

# 2025 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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### **Appendix A. SAMPLER GUIDELINES**

### **Appendix B. MARINE MAMMAL PROTECTION ACT 1972**

## 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 protocols, and the proper coding of all forms. This manual describes the history of the survey, general information, methods, and the roles and responsibilities of Supervisors, Leads, Fish and Wildlife Technicians, and Samplers; it then follows with information specific to each fishing mode and the corresponding form(s).

California's recreational fisheries are dynamic and diverse. Different sampling techniques may be employed based on area of the state, species or species group sought, time of year, and mode of fishing. Thorough reading of this manual coupled with on-going training will enable the Sampler to handle most situations, including unforeseen problems. Any situations, questions, or problems encountered that are not covered in this manual should be directed to the CRFS Field Lead or Supervisor.

To access the CRFS project page, please visit:  
<https://www.wildlife.ca.gov/Conservation/Marine/CRFS>

### **CRFS – Definition and Goal**

The California Recreational Fisheries Survey is a multi-part survey implemented in 2004. The goal of CRFS is to produce, in a timely manner, marine recreational fishery data needed for sustainable management of California's marine resources. This goal is a high priority for the California Department of Fish and Wildlife (Department) as it provides the necessary information to make management decisions. The fishery data produced are catch and effort estimates for marine recreational finfish fisheries. Providing timely estimates is essential for the active management of marine species, especially for species of concern. Funding for CRFS is provided through both state and federal sources.

CRFS is part of a larger network, the Pacific Coast Recreational Fisheries Information Network (RecFIN). RecFIN integrates state and federally funded marine recreational fisheries sampling programs from Washington, Oregon, and California by integrating estimates and data into a single database. The RecFIN database may be accessed by fishery managers, academia, constituents, and the public.

### **The Importance of Collecting Fishery Data**

Understanding recreational fisheries and estimating total harvest is important, and legally mandated. Economically important marine fish species can be harvested by recreational anglers in bays and estuaries, nearshore areas, as well as the open ocean. Though these species are harvested by both recreational and commercial sectors, recreational catch can be a significant portion of the total take of many marine fish species in California.

Catch and effort estimates are fundamental to assess the influence of fishing on a fish stock. The development of informed management plans, measures, and policies requires information about the species taken, fishing effort, and the inherent seasonal, temporal, and regional differences in those fisheries. Accurate and timely catch information on a wide range of marine fish species, coupled with their associated biological studies, allow management agencies to effectively protect, enhance, and maintain these living resources. These data are not only used by the Department, but also by state conservation agencies, recreational fishing industries, federal agencies, regional fishery management councils and commissions, academia and others interested in the productivity, management, conservation, and use of California's marine fisheries. Fishery stock assessments, the allocation of fishery resources between states, sectors, and regions, and the resulting management measures and regulations (both planned and emergency actions) depend on the results of these surveys.

### **State and Federal Mandates**

The National Oceanic and Atmospheric Administration (NOAA) Fisheries and the Department 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.

Specifically, 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. The Fish and Wildlife Act of 1956, Section 5(a)(4), 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.

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

### **History**

Surveys of recreational fisheries tend to be more complex and expensive compared to data collection from the commercial sector. The recreational sector is quite diverse, involves more constituents, and is affected more by weather, the economy, and regional differences than the commercial sector. Recreational anglers can fish from boats, piers, jetties, docks, and beaches

and can be widely and irregularly dispersed along the coast. Fishing habits and practices vary among fishing sites. Recreational anglers can be elusive; estimating recreational catch and effort can be difficult. Past surveys to assess the impact by recreational fisheries in California include:

### **Marine Recreational Fisheries Statistics Survey (MRFSS)**



The Marine Recreational Fisheries Statistics Survey (MRFSS) was the main survey used by the Department to estimate catch and effort from marine fisheries in California from 1979 to 2003. MRFSS used complementary (dependent on each other) surveys for catch and effort estimation. A random-digit-dialing household telephone survey was used to: 1) obtain participation and effort data; and 2) provide information on the proportion of fishing households in each county of the survey area. In addition to the telephone survey, MRFSS involved a field survey to intercept anglers to obtain information on catch (species, numbers of fish, lengths and weights) and area fished. The field intercept survey also collected information regarding number of anglers, state or county of residence, length of trip, catch composition angler telephone numbers, and other items of interest to fishery managers.

In January 2004, CRFS was implemented and replaced MRFSS. The CRFS design was built off MRFSS but was adjusted to incorporate necessary changes to provide more reliable recreational fisheries data on a finer regional scale and quicker time frame.

### **Ocean Salmon Project (OSP)**

The Department's Ocean Salmon Project (OSP) is in charge of recreational and commercial catch and effort estimates, utilizing coded wire tag (CWT) recoveries for California's ocean salmon fisheries. CWT estimates are a key component of salmon management because they identify the contribution of specific runs of salmon to the ocean fishery. OSP conducted a private boat survey from 1962 to 2003.

Since 2004, CRFS collects recreational data from primary private boat surveys for OSP (the "PR1" mode). The CRFS "PR1" survey is designed to maintain the continuity of the historical OSP private boat estimates. CRFS also works with OSP to collect Commercial Passenger Fishing Vessel (CPFV) ocean salmon data, and to track the activities of the CPFVs during the season. During salmon season, the primary goals for CRFS include identifying adipose fin-clipped salmon for length measurements and head removal to recover the CWT. Samplers north of Point Conception will receive specialized training from OSP prior to the recreational salmon opener. OSP processes the salmon sample data and salmon heads for CWT recovery. In addition, OSP produces biweekly catch and effort estimates and CWT contribution rates for salmon fishery management with the focus primarily on the major salmon ports. CRFS and OSP collaborate to implement effective CWT recovery and accurate salmon counts.

## **Survey Design**

Catch estimates can most easily be understood by this simple model:

Estimated Total Angler Trips x Estimated Mean Catch Per Trip = Estimated Total Catch

Where the "Mean Catch Per Trip" is also known as catch per unit effort (CPUE). Since catch and effort are separate entities, the survey can be described as having separate collections for 1) effort, and 2) catch. The effort component is the estimation of "Total Angler Trips" and the catch component is the "Mean Catch per Trip" derived from the catch and effort on sampled trips. The estimated "Total Catch" is the product of the effort component and the catch component. CRFS estimates are produced on a monthly basis.

CRFS is similar to its predecessor, MRFSS, in that there are two main parts to the survey: a field survey component (on-site) and an online survey (off-site). These survey components also rely on data collected from mandatory CPFV logs and sport fishing license sales to estimate total catch and fishing effort of marine recreational anglers in California.

### **CPFV Log Component**

CPFV operators are required to submit logs to the Department for each fishing trip. CPFV log data collection began in 1936. For each log entry, the vessel operator provides information on effort (number of anglers and number of hours fished) and take (species and number of fish caught). Logs are submitted monthly to CDFW and are mandatory. CRFS uses the CPFV effort data collected by Samplers and log records to estimate party/charter boat (PC) effort.

### **Online Survey Component**

The Angler License Directory Online Survey (ALDOS) uses emails to invite licensed anglers to provide survey responses online. The data collected are used to estimate the total number of marine recreational fishing trips taken by license holders when field observations of effort are not feasible, such as night-time fishing and private-access sites. This off-site method uses the Department's Automated License Data System (ALDS) to select samples from a list of active fishing license holders. Data collected from licensed anglers is used to identify the number of anglers that completed saltwater sport fishing trips, and how many trips they completed, by fishing mode, over a specified period of time. ALDOS is used to collect effort data only for beach and bank fishing, night-time fishing, and private access fishing that might otherwise go unaccounted for.

### **Field Sampling Component**

CRFS field sampling is conducted at over 500 publicly accessible sites during daylight hours to gather catch and effort data. CRFS Samplers intercept recreational anglers at the completion of their fishing trips to collect on-site data by conducting the survey. On-site data is more reliable because it is not

as susceptible to angler memory recall bias. On-site methods are used to collect all the catch data and some of the effort data.

**Mode**

CRFS conducts four major angler surveys based on fishing mode, and each survey is different. A fishing mode is defined as the method of access to fisheries. The modes in CRFS are:

- MM – Man-made structure fishing
- BB – Beach and bank fishing
- PC – Party and charter boat fishing
- PR – Private and rental boat fishing

The following table shows the surveys that are used for each mode of fishing, access type (public or private), and time of day (day or night).

**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 ■
PR	Effort	Field Survey	Under-coverage adjustment <sup>1</sup>	Under-coverage adjustment <sup>1</sup>	Under-coverage adjustment <sup>1</sup>
	CPUE	Field Survey	Use estimate from day	Use estimate from day	Use estimate from day
PC	Effort	CPFV logs and Field Checks <sup>2</sup>	CPFV logs and Field Checks <sup>2</sup>	Not Applicable	Not Applicable
	CPUE	Field Survey (onboard & dockside)	Field Survey (onboard & dockside)		
MM	Effort	Field Survey	NO ESTIMATE	NO ESTIMATE	NO ESTIMATE
	CPUE	Field Survey			
BB	Effort	Telephone Survey ALDTS <sup>3</sup>	Telephone Survey ALDTS <sup>3</sup>	Telephone Survey ALDTS <sup>3</sup>	Telephone Survey ALDTS <sup>3</sup>
	CPUE	Field Survey	Use estimate from day	Use estimate from day	Use estimate from day

1. Under-coverage adjustment using estimates from the ALDOS 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 Online Survey (ALDOS)

### **Geographic Divisions**

Coastal California is divided into six CRFS Districts. District boundaries generally follow some county boundaries and/or important biogeographic lines. Also, Districts coincide with some important state and federal fishery management lines.

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 eight counties surrounding San Francisco and San Pablo Bays: Alameda, Contra Costa, Solano, Sonoma, Marin, San Francisco, Santa Clara, 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 (CRFS) Districts



## **ROLES, RESPONSIBILITIES, GUIDELINES AND EXPECTATIONS**

**The Supervisor** oversees the field program and ensures the project 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, timesheets, and travel expense claims. The Supervisor has jurisdiction over hiring new field staff, and official employee action as needed.

**The Lead Person (Lead or Field Lead)** manages both field and office-work in their respective District(s). The Lead's job is to make sure CRFS data is properly collected by Field Samplers, processed, and entered into the CRFS database. The Lead oversees the training and quality control of Field Samplers, including Fish and Wildlife Technicians and Scientific Aids, and monitors the data flow through the District office(s) including when data is received, edited, scanned, entered, uploaded, filed, and archived. Leads edit the data sheets and provide feedback to staff, maintain site lists, and sample selections, and create the monthly Assignment Spreadsheet and sampling schedule in their respective District(s). Leads schedule staff meetings as needed, help review timesheets, recruit and interview new Samplers, and maintain/inventory all field equipment and forms. Leads review monthly CRFS estimates as they become available. They also work with the Department's Recreational Fishing Data Project and Ocean Salmon Project staff to ensure data and estimates are being properly reviewed, checked, and updated. Leads, along with Fish and Wildlife Technicians, will conduct quality control visits each month. During these "field checks" Sampler work performance will be reviewed, and feedback will be provided at that time or later.

The District Lead Person is the Sampler's primary resource for training, procedural questions, and problem solving. The Lead is also the person whom anglers may contact concerning CRFS procedures and sampling issues. Media contacts should be directed to the Lead.

**The Fish and Wildlife Technician (Tech)** has many of the same responsibilities as the Lead and the Field Sampler. Techs may be sent into the field to sample or conduct field checks on other Samplers. They help train new Samplers, process data, maintain sampling gear, and complete general office tasks. Techs may help oversee data tracking and entry, enter data themselves, scan data sheets, help set up meetings and trainings, and provide direction for field staff when the Lead is unavailable.

**The Field Sampler (Sampler)** plays a vital role in the CRFS project since the key to accurate data collection is high-quality interviewing skills and attention to detail. The Field Sampler role is generally filled by Department Scientific Aids, but occasionally the Techs and even the Leads may act in this capacity. A good Sampler is one who can approach strangers with little reluctance, diplomatically handle sensitive situations, follow procedure, and complete forms accurately and efficiently. Samplers are expected to act

professionally in both the field and office settings, accurately identify fish species, and communicate effectively with their Leads and coworkers. Sampler expectations and guidelines follow.

**The Port Lead Sampler** is an experienced Sampler assigned to track PC effort in a given port, and is usually responsible for ensuring sampling goals for CPFV salmon trips are met.

## **Expectations**

Field Samplers are expected to:

- Be knowledgeable of CRFS goals and how the data is used
- Be knowledgeable of California's ocean sportfishing regulations
- Read a monthly schedule and complete assignments as scheduled
- Identify common marine fish species
- Use a dichotomous key to identify uncommon marine fish species
- Keep gear and equipment in proper working order
- Have all necessary forms and gear available
- Operate in a professional manner
- Wear appropriate field and office attire that is neat and clean
- Accurately complete and submit forms in a timely fashion
- Work at sea on commercial passenger fishing vessels
- Follow the procedures in this manual
- Lift up to 50 pounds
- Have a reliable personal transportation and a driver license
- Have good communication skills
- Be adaptable to changes in procedures, protocols, forms, and schedules

## **Safety**

Sampler safety is more important than any CRFS task. Concerning personal safety there are two types of actions: 1) removing yourself from an immediate threat, 2) and taking care to avoid situations where your safety is at risk. If you find yourself in a situation of immediate danger, do whatever you can to make yourself safe. When you are safe, call the authorities or 9-1-1, and then call your Lead. Your Lead will provide you with a list of local emergency numbers.

If you are injured on the job, take care to memorize the chain of events that lead to the accident. Report your injury immediately and relay the detailed information so that proper action can be taken; a Worker's Compensation claim may be filed. Work with your Lead for proper documentation of work-related injuries and appropriate Personnel involvement, and doctor's visits.

The following sections describe ways to avoid accident or injury on the job with CRFS.

Driving in heavy traffic or in poor weather conditions is a part of this job. Take care when driving in parking lots; look for trailered boats, people, and

animals. Winter conditions create additional potential dangers: rock-slides, icy patches on the road or poor visibility. Allowing extra space between your vehicle and the vehicle front of you can help, along with proper maintenance of the vehicle (whether personal or state-owned). If you are driving on state time, make sure you possess the proper vehicle accident report forms.

The job site can be dangerous. When you first arrive to the site, look around and make sure it is safe to work. At many sampling sites, you may wait for anglers in your vehicle. Leave valuables at home and lock your vehicle when you leave it. It is a good idea to carry your cell phone with you or know where local payphones are located. Make acquaintances with local Harbor Patrol, Police Departments, State Park Rangers, and Wildlife Officers. Local law enforcement officers tend to have certain areas they patrol, so you will tend to see the same people at the same sites.

Inclement weather or rough ocean conditions may render a site inaccessible and unsafe, for instance when waves are breaking over a jetty. Assess the ocean before walking too close. Keep an eye on the surf when working on a beach. Be prepared for bad weather, even if the weather at the dock is nice. Plan ahead and bring foul weather gear and/or dress in layers.

Use caution when walking on rough terrain such as jetty rocks, uneven banks, and steep beach cliffs. Slippery docks, uneven terrain, and unstable piers may all be sources of accidents. Slow down, pay attention, and move with purpose to avoid injury. Wear shoes with good traction.

Working around vehicles and boats requires a roving eye for vehicles, especially those towing a trailer. Use care when climbing onto a boat, since the boat or trailer may not be stable, or the foothold and/or handholds may be slippery. Samplers need to be especially safety-diligent when sampling party boats. Be aware of inexperienced anglers who do not pay attention when overhead casting. On rocking boats there is potential danger from swinging hooks and weights on fishing rods. Maintain a safe distance from fishing action whenever possible and be alert to situations where these problems may occur. Keep an eye on the swells so that you may prepare for unexpectedly large waves. Staying within grasp of something to hold on to or sitting down while observing are strategies that make PC 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.

Remote sites require you to be aware of your surroundings; approach public restrooms, foliage, and other "hiding spots" with caution. Pay attention to people in the vicinity and try to position the front of your body towards them.

Difficult people are occasionally encountered. Most anglers will cooperate with the CRFS interview, but some anglers will not want to be intercepted for whatever reason. Don't take it personally; it is their right to refuse. Be polite and try to get them to change their mind; you will be trained in gaining anglers cooperation, and your Lead will provide you with compelling arguments you

can use to persuade anglers. Some anglers may be hostile toward you. Be aware of this potential when interviewing. If this should occur, stop the interview process, and walk away. Even if you stay and engage the angry angler, it will rarely change their views towards you and/or the Department. If the situation escalates, or you witness criminal activity, call 9-1-1 immediately and be prepared to describe the person, place, or vehicle involved. Vehicle license plate or boat CF numbers are very helpful to authorities. If you are personally threatened either verbally or with physical harm, leave immediately. When you are safe, call the authorities and then call your Lead. If at any time you are unsure of how to handle a situation, contact your Lead. Though these situations are rare, knowing how to properly handle and report them is crucial.

Handling fish requires safety measures as well. Be aware that handling fish and invertebrates poses a hazard. For specific fish species to handle with care, please refer to the "Species Sampling" section of this manual.

Measuring fish on a deck or dock can make the area slippery. Kneepads, gloves, and shoes with grip will help while measuring fish. Please take care not to drop fish; use two hands to carry them. Remember that these fish are bound for someone's dinner table; treat them with respect. Don't measure them on a dirty measuring board. Do not lift the fish over open water.

Lifting large fish or bags of fish requires proper lifting procedures to avoid back injury. Lift fish in an area with enough space to work comfortably. Plan your lift, gauge how much strength to exert, and know where you are going with the fish before you lift. Tighten your stomach muscles while lifting and use your leg muscles to lift, not your back. Do not twist while you are lifting; try to maintain the natural curve of your spine. Store the load between knee and shoulder level, so lifting will be easier. Keep the load balanced evenly and close to your body. Maintain balance by keeping your feet shoulder width apart. Do not jerk the load up; move smoothly.

Wild bird and pinniped interactions are occasionally observed while working for CRFS. These animals may become beached, stranded, sick or otherwise injured near a site where you are working. Marine birds and pinnipeds (California Sea Lions, Harbor Seals, Elephant Seals, etc.) are wild animals and should be left alone by CRFS Samplers and only attended to by authorized personnel. Whether you notice a stranded or sick animal yourself or a concerned citizen is reporting it to you, under no circumstances are Samplers to attempt to rescue or assist a stranded marine bird or pinniped; this falls outside the scope of the Sampler's job duties. Please contact the proper local wildlife care center; your Lead should provide you with the appropriate contact information for your area. As a side note, your Lead will give you contact(s) for reporting dead birds and mammals found onsite; certain research laboratories or veterinarian centers will perform necropsies on some or all of these species. Onboard CPFVs, let the crew handle situations where fishing line has become tangled around a bird or pinniped. Never try to assist a marine bird or pinniped while at sea. 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 Appendix B](#)).

### **Data Quality and Due Dates**

You are responsible for the quality of your own data, from collection through submittal to your Lead. All CRFS forms should be completed onsite. Do not leave an assignment with the intention of filling them out later; complete the forms while your memory is fresh. All forms will be reviewed for quality by the Sampler before passing them on to the Lead. Always check the manual first for resolving form-coding issues; you are responsible for following the correct procedures form-by-form and item-by-item. Take the time to look up codes, protocols, etc. in this manual before contacting your Lead with questions. If you can't get a hold of your Lead or Fish and Wildlife Technician regarding a question, take detailed notes on your data sheets. Strive for clean, legible data, with as many good (complete) interviews as possible.

Editing should be done in the field during down time when possible. 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 cost effective and reduces the chance of errors, since you will be editing while the events of the day are still fresh in your mind. If 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. 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 and Weekly Report regarding your editing time. Under no circumstances should you "save up" all the editing until the last minute. 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. Errors create more work for the data editor and data entry staff and may imply carelessness and lack of effort on the part of the Sampler. Timely, high quality, legible data is our primary goal, and this depends on the punctuality of the Sampler.

Timely submittal of data sheets is extremely important. All forms for assignments scheduled the previous Monday through Sunday must be mailed to your Lead on Monday, or Tuesday if Monday is a holiday, OR hand-delivered by Wednesday. Your Lead may specify different deadlines. Understand that by the time your data sheets are ready to be submitted, they are of significant value to the Department. Take care in handling them and delivering or mailing them to your Lead each week. Place your Assignment Summary Form on top of the corresponding data sheets, and keep all the forms together, sorted by assignment date. The forms should all be in order by date, assignment number, and form number. Do not hold up forms for questions; instead, contact your Lead explaining the problems. Mail forms in a strong manila envelope. Do not fold forms. Tape the envelope. Mail forms by USPS first class post ensuring there is enough postage for delivery. Leads

check the postmark to ensure data is mailed in a timely fashion. This is especially critical during the last week of the month.

In addition to weekly data, Samplers must meet other deadlines for Weekly Reports, OSP forms, timesheets, expense claims, fish quizzes, trainings, meetings, and/or conference calls. You are expected to be on time and participate in all these job-related items as they are assigned by your Lead or Supervisor.

The Lead will review, edit, and scan the data sheets before passing them on to data entry. Your Lead or Tech can help you with your field, coding, or form questions. Return calls and emails inquiring about your data in a timely fashion, because some data questions require Sampler input before they can be entered and uploaded.

The data entry team will review the data sheets as they are entering them, and they may contact you with questions. Since each step takes time, it is very important that the forms keep moving through the system; therefore, editing is an ongoing task (it doesn't end once the forms have been submitted). Occasionally, you may be contacted with questions about your data by another CRFS or OSP Lead, data manager, or data entry staff. Your quick response is essential to producing CRFS estimates on time. Poor quality editing will result in remedial action by your Lead.

### **Timesheets and Travel Expense Claims**

Timesheets and expenses are due MONTHLY to your Lead around the same time each pay period. Your Lead will inform you of strict deadlines for these items. The Department's time reporting site can be accessed here: <https://timereporting.wildlife.ca.gov/hrapp/admin/OAuth2Logon.aep> . Your Lead will direct you on where to find and how to use the current Department time keeping system. It is your responsibility to know the proper coding on the time sheet from your position title, and number, to the funding codes and how to claim absences like sick leave, holidays, etc.

Travel expense claims will be submitted through the Global CalATERS system. Work with your Lead and/or Supervisor to properly complete an expense claim. Expense claims are your responsibility; any errors or follow-ups to erroneous claims must be dealt with in a timely manner. The only expenses incurred during working hours that are typically reimbursable are: parking fees, tolls, mileage, meals and per diem (if applicable) and postage for mailing data sheets to your Lead. All other expenses must be pre-approved by the Supervisor.

Meals purchased while on assignment may be reimbursable; typically meals may be covered if the Sampler works over 24 hrs. As explained in your bargaining unit contract, the Department will only reimburse the Sampler for breakfast if the trip begins (departing headquarters) at or before 6 AM and the Sampler travels 100 miles or more that day. An example would be boat meal purchases while onboard a CPFV trip (which are encouraged as it is a

friendly gesture and a way of supporting the galley). Boat meals (breakfast) can be reimbursed only for: 1) morning trips and 2) if the Sampler traveled a distance of 50 miles or greater one-way from headquarters to the landing. Lunch and daily incidentals are not reimbursed on trips that are less than 24 hours in duration. Dinner may be claimed if the Sampler travels 50 miles or greater one-way and returns to headquarters after 7 PM. For more information on per diem travel reimbursement, please visit <http://www.calhr.ca.gov/>. After selecting Bargaining Contracts, you will find your information under Memorandum of Understanding, Unit 11.

Parking should be exempt from charge with the parking placard provided to you. However, there might be times when a parking lot has automated gated access, or the Sampler may be forced to feed a parking meter. If payment is required to park, retain the original receipt and it can be reimbursed.

Mileage reimbursement will be provided at the state government rate and is intended to cover the cost of fuel plus general wear and tear on the Sampler's personal vehicle. The use of a state vehicle is preferred, but if one is not available, a personal vehicle is allowed. Personal mileage reimbursement does not require documentation (e.g., gas receipts) but only includes that mileage generated while on assignment.

Postage for mailing original data sheets to the office is reimbursable but you must submit the original postage receipt. It is preferable to mail data from another Department office before using the post office or other mail service, to keep costs down and reduce the need for postage receipts. Only normal postage will be reimbursed; expedited mail services (e.g., express, overnight service) are not reimbursable unless pre-approved by the Supervisor.

### **Professional Conduct**

As an employee working for the State of California, all CRFS staff are held to a high standard of professional conduct and work ethic. Understand that you are the face of the Department of Fish and Wildlife, and the public will turn to you for help and advice on many subjects, some of which have nothing to do with fish or wildlife. CRFS Samplers are to follow etiquette when working in both the field and office setting. Address your Lead, coworkers, and members of the public with courtesy and respect. Be polite and professional in all your endeavors. Your behavior serves to substantiate the legitimacy of the survey and increase angler cooperation, builds positive workplace relationships, and helps you stand out as a responsible worker.

Etiquette can make or break a CRFS interview. Be aware of your body language and tone of voice. Before the CRFS interview, introduce yourself and the survey; do not assume anglers know who you are. Ask permission to board any boat or examine/handle any fish. Thank anglers after the interview is complete. Similarly, for CPFVs or other privately owned/managed sites, always introduce yourself to the landing personnel and crew, and ask permission to conduct your business and board any vessel. Refrain from words that could be construed as inappropriate or vulgar. Be aware of

diversity; CRFS Samplers interact with people from all walks of life. In the eyes of the public, CRFS Samplers are seen 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 wearing CRFS attire and fully equipped. While you are observing the fisheries, you are being observed and judged by the public. Your actions and conversations reflect on the Department and state government in general. Do not do anything that could be viewed as a waste of time or state resources. Remember that you are a public employee. Working with others is part of the job. While sampling, you will use your interpersonal communication skills to gain access to sites, board and sample boats, and persuade anglers to cooperate with the survey. You will work with other CRFS samplers, other agency staff, and law enforcement, as well as with the public, including anglers and curious individuals. In the office setting, you will work with other CRFS staff, as well as Department staff who have no affiliations with CRFS. If you are working next to someone you don't know, introduce yourself and be friendly.

Stick to your job duties so the public understands your role. 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. Do not allow the public to think you are a Wildlife Officer, or any other role of authority. Your primary responsibility as a CRFS Sampler is to collect recreational fisheries data. If you do not know the answer to a question from the public, never guess; refer them to your Lead. If you are approached by a reporter in the field, you should provide your Lead's contact information, and inform your Lead; do not engage them in an interview of any kind. Most information sought by a reporter (survey design, catch success rate, cooperation, etc.) needs to be answered by either the Lead or someone else in the Department. 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.

Conflicts of interest and incompatible activities must be avoided while working for CRFS. When you are hired as a Scientific Aid you will be given a list of activities to avoid once you have signed your oath of allegiance to the State. Some political and employment activities should be avoided, for example you may not work as a commercial fisherman while also working for CRFS. You may not use state resources, such as postage, office supplies, internet access, or state vehicles, for personal gain. You may not use your employment with the Department to promote your personal business or any other business. Gifts may not be accepted at any time, including free fishing trips on CPFVs, fish, clothing, or other goods and services. 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 the Sampler is either contributing to or helping the over-limit boat come down to the limit. This action may 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.

Tobacco use must be discreet. You may NOT smoke in view of the public. Never interview anglers while smoking or chewing tobacco. Do not throw cigarette butts on the ground or in the water. Do not spit chewing tobacco on the ground. If you do smoke, cover your CDFW patches and go away from the dock, anglers, and the public to a place where smoking is allowed; or do it in your personal car. It is against government policy to smoke in a state vehicle.

Working with Wildlife Officers can happen at any fishing site. Sometimes they will be undercover agents and you may interview a Wildlife Officer without your knowledge. If a Wildlife Officer asks you if you have seen any illegal activity, you should tell them generally 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 through CRFS is confidential, and we do not want to jeopardize our presence at any site or CPFV operation. If a Wildlife Officer approaches while interviewing, let them proceed with their investigation first; stand back during their investigation. If possible, complete the interview with an investigated angler, and include confiscated catch, if any. Report the encounter on your forms.

Illegal fishing activity will probably occur at some point in your fishery sampling career. The purpose of the field sampling for 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.

Do not give the impression to anyone that you are a Wildlife Officer. Do not try to enforce fishing regulations in the field. However, you may educate the anglers as to fishing regulations. If you observe illegal fishing activities, pass the information along to your Lead or go somewhere private and call CalTIP. 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 observed and measured the catch. The Sampler should inform the angler of 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.

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 to your Lead.

There may be occasions where an angler has kept a prohibited species, such as a Giant Sea Bass, Yelloweye Rockfish, or Cowcod. Try to collect all retained Yelloweye, Quillback, and overlimit Copper Rockfish, but do not collect any other prohibited species. A primary goal 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.

Be sure to make a note next to sublegal fish, over limits and fish taken out of season that are recorded in your data. This helps data editors tremendously.

Education and outreach is the best approach when you encounter fishing violations or the general curious layperson. While improving public relations for CRFS and the Department is helpful, it is not your main responsibility. Do not let education and outreach get in the way of collecting high-quality data for the project. When you have time, distribute informational fliers and brochures, and answer questions from the public to the best of your abilities. Let your Lead know what questions you are getting, so they can share answers to those questions.

While in the field, you may have people ask you questions about fishing regulations. You are responsible for knowing the basics and how to look up the answers in the sport fishing regulation booklet. Samplers should be aware of the current fishing regulations in their District; however, Samplers are not required to know the complex reasons *why* the regulations are as such. You should offer the person a copy of related outreach materials and show them where to find the answer, but never interpret regulations for the angler. Suffice it to say that fishery managers are doing all they can to provide fishing opportunities while conserving fish populations for future generations. There is tremendous pressure on managers to allow angling and to justify every restriction. You 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. If you do not know the answer to a regulation question and can't find it in your materials, never guess. Refer the angler to a CDFW office so they may get the answer directly. Often Samplers will not have time to get into a conversation and should politely explain that they are very busy with data collection at the moment.

Sometimes members of the public have stories of how they were mistreated by a Wildlife Officer, or other complaints regarding Department policies or regulations. You may listen but it is important to not take sides. Please

explain that we are biologists, not policymakers. You may suggest to the individual that they contact the Department with their concerns and/or write a letter to the California Fish and Game Commission.

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 emailed to be asked about their trips in the past one to two months. Samplers should also encourage angler cooperation with online surveys of recreational fisheries.

### **Attire**

Samplers are expected to look professional both in the field and the office setting. Samplers on assignment will wear their CRFS attire that is issued to them, including the polo shirt, hat and jacket. Do not wear attire with other logos (advertising logos, etc.), except on shoes it is okay. The public may be confused about who you are affiliated with if you display logos other than the Department shield while on assignment. Do not wear your CRFS attire when you are not working. No dangling jewelry. Samplers with long hair should tie it back.

Pants can be jeans, khakis, or corduroy. No sweats or tight-fitting pants (e.g. NO leggings, or jeggings, or “yoga pants”). Pants may not have holes, tears or obvious stains. You may wear long shorts (for warm weather), but they may not be too short, and they must have a hem or be rolled (no cut-offs).

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 find yourself sampling (e.g., on jetties, climbing into boats). You will be provided rubber boots for onboard CPFV assignments if you choose to wear them.

Hats will help prevent the sun from taking its toll and help identify you as a Department Sampler. Protect yourself against sunburn and heat exposure by wearing a hat. Hats help minimize 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.

The California State ID Card is to be on your person the entire time you are on assignment. Do not use your ID card for any other purpose. Samplers will be viewed as representatives of the state of California conducting official business.

Sunscreen is highly recommended to protect you from sunburn as well as reduce the risk of some skin cancers. You may be able to be reimbursed for

sunscreen - contact your Supervisor prior to purchase as the Department may have sunscreen that is provided for you.

Sunglasses will help protect your eyes from UV radiation. Sunglasses will not be provided to you.

Gloves will protect your hands while handling slippery wet fish. Gloves will be provided to you.

## **Vehicles**

A valid California driver license and reliable personal transportation are required to work on the CRFS Project. Responsible driving may be checked with a Department driver's test before you may operate a state vehicle.

State vehicle use is preferred, but if one is not available, you will use your own personal transportation. Work with your Lead to get a Voyager Fuel Card PIN assigned to you; this is required for fueling state vehicles. Your Lead will also provide you with information on how to reserve a state vehicle and how to fill out the state vehicle mileage log. Remember that only authorized persons may ride in a state vehicle and that state vehicles may only be used on official business.

Compensation for driving is defined here. Your Headquarters (HQ) address will be determined when you are hired. Once you leave your HQ while driving for CRFS, you are "on the clock" and will get paid your hourly rate to drive (i.e., travel time). Mileage from your home to HQ is part of your normal commute and that time will not be compensated. Mileage may only be reimbursed if you are using your personal vehicle. Please make notes on the data sheets if you used a personal vehicle or a state vehicle. Please make a note on your forms about unusual traffic conditions that would cause a long commute to your CRFS site.

Accidents happen. Make sure the proper state forms are with you when driving a state vehicle in case of a vehicular accident while on the job. Report all accidents, whether in a personal or state vehicle, to your Lead as soon as possible.

Citations are your responsibility. All California traffic laws apply when you are driving on state business. You are responsible for any traffic citations while driving on the job, including if you are in a state vehicle. Be a courteous and safe driver while driving on the job.

Parking can be difficult at some sites, especially during the busy summer months. 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 ID card and parking placard with them. Please attempt to park legally. Use your good judgment about parking in a non-recognized parking space. Your Lead has included notes about special parking situations in your site descriptions. Your Lead

will provide you with a parking placard to display on your dashboard to identify your vehicle. While you may sometimes need to park in a space reserved for boat trailers (as a last resort), never park in handicapped, fire hydrant, loading, tow-away or red zones. If you need to pay for parking, get a receipt and claim it on your monthly expense claim. When parking your vehicle at a launch ramp, be sure you give the anglers enough room to circle your vehicle with their boat trailers.

Parking citations should be brought to your Lead's attention right away. The placard may prevent ticketing; but it is not guaranteed that you will not get a parking citation while on assignment. If you do get a parking ticket, work with your Lead to attempt to dispute the ticket with city or harbor enforcement. This may involve your Lead writing a letter to the ticketing agency. Regardless of the outcome, the Department will not reimburse you for parking tickets or towing.

### **Equipment and Gear**

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 were not 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. Examples of Sampler negligence include 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.

### **CRFS Sampler 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, & 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. Binoculars
17. CRFS/RecFIN brochure
18. 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. Bags and collection tags for heads
  - c. Fillet knife

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 the digital copy. Lacking these elements when a field check is performed may result in disciplinary action. The Sampler should always plan ahead and have a sufficient number of forms on hand. Make arrangements to get more forms well in advance of getting low or running out.

### **Printed Materials**

Listed below are a number of printed materials available to the Sampler to provide 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.

1. *Bring That Rockfish Down* – Printed brochure through Sea Grant explains barotrauma and how to release rockfish properly.
2. *Canary/Vermilion/Yelloweye Flier* – Printed color flier with illustrations of Canary, Vermilion, and Yelloweye Rockfishes. Also lists key characteristic for species identification.
3. *California Fishing Passport* – Printed booklet, half letter size, double sided.
4. *CDFW Marine Region Card* – Business card with basic Marine Region contact information and web site address.
5. *CDFW CalTIP* – Business card with contact information for CalTIP; telephone number for anonymous reporting of violations.

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

### Electronic Materials

Some printed materials are available in electronic form on the Department (<http://www.wildlife.ca.gov/Fishing/>) and RecFIN ([www.recfin.org](http://www.recfin.org)) websites on the internet.

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

### Forms

Form	Survey Mode	Data
Assignment Summary Form	ALL, except PCS and PEC	Effort & Form counts
Shore Form	BB and MM	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	PCD	Catch and Effort
PC Effort Check	ALL	Effort
PR Form	PR1 and PR2	Catch and Effort

## **CRFS ASSIGNMENTS, SITES, AND SCHEDULES**

### **Site Code**

The CRFS samples at coastal sites up and down the State of California. All fishing sites for the CRFS project are given a county and site code; and it is this combination of county and site codes together that make a unique way to represent each fishing site. County codes are represented first, with three numerical digits. The site codes come next and are also three numerical digits. So, together each individual site is represented by a six-digit number. Most of the CRFS forms will require you to record the county and site codes for where you completed your assignment. After a while, you will become very familiar with these codes.

### **Site Name**

CRFS sites are identified by site name in addition to the site code. The site names are very specific and should be followed exactly as they are presented on the site list. CRFS sites can be of varying sizes and may span different structures or shorelines. For instance, one site may be a launch ramp, a very specific point, whereas another site may include a pier or a stretch of beach. A site name can vary depending on what the assigned mode of sampling is at that site.

### **Site List**

When you are hired, your Lead will give you a District site list which will have all the sites listed by county, corresponding maps, and driving directions to the sites. Leads may use a site description binder and/or a Wiki site to document the sites by District ([http://data.recfin.org/wiki/index.php/California\\_Recreational\\_Fisheries\\_Survey](http://data.recfin.org/wiki/index.php/California_Recreational_Fisheries_Survey)). These descriptions not only give specific instructions on how to get to the site, but also include site boundaries (if any), fishing modes available at the site, Marine Protected Areas near the site, the facilities available at the site, and any phone numbers or web links you may need, such as party boat landing information. Notify your Lead if you discover information for a site is incorrect.

The District site list may change on a monthly basis. Some sites may be active one month and inactive the next. Your Lead and Supervisor will determine which sites stay active and which ones become inactive, based on time of year, budget, fishing seasons, effort, safety, etc. It is important that you pay attention to your Monthly Schedule and only go to sites you are instructed to visit. In addition, fishing sites may change over time. Launch ramps are constructed or torn down, or new CPFV landings open for business. CPFV boats or landings may move ports, change ownership, or go out of business from lack of customers. 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.

## **Assignment ID**

Each assignment on the Monthly Schedule will have a unique six-digit assignment ID code (ASSN ID) for tracking purposes. The ASSN ID follows the assignment from the day it is populated from the Draw Program to the sampling event, and through the data entry process. It is extremely important to use the correct ASSN ID on all your forms.

## **The Draw Program and Assignment Selection**

Monthly assignments are determined by random selection through the Department's Data Portal CRFS Draw Program (called "Draw"). Stratified random sampling is used in all modes. Additionally, pressure-weighted sampling based on historical fishing patterns is used for PC, MM and PR2 modes. Each site has an estimate of past effort (fishing pressure) for each mode based on Sampler data collection of angler and boat counts. The 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). The Lead and Supervisor may utilize historical productivity data such as average interviews per site, MPA boundaries, safety at sites, or current budget status to adjust the number of active sites in the Draw. Fewer sites tend to give fewer assignments in the Draw.

Working with the Supervisor, the Lead generates the Draw each month, producing an Assignment Spreadsheet, Monthly Schedule, and Master Spreadsheet. The Assignment Spreadsheet is created in MS Excel and uploaded into the Data Portal where each assignment will be tracked by the Leads online. The Monthly Schedule is created in MS Excel and provided to the Samplers in a timely fashion so that they may plan their work month. The Master Spreadsheet is a printed spreadsheet that is used in the District office(s) as one way of tracking assignments through the data entry process.

## **Assigned Mode**

The assigned mode (AMODE) for each assignment will dictate how the assignment is sampled, including the duration, forms to use, and site(s) to visit. Shore modes (MM and BB) are arranged into clusters of sites where the Sampler visits a group of sites in one assignment, whereas PC and PR mode assignments will require you to stay at one site, generally all day. See the specific Mode Sections in this manual for protocols by assigned mode.

## **Duration**

The assignment duration will vary based on mode and the fishing effort that day. Most assignments require an 8-hour shift. Some assignments may be even longer work shifts, depending on the mode and time of year. CRFS is conducted during daylight hours only, so the summer months tend to have longer assignments. Including travel time, some PR assignments may last 16 hours. Sometimes riding onboard CPFVs will require up to a 15-hour day; overnight trips are even longer. In general, most assignments will require a minimum sampling time of two hours. Please see each Mode Section for specific instructions regarding arrival and departure times, as well as low-or-

no effort protocols. Please be aware that there are mode-specific instructions for each type of assignment, rescheduling, and onsite procedures.

## Monthly Schedules

CRFS Monthly Schedules are created in Excel on a monthly basis, around the 20<sup>th</sup> of the month. Requests for days off or changes to your availability must be submitted to your Lead no later than the 15<sup>th</sup> of the preceding month. It is important to let your Lead know your availability when it is due, so that the schedule can be finalized quickly. You will receive the schedule from your Lead approximately one week before the 1<sup>st</sup> of the following month. Monthly Schedules are produced in a tabular format, the Assignment Spreadsheet (i.e. DRAW tab), but may be copied into a calendar format, or a schedule by area or individual Sampler. The Monthly Schedule will tell you which day(s) you are to work, the mode, sites, start times, and coworkers. The columns in the assignment spreadsheet will be described to you by your Lead during training, so that you know how to interpret the Monthly Schedule. See below for an example of an Assignment Spreadsheet.

## Assignment Spreadsheet Example

DISTRICT	YEAR	MONTH	KOD	DOW	DAY	CNTY	SITE	PORT	CLUSTER	NAME	ASSNID	AMODE	PC DURATION	ORDER	START	CATEGORY
5	2014	AUG	WD	MON	4				WIN3		085202	MM		A		early
6	2014	AUG	WD	MON	4				RED2		086201	MM		B		early
6	2014	AUG	WD	MON	4	15	301	CRD		Crescent City Docks	086712	PCD	dockside			
6	2014	AUG	WD	MON	4	15	301	CRD		Crescent City Docks	086523	PR1				
6	2014	AUG	WD	MON	4	23	103	FLD		Fields Landing	086509	PR1				
5	2014	AUG	WD	TUE	5	23	106	SHC		Shelter Cove	085702	PCD	dockside			
6	2014	AUG	WD	TUE	5	23	307	TRD		Trinidad Docks	086720	PCD	dockside			
5	2014	AUG	WD	TUE	5	23	106	SHC		Shelter Cove	085509	PR1				
6	2014	AUG	WD	TUE	5	23	307	TRD		Trinidad Docks	086531	PR1				
6	2014	AUG	WD	TUE	5	23	107			Eureka T-street launch	086301	PR2				late
6	2014	AUG	WD	WED	6	23	307	TRD		Trinidad Charters	086605	PCO	half day			
6	2014	AUG	WD	WED	6	15	400	CRL		Crescent City Harbor	086536	PR1				
6	2014	AUG	WD	WED	6	23	120	EUR		Eureka Marina	086515	PR1				
5	2014	AUG	WD	WED	6	45	100	FTB		Noyo River	085502	PR1				
5	2014	AUG	WD	THR	7				WIN3		085201	MM		B		early
6	2014	AUG	WD	THR	7	23	102	TRH		Trinidad Hoist	086501	PR1				
5	2014	AUG	WD	THR	7	45	103			Point Arena	085302	PR2				early

## Managing Your Assignments

It is your responsibility to manage assignments scheduled to you. Assignments are required to be worked on the date they are assigned unless other arrangements have been made with your Lead. Office work and meetings, conference calls and trainings are just as important as field work. You are expected to be punctual to work, prepared and ready to go. Do not work on other Department projects without prior approval from the Lead and Supervisor.

## Assignment Goal

The Sampler's daily goal is to obtain as many high-quality interviews as possible in a reasonable amount of time in the assigned mode.

## Rescheduling and Cancellation

Do not move, reassign, or cancel an assignment without prior approval from your Lead. Do not swap assignments with another Sampler without prior approval from your Lead. There is more flexibility in the PC and BB assignments than in the PR1, PR2 and MM assignments, with PR1 being the

most restrictive, especially during salmon season. If you cannot make an assignment, you are ill, or have an emergency, contact your Lead or Supervisor immediately. It is crucial for statistical validity that Samplers complete all assignments as scheduled.

If you miss an assignment and it can't be covered by another Sampler on that same day, it needs to be rescheduled to another day by the Lead. We cannot carry over missed assignments from one month to another. It is also important to understand that any assignment scheduled to you is not "your" assignment. The assignment needs to be completed on the date provided by the Draw, who completes it is not important. If you cannot work an assignment, the Lead will try to cover with another Sampler first and will only modify the assignment date as a last resort.

### **Closed Sites**

If a site is closed upon your arrival, contact your Lead immediately. Your Lead needs to know the exact dates of closure so as to avoid extrapolating data to that site in estimates of fishing effort and catch. There is a difference between site and ocean conditions being unsuitable for fishing effort to develop and the site being closed by the city, county, harbor, or police for reasons such as construction or maintenance. Examples of site closures include but are not limited to: crime scene investigations, boat hoist malfunction, oil spill or some other hazard, tsunami warning, fish kills, pier renovations, and closures due to an entertainment event like a concert or car show. Please notify your Lead if a site is closed while you are on assignment.

### **Refused Entry to a Site**

In some cases, you may be refused entry to a fishing site. If after explaining the project, admittance cannot be obtained, you should contact your Lead immediately. Working with your Lead, you should proceed with an alternative site for the assigned mode, move to a second assignment, or reassign the assignment. Your Lead must be notified about your refused entry/access, including refusals by CPFVs.

### **Poor Weather**

Rain, wind, etc. might deter some anglers, but not all. In general, the rule to follow is that if people can fish, sampling should take place. 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 fishing 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 no effort, or you may have a second assignment that may be at a location where effort is on-going. Your Lead may also provide you with another work activity. See each mode section in this manual for low-effort protocols.

### **Fishing Tournaments**

For the purposes of CRFS sampling, a tournament is defined as a site and date specific fishing contest. Contestants usually have to return to

tournament headquarters by a certain time for the “weigh in” which limits how far they can travel, and only specific species of fish may be taken on the date of the tournament event. Generally, tournaments are not sampled. Once the Sampler determines that a tournament is taking place, the Sampler should contact the Lead immediately to discuss rescheduling the assignment. Notify your Lead in advance when you learn the date and location of a tournament so that your Lead can make appropriate arrangements, if necessary. If a tournament is sampled, all sample numbers must be flagged with a “T”. Informal ‘pools’, such as those arranged on CPFVs (jackpot contests), are *not* considered tournaments – anglers participating in these types of contests should be sampled. Some fishing contests are regional (encompassing a large area) and span a long period of time (a week, a month, or an entire fishing season). Participants usually pre-register at a location such as a tackle or bait store and may bring qualifying fish in during the entire time the contest is running. For the purposes of CRFS sampling, these types of contests are called derbies. Anglers participating in derbies are not in a tournament “T” and should be sampled as normal.

### **Opportunistic Sampling**

In general, you must stick to sampling in the mode you are assigned for the day, even if you see recreational anglers in a different fishing mode at the site you are canvassing. The only exception is you may sample PC mode dockside while sampling in a different mode as long as you won’t miss interviews in the assigned mode. Please see the PC section of this manual for further instructions on opportunistic PC sampling.

Opportunistic site effort checks (SEC) are mandatory at certain sites. Your Lead will provide you with directions on when and where to perform SECs. Site effort checks in BB and MM mode consist of counting the number of anglers fishing. SECs for PR modes are done by counting boat trailers. Sometimes SECs can be performed at nearby sites, or they may be completed at your current site for a mode other than your assigned mode.

### **Second Assignment**

Multitasking is a handy skill to have as a CRFS Sampler. A successful Sampler is one who can take on many tasks, prioritize, and collect as much high-quality data as possible. Normally you will be scheduled for one CRFS assignment on any given day. However, budget, or staffing issues may require you to work more than one assignment on the same day. If you have been given a second assignment by your Lead, generally you may begin working on it after completing your first assignment; both assignments would have a unique assignment ID. The second assignment would have a new primary site or cluster and possibly a different mode assigned. Sometimes you can complete one assignment during the downtime of another assignment, for instance, completing an opportunistic sample while sampling in another mode. Your Lead may give you side duties in conjunction with your primary assignment, such as pressure checks, helping another Sampler during peak hours or office work before or after your field shift. Work with your Lead to figure out a plan on these days with multiple tasks.

**No Anglers at Site**

After determining there are no anglers at your assigned site, please consult the mode sections of this manual for specific protocols. You may need to wait for effort to develop, or you may be able to move to another site, or the assignment might need to be rescheduled later in the month. If the weather is bad and there are small craft advisories, the assignment might be terminated. If you have questions after reading the mode-specific instructions for no effort, please contact your Lead.

**Incorrect Assignment**

Occasionally a Sampler may accidentally complete the wrong assignment. Examples could be: completing the wrong cluster assignment, sampling the wrong port, using the wrong form, or omitting a site in a cluster. In these cases, as soon as you discover the error, please inform your Lead immediately so a solution can be found. The assignment may need to be rescheduled or canceled. Do not discard any of the data sheets you may have completed during the incorrect assignment – submit them to your Lead along with the rest of your data. Be sure to include notes describing why the incorrect assignment was worked.

## **GENERAL ONSITE PROCEDURES**

The onsite procedures differ somewhat by mode of fishing, geographic region, and the conditions at each site; however, the main goals are to collect effort information and to intercept and get complete interviews from as many eligible anglers as possible. Each CRFS interview may take anywhere from one to twenty minutes to complete, depending on the number of anglers contributing to that interview, how many fish they've retained, and the number of species present.

Surveys like this one require sampling of boats, anglers, and their catch in a random manner to produce a truly representative sample. Many systematic procedures have been developed that are intended to approximate a true random sample. Without any way to truly randomize effort 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 the sampling unit is a boat (e.g., PR).

Overall, remember to reduce bias by not interviewing successful anglers only, or those at fillet stations, or by contacting just the friendly anglers. 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.

### **Canvassing and Screening for Eligibility**

Part of the CRFS Sampler's job is to build a rapport with anglers, make them feel comfortable, and determine if they are eligible for a CRFS interview. At shore sites you may canvass anglers to determine how long they have been fishing and how much longer they plan to fish at the site. You may also contact boat anglers who are launching and inform them you would like to speak with them when they come back to port. 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 can be informal; for example, the conversation might begin with "Catch anything?" or "How's the fishing?"

The purpose of canvassing is to screen anglers for eligibility for a CRFS interview. If they are NOT eligible, do not conduct a CRFS interview because the data may not be used. CRFS primarily samples recreational fin-fishing trips; however, CRFS interviews invertebrate only anglers but the emphasis will be restricted to collecting effort and reported catch information.

The definition of an eligible angler is one who has:

- been fishing recreationally in saltwater (seaward downstream of any saltwater cutoff)
- gear in the water or is part of a CPFV boat limit
- been targeting finfish or invertebrates
- completed their fishing trip in the assigned mode of fishing (exceptions for shore modes, see MM and BB sections)

Examples of ineligible anglers would be kelp harvesters, anglers setting crab pots, tide poolers, and anglers targeting sand crabs for bait.

### **Screening Divers**

In addition to hook-and-line anglers, consider divers (spear fishers). If a diver uses a spear gun, they are considered “anglers” too. If the spear fisher targeted fish (speared a fish or intended to) they are eligible for a CRFS interview. Divers intending to take invertebrates by hand are also eligible anglers. Divers entering the water from the shore using a flotation device to kick out with fins to fish are considered MM or BB anglers (depending on the site and where they enter the ocean). Divers who access the water from a boat or other craft propelled by paddles/oars are considered PR anglers; this includes kayaks, stand up paddleboards, and pontoon boats with oars.

### **Kayak Anglers**

Kayak anglers are of special interest to CRFS, as kayak fishing has become increasingly popular in recent years. Normally it is easy to tell a fishing kayak from a non-harvest kayak by the equipment onboard the kayak. However, you may need to speak to the kayaker directly to tell if they were fishing or not. Pay special attention to kayak fishers in the BB and PR modes.

### **CRFS Codes**

CRFS codes are presented at the end of this manual. Your Lead may also provide you with cheat sheets for common codes used in your District(s).

Angler Residence Codes: You will record the US zip codes for most of the anglers you interview. Use the foreign country codes for anglers who reside outside the US. If the angler does not know his zip code, you may record a city instead and try to look up the zip code later. Zip codes are not necessary for a valid interview so you may record a “don’t know” or “didn’t ask” as a last resort and proceed to the next part of the interview.

Site Codes: These are provided to you on your current site list, as part of your Monthly Schedule, and are also listed on the CRFS Wiki website. Site codes are numeric (NNN-NNN) and some sites can be represented using an OSP Port Code (XXX). OSP Port Codes are given to PR1 sites and CPFV landings. OSP Port Codes are listed at the end of this Manual as well.

Species Codes: Five letter fish species codes have been provided to you in this manual and are sorted three ways: by code, common name, and by American Fisheries Society (AFS) common name. These lists include most finfish species (and some inverts) found on the Pacific coast. All codes should be listed, if not contact your Lead. These species codes are used for both the target(s) on the trip and for the catch records. You will become familiar with the species codes of fish targeted and caught in your District(s). When in doubt always look up the code in this manual; never guess or make up your own species code.

## **Gear Type**

During a CRFS interview, the Sampler collects effort information including gear type used. The most common gear type encountered for anglers targeting finfish is hook-and-line (H). However, there are several other methods of take that anglers may use. The gear type should be recorded under GEAR on the following forms: PR, PCS, Shore, PCD, and PC Angler. A gear type is needed for both primary and secondary targets. If there is no secondary target, gear type should be left blank. Gear type is not a required data element for a valid CRFS interview, but it is important information to collect, and it is mandatory for a salmon interview. See below for definitions of each finfish gear type.

### **The following gear codes apply to finfish targets:**

H = **H**ook-and-line is a gear type used to take finfish. A hook or multiple hooks tied to a line that is attached to a reel mounted on a fishing rod, a handheld reel or the line can be tied directly to a rod without a reel. A poke pole, usually used in the intertidal, is another example of hook-and-line gear. Hook-and-line gear type is available for all finfish except salmon.

S = **S**pear is a gear type used to take finfish; either fired from a gun-like launcher, powered by one or more elastic bands, or a pole launched by hand using a single elastic band (e.g., Hawaiian sling).

T = **T**roll is angling from a boat or floating device that is making way by means of a source of power, other than drifting by means of the prevailing water current or weather conditions. Trolling is typically used to take salmon and large pelagic finfish like tunas.

N = Bait **N**et is a category that includes cast and dip nets. Bait net is defined as any type of net actively propelled by hand through the water or thrown with the intent to capture fish. Examples include dip nets, Hawaiian throw nets, seine nets (also called beach nets), and A-frame nets (like those used in the night smelt fishery).

### **The following gear codes apply to salmon only:**

M = **M**ooch is salmon fishing with bait from a boat or floating device that is making way by means of the prevailing water current or weather conditions only. Accurate recording salmon gear types is important for fisheries management. The mortality rate applied to released salmonids is determined by the gear type (i.e., 42.2% for mooching with bait, 14% for trolling).



locations. It is possible to interview in the tidal portion of a river. It is mandatory to screen anglers to see if their fishing was seaward of these saltwater cut off points. If any of their fishing was done seaward of these points, they are eligible anglers. If all their fishing was done above these points, they are ineligible for the CRFS interview. If you are recording catch, only record the catch caught seaward of these points. Some areas where anglers in freshwater need to be questioned regarding saltwater fishing are where US 101 or US 1 (Pacific Coast Highway) crosses estuaries and near rivers entering San Francisco Bay. Be sure to 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.

Occasionally you might interview an angler who states they were fishing in "brackish" water. If the location cannot be determined from your laminated maps, ask, "If you had to pick either salt or fresh water, what would you pick for most of your fishing today?" If the angler chooses fresh water, you should stop the interview. Occasionally an angler will report saltwater fishing at a freshwater location, in this case complete the interview and write a comment on the form and follow up with your Lead.

### Saltwater Cutoffs

District	County (Code)	River	Saltwater Cutoff Point
6	Del Norte (015)	Smith River	¼ way between mouth and Hwy 101
		Klamath River	¼ way between mouth and Hwy 101
	Humboldt (023)	Mad River	Mad River County Boat Ramp
		Eel River	Upper end of Cock Robin Island
		Redwood Creek	¼ way between mouth and Hwy 101
		Elk River	Hwy 101 Bridge
5	Mendocino (045)	Ten Mile River	Old dock, 100 yards up from Hwy 1
		Noyo River	End of Dolphin Cove Marina
		Big River	Mid-2 <sup>nd</sup> turn upstream
		Albion River	Upper dock
		Navarro River	Hwy 1 bridge
4	Sonoma (097)	Petaluma River	Hwy 37 bridge
		Coastal Rivers	Hwy 1 bridges
	Napa	Napa River	Hwy 37 bridge
	Solano (095)	Sacramento River	Carquinez Bridge
	Contra Costa (013)	Sacramento River	Carquinez Bridge
	San Mateo (081)	Coastal Rivers	Hwy 1 bridges
1-3	Districts 1-3	Coastal Rivers	PCH (Hwy 1) bridges (excludes Elkhorn Slough)

<sup>1</sup>Consult Lead regarding BB sampling procedures on the Klamath River.

**Combo Sites: Nearshore and Bay/Estuary/Harbor**

District	County (Code)	Site	Name
6	Del Norte (015)	201	Talawa
		300	North Jetty Crescent City
		303	South Jetty Crescent City
	Humboldt (023)	204	Gold Bluffs
		205	Freshwater Lagoon
		227	Samoa
		316	South Spit Beach
		210	North Jetty Eureka
		317	South Jetty Eureka
5	Mendocino (045)	204	Fort Bragg
		205	Mendocino
4	Sonoma (097)	300	North Jetty Bodega
		301	South Jetty at Doran Spit
	Marin (041)	205	Stinson Beach
		204	Bolinas Shore
	San Mateo (081)	304	North Jetty Princeton Harbor
		305	South Jetty Princeton Harbor
3	Santa Cruz (087)	306	Santa Cruz Marina Side Jetty
		305	Santa Cruz Lighthouse Jetty
	Monterey (053)	302	Elkhorn Slough North Jetty
		303	Elkhorn Slough South Jetty
	San Luis Obispo (079)	113	Morro Bay Jetties
2	Ventura (111)	305	Ventura Harbor North Jetty
		105	Ventura Harbor South Jetty
		308	Channel Islands North Jetty
		104	Channel Islands South Jetty
		223	Pt. Hueneme West Jetty
		307	Pt. Hueneme East Jetty
1	Los Angeles (037)	223	Marina Del Rey North Jetty
		224	Marina Del Rey South Jetty
		303	King Harbor Jetty

		110	Cabrillo Beach Jetty
		204	Seaport Village Jetty
		214	Alamitos Bay West Jetty
	Orange (059)	310	Newport Beach West Jetty
		112	Dana Point East Jetty
		101	Dana Point Harbor West Jetty
	San Diego (073)	113	Oceanside Jetties
		213	Mission Bay Jetties
		216	Tamarack Jetties

### **Catch Locations and Map Use**

Catch locations are important for boat modes. You will be given a set of laminated CDFW Block and Box maps. The location procedures gather information about the boat's location of catch, or effort if there is no catch. Catch location by species or species group is being used to study areas where species of interest are being caught (or not being caught) for purposes of protection/conservation using conservation areas, depth restriction boundaries, and potential MPAs, or refugia. Rockfish depth-dependent mortality rates applied on a depth-and-species basis may also differ by location.

The best person on the boat to contact dockside about catch locations will most often be the "pilot" of the vessel, also called the captain or skipper. We can think of every angler on a particular boat typically fishing and catching fish at the same locations.

Collecting location information may be one of the more difficult aspects of this survey. Anglers may not be able to provide their fishing location for a few reasons; anglers may be unaware of the location and unable to read or interpret your maps, they may not want to spend the time to provide this information, or they may be generally unwilling to divulge their favorite fishing spot. The Sampler will attempt to overcome these problems by being persistent, friendly, and helpful. Become familiar with local on-the-water and on-the-map landmarks and fishing site names to assist the angler in determining their fishing location. The Sampler must be convincing and credible while explaining the importance of gathering this data. While location is important, if an angler cannot or will not provide this information, continue with the CRFS interview. The absence of location data does not render the interview unusable; remember that the CRFS interview is voluntary.

### **Latitude and Longitude and the One-Minute Grid**

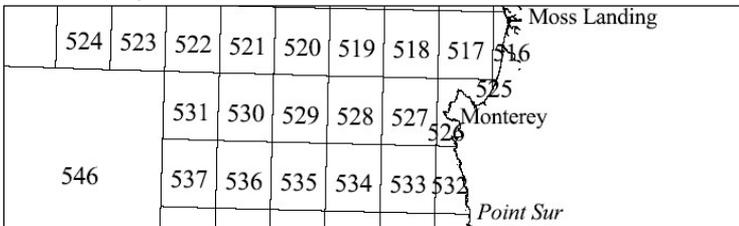
The Equator has been designated as 0° (zero degrees) latitude and the north and south poles are 90°. Greenwich, England was designated as 0° (zero degrees) longitude. Any geographic location on Earth can be pinpointed on a map using the latitude-longitude grid system. The accuracy of the degree

grid is increased using minute and second subdivisions of which there are 60 of each. A degree is about 60 nautical miles, a minute is about one 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. 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. Latitude and longitude, common fishing sites and buoys, depth contour lines, and county lines are labeled on the maps for reference.

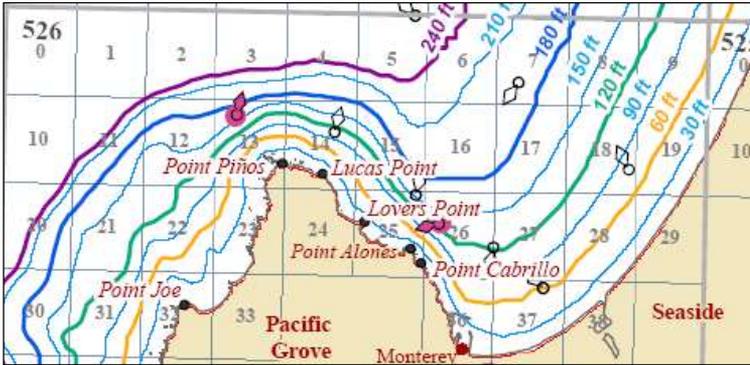
**CDFW Block-Box Maps**

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 or microblock (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. Boxes inside enclosed bays and estuaries have boxes numbered with three digits (bbb) starting at 100. Each box can be converted to latitude and longitude coordinates (point data) if needed, using the center of the box. 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. Try to get as fine scale catch locations as possible.

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



**Example Block-Box map; the box West of Pt. Piños is described as 526-13.**



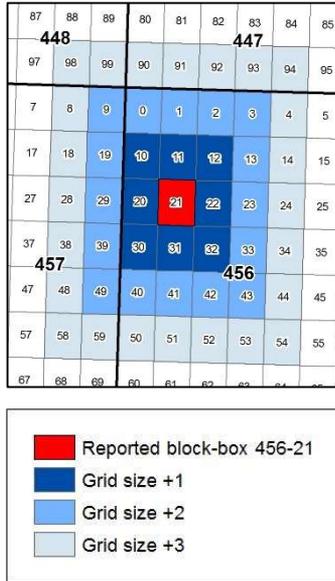
### **Definition of Location**

A catch location can be described in several ways: a latitude/longitude, block-box, block and two boxes or area around a block-box. 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.

### **Accuracy of Location Grid**

Recording 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 catch locations to form a "location cluster". The best location data captures catch location by species, to the box-level. Coding all catch on a boat to a broad area does not provide much for analysis. It's more important to try to identify catch locations based on species groups. For instance, anglers may target different species by fishing in a certain area, over a specific bottom-type or with specific gear; however, targets are one thing and catch is another. We are interested in where catch occurred. The Grid Size Item

The grid size is used as a way to indicate the extent or size in minutes around a block-box location. If an angler fishes over an area larger than a single 1-minute block-box and doesn't specify exactly which additional boxes were visited, then a grid size should be used. A grid size of "1" increases the area fished to include the boxes immediately adjacent to the center block-box creating a total area fished encompassing 9 boxes equivalent to a 3-minute by 3-minute area. Each grid size increment above 1 will increase the size of the area by adding the next row and column of adjacent boxes (see example). To include all the colored boxes in the example the location would be coded as 456-21 +3. The grid size can create a large area, so please record locations as precisely as possible and keep grid sizes to a minimum.



**Fishing Site Names**

You may use fishing site names to orient anglers when viewing the maps. Be aware that one site may have multiple local slang names. Please avoid prompting the angler when asking about catch locations, such as “Did you fish at Mulligan’s Hill today?” Prompting with specific location names introduces bias into data collection. When receiving an unfamiliar location name, have the angler locate it on the block-box map. The intent of this survey is not to confirm pre-conceived fishing locations, but to collect unbiased catch locations. Many previously “known” fishing locations become “fished out” and effort may shift in location and extent along with fish availability in the wake of these events. Fishery managers need the ability to study these events when they occur.

**Fish Identification**

In addition to the comprehensive list at the end of this manual, your Lead will provide you with “cheat sheets” of local species by species groups. It is your responsibility to know and identify the more common species by sight. Studying the identification guides and training in the office and aquarium, combined with experience in the field, should make you knowledgeable in species identification in a short time. Learn the CRFS priority species. All fish that are presented to the Sampler should be identified to the species level. Fish should be recorded using American Fisheries Society Common Names and with the correct species code. Samplers should never code a fish to the species level when they are not certain of its identification. Be aware that anglers may use slang names; slang names are names other than American Fisheries Society names. Samplers should not record a slang name in place

of its AFS Common Name. The Other Codes section of this manual lists slang names.

You are issued any of the following field guides: Miller and Lea's *Guide to the Coastal Marine Fishes of California Fish Second Edition*, *Peterson's Guide to Pacific Coast Fishes* or its replacement, and *A Field Guide to Coastal Fishes from Alaska to California*. 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 know when you are going to run into a rare fish that will need to be keyed out. Other field guides or cheat sheets are available. Often your Lead will have additional identification books available in the office. Contact your Lead to inquire about using these books or making a photocopy. Your Lead should also have access to a fish photograph database; contact them to view these images. If you simply cannot identify a fish in the field, please take the time to key it out and/or take multiple photos of the fish (see Specimen Documentation below) and record any key features to help you and your Lead identify it later.

**Observed Catch (Sampler-Examined)**

The Sampler will strive to examine all landed catch. Examined/observed catch is the most robust catch category because the Sampler saw it, counted it, and identified it to species. All observed kept fish should be identified to the species level. Fish reported above the species level (i.e. genus, family, or group) must be recorded as "kept unobserved" fish (a type of angler-reported catch, see below) and not as observed catch. If the angler(s) refuses to have the landed catch examined, it must be coded as kept unobserved.

It is more important to count and identify all rockfish to the species level than to get bio data from those fish.

When the Sampler is counting fish, the "dot-line system" should be used to tally the count. The system allows for a count to ten in less space than the more common "count-mark" (i.e. IIII ) system does going to five. When editing your forms for the day, decode the dot-line system by writing the actual number in the kept observed category.

dot-line system	
1 ·	6 1̣
2 ∴	7 1̣1̣
3 ∴.	8 1̣□
4 ∴∴	9 1̣∩
5 1̣∴	10 1̣∩

**Unavailable Landed Catch (Angler-Reported)**

The "Kept Unobserved" category includes catch that were kept by the angler, but for some reason the Sampler could not observe and identify to species. This type of catch category is angler-reported because fish were unavailable for positive identification by the Sampler (packed away, filleted, given away, fed to birds, or kept and used for bait).

For catch unavailable for identification (fish the Sampler cannot readily view), the Sampler will help the angler determine the catch to species level (ideally) or genus, family, or group. Hopefully, avid anglers can accurately identify catch, so you may be able to determine the unavailable catch to species

level. To help the angler, you should be familiar with the fish caught in your area that are commonly released, used for bait, etc. Mark these species in your field guide, so if the angler doesn't know the species of unavailable catch, you can show them pictures. Never code the catch beyond a taxonomic level you feel confident with; however, keep in mind that fisheries managers rely on catch estimates by species. Try to determine unavailable catch to species level. If that cannot be done, code catch to genus or family, or an even more general code, like "bottomfish" (BOTOM).

Be persistent with anglers who have kept rockfish which are unavailable. The general 'RFGEN' code is not ideal for managing this fishery. Samplers should try to get visual observations to identify and enumerate rockfish to species whenever possible. Use your best effort to gain access to the catch for species identification.

### **Filletted Catch (Sampler-Examined or Angler-Reported)**

Filletted catch are fish that have been somewhat processed before the sampler saw them. If the Sampler encounters filletted fish with attached skins, such as for rockfish or lingcod, the Sampler should try to identify those fillets to species. If the angler refuses or the Sampler is unable to identify the fillets, they should be recorded as "kept unobserved" fish. Count the fillets to get an accurate number of fish landed if the angler doesn't remember. Unidentified fillets may not be recorded as observed catch, even if you physically see a bag of fillets. This is especially important for filletted rockfish; never record unidentified rockfish fillets "RFGEN" as observed catch, even if you have enumerated them and identified the genus as rockfish. Only record fillets as "kept observed" when those fillets have been identified to the species level, by the sampler, based on the skins.

Oftentimes, a bag of fillets will contain some unidentified taxon such as rockfish genus, tuna, bottomfish, etc. and should be recorded as "kept unobserved". Try to have the angler provide the species of the fillets if they are confident in their identification skills. Unfortunately, anglers will often refuse to let you open their bag of fillets. If this happens, make a note on the data sheets that you were dealing with fillets, as this explains why they were not "observed" and there is no bio data associated.

### **Unidentified Examined Catch**

Samplers are expected to identify all fish to species level by recording the species name and/or code. You should be familiar with the species of fish caught in your area in the different fishing modes. It is important to know which species are commonly confused with each other. If you encounter a species you do not know, you should key out any marine sport-caught fish. Never code the catch beyond a taxonomic level you feel confident with. If you are not confident, take multiple photos, note key features, and share them with your Lead (see Specimen Documentation below) who will help you identify the fish. Take notes on what you think the species may be, and record the location of catch, depth, and any bio data which will help to identify the fish later.

### **Released Catch (Angler-Reported)**

Released catch are fish that were intentionally released back into the water after being caught. In order to release the fish, the angler first must have had control and possession of it. Do not record fish the angler may have had on the line but didn't actually land. 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 fish of this type were thrown back?"). Use fish identification charts and guides to help anglers determine the species of fish they released.

Fish that are released are further divided into two categories: released alive and released dead. The Sampler will ask the angler to determine if fish were released 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 are to be coded as dead. Severe wounds include bleeding gills. For *Sebastes spp.*, and other species with swim bladders brought up from deep water, there may be obvious signs of barotrauma (expanding gas) such as a protruding esophagus and eyes. Increased buoyancy may prevent the fish from swimming down from the surface. If the fish is unable to swim down, consider it dead. Fish returned to depth using descending devices are considered alive. The disposition of released catch is usually not something the Sampler can witness. The release event usually happened earlier in the day when the Sampler was not there. Record the disposition based on clarification with the angler if the released fish were returned alive or dead by asking, "Did the fish swim away?"

### **Specimen Documentation: Rare or Large Fish**

If you encounter a rare species that you cannot positively identify, attempt to key it out. This may not be possible due to time. If the angler is in a hurry, make a note on the data form and take several photos with a camera or smartphone. Take a photo using these guidelines:

- Have the head of the fish pointing to the left
- Get as close as your camera will allow (try macro mode)
- Have something in the photo to provide scale or take the photo with the fish on your board
  - If on your board, move the fish to the center of the board – do not have it pushed up against the stop as if you were measuring it. Maxillary extension is crucial so make sure the mouth is closed.
- Spread out the fins as much as possible
- Take the photograph in adequate light – not in deep shade. Make sure the subject is completely, not partially, lit.
- Take two or three shots just in case

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. Your Lead may also provide you with a "cheat sheet" of maximum reported lengths. Fish over the maximum size will be flagged in the database; without photographic proof, the record will be discarded from the database.

### **Sub-Sampling Biological Data and CRFS Priority Species**

When sampling during busy periods, you may need to subsample weights and lengths from most species (excluding ad-clipped salmon and species of concern). This should be done in a random or systematic fashion. 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 fish). **For a sample to be random every member of a given population must have an equal probability of being selected.** 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 by species. 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 randomly select 5 fish. At no time should you try to pick out the average or representative fish or the largest and smallest fish - this is not a random sample.

The CRFS Priority Species table below shows the top priorities for fish species sampling. The most important fish to measure are salmon of all species with a clipped adipose fin, non-retention species (i.e. fish that are illegal to keep), species with special weekly tracking (species of concern), and species with harvest limits.

It is important to see all salmon catch. It is important to obtain lengths and weights of rockfish, especially rare and non-retention species. Priority species may be added as emerging fisheries develop on data poor species. Groundfish harvest limits are set in metric tons and to get the best estimates we need both lengths and weights. Salmon are managed using the number of fish, so fishery managers only need the lengths of salmon with clipped adipose fins. Paired length and weight measurements are preferred but length only measurements can still be used; we cannot have a weight without first having a length. However, both length and weight can help with data quality since most species have an established length-weight ratio that your data will be checked against. You should try to get as many lengths and weights as possible for all fish (except salmon), but when sub-sampling is required the following species categories should be measured first:

**CRFS Priority Species**

<b>Highest Priority:</b>			
Ad-clipped salmon (both Chinook and Coho), length only		Pacific Halibut	
<b>Higher Priority: Species of Concern (in no particular order)</b>			
Yelloweye, Cowcod, Bronzespotted, Quillback, Black, and Copper Rockfishes		Bluefin Tuna	Thresher Shark
<b>High Priority: Species with Harvest Limits (in no particular order)</b>			
Cabezon	California Sheephead	Greenlings (Hexagrammos spp.)	Black-and-Yellow, Canary, Bocaccio, Brown, Calico, China, Gopher, Grass, Kelp, Olive, Treefish, Vermilion, Widow, Yellowtail, and other rockfishes
Lingcod	California Scorpionfish		

**CRFS Protocol for Dealing with Suspect Data**

In the field, if an angler reports unusual or suspect catch data to the CRFS Sampler, additional steps should be taken. Here are some clues to help the Sampler recognize suspect catch data:

- The reported species is out of documented range
- The reported species is unlikely to be taken in the fishing mode in which the angler is currently fishing
- The reported species is unlikely to have been caught in the area the angler claims (e.g., bay vs. open ocean)
- The reported species is unlikely to have been caught at the depth the angler is reporting
- The reported species is unlikely to be taken using the fishing gear the angler reported fishing with
- The angler incorrectly identifies the landed observed catch
- The novice angler admits that they may not be familiar with local species
- The angler reports a catch number that seems unrealistic

When the Sampler realizes that the data is suspect, the following steps should be taken:

1. Identify the angler from the boat or bag that encountered the suspect fish
2. Use the available fish ID materials to confirm the species with the angler. Show the angler what characteristics are used to identify the species in question and point out other species that are commonly confused with the species in question. List the characteristics that may be used to distinguish similar species, and ask if the angler noted any of these key characteristics

3. Do your best to ascertain the angler's fish identification skills. Is the angler able to identify the kept observed catch? Does the angler frequently fish in this area or at this site?
4. For species reportedly taken at an unusual depth, ask the angler how confident they were in the accuracy of the depth reported. Did they have a depth finder on board? Was the suspect fish caught in the same location and depth as any of the kept species?
5. Ask the angler to quantify how certain they were in their identification of the suspect species (e.g., 100% certain, less than 50% certain). Record this information on the data sheet. If the angler is less than 50% certain, consider speaking with other anglers in the group who may be more knowledgeable, if possible.
6. Circle the suspect catch data on the data sheet
7. Note on the ASF that the Sampler collected suspect data so that the data editor knows to look for and assess it
8. On a busy day, do not miss salmon boats to verify suspect data. When missing salmon catch is not a concern, Samplers should spend more time verifying suspect data (especially for Yelloweye, Quillback, Cowcod, and Copper Rockfish, Pacific Halibut, and other species of concern).

When the Sampler observes a species of concern, unusual or rare species that may be considered suspect, the Sampler should take steps to verify that what they observed was correct. Try to take a photo of all kept Yelloweye, Cowcod, Quillback, and Copper Rockfish and any unusual species (such as out-of-range, oversize, or uncommon species) or fish that you are unable to identify (see Specimen Documentation above). Yelloweye, Quillback, and Copper Rockfish collection is covered in the Species Sampling section of this manual. Email the photo(s) to your Lead as soon as possible to document what you saw and validate the species identification. If you are unable to take a photo, please list the characteristics that you used to identify the species. Circle the suspect data that you observed on the data sheet and make a note on the ASF and in the Weekly Report. Follow step 8 above regarding missing boats when you observe what may be considered suspect data.

When the data editor comes across the data sheet with suspect data, the following steps should be taken:

1. Review the steps the Sampler took to verify the accuracy of the data
2. Determine if the Sampler missed any steps in the verification process listed above
3. Contact the Sampler by phone as soon as possible to go over the situation, confirm all the details, and inquire if there is any additional information regarding the suspect data
4. The Sampler may be asked for a separate write-up to document the interaction with the angler claiming suspect data

5. The data editor will take notes of the conversation with the Sampler and append them to the data sheet containing the suspect data
6. Using their fish ID skills and knowledge of the local fishery, the data editor will work with the Lead(s) to form an opinion as to the accuracy of the suspect data and provide a recommendation. Those notes will be appended to the data sheet
7. The Lead will notify the Supervisor and CRFS Coordinator about suspect data involving Yelloweye, Quillback, Cowcod, and Copper and provide the notes pertaining to the suspect data

### **Biological Data Collection**

Species-level data collection is the most important. After determining catch species, the Sampler will measure as much of the finfish catch as possible (except for salmon, only adipose fin-clipped salmon are measured for length). Lengths and weights should still be taken from fish the Sampler is not able to identify, in hope of being able to use these data if the Lead is able to identify the fish based on photos/notes that the Sampler recorded.

Samplers should measure and weigh up to five (5) fish of each species in the bag or boat. More than 5 length and weight pairs per species may be obtained if time and angler cooperation allow. Missing biological data should be explained on the form. The goal is to get paired lengths and weights of 5 fish of each species. Weights may be missed if time does not allow. It is often difficult to obtain weights onboard PCs especially in less-than-ideal conditions. It is important for the CRFS program to collect biological data from fish that are under active management, also called "Species of Concern". Lengths can be used to predict weights and to examine length classes. For fish that are not weighed, weights will be calculated based on the length data. Weights are used to help with length-to-weight predictions, estimate mean weight and total metric tons harvested.

### **Fork Length Measurement and Use of the Measuring Board**

The Sampler shall measure fish to the fork of the caudal fin for all species with such morphology. See instructions below for measuring species without a forked caudal fin. 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. Samplers should never round lengths and weights. 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 the mouth closed, pushed up against the stop. 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.



A measuring board must be used unless a fish exceeds the length of the board, then use a tape measure. 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.

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, right). 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. Pull the slack out of the tape – make it tight under the fish's body
5. Read the length at the fork of the tail to the nearest millimeter
6. Clean the tape measure before it is used again



Alternate way to measure large fish:

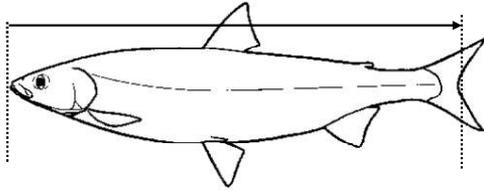
1. Place the measuring board on a hard, level surface
2. Straighten the fish as much as possible
3. Place the fish with the nose flush against the bracket end of the board and close the fish's mouth
4. Use the tape measure to measure the length of the fish that spills over the end of the board
5. Make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



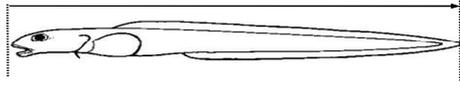
### Measuring Various Types of Fish

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).

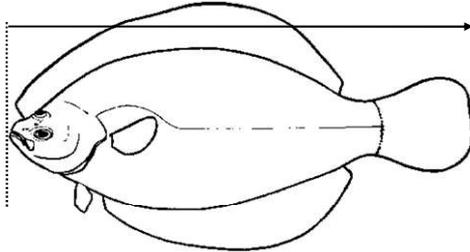
Salmonids – Salmonidae



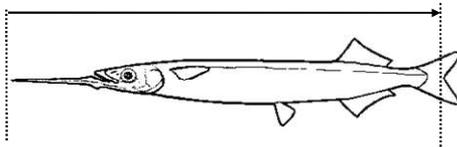
Eelpouts – Zoarcidae



Left eye flounders – Bothidae

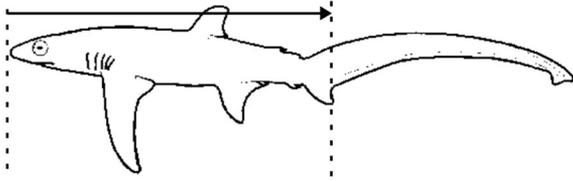


Halfbeaks – Hemiramphidae

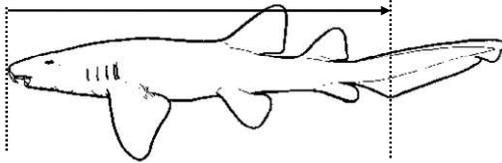


Sharks and sturgeons are measured from the tip of the snout to the center of the fork of the tail. For sharks without a fork, measure the shortest distance to the ventral lobe of the tail (See nurse shark below).

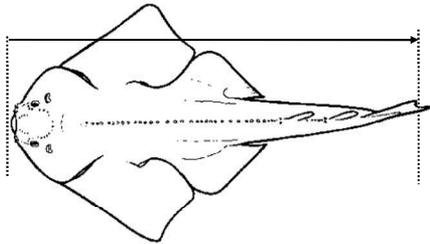
Thresher sharks –  
Alopiidae



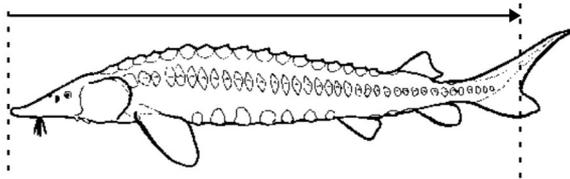
Nurse sharks –  
Ginglymostomatidae



Angel sharks –  
Squatinae

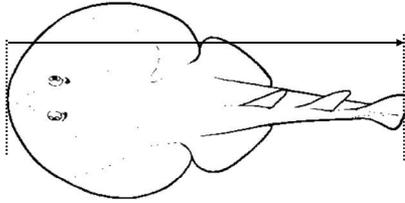


Sturgeons –  
Acipenseridae

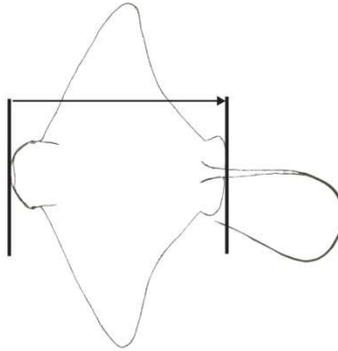


Skates and rays are measured from the tip of the snout to posterior end of the pelvic fins. Do not include the claspers (if any). When a caudal fin is present, the fish is measured to the caudal fin.

Electric rays – Torpedinidae

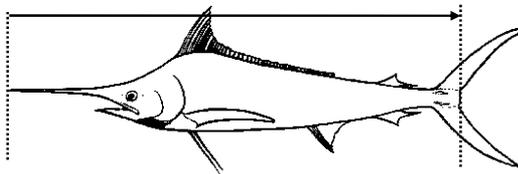


Bat rays – Myliobatidae



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

Billfishes - Xiphiidae



### Weight Measurement and Scale Use

Fish weights are to be recorded to the nearest hundredth of a kilogram (0.01 kg). The hundredths place may be a zero unless weighing small fish with the 1 kg hanging scale. Calibrate your scales weekly. Samplers should zero out all their scales at the start of each assignment. Three scales will be provided to each Sampler: One Pesola 1 kg scale, and two brass scales of 12.5 kg, and 25 kg capacity. The 25 kg scale is labeled in pounds and kilograms and displays measurements in 0.25 kg increments. The 12.5 kg scale is

labeled in pounds and kilograms and is accurate to tenths of a kilogram. 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. With tunas, record if the fish was bled next to the weight. Do not weigh gilled, gutted, or beheaded fish. Do not weigh salmonids. Do not weigh fish that are too lively to get an accurate reading from the scale.

After the scale has been exposed to saltwater and/or fish slime, rinse the scale in fresh water in the field if possible. At home wash the scale in hot soapy water. Rinse the scale in hot clean water to heat the metal to speed drying. Shake excess water from the scale. Place the scale in a dry warm place like in a sunny window, a warm oven, or under a hair dryer. When dry, spray with WD40 (for brass scales only).

Scales should be calibrated weekly or at least every month. Your Lead may require scale calibration documentation. Your Lead has calibration weights you may use to check your scales. Please calibrate outside in a well-ventilated area if you plan to use WD40. If the calibration knob seizes, notify your Lead for replacement. To adjust scales, here are a few items of known approximate weight you can use to check the accuracy of your scales:

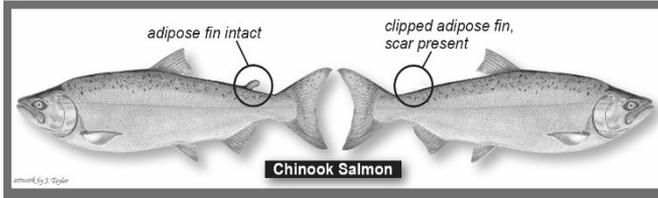
- 25 kg brass scale = 0.39 kg
- 1 liter of freshwater = 1.0 kg
- 1-gallon plastic jug of water = 3.9 kg

## SPECIES SAMPLING PROCEDURES

Specific procedures have been developed for sampling salmon, Yelloweye Rockfish and White Seabass.

### Salmon Sampling

All kept salmon must be examined for a clipped adipose fin (the small fleshy fin on the back of the fish between the dorsal and caudal fins). The adipose fin clip indicates the presence of a coded wire tag (CWT) in the salmon head. At least 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 Section 1.73(b) of Title 14, California Code of

Regulations (see Section 'Legal Authority' below). Angler refusals are generally rare, but do occur (see Section 'Non-Recovered Species (NRS) Protocol' below). Attach the headtag to the salmon head, measure the fish, record the headtag number and fork 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 sequence. 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 Report Form. You will never need to weigh a salmon, even an adipose fin-clipped fish; sport salmon management is based on numbers of fish, not on weight.

### Legal Authority

If an angler refuses to relinquish the head of a salmon inform them of the state law. *Recovery of Coded-wire Tag from Salmon Head, Section 1.73(b) of Title 14, California Code of Regulations: Any person in possession of a recreationally taken salmon with a missing adipose fin (the small, fleshy fin on the back of the fish between the back fin and tail) shall immediately relinquish the head of the salmon, upon request by an authorized agent or employee of the department, to facilitate the 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 fish owner.*



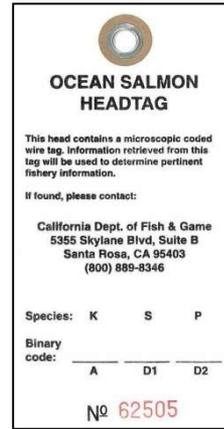
## Salmon Equipment

1. Head removal equipment:
  - Knife and sheath
  - Cutting Board
2. Headtag Kit:
  - Headtags
  - Small clear zipper baggies (for each head/headtag)
  - Headtag Report Form
  - Large clear bags
  - inventory tags
3. Courtesy Headtag kit
  - Courtesy Tags
  - Orange Information Request Cards
  - Courtesy Headtag Report Form

## Tagging the Head

A uniquely numbered headtag is issued for each adipose fin-clipped salmon observed while sampling. Place individual tagged heads in small clear zipper bags with the headtag number facing outward so it can be clearly seen from outside the bag. Place individually bagged heads into a large clear plastic bag. Attach an inventory tag to the outside of the large bag of heads. Using any type of non-clear bags will not be allowed as they can easily be confused with trash. See Section 'Non-Recovered Species (NRS) Protocol' below for instructions when the angler refuses to allow the tag to be applied to the salmon head.

Store the head in a clear zipper 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 zipper bag allows the lab to separate the frozen heads without damaging or tearing the headtag.



## Removing the Head

1. Using the metal wires of the headtag, securely attach a headtag 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 and headtag number.
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 and repeat the cut until it meets the end of the first 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



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.

### **Non-Recovered Species (NRS) Protocol**

Non-recovered salmon Heads are rare. Most salmon anglers are aware of the CWT program and the legal requirement to relinquish the head of adipose fin clipped salmon. If you cannot remove a head for some reason, attempt to attach the headtag to the fish and record the species and fork length. Point out the toll-free number on the headtag to the angler; they may decide to relinquish the head later. Record this information on your data sheet (i.e. headtag number and fork length) and put NRS next to the headtag number. Record NRS and the species name on the back of the corresponding headtag and on the Headtag Report Form. If you are unable to attach the headtag to the head, record the headtag number and NRS on the data sheet and Headtag 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 hatchery-origin fish to the year's catch.

### **Q. How do I persuade an angler to relinquish their salmon head?**

**A.** If the angler refuses to relinquish their head, try these tactics:

1. Inform the angler about the importance of coded-wire tags to salmon management.
2. Offer to provide information to the angler about their fish through the information request card program.
3. Remind the angler that by law, he/she has to relinquish the head under Section 1.73(b), Title 14, CCR.
4. Try to attach the headtag to the fish if possible and point out the phone number on the tag. The angler may decide to relinquish the head later. If the angler still refuses, follow the NRS protocol and notify your lead promptly. Document the vessel's CF number and the license plate number of tow vehicle on your ASF.

### **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 fork length information collected. Record the head as an NRS. The attached tag will be a reminder that they are to be returned to the Ocean Salmon Project (OSP). Collect the name and contact information of the Wildlife Officer.

Enforcement personnel will be contacted to remind them that OSP needs the confiscated head.

### Procedures for Tracking and Inventorying Salmon Heads

Each headtag is recorded on a Headtag Report Form. Fill out the form at the end of each sample day to accurately keep track of which headtags are used on each sample day. When inventorying your heads at the end of your sampling day, ensure each headtag number recorded on your data sheets match a salmon head in your possession. If there are discrepancies, try to identify the source of the error. Each Monday a copy of the form will be sent to OSP. Once all tags in the series have been used, mail the original Headtag Report form with your weekly data.

2017 HEADTAG REPORT							
(Use headtags in NUMERICAL order)							
NAME: _____				SERIES: 10000 - 10099			
Headtag#	MM / DD / YY	Port	Sample Mode	Headtag#	MM / DD / YY	Port	Sample Mode
10000	/ /			10050	/ /		
10001	/ /			10051	/ /		
10002	/ /			10052	/ /		
10003	/ /			10053	/ /		

<b>Port Codes</b> CRD = Crescent City Docks CRL = Crescent City Launch CRC = Crescent City (PC, COM) TRD = Trinidad docks TRH = Trinidad hoist EUR = Eureka	FLD = Fields Landing SHC = Shelter Cove FTB = Fort Bragg BOD = Bodega Bay DOR = Doran LMD = Loch Lomond	SAU = Sausalito RCH = Richmond BER = Berkeley EME = Emeryville SNF = San Francisco PRI = Princeton	SCR = Santa Cruz MOS = Moss Landing MOR = Monterey harbor (PR) MON = Monterey (COM) MOC = Monterey Coast Guard MOR = Morro Bay AVI = Avila	<b>Use the numeric County-Site code for any port code not listed.</b>
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<b>Sample Mode Codes:</b> PR1, PR2, PC, COM, MM, BB
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### Inventory Tags

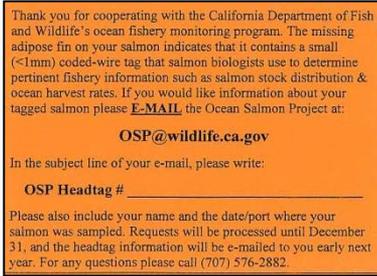
Inventory tags are used for labeling bags of heads to allow for tracking as they make their way to the Santa Rosa Office. Each large bag of heads must be inventoried. Record your name, date and headtag series contained in the bag on the Inventory Tag and attach this tag to each large bag prior to storage and delivery to the head drop off location. Multiple samplers can put their heads in one bag, but it needs to be clearly marked

Date Sent: 4/17/16	
Name:	Series in Bag:
Wong	78702-78712
Mattingly	83300-83304
Phillips	78100-78104

which heads were collected by each sampler. Each bag's inventory will be confirmed by OSP staff and compared to headtag numbers recorded on sample forms. Using your headtags in consecutive order makes headtag tracking easier.

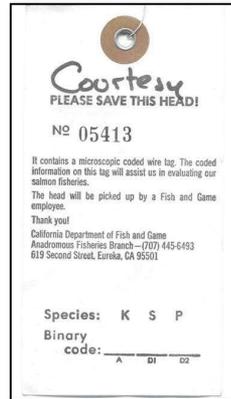
### Information Request Cards

Information request cards are given to salmon anglers who are interested in learning about their fish. After the salmon heads are processed for the season, OSP will send anglers who requested it, information about their salmon such as: brood year, 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. Information request cards can act as a positive outreach tool for salmon anglers, so Samplers are encouraged to hand out information request cards to anglers with tagged salmon.



### Courtesy Headtags

If an angler approaches you with a tagged salmon from outside your sample, you may collect the head and assign it a courtesy headtag. Attach a courtesy headtag to the salmon and process the head as usual. Fill out an information request card and hand it to the angler and remind them to follow the instructions on the card so they can receive the information at the end of the year.



### Important Salmon Goals to Remember

1. Every boat needs to be checked for salmon effort, catch, and adipose fin-clipped fish.
2. Each boat with salmon effort (or incidental salmon catch that they kept) should be noted as “a salmon boat”. Determine if any salmon were released and identify each salmon kept or released to species.
3. All salmon must be counted and observed for the presence of an adipose fin. All heads from adipose fin-clipped fish must be retrieved.
4. The heads should be frozen as soon as possible and delivered to the appropriate storage facility.

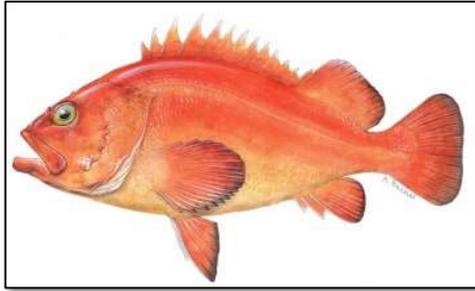
### Salmon Head Drop Off Protocol

Salmon heads collected by field staff should be taken to one of the drop-off locations listed below (Listed 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.

<b>Ports</b>	<b>Salmon Head Drop Off Location</b>	<b>Contact Name and Phone</b>
Crescent City, Trinidad, Eureka, Shelter Cove	CDFW – Eureka 619 2 <sup>nd</sup> 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 3637 Westwind Blvd. Santa Rosa, CA 95403	Jared Worland (707) 672-3410
Berkeley, Emeryville	Berkeley Marina 201 University Ave. Dock K-900, Men's restroom closet	Jared Worland (707) 672-3410
San Francisco, Princeton	CDFW – San Carlos 1123 Industrial Rd., Suite 300 San Carlos, CA 94070	Jared Worland (707) 672-3410
Santa Cruz	Long Marine Lab 1451 Shaffer Rd Santa Cruz, CA 95060	Jayna DaSilva (831) 649-7196
Moss Landing	Moss Landing Marine Labs, Corp Yard 8272 Moss Landing Rd. Moss Landing, CA 95039	Jayna DaSilva (831) 649-7196
Monterey	CDFW – Monterey 20 Lower Ragsdale Dr. Monterey, CA 93940	Jayna DaSilva (831) 649-7196
Morro Bay, Avila Harbor	CDFW – San Luis Obispo 3196 S. Higuera St., Suite A San Luis Obispo, CA 93401	Jayna 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, Quillback, and Copper Rockfish Sampling**

Yelloweye and Quillback Rockfish are prohibited species in the recreational fisheries. As a result, fewer Yelloweye and Quillback Rockfish data have been available for stock assessments compared to other allowed species. With limited opportunities to encounter them, sampling priority is to collect the length, weight, and catch location/depth data on all Yelloweye, Quillback, and Copper Rockfish (and other species of concern). Further, it is vital to get biological samples if the angler is agreeable to relinquishing the entire fish to you. Attempt to collect the whole carcass of all landed dead Yelloweye and Quillback Rockfish to



minimize the potential loss or cutting damage to otoliths. The whole fish is preferred as it also provides sex information that is otherwise unknown. If the fish you encounter is still alive, encourage the angler to release it. If the angler is unwilling or uneasy with giving you the whole fish, ask to collect the head, or the filleted carcass. You do not have any legal authority to require anglers to provide you with Yelloweye or Quillback Rockfish specimens or to allow you to cut the head off their fish; angler cooperation is strictly voluntary. Samplers must ask permission to first collect the carcass or as a last resort, the head. Do not collect heads or carcasses of Yelloweye, Quillback, or Copper Rockfish while on a CPFV.

The Groundfish Project removes otoliths for aging studies and collects sex information in the lab. The Yelloweye Rockfish stock assessment includes data from California, Oregon, and Washington. Yelloweye Rockfish growth rates may be higher in California waters than in cooler northern waters. It is important to capture both temporal and spatial changes in growth rates in order to effectively estimate the productivity of the stock. In prior years, biological samples of Yelloweye Rockfish from California have been limited but have recently increased, in part, because of CRFS collection efforts. The data and specimens CRFS Samplers are able to collect will improve the accuracy of growth curves and reduce uncertainty in future stock assessment modeling. Collection of Quillback and Copper Rockfish heads will help the Groundfish Project with aging studies for all three of these species.

Be sensitive to the fact that retention of Yelloweye and Quillback Rockfish is prohibited in California and the angler may be worried that you are collecting evidence against them. Let them know that while it is their responsibility to know the species of fish they are catching, identification of rockfish can be difficult. Stress that the Yelloweye and Quillback Rockfish collection is for biological purposes only and CRFS is not affiliated with CDFW Wildlife Officers. The data you are collecting is confidential and protected under the

Privacy Act. The angler cannot avoid a citation by allowing you to sample and/or collect the fish head. If a Wildlife Officer is present and intends to confiscate the RFYFY or RFQIL from the angler, ask them to let you weigh, measure and tag the fish. After your interview with angler is complete, ask the Wildlife Officer to consider giving the fish to your Lead after the case against the angler is adjudicated. Explain why CRFS is collecting RFYFY and RFQIL and the importance of each fish to the officer, if necessary. Notify your Lead of the encounter and provide the name of the Wildlife Officer so that your Lead may follow up with him/her. If an enforcement officer is present, follow the guidelines in this manual for working with enforcement (Roles and Responsibilities Section).

### Collection Priorities

During the salmon season do not miss boats to collect specimens, biological and location/depth data from Yelloweye, Quillback, and Copper Rockfish. Salmon are the priority. Remember that location and depth data are very important. Southern California Samplers should note fish caught in Mexican waters. Please note descending device usage for released Yelloweye, Quillback and Copper Rockfish.

Biological data priorities for Yelloweye, Quillback, and Copper Rockfish are as follows:

1. Length
2. Weight
3. Whole fish (for otoliths and sex), or carcass or head (head only for Copper Rockfish). Only collect specimens that are landed dead, and NOT from onboard a CPFV.

### Equipment

1. Clear bag for storage (do not use opaque bags because they can easily be confused with trash)
2. Rockfish headtags. Each Sampler will be provided with numbered headtags labeled "ROCKFISH HEADTAG". Only use these headtags for Yelloweye, Quillback, and Copper Rockfish. Use the tags in order.

### Procedures for Collection

1. Measure the fork length and record on the data sheet and headtag.
2. Weigh the fish and record on the data sheet and headtag.



The image shows a 'ROCKFISH HEAD TAG' form. At the top is a circular hole for a metal fastener. Below it is a blue header with the text 'ROCKFISH HEAD TAG'. A paragraph of text reads: 'This rockfish specimen has been collected for scientific research. If found, please contact: California Dept. of Fish & Wildlife Groundfish Project, Monterey (831) 649-2870'. The number 'NR 00086' is printed in red. Below this are several lines for data entry: 'Species Code \_\_\_\_\_', 'ASSN ID \_\_\_\_\_', 'MM/DD/YY \_\_\_\_\_', 'County / Site \_\_\_\_\_', 'Fork Length (mm) \_\_\_\_\_', and 'Weight (kg) \_\_\_\_\_'. At the bottom of the form is a small black silhouette of a rockfish.

3. Inform the angler of their possession of an illegal Yelloweye or Quillback Rockfish and ask permission to collect the whole fish or to take the head if they refuse the whole fish.



4. Inform the angler of the regulations and that it is illegal for them to retain Yelloweye and Quillback Rockfish.
5. Show the angler how to identify a Yelloweye and Quillback Rockfish
6. Explain to the angler that the Department can learn more about Yelloweye, Quillback and Copper Rockfish populations if they would allow you to examine the fish and take the whole fish or head. Tell the angler that 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, Quillback and Copper Rockfish grow.
7. Fill out the headtag completely before attempting to attach it to the jaw of the Yelloweye, Quillback, or Copper Rockfish.
8. Tag the fish if at all possible. Even if they deny you the fish, they may change their mind after it's photographed and/or filleted. Firmly attach the tag to the lower jaw of the fish.
9. Write the tag number on the data sheet to the right of the length measurement and circle the number.
10. If the angler will not give up the whole fish but will give you the carcass or the head after filleting, let them do so. They must use their own knife. Since it is somewhat difficult to fillet the fish without the head attached for leverage, the angler may wish to fillet the fish onsite and bring you the carcass or head. This is okay; tag the fish before the angler leaves to fillet the fish.

11. Take the fish or remove the head. To remove the head:

- Make sure to measure and tag the fish BEFORE removing the head.
- Lay the fish with the head on the cutting board portion of the measuring board.
- Slide your knife under the gill plate and cut straight down so that it clears about two inches behind the eyes.
- Flip the fish over to the other side and repeat the cut until it meets the end of the first 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. You may need to clean up around the gill arches to completely separate the head. Make sure the cut exposes the least amount



of meat possible and remove any gills or extra flesh attached to the head. Keep your board and knife clean as you are dealing with fish that someone will be eating.

- Place the head in a bag with the tag number visible from the outside for easy identification.



- Place the head or carcass in a clear bag. Store in a cool place and freeze as soon as possible. Inform your Lead about collecting a Yelloweye, Quillback, and/or Copper Rockfish by writing a note on the ASF and in the Weekly Report.

- In the Weekly Report, enter the number of RFYEY, RFQIL and RFCOP kept and released for that particular assignment.
- In the far right of the Weekly Report, enter the species code for Yelloweye Rockfish (RFYEY), Quillback Rockfish (RFQIL), and/or Copper Rockfish (RFCOP), the number of heads collected, and the tag #s used (see example below). If no tags are used enter zero (0).
- Add a note on the Weekly Report email narrative when you deliver tagged Yelloweye, Quillback and Copper Rockfish specimens to a "designated drop-off location".

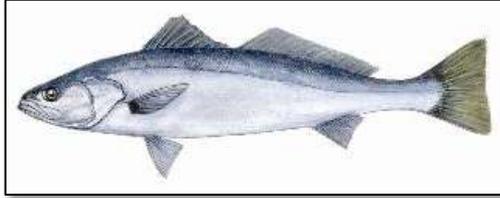
- Deliver the Yelloweye, Quillback, or Copper Rockfish specimens to the nearest designated CDFW office: Eureka, Fort Bragg, Santa Rosa, Belmont, Monterey, San Luis Obispo, Santa Barbara, San Pedro, or San Diego. Do not put salmon heads and rockfish specimens in the same bag.

## PR Form Example

SPECIES CODE *	CATCH			SPECIES LOC <i>or effort loc if no catch</i> Block-box; Lat / Lon	DEPTH Average Bottom (ft)	BIO DATA							
	KEPT		RELS			Fork length / carapace size (mm), sex (M/F/T)							
	obs *	alive *	(w/DD)			Weight (decimal kg) or tag #							
unobs *	dead *	seal take	1   2   3   4   5										
RFYEY	obs	1	0	(0)	539-20	240	435	(00055)					
	unobs	0	0	seal			1.90						

## White Seabass Sampling

In Southern (and sometimes Central) California, CRFS samples White Seabass for the presence of a coded wire tag (CWT). The Ocean Resources Enhancement and Hatchery Program (OREHP), a Department sponsored program, raises White Seabass and releases 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, and White Seabass do not possess an adipose fin that can be removed like salmon to indicate the presence of the CWT. Instead, Samplers are to use a special metal-detecting scanner “wand” to scan each kept fish. Do not scan fish that the angler intends to release.



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 Stamp to fund this program in 1983. This stamp 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, the 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.

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 importance of the OREHP by giving them a flyer. If it's an issue of wanting the otoliths (ear bones), the Department 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 (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)
2. Hand tally counter (The hand tally counter must be attached to the scanner's strap)
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

### **Procedure for Sampling and Scanning**

1. Measure the fork length and record.
2. Weigh the fish (be aware that some fish are quite large and may be too big for your scale or your physical ability to lift it)
3. Use the hand tally counter to keep track of the number of White Seabass scanned. This will give you the WSB Scan# during the assignment starting with '01'.
4. Before scanning, ask the angler if they left a hook in the mouth of the fish. The wand is very sensitive, and the presence of a hook can cause a false positive reading. If there is a hook, try to remove it. If you cannot remove the hook, ask the angler if you may collect the head. The OREHP can remove the hook and rescan the head in their lab.
5. Turn on the hand-held scanner and check to see that it is working properly by passing it over the block of wood with metal in it which comes in the scanner carrier. If the wood block is unavailable, a piece of metal will work too. You should hear a beep to indicate it is working. If the scanner is not working, please notify your Lead immediately to either replace the batteries or have the wand repaired.
6. Hold the fish up in front of you and away from any metal (e.g. jewelry, watch, measuring board, nails in the dock, coins).
7. Rub the scanner over the left side of the fish's head, focusing on the area under the eye and the cheek muscle.
8. If no beep is emitted turn the fish over and scan the other side of the head. If no beep, code as a negative scan status on the data sheet.
9. If the scanner beeps, indicating the presence of a CWT, inform the angler that you would like to remove the head because it is a tagged hatchery White Seabass. Code as an H status if there is a positive scan and you collect the head. If you cannot get the head, code the status as P.
10. Record the scan number and status code on your datasheet. Use the area to the right of the weight field to code the scan number and status. You may need to skip a bio data column in order to allow room for lengths, weights, and scan codes for multiple fish from one boat.

The code is a three-digit sequence where the first 2 digits are the number of fish scanned on that assignment (01, 02, 03, etc.) and the third digit is a scan status alpha code (see below). If the fish is not scanned, omit the scan number and status code.

#### Scan Status Alpha Codes

**H** = positive scan, head taken by Sampler

**N** = negative scan

**P** = positive scan, no head taken

## PR Form Example

SPECIES code	CATCH				SPECIES LOC <i>or effort loc if no catch</i>	DEPTH Average Bottom (ft)	BIO DATA Fork length / carapace size (mm), sex (M/F/T)								
	obs	alive total	(w/DD)				Block-box; Lat / Lon	Weight	Fish head was scanned, negative	tag #					
	unobs	dead	seal take	1							2	3	4	5	
SBWHT	2	0	( )		719-96-75	70	749	806							Fish head was not scanned
SBWHT	2	0	( )		719-96-75	70	926	1028	877						Fish scan #04 scanned positive but the head was not collected [P]
	0	0					01N	02N							
	0	0					03H	04P							

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

A. Inform the angler about the importance of coded-wire tags to White Seabass management. If they still refuse, 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'.

### Removing the Head

- Lay the fish on a flat surface
- Slide the knife under the gill plate and cut forward or at a 45-degree angle until the cut is approximately one inch behind the eyes
- Flip the fish over to the other side and repeat the cut until it meets the end of the first 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. Make sure the cut exposes the least amount of meat possible

### CRFS White Seabass Head Tag

1	2	3	4	5	6	ASSN ID
0	3	WSB Scan #				

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 with their own knife

- Fill out a White Seabass headtag form. Write the assignment ID in the ASSN ID fields and write the 2-digit numerical fish number of the scanned fish
- Place the completed headtag form in a clear zipper bag with the head
- Keep the head in a cool place and freeze it as soon as possible

## 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	White Seabass Head Drop Off Location	Phone
Monterey, Moss Landing, and Santa Cruz	CDFW – Monterey 20 Lower Ragsdale Drive, Suite 100 Monterey CA 93940	(831) 649-7196
Morro Bay, Avila Harbor	CDFW – San Luis Obispo 3196 S. Higuera St., Suite A San Luis Obispo, CA 93401	(831) 649-7196
Santa Barbara	CDFW – Santa Barbara 1233 Cliff Drive, Suite 9	(805) 568-1221
	Santa Barbara Landing 301 W. Cabrillo Blvd.	(805) 963-3564
Ventura	Eric's Tackle 2127 E. Thompson, Ventura	(805) 648-5665
Oxnard	Channel Islands Sportfishing Center 3900 Pelican Way, Oxnard	(805) 985-8511
Marina Del Rey	Marina Del Rey Sportfishing 13795 Fiji Way	(310) 822-3625
Redondo Beach	Redondo Beach Boat Hoist 181 N. Harbor Drive	(310) 374-3481
San Pedro	22 <sup>nd</sup> Street Landing 141 W 22 <sup>nd</sup> Street	(310) 832-8304
	LA Harbor Sportfishing Ports 'O Call Village	(310) 547-9916
Long Beach	Long Beach Sportfishing 555 Pico Ave., Berth 55	(562) 432-8993
	Pierpoint Landing 200 Aquarium Way	(562) 983-9300
Catalina Island	Avalon Seafood At the end of the green pier	(310) 510-0197
	Two Harbors Harbor Patrol Office On the Pier	(310) 510-4211
Huntington Beach	Pacific Edge Bait and Tackle 5042 Edinger Ave.	(714) 840-4262

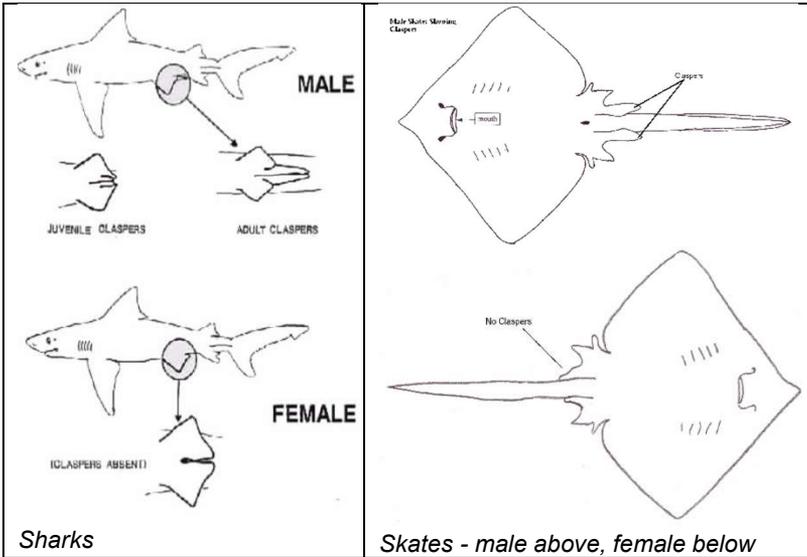
Ports	White Seabass Head Drop Off Location	Phone
	Mako Matt's Marine 4911 Warner Ave. #214	(714) 893-7743
	Huntington Harbor Fuel Dock Mariner's Point	(562) 592-4975
Newport Beach/Irvine	Melton Tackle Newport 419 Old Newport Rd.	(949) 642-6662
	Balboa Angling Club	(949) 673-6316
	Davey's Locker 400 Main Street	(949) 673-1434
	Newport Landing Sportfishing 309 Palm Street	(949) 675-0550
Dana Point	Dana Wharf Sportfishing 34675 Golden Lantern Street	(949) 496-5794
	Hogan's Bait and Tackle 34320 Pacific Coast Hwy #G	(949) 493-3528
Oceanside/Carlsbad	Helgren's Sportfishing 315 Harbor Drive South	(760) 722-2133
	Hubbs Sea World Research Institute 4200 Garfield Street	(760) 434-9501
San Diego	Dana Landing Mission Bay	(619) 226-2929
	Hubbs-Sea World Research Institute 2595 Ingraham Street	(619) 227-3870
	CDFW – San Diego 3883 Ruffin Road	(858) 467-4201

### Sexing Certain Species of Finfish

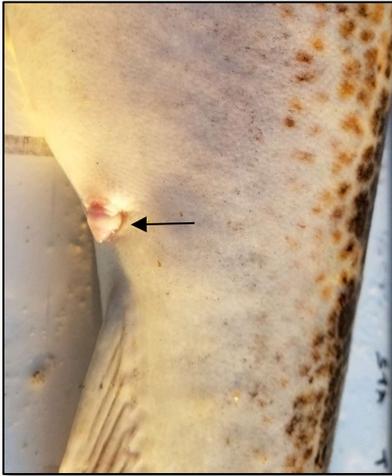
The sex of fishes should be recorded on the data form whenever possible. This information should be considered a bonus and should in no way interfere with your ability to get length and weight data. The codes for fish sex are: M=Male, F=Female, T=Transitional. Transitional California Sheephead may be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

Some species of fish can be sexed using external characteristics; for other species, sex 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. Sanddabs (*Citharichthys* spp.), while able to be externally sexed, are an exception and should not be sexed. If a fish is releasing live young or eggs, it's a female; the presence of white milt indicates that it's a male.

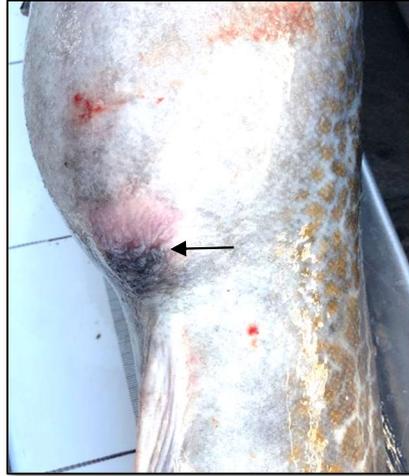
The sex of **elasmobranchs** can always be determined from external characters because male fish have a pair of mixopterygia (intromittent organs, claspers) which are visible from an early stage of development on the inside edge of the pelvic fins (see below). The females do not have mixopterygia.



Adult **Lingcod** can be sexed externally. View the ventral side of the fish near the posterior end. Males have a distinct papilla next to the anus. Females do not. If necessary, press around to reveal the papilla. Sometimes the male papilla does not protrude from the abdomen and will initially appear flush. See below, male Lingcod (pictured left) with papilla protrusion and female Lingcod (pictured right) without a visible papilla. Note, color is not indicative of sex.

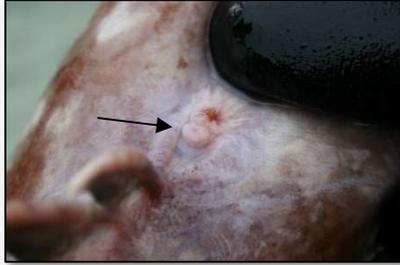


Lingcod sexing; **male**

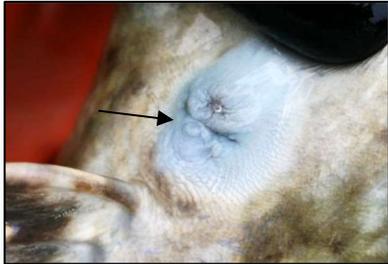


Lingcod sexing; **female**

**Cabazon** may also be sexed in a similar manner. Unlike Lingcod, male and female Cabazon both have papillae. The papillae on male and female Cabazon differ in shape. It is necessary to press around the papilla with your thumb to reveal features of its shape. The male papilla has ridges on its edges and protrudes slightly from the abdomen, resembling a cruller donut. The female papilla is conical in shape and has smooth edges and is surrounded by folds of skin, resembling a cinder cone (see below). Note, color is not indicative of sex.



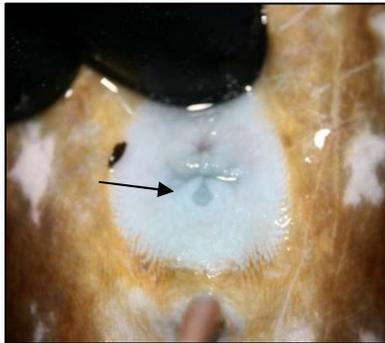
Cabazon sexing; **male** papilla resembles a cruller donut



Cabazon sexing; **female** papilla resembles a cinder cone



Cabazon sexing; **male**



Cabazon sexing; **female**

**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 stripe along their sides from head to tail.



Figure 12 – Juvenile Sheephead

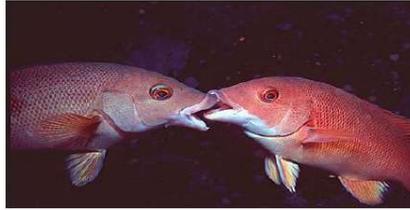


Figure 13 – Female Sheephead



Figure 14 – Transitional Sheephead

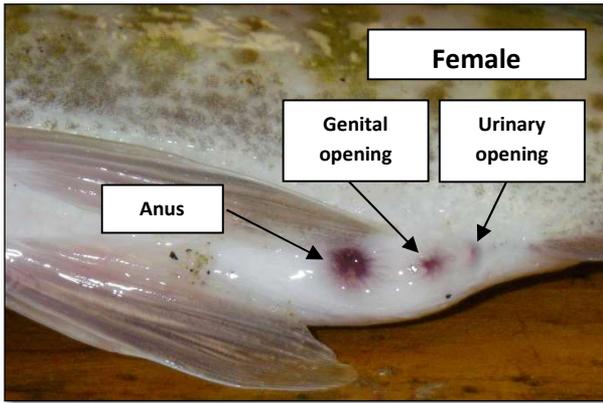


Figure 15 – Male Sheephead

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.

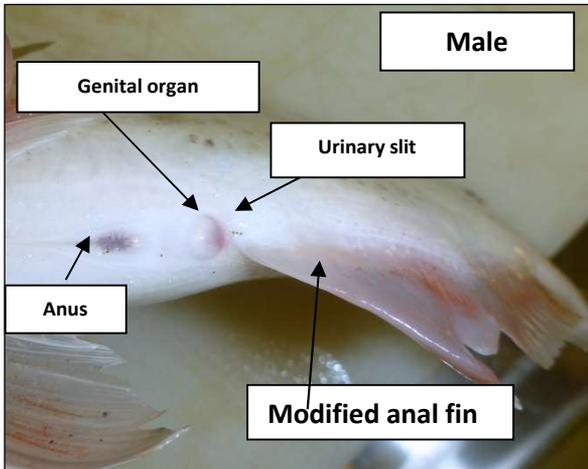
**Surfperch** of the subfamily Amphistichinae which includes species such as Barred, Redtail, Silver, Walleye, and Calico Surfperch, can be sexed externally by noting the number of openings between the anal and pelvic fins: males have two while females have three. To clarify, males have three openings; however, the genital and urinary openings appear as slits and the genital opening is obscured. Only two openings are visible on males. Note: other species of surfperch may be too difficult to sex.

Ventral view: female Barred Surfperch.

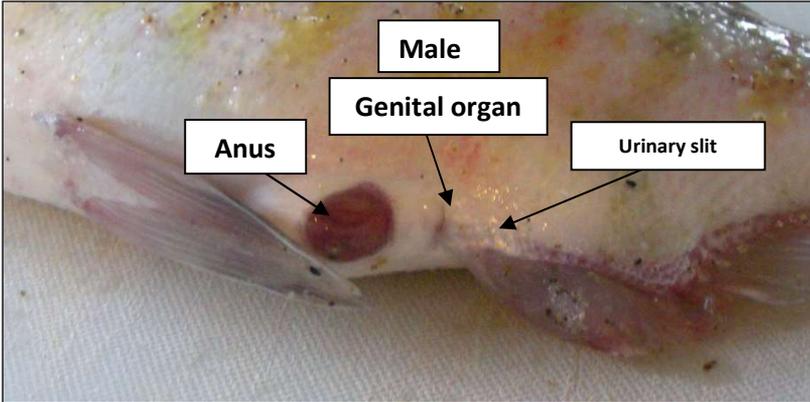


Pictured above and below are ventral views of a female Barred, male Redtail, and male Barred Surfperch, respectively. The anal, genital, and urinary openings appear as purplish "spots" in the female Barred Surfperch shown above. Male surfperch possess a genital organ and modified anal fin ray as shown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

Ventral view: ripening male Redtail Surfperch, exhibiting bulbous genital organ and modified anal fin.

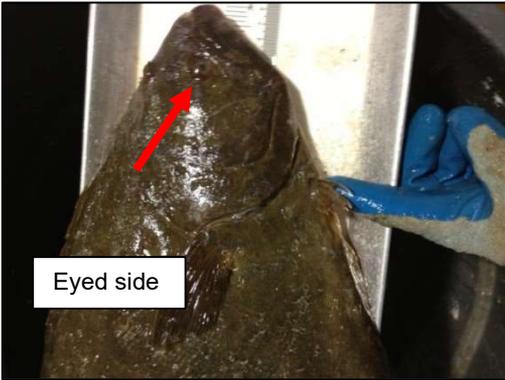


Ventral view: a non-ripe male Barred Surfperch

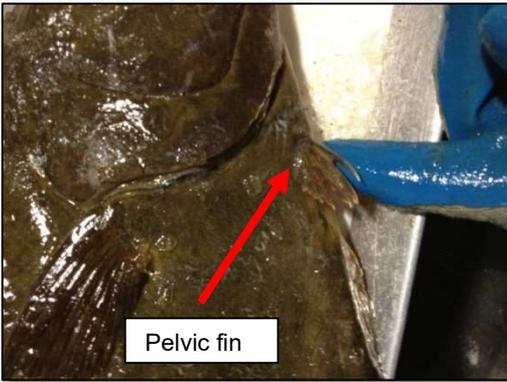


Note: male Barred Surfperch taken during the non-mating season may have genital organs that are not bulbous as shown above.

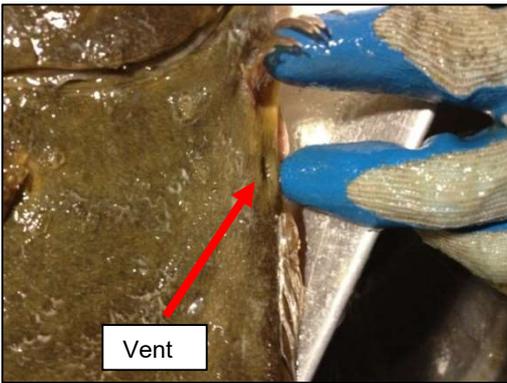
**California Halibut** can be sexed by squeezing the abdominal cavity to extrude sex products. Males will release milt 100% of the time; if no milt is released, the halibut is female.



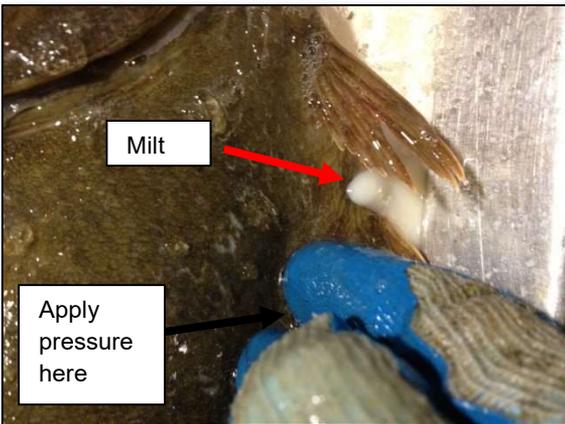
Step 1: Position the halibut so that the eyed side or pigmented side is facing upwards



Step 2: Locate the pelvic fin, which is just posterior to the gill cover and below the pectoral fin



Step 3: Flip the pelvic fin back towards the head and locate the vent underneath where sexual products are extruded



Step 4: Apply pressure to the organ cavity just posterior to the vent. If the halibut is male, milt will be released, as shown left. If no milt is extruded the halibut is female

Step 5: Both sexes may release a clear fluid prior to sexual products. It is important to note that both sexes may also release contents from other organs prior to sexual products. These contents may appear off-white in color and chunky (see photo). This halibut was not male. Milt is pearly white, opaque, and never chunky. If you see this, keep applying pressure. If milt is released after this then the halibut is male; if no milt then female.



**Kelp Greenling** are sexually dimorphic – the basic male pattern is brown-orange and red-purple with bright blue spots. These blue spots are often surrounded by smaller black spots. Colors can change during the reproductive season – courting males are often uniform gray with blue spots. The rule of thumb is if it has blue spots it is male. Females tend to be gray or brown with brown or yellow spots.

Male Kelp Greenling



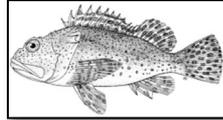
## Female Kelp Greenling



## Handling Fish

### California Scorpionfish

This pretty fish has a serious toxin in its dorsal, anal and pelvic fin spines. At the 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.

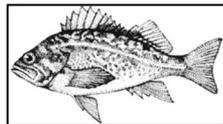


#### Remedies:

- 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.

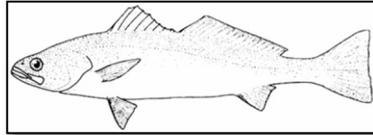
### Rockfish (*Sebastes* spp.)

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.



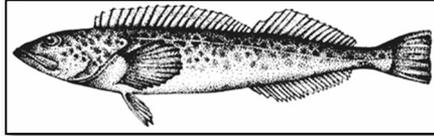
## White Seabass

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



## Lingcod

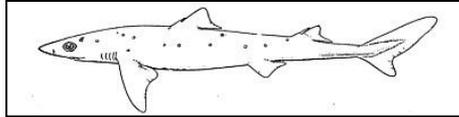
Lingcod have large, sharp teeth and sharp gill rakers. NEVER pick up this fish by inserting your hand under the gill cover. Instead, pick up the fish by inserting the thumb and forefinger of one hand into the eye sockets and use the other hand to lift the fish by the tail.



**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.

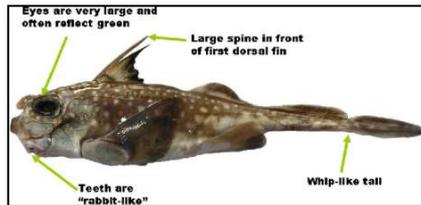
## Spiny Dogfish

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.



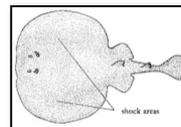
## Ratfish

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, take 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.

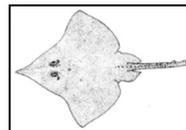


## Skates and Rays

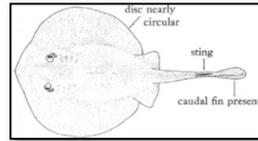
**Electric rays** can be dangerous. Do NOT touch the disk part of this fish! The name is self-explanatory. While you won't suffer permanent damage, the shock can be very strong and painful.



**Skates** have sharp scapular and tail spines that can be painful.



**Stingrays** and **Bat Rays** have a venomous stinger at the base of the tail which can inflict a painful wound. Again, heat or meat tenderizer may minimize the pain.



## Invertebrate Sampling

The primary goal of CRFS is to collect data on finfish trips. In general, finfish sampling has a higher priority than invertebrate sampling. A Sampler should never miss finfish boats or anglers to obtain more than the minimum data needed for a complete interview from invertebrate-only anglers. Observation of invertebrate catch for species composition and enumeration is not necessary. Angler reported kept and released is all that is required for invertebrate catch and effort.

Invertebrate anglers should be screened for finfish catch. If the angling party has only targeted invertebrates but incidentally caught finfish, you will code the second target as UNIFH along with recording catch.

BB invertebrate-only anglers should not be interviewed along with MM invertebrate-only anglers after the stop count. Invertebrate-only anglers intercepted during the PR surveys should be interviewed to obtain the minimum data needed for a complete CRFS sample. Observation of invertebrate catch is not necessary. Eligible anglers/boats targeting invertebrates will get their own CRFS sample number. Invertebrate-only anglers will not be included in any start, stop, or instantaneous angler counts while sampling in shore modes; invertebrate-only boats/trailers will be included in all counts while sampling in PR modes – make notes regarding known invertebrate-only boats included in counts. Code boats that are only setting invertebrate gear, not pulling gear/checking pots, as NFOTH when they return to the ramp.

In order to avoid missing finfish effort, Samplers may save time while sampling invertebrate-only boats/anglers by collecting only the minimum data elements required for a complete CRFS interview.

Note: conduct complete interviews whenever possible; this interview of minimum data elements should be completed only when pressed for time to avoid missing finfish effort.

The target boxes on all CRFS forms are primarily for finfish. If the targets are invertebrates and finfish, record the targets in the order that they are given in the CRFS interview (e.g., if an invertebrate is the primary target, record the appropriate invertebrate code in the primary target space and the finfish target in the secondary space). If an angler only targeted invertebrates, then, as with finfish, only the primary space would need to be coded.

The “Area fished” for invertebrates is the same as for finfish. Use the proper codes for nearshore, bay, offshore, etc. Gear for invertebrates is somewhat different though. In addition to Hook-and-line (H) gear that may be used to take invertebrates, there are special invertebrate-only gears (see Gen. Onsite Procedures). The number of pots/nets employed to catch invertebrates must be recorded. Be aware that anglers may employ two different kinds of gear at the same time, so both the primary and secondary targets will be filled out and the gear codes will reflect the two separate gears used.

Even if invertebrate pots were left out to soak overnight, or for many days, anglers may only harvest one day’s worth of limits on any one day that they check their gear. In most cases the “Days Fished” should always be “1” except in the case of boat anglers who have completed and filed a Declaration for a Multi-Day Fishing Trip (see Section 27.15 in the Ocean Sport Fishing Regulations booklet) with the Department. Although this occurrence is rare, multi-day fishing trips do occur in southern California, typically targeting lobster.

### **Squid Sampling**



CRFS Samplers should collect catch and effort data for Market Squid (SQDMK), or Humboldt/Jumbo Squid (SQDJU). With Market Squid, make sure to ask the angler if their squid bait was caught on the trip or bought at the store (do not include store-bought squid in the catch data).

Collect the minimum data elements required for a good interview from a squid-only boat. Code squid-only boats that you are not able to sample at all or are unable to collect the minimum data elements from, as missed boats, just like finfish boats. Make a note on your form as to the activity of the boat.

### **Abalone Sampling**

The vast majority of abalone effort is contained in the BB mode. Do not collect catch and effort data from abalone-only anglers in BB mode. Abalone anglers should be screened for effort as it is common for them to have a secondary target of finfish using the spear gear type. For those dual target trips, the goal would be to observe finfish catch and collect all catch and effort data for finfish prior to collecting abalone catch data. Angler reported catch for abalone meets CRFS needs and therefore it is not necessary to observe. Only catch that has been incidentally observed while collecting finfish data should be recorded as kept observed.



## Lobster Sampling

The code for California Spiny Lobster is LOBSP. The following target codes apply to the take of spiny lobster:

- F#** = flat hoop net,
- R#** = rigid, or "modified" hoop net
- #** = 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).

## Crab Sampling

This sampling includes Dungeness Crab (*Metacarcinus magister*) Red Rock Crab (CRBRR), Brown Rock Crab (CRBRR), Yellow Rock Crab (CRBYR), Slender or Graceful Rock Crab (CRBGR), and the general Cancer genus (CRBGN). Sheep Crabs or Kelp Crabs may be coded as true crabs (CRABS). For crab identification, please see:

<https://www.wildlife.ca.gov/Fishing/Ocean/Dungeness-Crab>  
[http://www.dfw.state.or.us/mrp/shellfish/crab/Crab\\_ID.asp](http://www.dfw.state.or.us/mrp/shellfish/crab/Crab_ID.asp)

## Handling Crab

In most cases you will not have to handle crabs except to remove finfish from a mixed catch within the same cooler or bag. Always wear gloves when handling crabs. Keep your fingers away from the chelipeds (claws). 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 any 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 (posterior most) set of legs at the point nearest to carapace and squeeze them together. This will give you a 'lever' to hold the crab. Do not squeeze too tightly or the legs

may detach. If you do get pinched, break the claw off from the body first to release the claw. Do not pull your finger (or other body part) out of the claw because this will result in lacerations.

## **Invertebrate Sampling Protocol FAQ**

### **General Protocol**

#### **1. How do I show that the angler or boat fished for invertebrates AND finfish?**

Record what the angler says was their primary and secondary target (so they can have a primary target of crab and secondary target of finfish). Each target will have its own area and gear specified.

#### **2. If a boat or angler reports only invertebrate target(s), but they kept or released finfish, should finfish be added as the secondary target?**

Yes. If finfish are caught, there needs to be a finfish target recorded. Edit your data as follows:

Primary target = invertebrate

Secondary target=

(Write UNIFH as the secondary target or a more specific finfish target the angler gives when probed further)

Primary target = invertebrate

Secondary target = invertebrate

(Change secondary target to UNIFH or a more specific finfish target the angler gives when probed further)

#### **3. Should I identify and count invertebrates that an angler or boat has kept?**

No. Ask the angler(s) for the number of invertebrates they kept and released by species. Record angler reported kept invertebrate species as kept unobserved. If the invertebrate catch is easily observed while sampling finfish, you should record those observed invertebrate as Kept/obs.

#### **4. How do I code gear used for an invertebrate target that does not have a CRFS gear code?**

Anglers targeting invertebrates may often use gears for which there is no applicable CRFS code – gears such as slurp guns, clam guns, shovels, rakes, pitchforks or other manual gears, including by hand. This is seen most often with clambers. In these instances, the Sampler will leave the gear field on the data sheet blank but include a note on the data sheet indicating what the clambers were using to take clams (or other invertebrates).

#### **5. Should I record biological data for invertebrates?**

No. Do not measure or determine the sex of any invertebrate catch.

## **MM and BB Modes**

### **6. Should I count invertebrate-only anglers during a shore assignment?**

No. Invertebrate-only anglers are NOT included in start, stop or instantaneous counts for MM mode. Invertebrate-only anglers are NOT included in the BB total estimated finfish anglers counts.

### **7. Should I interview invertebrate-only anglers during a shore assignment?**

**MM:** Yes, but do not interview incomplete or partial trip invertebrate-only anglers after the stop count and only if invertebrate sampling does not deter from finfish sampling.

**BB:** No, do not interview invertebrate-only anglers.

## **PR1 and PR2 Modes**

### **8. If a crab/lobster boat returned from JUST placing or setting pots/hoops, do I interview them?**

No, boats that are only placing pots/hoops without finfish effort are not eligible for a CRFS interview.

Code them as a NFOTH boat. You will record the time of the sample, the sample number, and "0" total anglers for this NFOTH boat.

### **9. If an invertebrate boat just returned from harvesting but has no finfish target, do I interview them?**

Yes. Invertebrate-only boats are interviewed for CRFS. Conduct the interview as normal except, we would not observe the catch and instead have the angler report the number of invertebrates kept and released by species. Do not collect biological data (sex & lengths).

### **10. How do I code days fished for a crab boat that soaked pots for 72 hours?**

For crab-only boats' days fished, we just ask for days the boat was out picking up pots. The boat fished for 1 day. Even if the pot(s) had a limit of crab for every day they soaked, the angler would only be able to bring in 1 limit of crab that day. For crab-only boats, code 1 day fishing regardless of how long the pots soaked. Even though the pots soaked overnight, do not check the Night Fishing box.

- 11. The last finfish boat just returned to the ramp. There are two trailers left in the lot, but I know they were fishing for invertebrates only – no finfish targets – because I spoke with them before they launched. Should I stay on site waiting for them to return?**

Do not stay on site waiting for known invert-only boats to return. Do include them in your PR stop count, with a note regarding activity. Do your best to canvass boats as they launch to determine activity/target – this will help you to determine whether you should stay on site. Stay onsite for the prescribed period of time (until sunset for PR1, up to 8 hours for the assignment for PR2) for trailers with unknown activity (trailers that were present on your arrival or trailers for boats that you were not able to canvass).

- 12. How do I record location and depth for invertebrate boats?**

We want location and bottom depth to reflect where the species were caught. Only code location and depth for effort if the boat had no catch at all.

If the boat caught baitfish and crab, for example, it should have two sets of locations and depths listed, one for the baitfish and one for the crab pots (lined up by catch species, not targets). Remember to re-record the location for finfish if there were crab measured and recorded in between the finfish species.

- 13. If the anglers had placed 5 pots/hoops but could only find 3 pots/hoops, how many total pots/hoops do I code?**

Three pots/hoops (P<sub>3</sub>/H<sub>3</sub>)

- 14. If an invertebrate-only boat is launching, how do I code that?**

**PR1:** Launched boats are not tracked in PR1 mode. However, notes on launching boats that are determined to be invertebrate-only during canvassing should be recorded elsewhere. This documentation will clarify to the Lead that the Sampler does not have to remain on site for known invertebrate-only boats at the end of the day.

**PR2:** We would code invertebrate-only boats that launched under the PR2 launched category. Please make a note that it was invertebrate only. You would not need to wait all day at the PR2 for an invertebrate-only boat.

**15. A boat has an ice chest with limits of crab and rockfish for five anglers. I'm pressed for time. What do I do?**

CRFS prioritizes finfish data over invertebrate data, and we don't collect biological data from invertebrates, so ignore the crab. Be careful sorting the fish from the crab. Once you're done with the rockfish, ask the angler(s) for counts of kept and released crab by species.

**16. A boat of four crabbers tells you that in addition to the four limits of Dungeness crab on their boat, they left another 15 legal-size crabs in their pots, and they plan on going back out in a day or two to pull them again. How do I code these 15 crabs that are not on the boat?**

These crabs will not show up anywhere on your data sheets for this assignment. If you were to count them, say as kept/unobserved, and another randomly-assigned CRFS sampling assignment was conducted when and where these crabbers came back with these crabs, they then would be double-counted.

**PCO and PCD Modes**

**17. Should I record invertebrate catch and bio data for a PC trip?**

No, do not record any invertebrate catch or bio data for a PCO or PCD sample. This includes unobserved and observed kept catch, released catch, measurements, and sex. You should only record an invertebrate as a target if it is reported as being a primary or secondary target, along with the water area and gear. Do not sample invertebrate-only PC trips.

## THE WEEKLY REPORT

Weekly Reports that summarize catch and effort data for species that require close monitoring are provided to fishery managers to ensure harvest guidelines are not exceeded. District Leads also use Weekly Reports to track Sampler activity and make sure assignments are completed during the sample week. Leads use the Weekly Report to track Sampler hours and check that Samplers' timesheets match what is reported, while the CRFS executive team uses the reports for budgeting purposes. The Weekly Report consists of a spreadsheet with a list of every assignment the Sampler worked or was scheduled to work, quantitative catch and effort data, and a qualitative description of weather, catch and effort for each assignment, and any other work done for CRFS or another CDFW project.

### Due Dates

All CRFS Samplers are to submit a Weekly Report to their District Lead and OSP by **8:00 AM each Monday throughout the year**. Weekly Reports from Samplers in Districts 1 and 2 may have different deadlines and content requirements given by their Leads. The report covers **ALL** assignments worked during the previous Monday through Sunday sampling week. Non-sample time for data entry, office work, training, meetings, and travel should also be included in the Weekly Report. The report also includes assignments that were scheduled, but not completed. Sick, vacation, and holiday hours to be claimed on Sampler's timesheets should also be reported in the Weekly Report.

### Assignments included in the Weekly Report:

MODE code	Mode Description
PR1	primary private rentals (skiffs)
PR2	secondary private rentals (skiffs)
PCO	PC-CPFV onboard sampling
PCS	PC-CPFV salmon dockside sampling
PCD	PC-CPFV non-salmon dockside sampling
PEC	PC-CPFV effort checks
MM	man-made structures
BB	beach-bank
Non-Sampling Mode Codes	
DAT	data-entry work in CDFW office
SEC	site effort checks
SK1	SEC 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
OPW	work for and paid by another CDFW project
TRN	specified training
PDD	professional development day
MTG	staff meeting

## **Sampling Assignment Summary in the Weekly Report**

### **PR1**

For the PR1 mode, the Weekly Report data is transcribed from the footer of the Assignment Summary Form (ASF). The Sampler sums the page totals from all their PR1 forms onto the footer of the ASF. The ASF footer totals align with the fields of the Excel Weekly Report. The Sampler must remember to include the onsite and/or offsite start count if they are the first Sampler, onsite and/or offsite stop count if they are the last Sampler and the names and numbers of other Samplers worked with and whether or not they have data. Do not include known non-fishing boats in the stop count.

### **PR2**

For the PR2 mode, the Weekly Report data is transcribed from the footer of the Assignment Summary Form (ASF). The Sampler sums the page totals from all of the PR2 forms onto the footer of the ASF. The ASF footer totals align with the fields of the Excel Weekly Report. Remember to include the onsite and/or offsite start count and onsite and/or offsite stop count. Do not include known non-fishing boats in the stop count.

### **PCO**

PCO is for onboard CPFV sampling. These assignments have an ASSN ID. Include the boat name, trip type and target(s) in the notes field; include the plans for rescheduling if they didn't make it out. Fill out the number of headtags used, HALPA, RFYEY, RFCOP, RFQIL and RFBLK kept and released, and other species headtags field (yellow groundfish items). Remember to only include HALPA, RFYEY, RFCOP, RFQIL and RFBLK counts captured on the PC Onboard catch and discard form, transcribed from the 'totals boxes' on the footer of the form.

### **PCS**

Salmon dockside assignments do not have an ASSN ID. Fill out the OSP port code and orange salmon items transcribed from the footer of the form. Samplers are to record only data they collected; when assisting another Sampler with a PCS sample, record hours worked on the Weekly Report without completing the salmon items. A new/separate sheet does not need to be created. Include the names and numbers of other Samplers worked with and whether or not they have data in the notes field of the spreadsheet.

### **PCD**

Non-salmon dockside assignments have an ASSN ID or are conducted opportunistically. All these PC assignments should be included in the Weekly Report. Fill out the number of headtags used and yellow groundfish items, transcribed from the 'totals boxes' on the footer of the form. Remember to include a row on the weekly even if the PCD was opportunistic.

## **PCS/PCD Combination Trips**

Boats with both salmon and non-salmon targets are frequently sampled concurrently during a sampling assignment. Data from these two different targets are recorded on separate rows on the Weekly Report – one row for the PCS data, and one row for the PCD data.

## **PEC**

Party/Charter effort checks (PECs) do not have an ASSN ID. PECs are important for validating CPFV logbooks and should be reported on the Weekly Report. This includes time spent checking in with the landings in person or by phone, emailing the Port Lead to report CPFV activity, filling out the PEC forms, etc. The mode should be listed as PEC and remember to include the OSP port code.

## **MM**

These are clusters that include man-made structure sites. Sample data fields are for boat modes only – do not fill out any fields between mileage and notes when sampling in shore modes, except for Headtags.

## **BB**

These are clusters that include beaches and bank sites. Sample data fields are for boat modes only – do not fill out any fields between mileage and notes when sampling in shore modes, except for Headtags.

## **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 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.

Even if the Sampler did not work any assignments or claim any hours during the week, they are still required to send an email stating, "I did not work and have nothing to report," or something to that effect. The Sampler is also required to send any other items that Leads are expecting; for example, if the Sampler did not collect any salmon heads that week, they are still required to submit an OSP headtag report.

Leads will compare time sheets with the work reported in the weekly reports. All time claimed on the timesheet must be reflected on a weekly report; total hours claimed on the time sheet must equal total hours claimed in the weekly reports.

Samplers must complete and send the Weekly Report to their Lead and OSP via email every Monday morning no later than 8:00 AM (Weekly Reports from Samplers in Districts 1 and 2 may have different deadlines and content requirements given by their Leads):

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, Sampler number, Monday's date, Lead's last name, and District will autofill in the gray columns.
5. Fill out the rest of the spreadsheet with all of your activities for the week (Mon-Sun), including field and office work, training, meeting, and "absent" hours such as vacation, sick, and holiday. Use the SamplerExample (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.

Once you have entered all your information for that week:

1. Right click on the Tab name (Template)
2. Select "Move or Copy"
3. Under the "To Book" heading, choose "new book" from the drop down menu
4. Check the box that says "Create a Copy"
5. Click "OK"
6. Save this new Excel file in the appropriate format: "mmddyy\_WeeklyReport\_D#\_LastName"
  - a. The "mmddyy" is the Monday date that began the sampling week
  - b. D# = CRFS District where MOST sampling occurred
  - c. LastName = Sampler's last name
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 the Lead and OSP.

For example; "Weather was partly sunny and warm all week. The swell was 2-4 feet with 5-10 knot winds. Salmon fishing was poor, but a few small salmon were kept. A lot of anglers switched to bottom fishing and caught mostly RFBLK but one RFYEY was released. Worked with James Phillips (302) who also has data – we each used our own headtags". Also include the status of any remaining PR1 trailers.

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
- Commercial pounds sampled (OSP only)

Some items on the Weekly Report are only applicable to groundfish; those column labels on the Template tab are color-coded in yellow. These fields include:

- Pacific Halibut kept (northern districts)
- Pacific Halibut released (northern districts)
- California Sheephead kept (southern districts)
- California Sheephead released (southern districts)
- Yelloweye Rockfish kept
- Yelloweye Rockfish released
- Copper Rockfish kept
- Copper Rockfish released
- Quillback Rockfish kept
- Quillback Rockfish released
- Black Rockfish kept
- Black Rockfish released
- Species of head collected
- Number of rockfish headtags used
- Rockfish head tag series 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. Do not report data another Sampler collected.

**Weekly Report Item by Item Instructions**

FIELD	INSTRUCTIONS	CODES AND FORMATS
<b>Header</b>		
Week beginning Monday	Fill out in header only: Monday's date in which sample week began.	Gray column will autofill when mode data is added  Example: 7/10/2025
Sampler Last Name	Fill out in header only: Enter your last name.	Gray column will autofill when mode data is added.

<b>FIELD</b>	<b>INSTRUCTIONS</b>	<b>CODES AND FORMATS</b>
		Example: TROXEL
Sampler Number	Fill out in header only: assigned CRFS or OSP Sampler 3-digit number.	Gray column will autofill when mode data is added) Example: 312
District Number	Enter the CRFS District where MOST of the sampling occurred.	1 = South 2 = Channel 3 = Central 4 = San Francisco 5 = Wine 6 = Redwood
Lead Last Name	Fill out in header only: last name of CRFS or OSP Lead.	Gray column will autofill when mode data is added. Example: ROBERTS
<b>Daily Data</b>		
Assn ID num	Assignment ID number (include leading zero) The assignment ID number should be reported on each line relevant to the assignment, including travel rows.	Leave blank if not applicable.
Date mm/dd	Enter the date that sampling/work occurred. Do not alter the date format. <b>REQUIRED FOR EACH ROW OF DATA.</b>	Example: 7/10
OSP Port, Cluster or Cnty Site	Enter the 3-letter alpha OSP port code for PR1, PCO, PCD, PCS and PEC assignments. Enter the cluster designation for BB and MM assignments. Enter the county and site codes for PR2 assignments (include leading zeros and NO dash). The sample site OSP port code, cluster, or Cnty Site should be reported on each line relevant to the assignment, including travel rows.	Example: MOS for Moss Landing PR1 site  Example: SFO10 for San Francisco MM cluster  Example: 023107 for Samoa Bridge Boat Ramp PR2 site
MODE	Enter the appropriate sampling mode for the sampled assignment or code for other work. Do not leave blank; <b>REQUIRED FOR EACH ROW OF DATA.</b>	PR1 = primary private and rental boats PR2 = secondary private and rental boats PCO = CPFV onboard

FIELD	INSTRUCTIONS	CODES AND FORMATS
	<p style="text-align: center;">OR</p> <p>Enter the appropriate non-sampling mode code for travel, data entry, office work, trainings, meetings, and other non-field assignments or "absent" hours such as sick, vacation, and holiday. <b>REQUIRED FOR EACH ROW OF DATA.</b></p>	<p>PCS = CPFV salmon dockside  PCD = CPFV non-salmon dockside  PCO = PC-CPFV onboard  PEC = PC-CPFV effort check  MM = man-made structures  BB = beach and bank  SEC = site effort check routes  MTG = staff meeting  TRN = specified training  OFC = all other office work  TRV = travel hours  OPW = other project hours  SK1 = SEC data entry  SK# = SK (non-SEC) data entry  DAT = data entry  SIC = sick  HOL = holiday VAC = vacation</p>
<p>Sample -Time Start</p> <p>End</p>	<p>Enter the 4-digit 24-hour time</p> <p>When sampling started; <b>REQUIRED FOR EACH ROW OF DATA.</b></p> <p>When sampling ended; <b>REQUIRED FOR EACH ROW OF DATA.</b></p>	<p>ALL Modes.</p> <p>Use military time (0000-2400) without colon (:). Use the leading zero for times before 1000. Example: 0800</p>
<p>Decimal Hours</p>	<p>Do NOT enter in this field. Based on the Start and End Sample Times the total Decimal Hours is automatically calculated for that row.</p>	<p>Decimal Hours column will autofill when Sample Time – Start and End data is added.</p> <p>Example: 7.75</p>
<p>Mileage</p>	<p>Enter the nearest whole number of miles to/from headquarters to/from sampling site and mileage accrued while traveling between sites in a personal vehicle.</p>	<p>Example: 25</p> <p>Enter zero "0" if a state car was used; only enter miles that will be claimed for reimbursement. Be sure to deduct commute miles before reporting "net" miles. Miles are reported only on TRV rows</p>
<p>Refu + Barrier</p>	<p>Enter the total number of boats where angler(s)</p>	<p>PR only  &lt;blank&gt; if non-applicable</p>

FIELD	INSTRUCTIONS	CODES AND FORMATS
	refused to be sampled or a language barrier occurred.	
Total Boats	Enter total number of sampled boats (not counting refusals, language barriers or missed boats).	PR and PC modes only <blank> if non-applicable
Salmon Boats	Enter the total number of salmon boats that were targeting and/or kept salmon.	PCS and PR only <blank> if non-applicable
Salmon Angs	Enter the total number of anglers who targeted and/or kept salmon.	PCS and PR only <blank> if non-applicable
Kings Kept	Enter the sum of King Salmon kept.	PCS and PR only 0 = No Kings kept # = Number of Kings kept <blank> if non-applicable
Kings Rels	Enter the sum of King Salmon released.	PCS and PR only 0 = No Kings released # = Number of Kings released <blank> if non-applicable
Coho Kept	Enter the sum of Coho Salmon kept.	PCS and PR only 0 = No Coho kept # = Number of Coho kept <blank> if non-applicable
Coho Rels	Enter the sum of Coho Salmon released.	PCS and PR only 0 = No Coho released # = Number of Coho released <blank> if non-applicable
Headtags	Enter the total number of salmon headtags used (includes tags collected in shore modes).	ALL Sampling Modes 0 = No headtags used # = Number of headtags used <blank> if non-applicable
HALPA Kept	Enter the total number of Pacific Halibut kept. (northern districts only)	PR and PC only 0 = No HALPA kept # = Number kept <blank> if non-applicable
HALPA Rels	Enter the total number of Pacific Halibut released. (northern districts only)	PR and PC only 0 = No HALPA released # = Number released <blank> if non-applicable
SHEEP Kept	Enter the total number of California Sheephead kept. (southern districts only)	PR and PC only 0 = No SHEEP kept # = Number kept <blank> if non-applicable

<b>FIELD</b>	<b>INSTRUCTIONS</b>	<b>CODES AND FORMATS</b>
SHEEP Rels	Enter the total number of California Sheephead released. (southern districts only)	PR and PC only 0 = No SHEEP released # = Number released <blank> if non-applicable
RFYFY Kept	Enter the total number of Yelloweye Rockfish kept.	PR and PC only 0 = No RFYFY kept # = Number kept <blank> if non-applicable
RFYFY Rels	Enter the total number of Yelloweye Rockfish released.	PR and PC only 0 = No RFYFY released # = Number released <blank> if non-applicable
RFCOP Kept	Enter the total number of Copper Rockfish kept.	PR and PC only 0 = No RFCOP kept # = Number kept <blank> if non-applicable
RFCOP Rels	Enter the total number of Copper Rockfish released.	PR and PC only 0 = No RFCOP released # = Number released <blank> if non-applicable
RFQIL Kept	Enter the total number of Quillback Rockfish kept.	PR and PC only 0 = No RFQIL kept # = Number kept <blank> if non-applicable
RFQIL Rels	Enter the total number of Quillback Rockfish released.	PR and PC only 0 = No RFQIL released # = Number released <blank> if non-applicable
RFBLK Kept	Enter the total number of Black Rockfish kept.	PR and PC only 0 = No RFBLK kept # = Number kept <blank> if non-applicable
RFBLK Rels	Enter the total number of Black Rockfish released.	PR and PC only 0 = No RFBLK released # = Number released <blank> if non-applicable
Missed Boats Onsite	Enter the total number of onsite missed boats.	PR only 0 = No missed onsite boats # = Number of missed boats onsite <blank> if non-applicable
Missed Boats Offsite	Enter the total number of offsite missed boats.	PR only 0 = No missed offsite boats # = Number of missed boats offsite <blank> if non-applicable

<b>FIELD</b>	<b>INSTRUCTIONS</b>	<b>CODES AND FORMATS</b>
Trailer Counts: Onsite Start	Enter the onsite trailer start count (should only be on first Sampler's form).	PR only # = number of trailers in the onsite count area at start count 0 = no trailers in onsite count area at start count <blank> if non-applicable
Trailer Counts: Offsite Start	Enter the offsite trailer start count (should only be on the first Sampler's form).	PR only # = number of trailers in the offsite count area at start count 0 = no trailers in offsite count area at start count <blank> if non-applicable
Trailer Counts: Onsite Stop	Enter the onsite trailer stop count (should only be on last Sampler's form).	PR only # = number of trailers in the onsite count area at stop count 0 = no trailers in the onsite count area at stop count <blank> if non-applicable
Trailer Counts: Offsite Stop	Enter the offsite trailer stop count (should only be on last Sampler's form).	PR only # = number of trailers in the offsite count area at stop count 0 = no trailers in the offsite count area at stop count <blank> if non-applicable
Other SPP Headtags: SPP	Enter the species code for heads taken from non-salmon species.	PR and PC only Example: RFYFY <blank> if non-applicable
Other SPP Headtags: #used	Enter the total number of non-salmon headtags used.	PR and PC only # = Number of other spp. headtag used 0 = No headtags used from other spp. <blank> if non-applicable
Other SPP Headtags: HT#	Enter the headtag series number(s) used for non-salmon species.	PR and PC only ##### = the headtag number used for other spp. Please include leading zeros on the HT#, if applicable. 0 = No other spp. headtags used <blank> if non-applicable
Weather and other	Enter notes about weather, other Samplers you worked	ALL MODES

FIELD	INSTRUCTIONS	CODES AND FORMATS
pertinent notes	with, training, CPFV activity, other Sampler headtags on your data sheets, driving conditions, etc. <b>REQUIRED FOR EACH ROW.</b>	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 that occur in the Weekly Report. The most common errors fall into the following categories: 1) fields inappropriately left blank or not blank, 2) transcription errors between the ASF and the Weekly Report and, 3) incorrect coding.

1. Make sure not to include data from other Samplers on your Weekly Report.
2. The Sampler must not fill in trailer count items if they were not in charge of tallying those for the PR assignment.
3. Fill out Pacific Halibut/California Sheephead, Yelloweye Rockfish, Copper Rockfish, Quillback Rockfish and Black Rockfish counts for PR and PC modes (excluding PCO onboard catch location).
4. Salmon items are only needed for PR and PCS assignments except for Headtags, which are reported for all sampling modes.
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 PCD data are recorded on the same date a line will be necessary for each mode.
8. Use the "Mode and Port Code" tab in the Excel file for a list of Mode codes, PR1 sites, and PC sites.
9. The assignment ID and sample site (port code, cluster or cnty/site) should be reported on each line relevant to the assignment, including the travel rows.



**Example of Weekly Report – 1 (Continued)**

AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ
REFCAN		REELK		Missed Boats		Trailer Counts			Other SPP Headtags		Notes		Monday	CDFW		District
Kept	Reis	Kept	Reis	OnSite	Offsite	OnSite	OffSite	OnSite	OffSite	Spp	# Used	HT #	(e.g., marine conditions, CPFV activity, trailer status)	Date	Lead	
8	6	96	63	0		33	0			RFYEY	1	00186	Travel from HQ to Shelter Cove II	5/6/2024	ROBERTS	6
0	0	30	22							0	0	0	Walkenhauer (303) has data als	5/6/2024	ROBERTS	6
										0	0	0	Sampled Squirrel and C'mon (R	5/6/2024	ROBERTS	6
										0	0	0	Sampled Squirrel (317R) trip. Ex	5/6/2024	ROBERTS	6
													Checkmate (2) non-fishing trip. S	5/6/2024	ROBERTS	6
													Travel from SHC to HQ. Overtime	5/6/2024	ROBERTS	6
													CRFS data entry in Eureka office	5/6/2024	ROBERTS	6
													Other Project Work: Video data a	5/6/2024	ROBERTS	6
10	12	106	47	0	4		0	1		0	0	0	Travel from HQ to Fort Bragg in S	5/6/2024	ROBERTS	6
													Worked for Bondoux (325) was S	5/6/2024	ROBERTS	6
													Travel from Fort Bragg to HQ in S	5/6/2024	ROBERTS	6
													I was asked to work in EUR for E	5/6/2024	ROBERTS	6
													Weekly reporting, emails, mailin	5/6/2024	ROBERTS	6
														5/6/2024	ROBERTS	6
														5/6/2024	ROBERTS	6

**Weekly Report Example 1, Continued.** (Columns AA-AQ) – Each mode requires different assignment summary totals (or data totals) (Columns K-AM). Reference the bottom of the ASF (for PR totals) and the Weekly Report template workbook, “ Field Definitions” tab, for full details on all mode totals. For instance, PCS mode assignments only require Columns L-S and Columns AK-AM assignment totals. Whereas, PCD mode assignments require Column L, S-AD, and AK-AM. PR1 or PR2 mode assignments require assignment summary totals for Columns K-AM; Offsite Missed Boats and Office Site Trailer Counts do not apply to all sites. Reference the PR sampling sections for details. BB or MM mode assignments only require Column S to be totaled. \*Note: Once a mode is filled into Column E, cells in that row will highlight in green or blue. Green cells indicate a summary total is required. Blue cells on PR1 or PR2 rows indicate a summary total may or may not be required. Reference the PR sampling sections for details on which sites require Offsite Missed Boats and Office Site Trailer Counts. All grey columns will autofill based on the header fields of the report. \*\*Note: all rows listed in the Weekly Report requires the Notes (Column AN) to be filled in.



**Example of Weekly Report – 2 (Continued)**

AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ
RFKAN		RFBLK		Missed Boats		Trailer Counts			Other SPP Headtags		Notes		Monday	CDFW		
Kept	Reis	Kept	Reis	Onsite	Offsite	OnSite Start	OffSite Start	OnSite Stop	OffSite Stop	Spp	# Used	HT #	(e.g., marine activity, trailer status)	Date	Lead	District
													Picking up forms, talking with Lea	5/6/2024	ROBERTS	6
													Travel from HQ to Oregon border in	5/6/2024	ROBERTS	6
													Some BB effort at Pelican Beach;	5/6/2024	ROBERTS	6
													Travel from Crescent City to HQ	5/6/2024	ROBERTS	6
													Travel from home to Trinidad in per	5/6/2024	ROBERTS	6
													No effort at Trinidad pier; some eff	5/6/2024	ROBERTS	6
													Travel from North Jetty to home.	5/6/2024	ROBERTS	6
													Travel from HQ to Samoa Bridge T	5/6/2024	ROBERTS	6
0	0	3	0	0	6					0	0	0	Boats able to make it out of the b	5/6/2024	ROBERTS	6
													Travel from Samoa Bridge T. Stree	5/6/2024	ROBERTS	6
													Travel from HQ to Eureka Slough	5/6/2024	ROBERTS	6
													Moderate BB and MM effort inside	5/6/2024	ROBERTS	6
													Travel from South Spt to HQ	5/6/2024	ROBERTS	6
													Completing and submitting weekly	5/6/2024	ROBERTS	6

**Weekly Report Example 2, Continued,** (Columns AA-AQ) – Each mode requires different assignment summary totals (or data totals) (Columns K-AM). Reference the bottom of the ASF (for PR totals) and the Weekly Report template workbook, “ Field Definitions” tab, for full details on all mode totals. For instance, PCS mode assignments only require Columns L-S and Columns AK-AM assignment totals. Whereas, PCD mode assignments require Column L, S-AD, and AK-AM. PR1 or PR2 mode assignments require assignment summary totals for Columns K-AM; Offsite Missed Boats and Office Site Trailer Counts do not apply to all sites. Reference the PR sampling sections for details. BB or MM mode assignments only require Column S to be totaled. \*Note: Once a mode is filled into Column E, cells in that row will highlight in green or blue. Green cells indicate a summary total is required. Blue cells on PR1 or PR2 rows indicate a summary total may or may not be required. Reference the PR sampling sections for details on which sites require Offsite Missed Boats and Office Site Trailer Counts. All grey columns will autofill based on the header fields of the report. \*\*Note: all rows listed in the Weekly Report requires the Notes (Column AN) to be filled in.

## THE ASSIGNMENT SUMMARY FORM (ASF)

The ASF is a cover sheet used to track CRFS assignments as well as a summary page of all data sheets used on the assignment. The ASF moves with the data sheets through delivery, editing, scanning, and data entry. ASFs are used by the Lead 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 PR trailer counts and to summarize data for boat mode assignments. Site Effort Checks (SEC) at certain sites may also be scheduled and these counts would be recorded on the ASF as well. 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 worked 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 data in boat modes but excludes PCO-Onboard Location Form data.

### Data Tracking

The top margin of each ASF has six fields (RCVD ON/BY, EDIT ON/BY, SCAN ON/BY, ENTER ON/BY, UPLD ON/BY and FILE ON/BY) used by the Lead and other data editors/data entry personnel to track the progress of the assignment through the editing and entry process. Leave these fields blank – the Lead will complete them.

RCVD ON/BY: _____	EDIT ON/BY: _____	SCAN ON/BY: _____
ENTR ON/BY: _____	UPLD ON/BY: _____	FILE ON/BY: _____

### 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, other Samplers on the assignment and general comments about marine conditions, effort and catch, PC activity and/or any other pertinent information that may have influenced fishing or sampling.

RCVD ONBY: _____	EDIT ONBY: _____	SCAN ONBY: _____						
ENTR ONBY: _____	UPLD ONBY: _____	FILE ONBY: _____						
<b>CRFS ASSIGNMENT SUMMARY FORM</b>								
Assn #	V16 3/4/19							
<b>COMMENTS</b>	<b>SAMPLER NAME:</b>	<b>SAMPLER #</b>	<b>DATE (MM/DD/YY)</b>	<b>ASSN ID</b>	<b>MODE</b>	<b>PORT/CLUS</b>	<b>HOURS</b>	
	<b>1 Joe Sampler</b>	<b>187</b>	<b>07/04/25</b>	<b>074503</b>	<b>PR1</b>	<b>PRI</b>	<b>10</b>	TOTAL
	<b>OTHER SAMPLER(S): NAME &amp; # (w/data)</b>	<b>OTHER SAMPLER(S): NAME &amp; # (w/data)</b>			<b>1</b>	<b>ASSN DISP*</b>	<b>8.5</b>	SAMPLING
	<b>Tom Johnson 156</b> (Y/N) circle one				<b>PV</b>	State Car or Pers Vehicle	<b>1</b>	TOT TRV
	<b>MARINE CONDITIONS:</b> 3-4 foot swell, light winds, patchy fog				<b>190000</b>	ODO START	<b>0.5</b>	TRV TIME HQ to site 1
	<b>EFFORT:</b> Fairly high. 35 trailers to start				<b>190050</b>	ODO STOP	<b>0.5</b>	TRV TIME last site to HQ
	<b>CATCH:</b> Mix of RFGEN and Salmon. Many anglers had limits				<b>50</b>	MILEAGE	<b>0.5</b>	EDIT
	<b>PC ACTIVITY:</b> One 6 pack (Sara Bella RFGEN charter) was sampled opportunistically							
	<b>OTHER PERTINENT INFORMATION:</b>							
	The Princeton Launch Ramp is scheduled to close 08/05/19 for repairs. Johnson (156) has stop count. No offsite trailer count							
<b>HEAD TAGS USED (PRPC):</b> 12001-12036								
				<b>HEAD TAGS USED (MMBB):</b>				

Round all hours to nearest 0.25 hour

0.00hr = 53-07 mins  
0.25hr = 08-22 mins  
0.50hr = 23-37 mins  
0.75hr = 38-52 mins

### Hours

For each CRFS assignment, record sampling, travel, and edit hours to the nearest quarter (0.25) hour, rounding up or down as necessary. Travel time is the time spent driving from headquarters to the first site plus the time spent driving from the last site to headquarters at the end of the day. Sampling time is the time of arrival at the first site until the time of departure at the last site, and includes time spent driving between sites. Edit time is time spent editing data outside of the assignment. Normally, CRFS Samplers edit data during slow periods onsite, but if this is not possible, at-home editing time should be reported here. Time spent at a site conducting a PEC or SEC is considered sample time.

### ASF Site Rows

This area is used to report and describe each site visit during an assignment. ASFs for MM and BB cluster assignments and SEC assignments will often have quite a few site rows filled out, since the Sampler is roving among multiple sites. Generally, for PR and PC modes, only one site will be listed because the Sampler will be at that same site for the entire working day. In addition, SECs conducted at sites adjacent to sites in the assigned mode may be added and recorded on the same ASF.

*Assignment dispositions: 1=Complete, 2=Reassigned, 6=Canceled		HQ Departure Time:	<b>0730</b>	Site Effort Check (if applicable)	PR Trailer Counts		
Check box if continued on 2nd page <input type="checkbox"/>		HQ Return Time:	<b>1700</b>		Onsite Start	Onsite Stop	Offsite Stop
Row #	SITE NAME / SITE COMMENT	TIME		MODE	TRAILER COUNTS		
1	<b>Princeton PC</b>	CNTY	<b>81</b>	ARRV	<b>0800</b>	35	
	Lots of late launches due to nice weather. One angler had a cowcod. Informed him the fish was no take and gave him a reg book.	SITE	<b>100</b>	START	<b>0805</b>		
		DISPO**	<b>1</b>	STOP	<b>1625</b>		
		HRS	<b>8.5</b>	DEPR	<b>1630</b>		

This section is also used to record how much of the Sampler's time was spent at each site, the reason for leaving a site (disposition), arrival/departure time, time active sampling started/stopped, and PR trailer counts. 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). Under certain circumstances, effort checks at various sites may be assigned. The Lead will give more information on SEC assignments.

**ASF Footer – Boat Mode Totals**

The footer of the ASF consists of totals for boat modes and is used to monitor sampling and catch for weekly tracking. The footer is to be filled out for boat mode assignments only, with the grand sum of the page totals from each form. No data are needed in this section for MM and BB modes. Report these PR totals to your Lead on your Excel Weekly Report every Monday by 8:00 AM. Weekly Reports from Samplers in Districts 1 and 2 may have different due dates and content requirements given by their Leads.

**ASF Item-by-Item Instructions**

Field Name	Instructions	Coding Examples and Formats
HEADER		
Assn #	The assignment number will be “1” unless are issued more than one assignment in a day.	1 = first assignment 2 = second assignment
Sampler Name	Print your full name. Do not sign.	Joe Sampler
Sampler #	Enter your personal 3-digit CRFS Sampler ID code.	100 to 399 Example: Joe Sampler = 150
Date	Enter the assignment date.	MM/DD/YY Example: 08/05/25 for Aug, 5 2025
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. 08= August). The third field is the CRFS District (i.e. 4 = SF). The fourth field identifies the mode and the last two fields from 01-99 are generated by the schedule draw program

Field Name	Instructions	Coding Examples and Formats
Comment	Summarize and describe your day's activities in the space provided. Include marine conditions that may have affected catch or effort. Report on unusual events, angler activities, and species targets. Describe rescheduled assignments, missed and canceled assignments, and alternate site, if completed at a different site than assigned. Include descriptions of effort levels and catch, especially rare species. Report the names and sampler numbers of additional Samplers whom worked with. Circle appropriate letter indicating whether or not additional Samplers collected data. List names of CDFW staff who conducted field checks. List any PC activity, other pertinent information, and headtags used.	<p>"The beaches were empty due to NW gale force winds."</p> <p>"Waves washing over jetty made it unsafe to conduct counts."</p> <p>"Effort was high but catch avg. 4 RF each; a few ling also landed"</p> <p>"Worked with Jane Doe (217) and had a field check by John Doe"</p> <p>"Used headtag series 50000-06"</p> <p>"Unable to obtain weights due to rough conditions"</p> <p>"Worked with Sampler Joe Smith today. We both have data"</p> <p>"No PC effort at assigned site Emeryville, assignment completed at Berkeley instead".</p>
ASSN MODE	Enter the assigned mode. The assigned mode will appear on your Sampler Schedule.	<p>PR1 and 2 = Primary and secondary private / rental boat sites.</p> <p>MM = Manmade structures</p> <p>BB = Beaches and banks.</p> <p>PCO = Party and charter boats sampled on-board</p> <p>PCD = Non-Salmon party and charter boats sampled dockside</p> <p>PEC = Party/Charter effort check</p> <p>SEC = Site Effort Check</p>

Field Name	Instructions	Coding Examples and Formats
CLUSTER	For MM, BB, and SEC assignments record the cluster site code. The cluster code is the county or District alpha-code with a number suffix. For PR and PC modes use the three letter OSP port code.	San Diego 1 = SDG1 Central 1 = CEN1 Bodega PR1 = BOD
ASSN DISP	Report the number code for the assignment disposition. The codes are defined under the "COMMENT" box. The assignment dispositions are 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 "completed" with the assignment and it is done. 2 = Reassigned: When the assignment needs to be moved or rescheduled. Examples: If a PC boat is missed the and there are no eligible alternates; personal reasons approved by the Lead; the site is closed to fishing; no boats going out due to weather or low effort; sickness or injury during the assignment; the situation is unsafe or unhealthy. 6 = Cancelled: When the Lead notifies that the assignment cannot be rescheduled before the end of the month
State car or pers vehicle	Record "SC" for state car or "PV" for personal vehicle.	"SC" or "PV." Make notes in comments if used some other transportation
Odo Start	Record your odometer mileage at start of driving (leave home/HQ).	Example:10001
Odo Stop	Record your odometer mileage at end of driving (arrive at home/HQ).	Example: 10044
MILEAGE	Compute the total miles driven to the nearest whole mile for the day. This will help	Miles, to the nearest whole number

Field Name	Instructions	Coding Examples and Formats
	the Sampler fill out a CalATERS claim for the month. For Samplers using a State car, do not record mileage (leave blank).	Example: 43
HOURS TOTAL	<p>The total hours for the day. Includes: sampling, travel and edit</p> <p>A conversion chart has been provided in the COMMENTS section to help with rounding hours to the nearest 0.25 hours.</p>	<p>Round to nearest 0.25 hour.</p> <p>Example: 8 hours and 20 minutes would be rounded to 8.25</p>
HOURS SAMPLING	The time spent from arrival at the first site to the time leaving the last site.	<p>Round to nearest 0.25 hour.</p> <p>Example: 8 hours and 40 minutes worked would round to 8.75</p>
HOURS TOT Travel	The time spent travelling from HQ to the first site, plus the time spent travelling from the last site to HQ.	Travel between sites is counted in your HOURS SAMPLING.
HOURS TRV time HQ to first site	The time leaving HQ to the time of arrive at the first site.	<p>Round to nearest 0.25 hour.</p> <p>Example: 45 minutes rounds to 0.75 hours</p>
HOURS TRV time last site to HQ	The time from when leaving the last site to when arrival at HQ.	<p>Round to nearest 0.25 hour.</p> <p>Example: 55 minutes rounds to 1.0 hours</p>
HOURS EDIT	Extra time spent editing forms at home or office. Edit forms during slack time between interviews; however, occasions may arise which require more time to edit forms.	<p>Round to nearest 0.25 hour.</p> <p>Example: 25 minutes rounds to 0.5 hours</p>
<b>SITE ROWS</b>		
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"

Field Name	Instructions	Coding Examples and Formats
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
SITE	Record the 3-digit site code corresponding to the site name.	"104" = Moss Landing Launch Ramp
DISPO = Site Disposition	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.	Use the lowest valid code: 0 = Site Effort Check: Sampler performed a trailer/angler count only (i.e., drive-bys) 1 = Complete/Done 4 = Low Effort (PC only): There are no anglers. The assn will need to be rescheduled; work with your Lead on this. 5 = Other: Examples: Time spent at site (outside of assigned cluster) interviewing anglers; unable to ride the boat for whatever reason (not allowed by captain, PC had motor problems, poor weather). 7 = Roving (Clusters): Sampling a cluster of sites and moving between sites as scheduled. The last site visited will get a DISPO = 1
HRS = 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 from the site. Include time spent driving between access points at that site.	Round to nearest 0.25 hours.  Example: 55 minutes rounds to 1.0 hours

<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
ARRV = Arrival	Time in 24-hour format of physically arriving at the site.	24-hour format:  "0701" = 7:01am
START	This is the time of physically start sampling, usually by doing an arrival count of trailers or anglers.	24-hour format:  Must be at least one minute later than ARRV time
STOP	This is the time of physically stopped sampling, when stop count is completed.	24-hour format:  For MM assignments, do the end count at the STOP times
DEPR = Departure	This is the time when physically departing from the site.	24-hour format:  "2359" = 11:59pm
Site Effort Check (if applicable)	Only use this if assigned to specifically go check fishing effort for a certain site or group of sites. Write in the number of anglers/boats/trailers in the appropriate cell for the mode(s) assigned to check (MM, BB, PC, PR).	Example: Assigned to go check a series of sites in a specified route. Record the number of anglers or trailers seen at each site.  Example: While traveling to or from a CRFS assignment and instructed to conduct SEC counts at adjacent sites.
PR Trailer Counts	Record the number of fishing trailers Onsite, Offsite or both, if applicable.	See Summary of PR Counts table in PR1 and PR2 sections
<b>FOOTER – BOAT MODE TOTALS</b>		
Refu + Barrier	Total number of PR fishing boats that refused the CRFS survey or were language barriers on all PR/PCO forms.	Sum of Refu + Barrier from each PR/PCO/PCD page

<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
Total Boats	Total number of boats on all PR pages; includes fishing and NF boats (But not missed boats, refusals, or language barriers).	Sum of 'Total Boats' from each PR/PCO/PCD page
Boats Salmon	Total number of boats sampled that were targeting and/or kept salmon on all PR forms. Include "Salmon Refusals" as salmon boats.	Sum of 'Salmon Boats' from each PR page 0 = no salmon boats
Angs Salmon	Total number of anglers sampled from boats targeting and/or keeping salmon on all PR forms. Include "Salmon Refusal" anglers as salmon anglers.	Sum of 'Salmon Angs' from each PR form
Kept Kings	Total number of Chinook salmon kept observed + kept unobserved on all PR/PCO forms.	Sum of 'Kept Kings' from each PR/PCO/PCD Angler form
Rels Kings	Total number of Chinook salmon released alive + released dead on all PR/PCO forms.	Sum of 'Rels Kings' from each PR/PCO/PCD form
Kept Coho	Total number of Coho salmon kept observed + kept unobserved on all PR/PCO forms.	Sum of 'Kept Coho' from each PR/PCO/PCD form
Rels Coho	Total number of Coho salmon released alive + released dead on all PR/PCO forms.	Sum of 'Rels Coho' from each PR/PCO/PCD form
# Head Tags	Total number of salmon head tags issued (including NRS tags) on all PR/PCO forms.	Sum of '# Head tags' from each PR/PCO/PCD form
Kept Pac. Halibut (NorCal) Kept Sheephead (SoCal)	Total number of Pacific halibut/CA Sheephead 'observed kept' and 'unobserved kept' from all PR/PCO forms.	Sum of 'Kept Pacific halibut' or 'CA Sheephead' from each PR/PCD/PCO/PCD Angler Form
Rels Pac. Halibut (NorCal) Kept	Total number of Pacific halibut/CA Sheephead 'released dead + released alive' from all PR/PCO forms.	Sum of 'Rels Pacific halibut' or 'CA Sheephead' from each PR/PCO/PCD form

<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
Sheephead (SoCal)		
Kept Yelloweye	Total number of Yelloweye Rockfish 'observed kept' and 'unobserved kept' from all PR/PCO forms.	Sum of 'Kept Yelloweye' from each PR/PCO/PCD form
Rels Yelloweye	Total number of Yelloweye Rockfish 'released dead + alive' from all PR/PCO forms.	Sum of 'Rels Yelloweye' from each PR/PCO/PCD form
Kept Copper	Total number of Copper 'observed kept' and 'unobserved kept' from all PR/PCO forms.	Sum of 'Kept Copper' from each PR/PCO/PCD form
Rels Copper	Total number of Copper 'released dead + alive' from all PR/PCO forms.	Sum of 'Rels Copper' from each PR/PCO/PCD form
Kept Quillback	Total number of Quillback RF 'observed kept' and 'unobserved kept' from all PR/PCO forms.	Sum of 'Kept Quillback RF' from each PR/PCO/PCD form
Rels Quillback	Total number of Quillback RF 'released dead + alive' from all PR/PCO forms.	Sum of 'Rels Quillback RF' from each PR/PCO/PCD form
Kept Black RF	Total number of Black RF 'observed kept' and 'unobserved kept' from all PR/PCO forms.	Sum of 'Kept Black RF' from each PR/PCO/PCD form
Rels Black RF	Total number of Black RF 'released dead + alive' from all PR/PCO forms.	Sum of 'Rels Black RF' from each PR/PCO/PCD form
On Missed	The total number of onsite missed boats on all PR forms.	Sum of 'On Missed' from each PR form
Off Missed	The total number 'offsite missed boats' returning to the PR1's offsite area (usually a marina or private slip) on all PR forms.	Sum of 'Off Missed' from each PR form

### **ASF Coding Tips**

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

### **Specific Editing Checks**

1. The date should be recorded in MM/DD/YY format, like the other CRFS forms
2. BB and MM assignments are disposition 7 = 'roving' until the last site visit, which is 1 = 'complete'
3. Round all recorded time to nearest 0.25 hour. The table in the COMMENTS area is provided to help with rounding
4. If a field is not applicable, such as SEC or PR Trailer Counts, leave it blank
5. The footer is only for Boat Mode assignments; leave it blank for MM and BB modes.
6. Time spent doing PECs or driving between sites should be coded as sample time.
7. If the data goes onto the back of the ASF form, check the box above the ASF rows.

# Assignment Summary Form Examples PR1

RCVD ONBY: _____		EDIT ONBY: _____		SCAN ONBY: _____																	
ENTR ONBY: _____		UPLD ONBY: _____		FILE ONBY: _____																	
Asn # V10 34/12		<b>CRFS ASSIGNMENT SUMMARY FORM</b>																			
<b>1</b>	SAMPLER NAME: <b>Joe Sampler</b>		SAMPLER #	DATE (MM/DD/YY)	ASSN ID	MODE	PORT/CLUS	HOURS	TOTAL SAMPLING TOT TRV TRV TIME HQ to site 1 TRV TIME last site to HQ EDIT												
			<b>187</b>	<b>07/04/25</b>	<b>074503</b>	<b>PR1</b>	<b>PRI</b>	<b>10</b>													
<b>COMMENTS</b>	OTHER SAMPLER(S): NAME & # (w/dots)		OTHER SAMPLER(S): NAME & # (w/dots)		<b>1</b>	ASSN DISP*	Site Car or Pers Vehicle	<b>8.5</b>	Round all hours to nearest 0.25 hour 0.00hr = 53-07 mins 0.25hr = 08-22 mins 0.50hr = 23-37 mins 0.75hr = 38-52 mins												
	<b>Tom Johnson 156</b> (Y/N) circle one		(Y/N) circle one		<b>PV</b>		<b>1</b>														
	MARINE CONDITIONS: 3-4 foot swell, light winds, patchy fog				<b>190000</b>	ODO START	<b>0.5</b>														
	EFFORT: Fairly high. 35 trailers to start				<b>190050</b>	ODO STOP	<b>0.5</b>														
	CATCH: Mix of RFGEN and Salmon. Many anglers had limits				<b>50</b>	MILEAGE	<b>0.5</b>														
	PC ACTIVITY: One 6 pack (Sara Bella RFGEN charter) was sampled opportunistically																				
OTHER PERTINENT INFORMATION: The Princeton Launch Ramp is scheduled to close 08/05/19 for repairs. Johnson (156) has stop count.  No offsite trailer count																					
HEAD TAGS USED (PR/PC): <b>12001-12036</b>		HEAD TAGS USED (M/MBB):																			
*Assignment dispositions: 1=Complete, 2=Reassigned, 6=Cancelled		HQ Departure Time: <b>0730</b>		Site Effort Check (if applicable)		PR Trailer Counts															
Check box if continued on 2nd page <input type="checkbox"/>		HQ Return Time: <b>1700</b>				Onsite 01 Onsite 02 Onsite 03 Onsite 04															
Row #	SITE NAME / SITE COMMENT			TIME																	
<b>1</b>	<b>Princeton PC</b>			CNTY	<b>81</b>	ARRV	<b>0800</b>	<b>35</b>													
	Lots of late launches due to nice weather. One angler had a cowcod. Informed him the fish was no			SITE	<b>100</b>	START	<b>0805</b>														
				DISPO**	<b>1</b>	STOP	<b>1625</b>														
				HRS	<b>8.5</b>	DEPR	<b>1630</b>														
<b>2</b>				CNTY		ARRV															
				SITE		START															
				DISPO**		STOP															
<b>3</b>				CNTY		ARRV															
				SITE		START															
				DISPO**		STOP															
<b>4</b>				CNTY		ARRV															
				SITE		START															
				DISPO**		STOP															
<b>5</b>				CNTY		ARRV															
				SITE		START															
				DISPO**		STOP															
				HRS		DEPR															
PR & PC ONLY		<b>1</b>	<b>36</b>	<b>30</b>	<b>85</b>	<b>48</b>	<b>40</b>	<b>0</b>	<b>6</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>16</b>	<b>12</b>	<b>9</b>	<b>0</b>	<b>7</b>
Refusal + Borrow		Total Boots	Boots Salmon	Angs Kings	Kept Rels	Kept Rels	Kept Rels	Head Tags	Kept HALPA	Kept RFVEY	Kept RFCOP	Kept RFQIL	Kept RFLBK	Kept Missed	ON	OFF					
**Site dispositions: 0=Effort check, 1=Complete, 4=Low Effort, 5=Other (comment), 7=Roving (MM, BB clusters)																					

# Assignment Summary Form Examples

## BB

RCVD ONBY: \_\_\_\_\_ EDIT ONBY: \_\_\_\_\_ SCAN ONBY: \_\_\_\_\_  
 ENTR ONBY: \_\_\_\_\_ UPLD ONBY: \_\_\_\_\_ FILE ONBY: \_\_\_\_\_

\*116 334719

### CRFS ASSIGNMENT SUMMARY FORM

Asn #	SAMPLER NAME:	SAMPLER #	DATE (MM/DD/YY)	ASSN ID	MODE	PORT/CLUS	HOURS	TOTAL
1	<b>Joe Sampler</b>	187	12/10/25	124112	BB	SFO13	8	
COMMENTS	OTHER SAMPLER(S): NAME & # (w/data)	OTHER SAMPLER(S): NAME & # (w/data)			1	ASSN DISP*	7	SAMPLING
	(Y/N) circle one	(Y/N) circle one			PV	State Car or Pers Vehicle	1	TOT TRV
	MARINE CONDITIONS: 3-4 foot swell, light winds, incoming tide				190000	ODO START	0.50	TRV TIME HQ to site 1
	EFFORT:				190050	ODO STOP	0.50	TRV TIME last site to HQ
	CATCH: Mostly perch and baitfish landed				50	MILEAGE	0	EDIT
PC ACTIVITY:								Round all hours to nearest 0.25 hour
OTHER PERTINENT INFORMATION: Start Category = Early								0.00hr = 53-07 mins 0.25hr = 08-22 mins 0.50hr = 23-37 mins 0.75hr = 38-52 mins
HEAD TAGS USED (PRPC):	HEAD TAGS USED (MMBB):							

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

Check box if continued on 2nd page

HQ Departure Time: 0730  
 HQ Return Time: 1530

Site Effort Check (if applicable)

PR Trailer Counts

Row #	SITE NAME / SITE COMMENT	CNTY	ARRV	TIME	BB	MM	PR	Onsite Start	Offsite Start	Onsite Stop	Offsite Stop
1	<b>Bolinas Shore</b>	41	ARRV	0800	BB	2	0				
	Low Effort. 2 Anglers targeting surfperch and planned to fish until 1450. Got incomplete interviews before leaving the site.	SITE	204	START							
		DISPO**	7	STOP							
		HRS	1	DEPR	0900	PR					
2	<b>Stinson Beach</b>	41	ARRV	0910	BB	3	0				
	Interviewed 3 anglers that were just leaving as I arrived.	SITE	205	START							
		DISPO**	7	STOP							
		HRS	0.50	DEPR	0945	PR					
3	<b>Muir Beach</b>	41	ARRV	1000	BB	4	0				
	4 anglers planned to fish all day. Got incomplete interviews before leaving the site.	SITE	230	START							
		DISPO**	7	STOP							
		HRS	1	DEPR	1100	PR					
4	<b>Bolinas Shore</b>	41	ARRV	1110	BB	2	0				
	Followed up with the 2 anglers from the morning. Got complete interviews.	SITE	204	START							
		DISPO**	7	STOP							
		HRS	3.25	DEPR	1425	PR					
5	<b>Stinson Beach</b>	41	ARRV	1430	BB	2	0				
	2 anglers starting right before finishing sampling. Unable to get incomplete interview.	SITE	205	START							
		DISPO**	1	STOP							
		HRS	0.50	DEPR	1500	PR					

PR & PC ONLY

Refusa + Barrier	Total Boats	Boats Salmon	Angs	Kept Kings	Rels Kings	Kept Coho	Rels Coho	Head Tags	Kept HALPA	Rels HALPA	Kept RFYEY	Rels RFYEY	Kept RFCOP	Rels RFCOP	Kept RFQIL	Rels RFQIL	Kept RFBK	Rels RFBK	ON	OFF

\*\*Site dispositions: 0=Effort check, 1=Complete, 4=Low Effort, 5=Other (comment), 7=Roving (MM, BB clusters)

# Assignment Summary Form Examples

## MM

RCVD ONBY: _____		EDIT ONBY: _____		SCAN ONBY: _____																			
ENTR ONBY: _____		UPLD ONBY: _____		FILE ONBY: _____																			
<b>CRFS ASSIGNMENT SUMMARY FORM</b>																							
Assn # <span style="float: left;">V16 04/19</span>																							
<b>1</b>	SAMPLER NAME: <b>Joe Sampler</b>		SAMPLER #	DATE (MM/DD/YY)	ASSN ID	MODE	PORT/ CLUS	HOURS	TOTAL														
			<b>187</b>	<b>11/18/25</b>	<b>114232</b>	<b>MM</b>	<b>SFO2</b>	<b>7.75</b>															
<b>COMMENTS</b>	OTHER SAMPLER(S): NAME & # (w/data)		OTHER SAMPLER(S): NAME & # (w/data)			<b>1</b>	ASSN DISP*	<b>7.25</b>	SAMPLING														
	(Y/N) circle one		(Y/N) circle one			<b>PV</b>	State Car or Pers Vehicle	<b>0.5</b>	TOT TRV														
	MARINE CONDITIONS: 3-4 foot swell, light winds, incoming tide					<b>190000</b>	ODO START	<b>0.25</b>	TRV TIME HD to site 1														
	EFFORT: Mostly perch anglers. Found at all sites, but most at the N. Jetty					<b>190050</b>	ODO STOP	<b>0.25</b>	TRV TIME last site to HQ														
	CATCH: Saw PRKMK and SMJAK. The rest were SPFAM					<b>50</b>	MILEAGE	<b>0</b>	EDIT														
	PC ACTIVITY:																						
	OTHER PERTINENT INFORMATION: Start Category = Early																						
	HEAD TAGS USED (PRPC):		HEAD TAGS USED (MMBB):																				
*Assignment dispositions: 1=Complete, 2=Reassigned, 6=Canceled						HQ Departure Time: <b>0745</b>		Site Effort Check (if applicable)		PR Trailer Counts													
Check box if continued on 2nd page <input type="checkbox"/>						HQ Return Time: <b>1530</b>																	
Row #	SITE NAME / SITE COMMENT							TIME															
<b>1</b>	<b>North Jetty Princeton Harbor</b>							CNTY	<b>81</b>	ARRV	<b>0800</b>	BB											
	Used binoculars to get counts at this site. Some crab only anglers that were not included in the counts.							SITE	<b>304</b>	START	<b>0810</b>	MM											
								DISPO**	<b>7</b>	STOP	<b>1034</b>	PR											
								HRS	<b>3</b>	DEPR	<b>1100</b>												
<b>2</b>	<b>Princeton Pier</b>							CNTY	<b>81</b>	ARRV	<b>1110</b>	BB											
	Low effort. 2 perch anglers.							SITE	<b>302</b>	START	<b>1115</b>	MM											
								DISPO**	<b>7</b>	STOP	<b>1230</b>	PR											
								HRS	<b>1.5</b>	DEPR	<b>1240</b>												
<b>3</b>	<b>South Jetty Princeton Harbor</b>							CNTY	<b>81</b>	ARRV	<b>1255</b>	BB											
	2 PRKMK caught and measured							SITE	<b>305</b>	START	<b>1300</b>	MM											
								DISPO**	<b>7</b>	STOP	<b>1415</b>	PR											
								HRS	<b>1.5</b>	DEPR	<b>1420</b>												
<b>4</b>	<b>North Jetty Princeton Harbor</b>							CNTY	<b>81</b>	ARRV	<b>1435</b>	BB											
	Went back to this site since it had the most effort							SITE	<b>304</b>	START	<b>1440</b>	MM											
								DISPO**	<b>1</b>	STOP	<b>1500</b>	PR											
								HRS	<b>0.75</b>	DEPR	<b>1515</b>												
<b>5</b>								CNTY		ARRV		BB											
								SITE		START		MM											
								DISPO**		STOP		PR											
								HRS		DEPR													
<b>PR &amp; PC ONLY</b>	Refusal + Barrie	Total Boats	Boats	Angs Salmon	Kept Kings	Relts Kings	Kept Coho	Relts Coho	Head Tags	Kept HALPA	Relts HALPA	Kept RFYEY	Relts RFYEY	Kept RFCOP	Relts RFCOP	Kept RFQIL	Relts RFQIL	Kept RFBK	Relts RFBK	ON	OFF		

# Assignment Summary Form Examples

## PCO – Reassigned

RCVD ONBY: _____		EDIT ONBY: _____		SCAN ONBY: _____											
ENTR ONBY: _____		UPLD ONBY: _____		FILE ONBY: _____											
Assn # V10 34912		<b>CRFS ASSIGNMENT SUMMARY FORM</b>													
<b>COMMENTS</b>	<b>1</b> SAMPLER NAME: <b>Joe Sampler</b>	SAMPLER #	DATE (MM/DD/YY)	ASSN ID	MODE	PORT/ CLUS	HOURS	TOTAL							
	OTHER SAMPLER(S): NAME & # (w/boat)	OTHER SAMPLER(S): NAME & # (w/boat)			2	ASSN DISP*	1	SAMPLING							
	(Y/N) circle one	(Y/N) circle one			PV	State Car or Pers Vehicle	0.5	TOT TRV							
	MARINE CONDITIONS: Foggy, strong winds, large swells				190000	ODO START	0.25	TRV TIME HQ to site 1							
	EFFORT: All boats targeting salmon				190050	ODO STOP	0.2	TRV TIME last site to HQ							
	CATCH:				50	MILEAGE	0	EDIT							
	PC ACTIVITY: Hulicat Docked. Port Lead Informed.														
	OTHER PERTINENT INFORMATION:														
	HEAD TAGS USED (PR/PC):	HEAD TAGS USED (MM/BB):													
	*Assignment dispositions: 1=Complete, 2=Reassigned, 6=Concealed Check box if continued on 2nd page <input type="checkbox"/>														
		HQ Departure Time: <b>0645</b>		Site Effort Check (if applicable)		PR Trailer Counts									
		HQ Return Time: <b>0816</b>				Onsite Start	Onsite Stop								
Row #	SITE NAME / SITE COMMENT	TIME				Onsite Start	Onsite Stop								
1	<b>Princeton PC</b> All boats targeting salmon, no non-salmon trips available for me to ride. Will need to reschedule the assignment. Hulicat says they were running a RFGEN trip I could sample next weekend	CNTY	<b>81</b>	ARRV	<b>0700</b>	BB									
		SITE	<b>400</b>	START		MM									
		DISPO**	<b>2</b>	STOP		PR									
		HRS	<b>1</b>	DEPR	<b>0800</b>										
2		CNTY		ARRV		BB									
		SITE		START		MM									
		DISPO**		STOP		PR									
		HRS		DEPR											
3		CNTY		ARRV		BB									
		SITE		START		MM									
		DISPO**		STOP		PR									
		HRS		DEPR											
4		CNTY		ARRV		BB									
		SITE		START		MM									
		DISPO**		STOP		PR									
		HRS		DEPR											
5		CNTY		ARRV		BB									
		SITE		START		MM									
		DISPO**		STOP		PR									
		HRS		DEPR											
<b>PR &amp; PC ONLY</b>	ReFuel + Baiter	Total Boats	Boats Salmon	Angs Kings	Kept Rels Kings	Kept Rels Coho	Head Tags	Kept Rels HALPA	Kept Rels RPYEY	Kept Rels RFCOP	Kept Rels RFQIL	Kept Rels RFBLK	ON	OFF	Missed
	**Site dispositions: 0=Effort check, 1=Complete, 4=Low Effort, 5=Other (comment), 7=Roaming (MM, BB clusters)														

# Assignment Summary Form Examples

## PCO – Completed

RCVD ONBY: \_\_\_\_\_ EDIT ONBY: \_\_\_\_\_ SCAN ONBY: \_\_\_\_\_  
 ENTR ONBY: \_\_\_\_\_ UPLD ONBY: \_\_\_\_\_ FILE ONBY: \_\_\_\_\_

**CRFS ASSIGNMENT SUMMARY FORM**

Assn #	1	SAMPLER NAME: <b>Joe Sampler</b>	SAMPLER #	DATE (MM/DD/YY)	ASSN ID	MODE	PORT/ CLUS	HOURS		
			<b>187</b>	<b>08/16/25</b>	<b>084603</b>	<b>PCO</b>	<b>PRI</b>	<b>8</b>	TOTAL	
COMMENTS	OTHER SAMPLER(S): NAME & # (w/data)		OTHER SAMPLER(S): NAME & # (w/data)			<b>1</b>	ASSN DISP*	<b>7.5</b>	SAMPLING	
	(Y/N) circle one		(Y/N) circle one			<b>PV</b>	State Car or Pers Vehicle	<b>0.5</b>	TOT TRV	
	MARINE CONDITIONS: 3-4 foot swells, light wind, light current, sunny									
	EFFORT: RFGEN and LNGCD						<b>190000</b>	ODO START	<b>0.25</b>	TRV TIME, HQ to site 1
	CATCH: Boat limits for RFGEN and LNGCD. One RFYEY released w/ DD						<b>190050</b>	ODO STOP	<b>0.25</b>	TRV TIME last site to HQ
PC ACTIVITY: Hulicat Docked. Port Lead informed						<b>50</b>	MILEAGE	<b>0</b>	EDIT	
OTHER PERTINENT INFORMATION:										
HEAD TAGS USED (PR/PC):						HEAD TAGS USED (MM/BB):				
*Assignment dispositions: 1=Complete, 2=Reassigned, 0=Canceled										
Check box if continued on 2nd page <input type="checkbox"/>						HQ Departure Time: <b>0600</b>	Site Effort Check (if applicable)		PR Trailer Counts	
						HQ Return Time: <b>1400</b>	Onsite Start	Onsite Stop	Offsite Stop	

Row #	SITE NAME / SITE COMMENT	TIME										PR Trailer Counts			
		CNTY	ARRV	0630	BB	0630	0630	0630	0630	0630	0630	0630	Onsite Start	Onsite Stop	Offsite Stop
1	<b>Princeton PC</b> Lots of undersized LNGCD released. One angler had a question regarding fisheries management I could not answer. I gave them the lead's card	<b>81</b>	ARRV	<b>0630</b>	BB										
		<b>400</b>	START		MM										
		<b>1</b>	STOP		PR										
		<b>7.5</b>	DEPR	<b>1330</b>											
2		CNTY	ARRV		BB										
		SITE	START		MM										
		DISPO**	STOP		PR										
		HRS	DEPR												
3		CNTY	ARRV		BB										
		SITE	START		MM										
		DISPO**	STOP		PR										
		HRS	DEPR												
4		CNTY	ARRV		BB										
		SITE	START		MM										
		DISPO**	STOP		PR										
		HRS	DEPR												
5		CNTY	ARRV		BB										
		SITE	START		MM										
		DISPO**	STOP		PR										
		HRS	DEPR												
<b>1 0 0 0 0 1 0 0 0 8 10 5 6</b>															

PR & PC ONLY	Refusal + Barrier	Total Boats	Boats Salmon	Angs	Kept Kings	Rels Coho	Kept Head Tags	Rels HALPA	Kept RFYEY	Rels RFOCW	Kept RFCAN	Rels RFBLK	ON Missed	OFF

\*\*Site dispositions: 0=Effort check, 1=Complete, 4=Low Effort, 5=Other (comment), 7=Roving (MM, BB clusters)





## **Beach and Bank (BB) Mode Sampling**

### **BB Mode Definition**

Beach and Bank mode (BB) is defined as a shore mode where recreational fishing occurs on beaches and/or banks. Beach is defined as the ocean shore made up of sand or pebbles, usually washed by high tide waters. Bank is defined as the slope of elevated land adjoining with the ocean or bay, can be rock or an overhanging cliff, and may be reinforced with materials placed there by humans. A beach or bank may be part of a nearshore area or a bay or estuary.

### **BB Survey Goal**

The primary goal for BB sampling is to estimate catch per unit of effort (CPUE) as catch per angler trip in this mode. CPUE is calculated by multiplying the catch per minute fished by the average trip length. Fishing effort is provided by the telephone survey. Other relevant data collected by the BB survey include area fished, gear type, target(s), and fish biological data. The Sampler's goal while on a BB assignment is to obtain as many high-quality interviews from as many BB anglers as possible.

### **BB Survey Methods**

In comparison to other modes of fishing sampled by CRFS, BB mode is sampled at a lower rate. BB sites are grouped into clusters. The Sampler will rove and sample all sites in a cluster assignment. The sites within a cluster are defined by a site list which will be provided by the Lead via the Monthly Schedule. The number of sites or if they are active/inactive may depend on the season and/or the geographic proximity among sites. The cluster/site list changes and is unique by month. It is important for Samplers to use the cluster/site list that matches the month of the sample selection.

The BB sample draw selects one assignment per BB cluster per month. Randomly, 2/3 of all the District's BB clusters are assigned to weekend days and 1/3 of the clusters are assigned to weekdays. BB effort is expected to be different for these separate kinds of days (KODs). Therefore, expect more BB assignments to be scheduled on weekends and holidays than on weekdays. The site list will designate the site labels (e.g. A, B, C...) for sites within a cluster. Sites within a cluster will be sampled in a predetermined order. The starting site will be randomly selected by the draw. The Sampler will begin their BB sample day by consulting the Monthly Schedule, which will provide the start time (early or late) and the first site to visit. Leads will set the times for early and late start times each month based on knowledge of the fisheries and the daylight hours available. The Sampler is to rove through the sites in a manner designated by the Lead. All of the BB sites are publicly accessible which allow Samplers to access them without problems.

### Example BB Clusters from Site List

DISTRICT	MONTH	CNTY	NAME	SITE	SITE LETTER	AMODE	CLUS
1	APR	37	Marine Stadium	215	A	BB	LOS1
1	APR	37	Pier J	201	B	BB	LOS1
1	APR	37	Cabrillo Beach	110	A	BB	LOS2
1	APR	37	Cherry Beach	402	B	BB	LOS2
1	APR	37	King Harbor	303	C	BB	LOS2
1	APR	37	Palos Verdes	211	A	BB	LOS3
1	APR	37	Royal Palms	206	B	BB	LOS3

The Sampler is to contact the Lead immediately if they cannot complete an assignment due to illness or emergency. For the proper implementation of statistical methods it is crucial that Samplers try to complete all assignments as scheduled. As with any mode, rescheduling of BB assignments is not desirable to the survey. If necessary, the Lead can reschedule a BB assignment. Leads will attempt to conserve the original KOD when rescheduling a BB assignment; however, the KOD may be changed if necessary.

Up to eight hours is allotted for each BB assignment. This includes travel time to and from the site to headquarters and should allow the Sampler to be on site for six to seven hours. Samplers are to avoid working over an eight hour day for BB assignments. BB angler (angler parties) interviews are completed on the CRFS Shore Form. The Sampler will obtain an estimate of total BB anglers for each site visit and record any fishing kayak or fishing personal watercraft activity at those sites. In addition, the Sampler may perform SECs at adjacent sites using the Assignment Summary Form and may also perform CPFV checks at adjacent PC sites using the PC Effort Check Form (PEC).

When a BB cluster is assigned, the Sampler will typically have to cover an extensive stretch of coast. The Sampler will move through the access points defined in the cluster, counting and/or canvassing any anglers they encounter. An access point is a pre-defined location within a BB site where the Sampler may access a beach/bank in an attempt to intercept anglers. Some BB sites have one access point while others have many access points. The Sampler may use a site map binder or the CRFS Wiki site for driving directions, site boundaries, and a list of access points. After visiting the first site in a cluster, the Sampler should move through the other sites looking for angler activity and keeping detailed data records. After the Sampler has visited all sites within the assigned cluster they may return to previously visited sites where they expect to obtain interviews. All of the sites within the assigned cluster must be visited in order for the assignment to be considered complete. The Sampler is to notify their Lead immediately if they are not able to complete a BB assignment by visiting all sites within your assigned BB cluster.

The general rule is for the Sampler to stay at a site where they expect to get one interview per hour. If they do not expect to obtain at least one interview

per hour, the Sampler should move to the next site in the cluster. In an effort to obtain as many valid and high-quality BB interviews as possible at a site, it may be necessary to stay at certain access points where there is high angler activity. Not all access points need to be visited unless there is no effort. The Sampler should take up a strategic position so they can intercept a majority of the anglers. If no such point exists, the Sampler should be positioned where the majority of the anglers are within sight and easily accessible. At crowded beaches, close observation of the fishing activity is required since the Sampler must be alert to those anglers leaving the site. In other instances, roving through access points by vehicle is the easiest way to spot and count anglers at a site. Each BB cluster is unique and the Sampler will be trained on the best way to sample any specific BB site.

### **BB Estimated Total Finfish Angler Counts**

An important aspect of BB sampling is obtaining estimated total finfish angler counts by site. The BB survey does not collect start, stop and instantaneous counts like for the MM survey. Since BB sites are vast and angler effort tends to be low, CRFS only needs an overall estimate of the number of finfish anglers participating in BB mode while you are there sampling a site. Since BB sites are divided up into access points, the Sampler may not know the estimated total of finfish anglers until the last access point has been checked. A good way for the Sampler to perform this estimated count is to keep a running tally of BB anglers while moving through all access points. The Sampler should also keep note of any arriving BB anglers.

For BB estimated total angler counts the Sampler is to count finfish anglers only. A finfish angler is defined as an angler that has wet gear hours and has or is targeting finfish during the survey day or has the immediate intent to finfish. This includes anglers taking a break, re-baiting or moving between locations within the site. Invertebrate-only anglers are NOT included in BB angler counts. If an angler is moving back and forth between a BB and a MM, they should be included in the BB Estimated Total Finfish Anglers Count. The Sampler should try not to double count or miss anglers behind bluffs or obstructions. Oftentimes it is difficult to determine the number of anglers on a long open beach so the Sampler should use binoculars and their best judgment. If it is difficult or dangerous to walk on a beach or bank, it is recommended to count finfish anglers using binoculars. The Sampler is to pay attention to site boundaries and only count BB anglers at that specific BB site. It is important for the Sampler to remember this is just an estimate. Times are not associated with any BB counts.

### **Canvassing**

A useful tactic for sampling in BB mode is to complete a preliminary canvass to determine the number and location of anglers at a site and a rough approximation of the duration of their trips. With this information the Sampler is able to maximize intercept coverage by planning their movements around those of the anglers. It may give the Sampler a good indication of when to stay onsite and when to move to the next site in the cluster.

### **Incomplete BB trips**

While complete-trip interviews are preferred, BB mode sampling protocol allows Samplers to interview anglers who have not yet completed their fishing trips. Anglers must have fished for at least 60 minutes to be eligible for a CRFS interview in BB mode. Unlike MM mode, anglers in BB mode do not have to be more than halfway done with their fishing trip to be interviewed. Incomplete-trip interviews are allowed in an effort to get as much BB data as possible; normally this mode has lower effort than other modes and it has historically been a challenge to get an adequate number of BB interviews per assignment. The Sampler may get incomplete-trip interviews at any time while working a BB assignment.

Question	Answer
What if an angler is done fishing but did not fish for 60 minutes?	They are considered a complete trip and should be interviewed.

Before getting an incomplete-trip interview, the Sampler is to canvass the angler(s) to determine if they should stay on site to get the interview or return to the site later. After visiting all sites in a cluster, the Sampler may encounter the same angler(s) again upon return to that site. When this happens, the Sampler is to attempt to update the interview. The Sampler should update the interview by copying the relevant information onto the Shore Form for the most recent visit to the site and deleting the interview from the Shore Form for the previous visit to the site.

Do not conduct incomplete trip interviews of anglers targeting invertebrates only without any incidental finfish bycatch. Refusals and Barriers should not be recorded for incomplete trips.

### **Low Effort Protocol**

The general sampling guideline for clusters is to strive to obtain at least one interview per hour. If the Sampler cannot do such, they are to move to the next site in the cluster, return to a previous site in the cluster if they have gone through all sites, or terminate the assignment. If there is low effort at a BB site, the Sampler is to canvass the angler(s). The Sampler may decide to wait for anglers to complete their trip. The Sampler 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 six sample hours. Other reasons to leave the assignment early would be if the site is unsafe, darkness, or extreme weather conditions.

### **No Anglers in BB Mode**

The ASF and Shore Form header information, estimated BB angler counts and times, must be completed for each visit to a site even if there are no finfish anglers present. After determining there are no BB anglers at the first site, the Sampler will go immediately to the next nearest site in the cluster. If no anglers are present at the next site, the Sampler will go immediately to the next nearest site. The Sampler is to keep searching for anglers by roving through sites and access points for up to two hours. If the Sampler does not

find any BB anglers after roving through all sites in the cluster and two hours of sampling time has passed and no effort seems likely to develop, the Sampler may terminate the assignment; the assignment is complete. While waiting for effort to develop or anglers to complete their trip at an assigned mode and site, the Sampler may sample in PC mode opportunistically if this mode exists at the site.

### **Observed PR Accessed from BB**

Fishing kayaks, and personal watercrafts (PWCs) are considered PR mode and may not be interviewed while you are sampling a BB. However, CRFS is interested in documenting where kayak and PWC-based angling activity takes place. Determining kayak angler launch sites can be difficult. In an effort to gather as much data on kayak fishing activity as possible, the Sampler will keep track of the number of fishing kayaks launched from the BB shore. These data will be used to determine if the creation of additional PR2 sites is warranted. The Sampler is to use discretion on the intended target based on visual observations and make the determination to include kayak and PWC anglers in the count only if it believed finfish is either the primary or secondary target.

### **Anglers Fishing in Two Modes**

When interviewing an angler who has been fishing in two different modes (i.e. BB mode and MM mode), ask the angler where they have spent most of their time fishing. The angler is eligible for an interview if they have spent more than half of their fishing trip in the BB mode. The Sampler will collect only the information which pertains to the angler's time on the BB, i.e. catch, target(s), gear, area. The angler is ineligible for an interview if they have spent less than half of their time fishing in the BB mode.

To accurately portray the angler's time fishing in the BB mode, the Sampler will need to adjust the angler's arrival time. The Sampler will ask the angler how long they spent fishing at the BB and will calculate the angler's arrival time by taking the interview time and subtracting the angler's total time fishing in BB mode to create the estimated arrival time.

### **Opportunistic PC Sampling**

It is possible to sample PC boats during BB sampling. For instance, the Sampler may encounter PC boats at beaches next to a PR site or PC landing. However, the Sampler may not leave the site or miss any BB interviews to complete an opportunistic PC sample.

### **Screening Divers**

The Sampler is to be aware that divers at a beach or bank may be targeting finfish. If a diver used or intended to use a spear gun, they can be interviewed as eligible anglers (gear = S). Divers entering the water from the BB shore using fins and a flotation device (such as a dive tube) to fish are considered BB anglers. Spearfishers using kayaks or personal watercraft are PR anglers and may not be interviewed while the Sampler is sampling a BB assignment.

## **Invertebrate Sampling in BB Mode**

The goal of BB sampling is to collect as much information on finfish catch and an estimate of the total number of anglers fishing at each site. However, on beach and bank assignments it is possible for the Sampler to find anglers targeting invertebrates. The Sampler must be aware of invertebrate-only anglers to avoid including these anglers in the BB estimated total finfish angler counts and the observed PR accessed from BB counts.

Sometimes the Sampler may find an angler targeting both finfish and invertebrates. These anglers, of course, qualify for a CRFS interview and are included in the effort count. For the invertebrate component of the catch the Sampler will record all retained invertebrates as kept unobserved – do not count or collect biological data from retained invertebrates. Anglers targeting invertebrates only could have incidental catch of finfish; in this case record UNIFH as the secondary target. Beach and bank anglers targeting invertebrates only without incidental finfish bycatch are not included in the survey and will not be interviewed.

## **Two BB Assignments in One Day**

Rarely a Sampler will be given two BB assignments on the same day. The Lead should specify which assignment to work first. 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.

## **Ways to Reduce Bias**

Some ways to reduce potential bias in the BB sample include:

- BB anglers may fish during incoming tides, however the Sampler should not introduce bias into the survey by only interviewing anglers during that time period.
- Samplers should be sure to check all access points, not just the most frequently used, or the most easily accessible.

## **CRFS BB Mode Questionnaire**

The wording of the questions (i.e. script) has been structured to capture the required information for this survey in an efficient and thorough manner. A laminated copy of the BB questionnaire will be provided. It is important that the Sampler use the wording of questions as stated in the BB script since slight changes in wording can result in different responses. The Sampler will be canvassing, screening, introducing the survey, and providing the Privacy Act information. After screening for angler-eligibility, the Sampler will introduce the survey to the angler(s) to be sampled by saying:

**SCREENING: Have you fished from a beach or bank in saltwater today?**

Yes: Go to the next question.

No: If not complete but fished for at least 60 minutes, go to next

No: If not complete and have not fished for at least 60 minutes = Ineligible; stop interview.

Refused: Code Sample # as R, record the number of anglers in the group, terminate interview. Only code R/B if the trip was complete, otherwise leave blank.

**“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 about your fishing trip?”**

The Sampler will state the Privacy Act by 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.”**

**ANGS Total: How many of you had gear in the water?**

Enter the total number of anglers that fished together. Go to next.

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 without a current California sport fishing license. Go to next.

Refused: Code R in (unlic) and continue the interview.

**TRIP LENGTH: At what time did you arrive at the fishing site today?**

Enter the time in 24 hr format when the angler reported arriving at the site. Go to next.

Refused: Code Sample # as R, terminate interview.

If incomplete trip but fished for **AT LEAST** 60 minutes: **How many additional hours and minutes do you plan to fish here today?**

Enter the number of additional hours and minutes the angler intends to fish. Go to next.

Refused: Leave blank, terminate interview.

**ZIP CODE:** Ask a random angler in the group. **What is the ZIP code of your residence?** If ZIP unknown, ask: **What city or town do you live in?**

Refused: Code R, Don't know: Code DK

Sampler didn't ask: Code DA

Non U.S. resident: Code Foreign Country

**PRIMARY TARGET: What type of fish were you primarily trying to catch?** Code the taxon of the angler's primary target.

Anything: Code UNIFH

Refused: Code Sample # as R, terminate interview.

**SECONDARY TARGET: What type of fish were you secondarily trying to catch?** Code the taxon of the angler's secondary target.

Anything: Code UNIFH

No secondary target: Leave blank

**EFFORT AREA: Was your <primary target> fishing in the ocean or enclosed bay/estuary/harbor?**

Nearshore (< 3 miles): Code N

Bay/Estuary/Harbor: Code B. Be aware of freshwater cutoffs.

Refused: Sampler will determine and code appropriately

**EFFORT AREA: Was your <secondary target> fishing in the ocean or enclosed bay/estuary/harbor?**

Nearshore (< 3 miles): Code N

Bay/Estuary/Harbor: Code B. Be aware of freshwater cutoffs.

Refused: Sampler will determine and code appropriately

**GEAR: What gear type did you use for <primary target>?**

**Finfish**

Hook & Line: Code H

Spear: Code S

Bait Net: Code N

**Shellfish**

Pot #: Code Pn

Flat Hoop Net #: Code Fn

Rigid Hoop Net #: Code Rn

Snare: Code E

SCUBA: Code C

Free Diving: Code D

**GEAR: What gear did you use for <secondary target>?**

**Finfish**

Hook & Line: Code H

Spear: Code S

Bait Net: Code N

**Shellfish**

Pot #: Code Pn

Flat Hoop Net #: Code Fn

Rigid Hoop Net #: Code Rn

Snare: Code E

SCUBA: Code C

Free Diving: Code D

**SPECIES CODE: Did you catch any fish today?**

Yes: Record 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.

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 all fish as Kept Unobserved.

Filletts: If filletts can't be ID'ed by skin, enter zero and code numbers of Kept Unobserved.

Refused to let you see fish or tell you the types and numbers of fish kept (i.e., kept unobserved): Code Sample # as R, terminate interview.

**KEPT UNOBSERVED: Did you retain any other fish?** Probe for any fish given away, filleted, used for bait or thrown away.

Yes: Record species and number of fish.

No: Enter zeroes in Kept Unobserved boxes for all Kept Observed species recorded.

Refused: Code Sample # as R, terminate interview.

Don't Know: Code Sample # as R, terminate interview.

**RELEASED ALIVE: Were any fish released alive?** Probe for any fish that were purposely released alive (swam away).

Yes: Record species and number of fish.

No: Enter zeroes in Released Alive Total boxes for all Kept Observed or Unobserved species recorded.

Refused: Code Sample # as R, terminate interview.

Don't Know: Code Sample # as R, terminate interview.

**RELEASED DEAD: Were any fish released dead?** Probe for any fish that were thrown back dead (did not swim away).

Yes: Record species and number of fish.

No: Enter zeroes 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.

**BIO DATA: May I measure your kept fish today?**

**FORK LENGTH (MM) SEX (M/F/T):** Enter the fork length in millimeters of each fish measured above the dotted line. 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 below the length in place of the weight. If the salmon head is lost or refused write NRS after the tag number. For collected yelloweye rockfish and white seabass, enter a length and weight and put the head tag number or scan code to the right of the measurements. Circle salmon and yelloweye head tag numbers.

### **Shore Form Procedures for BB Mode**

This section describes specific procedures for the BB survey using the Shore Form. The Shore Form is used for shore modes only (MM and BB).

### **Numbering the Visits, Interviews and Shore Form Pages**

Each BB site visited should be recorded on the ASF in the order visited. The Sampler must start a new Shore Form page when they arrive at a site. The

first interview at a site will be “1” and all other interviews at that site, during that visit will be numbered sequentially. At the next site, the Sampler must start a new Shore Form page and begin renumbering interviews with “1” again. If the same site is visited more than one time in a day, a new page will be used for each visit, and the Sampler must start with interview “1” at each visit. An example is shown below.

First site in the cluster

- Site 1 on ASF
- Start a new Shore Form page
- Number interviews sequentially starting with 1

Second site in the cluster

- Site 2 on ASF
- Start a new Shore Form page
- Number interviews sequentially starting with 1

Third and last site in the cluster

- Site 3 on ASF
- Start a new Shore Form page
- Number interviews sequentially starting with 1

Return to site 2

- Site 4 on ASF
- Start a new Shore Form page
- Number interviews sequentially starting with 1

Shore Form page numbers will start at “1” and be numbered sequentially for the entire assignment.

## **Shore Form Layout**

The Shore Form is used for both BB and MM cluster assignments. The Shore Form allows for one angler or a group of anglers (angler-group) to be interviewed at one time. It is preferred to interview individual anglers, unless their catch is grouped together and cannot be separated. Angler-group data are recorded in rows (angler-rows) with specific data items arranged by columns. The Shore Form divides each angler-row into three main sections: Effort, Catch, and Bio Data. These sections, along with the header and footer are explained below. Each angler-row has two sub-rows to record two observations for each item in some columns. Catch and Bio Data may span multiple rows and sub-rows as needed to code additional species, fish counts, and measurements. An angler-group may be continued on the next page.

## **Header Items**

The Shore Form header identifies the type of shore mode, assignment, date of the assignment, and the site, cluster and sampler completing the assignment. These items are required for each page header, on all sheets used in the assignment.

The second part of the header is divided into an MM section and a BB section. For BB mode, the MM items are left blank. The BB items include estimated total finfish angler count and observed PR accessed from BB count. This count includes any fin-fishing kayak or personal water craft (PWC) that launched from the beach and bank site.

**CRFS SHORE FORM**

MM BB V13\_02032022

For Assignment, Page \_\_\_\_ of \_\_\_\_

ASSN ID	Site Visit of	Date (MM/DD/YY)	CNTY	SITE	SITE NAME	CLUSTER	Sampler #	Sampler Last Name
<b>MM COUNTS</b> (inst. at least every 1.5 hr)		Start	Inst #1	Inst #2	Inst #3	Inst #4	Inst #5	Stop
Time Count Began								
Finfish Anglers								
		<b>BB</b>		Total Observed Anglers		OBS PR Accessed From BB		

**Effort Items**

Individual (or group) angler data fields include sample number, time, total anglers, unlicensed anglers, arrival time, additional time, zip code, primary and secondary target species, and water area and gear (for each target).

**EFFORT**

SAMPLE # [or R or B]	ANGS Total (unlic)	TRIP LENGTH		Zip Code	TARGET		AREA	GEAR
		Arrival Time	Additional Time hrs   min		1st	2nd		
Time		time						
A	( )	ADD-hrs	ADD-min	zip				

**Catch Items**

Catch data recorded include any species caught, number of fish by species examined (kept obs), number of fish by species landed unavailable (kept unobs), number of fish by species released alive, and number of fish by species released dead.

**Biological Data Collection**

For each fish examined, lengths, weights and sex when appropriate are recorded in the bio data section. Also head tag numbers for specimens collected (salmon, White Seabass, Yelloweye Rockfish) are recorded here. There are no required items in the Bio Data section. However, it is important to gather as much finfish biological data (length, weight and sex) as possible.

SPECIES CODE	CATCH		BIO DATA				
	KEPT	RELS	Fork length/Carapace size (mm), Sex (M/F/T)				
	obs	alive	Weight (decimal kg) or tag #				
	unobs	dead	1	2	3	4	5
	obs	alive					
	unobs	dead					

**Shore Form Item by Item Instructions (BB Mode)**

Field Name	Instructions	Coding Examples and Formats
HEADER		
<input type="checkbox"/> MM <input type="checkbox"/> BB	Check the box for the assigned survey mode listed in the column AMODE of the Monthly Schedule. Only required to check the box on the first page of the assignment.	<del>X</del> BB
Page ___ of ___	Enter in sequence the page number of the form and the total number of pages for the assignment. Enter page info on all pages.	Example: Page 2 of 7
ASSN ID	Enter the six digit assignment ID number on all pages. The ASSN ID is listed on the Monthly Schedule and is unique to each CRFS assignment.	ASSN ID is in the format MMDNNN where MM is the calendar month ranging from 01-12; D is the CRFS District from 1-6; NNN is the sequence numbers generated by the draw from 101 to 999 where the first N digit is the mode: 1=BB 2=MM 3=PR2 4=PR1 generated by the draw 5=PR1 generated by OSP 6=PCO 7=PCD 9=Opportunistic PCD  Example: 076103 is from July, District 6, a BB assn, third assn randomly chosen by the draw

<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
Date	Enter the date the assignment was completed on all pages.	Format is MM/DD/YY Example: 07/01/17 = July 1, 2017
CNTY	Enter the 3 digit numeric county code. Must be entered on all pages. County codes are listed on the Site List.	Example: 053 = Monterey County
SITE	Enter the 3 digit numeric site code. Must be entered on all pages. Site codes are listed on the Site List.	Example: 205 = Zmudowski State Beach
SITE NAME	Enter the correct name of the BB site which can be found on the Site List. Must be entered on all pages.	Example: Zmudowski State Beach
CLUSTER	Enter the Cluster code/name which can be found on the Site List. Must be entered on all pages.	Example: CEN5 This is the fifth BB cluster in Central District (District 3)
Sampler #	Enter your 3 digit numeric Sampler identification number on all pages.	Example: 207 = Jayna Da Silva
Sampler Last Name	Write your last name completely and legibly on all pages.	Example: Da Silva
<b>MM COUNTS</b>		
Time Count Began – Start	Leave blank for BB.	
Finfish Anglers – Start	Leave blank for BB.	
Time Count Began – Inst #1-5	Leave blank for BB.	
Finfish Anglers – Inst #1-5	Leave blank for BB.	
Time Count Began – Stop	Leave blank for BB.	
Finfish Anglers – Stop	Leave blank for BB.	

Field Name	Instructions	Coding Examples and Formats
BB Estimated Total Finfish Anglers	Enter the total estimated finfish anglers present at the site while you are there. Tally and sum all the anglers at each access point and add any additional anglers who start fishing.	Example: 3 = three BB finfish anglers
OBS PR Accessed From BB	Enter the total number of fin fishing kayaks or personal watercraft (PWC) that accessed the ocean from the BB site you are sampling. Kayak or PWC anglers may not be interviewed as they are PR mode.	Example: 3 = three fin fishing kayaks were observed on site
<b>EFFORT</b>		
SAMPLE # [or R or B]	<p>Record BB sample numbers in consecutive order starting with 1 for every angler or angler-groups interviewed during a visit to a site.</p> <p>Refusals: anglers who refuse to participate and who are done fishing, record an R without a sample number.</p> <p>Barriers: anglers who cannot participate due to a language barrier and are done fishing, record a B without a sample number.</p>	<p>Sample # = 1, meaning the first interview collected at that site during that visit</p> <p>Refusal = R Language Barrier = B</p> <p>Sample flags: T = tournament Record a T after the sample number if the anglers are part of a fishing tournament</p> <p>Example: 3T = the third interview at the site and the angler(s) participated in a fishing tournament</p>
Time	Enter the time for each interview attempted. Refusals	Format is military time (24-hr format)

Field Name	Instructions	Coding Examples and Formats
	and barriers should have a time recorded.	Example: 1730 = 5:30 pm
ANGS Total	<p>Enter the total number of anglers who contributed to the bag of the interview you are conducting.</p> <p>Refusals and Barriers: Count the number of angler(s) in the group and report that number. Terminate the interview.</p>	<p>Example: 3 = three anglers contributed to the bag</p> <p>Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview; include the total number of anglers</p>
ANGS (unlic)	<p>Enter the number of anglers out of the total contributors to the bag who do NOT have a current CA fishing license.</p> <p>Note that “unlicensed anglers” field is a subset of the total anglers, therefore unlicensed ≤ total anglers.</p>	<p>Example: 0 = All anglers in the bag were licensed</p> <p>Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview</p> <p>This is not a required field for MM sampling; it is required for BB sampling</p>
Arrival Time	Enter the time that the angler(s) in the bag arrived at the site.	<p>Format is military time (24-hr format). Example: 1730 = 5:30 pm</p> <p>Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview</p>
Additional Time – ADD-hrs	Enter the number of whole hours that the angler(s) in the bag plan to continue to fish.	Complete-trip: 0, meaning they have no additional hours and are done fishing for the day

Field Name	Instructions	Coding Examples and Formats
	Note: for an incomplete BB interview to be considered valid, the angler(s) must have been fishing for at least 60 minutes.	<p>Incomplete trip example: 2, means they intend to fish for 2 more hours</p> <p>Refused or Barrier: Leave blank and terminate the interview</p>
Additional Time – ADD-min	Enter the number of whole minutes that the angler(s) in the bag plan to continue to fish.	<p>Complete-trip: 0, meaning they have no additional minutes and are done fishing for the day</p> <p>Incomplete trip example: 30, means they intend to fish for 30 more minutes</p> <p>Refused or Barrier: Leave blank and terminate the interview.</p>
Zip Code	Record the five digit numeric zip code residence of the angler, or a random angler contributing to the bag.	<p>Example: 90210 = Beverly Hills</p> <p>Refused = R</p> <p>Don't know = DK</p> <p>Sampler didn't ask = DA</p> <p>Foreign Country = use the 3 letter country code; Example: Ireland = FIE</p>
TARGET – 1 <sup>st</sup>	Record the five letter species code of the primary target sought for the angler, or group of anglers. Anglers who do not have a specific target may be coded to unidentified fish.	<p>Example: LNGCD = targeting lingcod</p> <p>UNIFH = "Anything" target or unspecified target.</p> <p>Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview.</p>
TARGET – 2 <sup>nd</sup>	Record the five letter species code of the secondary target sought for the angler,	<p>Example: ABALO = targeting abalone</p>

Field Name	Instructions	Coding Examples and Formats
	or group of anglers. You may need to probe for secondary targets. However, a secondary target is not required, may leave blank.	Blank = no secondary target
AREA	Record the water area where the majority of fishing effort occurred by primary and secondary target.	N = Nearshore (Ocean < 3 miles out)  B = Enclosed bay, estuary, or harbor
GEAR	Record the fishing gear type used by primary and secondary target.	H = Hook and line S = Spear N = Bait net  Invert gear only: Pn = Pot and number of pots used Fn = Flat hoop net and number of nets used Rn = Rigid hoop net and number of nets used E = Snare C = SCUBA diving (by hand) D = Free diving (by hand) Unspecified invert. gear (shovel, rake, gun, etc.)- leave blank and make a note on form.
<b>CATCH</b>		
SPECIES	Record the five letter species code for each species or taxon caught. Use additional rows for angler-bags with multiple catch species.	Example: HALCA = California halibut  NOCATCH = nothing was caught  Refused or Barrier: Code an R or B in the Sample # field,

Field Name	Instructions	Coding Examples and Formats
KEPT obs	Enter the whole number of fish by species that were retained in the bag by the angler(s) and examined by the Sampler. Only fish/inverts that the Sampler is able to see and count are recorded here. May include fillets that can be counted and identified to species. Fillets that can't be identified to species should be recorded in kept unobs. Make a note on the form confirming when overlimits are recorded.	<p>respectively, and terminate the interview</p> <p>Example: 5 = five specimens of this species were examined and counted</p> <p>0 = no catch of any species examined for this bag</p> <p>Refused: Try to get angler-reported catch if no fish are allowed to be examined</p> <p>Barrier: Record a B in the Sample # field and terminate the interview</p>
KEPT unobs	Enter the number of fish by species that were retained in the bag by the angler(s) but not examined by the Sampler. This includes any fish/inverts that the Sampler is not able to see, identify, or count. This includes fish given away, packed away on ice, thrown away, fillets that are not identifiable or countable, or used for bait. Probe for catch that may not be remembered such as bait species. Make a note on the form confirming when	<p>Example: 5 = five specimens of this species were reported by the angler as kept</p> <p>0 = no unavailable catch of any species for this bag</p> <p>Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview</p>

Field Name	Instructions	Coding Examples and Formats
	overlimits are recorded.	
RELS alive	Enter the whole number of fish by species reported as released alive by the angler(s) contributing to this bag. This includes fish released with and without a descending device. Fish must have been landed and intentionally released. Probe for catch that may not be remembered. "Alive" means the fish was not dead upon release, did not have significant wounds, and swam away after release.	<p>Example: 3 = three specimens of this species were reported by the angler as released with no mortal injuries</p> <p>0 = no fish released alive</p> <p>Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview</p>
RELS dead	Enter the whole number of fish by species reported as released dead by the angler(s) contributing to this bag. Fish must have been landed and intentionally released. Probe for catch that may not be remembered. "Dead" means the fish was not moving upon release, had significant wounds, and could not swim away after release.	<p>Example: 2 = two specimens of this species were reported by the angler as released with mortal injuries, were floating, and/or unable to swim away</p> <p>0 = no fish released dead</p> <p>Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview</p>
<b>BIO DATA</b>		
Fork length (mm),  Sex (M/F/T)	In the top box, enter the catch species' fork length.	<p>Example: 321 = 321 mm fork length.</p> <p>If no length can be obtained, leave blank</p> <p>F = female</p>

Field Name	Instructions	Coding Examples and Formats
	<p>Record M, F, or T after the length for sexed species.</p> <p>Do not collect lengths from salmonids with an intact adipose fin.</p> <p>Make a note on the form confirming when sublegal fish are recorded.</p>	<p>M = male T = transitional If no sex can be obtained, omit sex</p> <p>Example: 443F = the fish was 443 mm and a female</p>
Weight (decimal kg) or Tag#	<p>In the box below the length, enter the catch species' weight in kg. Do not weigh filleted, beheaded, or gutted fish. You may weigh bled fish</p> <p>For salmon, enter the 5 digit numeric headtag number below the length in place of the weight and circle the tag number. Do not weigh the salmon</p>	<p>Example: 5.3 = 5.3 kg weight If no weight can be obtained, leave blank</p> <p>Example: (12345) = tagged salmon where head was collected</p>



## **Man-Made Structure (MM) Mode Sampling**

### **MM Mode Definition**

Man-made mode is defined as a human-made structure where recreational fishing occurs. Man-made (MM) structures include piers, jetties, bridges, docks or other similar structures.

### **MM Survey Goals**

The primary goals for MM sampling are to estimate catch per unit of effort (CPUE) as catch per angler trip and fishing effort as the number of angler trips. CPUE is derived from counts of fish by species and catch type (sampler observed kept, and angler reported kept, released alive and released dead) and from the number of anglers in the interviewed fishing parties. Fishing effort is based on the counts of anglers while on site and the duration of the fishing trip for each angling party. Other relevant data collected by the MM survey include area fished, gear type, target(s), fish length and weight measurements. The goal of the Sampler while on an MM assignment is to obtain as many high-quality interviews from as many MM anglers as possible and to obtain accurate counts of anglers fishing for finfish.

### **MM Survey Methods**

MM sites are grouped into clusters. The number of sites in a cluster will vary but the Sampler must visit all sites within the cluster for the assignment to be considered complete. The sites within a cluster are defined by a site list which will be provided by the Lead via the Monthly Schedule. The number of sites or if they are active/inactive may depend on the season and/or the geographic proximity among sites. The cluster/site list changes and is unique by month. The Sampler is to use the cluster/site list that matches the month of the sample selection included in the monthly schedule.

The MM sample draw takes into consideration the overall effort of the MM cluster. Clusters with high effort have a higher probability of being drawn for sampling than those with lower effort. Not all MM clusters will be sampled every month. The site list will designate the site labels (e.g. A, B, C...) for sites within a cluster. Sites within a cluster will be sampled in a predetermined order. The starting site will be randomly selected by the draw program. A Sampler will begin their MM sample day by consulting the Monthly Schedule, which will provide the start time (early or late) and the first site to visit. Leads will set the times for early and late start times each month based on knowledge of the fisheries and the daylight hours available. The Sampler is to rove through the sites in alphabetical order or in a manner designated by the Lead. All of the MM sites are public access sites so you should be able to access them without problems.

## Example MM Clusters from Site List

DISTRICT	AMODE	CLUS	SUBSITE	TMODE	CNTY	SITE	MONTH	YEAR	NAME
5	MM	WIN3	A	MM	45	204	3	2014	Fort Bragg
5	MM	WIN3	B	MM	45	103	3	2014	Point Arena
6	MM	RED2	A	MM	23	211	3	2014	South Spit
6	MM	RED2	B	MM	23	105	3	2014	King Salmon: Rock Fingers
6	MM	RED2	C	MM	23	305	3	2014	Del Norte St Pier
6	MM	RED4	A	MM	23	307	3	2014	Trinidad Pier
6	MM	RED4	B	MM	23	210	3	2014	North Jetty Eureka
6	MM	RED6	A	MM	15	300	3	2014	North Jetty Crescent City
6	MM	RED6	B	MM	15	314	3	2014	B Street Pier
6	MM	RED6	C	MM	15	302	3	2014	Citizen's Dock
6	MM	RED6	D	MM	15	303	3	2014	South Jetty Crescent City

The Sampler is to contact the Lead immediately if they cannot complete an assignment due to illness or an emergency. For the proper implementation of statistical methods, it is crucial for statistical methods that Samplers try to complete all assignments as scheduled. As with any mode, rescheduling of MM assignments is not desirable to the survey. If necessary, the Lead can reschedule an MM assignment. Leads must conserve the effort category, kind of day (KOD), start time and cluster order when rescheduling MM assignments – if there are no available KODs during the remainder of the month the Lead will cancel the assignment.

Up to eight hours is allotted for each MM assignment. This includes travel time to and from the site to your headquarters and should allow the Sampler to be on site for six to seven hours. A Sampler is to try and avoid working over an eight-hour day for MM assignments. Interviews of MM anglers (or angler parties) are recorded on the CRFS Shore Form. The Sampler will obtain accurate start, stop and instantaneous counts of finfish anglers while onsite. In addition, the Sampler may perform pressure checks at adjacent sites using the Assignment Summary Form and may also perform CPFV checks at adjacent PC sites using the PC Effort Check Form (PEC).

The Sampler may use a site map binder or the CRFS Wiki site for driving directions and site boundaries. After visiting the first site in the cluster, the Sampler should move through the assigned order of sites looking for angler activity and keeping detailed data records. After visiting all sites in the prescribed order for the MM cluster, the Sampler may return to any previous sites where they expect to obtain interviews. All of the sites within a cluster must be visited in order for the assignment to be considered complete. A Sampler is to notify the Lead immediately if they are not able to complete an MM assignment by visiting all sites within the assigned MM cluster.

The general rule is to stay at a site where it is expected to get one interview per hour. If the Sampler does not expect to obtain at least one interview per hour, they should move to the next site in the cluster. In an effort to obtain as many valid and high-quality MM interviews as possible, it may be necessary to stay at certain sites where there is high angler activity. The Sampler should take up a strategic position so they can intercept a majority of the anglers. Samplers are to avoid surveying only at cleaning stations on wharfs or piers

as this will bias data towards successful anglers. Close observation of fishing activity is required, especially at crowded piers where the Sampler must be alert to any anglers leaving the site. Each MM cluster is unique and new Samplers will be trained on the best way to sample any specific MM site.

### **MM Angler Counts**

An important aspect of MM sampling is obtaining accurate counts of finfish anglers by site. The survey uses start, stop and instantaneous counts to collect effort data. A start count is performed upon your initial arrival to the site. Instantaneous counts are done while on site; the Sampler will stop actively sampling and conduct a count. These angler counts may not happen instantly; they may take from a few minutes to half an hour to complete (depending on the size of the site). Instantaneous counts must be completed every 1.5 hours or less while onsite. Finally, a stop count is conducted when sampling ceases but before incomplete-trip interviews are attempted. Do not interview anglers while conducting start, instantaneous, or stop counts.

For MM angler counts the Sampler is to count finfish anglers only. A finfish angler is defined as an angler that has wet gear hours and has or is targeting finfish during the survey day or has the immediate intent to finfish. This includes anglers taking a break, re-baiting or moving between locations within the site. Invertebrate-only anglers are NOT included in MM angler counts. The Sampler should begin their count at one end of the MM structure and work their way to the other end, counting anglers as they go. Start, stop and instantaneous counts should be conducted in a consistent manner and direction for the entire time onsite. The starting point of a count can vary between sites depending on site logistics. The Sampler should consider the length and shape of the MM structure when deciding the most efficient starting point for their counts. It is important for the Sampler to try not to double count or miss anglers behind obstructions. Oftentimes it is difficult to determine the number of anglers when there are multiple fishing rods so the Sampler must use their best judgment. If it is too difficult or dangerous to walk on a jetty or other structure, it is recommended to count finfish anglers using binoculars. The Sampler will use local knowledge and their discretion to determine the activity of those inaccessible anglers and only count anglers believed to be targeting finfish. The Sampler is to write a note on the ASF with the count of anglers and the proportion that you used. The time the angler count began is always recorded on the ASF and in the header of the Shore Form.

### **Canvassing**

A useful tactic for sampling in MM mode is to complete a preliminary canvass to determine the number and location of anglers at a site and a rough approximation of the duration of their trips. With this information the Sampler is able to maximize intercept coverage by planning their movements around those of the anglers. It may give the Sampler a good indication of when to stay onsite and when to move to the next site in the cluster.

## **Anglers Fishing in Two Modes**

When interviewing an angler who has been fishing in two different modes (i.e. BB mode and MM mode), ask the angler where they have spent most of their time fishing. The angler is eligible for an interview if they have spent more than half of their fishing trip in the MM mode. The Sampler will collect only the information which pertains to the angler's time on the MM, i.e. catch, target(s), gear, area. The angler is ineligible for an interview if they have spent less than half of their time fishing in the MM mode.

To accurately portray the angler's time fishing in the MM mode, the Sampler will need to adjust the angler's arrival time. The Sampler will ask the angler how long they spent fishing on the MM and will calculate the angler's arrival time by taking the interview time and subtracting the angler's total time fishing in MM mode to create the estimated arrival time.

When completing instantaneous start or stop counts, if the angler is fishing on the MM during the time of your count, include them in the count. If they are not fishing on the MM during the instantaneous count they are NOT included. Do not adjust counts if the angler reports they have spent most of their time fishing in another mode.

## **Incomplete MM trips**

While complete-trip interviews are preferred, MM mode sampling protocol allows the Sampler to interview anglers who have not yet completed their fishing trips. Incomplete trips should only be conducted for anglers targeting finfish. Anglers in MM mode must be at least halfway done with their fishing trip to be interviewed. If an angler finishes their trip while a sampler is in the process of conducting incomplete interviews that angler is still eligible to be interviewed. Incomplete-trips are allowed in an effort to get as much MM data as possible. Incomplete-trips are adjusted based on the catch rates for the time fished to account for additional fishing time. Incomplete trip interviews must be conducted AFTER the stop count. Do not record Refusals and Barriers of incomplete trips.

Before getting an incomplete-trip interview, canvass the angler(s) to determine if the Sampler should stay on site to get the interview or return to the site later. The Sampler may encounter the same angler(s) again if you return to the site after visiting all other sites in the cluster. When this happens, the Sampler is to attempt to update the interview. The Sampler should update the interview by copying the relevant information onto the Shore Form for the current visit to the site and deleting the interview from the Shore Form for the previous visit to the site. Do not conduct incomplete-trip interviews of invertebrate-only anglers without incidental finfish bycatch.

## **Low Effort Protocol**

The general sampling guideline for clusters is to strive to obtain at least one interview per hour. If the Sampler cannot do such, they are to move to the next site in the cluster, then return to a previous site in the cluster if they have gone through all sites, or terminate the assignment. If there is low effort at a MM site, the Sampler is to canvass the angler(s) and determine the duration of their trip. The Sampler may decide to wait for them to complete their trip.

The Sampler should continue to rove from site to site in the cluster in order until the day's fishing activity has ceased or the Sampler has worked to the limit of six sample hours. Other reasons to leave the assignment early would be if the site is unsafe, darkness, or extreme weather conditions.

### **No Anglers in MM Mode**

The ASF and Shore Form header information, start/stop counts, and times must be completed for each visit to a site, even if there are no finfish anglers present. After determining there are no MM anglers at the first site, the Sampler should go immediately to the next site in the order. If no anglers are present at the next site, the Sampler should go immediately to the next site in the order. The Sampler is to keep searching for anglers by roving through sites for up to two hours. If the Sampler does not find any MM anglers after roving through all sites in order and two hours of sampling time has passed and effort does not seem likely to develop, they may terminate the assignment; the assignment is complete. Knowing that the cluster had zero effort for that day is important.

### **Opportunistic PC Sampling**

It is possible to sample PC boats during MM sampling. For instance, the Sampler may encounter PC boats at large piers. However, they may not leave the site or miss any MM interviews to complete an opportunistic PC sample.

### **Screening Divers**

The Sampler is to be aware that divers at a dock, pier or jetty may be fishing. If a diver used or intended to use a spear gun, they can be interviewed as eligible anglers (gear = S). Divers entering the water from the MM structure using fins and a flotation device (such as a dive tube) to fish are considered MM anglers. Spearfishers using kayaks or personal watercraft are PR anglers and may not be interviewed while the Sampler is sampling a MM assignment.

### **Invertebrate Sampling in MM Mode**

The goal of MM sampling is to collect information on finfish effort and catch. However, man-made structures are often found to be popular places for anglers to target invertebrates. The Sampler must be aware of invertebrate-only anglers to avoid including them in their MM angler counts. Especially on man-made structures it can be difficult to determine fishing targets since at first glance it can appear the anglers are using the hook and line gear type. It is common for invertebrate gear to be fitted on a standard fishing pole, which can make it easy for the Sampler to miscount the angler as targeting finfish. Therefore, the Sampler should pay attention to what anglers are reeling in or ask their intended target.

Sometimes the Sampler may find an angler targeting both finfish and invertebrates. These anglers, of course, qualify for a CRFS interview and are included in the effort count. For the invertebrate component of the catch the Sampler will record all retained invertebrates as kept unobserved – do

not count or collect biological data from retained invertebrates. Anglers targeting invertebrates only could have incidental catch of finfish; in this case record UNIFH as the secondary target. The Sampler should not miss interviews of finfish anglers while sampling anglers with invertebrate only targets. Do not interview invertebrate only anglers after the stop count (incomplete trip interviews).

### **CRFS MM Mode Questionnaire**

The wording of the questions (i.e. script) has been structured to capture the required information for this survey in an efficient and thorough manner. You will be provided with a laminated copy of the MM questionnaire. It is important that you use the wording of questions as stated in the MM script since slight changes in wording can result in different responses. You will be canvassing, screening, introducing the survey, and providing the Privacy Act information. After screening for angler-eligibility you will introduce the survey to the angler(s) to be sampled by saying:

**SCREENING: Have you completed a saltwater sport fin-fishing trip today?**

Yes: Go to next.

No: If after the stop count and has completed at least 50% of the anticipated fishing trip, go to next

No: If not complete and not at least 50% done with the trip after the stop count = Ineligible; stop interview.

Refused: Code Sample # as R, record the number of anglers in the group, terminate interview. Only record R/B if the trip was complete.

**“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 about your fishing trip?”**

The Sampler will state the Privacy Act by 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.”**

**ANGS Total: How many of you had gear in the water?**

Enter the total number of anglers that fished together. Go to next.

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 without a current California sport fishing license. Go to next.

Refused: Code R in (unlic) and continue interview

**TRIP LENGTH: At what time did you arrive at the fishing site today?**

Enter the time in 24 hr format when the angler reported arriving at the site. Go to next.

Refused: Code Sample # as R, terminate interview.

If incomplete-trip but fished for **at least 50%: How many additional hours and minutes do you plan to fish here today?**

Enter the number of additional hours and minutes the angler intends to fish. Go to next.

Refused: Leave blank, terminate the interview.

ZIP CODE: Ask a random angler in the group. **What is the ZIP code of your residence?** If ZIP unknown, ask **What city or town do you live in?**

Refused: Code R, Don't know: Code DK

Sampler didn't ask: Code DA

Non-U.S. resident: Code Foreign Country

PRIMARY TARGET: **What type of fish were you primarily trying to catch?** Code the taxon of the angler's primary target.

Anything: Code UNIFH

Refused: Code Sample # as R, terminate interview.

SECONDARY TARGET: **What type of fish were you secondarily trying to catch?** Code the taxon of the angler's secondary target.

Anything: Code UNIFH

No secondary target: Leave blank

EFFORT AREA: **Was your <primary target> fishing in the ocean or enclosed bay/estuary/harbor?**

Nearshore (< 3 miles): Code N

Bay/Estuary/Harbor: Code B. Be aware of freshwater cutoffs.

Refused: Code Sample # as R, terminate interview

EFFORT AREA: **Was your <secondary target> fishing in the ocean or enclosed bay/estuary/harbor?**

Nearshore (< 3 miles): Code N

Bay/Estuary/Harbor: Code B. Be aware of freshwater cutoffs.

Refused: Code Sample # as R, terminate interview

GEAR: **What gear type did you use for <primary target>?**

**Finfish**

Hook & Line: Code H

Spear: Code S

Bait Net: Code N

**Shellfish**

Pot #: Code Pn

Flat Hoop Net #: Code Fn

Rigid Hoop Net #: Code Rn

Snare: Code E

SCUBA: Code C

Free Diving: Code D

GEAR: **What gear did you use for <secondary target>?**

**Finfish**

Hook & Line: Code H

Spear: Code S

Bait Net: Code N

**Shellfish**

Pot #: Code Pn

Flat Hoop Net #: Code Fn

Rigid Hoop Net #: Code Rn

Snare: Code E

SCUBA: Code C

Free Diving: Code D

SPECIES CODE: **Did you catch any fish today?**

Yes: Record 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.

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 all fish as Kept Unobserved.

Filletts: If filletts can't be IDed by skin, enter zero and code numbers of Kept Unobserved.

Refused to let you see fish or tell you the types and numbers of fish kept (i.e., kept unobserved): Code Sample # as R, terminate interview.

KEPT UNOBSERVED: **Did you retain any other fish?** Probe for any fish given away, filleted, used for bait or thrown away.

Yes: Record species and number of fish.

No: Enter zeroes in Kept Unobserved boxes for all Kept Observed species recorded.

Refused: Code Sample # as R, terminate interview.

Don't Know: Code Sample # as R, terminate interview.

RELEASED ALIVE: **Were any fish released alive?** Probe for any fish that were purposely released alive (swam away).

Yes: Record species and number of fish.

No: Enter zeroes in Released Alive Total boxes for all Kept Observed or Unobserved species recorded.

Refused: Code Sample # as R, terminate interview.

Don't Know: Code Sample # as R, terminate interview.

RELEASED DEAD: **Were any fish released dead?** Probe for any fish that were thrown back dead (did not swim away).

Yes: Record species and number of fish.

No: Enter zeroes 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.

### BIO DATA: **May I measure your kept fish today?**

FORK LENGTH (MM) SEX (M/F/T): Enter the fork length in millimeters of each fish measured above the dotted line. 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 below the length in place of the weight. If the salmon head is lost or refused write NRS after the tag number. For collected Yelloweye Rockfish and White Seabass, enter a length and weight and put the head tag number or scan code to the right of the measurements. Circle salmon and yelloweye head tag numbers.

### **Shore Form Procedures for MM Mode**

This section describes specific procedures for MM surveys using the Shore Form. The Shore Form is used for shore modes only (MM and BB).

### **Numbering the Visits, Interviews and Shore Form Pages**

Each MM site visited should be recorded on the ASF in the order visited. The Sampler must start a new Shore Form page when they arrive at a site. The first interview at a site will be "1" and all other interviews at that site will be numbered sequentially. At the next site, the Sampler must start a new Shore Form page and begin renumbering interviews with "1" again. If the Sampler visits the same site more than one time in a day, a new page will still be used for each visit, and the interview numbering will start with "1" at each visit. An example is shown below.

First site in the cluster

- Site 1 on ASF
- Start a new Shore Form page
- Number interviews sequentially starting with 1

Second site in the cluster

- Site 2 on ASF
- Start a new Shore Form page
- Number interviews sequentially starting with 1

Third and last site in the cluster

- Site 3 on ASF
- Start a new Shore Form page
- Number interviews sequentially starting with 1

Return to site 2

- Site 4 on ASF
- Start a new Shore Form page

- Number interviews sequentially starting with 1

Shore Form page numbers will start at “1” and be numbered sequentially for the entire assignment.

**Shore Form Layout**

The Shore Form is used for both BB and MM cluster assignments. The Shore Form allows for one angler or a group of anglers (angler-group) to be interviewed at one time. It is preferred to interview individual anglers, unless their catch is grouped together and cannot be separated. Angler-group data are recorded in rows (angler-rows) with specific data items arranged by columns. The Shore Form divides each angler-row into three main sections: Effort, Catch, and Bio Data. These sections, along with the header and footer are explained below. Each angler-row has two sub-rows to record two observations for each item in some columns. Catch and Bio Data may span multiple rows and sub-rows as needed to code additional species, fish counts, and measurements. An angler-group may be continued on the next page.

**Header Items**

The Shore Form header identifies the type of shore mode, assignment ID, number, number of sites visited, date of the assignment, county, site, cluster, and Sampler completing the assignment. These items are required for each page header, on all sheets used in the assignment.

The second part of the header is divided into an MM Counts section and a BB Counts section. For MM mode, the BB items are left blank. The MM items include angler counts and the times each count was conducted.

CRFS SHORE FORM  MM  BB V13\_02032022 For Assignment, Page \_\_\_\_ of \_\_\_\_

ASSN ID	Site Visited of	Date (MM/DD/YY)	CNTY	SITE	SITE NAME	CLUSTER	Sampler #	Sampler Last Name
MM COUNTS (inst. at least every 1.5 hr)		Start	Inst #1	Inst #2	Inst #3	Inst #4	Inst #5	Stop
Time Count Began								
Finfish Anglers								
BB Total Observed Anglers								
OBS PR Accessed From BB								

**Effort Items**

Individual (or group) angler data fields include sample number, time, total anglers, unlicensed anglers, arrival time, additional time, zip code, primary and secondary target species, and water area and gear (for each target).

**EFFORT**

SAMPLE # [or R or B]	ANGS Total (unlic)	TRIP LENGTH		Zip Code	TARGET		AREA	GEAR
		Arrival Time	Additional Time		1st	2nd		
Time		hrs	min					
		time						
	( )	ADD-hrs	ADD-min	zip				

**Catch Items**

Catch data recorded include any species caught, number of fish by species examined (kept obs), number of fish by species landed unavailable (kept unobs), number of fish by species released alive, number of fish by species released dead.

**Biological Data Collection**

For each fish examined, lengths, weights and sex when appropriate are recorded in the bio data section. Also head tag numbers for specimens collected (salmon, White Seabass, Yelloweye Rockfish) are recorded here. There are no required items in the Bio Data section. However, it is important to gather as much biological data (length, weight and sex) as possible.

CATCH			BIO DATA				
SPECIES CODE	KEPT	RELS	Fork length/Carapace size (mm), Sex (M/F/T)				
	obs	alive	Weight (decimal kg) or tag #				
	unobs	dead	1	2	3	4	5
	obs	alive					
	unobs	dead					

**Shore Form Item by Item Instructions (MM Mode)**

Field Name	Instructions	Coding Examples and Formats
<b>HEADER</b>		
<input type="checkbox"/> MM <input type="checkbox"/> BB	Check the box for the assigned survey mode listed in the column AMODE of the Monthly Schedule.	<input checked="" type="checkbox"/> MM
Page ___ of ___	Enter in sequence the page number of the form and the total number of pages for the assignment. Enter page info on all pages.	Example: Page 2 of 7
ASSN ID	Enter the six digit assignment ID number on all pages. The ASSN ID is listed on the Monthly Schedule and is unique to each CRFS assignment.	ASSN ID is in the format MMDNNN where MM is the calendar month ranging from 01-12; D is the CRFS District from 1-6; NNN is the sequence numbers generated by the draw from 101 to 999 where

Field Name	Instructions	Coding Examples and Formats
		<p>the first N digit is the mode:            1=BB            2=MM            3=PR2            4=PR1 generated by the draw            5=PR1 generated by OSP            6=PCO            7=PCD            9=Opportunistic PCD</p> <p>Example: 076203 is from July, District 6, a MM assn, third assn randomly chosen by the draw</p>
Site Visit ___ of ___	<p>Each site sampled in the cluster requires a new Shore Form and a unique Site Visit number, starting with 1.</p> <p>Enter in chronological order the Site Visit number and the total number of site visits for the cluster. Enter Site Visit info on all pages.</p>	<p>(Visit #) of (Total Site Visits in cluster assn)</p> <p>Site Visit <u>3</u> of <u>6</u></p>
Date	Enter the date the assignment was completed on all pages.	Format is MM/DD/YY Example: 07/01/15 = July 1, 2015
CNTY	Enter the 3 digit numeric county code. Must be entered on all pages. County codes are listed on the Site List.	Example: 023 = Humboldt County
SITE	Enter the 3 digit numeric site code. Must be entered on all pages. Site codes are listed on the Site List.	Example: 211 = South Spit

<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
SITE NAME	Enter the correct name of the MM site which can be found on the Site List. Must be entered on all pages.	Example: South Spit
CLUSTER	Enter the Cluster code/name which can be found on the Site List. Must be entered on all pages.	Example: RED3 This is the third MM cluster in Redwood District (District 6)
Sampler #	Enter your 3 digit numeric Sampler identification number on all pages.	Example: 301 = Marc Heisdorf
Sampler Last Name	Write your last name completely and legibly on all pages.	Example: Heisdorf
<b>MM COUNTS</b>		
Time Count Began – Start	Enter the time in which you begin the MM start count.	Format is military time (24-hr format). Example: 1300 = 1:00 pm
Finfish Anglers – Start	Enter the number of finfish anglers at the site. Omit invert-only anglers from the count.	Enter positive whole number of anglers. Example: 3 = three MM finfish anglers
Time Count Began – Inst #1	Enter the time in which you begin the first instantaneous count. This should be done within 1.5 hrs of the start count.	Format is military time (24-hr format). Example: 1430 = 2:30 pm
Finfish Anglers – Inst #1	Enter the number of finfish anglers at the site. Omit invert-only anglers from the count. Instantaneous counts are not required if you leave the site 1.5 hours or less after arriving; in this case there would only be a start and stop count.	Enter positive whole number of anglers. Example: 6 = six MM finfish anglers

Field Name	Instructions	Coding Examples and Formats
Time Count Began – Inst #2	Enter the time in which you begin the second instantaneous count. This should be done within 1.5 hrs of the previous count.	Format is military time (24-hr format) Example: 1600 = 4:00 pm
Finfish Anglers – Inst #2	Enter the number of finfish anglers at the site. Omit invert-only anglers from the count. Instantaneous counts are not required if you leave the site 1.5 hours after arriving; in this case there would only be a start and stop count.	Enter positive whole number of anglers Example: 8 = eight MM finfish anglers
Time Count Began – Inst #3, Time Count Began – Inst #4, Time Count Began – Inst #5	Continue entering times for each instantaneous count until you are ready to leave the site by doing a stop count (see below).	Format is military time (24-hr format) Example: 1730 = 5:30 pm
Finfish Anglers – Inst #3, Finfish Anglers – Inst #4, Finfish Anglers – Inst #5	Continue entering the number of finfish anglers for each instantaneous count until you are ready to leave the site by doing a stop count (see below).	Enter positive whole number of anglers Example: 0 = zero MM finfish anglers
Time Count Began – Stop	Enter the time in which you begin the MM stop count.	Format is military time (24-hr format). Example: 1800 = 6:00 pm
Finfish Anglers – Stop	Enter the number of finfish anglers at the site. Omit invert-only anglers from the count.	Enter positive whole number of anglers Example: 0 = zero MM finfish anglers
BB Estimated Total Finfish Anglers	Leave blank for MM sampling.	
OBS PR Accessed From BB	Leave blank for MM sampling.	

Field Name	Instructions	Coding Examples and Formats
<b>EFFORT</b>		
SAMPLE # [or R or B]	<p>Record MM sample numbers in consecutive order starting with 1 for every angler or angler-groups interviewed during a visit to a site.</p> <p>Refusals: anglers who refuse to participate, record an R without a sample number.</p> <p>Barriers: anglers who cannot participate due to a language barrier, record a B without a sample number.</p>	<p>Sample # = 1, meaning the first interview collected at that site during that visit</p> <p>Refusal = R Language Barrier = B</p> <p>Sample flags: T = tournament Record a T after the sample number if the anglers are part of a fishing tournament Example: 3T = the third interview at the site and the angler(s) participated in a fishing tournament</p>
Time	Enter the time stamp for each interview attempted. Refusals and barriers should get a time.	Format is military time (24-hr format) Example: 1730 = 5:30 pm
ANGS Total	<p>Enter the total number of anglers who contributed to the bag of the interview you are conducting.</p> <p>Refusals and Barriers: Count the number of angler(s) in the group and report that number. Terminate the interview.</p>	<p>Example: 3 = three anglers contributed to the bag</p> <p>Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview</p>
ANGS (unlic)	Enter the number of anglers out of the total contributors to the bag that do NOT have a current CA fishing license.	<p>Example: 0 = All anglers in the bag were licensed</p> <p>Refused or Barrier: Code an R or B in the Sample # field,</p>

Field Name	Instructions	Coding Examples and Formats
	<p>Note that “unlicensed anglers” field is a subset of the total anglers, therefore unlicensed ≤ total anglers.</p>	<p>respectively, and terminate the interview</p> <p>This is not a required field for MM sampling; it is required for BB sampling</p>
Arrival Time	<p>Enter the time that the angler(s) in the bag arrived at the site.</p>	<p>Format is military time (24-hr format). Example: 1730 = 5:30 pm</p> <p>Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview</p>
Additional Time – ADD-hrs	<p>Enter the number of whole hours that the angler(s) in the bag plan to continue to fish.</p> <p>Note: for an incomplete MM interview to be considered valid, the angler(s) must have completed at least 50% of the fishing trip at the time of the interview</p>	<p>Complete-trip: 0, meaning they have no additional hours and are done fishing for the day</p> <p>Incomplete trip example: 2, means they intend to fish for 2 more hours</p> <p>Refused or Barrier: terminate the interview and leave the sample blank</p>
Additional Time – ADD-min	<p>Enter the number of whole minutes that the angler(s) in the bag plan to continue to fish.</p>	<p>Complete-trip: 0, meaning they have no additional minutes and are done fishing for the day</p> <p>Incomplete trip example: 30, means they intend to fish for 30 more minutes Refused or Barrier: \ Terminate the</p>

Field Name	Instructions	Coding Examples and Formats
		interview and leave the sample blank
Zip Code	Record the five digit numeric zip code residence of the angler, or a random angler contributing to the bag.	Example: 90210 = Beverly Hills Refused = R Don't know = DK Sampler didn't ask = DA Foreign Country = use the 3 letter country code; Example: Ireland = FIE
TARGET – 1 <sup>st</sup>	Record the five letter species code of the primary target sought for the angler, or group of anglers. Anglers who do not have a specific target may be coded to unidentified fish.	Example: LNGCD = targeting lingcod UNIFH = "Anything" target or unspecified target  Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview
TARGET – 2 <sup>nd</sup>	Record the five letter species code of the secondary target sought for the angler, or group of anglers. You may need to probe for secondary targets. However, a secondary target is not required, may leave blank.	Example: ABALO = targeting abalone  Blank = no secondary target
AREA	Record the water area where the majority of fishing effort occurred by primary and secondary target.  Note that the AREA of fishing effort and the species catch location may differ.	N = Nearshore (Ocean < 3 miles out)  B = Enclosed bay, estuary, or harbor  Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview

Field Name	Instructions	Coding Examples and Formats
GEAR	Record the fishing gear type used by primary and secondary target.	<p>H = Hook and line  S = Spear  N = Bait net</p> <p>Invert gear only:  Pn = Pot and number of pots used  Fn = Flat hoop net and number of nets used  Rn = Rigid hoop net and number of nets used  E = Snare  C = SCUBA diving (by hand)  D = Free diving (by hand)  Unspecified invert. gear (shovel, rake, gun, etc.) – leave blank and make note on form</p>
<b>CATCH</b>		
SPECIES	Record the five letter species code for each species or taxon caught. Use additional rows for angler-bags with multiple catch species.	<p>Example: HALCA = California Halibut</p> <p>NOCATCH = nothing was caught</p> <p>Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview</p>
KEPT obs	Enter the whole number of fish by species that were retained in the bag by the angler(s) and examined by the Sampler. Only fish/inverts that the Sampler is able to see and count are recorded here. May include fillets that can be counted and	<p>Example: 5 = five specimens of this species were examined and counted</p> <p>0 = no catch of any species examined for this bag</p> <p>Refused: Try to get angler-reported catch if no fish are allowed to be examined</p>

Field Name	Instructions	Coding Examples and Formats
	<p>identified to species. Fillets that can't be identified to species should be recorded in kept unobs. Make a note on the form confirming when overlimits are recorded</p>	<p>Barrier: Record a B in the Sample # field and terminate the interview</p>
KEPT unobs	<p>Enter the whole number of fish by species that were retained in the bag by the angler(s) but not examined by the Sampler. This includes and fish/inverts that the Sampler is not able to see, identify, or count. This includes fish given away, packed away on ice, thrown away, fillets that are not identifiable or countable, or used for bait. Probe for catch that may not be remembered such as bait species. Make a note on the form confirming when overlimits are recorded.</p>	<p>Example: 5 = five specimens of this species were reported by the angler as kept</p> <p>0 = no unavailable catch of any species for this bag</p> <p>Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview</p>
RELS alive	<p>Enter the whole number of fish by species reported as released alive by the angler(s) contributing to this bag. This includes fish released with and without a descending device. Fish must have been landed and intentionally released. Probe for catch that</p>	<p>Example: 3 = three specimens of this species were reported by the angler as released with no mortal injuries</p> <p>0 = no fish released alive</p> <p>Refused or Barrier: Code an R or B in the</p>



Field Name	Instructions	Coding Examples and Formats
Weight (decimal kg) or Tag#	<p>In the box below the length, enter the catch species' weight in kg. Do not weight filleted, beheaded, or gutted fish. You may weigh bled fish.</p> <p>For salmon, enter the 5 digit numeric headtag number below the length in place of the weight and circle the tag number.</p>	<p>Example: 5.3 = 5.3 kg weight. If no weight can be obtained, leave blank.</p> <p>Example: 12345 ⇒ tagged salmon where head was collected</p> <p>Do not weight salmon</p>

# Shore Form Example (MM Mode)

For Assignment, Page 2 of 6

**CRFS SHORE FORM**  MM  BB  BB

ASSN ID: 113202 Date (MM/DD/YYYY): 11/29/2023 CNTY: 111 SITE: 307 **SITE NAME:** Pt. Hueneeme East Jetty **CLUSTER:** CHS3 **SAMPLER #:** 206 **SAMPLER LAST NAME:** Smith

**MM COUNTS (inst. at least every 1.5 hr):** **Start** 0758 **Inst #1** 0928 **Inst #2** 1055 **Inst #3**  **Inst #4**  **Inst #5**  **Stop** 1225

**Time Count Began** 0758 **Finfish Anglers** 11 19 24 **BB Total Observed Anglers**  **OBS PR Accessed From BB**

SAMPLE # (for R or B)	ANGS Total (units)	TRIP LENGTH Arrival Time Additional Time hrs min	Zip Code	TARGET		AREA	GEAR	SPECIES CODE	KEPT RELS		BIO DATA								
				1st	2nd				obs	alive	obs	1	2	3	4	5			
1	1	0600 time	93033	SPFAM	N	H	No Catch	0	0										
A 0824	(1)	00 AED-hrs ADD-min		CROWT	N	H		0	0										
2	1	0745 time	93031	UNIFH	N	H	MACPA	0	0										
B 0854	(0)	00 AED-hrs ADD-min		CRBGN	N	F2		5	0										
B	3	time																	
C 0926	( )	AED-hrs ADD-min																	
3	1	0830 time	93017	CRBDG	N	E	CRBRR	1	0										
D 1008	(0)	00 AED-hrs ADD-min						0	0										
4	2	0700 time	93013	MACPA	N	H	SPWAL	8	0										
E 1016	(2)	00 AED-hrs ADD-min		SPFAM	N	H		0	0										
F	( )	time						X	X										
	( )	AED-hrs ADD-min						X	X										
G	( )	time						1	0										
	( )	AED-hrs ADD-min						0	0										
5	1	0700 time	93021	UNIFH	N	H	SPEAR	0	1										
H 1251	(0)	2 15 AED-hrs ADD-min						0	0										

**Site Visit of:** (Visit #) of (Total Site Visits in cluster #) **SAMPLE #:** # of interview, OR Refusal, Language Barrier **Sample # Flag:** Tournament

**TRIP LENGTH:** Sample as many completed trips as possible. **MM:** valid incomplete trip; trip at least 50% completed. **BB:** valid incomplete trip; angler/party fished at least 60 minutes

**Arrival Time:** Record the time the angler(s) arrived at the site.

**Additional Time:** Incomplete trips; record angler's estimate of additional time at the site in hours & minutes. Complete trips; record zero in the ADD-hrs & ADD-min boxes.

**WATER AREA:** Nearshore (<3mi), enclosed Bay/estuary/harbor **GEAR:** Hook & line, Spear, Bat Net **Invert gear only:** Pot #, Flat # or Rigid # hoop net, snare, sCuba, free Dive

## Primary Private and Rental Boat (PR1) Mode Sampling

### Introduction

Although all fishing modes are sampled, CRFS puts more emphasis on fishing from boats, where the majority of managed fish species are caught compared to 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. The publicly accessible sites where private and rental boats launch are stratified into primary sites (PR1) and secondary sites (PR2). To divide sites into the two strata (PR1 and PR2), data for “important management species” were analyzed separately for sites north and south of Point Conception. Important management species were defined as those with active fishery management plans and include salmon, groundfish (e.g., rockfishes, Lingcod, Cabezon, California Scorpionfish, flatfishes, and some sharks and rays), highly migratory species (tunas, billfishes, Dolphinfish, and certain oceanic sharks), and species in the California Nearshore Fishery Management Plan.

**PR1 sites are defined as publicly accessible launch facilities (e.g., launch ramps, hoists, beach tractors, rental shops) where at least 90 percent of fishing effort and catch of “important management species” by private or rental boats occurs.** The PR1 survey estimates total effort and catch for each individual primary site and month. The data from this survey, the secondary survey (PR2) and the telephone survey of licensed anglers (ALDTS for night and private access fishing) is used to make total private and rental boat (PR) effort and catch estimates for the CRFS program. The sampling procedures for PR1 and PR2 are similar, and the same forms will be used for both PR1 and PR2. Differences in the sampling procedures for the two strata are listed in the table below.

### Differences between PR1 and PR2 sampling procedures.

Sampling Procedure	PR1	PR2
Time on site when trailers present	From the return of the first boat until the last boat returns or sunset (whichever is first)	Up to 8 hours, including travel time
Scheduled start time	Lead will assign a start time	Early or late start as defined by Lead each month
Count boats launching	No	Yes
Count offsite missed boats	Counted at some PR sites	No

## PR1 GOALS

The primary goals for PR assignments are to:

- ✓ Obtain accurate counts of the boats and anglers using the site
- ✓ Obtain high quality interviews and catch data
- ✓ Observe all kept salmon
- ✓ Collect heads of all adipose fin-clipped salmon

### Effort Data

The goal is to estimate total fishing effort for the day. This is done by counting trailers and returning boats and determining the number of anglers on each fishing boat. 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 PR1 sample site. Effort is expanded to account for weekend (and holidays) and weekday days not sampled (the remaining 80%). The effort estimate is calculated in angler trips by target fishery group.

### Catch Data

An additional goal is to estimate catch per angler-trip. Catch per angler-trip is determined by counting the number of each species that is kept and recording the number of each species that are reported as released or otherwise unavailable to examine. Estimation of effort and estimation of catch per angler-trip are each calculated for a PR1 site, month, kind of day (weekend/weekday), water area, and trip type (target). Effort is calculated as the total number of anglers sampled during the time period, adjusted for un-sampled anglers, and expanded for the total available weekend or weekdays per month. Catch rate per angler-trip is calculated from the sum of catch recorded from sampled anglers divided by the total sampled anglers. Total catch is the product of estimated effort and estimated catch rate.

### Observe Kept Salmon

Another goal of PR1 sampling is to observe all kept salmon for adipose fin-clipped fish and head removal of adipose fin-clipped fish 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. Ideally, CRFS Samplers will not miss any boats at PR1 sites during salmon season.

### Location of Catch Data

Another 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 average depths of their catch. The data is used to apply depth-based mortality estimates to some released species and summarize the catch estimates in depth ranges and by 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.

### **Biological Data Collection**

Another goal is to sample lengths and weights of landed catch. Lengths will be used in a regression to calculate a predicted weight for fish without a sampled weight, and to examine the size distribution of the landings. Sampled weights are used to calculate average weights by species. These average weights are multiplied by estimated total catch by species in numbers of fish to estimate total catch in metric tons. Metric ton estimates are used to evaluate catch quotas and the rebuilding status of some distressed species. Numbers of fish for quotas and evaluating status of ESA listed stocks is used in salmon management. Note: do not measure or weigh non-adipose fin-clipped salmon; only adipose fin-clipped fish need to be measured for fork length, prior to head removal. Salmon are managed in numbers of fish, and not by weight.

### **Sample Selection**

Sampling days are selected each month with a set number of weekdays and weekends/holidays based on sample rate objectives. Weekends and holidays are scheduled separately from weekdays. PR1 samples are selected to ensure statistically valid estimates of fishery catch and angler effort, and representative sampling of salmon CWTs. Assignments are scheduled one to two weeks before the first of the month. During ocean salmon season, CDFW's Ocean Salmon Project (OSP) creates the PR1 schedule for those Districts with salmon effort. OSP's sampling schedule is additionally stratified by half-month periods to ensure representative CWT recovery.

### **Scheduling**

The Lead will schedule the random selection of days for sampling for each month in advance. PR1 sites are sampled on several days per month by kind of day. The two kinds of days are weekends/holidays and weekdays. Effort and catch rate are expected to be different for these kinds of days. Rescheduling PR1 days will reduce the statistical validity of the random selection of samples and should be avoided. If it is necessary, the Leads will reschedule and observed the originally scheduled kind of day. 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, contact the lead for direction if zero trailers are present during the start count. Samplers should expect an erratic schedule as PR1 sites can have varying effort dependent on the fishing seasons, ocean conditions, etc.

## **PR1 SURVEY PROCEDURES**

### **Effort Data Collection**

During salmon season, the primary goal is to determine the activity, i.e. effort, of every boat returning to the site that day. A specific set of data must be collected for every boat that returns to the PR1 site for a robust sample. For

every boat intercepted the intercept time, number of anglers (licensed and unlicensed), and the target(s) (species or activity) should be recorded. For non-fishing (NF) boats (recreational or commercial activity type), record the specific non-fishing activity as the primary target. See Non-Fishing (NF) Boat Types.

Boats targeting invertebrates are sampled as well, just like finfish boats, regardless of whether they had finfish bycatch. See the Species Sampling Chapter for more information on invertebrate trips.

### **Arrival and Trailer Counts**

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 scheduled by the Lead. 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 PR1 site, and a Sampler is present when the last boat returns or sunset. The Lead may schedule arrival times, or they may leave it up to the Samplers to arrange among themselves.

Trailer counts are used to estimate effort for the day. A starting trailer count will be conducted upon arrival of the first Sampler. All boats returning to the site during sampling hours will be intercepted. A final trailer count will be conducted upon departure of the last Sampler. Counts of "trailers" include traditional boat 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. See the Summary of PR Trailer Counts table on page 10-42 for more information. Trailer counts are not conducted at some PR1 sites (CRD and TRD, for example). Some PR1 sites have buddy sites that are not sampled, but trailer counts are still conducted. These counts are used to determine effort and catch rates are assumed to be the same as the sampled PR1 site. These counts are considered offsite trailer counts.

### **Low Effort Protocol**

If after arrival the first Sampler determines that fishing effort for the day is low, the Sampler will follow the low effort protocols (with regard to additional Samplers assigned to the site) provided by the Lead, which may vary by District. If there is known/suspected finfish effort, the Sampler will remain until the last boat returns or sunset.

### **No Boats in PR1 Mode**

Occasionally, a PR1 site may have no effort, due to weather, etc. If the first Sampler to arrive determines that the start count is zero, the Sampler should notify any other Samplers assigned to the site that day that they will not be needed, and stay on site for a minimum of two hours to see if effort develops. If no effort develops after two hours, the assignment will be considered complete.

### **Sub-Sampling**

The goal of CRFS is to produce high quality data for both catch and effort. Typically, Leads schedule enough Samplers to sample every boat, especially during salmon season. Sub-sampling during salmon season should not occur. During salmon season it might be necessary to skip the collection of biological data on non-salmon boats in order to sample all salmon boats. When salmon fishing is closed, sub-sampling boats can become a necessity to retain the collection of high-quality catch data. It is OK to miss a boat to observe catch and collect biological data for CRFS priority species. Boats should not be canvassed for target to determine if they are to be missed.

### **Onsite Missed Boats**

Avoid missing boats at the PR1. If a boat is completely missed while sampling other boats, it is considered an onsite missed boat. Onsite missed boats do not have a time, target species, or number of anglers recorded; they are simply tallied with the current boat the Sampler is interviewing in the left-most missed boat column on the PR Form. Record "K" next to the number of missed fishing kayaks. Page totals for onsite missed boats are tallied at the bottom of each PR page, and assignment totals for all onsite missed boats are tallied at the bottom of the ASF.

### **Offsite Missed Boats**

During salmon season in northern California, it is important to count sport fishing boats going past certain PR1 sites into a marina or harbor/mooring as "offsite missed boats." Do not include boats returning to adjacent or alternate sites (aka buddy sites) as offsite missed boats unless instructed to do so. Specifics are given for each site below. Offsite missed boats are tallied in the right most missed boats column with the current boat the Sampler is interviewing at the time. Record "K" next to the number of offsite missed fishing kayaks. Page totals for offsite missed boats are tallied at the bottom of each PR page, and assignment totals for all offsite missed boats are tallied at the bottom of the ASF. If the vessel returns to the PR1 site, remove one boat from the offsite missed boat count.

<b>PR Sites: Offsite Missed Boats and/or Offsite Trailer Areas PR1 Site</b>	<b>Offsite Missed Boats</b>	<b>Offsite Trailer Count /Offsite trailer area</b>
Fields Landing LR (FLD)	King Salmon marina	<none>
Noyo River LR (FTB)	Dolphin Isle marina	<none>
Westside LR (BOD)	Bodega Bay marinas	Doran LR
Berkeley Marina LR (BER)	Berkeley marina	Emeryville LR
Pillar Point LR (PRI)	Pillar Point (Princeton) marina	<none>
Santa Cruz Marina LR (SCR)	Upper marina	<none>
Monterey Marina LR (MOH)	Monterey marina	<none>

### **Specific Offsite Count Instructions**

**Fields Landing Launch Ramp (FLD):** Recreational fishing boats that are seen going into the King Salmon marina are to be counted as offsite missed boats.

**Noyo River Launch Ramp (FTB):** Recreational fishing boats that pass the Noyo River Launch Ramp on their way to Dolphin Isle Marina are counted as offsite missed boats.

**Westside Launch Ramp (BOD):** A trailer count is made at the Doran Launch Ramp before and after sampling at the Westside Launch Ramp (PR1 site). Recreational fishing boats that go by the Westside Launch Ramp into Bodega Bay marinas are counted as offsite missed boats.

**Berkeley Marina Launch Ramp (BER):** A trailer count is made at the Emeryville Launch Ramp before and after sampling at the Berkeley Marina Launch Ramp (PR1 site). Recreational fishing boats that go by the Berkeley Marina Launch Ramp into the marina are counted as offsite missed boats.

**Pillar Point Launch Ramp (PRI):** Recreational fishing boats that are seen going into the marina are to be counted as offsite missed boats. Note that anglers using the Pillar Point LR park their trailers in the upper lot or along the highway; these are considered onsite trailers.

**Santa Cruz Marina Launch Ramp (SCR):** Recreational fishing boats are counted as offsite 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 offsite missed boat count.

**Monterey Marina Launch Ramp (MOH):** Recreational fishing boats that are seen going into the marinas are to be counted as offsite missed boats.

### **Catch Data Collection**

All private boats that have completed a fishing trip should be sampled for catch. Catch includes landed catch (fish brought ashore) and reported catch such as discards or other catch not available. 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 catch. This determination may need to be done before the driver leaves to get the trailer. The goal is for the Sampler to observe all finfish catch to identify to species, recover heads from all adipose fin-clipped salmon, measure and weigh as many fish as possible, and document all unobserved catch for each boat.

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.

### **Biological Data Collection**

After determining the catch by species 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 active management, especially species of concern. A prioritized list of species to preferentially sample is provided (see Priority Species). Lengths can be used to predict weights and to examine length classes; however, recording length-weight pairs is the goal for bio data collection. Do not weigh any salmon species, and only record 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 every fish on every incoming boat. The Sampler should attempt a random sample of fish in this case, following the priority list. Lengths are required for all adipose fin-clipped salmon. Refer to the section, General Onsite Procedures: Catch Measurement.

### **Catch Location and Average Depth Data Collection**

The Sampler will attempt to determine the location and average depth of catch by species, or the location and depth of the majority of the boat's fishing effort if there is no catch. Maps with depth contour lines are provided to assist the angler in determining the catch location(s) and depths. If all species were caught within the same location and depth, then only one location and depth may need to be reported. Often, locations and corresponding depths may need to be reported separately for individual species or species groups. For

suspect data, rare species, and especially for prohibited species, double check the catch location and average depth with the angler. For trips with large areas of trolling (for non-bottomfish species), a general area can be used. Catch location is used to manage fisheries by geographic boundaries.

### **Sub-sampling Locations and Depths**

There may be times when the level of activity at a site is too high to sample the locations and average depths of all catch on every boat. In these cases, the Sampler should attempt a random sample of more specific locations and depths for bottom-fishing boats. This allows some boats to give a single more general location to save time. Boats targeting surface fishes (tuna, salmon, seabass, etc.) may be coded with the general locations and depths as well, when time is short. It is important to document location and average depth for non-retention species and species on the Priority Species List.

Q. What if a salmon boat comes in with a few rockfish but no salmon catch, do I code the salmon effort or the bottomfish catch location and depth when I'm in a hurry?

A. Do not code the location of fishing effort if there is catch; code the location specific to the catch species. In this instance, it is more important to code the location for the rockfish catch.

### **Minimum PR Sample**

A CRFS sample is defined as a boat which has been sampled for both effort and catch. Catch locations, time launched, zip code, average depths, and bio data are not required for a valid CRFS sample. Note: the data elements below are the minimum required for a valid sample; Samplers should make every effort to collect the data needed to complete EVERY field.

The following data elements are the minimum requirements for a useable CRFS interview:

- Total number of anglers who fished
- Number of days fished
- Target
- Area fished (water area, e.g., Nearshore=N)
- All catch, unobserved number of fish by species

Minimum requirements for a valid salmon sample usable by OSP (RS):

- Total number of anglers who fished (just count people)
- Number of kept salmon by species (released fish not required)
- All kept salmon must be observed for adipose fin-clips
- All adipose fin-clipped salmon receive a unique headtag, even if the head cannot be collected (i.e., NRS) Boats that provide only the minimum requirements for a valid salmon sample usable by OSP shall be flagged with "RS" in the sample # field and summed to the page tally as a salmon boat. These boats are not tallied in the Barrier/Refusals field.

The minimum items for the PR interview are listed above. If only the salmon requirements are met it will receive an "RS" code. Please note that gear is **not required** for an RS sample, but if the boat has downriggers with flashers, it is safe to assume trolling gear. If gear cannot be identified, leave blank.

Fish measurements may be omitted but fish counts may not. Never code rockfish to the genus level to save time. If the minimum requirements cannot be met, the boat will be considered a Barrier or Refusal or tallied as a missed onsite boat depending on the nature of the interaction.

### **Screening Divers**

In addition to hook-and-line anglers, divers may qualify for the CRFS interview. If a diver carries a spear gun with them, they can be interviewed as 'anglers.' If they spear a fish or intended to spear a fish they are considered eligible anglers and can be interviewed with gear code "S." Divers taking or intending to take invertebrates are also eligible to be sampled (see General Onsite Procedures under invertebrate sampling section). Divers entering the water from the shore using fins and a flotation device (such as a dive tube) 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, stand up paddleboards (SUPs) and pontoon boats with 'oars.' In effect, having a paddle is what designates the mode as PR.

### **Fishing Tournaments**

For the purposes of CRFS sampling, a tournament is defined as a site and date specific fishing contest. Contestants usually must return to tournament headquarters by a certain time for the "weigh in" which limits how far they can travel, and only specific species of fish may be taken on the date of the tournament event. Generally, tournaments are not sampled. Once the Sampler determines that a tournament is taking place, the Sampler should contact the Lead immediately to discuss the situation. It is important to notify the Lead in advance when a tournament date and location is discovered so that the Lead can make appropriate arrangements, if necessary. If the Lead determines to sample as scheduled, a sample flag of "T" should be used for all boats sampled that are participating in the tournament.

Informal 'pools', such as those arranged on CPFVs (jackpot contests), are *not* considered tournaments—anglers participating in these types of contests should be sampled as usual. Some fishing contests are regional (encompassing a large area) and span a long period of time (a week, a month, or an entire fishing season). Participants usually pre-register at a location, such as a tackle or bait store, and may bring qualifying fish in during the entire time the contest is running. For the purposes of CRFS sampling, these types of contests are called derbies. Anglers participating in derbies should be sampled as usual.

### **THE PR FORM (PR1 MODE)**

The PR Form collects total boat effort for the day by counting trailers and intercepting returning boats. Each boat is screened as fishing or non-fishing.

For fishing boats, determine target fish species and number of anglers per boat. In northern California during salmon season, the form will also count all retained and released salmon as well as record lengths of adipose fin-clipped salmon head tag numbers. For boats with catch, all the fish are counted by species along with location(s) and average depth(s). When time allows, detailed catch locations and average depths are recorded and observed finfish are measured and weighed.

### **Questionnaire Usage**

Samplers are given a laminated copy of the **questionnaire** used with the PR Form. The questions for the interview are written out, in full for standardization. The Sampler should word each question specifically as it is written in the questionnaire. In order to have meaningful comparative data, each angler should respond to a standardized stimulus. Methodological studies have shown that even slight changes in questionnaire wording, for example "should" versus "could," drastically influence responses.

### **Introduction to the PR1 Interview**

Tasks while sampling boats are generally done in this order:

1. Determine if anyone on the boat has fished
2. Determine the total number of anglers and of those, the number unlicensed
3. Determine the launch time of the boat
4. Determine zip code of one random angler
5. Determine total days fished on the trip
6. Determine if night fishing occurred
7. Determine the target species and gear (or non-fishing activity)
8. Determine the primary area fished for the fishing target(s)
9. Determine any catch (including discards) or marine mammal losses (salmon only)
10. Determine how many of each rockfish species were released using a descending-device
11. Count catch by species (mandatory for all salmon species)
12. Determine the location and average depth of the catch, or location of majority of effort if no catch
13. Record finfish length measurements and weights of the catch (prefer length-weight pairs)
14. Depending upon region: collect salmon and/or White Seabass heads and Yelloweye Rockfish

### **Before the Assignment**

The Sampler should check their equipment and forms before leaving for the site. This will ensure that the Sampler has enough forms and other supplies to complete the assignment. Be aware of the weather forecast and prepare for conditions. In northern California during salmon season, be sure additional salmon equipment and tags are on hand. In southern California, make sure to have a White Seabass wand if one has been issued. Double check the date, site, port and assignment ID. Record site information,

Sampler name, and ID number on the PR Form and on the Assignment Summary Form (ASF). Plan to arrive onsite at a time given by the Lead.

### **Arrival on Site**

Upon arrival at the PR1 site, count the number of trailers (if applicable) in the parking lot and any adjacent streets or parking lots (consult the CRFS Wiki site or the site description book to determine the count area for each site). Record the arrival time on the ASF and the arrival trailer count in the start count box on the first PR Form. During salmon season in northern California, call the Lead if you think help will be needed from additional Samplers in order to not miss any boats.

### **Sampler Location Onsite**

There are differences among PR sites. Onsite positioning procedures for obtaining interviews 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, on the beach, or at the ramp. The Sampler will use discretion in determining the best approach at a particular site. For most PR1 sites, 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 delay the trailering process which may result in unhappy anglers.

### **Multiple Samplers on One Assignment**

In some cases, the Lead will schedule two or more Samplers to work at a PR1 site due to expected high effort. Samplers may work shifts that overlap. 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 the activity is complete for the day or sunset. The Lead will advise as to which methodology to use based on the season, fishing effort, District, etc. In northern California, Samplers should coordinate onsite arrival times with each other when working on the same assignment.

### **Avoiding Duplication and Sharing Counts**

It is important that Samplers working together not duplicate or omit any data in the field and when submitting forms and summaries. Each Sampler edits and submits a separate set of forms. The Assignment ID is the same for both Samplers. Be sure to record the last names and Sampler ID number of all Samplers working the assignment at the top of the first PR page and on the ASF, and circle "Y" or "N" if they have data or not. Each Sampler numbers their boats separately, so there may be two or more boats labeled #1 for the assignment. The start count will be performed by the Sampler who arrives on site first, while the stop 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. The start and stop count will be reported in the Weekly Report by the Sampler who conducted the respective count. Each Sampler will have their own separate PR form and ASF form subtotals. These

totals will be summed after data entry to compute totals for the entire assignment with multiple Samplers. The data will be merged in the database.

### Onsite Trailer Counts

Trailer counts are made when the first Sampler arrives and when the last Sampler leaves. Counts of “trailers” include traditional boat trailers. Personal watercraft (PWC) trailers, car top boat carriers, boats loaded into the beds of trucks, non-trailerred inflatable boats, and kayak and canoe carriers are excluded. Do not count trailers not attached to vehicles, or known non-fishing, commercial or CPFV trailers. See the Summary of PR Trailer Counts table on page 10-43 for more information. Immediately before leaving the site at the end of the day, the Sampler will count the number of trailers remaining in same area. Known commercial, non-fishing or CPFV trailers should not be included; all others are included in the stop count Trailer counts are not conducted at some PR1 sites (CRD and TRD, for example).

### Offsite Trailer Counts

Trailer counts for buddy sites are recorded during certain PR1 samples. This data is recorded on the first page of the PR Form in the offsite start and stop trailer count boxes. These counts are recorded on the Assignment Summary Form too. If the “count area” (ramp parking lot) is full and trailers are forced to be (that are active at the PR1 site) parked on the street or outside the normal “count area”, include those trailers in the onsite trailer count, **not** in the offsite trailer count.

Offsite start and stop trailer count coding example.

Page <u>1</u> of <u>5</u>		Trailer Counts	
Sampler Last Name	Other Samplers: Name & # (w /data)	Time	
<b>Bondoux</b>	<b>Stenberg 305 (Y N)</b>	Start <b>0805</b>	onsite <b>15</b>
		Stop <b>1625</b>	offsite <b>2</b>
BIO DATA		MissedBt	
SPECIES LOC <i>or effort loc if no catch</i>	DEPTH Average	Fork length / carapace size (mm), sex (M/F/T)	
Block-box; Lat / Lon	Bottom (ft)	Weight (decimal kg) or tag #	
		1	2
		3	4
		5	
		onsite	offsite
		PR2 Launched	

### Monitoring Boats

When a boat arrives at the PR1 site, a new sample is created with the time of arrival. During very busy times, a boat may arrive and will not be sampled because the Sampler(s) are busy with other boats. This boat will be tallied on an existing boat row as an onsite missed boat in the onsite missed boat column. An onsite missed boat may be either a non-fishing boat (NF) or a fishing boat. The proportion of fishing to non-fishing sampled boats is applied to the count of onsite missed boats to estimate several 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 the missed boats are fishing boats, but half the boats actually sampled were NF boats, then the estimate of fishing boats

missed will be underestimated by 50% because missed boats were not representative of the boats sampled. Therefore, onsite missed boats should be a representative selection of all boats, not just fishing boats or boats that look like a lot of work to sample. During salmon season every effort should be made to avoid missing boats. Ideally, there should not be any missed boats. With two or more Samplers working each PR1 assignment, it should be possible to sample every boat. Once a boat has been canvassed and the target is either finfish or invertebrate the minimum CRFS interview is required. Contact your Lead immediately if additional help is needed to avoid missing boats.

### **Multiple PR Trips on the Same Day**

Occasionally PR boats will make more than one trip per day; sometimes the skipper drops off passengers from a morning trip and takes a new crew out on a second trip in the afternoon, or the crew may remain the same after returning from the first trip of the day. The Sampler may recognize the boat as having been sampled earlier in the day, or the crew may point out that they have already been sampled at the completion of their first trip. Regardless of how this second (or subsequent) trip is discovered, the Sampler is to treat these trips separately, and attempt to sample both as distinct trips each with unique data – separate sample numbers, different launch times, segregated catch, etc. Do not combine both trips into one sample. If the catch from both trips is still onboard at the completion of the second trip and the crew is unable to separate catch by trip, the Sampler is to record catch from the second trip as angler reported (kept unobserved). If anglers are reluctant to participate in the survey again, point out that each of their trips is unique, and it's important for CRFS to capture data from each and every unique trip – perhaps the boat had different targets, fished in a different location, or caught a different composition of species.

### **Determination of Boat Type**

A category based on activity must be assigned for each boat intercepted. Ask a passenger on the boat as to its activity for the day. There are, essentially, two types of boats in the PR survey: Fishing and Non-fishing (NF). A fishing boat is defined as a boat, either privately owned or rented, upon which recreational fishing effort (for finfish OR invertebrates) occurred. Boats that targeted invertebrates only are considered fishing boats. Catch is not necessary to be considered a fishing boat. Boats that intended to fish but did not put gear in the water are NF boats. A CPFV carrying passengers paying to fish is not considered a fishing boat for the purposes of PR mode sampling.

### **Non-Fishing (NF) Boat Types**

There are three NF codes currently being used:

- 1. NFCOM** – a commercial fishing boat targeting finfish or invertebrates (note: occasionally a commercial fishing boat may be fishing recreationally that day – the boat would be sampled just like any other PR boat).
- 2. NFPC6** – Commercial Passenger Fishing Vessels, also called party/charter (PC) boats, vessels that are permitted to take paying passengers

fishing. This includes smaller, trailered “6-pack” boats. The Sampler may have to inquire with the operator to determine if the boat was a regular PR boat or was fishing as a CPFV that trip.

**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, research, etc.

### **CPFV and Commercial Boats**

Commercial Passenger Fishing Vessels (CPFV) are coded as “NFPC6” on the PR Form. If the Sampler encounters a CPFV at the PR1 site, the boat is coded as “NFPC6” in the Target field of the PR Form. The boat should then be sampled opportunistically using the appropriate PC dockside sampling. Commercial fishing boats are coded as NFCOM in the Target field of the PR Form; commercial fisheries are sampled using other non-CRFS surveys.

### **Opportunistic PC Sampling**

Commercial Passenger Fishing Vessels (CPFV) that utilize a PR site are coded as “NFPC6” on the PR Form. Monitoring PR effort during a PR assignment is a priority; if time allows and without missing any PR effort, the Sampler should sample the CPFV using the appropriate PC dockside sampling form – the CRFS-OSP SALMON CPFV DOCKSIDE form for trips that targeted salmon only, and the CRFS PC (CPFV) DOCKSIDE form for trips that targeted something other than salmon. If the boat targeted both salmon and non-salmon on the same trip, sample the boat using *both forms*, recording data on the appropriate form. Report all CPFV activity to the PEC Port Lead (Districts 3-6) or record the vessel’s effort on a PEC form (Districts 1-2). See CPFV Dockside Sampling sections in this manual for more information on sampling CPFVs dockside.

### **Q. What if I see a PC (party or charter) boat returning to the PR1 site?**

**A.** Determine if the boat was fishing recreationally (PR trip), or if it was carrying passengers paying to fish (CPFV trip). If the former, sample the boat as a PR boat on the PR form. If the latter, code the boat as an NFPC6 boat on the PR form and do one or both of the following:

- 1) If the boat was targeting salmon, sample the boat using the CRFS-OSP SALMON CPFV DOCKSIDE form.
- 2) If the boat was targeting anything besides salmon, sample the boat using the CRFS PC (CPFV) DOCKSIDE form.
- 3) If the boat was targeting both salmon and non-salmon species, sample the boat using both dockside forms.

### **Refused Boats**

Participation in this survey is voluntary. An angler may refuse to participate. However, this data is crucial to sustainable fisheries management, so the Sampler should try to get as many questions answered as possible. Some anglers on the boat may be more receptive than others.

Although refusal to answer key CRFS questions will be coded as a refusal, salmon minimum data element requirements will allow for saving a sample when CRFS minimum interview requirements are not met. Anglers are required to make kept salmon available for sampling (Title 14, CCR, Section 1.73(b)); minimum requirements for a valid salmon sample include number of anglers, number of kept salmon by species, and number of salmon with adipose fin clips— code these boats as RS in the Sample #. Zip code, location, time launched, and average depth are not necessary for a “valid” sample; however, these items *are* important. If you cannot get all the required questions answered, you will have to record the boat as a refusal; code an “R” in the Sample # field. Refusals do not get a sample number, just an “R.” Refused boats tallies are not inclusive of the “Total Boats” subtotal on the bottom of the PR form but should be included in the salmon boats subtotal. If you can collect the minimum salmon requirements the boat would be coded “RS” and included in the total boats on the PR1 page totals.

### **Language Barrier Boats**

Anglers that cannot speak English may not be able to effectively answer survey questions. If there is too much of a language barrier, the Sampler should stop the CRFS interview. If all the required questions are not answered, the boat is recorded as a barrier; code a “B” in the Sample # field. Barriers do not get a sample number, just a “B.” Language-barrier boats are not tallied into the total boats field on the PR1 page totals but are tallied in the Refu + Barrier total.

### **Anglers, Zip Code and Days Fished**

Once the Sampler determines the boat is an eligible fishing boat and willing and able to participate, they determine the angler effort on the boat. Some of the passengers may not be anglers. The Sampler will determine the number of anglers who actually fished. Next, the Sampler determines the number who fished without a valid CA fishing 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. Often, the anglers will want to show their licenses— Samplers 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; children are not eligible to participate in the telephone survey, and some anglers are not required to have a license and so would not be a part of the 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. The “N” box will be checked if the boat fished at night any time during their trip (after dark and before dawn). If only night fishing occurred, the “N” box will be checked and “0” days fished will be recorded. If it is a multi-day trip, record the number of days fished, leave the launch time blank, and leave a note on the data sheet. Boats that fish and use a launch ramp more than once in a day are

considered “multi-trip” boats. Each trip is sampled separately. Boats that use the launch ramp once and stay out fishing for multiple days are considered “multi-day” boats are sampled once and the number of days fished are recorded.

One of the anglers on the boat 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, use the applicable foreign country code. The zip code is used primarily to help quantify the contribution of sportfishing to the economy. The angler asked should be at random, 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 need a complete census of catch. The term “catch” includes observed and unobserved kept fish and released fish. Catch includes landed fish, fish given away, taken by marine mammals (salmon only), used for bait, filleted or eaten, **AND** fish purposely released, thrown back alive (shakers) or dead. Anglers may report that they have no fish on the boat. However, a boat may still have catch if they caught and released fish or lost a fish to a marine mammal. Be sure to inquire about anything that was caught and then used for bait or any other fish that were caught but not available for the Sampler to observe.

### **Examining Catch**

The Sampler will examine all landed catch for each fishing boat. Examined or observed finfish are the most robust because the Sampler actually saw, counted, and identified the catch to species. If the angler(s) refuses to have the landed catch examined, all catch are coded as “kept unobserved”. 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 to species. Can I just code rockfish genus “RFGEN”?

A. No, you must record catch to species. The only time you should be using the RFGEN code is for unobserved catch that the angler simply cannot identify, even with identification guides. There will often 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 bio data.

## Salmon Head Recovery

All kept salmon shall be examined for the presence of an adipose fin. Title 14, California Code of Regulations Section 1.73(b) require anglers to show their salmon catch to

Department representatives, and to relinquish the heads of all adipose fin-clipped salmon to the State at no charge. When the Sampler encounters an adipose fin-clipped salmon, notify the angler that the salmon head will be removed for recovery of the CWT. Apply a headtag to the lower jaw of the



salmon using the attached wires, measure the fork length, and record these numbers on the PR Form. Remove the salmon's head using the knife and cutting board provided, taking as little flesh and gills as possible. Place the tagged head in the clear bag with the headtag numbers facing outward and freeze as soon as possible. A headtag is issued to every adipose fin-clipped salmon, even if the head cannot be recovered. See the Species Sampling section for complete details regarding salmon sampling.

## Observed Catch (Sampler-Examined)

The Sampler will attempt to observe and examine all retained finfish catch, recording the number of fish kept and observed by species in the appropriate box on the PR Form. It is important to note that only fish that the Sampler sees and counts can be recorded as "kept observed." Fish not able to be physically viewed and counted by the Sampler must be recorded in the "kept unobserved" box. It is important to the CRFS program to differentiate between Sampler-examined and angler-reported fish counts. Estimates of total harvest are summarized separately for the Sampler-examined and angler-reported catches.

Sampler may identify fillets with skin patches, being careful not to double count fish (i.e. two fillets equals one fish). Fish identified by skins are considered "kept observed." Anglers may not want the Sampler examining fish that have been filleted. These fillets are someone's dinner, and they may not want to get their food dirty or they may be hesitant to open a tied bag. Ask the angler before attempting to examine fillets.

## Unavailable Catch (Angler-Reported)

In addition to any fish the Sampler sees, each fishing boat will be polled for any fish caught that are not available for examination. Unavailable catch are usually fish that have been thrown back, given away, packed away, used for bait, filleted (not identified by skins), eaten or taken by marine mammals

(salmon only). Unavailable fish are reported by the entire group of anglers on the boat. The anglers are asked to separately report any unobserved fish in four categories; kept, released alive, released dead, and seal take (salmon only). If no fish were caught (kept or released), a NO CATCH code is recorded in the Species code box and the catch boxes are zeroed out.

### **Kept Unobserved Catch**

Fish that are not thrown back, but otherwise are not available for examination will be separately recorded on the PR Form. Kept unobserved fish include fish given away, packed away, used for bait, filleted (not identified by skins), or eaten. Kept fish that the angler refuses to show to the Sampler are included as "kept unobserved." These fish are counted separately from fish which the Sampler personally examines and counts (kept observed). Be persistent with anglers that have unavailable rockfish catch. Use your best effort to gain access to the catch for species identification.

### **Released Alive**

The released alive catch category is the total number of fish by species that were released alive in swimming condition. Released alive includes fish intentionally landed and subsequently released, those that are purposely shaken off the hook boat-side, 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.

### **Released Alive with Descending Device (DD)**

This is a subset of released-alive and 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 barotrauma. Use of a descending device to send rockfish back down to depth can greatly reduce discard 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. Use of a needle to vent the swim bladder of a fish is not considered a descending device. Released-alive with descending device is coded only for rockfish species. Released-alive with descending device is a subset of the released-alive total; the number of released-alive with descending device will always be less than or equal to the released-alive total.

### **Released Dead**

The released dead category 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 wounds or inability to swim down) may be coded as dead. The Sampler and angler

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.

### **Seal Take**

The seal take category includes any salmon that were known to have been taken by any marine mammal (seals, sea lions or other marine mammals). Seal take should only be determined for salmon catch. Anglers must be certain and have seen the marine mammal take the salmon from their line. The Sampler should inquire further with those anglers who say 'I think' or 'maybe' a fish was lost to a pinniped. The Sampler should not include fish that naturally escaped or were naturally caught and eaten by a pinniped.

### **Catch Location and Average Depth**

All CRFS boats are sampled for the catch location and average bottom depth. For boats with catch, a catch location will be recorded. Location and an average bottom depth may be recorded for all catch together or by species when determined and time allows. For boats with no catch, location and average bottom depth for the majority of fishing effort is recorded. The majority of effort is defined as where most of the boat's time was spent with gear in the water. Average bottom depth is used to put the catch estimates into depth zones and compare with locations. It is also used to help estimate depth dependent mortality rates for some groundfish species.

Q. If the PR anglers do not have any catch, should the catch location be left blank?

A. No, still code a location. In this case, code to the major area fished (where effort mostly occurred).

### **Coding Location of Catch for Multiple Species on the Same Trip**

Frequently, PR boats will fish in several locations for different species/species groups on the same trip. It is important for the Sampler to recognize when this occurs and code distinct locations of catch for each species/species group. If anglers do not give some indication that their catch for the day came from more than one location and the Sampler is either not paying attention or not familiar with local fisheries, then incorrect location information will be collected that may bias CRFS data. Taken to the extreme, when a boat's catch comes from more than one location and the Sampler does not collect location of catch data for

each species/species group, it may appear that the boat was fishing in an illegal area, at an illegal depth or with illegal gear.

TARGET 1st	AREA	GEAR	SPECIES CODE	KEPT		RELS		SPECIES LOC or effort loc if no catch Block-box; Lat / Lon	DEPTH Average Bottom (ft)
				obs	alive	(w/DC)	dead		
2nd				unobs	dead	seal take			
RFGN	N	H	RFBLK	6	2	(0)	222-23	40	
HALPA	O	H		0	0	seal			
			HALPA	2	0	( )			
				0	0	seal			
			RFBLU	3	0	(0)			
				0	0	seal			
			LNGCD	4	2	( )			
				0	0	seal			

This is an example of incorrect coding of location of catch. As is, the Pacific Halibut catch location will be attributed to the one recorded location of catch; this is incorrect, as HALPA are rarely taken in 40 feet of water, and the water area for the HALPA target was coded as offshore – this location is clearly within three miles of shore.

TARGET 1st	AREA	GEAR	SPECIES CODE	KEPT		RELS		SPECIES LOC or effort loc if no catch Block-box; Lat / Lon	DEPTH Average Bottom (ft)
				obs	alive	(w/DC)	dead		
2nd				unobs	dead	seal take			
RFGN	N	H	HALPA	2	0	( )	223-25	350	
HALPA	O	H		0	0	seal			
			RFBLK	6	2	(0)			
				0	0	seal			
			RFBLU	3	0	(0)			
				0	0	seal			
			LNGCD	4	2	( )			
				0	0	seal			

This is another example of incorrect coding of location of catch. As is, the rockfish and Lingcod catch will be attributed to the one recorded location of catch. This example is typical of catch seen in District 6; current groundfish regulations include depth restrictions of 120 to 180 feet. If left as is, it will appear that the bottomfish were taken at an illegal depth.

TARGET 1st	AREA	GEAR	SPECIES CODE	KEPT		RELS		SPECIES LOC or effort loc if no catch Block-box; Lat / Lon	DEPTH Average Bottom (ft)
				obs	alive	(w/DC)	dead		
2nd				unobs	dead	seal take			
RFGN	N	H	RFBLK	6	2	(0)	222-23	40	
HALPA	O	H		0	0	seal			
			HALPA	2	0	( )	223-25	350	
				0	0	seal			
			RFBLU	3	0	(0)	222-23	40	
				0	0	seal			
			LNGCD	4	2	( )			
				0	0	seal			

This is an example of correct coding of location of catch. Note that for the Blue Rockfish and Lingcod catch to be associated with the location of the Black Rockfish catch, the location and depth needs to be repeated after the Pacific Halibut row.

## Measuring Catch

For each CRFS boat with observed catch, the Sampler should sample the catch for species composition and bio data: lengths, weights, and sex for some fish. The priority is to document and measure the priority species and,

in northern California, adipose fin-clipped salmon. Do not measure salmon with intact adipose fins. A secondary priority is to weigh important management species. Please see the General Onsite Procedures section for a complete list of priority species.

Time allowing, all fish except salmon may be measured and weighed. The goal is for paired lengths and weights, if possible. Paired lengths and weights allow for a regression equation to check for sampling error. If time is short, 5 paired length and weights should be collected per species. Lengths are used to predict weights using a regression and to examine length classes. Weights are used to calculate more precise metric ton estimates and are used with the length to estimate fish condition.

Some fish may be sexed using external characteristics. Please see the Species Sampling section for complete details on which species may be sexed.

### **Interview Priorities**

Samplers should be aware that some of the PR data is required for a valid CRFS interview, while sub-sampled data may be of high or lower priority.

### **Required Fishing Effort Data**

Count offsite trailers upon arrival (where applicable)

Intercept all onsite boats

Determine if the boat is fishing or not

Determine the number of anglers

Determine the target species (or non-fishing activity)

Count all missed onsite and offsite (where applicable) boats

Count all fishing boat trailers at departure

Count all off-site fishing boat trailers after departure (where applicable)

### **Required Catch Data**

Determine if any catch (including unobserved/unavailable catch)

Count catch by species (not higher-level taxa)

Examine salmon for adipose fin-clips and collect heads

Determine the location and average bottom depth of the majority of the catch (or effort if no catch)

### **Sub-sampled Data (Priority Order)**

1. Record length measurements of priority species
2. Record weights of priority species
3. Record length and weight pairs of other species
4. Determine the location and average bottom depth of each species

### **CRFS PR Form Questionnaire**

It is important to use the wording of questions as stated in the PR questionnaire because slight changes in wording can result in different responses.

**INTRODUCTION: Hello, my name is \_\_\_\_\_ and I represent CDFW. I am 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.**

**BOAT ROW, EFFORT COLUMNS:**

**Sample # [or R or B or RS]:** 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, water area, targets, gear, catch #s by species) are also coded with R and do not get a sample #. Code boats that refuse all data elements other than those required for a minimum salmon sample (# ang, # kept/obs salmon and all must be observed, # ad clips) with "RS" in the sample number field.

**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:-----** R

**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:----- Leave blank

EFFORT AREA: **Was your <primary target> fishing in the ocean 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  
Mexico:----- M  
Refused:----- Code Sample # as R, terminate interview

Offshore islands have separate codes – see bottom of PR form

EFFORT AREA: **Was your <secondary target> fishing in the ocean 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  
Mexico:----- M  
Refused:----- Leave blank

Offshore islands have separate codes – see bottom of PR form

GEAR: **What gear did you use for <primary target>?**

Finfish		Shellfish	
Hook & Line:-----	H	Pot #:-----	P <sub>n</sub>
Spear:-----	S	Flat Hoop Net #:-----	F <sub>n</sub>
Troll:-----	T	Rigid Hoop Net #:-----	R <sub>n</sub>
Bait Net:-----	N	Snare:-----	E
Mooch: (salmon only)-----	M	SCUBA:-----	C
Both M & T (salmon only):-----	B	Free Diving:-----	D
Refused:-----	R		

GEAR: **What gear did you use for <secondary target>?**

Finfish		Shellfish	
Hook & Line:-----	H	Pot #:-----	P <sub>n</sub>
Spear:-----	S	Flat Hoop Net #:-----	F <sub>n</sub>
Troll:-----	T	Rigid Hoop Net #:-----	R <sub>n</sub>
Bait Net:-----	N	Snare:-----	E
Mooch: (salmon only)-----	M	SCUBA:-----	C
Both M & T (salmon only):-----	B	Free Diving:-----	D
Refused:-----	R		

DAYS FISHED trip:

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

Launch Time: **What time did you leave the ramp?** Record the time (in 24 hr format) the boat left the ramp.

Refused:----- R  
Don't know----- DK  
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:----- R  
Don't know----- DK  
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, proceed to 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 catch?** Probe for any catch 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)  
Don't know----- DK  
No:----- Record zero in (w/DD)  
Sampler didn't ask---- DA  
Refused:----- R  
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 targeted salmon. **Did you see any seals or sea lions take your fish from your line?**

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:----- R  
Don't know----- DK  
No Salmon Catch:-- Leave blank  
Sampler didn't ask-- DA

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:----- R  
 Don't know----- DK  
 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

Don't know----- DK  
 Depth in Feet:----- FFF  
 Sampler didn't ask----- DA  
 Refused:----- R

**PR Form Layout**

Boat samples are recorded in rows with data fields arranged by columns. Each boat row has two sub-rows to record two observations for each item in some fields. Boat sample data may span multiple rows and sub-rows as needed to document additional catch species, fish counts, catch location(s) and depths, and fish bio data. Fish records for a boat may also be continued on the next page; the PR form is double-sided to reduce waste and the front and back of the form are the same.

The form is subdivided into four sections; the header row (sample day), individual boat data (effort), individual fish data (catch and bio data) and sub-total/totals (page summary).

**Header Row Items**

The header row records data for the sample day. The header includes a unique assignment ID number, date, site information (county, site, port), Sampler ID number and name, additional Samplers present at the site and their ID numbers and if they have data or not, start and end times, and trailer counts. All these items are required.

<b>CRFS PR FORM</b> (v8 11/09/2014)			<input type="checkbox"/> PR1 <input type="checkbox"/> PR2		Page _____ of _____	Trailer Counts	
ASSN ID	Date (MM/DD/YY)	CNTY	SITE	OSP Port	Sampler #	Sampler Last Name	Other Samplers Name & # (w/Status)
							Start Time
							onsets
							offsets

### Interview Effort Items

Individual boat data include boat sample number, time, total anglers (licensed and unlicensed), days fished, night fishing check box, zip code, target species (primary and secondary), water area and gear (for each target). Onsite and offsite missed boats (for select PR1) are tallied on the right side of the form. Launching vessels are tallied only in PR2 sampling mode; leave blank for PR1 mode.

SAMPLE # [or R or B]	ANGS Total	DAYS FISHED		TARGET 1st	AREA	GEAR
		on trip	at Night			
Time	(unlic)	Launch Time		2nd		
		Zip Code				
			N <input type="checkbox"/>			
	( )		time			
A			zip			

MissedBt		PR2 Launching
onsite	offsite	

### Individual Fish Data: Catch and Biological Data

Individual fish data recorded include the species, number landed examined (kept obs), number landed unobserved (kept unobs), number released alive, number of barotrauma-sensitive species released with a descending device, number of fish released dead, number lost to pinnipeds (salmon only), species catch location, average bottom depth, lengths, weights, sex, and head tag numbers.

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	alive total (w/DD)	dead			1	2	3	4	5
	unobs	dead	seal take							
	obs	alive	( )							
	unobs	dead	real							

### Footer Totals

At the bottom of each page, sum the number of refusals and language barriers, total boats (includes fishing and non-fishing), boats targeting salmon or with kept salmon, anglers targeting salmon or with kept salmon, the number of king salmon kept and released (Chinook Salmon, SALCK), the number of silver salmon kept and released (Coho Salmon, SALCO), the number of Pacific Halibut kept and released (HALPA), the number of Yelloweye Rockfish (RFYFY) kept and released, the number of Copper Rockfish (RFCOP) kept and released, the number of Quillback Rockfish (RFQIL) kept and released, the number of Black Rockfish (RFBK) kept and released, and the number of onsite and offsite missed boats. The summary of effort and catch from each page is used to facilitate completion of the assignment summary form and weekly summary report; the data is also used to verify data entry. The salmon, Pacific Halibut, and overfished rockfish



Field Name	Instructions	Coding Examples and Formats
Sampler Last Name	Write out your last name completely on all pages.	
Other Samplers: Name & #	<p>Write out last name and Sampler # for other Samplers working on this assignment.</p> <p>Circle Y (yes) or N (no) to indicate if the Sampler has a separate set of data to submit.</p> <p>First PR page only.</p>	Example: Smith 132 (Y)
TRAILER COUNTS		
Notes on Trailer Counts	<p>Upon arrival, the first Sampler will enter the total number of trailers in the established trailer count area for that site for onsite and offsite (if applicable) under "Start."</p> <p>At the end of the assignment, the last Sampler will enter the total number of trailers on site upon departure under "Stop."</p> <p>First PR page only.</p>	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 there are trailers (that are active at the site) parked on the street or other parking area, it is important to include that effort in the counts.
Time [Trailer Counts, Start and Stop]	<p>Record the time you <u>began</u> counting the onsite trailers (Start is upon arrival, and Stop is at the end of the assignment).</p> <p>The times of Sampler arrival and departure from locations where offsite counts are conducted will also be recorded on the ASF.</p>	<p>Use 24-hour military time format.</p> <p>Example: 9:00 AM = 0900</p>

Field Name	Instructions	Coding Examples and Formats
Onsite [Trailer Counts, Start and Stop]	Onsite refers to trailer count occurring at the assigned site.	See the table titled "Summary of PR Counts" for specifics on what to include in the counts.
Offsite [Trailer Counts, Start and Stop]	<p>At certain PR1 sites count the fishing trailers at a nearby PR site. The "offsite trailer count area" is listed on the monthly site list or the Lead will provide a list.</p> <p>The Start Count should take place <u>before</u> going to the assigned PR1 site. The Stop Count should take place after sampling is complete at the assigned PR1 site.</p>	See the table titled "Summary of PR Counts" for specifics on what to include in the counts.
<b>EFFORT</b>		
Sample # [or R or RS or B]	<p>Record a sample number in consecutive order (starting with 1) for every boat intercepted (except for refusals or language barriers). See the table titled "Summary of PR Counts" for specifics. For refusals (R) or language barriers (B) record an R or B without a sample number. For refusals where minimum salmon data elements are available, record RS and record the salmon data elements.</p> <p>Flag special types of boats using letter codes (see right column) after the sample number.</p>	<p>Sample # = 1, 2, 3...</p> <p>REFUSALS and LANGUAGE BARRIERS are NOT issued a 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>SAMPLE FLAGS KAYAK - record a "K" after the sample number. PWC, canoes, other small non-trailerred boats, and "non-traditional boats" with trailers - record a "P" after the sample number TOURNAMENT - record a "T" after the sample number SAILBOAT - record a "S" after the sample number</p> <p>NON-FISHING TRIPS: Record a sample number, and the non-fishing type</p>

Field Name	Instructions	Coding Examples and Formats
		under TARGET. See the table titled "Summary of PR Counts" for specifics.
Time	Enter a time stamp for every boat that is given a sample number or is a refusal or language barrier.	Use 24-hour military time format.  Example: 5:00 PM = 1700
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 = NF boat only 3 = three anglers fished total R or B: code the Sample # box with "R" or "B" and # of anglers if known, 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.  Note: unlicensed is a subset of total anglers, therefore unlicensed ≤ total anglers	0= all anglers were licensed  R or B: code the Sample # box with "R" or "B" and # of anglers if known. Leave unlic. blank. Continue interview if possible, otherwise terminate the interview
DAYS fished (left column) = trip effort  N = Night fishing	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. <u>If only night fishing occurred</u> , 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.  R or B: code the Sample # box with "R" or "B" and terminate the interview

Field Name	Instructions	Coding Examples and Formats
Launch Time	Enter the time that the boat launched from the PR1 site for this fishing trip.	Use 24-hour military time format.  Example: 6:15 AM = 0615  If a trip is greater than 1 day in duration, leave the launch time blank and make a note on the data sheet.
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).	Example: 90210 = Beverly Hills  Refused = R Don't know = DK Sampler didn't ask = DA Foreign country = 3-letter country code e.g., Ireland = FIE
<p>Target</p> <p>Primary = the main target/activity for the trip</p> <p>Secondary = the secondary target/activity for the trip</p>	<p>Each intercepted boat is screened to determine the primary and secondary activity/target, including fishing and nonfishing activity.</p> <p>Activities/targets are coded using 5 letter alpha codes.</p> <p>Targets may be determined by asking the angler(s) "what was the number one and number two fish you were fishing for?"</p> <p>Anglers who don't have specific targets after probing are recorded as UNIFH.</p> <p>If the anglers refuse to provide a target, then code the Sample # box with "R" and terminate the interview.</p>	<p>Example: HALCA = targeting California Halibut</p> <p><u>Non-Fishing Codes:</u> NFCOM = commercial fishing trip (non-CPFV). Record F&amp;G numbers for commercial salmon vessels.</p> <p>NFPC6 = CPFV trip *Do NOT record CPFV trips as a PR; record the NF code then sample using the appropriate PC dockside form.</p> <p>NFOTH = Any other boating activity, including maintenance, enforcement, research, sailing, etc.</p> <p>Do not record NF kayaks or personal watercraft. NF</p>

Field Name	Instructions	Coding Examples and Formats
	<p>If the anglers cannot speak English, then code the Sample # box with "B" and terminate the interview.</p>	<p>sailboats are recorded as NF boats with an "S" flag.</p> <p>R or B: code the Sample # box with "R" or "B" and terminate the interview.</p>
AREA	<p>Record the water area code where the majority of fishing <b>effort</b> (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>Area is left blank for NF trips or blank secondary targets.</p>	<p>N = (nearshore ocean &lt; 3 mi)  O = (offshore ocean &gt; 3 mi)  B = enclosed bay or estuary  M = Mexico</p> <p><u>Island Codes:</u>  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</p> <p>R or B: code the Sample # box with "R" or "B" and terminate the interview.</p>
GEAR	<p>Enter single letter code for the fishing gear used by the boat for each target. The gear should be determined and recorded for each primary and secondary target identified.</p> <p>Gear is left blank for NF trips or blank secondary targets.</p> <p>There are two special gears for salmon fishing.  The gear should be determined and</p>	<p>H = Hook-and-line  S = Spear  T = Troll  M = Mooch (salmon only)  B = Both M and T(salmon only)  N = Bait Net</p> <p><u>Invert Only</u>  P<sub>n</sub> = Pot and #  F<sub>n</sub> = Flat hoop net and #  R<sub>n</sub> = Rigid hoop net and #  E = Snare  C = SCUBA diving  D = Free diving  Unspecified invert. gear (shovel, rake, gun, etc.) –</p>

Field Name	Instructions	Coding Examples and Formats
	recorded for each primary and secondary target identified.	leave blank and make note on form.
<b>CATCH</b>		
SPECIES	<p>Enter the 5-letter alpha code for each species or taxon of all fish examined or reported by the boat.</p> <p>Additional rows are used for boats with multiple species catch.</p>	<p><b>No catch:</b> write "NO CATCH" in the SPECIES box and zeros in catch boxes:</p> <ul style="list-style-type: none"> <li>- KEPT obs</li> <li>- KEPT unobs</li> <li>- RELS alive total</li> <li>- RELS dead</li> </ul> <p>If the anglers refuse to let you see the catch or provide information on the fish caught or released, code the Sample # box with "R" and terminate the interview.</p>
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 can see, and count are recorded here. May include fillets that can be counted and identified. Make a note on the form if the daily bag limit is exceeded for a species or group of species.</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 kept 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>This includes fish used for bait, thrown away as trash, given away, and fillets that are not identifiable or countable, or any other fish that are not available for sampling. This also includes fish that the Sampler can see, but for whatever reason, is not able to count. Make a note on the form if the daily bag</p>

Field Name	Instructions	Coding Examples and Formats
	<p>Probe for catch that may not be remembered, such as bait species.</p>	<p>limit is exceeded for a species or group of species.</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. This includes both fish released with a descending device and without a descending device</p> <p>Fish must have been landed first or have been intentionally released.</p> <p>Probe for catch that may not be remembered.</p> <p>If no fish of a species are reported as released alive record a zero.</p>	<p>Fish appeared alive with no mortal injuries upon release</p> <p>No fish released = zero</p> <p>R or B: code the Sample # box with "R" or "B" and terminate the interview.</p>
RELS alive (w/DD)	<p>Enter the number of rockfish by species that were released alive using a descending device. Venting the fish is not a descending device.</p> <p>This field does not apply to non-rockfish species.</p> <p>Note: Rockfish released using a descending device are considered alive.</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 didn't ask = DA</p>

Field Name	Instructions	Coding Examples and Formats
		Note: RELS alive (w/DD) is a subset of RELS alive total, therefore RELS alive (w/DD) ≤ RELS alive total
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.</p>	Refused: code the Sample # box with "R" and terminate the interview
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 salmon from the line.</p>	<p>This question is only asked if salmon was targeted.</p> <p>No salmon target = leave blank  Refused = R  Don't know = DK  Sampler didn't ask = DA  No salmon lost = 0</p>
SPECIES LOC	<p>Enter the location where the majority of the catch species were caught.</p> <p>If no catch, record the location where the majority of fishing effort occurred.</p> <p>A separate location may be recorded for each species observed or reported.</p> <p>For trips with large areas of trolling for non-bottomfish species, record a general area.</p>	<p><b>Block- Box:</b>  BBB-bb-bb-bb or  BBB-bbb-bbb-bbb</p> <p>718-106-107-108 = block and 3 boxes (inland)</p> <p>235-12-14-15 = block and 3 boxes (ocean)</p> <p>252 = block only</p> <p><b>Block-Box-Grid Size:</b>  BBB-bb+g:  212-01+3 = block and one box plus grid size (in nautical miles)</p>

Field Name	Instructions	Coding Examples and Formats
		<p><b>Lat/Long:</b> Latitude in upper box and longitude in the lower box. Only use whole degrees and minutes (no seconds or decimals). 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> <p>Refused = R Don't know = DK Sampler didn't ask = DA</p>
DEPTH	<p>Enter the average <u>bottom depth</u> in feet for the catch location. This is <u>not</u> a mid-water depth of capture.</p> <p>Enter a single depth or if a range is given enter the mean depth.</p> <p>The depth should be recorded by species when possible.</p>	<p>100 = 100 feet</p> <p>100 min/120 max = enter as mean depth 110 feet = 110</p> <p>Refused = R Don't know = DK Sampler didn't ask = DA</p>
<b>BIO DATA</b>		
Fork Length (mm)  Sex	<p>In the top row enter the fork length for the fish in mm.</p> <p>Add an M, F, or T after the length for sexed species.</p> <p>Do not measure a salmon with an intact adipose fin.</p>	<p>321 = fork length in mm</p> <p>F = Female M = Male T = Transitional (CA Sheephead)</p> <p>333F = female fish 333 mm fork length</p>

Field Name	Instructions	Coding Examples and Formats
Weight (decimal kg) or Head Tag #	<p>Below the length, enter the weight of the fish in kg. Do not weigh salmon.</p> <p>For salmon, groundfish, and White Seabass, enter the headtag number below the length and circle the headtag number.</p> <p>For salmon heads not recovered or lost, record the head tag number and code NRS (non-recoverable species).</p>	<p>5.3 = weight in kg</p> <p>12345 NRS = adipose fin-clipped salmon head not recovered</p>
<b>MISSED BOATS</b>		
Missed Bt onsite	<p>Enter the number of boats that returned to the sample site that were not sampled since the last sampled boat.</p> <p>Tally marks can be recorded in the box, then the total is recorded when the next sampled boat comes in.</p>	<p>This includes un-sampled or missed boats See the table titled "Summary of PR Counts" for specifics</p> <p>Refusals are NOT missed boats</p> <p>Language barriers are NOT missed boats</p> <p><u>SAMPLE FLAGS</u> K = KAYAKs P = PWC, paddle boards, canoes, other small non-trailerred boats, and "non-traditional boats" with trailers S = SAILBOAT</p> <p>Example: 2K = 2 fishing kayaks It is OK to put multiple numbers and flags in a row (line). For example, you could list:</p>

Field Name	Instructions	Coding Examples and Formats
		2 = 2 recreational fishing boats missed AND 1K = one fishing kayak missed. Page Tot = 3
Missed Bt offsite	Enter the number of fishing boats that returned to an offsite boat area since the last sampled boat.  See the table titled "Summary of PR Counts" for specifics.	See the table listing sites with associated offsite missed fishing boat counts
PR2 Launched (PR2)	This data is <u>only</u> needed for PR2 samples.	Leave blank for PR1 sampling mode
<b>FOOTER</b> The footer contains the sum of the page totals for each category below.		
Refu + Barrier	Enter the sum of refusals and language barriers for the page	Count the number of R and B entries in the sample # column. Do not include RS samples
Total Boats	Enter the sum of intercepted boats on the page.	Total Boats = sampled finfish boats + eligible invertebrate only boats+ non-fishing boats  Does NOT include missed boats or refusals/language barriers, but does include RS samples
Salmon Boats/Angs	Enter the sum of number of boats that targeted and/or kept salmon on the page/sum of anglers for these boats.	A boat/angler(s) that kept salmon while targeting other species would be tallied as a salmon boat with salmon angler(s)
Kings kept/rels	Enter the sum of observed and reported kept and released alive and dead king (Chinook) salmon on the page.	

Field Name	Instructions	Coding Examples and Formats
Coho kept/rels	Enter the sum of observed and reported kept and released alive and dead silver (Coho) salmon on the page.	
Pacific Halibut kept/rels	Enter the sum of observed and reported kept and released alive and dead Pacific Halibut on the page.	
Yelloweye kept/rels	Enter the sum of observed and reported kept and released alive and dead Yelloweye Rockfish on the page.	
Copperkept/rels	Enter the sum of observed and reported kept and released alive and dead Copper Rockfish on the page.	
Quillback kept/rels	Enter the sum of observed and reported kept and released alive and dead Quillback Rockfish on the page.	
Black kept/rels	Enter the sum of observed and reported kept and released alive and dead Black Rockfish on the page.	
Missed boats on/off	Enter the sum of missed onsite and offsite boats on the page.	Do NOT sum by sample flag type (i.e., K, P, S). Sum all missed boats together

**Specific editing checks:**

1. Check that offsite start and stop counts and/or offsite missed boats are appropriately present or not present depending on the PR1 site sampled.
2. Check that missed boats are coded on each boat row. NOT on rows with just catch and bio data.
3. Check that all pages are present and numbered sequentially.
4. Check that there are no missing gears and that catch location coordinates are coded in the correct format.
5. 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 the data can be entered consecutively.

6. Make sure fish sex is in correct position (after length). Do not circle fish sex code.

### Summary of PR Counts

Type of Boat, Angler or Trailer	Interviews and Sample Number	Onsite Missed	Offsite Missed (PR1 sites only)	Trailer Counts: Onsite, Offsite and Pressure Checks
<b>General Rule</b>		NEVER ADJUST THESE COUNTS		
<b>non-fishing boats</b> (NFPC6, NFCOM, NFOTH)  See below for info on kayaks, PWC and sailboats	Interview & record sample #	Do NOT include boats that can be identified as NFPC6 or NFCOM.  Include all other traditional trailerable boats	Do NOT include in count	Do NOT include trailers that can be identified as NFPC6 or NFCOM or NFOTH  Include all other traditional trailers
<b>kayaks, PWCs, canoes, other small non-trailerred boats, and “non-traditional boats” with trailers (e.g. jet skis, dinghies)</b>  Use the flag <b>K</b> for kayaks. Use the flag <b>P</b> for PWCs, canoes, other small non-trailerred boats, and	Interview <b>fishing</b> boats & record sample # with K or P flag Do NOT interview <b>non-fishing</b> boats & do NOT give them a sample #.	Only count <b>fishing</b> boats & flag with K or P.	Only count <b>fishing</b> boats & flag with K or P.	Do NOT include in count. This means, do NOT include: jet ski trailers trailers that can be identified as for sailing dinghies vehicle with racks for boats vehicles without trailers  Do NOT adjust counts for kayaks etc. interviewed

Type of Boat, Angler or Trailer	Interviews and Sample Number	Onsite Missed	Offsite Missed (PR1 sites only)	Trailer Counts: Onsite, Offsite and Pressure Checks
"non-traditional boats".				
<b>sailboats</b>	Do NOT interview non-fishing dinghies. Treat like kayaks or PWC. For larger sailboats, interview & record sample # with S flag for both fishing and non-fishing (NFOTH)	Include in count & flag with S if fishing	Do NOT include in count	Do NOT include trailers that can be identified as sailboat trailers in count  If you can't determine or don't know that a trailer belongs to a sailboat, then include it in the count
<b>trailers with no vehicle attached or "abandoned" trailers</b>	Not Applicable	Not Applicable	Not Applicable	Do NOT include in count
<b>refusals (R) &amp; language barriers (B)</b>	Interview & record R or B (no sample #)	Not Applicable	Not Applicable	Not Applicable
<b>Vehicles with no trailers</b>				Do NOT include in count.  Do NOT adjust counts for boats that have been interviewed that are not trailered







## Secondary Private and Rental Boat (PR2) Mode Sampling

### Introduction

Although all fishing modes are sampled, CRFS puts more emphasis on fishing from boats, where the majority of managed fish species are caught compared to 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. The publicly accessible sites where private and rental boats launch are stratified into primary sites (PR1) and secondary sites (PR2). To divide sites into the two strata (PR1 and PR2), data for “important management species” were analyzed separately for sites north and south of Point Conception. Important management species were defined as those with active fishery management plans and include salmon, groundfish (e.g., rockfishes, Lingcod, Cabezon, California Scorpionfish, flatfishes, and some sharks and rays), highly migratory species (tunas, billfishes, Dolphinfinch, and certain oceanic sharks), and species in the California Nearshore Fishery Management Plan.

**PR2 sites are defined as publicly accessible launch facilities where less than 10 percent of the private and rental boat catch of “important management species” has been landed historically.** The sampling procedures for PR1 and PR2 are similar, and the same forms (PR Form and ASF) are used for both PR1 and PR2. Differences in the sampling procedures for the two strata are listed in the table below.

### Differences between PR1 and PR2 sampling procedures.

Sampling Procedure	PR1	PR2
Time on site when trailers present	From the return of the first boat until the last boat returns or sunset (whichever is first)	Up to 8 hours, including travel time
Scheduled start time	Lead will assign a start time	Early or late start as defined by Lead each month
Count boats launching	No	Yes
Count offsite missed boats	Counted at some PR sites	No

### PR2 GOALS

The primary goals for PR assignments are to:

- ✓ Obtain accurate counts of the boats and anglers using the site
- ✓ Obtain high quality, interviews and catch data
- ✓ Observe all kept salmon
- ✓ Collect heads of all adipose fin-clipped salmon

### Effort Data

The goal is to estimate total fishing effort for the day. This is done by counting trailers and returning boats and determining the number of anglers on each fishing boat. 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. Effort is expanded to account for weekend (and holidays) and weekday days not sampled. The effort estimate is in angler trips by target fishery group. Additionally, in PR2 mode we collect the number of boats launching. These data along with the trip length data is used to generate better effort profiles (i.e., effort by time of day).

### **Catch Data**

An additional goal is to estimate catch per angler-trip. Catch per angler-trip is determined by counting the number of each species that is kept and recording the number of each species that are reported as released or otherwise unavailable to examine. Estimation of effort and estimation of catch per angler-trip are each calculated for a PR2 site, month, kind of day (weekend/weekday), water area, and trip type (target). Effort is calculated as the total number of anglers sampled during the time period, adjusted for un-sampled anglers, and expanded for the total available weekend or weekdays per month. Catch rate per angler-trip is calculated from the sum of catch recorded from sampled anglers divided by the total sampled anglers. Total catch is the product of estimated effort and estimated catch rate.

### **Location of Catch Data**

Another 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 average depths of their catch. The data is used to apply depth-based mortality estimates to some released species and summarize the catch estimates in depth ranges and by 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.

### **Biological Data Collection**

Another goal is to sample lengths and weights of landed catch. Lengths will be used in a regression to calculate a predicted weight for fish without a sampled weight, and to examine the size distribution of the landings. Sampled weights are used to calculate average weights by species. These average weights are multiplied by estimated total catch by species in numbers of fish to estimate total catch in metric tons. Metric ton estimates are used to evaluate catch quotas and the rebuilding status of some distressed species. Numbers of fish for quotas and evaluating status of ESA listed stocks is used in salmon management. Note: do not measure or weigh non-adipose fin-clipped salmon; only adipose fin-clipped fish need to be measured for fork length, prior to head removal. Salmon are managed in numbers of fish, and not by weight.

### **Sample Selection**

The PR2 sampling schedule takes into consideration the effort of all PR2 sites within the District. Sites with high effort have a higher probability of being drawn for sampling than those with low effort. Based on random chance, all PR2 sites may not be sampled every month. Some PR sites may change

from PR2 to PR1 and back to PR2 on a monthly basis, depending on fishery season openings and closings and effort changes throughout the year. Be sure to check the District site list every month.

### **Scheduling**

The Lead will schedule the random selection of days for sampling for each month in advance. The number of PR2 assignments sampled each month depends on the number of active PR2 sites in the District and the number of kind of days available. The two kinds of days are weekends/holidays and weekdays. Effort is expected to be different for these kinds of days. Rescheduling of PR2 assignments will disrupt the random selection of samples reducing the statistical validity and representation, and if allowed, will respect separation of the kinds of days and may be done only with the Lead's 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 PR2 sites can have varying effort dependent on the fishing seasons, ocean conditions, etc.

## **PR2 SURVEY PROCEDURES**

### **Effort Data Collection**

One goal is to determine the activity, i.e. effort, of every boat returning to the site during the PR2 shift. A specific set of data must be collected for every boat that returns to the PR2 site. For every boat intercepted the time, number of anglers (licensed and unlicensed), and the target(s) (species or activity) should be recorded. For non-fishing (NF) boats (recreational or commercial activity type), record the specific non-fishing activity for the primary target. See Non-Fishing (NF) Boat Types.

Boats targeting invertebrates are sampled as well, just like finfish boats, regardless of whether they had finfish bycatch. See the Species Sampling Chapter for more information on invertebrate trips.

### **PR2 Assignment Duration**

Up to eight hours is allotted for each PR2 assignment. This includes travel time to and from the site to your headquarters and should allow the Sampler to be on site for six to seven hours.

On average, the highest number of boats returning per hour is between 1300 and 1600 hours. This varies by time of the year, location, target, and weather conditions, but the sampling duration at the site should include the time period when most of the boats are returning. Sampling early and late returning boats is also important as the species composition for those boats may differ from the boats returning during the peak period. The Monthly Schedule will list **early** or **late** start times for each PR2 assignment for the purpose of varying the time on site. The Lead will set the time for the early and late start times each month based on knowledge of the fisheries and the

daylight hours available. An early start time might be 0900 hours, and a late start time might be 1100 hours.

### **Low Effort Protocol**

The Sampler will stay onsite if there is known/suspected finfish effort, until eight hours has been spent on the assignment (including travel time), or sunset.

### **No Boats in PR2 Mode**

If there is no effort at a PR2 site, the Sampler should stay for a minimum of 2 hours to see if effort develops. If no effort develops on a zero-effort day, the Sampler terminates the assignment and it is considered complete.

### **Arrival and Trailer Counts**

PR2 sites will be sampled for effort and catch during daylight hours, at a single site. The Sampler will arrive based on the start time defined in the Monthly Schedule and depart after 6-8 hours of sampling, depending on travel time.

Trailer counts are used to estimate effort for the day. A starting trailer count will be conducted upon arrival of the first Sampler. All boats returning to the site during sampling hours will be intercepted. Counts of "trailers" include traditional boat trailers. Personal watercraft (PWC) trailers, car top boat carriers, boats loaded into the beds of trucks, non-trailerred inflatable boats, and kayak and canoe carriers are excluded. See the Summary of PR Trailer Counts table on page 11-38 for more information.

### **Onsite Trailer Count**

The Sampler should count the number of trailers in the parking lot and any adjacent streets or parking lots (consult the Wiki or a site description book to determine the count area for each site). Do not count trailers not attached to vehicles, or known non-fishing, commercial or CPFV trailers. Some PR2 sites consist of a boat rental shop where there are no traditional trailers; in these instances, ask the rental shop about how many boats were rented. Immediately before leaving the site at the end of the day, the Sampler will count the number of trailers remaining in same area. Known commercial or CPFV trailers should not be included; all others are included in the stop count.

### **Onsite Missed Boats**

Avoid missing boats at the PR2. If a boat is completely missed while sampling other boats, it is considered an onsite missed boat. Once a boat is canvassed for activity it is not considered missed and a conservative attempt should be made to conduct a CRFS interview. Refusals and language barriers do not count as missed boats. Onsite missed boats do not have a time, target species, or number of anglers recorded; they are simply tallied with the current boat the Sampler is interviewing in the left-most missed boat column on the PR Form. Record "K" next to the number of missed fishing kayaks. Page totals for onsite missed boats are tallied at the bottom of each PR page,

and assignment totals for all onsite missed boats are tallied at the bottom of the ASF.

### **Limited Activity at the Site**

Since many of the PR2 sites have relatively low effort, especially in the winter, Samplers should be prepared to conduct other work while waiting for boats to return. Work that might be completed includes editing forms, reviewing the manual, studying fish identification, and reviewing outreach materials. Some sites have high fishing effort for kayaks, PWCs, and boats that do not use traditional boat trailers. Samplers should stay on site for the entirety of their shift at these sites even if there is a zero-trailer count.

### **Sites that do not have a traditional trailer count:**

District 1:

- La Jolla (Beach Access) (73-211)
- Lower Newport Bay (Beach launch) (59-409)

District 2:

- Gaviota Pier Boat Hoist and Beach Launch (83-203)
- Goleta Pier Boat Hoist and Beach Launch (83-301)

District 3:

- Santa Cruz Small Boat (087-304)
- Pebble Beach PR2 (053-214)
- Leffingwell Landing (079-203)
- Spooner's Cove (079-210)

District 4:

- Miller Park (41-102)
- Lawsons Landing (41-103)
- Timber Cove (97-107)
- Ocean Cove (97-108)
- Salt Point Ramp (97-109)
- Stillwater Cove (97-110)
- Alameda Rockwall (1-108)

District 5:

- Shelter Cove (023-106)
- Van Damme (045-206)
- Albion (045-102)
- Point Arena (045-103)

District 6:

- Trinidad Harbor (023-102)

**Offsite Trailer Counts**

Several PR2 sites are near one another, and catch, effort, and species composition are similar. These are nearby launch ramps or boat rental facilities where the sampler will obtain start and stop counts of trailers or fishing boats out at a rental facility. Before and after the PR2 assignment you will stop by the offsite count site and get a start count before your PR2 assignment and a stop count after your PR2 assignment. You will not be obtaining any interviews at the offsite count site. If it is a rental facility the sampler may be able to call and see how many fishing boats are out and use these for a start and stop count. These counts are recorded in the offsite trailer count box in the upper right hand of the PR form.

District	Sampled PR2 Site	Offsite Start and Stop Counts Obtained
1	073-105 Chula Vista Launch Ramp	073-310 National City Launch Ramp
1	073-112 Glorietta Launch Ramp	073-118 Coronado Boat Rentals
1	073-018 Seaforth Boat Rentals	073-119 Dana Landing Rentals
4	001-100 Berkeley Launch Ramp	001-107 Emeryville Launch Ramp
4	097-100 Westside Launch Ramp	097-105 Doran Park Launch Ramp
4	097-108 Ocean Cove Launch Area	097-109 Salt Point Launch Ramp
4	097-107 Timber Cove Launch Area	097-110 Stillwater Cove
4	001-101 Grand Street Launch Ramp	001-102 Estuary Park Launch Ramp

**Launched Boats**

In PR2 mode, boats that launch are also tallied. **Record all boats that launch**, regardless of activity (except non-fishing kayaks or PWC). Fishing kayaks, fishing PWCs, and sailboats are flagged with a “K”, “P”, and an “S” respectively. PWCs include canoes, other small non-trailerred boats, and

non-traditional boats with trailers. Launching boats are tallied in the “PR2 Launched” column. Do not include known commercial and CPFV boats in this count.

### **Catch Data Collection**

All private boats that have completed a fishing trip should be sampled for catch. Catch includes landed catch (fish brought ashore) and reported catch such as discards or other catch not available. 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 catch. This determination may need to be done before the driver leaves to get the trailer. The goal is for the Sampler to observe all finfish catch to identify to species, measure and weigh as many fish as possible, and document all unobserved catch for each boat.

### **Biological Data Collection**

After determining the catch by species 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 active management, especially species of concern. A prioritized list of species to preferentially sample is provided (see Priority Species). Lengths can be used to predict weights and to examine length classes; however, recording length-weight pairs is the goal for bio data collection. Do not weigh any salmon species, and only record 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 every fish on every incoming boat. The Sampler should attempt a random or systematic sample of fish in this case, following the priority list. Refer to the section, General Onsite Procedures: Catch Measurement.

### **Catch Location and Average Depth Data Collection**

The Sampler will attempt to determine the location and average depth of catch by species, or the location and depth of the majority of the boat's fishing effort if there is no catch. Maps with depth contour lines are provided to assist the angler in determining the catch location(s) and depths. If all species were caught within the same location and depth, then only one location and depth may need to be reported. Often, locations and corresponding depths may need to be reported separately for individual species or species groups. For suspect data, rare species, and especially for overfished species, double check the catch location and average depth with the angler. For trips with large areas of trolling (for non-bottomfish species), a general area can be used. Catch location is used to manage fisheries by geographic boundaries.

### **Sub-sampling Locations and Depths**

There may be times when the level of activity at a site is too high to sample the locations and average depths of all catch on every boat. In these cases, the Sampler should attempt a random or systematic sample of more specific locations and depths for bottom-fishing boats. This allows some boats to give

a single more general location to save time. Boats targeting surface fishes (tuna, salmon, seabass, etc.) may be coded with the general locations and depths as well, when time is short. It is important to document location and average depth for trips with catch of non-retention species and species on the Priority Species List.

### **Minimum PR Sample**

A CRFS sample is defined as a boat which has been sampled for both effort and catch. Catch locations, average depths, and bio data are not required for a valid CRFS sample. Note: the data elements below are the minimum required for a valid sample; Samplers should make every effort to collect the data needed to complete EVERY field.

#### The following data elements are the minimum requirements for a useable CRFS interview:

- Total number of anglers who fished
- Number of days fished
- Target
- Area fished (water area, e.g., Nearshore=N)
- All catch, unobserved number of fish by species

The minimum items for this interview are listed above. Fish measurements may be omitted but fish counts may not. Never code rockfish to the genus level to save time. If the minimum requirements cannot be met, the boat will be considered a Barrier or Refusal or tallied as a missed onsite boat depending on the nature of the interaction.

### **Screening Divers**

In addition to hook-and-line anglers, divers may qualify for the CRFS interview. If a diver carries a spear gun with them, they can be interviewed as an 'angler/s.' If they spear a fish or intended to spear a fish they are considered an eligible angler and can be interviewed with gear code "S." Divers taking or intending to take invertebrates are also eligible to be sampled (see the General Onsite Procedures section). Divers entering the water from the shore using fins and a flotation device (such as a dive tube) 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, stand up paddleboards (SUPs) and pontoon boats with 'oars.' In effect, having a paddle is what designates the mode as PR.

### **Fishing Tournaments**

For the purposes of CRFS sampling, a tournament is defined as a site and date specific fishing contest. Contestants usually must return to tournament headquarters by a certain time for the "weigh in" which limits how far they can travel, and only specific species of fish may be taken on the date of the tournament event. Generally, tournaments are not sampled. Once the Sampler determines that a tournament is taking place, the Sampler should contact the Lead immediately to discuss the situation. It is important to notify the Lead in advance when a tournament date and location is discovered so

that the Lead can make appropriate arrangements, if necessary. If the Lead determines to sample as scheduled, a sample flag of "T" should be used for all boats sampled that are participating in the tournament.

Informal 'pools', such as those arranged on CPFVs (jackpot contests), are not considered tournaments—anglers participating in these types of contests should be sampled as usual. Some fishing contests are regional (encompassing a large area) and span a long period of time (a week, a month, or an entire fishing season). Participants usually pre-register at a location, such as a tackle or bait store, and may bring qualifying fish in during the entire time the contest is running. For the purposes of CRFS sampling, these types of contests are called derbies. Anglers participating in derbies should be sampled as usual.

### **THE PR FORM (PR2 MODE)**

The PR Form collects total boat effort for the day by counting trailers and sampling returning boats. Each boat is screened as fishing or non-fishing. For fishing boats, determine target fish species and number of anglers per boat. In northern California during salmon season, the form will also count all retained and released salmon as well as record lengths of adipose fin-clipped salmon head tag numbers. For boats with catch, all the fish are counted by species along with location(s) and average depth(s), and observed fish are measured and weighed.

### **Questionnaire Usage**

Samplers are given a laminated copy of the **questionnaire** used with the PR Form. The questions for the interview are written out, in full for standardization. The Sampler should word each question specifically as it is written in the questionnaire. In order to have meaningful comparative data, each angler should respond to a standardized stimulus. Methodological studies have shown that even slight changes in questionnaire wording, for example "should" versus "could," drastically influence responses.

### **Introduction to the PR2 Interview**

Tasks while sampling boats are generally done in this order:

1. Determine if anyone on the boat has fished
2. Determine the total number of anglers and of those, the number of unlicensed
3. Determine the launch time of the boat
4. Determine zip code of one random angler
5. Determine total days fished on trip
6. Determine if night fishing occurred
  
7. Determine the target species and gear (or non-fishing activity)
8. Determine the primary area fished for the fishing target(s)
9. Determine if any catch (including discards) or marine mammal losses (salmon only)
10. Determine how many of each rockfish species a descending-device was used for release

11. Count catch by species (mandatory for salmon species)
12. Determine the location and depth of the catch, or if no catch, where the majority of fishing effort occurred
13. Record finfish length measurements and weights of the catch (prefer length-weight pairs)
14. Depending upon region: collect salmon and/or White Seabass heads and Yelloweye Rockfish

### **Before the Assignment**

The Sampler should check their equipment and forms before leaving for the site. This will ensure that the Sampler has enough forms and other supplies to complete the assignment. Be aware of the weather forecast. In northern California during salmon season, be sure additional salmon equipment and tags are on hand. In southern California, make sure to have a white seabass wand if one has been issued. Double check the date, site, port and assignment ID. Record site information, Sampler name, and ID number on the PR Form and on the Assignment Summary Form (ASF). Plan to arrive on site at the time designated by your Lead.

### **Arrival on Site**

Upon arrival at the PR2 site, count the number of trailers in the parking lot and any adjacent streets or parking lots (consult the CRFS Wiki site or the site description book to determine the count area for each site). Record the arrival time on the ASF and the arrival trailer count in the start count box on the first PR Form.

### **Sampler Location Onsite**

There are differences among PR2 sites regarding onsite positioning for obtaining interviews. 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, on the beach, or at the ramp. The Sampler will use discretion in determining the best approach at any particular site. For most PR2 sites, 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 delay the trailering process which may result in unhappy anglers.

### **Monitoring Boats**

When a boat arrives at the PR2 site, a new sample is created with the time of arrival. During very busy times, a boat may arrive and will not be sampled because the Sampler(s) are busy with other boats. This boat will be tallied on an existing boat row as an onsite missed boat in the onsite missed boat column. An onsite missed boat may be either a non-fishing boat (NF) or a fishing boat. The proportion of fishing to non-fishing sampled boats is applied to the count of onsite missed boats to estimate several 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 the missed boats are fishing boats, but half the boats actually sampled were NF boats, then the estimate of fishing boats

missed will be underestimated by 50% because missed boats were not representative of the boats sampled. Therefore, onsite missed boats should be a representative selection of all boats, not just fishing boats or boats that look like a lot of work to sample. During salmon season every effort should be made to avoid missing boats. Ideally, there should not be any missed boats. Once a boat has been canvassed and the target is either finfish or invertebrate the minimum CRFS interview is required. Contact your Lead immediately if additional help is needed to avoid missing boats.

### **Multiple PR Trips on the Same Day**

Occasionally PR boats will make more than one trip per day; sometimes the skipper drops off passengers from a morning trip and takes a new crew out on a second trip in the afternoon, or the crew may remain the same after returning from the first trip of the day. The Sampler may recognize the boat as having been sampled earlier in the day, or the crew may point out that they have already been sampled at the completion of their first trip. Regardless of how this second (or subsequent) trip is discovered, the Sampler is to treat these trips separately, and attempt to sample both as distinct trips each with unique data – separate sample numbers, different launch times, segregated catch, etc. Do not combine both trips into one sample. If the catch from both trips is still onboard at the completion of the second trip and the crew is unable to separate catch by trip, the Sampler is to record catch from the second trip as angler reported (kept unobserved). If anglers are reluctant to participate in the survey again, point out that each of their trips is unique, and it's important for CRFS to capture data from each and every unique trip – perhaps the boat had different targets, fished in a different location, or caught a different composition of species.

### **Determination of Boat Type**

A category based on activity must be assigned for each boat intercepted. Ask a passenger on the boat as to its activity for the day. There are, essentially, two types of boats in the PR survey: Fishing and Non-fishing (NF). A fishing boat is defined as a boat, either privately owned or rented, upon which fishing effort (for finfish OR invertebrates) occurred. Boats that targeted invertebrates only are considered fishing boats. Catch is not necessary to be considered a fishing boat. Boats that intended to fish but did not put gear in the water are NF boats. A CPFV carrying passengers paying to fish is not considered a fishing boat for the purposes of PR mode sampling.

### **Non-Fishing (NF) Boat Types**

There are three NF codes currently being used:

1. **NFCOM** – a commercial fishing boat targeting finfish or invertebrates (note: occasionally a commercial fishing boat may be fishing recreationally that day – the boat would be sampled just like any other PR boat).
2. **NFPC6** – Commercial Passenger Fishing Vessels, also called party/charter (PC) boats, vessels that are permitted to take paying passengers fishing. This includes smaller, trailered “6-pack” boats. The

Sampler may have to inquire with the operator to determine if the boat was a regular PR boat or was fishing as a CPFV that trip.

- 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, research, etc.

### **CPFV and Commercial Boats**

Commercial Passenger Fishing Vessels (CPFV) are coded as “NFPC6” on the PR Form. If the Sampler encounters a CPFV at the PR2 site, the boat is coded as “NFPC6” in the Target field of the PR Form. The boat should then be sampled opportunistically using the appropriate PC dockside sampling. Commercial fishing boats are coded as NFCOM in the Target field of the PR Form; commercial fisheries are sampled using other non-CRFS surveys.

### **Opportunistic PC Sampling**

Commercial Passenger Fishing Vessels (CPFV) that utilize a PR site are coded as “NFPC6” on the PR Form. Monitoring PR effort during a PR assignment is a priority; if time allows and without missing any PR effort, the Sampler should sample the CPFV using the appropriate PC dockside sampling form – the CRFS-OSP SALMON CPFV DOCKSIDE form for trips that targeted salmon only, and the CRFS PC (CPFV) DOCKSIDE form for trips that targeted something other than salmon. If the boat targeted both salmon and non-salmon on the same trip, sample the boat using *both forms*, recording data on the appropriate form. Report all CPFV activity to the PEC Port Lead (Districts 3-6) or record the vessel’s effort on a PEC form (Districts 1-2). See CPFV Dockside Sampling sections in this manual for more information on sampling CPFVs dockside.

### **Refused Boats**

Participation in this survey is voluntary. An angler may refuse to participate. However, this data is crucial to sustainable fisheries management, so the Sampler should try to get as many questions answered as possible. Some anglers on the boat may be more receptive than others.

Although refusal to answer key CRFS questions will be coded as a refusal, salmon minimum data element requirements will allow for saving a sample when CRFS minimum interview requirements are not met. Anglers are required to make kept salmon available for sampling (Title 14, CCR, Section 1.73(b)); minimum requirements for a valid salmon sample include number of anglers, number of kept salmon by species, and number of salmon with adipose fin clips– code these boats as RS in the Sample #. Zip code, location, time launched, and average depth are not necessary for a “valid” salmon sample; however, these items *are* important. If you cannot get all the required questions answered, you will have to record the boat as a refusal; code an “R” in the Sample # field. Refusals do not get a sample number, just an “R.” Refused boats are not tallied into the total boats on the PR2 page totals. If

you can collect the minimum salmon requirements the boat would be coded “RS” and included in the total boats on the PR2 page totals.

### **Language Barrier Boats**

Anglers who cannot speak English are usually not able to effectively answer survey questions. If there is too much of a language barrier, the Sampler should stop the CRFS interview. If all the required questions are not answered, the boat is recorded as a barrier; code a “B” in the Sample # field. Barriers do not get a sample number, just a “B.” Language-barrier boats are not tallied into the total boats on the PR page totals.

### **Anglers, Zip Code and Days Fished**

Once the Sampler determines the boat is an eligible fishing boat and willing and able to participate, determine the angler effort on the boat. Some of the passengers may not be anglers. The Sampler will determine the number of anglers who actually fished. Next, the Sampler determines the number who fished without a valid CA fishing 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. Often, the anglers will want to show their licenses—Samplers 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; children are not eligible to participate in the telephone survey, and some anglers are not required to have a license and so would not be a part of the 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. The “N” box will be checked if the boat fished at night (after dark the night before until dawn of the current day). If only night fishing occurred, the “N” box will be checked and “0” days fished will be recorded. If it is a multi-day trip, record the number of days fished, leave the launch time blank, and leave a note on the data sheet. Boats that fish and use a launch ramp more than once in a day are considered “multi-trip” boats. Each trip is sampled separately. Boats that use the launch ramp once and stay out fishing for multiple days are considered “multi-day” boats are sampled once and the number of days fished are recorded.

One of the anglers on the boat 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, use the applicable foreign country code. The zip code is used primarily to help quantify the economic role of sportfishing. The angler asked should be at random, 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 need a complete census of catch. The term “catch” includes

observed and unobserved kept fish and released fish. Catch includes landed fish, fish given away, taken by marine mammals (salmon only), used for bait, filleted or eaten, **AND** fish purposely released, thrown back alive (shakers) or dead. Anglers may report that they have no fish on the boat. However, a boat may still have catch if they caught and released fish. Be sure to inquire about anything that was caught and then used for bait or any other fish that were caught but not available for the Sampler to observe.

### **Examining Catch**

The Sampler will examine all landed finfish catch for each fishing boat. Examined or observed fish are the most robust because the Sampler actually saw, counted, and identified the catch to species. If the boat refuses to have the landed catch examined, all catch are coded as “kept unobserved”. 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 “RFGEN”?

A. No, you must record catch to species. The only time you should be using the RFGEN code is for unobserved catch that the angler simply cannot identify, even with identification guides. There will often 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 bio data.

### **Observed Catch (Sampler-Examined)**

The Sampler will attempt to observe and examine all retained finfish catch, recording the number of fish kept and observed by species in the appropriate box on the PR Form. It is important to note that only fish that the Sampler sees, and counts can be recorded as “kept observed”. Fish not able to be physically viewed and counted by the Sampler must be recorded in the “kept unobserved” box. It is important to the CRFS program to differentiate between Sampler-examined and angler-reported fish counts. Estimates of total harvest are summarized separately for the Sampler-examined and angler-reported catches.

The Sampler may identify fillets with skin patches, being careful not to double count fish (i.e. two fillets equals one fish). Fish identified by skins are considered “kept observed.” Anglers may not want the Sampler examining fish that have been filleted. These fillets are someone's dinner, and they may not want to get their food dirty or open a tied bag. Ask the angler before attempting to examine fillets.

### **Unavailable Catch (Angler-Reported)**

In addition to any fish the Sampler sees, each fishing boat will be polled for any fish caught that are not available for examination. Unavailable catch are usually fish that have been thrown back, given away, packed away, used for bait, filleted (not identified by skins), eaten, or taken by marine mammals (salmon only). 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; kept, released alive, released dead, and seal take (salmon only). If no fish were caught (kept or released), a NO CATCH code is recorded in the Species Code box and zeros recorded in the catch boxes.

### **Kept Unobserved Catch**

Fish that are not thrown back, but otherwise are not available for examination will be separately recorded on the PR Form. Kept unobserved fish include fish given away, packed away, used for bait, filleted (not identified by skins), or eaten. Kept fish that the angler refuses to show to the Sampler are included as “kept unobserved”. These fish are counted separately from fish which the Sampler personally examines and counts (kept observed). Be persistent with anglers that have unavailable rockfish catch. Use your best effort to gain access to the catch for species identification.

### **Released Alive**

The released alive catch category is the total number of fish by species that were released alive in swimming condition. Released alive total includes fish intentionally landed and subsequently released, those that are purposely shaken off the hook boat-side, 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.

### **Released Alive with Descending Device (DD)**

This is a subset of released alive and 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 discard 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. Use of a needle to vent the swim bladder of a fish is not considered a descending device. Released alive with descending device is coded only for rockfish species. Released alive with descending device is a subset of the released-alive total; the number of released alive with descending device will always be less than or equal to the released alive total.

### **Released Dead**

The released dead category 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 wounds or inability to swim down) may be coded as dead. The Sampler and angler 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**

The seal take category includes any salmon that were known to have been taken by any (seals, sea lions or other marine mammals). Seal take should only be determined for salmon catch. Anglers must be certain and have seen the marine mammal take the salmon from their line. The Sampler should inquire further with those anglers who say 'I think' or 'maybe' a fish was lost to a pinniped. The Sampler should not include fish that naturally escaped or were naturally caught and eaten by a pinniped.

### **Catch Location and Average Depth**

All CRFS boats are sampled for the catch location and average depth. For boats with catch, a fishing location will be recorded. Location and the average depth may be recorded for all catch together or by species when determined and time allows. For boats with no catch, the location and average depth where the majority of fishing effort occurred is recorded. The majority of effort is defined as where most of the boat's time was spent with gear in the water. Average 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 species.

Q. If the PR anglers do not have any catch, should the catch location be left blank?

A. No still code a location. In this case, code to the major area fished (where effort mostly occurred).

### **Coding Location of Catch for Multiple Species on the Same Trip**

Frequently, PR boats will fish in several locations for different species/species groups on the same trip. It is important for the Sampler to recognize when this occurs and code distinct locations of catch for each species/species group. If anglers do not give some indication that their catch for the day came from more than one location and the Sampler is either not paying attention or not familiar with local fisheries, then incorrect location information will be collected that may bias CRFS data. Taken to the extreme, when a boat's catch comes from more than one location and the Sampler does not collect location of catch data for

each species/species group, it may appear that the boat was fishing in an illegal area, at an illegal depth or with illegal gear.

TARGET 1st	AREA	GEAR	SPECIES CODE	KEPT		RELS		SPECIES LOC or effort loc if no catch Block-box; Lat / Lon	DEPTH Average Bottom (ft)
				obs	alive	(#DD)	dead		
2nd				unobs	dead	seal take			
RFGN	N	H	RFBLK	6	2	(0)	222-23	40	
HALPA	O	H		0	0	seal			
			HALPA	2	0	( )			
				0	0	seal			
			RFBLU	3	0	(0)			
				0	0	seal			
			LNGCD	4	2	( )			
				0	0	seal			

This is an example of incorrect coding of location of catch. As is, the Pacific Halibut catch location will be attributed to the one recorded location of catch; this is incorrect, as HALPA are rarely taken in 40 feet of water, and the water area for the HALPA target was coded as offshore – this location is clearly within three miles of shore.

TARGET 1st	AREA	GEAR	SPECIES CODE	KEPT		RELS		SPECIES LOC or effort loc if no catch Block-box; Lat / Lon	DEPTH Average Bottom (ft)
				obs	alive	(#DD)	dead		
2nd				unobs	dead	seal take			
RFGN	N	H	HALPA	2	0	( )	223-25	350	
HALPA	O	H		0	0	seal			
			RFBLK	6	2	(0)			
				0	0	seal			
			RFBLU	3	0	(0)			
				0	0	seal			
			LNGCD	4	2	( )			
				0	0	seal			

This is another example of incorrect coding of location of catch. As is, the rockfish and Lingcod catch will be attributed to the one recorded location of catch. This example is typical of catch seen in District 6; current groundfish regulations include depth restrictions of 120 to 180 feet. If left as is, it will appear that the bottomfish were taken at an illegal depth.

TARGET 1st	AREA	GEAR	SPECIES CODE	KEPT		RELS		SPECIES LOC or effort loc if no catch Block-box; Lat / Lon	DEPTH Average Bottom (ft)
				obs	alive	(#DD)	dead		
2nd				unobs	dead	seal take			
RFGN	N	H	RFBLK	6	2	(0)	222-23	40	
HALPA	O	H		0	0	seal			
			HALPA	2	0	( )	223-25	350	
				0	0	seal			
			RFBLU	3	0	(0)	222-23	40	
				0	0	seal			
			LNGCD	4	2	( )			
				0	0	seal			

This is an example of correct coding of location of catch. Note that in order for the Blue Rockfish and Lingcod catch to be associated with the location of the Black Rockfish catch, the location and depth needs to be repeated after the Pacific Halibut row.

## Measuring Catch

For each CRFS boat with observed catch, the Sampler should sample the catch for species composition and bio data: lengths, weights, and some fish may be sexed. The priority is to document and measure the priority species

and, in northern California, adipose fin-clipped salmon. Do not measure non-adipose fin-clipped salmon. A secondary priority is to weigh important management species. Please see the General Onsite Procedures section for a complete list of priority species.

Time allowing, all fish may be measured and weighed. The goal is for paired lengths and weights, if possible. Paired lengths and weights allow for a regression equation to check for sampling error. Lengths are used to predict weights using a regression and to examine length classes. Weights are used to calculate more precise metric ton estimates and are used with the length to estimate fish condition.

Some fish may be sexed using external characteristics. Please see the Species Sampling section for complete details on which species may be sexed.

### **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 Catch Data**

- Determine if any catch (including unobserved/unavailable catch)
- Count catch by species (not higher-level taxa)
- Examine salmon for adipose fin-clips and collect heads
- Determine the location and average bottom depth of each species

### **Sub-sampled CRFS Data (Priority Order)**

1. Record length measurements of priority species
2. Record weights of priority species
3. Record length and weight pairs of priority species
4. Determine the location and depth of each species

### **CRFS PR Form Questionnaire**

It is important to use the wording of questions as stated in the PR questionnaire because slight changes in wording can result in different responses.

**INTRODUCTION: Hello, my name is \_\_\_\_\_ and I represent CDFW. I am 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.**

**BOAT ROW, EFFORT COLUMNS:**

**Sample # [or R or B or RS]:** 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, water area, targets, gear, catch #s by species) are also coded with R and do not get a sample #. Code boats that refuse all data elements other than those required for a minimum salmon sample (# ang, # kept/obs salmon and all must be observed, # ad clips) with "RS" in the sample number field.

**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 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  
Mexico:----- M  
Refused:----- Code Sample # as R, terminate interview

Offshore islands have separate codes – see bottom of PR form

**EFFORT AREA: Was your <secondary target> fishing in the ocean 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  
Mexico:----- M  
Refused:----- Code Sample # as R, terminate interview

Offshore islands have separate codes – see bottom of PR form

**GEAR: What gear did you use for <primary target>?**

Finfish		Shellfish	
Hook & Line:-----	H	Pot #:-----	P <sub>n</sub>
Spear:-----	S	Flat Hoop Net #:-----	F <sub>n</sub>
Troll:-----	T	Rigid Hoop Net #:-----	R <sub>n</sub>
Bait Net:-----	N	Snare:-----	E
Mooch:-----	M	SCUBA:-----	C
Both M & T (salmon only):-----	B	Free Diving:-----	D
Refused:-----	R		

**GEAR: What gear did you use for <secondary target>?**

Finfish		Shellfish	
Hook & Line:-----	H	Pot #:-----	P <sub>n</sub>
Spear:-----	S	Flat Hoop Net #:-----	F <sub>n</sub>
Troll:-----	T	Rigid Hoop Net #:-----	R <sub>n</sub>
Bait Net:-----	N	Snare:-----	E
Mooch:-----	M	SCUBA:-----	C
Both M & T (salmon only):-----	B	Free Diving:-----	D
Refused:-----	R		

DAYS FISHED trip: **What time did you leave the ramp?** Record the time (in 24 hr format) the boat left 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

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:----- R

Don't know----- DK

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 catch?** Probe for any catch 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)  
Don't know----- DK  
No:----- Record zero in (w/DD)  
Sampler didn't ask--- DA  
Refused:----- R  
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 from your line?**

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:----- R  
Don't know----- DK  
No Salmon Catch:--- Leave blank  
Sampler didn't ask--- DA

CATCH LOCATION: **Where were most of the <species> caught?**

NO CATCH: **Where did the boat spend most of its time fishing today?**



### Individual Effort Items

Individual boat data include boat sample number, time, total anglers (licensed and unlicensed), days fished, night fishing check box, zip code, target species (primary and secondary), water area and gear (for each target). Onsite and offsite missed boats (for select PR1) are tallied on the right side of the form. Launching vessels are tallied only in PR2 sampling mode; leave blank for PR1 mode.

SAMPLE # [or R or B]	ANGS Total	DAYS FISHED		TARGET	AREA	GEAR
		on trip	at Night			
				1st		
Time	(unlic)	Launch Time		2nd		
		Zip Code				
		N <input type="checkbox"/>				
	( )	time				
A		zip				

MissedBt		
onsite	offsite	PR2 Launched

### Recording Launched Boats

In PR2 mode you will also be tallying any boats that are launching. In the left-most “PR2 Launched” enter the number of boats that launched since you completed sampling the last boat. In addition, these fishing kayaks, fishing PWCs, and sailboats are to be flagged “K”, “P”, and “S” respectively.

### Individual Fish Data: Catch and Biological Data

Individual fish data recorded include the species, number landed examined (kept obs), number landed unavailable (kept unobs), number released alive, number of barotrauma-sensitive species released with a descending device, number of fish released dead, number lost to seals (salmon only), species catch location, average bottom depth, lengths, weights, sex, and head tag numbers.

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 (MF/TF)				
	obs	alive total (w/DD)	seal take			Weight (decimal kg) or (tag #)				
	unobs	dead				1	2	3	4	5
	obs	alive	( )							
	unobs	dead	seal							

### Footer Totals

At the bottom of each page, sum the number of refusals and language barriers, total boats (includes fishing and non-fishing), boats targeting salmon or with kept salmon, anglers targeting salmon or with kept salmon, the number of king salmon kept and released (Chinook Salmon, SALCK), the number of silver salmon kept and released (Coho Salmon, SALCO), the number of Pacific Halibut kept and released (HALPA), the number of Yelloweye Rockfish (RFYFY) kept and released, the number of Copper



<b>Field Name (noted if exclusively PR1 or PR2)</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
SITE	Enter the 3-digit numeric site code on the first page only.	Example: 100 = Noyo River Launch Ramp
OSP port (PR1)	For all PR1 assignments, enter the 3-letter alpha code on all pages. The codes are in Sampler Manual, behind the tab Other Codes.	Example: FTB = Fort Bragg
Sampler #	Enter your 3-digit Sampler identification number on all pages.	3-digit numeric code = 305
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 PR page only.	Example: Smith 132 (Y)
<b>TRAILER COUNTS</b>		
Notes on Trailer Counts	Upon arrival 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 sample day, enter the total number of boat trailers on site upon departure under "Stop".  First PR 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 there are trailers (that are active at the site) are parked on the street or offsite, it is important to include that effort in the counts
Time [Trailer Counts, Start and Stop]	Record the time you <u>began</u> counting the onsite trailers (Start is upon arrival, and Stop is	Use 24-hour military time format

Field Name (noted if exclusively PR1 or PR2)	Instructions	Coding Examples and Formats
	<p>at the end of the assignment).</p> <p>The times of Sampler arrival and departure from locations where offsite counts are conducted will also be recorded on the ASF.</p>	<p>Example: 9:00 AM = 0900 hours</p>
<p>Onsite [Trailer Counts, Start and Stop]</p>	<p>Onsite refers to trailer count occurring at the assigned site.</p>	<p>See the attached table titled "Summary of PR Counts" for specifics on what to include in the counts</p>
<p>Offsite [Trailer Counts, Start and Stop]</p>	<p>At certain PR sites count the fishing trailers at a nearby PR site. The "offsite trailer count area" is listed on the monthly site list or the Lead will provide a list.</p> <p>The Start Count should take place <u>before</u> going to the assigned PR site. The Stop Count should take place after sampling is complete at the assigned PR site.</p>	<p>See the attached table titled "Summary of PR Counts" for specifics on what to include in the counts</p>
<b>EFFORT</b>		
<p>Sample # [or R or B]</p>	<p>Record a sample number in consecutive order (starting with 1) for every boat intercepted (except for refusals or language barriers). See the attached table titled "Summary of PR Counts" for specifics. For refusals, record an R without a sample number. For language barrier, record a B without a number.</p>	<p>Sample # = 1,2,3...</p> <p>REFUSALS and LANGUAGE BARRIERS are NOT issued a 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>SAMPLE FLAGS KAYAK - record a "K" after the sample number</p>

Field Name (noted if exclusively PR1 or PR2)	Instructions	Coding Examples and Formats
	Flag special types of boats using letter codes (see right column) and a sample number.	<p>PWC, canoes, other small non-trailer boats, and "non-traditional boats" with trailers - record a "P" after the sample number            TOURNAMENT - record a "T" after the sample number            SAILBOAT - write a "S" after the sample number</p> <p>NON-FISHING TRIPS:            Record a sample number in the box, and the non-fishing type under TARGET. See the attached table titled "Summary of PR Counts" for specifics.</p>
Time	Enter a time stamp for every boat that is given a sample number or is a refusals or language barriers.	<p>Use 24-hour military time format</p> <p>Example: 5:00 PM = 1700 hours</p>
ANGS total	<p>Enter the total number of anglers on the boat regardless of license status (licensed anglers+ unlicensed anglers).</p> <p>Code zero for NF boats.</p>	<p>0 = NF boat only</p> <p>3 = three anglers fished total</p> <p>R or B: code the Sample # box with "R" or "B" and # of anglers if known, terminate the interview</p>
ANGS (unlic)	<p>Enter the number of anglers out of the total anglers fishing who do NOT have a current CA fishing license of any type.</p> <p>Note: unlicensed is a subset of total anglers, therefore unlicensed ≤ total anglers.</p>	<p>0 = all anglers were licensed</p> <p>R or B: code the Sample # box with "R" or "B" and # of anglers if known. Leave unlic. blank. Continue interview if possible, otherwise terminate the interview</p>

<b>Field Name (noted if exclusively PR1 or PR2)</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
<p>DAYS fished (left column) = trip effort</p> <p>N = Night fishing</p>	<p>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.</p> <p>Boats that engaged in any night fishing (non-daylight) will be identified by checking the "N" box. <u>If only night fishing occurred</u>, record 0 days fished.</p>	<p>Example: fishing during daylight hours the evening of one day and the morning of the next day = 2 days of fishing effort</p> <p>R or B: code the Sample # box with "R" or "B" and terminate the interview</p>
<p>Launch Time</p>	<p>Enter the time that the boat launched from the PR2 site for this fishing trip.</p>	<p>Use 24-hour military time format</p> <p>Example: 6:15 AM = 0615 hours</p> <p>If a trip is greater than 1 day in duration, leave the launch time blank and make a note on the data sheet</p>
<p>Zip Code</p>	<p>Select a random angler on the boat and request the residence zip code. Use a random method of selection to avoid bias (do not always pick the boat operator).</p>	<p>Example: 90210 = Beverly Hills</p> <p>Refused = R  Don't know = DK  Sampler didn't ask = DA  Foreign country = 3-letter country code e.g., Ireland = FIE</p>
<p>Target</p> <p>Primary = the main target/activity for the trip</p>	<p>Each boat not missed is screened to determine the primary and secondary activity/target, including fishing and nonfishing activity.</p>	<p>Examples:  HALCA = targeting California Halibut</p> <p><u>Non-Fishing Codes:</u></p>

Field Name (noted if exclusively PR1 or PR2)	Instructions	Coding Examples and Formats
Secondary = the secondary target/activity for the trip	<p>Activities/targets are coded using 5 letter alpha codes.</p> <p>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 are recorded as UNIFH.</p> <p>If the anglers refuse to provide a target, then code the Sample # box with "R" and terminate the interview.</p> <p>If the anglers cannot speak English, then code the Sample # box with "B" and terminate the interview.</p>	<p>NFCOM=commercial fishing trip (non CPFV)</p> <p>NFPC6 = CPFV trip *Do NOT record CPFV trips as a PR; record the NF code then sample using a PC dockside form</p> <p>NFOTH = Any other boating activity, including maintenance, enforcement, research, sailing, etc.</p> <p>Do not record NF kayaks or personal watercraft. NF sailboats are recorded as NF boats with an "S" flag</p> <p>R or B: code the Sample # box with "R" or "B" and terminate the interview</p>
AREA	<p>Record the water area code where the majority of fishing <b>effort</b> (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>Area is left blank for NF trips or blank secondary targets.</p>	<p>N = (ocean &lt; 3 mi) O = (ocean &gt; 3 mi) B = enclosed bay or estuary M = Mexico</p> <p><u>Island Codes:</u> 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</p>

Field Name (noted if exclusively PR1 or PR2)	Instructions	Coding Examples and Formats
		R or B: code the Sample # box with "R" or "B" and terminate the interview
GEAR	<p>Enter single letter code for the fishing gear used by the boat for each target. The gear should be determined and recorded for each primary and secondary target identified.</p> <p>Gear is left blank for NF trips or blank secondary targets.</p> <p>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</p> <p><u>Invert Only</u> P<sub>n</sub> = Pot and # F<sub>n</sub> = Flat hoop net and # R<sub>n</sub> = Rigid hoop net and # E = Snare C = SCUBA diving D = Free diving</p> <p>Unspecified invert. gear (shovel, rake, gun, etc.) – leave blank and make note on form.</p>
<b>CATCH</b>		
SPECIES	<p>Enter the 5-letter alpha code for each species or taxon of all fish examined or reported by the boat.</p> <p>Additional rows are used for boats with multiple species catch.</p>	<p><b>No catch:</b> write "NO CATCH" in the SPECIES box and zeros in catch boxes:</p> <ul style="list-style-type: none"> <li>- KEPT obs</li> <li>- KEPT unobs</li> <li>- RELS alive total</li> <li>- RELS dead</li> </ul> <p>If the anglers refuse to let you see the catch or provide information on the fish caught or released, code the Sample # box with "R" and terminate the interview</p>
KEPT obs (observed)	Enter the number of fish by species examined for this boat.	Only fish that the Sampler can see, and count are recorded here;

<b>Field Name (noted if exclusively PR1 or PR2)</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
	<p>If no fish of a species are examined, record a zero. Sampler will identify and count each species retained by the boat.</p>	<p>may include fillets that can be counted and identified; make a note on the form if the daily bag limit is exceeded for a species or group of species</p> <p>If the boat refuses both KEPT obs and KEPT unobs, then code Sample # box with "R" and terminate the interview</p>
<p>KEPT unobs (unobserved)</p>	<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; make a note on the form if the daily bag limit is exceeded for a species or group of species</p> <p>If the boat refuses both KEPT obs and KEPT unobs, then code Sample # box with "R" and terminate the interview</p>
<p>RELS alive total</p>	<p>Enter the number of fish by species reported as released alive by the boat. This includes both fish released with a descending device and without a descending device.</p> <p>Fish must have been landed first or have been intentionally released.</p>	<p>Fish appeared alive with no mortal injuries upon release</p> <p>No fish released = zero</p> <p>R or B: code the Sample # box with "R" or "B" and terminate the interview</p>

Field Name (noted if exclusively PR1 or PR2)	Instructions	Coding Examples and Formats
	<p>Probe for catch that may not be remembered.</p> <p>If no fish of a species are reported as released alive record a zero.</p>	
RELS alive (w/DD)	<p>Enter the number of rockfish by species that were released alive using a descending device. Venting the fish is not a descending device.</p> <p>This field does not apply to non-rockfish species.</p> <p>Note: Rockfish released using a descending device are considered alive.</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 didn't ask = DA 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.</p>	<p>R or B: code the Sample # box with "R" or "B" and terminate the interview</p>
Seal take	<p>Enter the number of salmon reported taken by pinnipeds for the trip. The angler must have seen the pinniped take the fish from the line.</p>	<p>This question is only asked if salmon catch was targeted</p> <p>No salmon target = leave blank</p> <p>Refused = R</p>

Field Name (noted if exclusively PR1 or PR2)	Instructions	Coding Examples and Formats
		Don't know = DK Sampler didn't ask = DA  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 location where the majority of fishing effort occurred.</p> <p>A separate location may be recorded for each species observed or 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><b>Block- Box:</b>            BBB-bb-bb-bb or            BBB-bbb-bbb-bbb</p> <p>718-106-107-108 = block and 3 boxes (inland)</p> <p>235-12-14-15 = block and 3 boxes (ocean)</p> <p>252 = block only</p> <p><b>Block-Box-Grid Size:</b>            BBB-bb+g:            212-01+3 = block and one box plus grid size</p> <p><b>Lat/Long:</b>            Latitude in upper box and longitude in the lower box; Only use whole degrees and minutes (no seconds or decimals). 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> <p>Refused = R            Don't know = DK            Sampler didn't ask = DA</p>

Field Name (noted if exclusively PR1 or PR2)	Instructions	Coding Examples and Formats
DEPTH	<p>Enter the <u>bottom depth</u> in feet for the catch location. This is <u>not</u> a mid-water depth of capture.</p> <p>Enter a single depth or if a range is given enter the mean depth.</p> <p>The depth should be recorded by species when possible.</p>	<p>100 = 100 feet</p> <p>100 min/120 max = then enter as mean depth 110 feet = 110</p> <p>Refused = R</p> <p>Don't know = DK</p> <p>Sampler didn't ask = DA</p>
<b>BIO DATA</b>		
Fork Length (mm) Sex	<p>In the top row enter the fish's fork length.</p> <p>Add an M, F, or T after the length for sexed species.</p> <p>Do not measure a salmon with an intact adipose fin.</p>	<p>321 = FL in mm</p> <p>F = Female M = Male T = Transitional (CA Sheephead)</p> <p>321F = female fish 321 mm FL</p>
Weight (decimal kg) or Head Tag #	<p>Below the length, enter the weight for the fish or eligible invertebrate in kg.</p> <p>Do <u>not</u> weigh headed or gutted fish.</p> <p>For salmon and all groundfish, enter the headtag number below the length and circle the headtag number.</p> <p>For salmon heads not recovered or lost, enter the head tag number and code NRS (non-recoverable specimen). Do not weigh salmon.</p>	<p>5.35 = weight in kg</p> <p>12345 NRS = adipose fin-clipped salmon head not recovered</p>

Field Name (noted if exclusively PR1 or PR2)	Instructions	Coding Examples and Formats
<b>MISSED AND LAUNCHED BOATS</b>		
Missed Bt onsite	<p>Enter the number of boats that returned to the sample site that were not sampled since the last sampled boat.</p> <p>Tally marks can be recorded in the box, then the total is recorded when the next sampled boat comes in.</p>	<p>This includes un-sampled or missed boats See the table titled "Summary of PR Counts" for specifics Refusals are NOT missed boats Language barriers are NOT missed boats</p> <p><u>SAMPLE FLAGS</u> K = KAYAKs P = PWC, paddle boards, canoes, other small non-trailerred boats, and "non-traditional boats" with trailers S = SAILBOAT</p> <p>Example: 2K = 2 fishing kayaks It is OK to put multiple numbers and flag in a row (line). For example, you could list: 2 = 2 recreational fishing boats missed AND 1K = one fishing kayak missed. Page Tot = 3</p>
Missed Bt offsite	<p>Enter the number of boats that returned to an offsite boat area since the last sampled boat.</p> <p>See the attached table titled "Summary of PR Counts" for specifics on what to include in the counts.</p>	PR1 only, leave blank for PR2

Field Name (noted if exclusively PR1 or PR2)	Instructions	Coding Examples and Formats
PR2 Launched (PR2)	This data is <u>only</u> needed for PR2 samples. Enter the number of boats that launched since you completed sampling the last boat. Include all boats regardless of activity (except do not record NF kayaks or NF PWC).	See the attached table titled "Summary of PR Counts" for specifics on what to include in the counts  <u>SAMPLE FLAGS</u> K = KAYAKs P = PWC, canoes, other small non-trailerred boats, and "non-traditional boats" with trailers S = SAILBOAT  It is OK to put multiple numbers and flag in a row (line). For example, you could list: 2 = 2 recreational fishing boats launched AND 1K = one fishing kayak launched
<b>FOOTER</b>		
The footer contains the sum of the page totals for each category below.		
Refu + Barrier	Enter the sum of refusals and language barriers for the page.	Count the number of R and B entries in the sample # column Do not include RS samples
Total Boats	Enter the 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, but does include RS samples
Salmon Boats/Angs	Enter the sum of number of boats that targeted and/or caught salmon on the page/sum of anglers for these boats.	A boat/angler(s) that kept salmon caught incidentally while targeting other species

<b>Field Name (noted if exclusively PR1 or PR2)</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
		would be tallied as a salmon boat/angler(s)
Kings kept/rels	Enter the sum of observed and reported kept and released alive and dead king (Chinook) salmon on the page.	
Coho kept/rels	Enter the sum of observed and reported kept and released alive and dead silver (Coho) salmon on the page.	
Pacific halibut kept/rels	Enter the sum of observed and reported released alive and dead Pacific Halibut on the page.	
Yelloweye kept/rels	Enter the sum of observed and reported kept and released alive and dead Yelloweye Rockfish on the page.	
Copper kept/rels	Enter the sum of observed and reported kept and released alive and dead Copper Rockfish on the page.	
Quillback kept/rels	Enter the sum of observed and reported kept and released alive and dead Quillback Rockfish on the page.	
Black kept/rels	Enter the sum of observed and reported kept and released alive and dead Black Rockfish on the page.	
Missed boats on/off	Enter the sum of missed onsite boats for the page. The missed boats offsite is for the PR1 mode only.	Do NOT sum by sample flag type (i.e., K, P, S). Sum all missed boats together

### Specific editing checks

1. Check that offsite start and stop counts are appropriately present or not present depending on the PR2 site sampled.
2. Check that onsite missed boats are coded on each boat row. NOT on rows with just catch and bio data.
3. Check that all pages are present and numbered sequentially.
4. Check that there are no missing gears and that catch location coordinates are coded in the correct format.
5. 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 the data can be entered consecutively.
6. Make sure fish sex is in correct position (after length). Do not circle fish sex code.

### Summary of PR Counts

Type of Boat, Angler or Trailer	Interviews and Sample Number	Onsite Missed	Offsite Missed	Trailer Counts: Onsite, Offsite and Pressure Checks
<b>General Rule</b>		NEVER ADJUST THESE COUNTS	Not Applicable	NEVER ADJUST THESE COUNTS
<b>non-fishing boats</b> (NFPC6, NFCOM, NFOTH)  See below for info on kayaks, PWC and sailboats	Interview & record sample #.	Do NOT include boats that can be identified as NFPC6 or NFCOM.  Include all other traditional trailerable boats	Not Applicable	Do NOT include trailers that can be identified as NFPC6 or NFCOM or NFOTH.  Include all other traditional trailers
<b>kayaks, PWCs, canoes, other small non-trailerred boats, and “non-traditional boats” with trailers (e.g.</b>	Interview <b>fishing</b> boats & record sample # with K or P flag Do NOT interview <b>non-fishing</b> boats & do	Only count <b>fishing</b> boats & flag with K or P.	Not Applicable	Do NOT include in count. This means, do NOT include: jet ski trailers trailers that can be identified as for sailing dinghies

Type of Boat, Angler or Trailer	Interviews and Sample Number	Onsite Missed	Offsite Missed	Trailer Counts: Onsite, Offsite and Pressure Checks
<p><b>jet skis, dinghies)</b></p> <p>Use the flag <b>K</b> for kayaks. Use the flag <b>P</b> for PWCs, canoes, other small non-trailer boats, and “non-traditional boats”.</p>	<p>NOT give them a sample #.</p>			<p>vehicle with racks for boats vehicles without trailers</p> <p>Do NOT adjust counts for kayaks etc. interviewed.</p>
<p><b>sailboats</b></p>	<p>Do NOT interview non-fishing dinghies. Treat like kayaks or PWC. For larger sailboats, interview &amp; record sample # with S flag for both fishing and non-fishing (NFOTH).</p>	<p>Include in count &amp; flag with S.</p>	<p>Not Applicable</p>	<p>Do NOT include trailers that can be identified as sailboat trailers in count.</p> <p>If you can't determine or don't know that a trailer belongs to a sailboat, then include it in the count.</p>
<p><b>trailers with no vehicle attached or “abandoned” trailers</b></p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>Do NOT include in count</p>
<p><b>refusals (R) &amp; language barriers (B)</b></p>	<p>Interview &amp; record R or B (no sample #).</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>Not Applicable</p>

Type of Boat, Angler or Trailer	Interviews and Sample Number	Onsite Missed	Offsite Missed	Trailer Counts: Onsite, Offsite and Pressure Checks
Vehicles with no trailers				<p>Do NOT include in count.</p> <p>Do NOT adjust counts for boats that have been interviewed that are not trailered.</p>





## Party/Charter Boat Onboard (PCO) Mode Sampling

### CPFV Survey Procedures

The PC boat survey samples Commercial Passenger Fishing Vessels (CPFVs) by sampling onboard (PCO) or dockside (PCD) to get various data elements related to catch. CPFV log data and Pressure Effort Checks (PECs) are used for effort estimates. See the PCD and PEC sections for protocols pertaining to those modes and forms.

The primary goal for PCO sampling is to obtain the catch per unit effort (CPUE). CPUE is determined from the total kept and released fish for each angler per trip-type. Other data relevant to angler catch and effort, such as location, depth, and fish measurements are recorded. Catch estimates are produced for each CRFS District by month. Estimated mean catch per angler are calculated and multiplied by total effort derived from the CPFV logs that operators are required to submit for each fishing trip and adjusted for compliance using PEC data to estimate total catch. Since CPUE is not calculated for fishing in Mexican waters, no PC trips fishing in Mexico are sampled.

A secondary goal for onboard PC sampling is to collect discard fish lengths and record detailed locations and depths of those released fish. Fish that will be released are measured whenever possible; special attention should be given to species of concern. Discard data are important for the weight calculation of catch thrown back alive and dead.

### PC Assignments

In general, PC assignments are single site samples. They may be assigned as onboard or dockside samples based on trip-type and target(s). The Lead will assign the of the sample. Rescheduling these assignments is not desirable to the survey, but can happen depending on boat capacity or weather/ocean conditions. Contact the Lead if the assignment needs to be rescheduled.

### PC Definitions

Party and charter boats that take passengers fishing in saltwater must be permitted by the state as a CPFV, operated under a Coast Guard license and be inspected.

- **Party boat** – A CPFV on which fishing space and privilege are provided for a fee. The vessel is operated by a licensed skipper (guide) and crew. Anglers on a party boat are usually not associated with one another but may be in small groups.
- **Charter boat** – A CPFV that is hired by a single 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 party boats 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 – Informal term for small party or chartered boats that carry up to six paying passengers, either due to Coast Guard license requirements or boat capacity. 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**

Priority should be given to bottom fishing trips, especially rockfishes and Lingcod. The entire trip should be sampled, regardless of changes to the boat targets after leaving the dock. Overtime issues may prevent Samplers from riding long-range trips, and are usually sampled dockside. In Districts 3-6, dockside sampling is most often exercised on lower-priority species to ensure CPUE is obtained from all trip-types. Six-pack vessels are sampled dockside, unless special circumstances allow for the Sampler to ride onboard (generally there is no room for a Sampler on a six-pack). In some instances, the Lead will schedule dockside sampling assignments to include six-packs or targets other than Rockfish/Lingcod. Salmon trips are sampled dockside exclusively; however, salmon-rockfish combo trips may be sampled onboard. CRFS Samplers may encounter Ocean Salmon Project (OSP) Samplers on the dock. If this occurs, work with them to intercept as many anglers and boats as possible. Note that all finfish catch, including salmon, for all anglers sampled, go on the PCO forms.

### **Trip Duration**

The Lead may assign the trip duration to sample, such as ½ day, ¾ day, full day, twilight, or overnight. The Lead may also assign the target species, such as bottomfish, Lingcod, or bass. Long-range boats depart and arrive at odd hours, so check with the landing for the boat’s arrival time to sample dockside.

### **Opportunistic PC Sampling**

You may encounter other CPFVs after sampling in PCO mode. These trips can be sampled opportunistically using the appropriate dockside form (PCS for salmon and/or PCD for non-salmon). However, the assigned mode takes priority unless directed otherwise by the Lead; do not miss anglers or boats in your assigned mode to opportunistically sample CPFVs.

### **Introduction to Onboard Sampling**

This onboard data collection program has been conducted since 1999. Since many CPFVs fillet their catch at sea, Samplers must ride onboard to collect important data on retained catch, such as species composition, discard measurements, and species targets. In addition, most CPFVs maintain an array of electronics, which allows the Sampler to obtain fishing depth. The Sampler carries a handheld GPS receiver (with the captain’s permission) to

collect detailed information regarding location. Location and depth data are used to assess depth-based mortality rates of encountered species.

### **Additional Data Collected Onboard**

- Species targeted, area fished, and duration of each fishing stop.
- Species kept and released for 'observed' anglers at each stop.
- Measurements of released fish by fishing stop.
- Whether or not a descending device (DD) was used for each species released by observed anglers.

### **PC Sampling Scheduling**

PC assignments are selected to sample at least 2% of non-salmon fishing trips. Sampling occurs on weekends and weekdays throughout the month based on historical finfish fishing trips. If effort is low or absent at the assigned site, follow the Alternate PC Trips protocol described below.

### **Scheduling PC Trips**

The Lead will provide a list of CPFVs and landing sites with contact information. Call ahead to determine the availability of boats for sampling onboard. Going to the landing is preferred to calling and will result in a better chance of getting on a boat. Landing websites can be helpful to see how many trips are planned and spaces available. If needed, 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. If contacting a number of different landing personnel at different times, keep a contact log with numbers, names, dates, times, and messages left to avoid duplicating or omitting contact efforts; include this information on the ASF if the trip is not successful. Use alternate sites if sampling cannot be conducted at the assigned site. In this case, still list the assigned site as the first site visited on the Assignment Summary Form. Different boats from the same landing may fish in different locations using different methods. Try to sample boats that are infrequently sampled.

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

Always collect information on CPFVs when in the field. Inform the Lead of any boats leaving port/sold or decommissioned, or if new boats arrive at the landing.

### **Onboard Observer Protections**

Under California law, CPFVs are required to carry Samplers when asked. However, it is important to work with the landing and/or vessel operator to develop a positive relationship. Positive relationships reduce sampling bias

and prevent unnecessary hostility. Samplers are there to observe normal fishing activities, and not to enforce rules or alter angler behavior. Below is a copy of Title 14 which the Sampler should have on hand when sampling CPFVs.

**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 observer's 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**

CRFS should sample chartered boat trips along with open-party trips. Chartered trips can make up a significant proportion of the total CPFV fishing trips, especially during the summer. It is important to sample chartered trips, as well as open-party trips to accurately estimate CPFV catch and effort.

The policy is to sample chartered trips with consent from the charter master (the private party individual who has paid for a private group to charter the vessel for fishing); however, CRFS has the authority to sample chartered trips that are not filled to Coast Guard rated maximum capacity.

When calling the landing to make sampling arrangements, introductions are important; the Sampler should introduce themselves as working for CDFW and CRFS and ask about all the scheduled trips going out for the assigned trip-type including chartered trips. If there is no party boat trip going out for the scheduled trip-type, but there is a charter for that trip-type, request to sample that trip with consent from the charter master. Be sure to confirm any chartered trips and get the name and phone number of the charter master. If contact cannot be made, show up an hour before the trip is scheduled to leave to have the opportunity to explain onboard sampling to the charter master, and request permission to sample onboard. Occasionally attempt to sample chartered trips (even though there is a party boat trip available) when there is the opportunity to get on a boat that is rarely sampled. Introductions are important to the crew and captain, especially for vessels that are not routinely sampled. For vessels that are not normally sampled, ask about the trips that they are running and the best way to get in contact with them. Some CPFVs may not book trips through a landing office or may be overlooked by office personnel because they are typically used for non-fishing trips.

## **CPFV Refusals**

Under section 105.5 (Title 14 CCR) Samplers have authority to access all CPFV boats. However, the Sampler may need to explain the survey and provide evidence of employment as a CRFS Sampler. Always be prepared with copies of Title 14, section 105.5, CDFW ID badge, a CRFS handout, and the Lead's business card to best be prepared to demonstrate the legitimacy of the sampling program, and to explain the survey. Be familiar with the relevant regulations on fishing seasons, bag limits, etc., and CRFS cooperation, and have copies to show to charter masters and landing personnel.

It is important to document all attempts (successful or unsuccessful), to sample chartered trips on the Assignment Summary Form. Make sure to 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 why in the comment section, and any plans to reschedule vetted by the Lead.

If outright refused by landing personnel or upon encountering any hostility or difficulties, leave a copy of Title 14, section 105.5 with the landing manager and contact the Lead. Provide the 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. The Lead will initiate procedures to follow-up with the vessel.

## **Chartered Trip Refusals**

If the charter master of a chartered boat declines any CRFS sampling, it will be considered an acceptable 'unable to sample' event. If this occurs, try to sample an alternate trip or contact the Lead to reschedule. However, if the landing or captain of the chartered vessel refuses 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, contact the Lead as soon as possible. Document everything that occurred (individuals involved, time, etc.), and be as descriptive and precise as possible.

## **Alternate PC Trips**

Occasionally, the scheduled PC trip won't get sampled due to poor weather, low effort, boat maintenance, Coast Guard capacity, etc. This is why it is important to call ahead and show up at least half an hour before the scheduled departure. Follow this hierarchy of steps when choosing an alternate trip and/or landing for your assignment:

1. Sample the assigned trip-type at the assigned landing.
2. Sample a different trip-type at the assigned landing.
3. Sample the 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 the assignment to a different day with guidance and approval from the Lead.

### **Arrival at a PC Site**

Show up at least a 1/2 hour before the boat is scheduled to leave. Sometimes party boats are full to Coast Guard capacity resulting in a denial. If this is the case, try another boat. If the landing says that the boat is “chartered,” ask permission from the 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. Some boats will require a sign-in sheet, as such, it is a good practice to confirm with the deckhand or captain if it is needed. Good rapport with the crew will often result in better cooperation from the boat patrons.

The operator must allow free boarding privileges, if not, inform the Lead immediately and attempt to board another boat. Refusals are illegal. Document these actions. Since the Sampler is an unpaid passenger and boats have a legal capacity, there may be difficulty boarding 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 told that the boat is at Coast Guard capacity, politely ask for the number of passengers and crew on the boat, so this claim can be verified by the Lead. Many vessels have a fishing capacity which is lower than the Coast Guard capacity; confirm with the captain about the capacity limit. Just because a vessel is at fishing capacity does not mean they are at Coast Guard capacity, and they may be able to take another non-fishing passenger.

### **Onboard the Boat Trip**

The onboard Sampler has procedures to follow before, during, and after fishing. These procedures are designed to optimize sampling time, get as many angler-bags surveyed as possible, and reduce potential bias. The Sampler will use available time to collect demographic data from anglers in advance, since that is difficult once fishing starts.

### **On the Way Out**

Once the boat gets underway, the captain will give a speech about life jackets and safety, fishing procedures, and regulations. After this speech is a good time for introductions and to start collecting angler data. It is helpful to start on one side of the boat and work around the boat, this will allow the Sampler to meet the anglers, describe the survey, and prime them for what data will be collected (this cuts down on the number of refusals). It aids in being able to figure out who is who at the end of the day. 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 or tired. Make sure to record good angler reference notes, to revisit these anglers after fishing has concluded. Make a note of the angler’s appearance, such as blue Nike shoes or type of sweatshirt. Recording easily removable articles of clothing such as jackets and hats is not recommended since the angler may remove them as the temperature changes. Try and choose features that cannot be changed such as facial hair, shoes, 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 the Sampler can keep track of their catch. Make sure to record these bag numbers on the CPFV Onboard Angler Form, and remember that there could be duplicate numbers with different colors and multiple anglers for a bag.

Under optimal circumstances, all anglers on the boat will be interviewed. However, some form of angler sub-sampling may be necessary if the boat holds many anglers, there are many fish, or if the time required for travel back to port is minimal. Generally, attempt to sub-sample at least 30 anglers aboard the boat.

### **During Fishing**

The CPFV Onboard Location Form is used to monitor the start and stop times, targets, and depths for each fishing stop. The Sampler monitors a subset of the anglers (observed anglers) for kept and released numbers of fish by species for each fishing stop. The Sampler also takes measurements of released fish on the CPFV Onboard Catch and Discard Form when time allows. Details of this procedure and items to collect are explained in the sections for those forms below.

### **Onboard Fishing Locations**

Each fishing “stop” the boat makes where anglers are allowed to drop their lines into the water is a separate fishing location. At each stop, the Sampler will select a subset of anglers to monitor for kept and released fish. 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; reasons for this include an angler taking a break for lunch, moving to a different part of the vessel, or due to sea sickness.

There are different kinds of fishing stops. When the boat is not anchored and the anglers drop their lines, the stop 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 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 spot. In this case, the anglers may or may not pull up their gear as the boat remains under power (gears engaged) to maintain or slowly move into a favorable location. In this situation, the Sampler records this as a single stop, 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 stop may be a drift, static point, or troll (moving through the water under power) with starting and ending points, two latitude/longitude locations are 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 (deg,xx.01 min) and a time (in 24-hour format) 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 does not need to be recorded. However, the ending time should always be recorded.

Often the captain will be “prospecting” for fish when asking 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 in the same way as productive stops. There is biological interest in locations where fish are unavailable or not catchable.

### **Onboard Catch by Location**

For each fishing stop, keep a tally count of the fish caught by species and the disposition (kept, released alive, released dead, or descended) for the observed subset of anglers. Use the dot-line system for tallies, not hash-marks.

When the catch rates are high, monitor fewer anglers for the catch count. It is acceptable to monitor different numbers of anglers at each stop; however, the same number of anglers must be observed throughout the entire stop.

### **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 wearing Department attire. One study has shown that the released catch rate of rockfishes decreases for observed trips. Due to these potential biases, the Sampler should avoid actions that alter fishing behavior at sea. Some of these actions include drawing attention to over limits, illegal fish and fishing practices.

Difficulties arise when the number of anglers on the boat increases beyond a reasonable number which can be observed at one time. Therefore, sampling a subset of anglers is allowed. Generally, a subset greater than 10 anglers is not advised. When observing a subset of anglers, the Sampler should vary the position on the boat to watch a different subset for each stop. This is required so that the sample is random with respect to the position on the boat (e.g., stern, bow, or side) and the skill of the anglers. This is important on trips utilizing live bait to chum in the stern of the boat. High catch rate anglers tend to congregate near the bait box. Avid anglers oftentimes prefer the bow. Avoid continuous sampling of one area on the boat by sampling in proportion to the ‘numbers of anglers’ not the amount of catch.

Contact the Lead regarding questions or concerns about how to sample individual boats.

### **Crew**

CPFV crewmembers who fish with the intention of keeping their catch, or who are putting their catch in a separate "crew bag" are considered eligible anglers, are part of the total anglers, and may be interviewed. Conversely, crewmembers who are fishing solely to add catch to the bags of paid passengers are not considered eligible (note: this practice is illegal under Title 14, CCR Section 195(e)(2)). 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.

The Sampler may witness illegal fishing practices. Do nothing. Let the captain and the crew police the boat if they choose to. The Sampler's job is to sample, not to police illegal activity. Do not alter angler fishing behavior in any way. Do not bring your own descending device onboard. Do not act as a deckhand by helping passengers land fish or provide advice to increase the catch rate. Our workers' compensation insurance does not cover injuries obtained while doing any deckhand duties. Stay out of the way as much as possible. Use spare time to edit data, key out any unusual fish, etc. Don't make comments about other boats and their success at catching fish; keep a low profile.

Remember, we want to foster a good working relationship between CRFS and the CPFV industry; having the cooperation of the crew and landings is important; don't do anything to jeopardize the relationship. Some boats have secret fishing spots or unique methods of catching fish. Don't reveal any boat secrets to others. It is best not to discuss any boat trips with anyone. If anyone asks questions about where the boat fished, what kinds of fish were caught, or how the fishing was, politely explain that the data is confidential and refer them to the captain. Any deckhand cooperation problems should be referred to the captain.

### **On the Way Back**

Allow plenty of time on PC trip to identify and measure fish before the filleting process begins. The Sampler may need to stop observing during the last drift to get started on measuring bags. Try to judge when the anglers will stop fishing (ask the crew). Estimate how long the boat ride back to the dock will be and how long it will take to work up each bag. This will give an idea of when to stop observing anglers to start collecting catch and biological data from each bag. Ask the filleter where to set up to measure and which bags they will fillet first. Also ask if any anglers are not having fish filleted as these can be left for last. Filleters may have preferential treatment of some anglers or bags. Go down the fillet line and count and measure fish in the bag that is associated with each angler # and bag # of 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. It may be necessary to skip the measurements for some bags in order to stay ahead of the filleter.

Whole bags may be skipped or simply angler-reported, if necessary to keep pace with the filleter. For safety reasons, stand clear of the filleter and fillet knives. Coordinating and communicating with the crew will allow efficient data collection and minimize impact to boat operations.

In addition to surveying the bag of kept fish, ask each interviewed angler about any unobserved catch. This includes any fish kept for bait, released fish and their disposition (released alive or released dead). Remind anglers about fish used for bait, or thrown back, especially species of concern descended by the crew. For rockfishes, try to probe to identify the released catch to species-level and avoid grouping at a higher level (e.g., RFGEN). Use field guides (time permitting) or reference kept catch that are in front of them. When encountering a bag of fillets the angler won't open or can't enumerate to species level, it is best to skip this interview and move to the next angler-bag. The point is to get high-quality bag census to species-level rather than many bags of higher-level taxa.

Due to boat limits and fish-shuffling, do not attempt to record catch given-away to another angler on the boat, 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.

### **Boat Limits**

With the CDFW boat limit regulations, CPFVs can continue to fish until limits have been caught for all authorized anglers and crew onboard. Even seasick anglers who do not wet a line all day may leave the boat with fish, provided they have a fishing license.

Occasionally, the crew will want to include the Sampler when calculating the boat limit. This is not appropriate, as the Sampler will not be fishing, and is not allowed to accept gifted fish. If the crew includes the CRFS Sampler in their boat limit calculation, tactfully inform them that this is not allowed; the Sampler may not leave the boat with any fish in possession and thus may not be included in the boat limit calculation.

### **Crew Fish**

The crew may be interviewed if they kept fish towards the boat limit. Be aware that the crew might distribute all their personal catch to other anglers and in this instance, they would not be a valid angler (note: this practice is illegal under Title 14, CCR Section 195(e)(2)).

When the boat has exceeded boat limits, there will be unclaimed fish. Assign unclaimed kept fish to the crew first. 'Crew fish' are fish that will be going home with the crew. In this instance, code the crew interview with a "C" flag; they are part of the total angler calculation. Do NOT assign released fish to crew UNLESS they also have kept fish.

### **Boat Fish/Group Catch**

In general, avoid using “Boat Fish” or “Group Catch” unless it is unknown who those fish will go to. If these fish are to be thrown overboard, the Sampler should obtain counts by species and any measurements, if possible of all fish discarded after the kept ‘boat fish’ have been distributed amongst anglers. All extra fish that are left over, whether kept onboard or thrown over the side (another illegal practice – Section 1.87 Title 14 CCR), should be coded on the Catch/Discard form as the crew’s fish. Of note, do not inform the crew or anglers when illegal practices occur.

See example at the end of the PC Onboard Catch and Discard form for how to code “Boat Fish.”

### **NO CATCH Bags**

Occasionally there will be anglers who do not catch fish and do not accept fish from other anglers as part of the boat limit. In this instance they are a ‘NOCATCH’ bag and must be recorded as such. Try to pay attention to this situation because these anglers (often seasick) will not line up at the fillet station. If these no catch bags are ignored, and left off the PCO forms, fish will be expanded to those ‘missed/skipped’ anglers based on the interviews that were obtained from successful anglers (which is biasing high). All eligible anglers should be interviewed, with or without catch. Do not only interview anglers with catch. NO CATCH bags are relatively easy to document.

### **Overnight Trips**

Occasionally CRFS will sample a trip that departs at night and fishes the next day. 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 the total number of hours on the boat; sleeping hours are included and are compensable. Sleep should be limited to nighttime when no anglers are actively fishing.

### **No Anglers in PC Mode**

If the assigned PC site as scheduled has no anglers, refer to the Alternate PC Trips protocol described earlier in this section, unless the Lead has given specific landings to sample as an alternative. If no effort in the assigned mode is found at the primary site and alternate sites, contact the Lead to determine the assignment’s final disposition. Most likely, the assignment will be moved to another date.

### **Sampling Dungeness Crab Onboard**

Crab catch and biological data will be ignored on PC trips, only record crab as a target, the area fished, and the gear type (including the number of pots or hoops pulled).

## Two PC Assignments in One Day

The Sampler may be given two PC assignments on the same day. The Lead should specify which assignment to work first. The Sampler must attempt that assignment first before the second assignment is completed.

## Special Assignment Summary Form 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 completed for each BOAT sampling attempt that provides information about CPFV activities (including no activity).
3. A PEC can only be recorded if information is obtained about the site effort/vessel activity. Information is obtained from phone calls, on-site visits, and published information. Nothing will be recorded on the PEC if no contact is made or no information is collected (e.g., unreturned messages and unanswered phone calls).
4. If you later determine that the site or CPFV did not have PC effort and 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, only one ASF is needed to record the assignment when complete or canceled (ASF assignment disposition = 1 or 6).
6. Record attempted/unsuccessful sampling when the original assignment could not be completed as scheduled (i.e., the boat is full, trip is canceled, etc.; ASF assignment disposition = 2).

## Onboard Sampling Tips

1. Many booking offices have an automated phone tree or website that includes the fishing schedule for the week, this can be a helpful tool when planning a PC assignment. However, the phone tree or website is not a replacement for actually speaking to the booking office or captain.
2. All eligible anglers, with or without catch, should be interviewed. Do not just interview the anglers with catch.
3. Anglers who are too seasick to fish but, due to boat limits, have catch can still be included on the CPFV Onboard Angler and Catch/Discard forms. Seasick anglers may be eligible since wet gear hours include any 'rod time' provided by others in the boat limit and catch may be shared. Include the sick angler as an eligible angler.
4. Include fish caught by the crew and given to the customers in the accepting angler's bag.
5. Make sure not to measure the same fish twice. Occasionally, an angler may have more than their limit in the bag. If all fish are measured and the angler decides to keep their legal limit and give away their extras, make sure the fish already measured don't go into someone else's bag that have not been measured, as they could potentially get measured a second time.

6. Filleted fish count as “kept observed” if the Sampler can identify fish based off attached skins. Otherwise, filleted fish are recorded as “kept unobserved” and species composition is angler-reported.
7. Do not interfere with the filleting process. Try not to hold up the filleter(s).
8. 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).
9. 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.
10. Do not take your friends along on the trip.
11. Do not sleep on day trips. Sleep is permitted on overnight trips, but only at night and while no anglers are actively fishing.
12. Document, in detail, any refused access to a boat. Similarly, document any action by the crew that impedes CRFS Sampling duties.
13. Thank the captain and crew at the end of the trip.
14. Be courteous. The Sampler should be the last one off the boat allowing, within reason, all paying passengers to offload the boat first.
15. Additional storage space and seats within cabins should go to paying passengers first.
16. Do not fish while onboard.
17. Do not accept free fishing trips.
18. Do not accept any gifts while onboard. This includes fish, food, drinks.
19. The wheelhouse is typically off limits to everyone but the crew. If a GPS or depth-finder is needed, ask the captain first before entering the wheelhouse or have him report the numbers to you.
20. Do not bring a banana on board; they are considered bad luck. It is best to be considerate of anglers’ superstitions.

## **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; there’s no information. If possible, go the booking office in person or to the slips before or after an assignment in the area. Additionally, show up on the morning of the PC assignment and try to get on the boat or reschedule the assignment. Contact the 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. Code the assigned sites and alternates on the Assignment Summary Form (ASF) for the assigned date with a reschedule. Contact the Lead immediately to reschedule.

Q. I leave messages, but they don’t call back. Do I code a refusal?

A. Code nothing; there is no contact and no information. Either: show up on the morning of the assigned PC assignment and try to get on the boat or reschedule the assignment. Contact the Lead in this instance.

Q. I'm told that no boats are going out, but later find out that was a lie.  
A. Code a refusal for that date and boat(s) on the ASF and REPORT this to the Lead. Contact the Lead immediately 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. This is something that could possibly have been anticipated. Code the boat's activity on the PEC Form (or contact the port lead) for the trip date. Contact the Lead to reschedule.

Q. I'm told that no boats are going out. Do I code an attempt?  
A. Code this on the ASF and the PEC Form (or contact the port lead). Contact the 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 comments in the follow-up email to the Lead. Contact the Lead to reschedule.

Q. The office refused to talk to me. What do I do?  
A. Code a refusal on the ASF and contact an alternate boat or site. Contact the Lead with the refusal details and reschedule the assignment.

Q. The office scheduled me on a boat, but the captain refused me. I ride one of the other boats at the site. Do I code a refusal?  
A. Yes, code the boats for that site and date on the ASF and PEC Forms (or contact the port lead). Indicate who refused on which boat and detail the event to the 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. No boats are going out on my assigned PCO day; I reschedule the assignment for a later date. Do I code a reassignment?  
A. Yes, if the alternate PC trip protocol was followed and the reschedule has been approved by the Lead.

## THE CPFV ONBOARD ANGLER FORM

The CPFV Onboard Angler form is used to collect the CPFV trip details, as well as connecting an angler with their catch zip code. This is the form that will be utilized at the beginning of the trip, before any fishing occurs. The CPFV Onboard Angler form has a front and back side 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 to link the data to the other PC forms and to provide some unique information about the CPFV trip. All these items are required.

ASSN ID	Date (MM/DD/YY)	CNTY	SITE	OSP Port	Sampler #	Sampler Last Name						
DFG Boat #	Boat Name	Duration Type	PC Mode (P or C)	Departure & Return Date (MM/DD/YY)		Time	DAYS fished	TOTAL ANGS	TARGET	AREA	GEAR	DD?
				Depart					fst			Y/N
				Return					end			
Captain:												

#### Angler Data

Catch Recorded obs reported obs	ANGLER #	BAG #	Angler Reference (angler name, description, etc.)	Zip Code
unobs & RELS				Zip

There are six items for each angler. All the data except for the Catch Recorded column can be collected on the

way out to the fishing grounds. The Catch Recorded fields will be used after fishing has stopped and catch in each angler-bag 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
<b>HEADER</b>		
Page _ of _	Enter, in sequence, the page number of the form and the total number of pages with data.	Example: Page 2 of 2
ASSN ID	Enter the 6-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 (PCO assignments are numbered 600-699)
Date	Enter the date. Use MM/DD/YY format.	07/14/25 = July 14, 2025
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.	"Smith"
CDFW Boat #	This is the CDFW vessel ID number of the boat (permit number).	12345 = 'Fish Hoover'
Boat Name	Enter the 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	Enter the appropriate PC mode.	P = open party trip C = boat was chartered to a private party

Field Name	Instructions	Coding Examples and Formats
Departure & Return Date (MM/DD/YY) Time = Military hrs	Record the date and time of the departure and return of the CPFV.	Depart 10/26/25 0700 Return 10/26/25 1700
DAYS Fished	Enter the days fished for this trip.	1 = all fishing within one day
BOAT ANGS	Enter the total # of anglers on the sampled trip (include any crew that take fish).	25 = 25 eligible anglers
Target 1 <sup>st</sup> = primary target 2 <sup>nd</sup> = secondary target	Record both the primary and secondary targets of that trip. Targets are recorded using the 5-digit alpha codes.	HALCA = targeting California Halibut  If no secondary target, line out the field.
AREA	Record the water area code where the majority of fishing <b>effort</b> (fishing time) occurred for each primary and secondary target.	N = (< 3 mi) O = (> 3 mi) B = enclosed bay 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 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 T = Troll S = Spear N = Bait Net <u>Salmon only:</u> M = Mooch B = Both (mooch and troll) <u>Invert only:</u> P# = Pots used and number R# = Rigid hoop used and number F# = Flat hoop and number E = snarE C = sCuba

Field Name	Instructions	Coding Examples and Formats
DD?	If the boat used a descending device of any kind to release fish, record a Y; otherwise, record N. Descending devices can increase the survival rate of fish that are suffering from barotrauma, by returning them to the proper depth. Examples of descending devices include inverted/weighted milk crates and specially designed quick-release hooks.	D = free Diving Y = descending device was used on this trip N = No device was used
<b>ANGLER</b>		
Catch Recorded  Obs = observed	Indicate here if confirmed that the observed catch has been recorded on the Catch and Discard Form for this angler.	Y = observed catch was recorded for angler  N = no observed catch was recorded for angler  BLANK or DK = catch was missed for some reason; details must be provided on the ASF
Catch Recorded  Reported = unobs & RELS	Indicate here if confirmed that the unobs/RELS catch has been recorded on the Catch and Discard Form for this angler.	Y = reported catch was recorded for angler  N = no reported catch was recorded for angler  BLANK or DK = catch was missed for some reason; details must be provided on the ASF
Angler #	Record a number in consecutive order (starting with 1) for every angler interviewed (except	1 = first angler interviewed  REFUSALS/LANGUAGE BARRIERS: do NOT issue sample number.

Field Name	Instructions	Coding Examples and Formats
	refusals/barriers). Each angler gets a unique angler number.	Record an "R" (refusal) or "B" (language barrier) in the Angler # box. "C" flag = crew angler
Bag #	Enter the bag # used to this angler, if one is issued. If none issued, create a unique bag number to link angler to the bag.	32 Blue = bag number of the angler
Anger REFERENCE	Use this space to record notes that may help 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'
Zip Code	Record the angler's permanent residence zip code. If outside the USA, use the foreign country code.	90210 = Beverly Hills R = Refused DK = Angler doesn't know DA = Sampler didn't ask  Foreign codes are in the back of this manual

### PC Angler Form: Specific Editing Checks

#### Header:

1. Make sure to use the correct F/G boat number and vessel name in the header.
2. If the trip is a full day, still code the trip as  $\frac{3}{4}$  because the duration is defined as  $\frac{3}{4}$  to full day trip.
3. Twilight trips are often called 'sundowners.'
4. Include crewmembers in the total anglers count when crew take fish home.
5. The gear codes M (mooch) and B (both troll and mooch) are SALMON gear types ONLY.
6. If there is no secondary target, leave blank or line-out that field.

#### Main Form:

7. Make sure each angler who is interviewed is assigned a unique angler # and has their own separate row on the PC Angler Form.
8. While anglers have their own unique number, there may be more than one angler contributing to a bag (i.e. bag #s may be repeated if they include more than one anglers' catch, but angler #s are not repeated).
9. Anglers may only attribute their catch to ONE bag.

10. Check the PC Catch and Discard Form to make sure the anglers and bags recorded on the PC Angler Form match up.
11. The Catch Recorded column must be filled out for each angler interviewed. Fill out both the observed and unobserved/released boxes for each angler. If these boxes are left blank, it is considered an incomplete interview, a (DK) bag, and it will be discarded. Remember "DK" means that the interview is unusable.
12. Refusals and language barriers do not get an angler #. An "R" or "B" should be put in the angler # box. Verify that no refusals or language barriers have received a sample #.
13. Crew get a "C" flag after their angler number (e.g. 25C).
14. Anglers who are under the age of 16 and do not have a license are still eligible for an interview and will have their own angler #.
15. Be tactful when assigning angler descriptions.

# Example of Onboard Angler Form

CRFS PC (CPFV) ONBOARD ANGLER FORM (V22 02032022)

Page 1 of 1

ASSN ID	Date (MM/DD/YY)	CNTY	SITE	OSP Port	Sampler #	Sampler Last Name					
075607	07/13/25	045	400	FTB	298	Fish					
DFG Boat #	Boat Name	Duration Type	PC Mode (P or C)	Departure & Return Date (MM/DD/YY)	Time	DAYS fished	TOTAL ANGS	TARGET	AREA	GEAR	DD?
45678	Telstar	1/2	P	Depart 07/13/25	0702	1	10	1st RFGEN	N	N	H
Captain: John Troller				Return 07/13/25	1208			2nd LNGCD	N	N	Y

Catch Recorded obs reported	ANGLER #	BAG #	Angler Reference (angler name, description, etc.)	Zip Code	Catch Recorded obs reported	ANGLER #	BAG #	Angler Reference (angler name, description, etc.)	Zip Code
Y	1	10	Bob, Black Hat	90706	Y	9	4	Bill, Blue Shirt	95403
Y	2	8	Lisa, Red Hat	95437	Y	10	9	Jon, Rain Slicks	95973
Y	3	7	Jeff, Brown Hat	95437	N				
Y	4	5	Lucy, Red Boots	93117					
Y	5	2	Mike, Cowboy Hat	90720					
Y	6	1	John, Grey Shirt	95437					
Y	7	3	Ken, Muck Boots	93101					
Y	8	6	Mary, Pink Beanie	95403					

Each interviewed angler is assigned an individual Angler #.

Observed and Unobserved/Released fields always need to be filled in.

Duration Type: 1/2 day, 3/4 to full day, Twilight, Overnight, Other-describe PC Mode: Open Party, Charter

TOTAL ANGS: all eligible anglers (including crew if they take home fish)

AREA (Water Area & Island): Water Area: Nearshore (<3mi), Offshore (>3mi), enclosed Bay/estuary/harbor, 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 Salmon gear only: 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: Y = Yes, type of catch (obs or unobs/RELS) occurred and was recorded, N = No, 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



ASSN ID	Date (MM/DD/YY)	OSP Port

### Boat Assignment Data

There are seven boat assignment data items, which are used to link the data to the other PC forms and to provide some unique information about the CPFV trip. All these items are required.

Sampler #	Sampler Last Name

DFG Boat #	Boat Name

### Fishing Location Data

There are 16 data items for each location. There are three columns on each side of the form allowing a total of six stops recorded per sheet. Each fishing stop will have its own column. Not all the items are required at each stop.

**Coordinate Data** – latitude, longitude, geographic format (use default mode (1 = deg,xx.01 min)), area fished, and start and end times.

	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			

**Physical Data** – depths, number of observed anglers, fishing type, Sampler location and primary target. Depth is used to help allocate catch and effort into depth zones. Depth is also used to estimate mortality of released catch.

Depths may be obtained from the captain. Based on section 105.5, the Sampler is allowed to

view the vessel depth finder. If the depth information from the captain is inaccurate or suspicious, leave the location information blank and inform the Lead.

Q. What if the batteries on my GPS fail?

A. Put in the spare batteries. If the GPS fails, ask the captain for locations from the vessel GPS, if refused, leave the location blank. Record all other items, including times. If there is no GPS on the vessel, leave the location blank and write a comment about what happened.

Q. What if the captain does not want this location recorded?

A. Ask to record the location without the seconds (e.g., within one mile, 3232\_\_ 1910\_\_), otherwise leave the location blank. Record all other items, including times.

## Species Count Data

There are 10 rows for species counts for each location column. There are two items to identify the species on each row: the common name and the 5-character alpha species code.

Common Name	SPECIES code	KEPT			RELS			KEPT			RELS			
		alive	dead	w/DD <small>(log subset)</small>										

For each location column there are four items to record for each species row: the number of fish kept, released alive, released dead, and released with a descending device (w/DD). The counts of fish must be for the number of observed anglers in that location column.

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. Code the fish as descended.

## Recording Numbers Kept and Released

dot-line system	
1 ·	6 𐄂
2 ∶	7 𐄃
3 ∶ ∶	8 𐄄
4 ∶ ∶ ∶	9 𐄅
5 ∶ ∶ ∶ ∶	10 𐄆

The method used for recording the count for fish kept or returned is called the “dot-line system.” The system allows for a count to ten in less space than the more common “count-mark” (i.e. IIII) system does going to five. When editing forms for the day, decode the dot-line system by writing the actual number to the right, and circling it. 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 the 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 be collected.

## CPFV Onboard Location Form Item by Item Instructions

Field Name	Instructions	Coding Examples and Formats
<b>BOAT ASSIGNMENT</b>		
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

Field Name	Instructions	Coding Examples and Formats
Page ___ of ___	This is used to indicate total number of pages. Each side of the form is considered a page.	"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. Enter the 6-digit assignment ID number on all pages.  (Refer to the monthly 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 (PCOs are numbered 601-699.)  042601
Date	This is the date of the assignment and is the same as on the Assignment Summary Form and is used to track the data.	MM/DD/YY  01/01/25 = New Year's Day, 2025
OSP Port	Enter the 3-letter alpha code used by the Ocean Salmon Project for this port.	FTB = Fort Bragg
Sampler #	The 3-digit Sampler ID code.	100 = Joe Smith
Sampler Last Name	Print the last name to the right of the Sampler ID #.	"Smith"
CDFW Boat #	This is CDFW vessel id number of the boat (permit number).	12345 = 'Fish Hoover'
Boat Name	Enter the boat name.	'Fish Hoover'
<b>FISHING LOCATION</b>		
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	10 = ten anglers observed for catch at this location

Field Name	Instructions	Coding Examples and Formats
	of anglers should be observed at each stop.	
Start Latitude	North latitude in one of the valid formats at the start fishing time.	334996 = 33 degrees 49.96 minutes north latitude (GFMT=1) R = Captain refusal Blank = Don't know
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."	182474 = 118 degrees 24.75 minutes east longitude (GFMT=1) R = Captain refusal Blank = Don't know
Start Time	This is "lines down" time. Record the time in 24-hour format when fishing started at a new location.	0000 = midnight 0001 = one minute after midnight Blank = Don't know
Start Depth	Record the start bottom depth in feet, 1 fathom = 6 feet.	60 = sixty feet Blank = same as start R = Captain refusal Blank = Don't know
End Latitude	North latitude is 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 three minutes.	335002 = 33 degrees 50.02 minutes north latitude (GFMT = 1) R = Captain refusal Blank = same as start (i.e., anchored stop), or don't know
End Longitude	West longitude is 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.	182461 = 118 degrees 24.61 minutes east longitude (GFMT = 1) R = Captain refusal Blank = same as start (i.e., anchored stop) or don't know
End Time	This is "lines up" time. Record the time in 24-hour format when fishing ended for this location.	0500 = 5am 1800 = 6pm
End Bottom Depth	Record the end bottom depth in feet.	50 = fifty feet

Field Name	Instructions	Coding Examples and Formats
		BLANK = same as start (i.e., anchored stop) or don't know
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 four geographic formats (GFMT) expected to be read from boat GPS and Ioran equipment (with proper punctuation):  <b>1</b> = Degrees, minutes – DDMM.MM <b>3</b> = Degrees, minutes, seconds – DDMMSS
AREA	Distance from shore where the majority of fishing occurred for this stop.	N = Nearshore (< 3 mi) O = Offshore (> 3 mi) B = enclosed bay/estuary/harbor 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
FType	Fishing Type – This is one of the four predefined types of boat movement used for fishing activity at this stop.	<b>D</b> = Free drift (engine not in gear) <b>S</b> = Stationed (engine in/out of gear to maintain position) <b>A</b> = Anchored (boat attached to the bottom) <b>T</b> = 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 on the boat the observed anglers are located.	B = Bow S = Stern D = Side (port or starboard)
TARGET	Record the 5-digit alpha code for the target species for this stop.	RFGEN = Rockfish Genus

Field Name	Instructions	Coding Examples and Formats
<b>SPECIES CATCH</b>		
Common Name	This is the approved AFS common name.	'BROWN ROCKFISH'
SPECIES Code	Use the 5 letter CRFS alpha code.	RFBRN = Brown Rockfish
KEPT	Record the number of fish of species <i>kept</i> at this location by the observed anglers.	2 = two kept Blank = None kept
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 alive
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 wounds or inability to swim down) may be coded as dead.	10 = ten released dead Blank = None released dead
RELS w/DD ( <u>not</u> subset)	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 w/DD
Additional Sheet?	Indicate here if you require another sheet to capture all species for this stop.	Y(circled) = YES, Add'l sheet N(circled) = NO Add'l sheet

## PC 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, record a new "stop" for every drift and troll. When the boat stops, this is the end position of the troll. Make sure to bring extra data forms to record locations. For trolled locations, the number of observed anglers is the number of trolling rods observed.

### 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.

## PC Location Form Specific Editing Checks

### Header:

1. Make sure the header information is completely filled out and matches all other PC forms of an assignment.
2. OSP Port codes are never left blank.
3. Boat name and CDFW Boat # cannot be left blank.

### Main Form:

4. Species codes and names must be listed on first page.
5. Make sure the GFMT matches the location in 'seconds' (or '100<sup>th</sup> minute'). Coordinates in deg.min.sec format can't end in a number greater than '59'.
6. Make sure the GPS unit is not set to decimal degrees; this is not a valid format.
7. GPS devices should be set to deg,xx.01 min. as the preferred format.
8. Start time and depth should not be left blank.
9. Start and end coordinates and times must be provided for all troll and drift trips.
10. Do not leave location fields blank, except the end location when anchored or if the GPS unit fails and cannot get coordinates from crew.
11. If no fish were caught, leave the field blank. Do not code as "0" – easier for data-entry.
12. Fill in stop numbers on any additional sheets.
13. 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 on an anchored stop).
14. 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 and circled.
15. When recording fish released with a DD (descending device) make sure to remember it is not a subset of released fish.



# Onboard Location Form – Multiple Sheets

More Stops 

1		2		3		4		5		6		7		8		9		10		11		12	
<p><b>CRFS ONBOARD CPV SAMPLING FORM</b></p> <p><b>BACK OF SHEET</b></p>																							

14		15		16		17		18		19		20		21		22		23		24		25	
<p><b>CRFS ONBOARD CPV SAMPLING FORM ADDITIONAL SHEET</b></p> <p><b>BACK OF ADDITION SHEET</b></p>																							

26		27		28		29		30		31		32		33		34		35		36		37	
<p><b>CRFS ONBOARD CPV SAMPLING FORM ADDITIONAL SHEET</b></p> <p><b>BACK OF ADDITION SHEET</b></p>																							

More Fish 

**CPFV ONBOARD CATCH AND DISCARD FORM**

The CPFV Onboard Catch and Discard form collects all of the catch and biological data from the PCO trip. Effort, reported catch, and lengths and weights of observed catch are all captured on this form. Discarded fish that are opportunistically measured are also recorded here.

The CPFV Onboard Catch and Discard form has front and back sides to capture a number of species records by bag. 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 PCO 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 seven boat assignment data items, which are used both to link the data to the other PCO 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 V 9 11/19/12						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 three 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 Bio Data**

These data are collected opportunistically during the location stops. 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 (released fish are usually smaller or less desirable species), leading to a potential bias if only kept fish sizes are used to estimate discarded catch.

DISCARDS
Stop #

Location of the discards ('stop #' on the form) is collected because management methods use latitude, distance from shore, and depth criteria for mortality rates. The stop number links the fish and size to these criteria for management analysis. For example, bottom depth may be used to apply additional mortality to the rockfishes released alive that are susceptible to barotrauma.

To capture these 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 of unobserved anglers (anglers outside the subset observed during a stop) count towards this goal as well, so consider all anglers equally when measuring discards. It is easier to get discarded fish measurements by mentioning the intention to crew and anglers during the pre-fishing interviews.

### **Handling Live Fish**

Do not allow live fish to remain aboard waiting to be measured before discard, as this may give the impression that CRFS protocols allow fish to sustain trauma or die needlessly. Try not to increase the chance of mortality of released fish by obtaining our discard measurements. Whenever possible, give priority to uncommon, rare, or species of concern. 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
6. Do not ask the crew to bring aboard large giant sea bass, oversize sturgeon, etc., just so they can be measured before release. These fish should not be removed from the water and released boat-side.
7. Do not measure released salmon brought aboard during the onboard survey.

### **Discard Data Coding Tips**

1. 100% of discarded non-retention species that are brought on deck should be measured.
2. Lengths are required for discard fish records, but weights should only be collected on fish that are already dead.
3. The size of the fish should not affect the Sampler's decision to measure the discard. Keep it random.
4. Discarded fish can also be recorded as RELS by an angler, but never as KEPT.
5. If measured discards of the same species were released alive and dead, record the fish released alive in one row and the fish released dead in another row of the form. Avoid double counting.
6. Kept unobserved fish (that are cut up for bait, filleted, taken home or given to others) are NOT discarded fish.
7. 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 different types of catch and measurements for the 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					

**Rockfish-Combo Trips**

All finfish catch must be included in the angler’s bag for a valid sample. Do not record invertebrate data on the Catch and Discard form. The Sampler may need to interview anglers about their catch twice during the trip if the boat targets separate species in different locations. Focus on collecting bio data on groundfish, before collecting bio data on other finfish species. If salmon are landed, include the catch in the angler’s bag, but collecting salmon heads is not a priority in this mode. It is not necessary to complete a PCS sample on a Salmon/Rockfish trip. However, if you visually inspect/count all salmon and collect heads from ad-clipped salmon dockside, this data needs to be recorded on a Party/Charter Boat Sample (PCS) form. See chapter “PCS Sampling” for further details.

**Total Items**

At the bottom of each page, tally the number of Pacific Halibut (Northern California)/California Sheephead (Southern California), Yelloweye Rockfish, Copper Rockfish, Quillback Rockfish, and Black Rockfish encounters.

Kept	Rels								
HALPA		RFYFY		RFCOP		RFQIL		RFBLK	

**PC Onboard Catch and Discard Form Item by Item Instructions**

Field Name	Instructions	Coding Examples and Formats
<b>HEADER</b>		
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 6-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 (PCO assignments are 600-699)
Date	Enter the date in the MM/DD/YY.	01/01/25 = January 1, 2025
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.	"Smith"
CDFW Boat #	This is the CDFW vessel ID number of the boat (permit number).	12345 = 'Fish Hoover'
Boat Name	Enter the name of the boat.	'Fish Hoover'
<b>EFFORT</b>		
Angler #(s)	Enter the Angler # from the Onboard Angler Form of the angler(s) who are responsible for the catch in the linked bag.	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

Field Name	Instructions	Coding Examples and Formats
		BLANK = discard measurement or boat fish; 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).	4 = four total anglers associated with this catch in the bag  BLANK = discard measurement or boat fish; EFFORT column left blank
BAG #	Enter the bag # used by the Angler who are associated with this catch.	32 Blue = bag number of the angler  BLANK = discard measurement; EFFORT column left blank
<b>DISCARDS</b>		
Stop #	Enter the stop # from the Onboard Location Form where the measured fish was discarded.	5 = stop number '5'  Blank = bag data
<b>CATCH</b>		
SPECIES	Enter the alpha code for each species or taxon of all fish examined or reported by the angler(s) contributing to the bag. Additional rows are used for multiple catch species. <b>NOTE:</b> If the angler is unavailable at this time to report unobserved catch, this data can be collected later.	"NO CATCH" is a code for no catch at all: enter zeros for numbers of fish in the four catch boxes.  Refused: This is a refusal, terminate interview

Field Name	Instructions	Coding Examples and Formats
<p>KEPT Obs</p> <p>Obs = observed /verifiable by the Sampler</p>	<p>Enter the number of fish examined for this angler(s). The Sampler will identify and count each species retained by the angler(s).</p>	<p>May include fillets with identifiable skin. 0 = None Refused/don't know: interview is incomplete and should be terminated</p> <p>Leave BLANK for a measured discarded fish row</p>
<p>KEPT Unobs</p> <p>Unobs = retained but not verifiable/available for the Sampler</p>	<p>Bags of unidentifiable fillets, fish used for bait, fish not seen, or fish not counted by the Sampler get recorded as "kept unobserved" here.</p>	<p>Includes fish used for bait and fillets that are not identifiable 0 = None Refused/don't know: interview is incomplete and should be terminated</p> <p>Leave BLANK for a measured discarded fish row</p>
<p>RELS Alive</p> <p>Alive = fish appeared alive with no mortal injuries upon release</p>	<p>Enter the total number of fish reported as released alive by the angler(s). Fish must have been landed and intentionally released. Probe for catch that may not be remembered, such as bait species. 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.</p>	<p>Record species and number of fish released ALIVE</p> <p>0 = None</p> <p>Refused / don't know = the interview is incomplete and should be terminated</p> <p>Enter the number of living discarded fish measured, if applicable.</p>
<p>RELS Dead</p> <p>Dead = fish was thrown back dead/dying</p>	<p>Enter the total number of fish reported as released dead by the</p>	<p>Record species and number of fish released DEAD</p>

Field Name	Instructions	Coding Examples and Formats
	<p>angler(s). Fish must have been landed and intentionally released. Probe for catch that may not be remembered, such as bait species. 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.</p>	<p>0 = None</p> <p>Refused / don't know = the interview is incomplete and should be terminated</p> <p>Enter the number of dead discarded fish measured, if applicable.</p>
<b>BIO DATA</b>		
<p>Fork Length Size (mm), Sex</p>	<p>In the top row enter the fish's fork length</p> <p>Add an M, F, or T after the length for sexed species.</p>	<p>321 = FL in mm</p> <p>F = Female M = Male T = Transitional (CA Sheephead)</p> <p>321F = female fish 321 mm FL</p>
<p>Weight/Head Tag #</p>	<p>In the bottom row, enter the weight in kg.</p> <p>For tagged salmon, enter the headtag number below the length (no weight). Circle the tag number. For heads not recovered or lost, enter the headtag number and code NRS (non-recovered specimen). Salmon head tag numbers are 5-digit.</p>	<p>5.35 = weight in kg</p> <p>(2345)NRS = tagged head not recovered</p>

Field Name	Instructions	Coding Examples and Formats
<b>FOOTER</b>		
Pacific Halibut (Northern CA) Kept/Rels CA Sheephead (Southern CA) Kept/Rels	Enter the sum of kept and released Pacific Halibut or CA Sheephead on the page.	
Yelloweye Kept/Rels	Enter the sum of kept and released Yelloweye Rockfish on the page.	
Copper Rockfish Kept/Rels	Enter the sum of kept and released Copper Rockfish on the page.	
Quillback Rockfish Kept/Rels	Enter the sum of kept and released Quillback Rockfish on the page.	
Black Kept/Rels	Enter the sum of kept and released Black Rockfish on the page.	

**PC Catch and Discard Form 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 (left hand section) blank.
3. Make sure the Pacific Halibut/CA Sheephead, Yelloweye Rockfish, Copper Rockfish, Quillback Rockfish, and Black Rockfish boxes (bottom of the page) are filled out on each sheet for bags sampled (omit measured discarded fish here).
4. Make sure all salmon headtag #s are circled.
5. Make sure all headers are filled out and nothing is left BLANK.
6. Make sure to fill out Angler Total on all bags; it is necessary to know how many anglers contributed to a bag.

# Onboard Catch & Discard Form Example

CRFS PC (CPFV) ONBOARD CATCH AND DISCARD FORM (V13 12/17/2021)

Page 1 of 8

ASSN ID	Date (MM/DD/YY)	OSP Port	Sampler #	Sampler Last Name	DFG Boat #	Boat Name
075607	07/13/25	FTB	298	Fish	45678	Telstar

EFFORT			DISCARDS	CATCH			BIO DATA				
ANGLER #(s) from Angler Form	ANGS Total	BAG # (Sample #)		SPECIES	KEPT	RELS	Fork length / Carapace size (mm), sex (MF/T)				
					obs	alive	Weight (decimal kg) or (tag #)				
			Stop #		unobs	dead	1	2	3	4	5
A		D	1	RFVER	0	2	243	214			
					0	0					
B		D	2	RFYEY	0	2	473	326			
					0	0					
C		D	2	RFYEY	0	0	271				
					0	1					
D	1	1	10	RFVER	2	0	418	429			
					0	0					
E				RFBLU	5	1	287	356	323	266	284
					0	1					
F				RFCOP	1	0	362				
					0	0					
G				RFROS	2	2	246	310			
					0	1					
H				LNGCD	2	0	655 M	595 M			
					0	0					
I	8	1	6	RFBLU	4	3	286	318	327	333	
					0	0					
J				RFVER	2	0	512	412			
					0	0					
K				RFYEY	0	1					
					0	0					
L				LNGCD	2	1	721 F	591 M			
					0	1					
M				RFCHN	4	0	312	325	318	299	
					0	0					

**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 # blank; write **Boat Fish** for BAG #.

**For finfish, ANGS Total:** TOTAL ANGTS from the PCO Angler Form (i.e., number of eligible anglers incl. crew if they take fish home). Record obs.

**DISCARDS:** Record the Stop # for measured discards; leave EFFORT columns blank; complete CATCH & BIO DATA columns.

0	0	0	1	1	0	0	0	0	0
Kept	Rele								
HALPA		RFYEY		RFCOP		RFQIL		RFBLK	

### Coding 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 if they are keeping fish. Additional fish or fish that do not belong to a specific person are coded to the crew first, and then any fish above this are termed boat fish (group catch). The boat fish will be coded to the crew until each crew member has limits. Only then will left over fish be coded as boat fish.
- The bag # will be "Boat Fish."
- List the species and the number of fish as kept-observed.
- If the Sampler has time, the fish should be measured and that data 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.
- There should be no released boat fish; code releases to individual anglers.

EFFORT			DISCARDS Stop #	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	unobs	alive	dead	Weight (decimal kg) or (tag #)				
							1	2	3	4	5		
A	10	Boat Fish		DABPA	4	0	0	216	226	310	267		
					0	0	0						
B				RFROS	1	0	0	254					
					0	0	0						
C				RFGRN	2	0	0	308	312				
					0	0	0						

## **Party/Charter Boat Non-Salmon Dockside (PCD) Mode Sampling**

The CRFS PC (CPFV) Dockside form collects catch and effort data from non-salmon trips (PCD) that will be used to supplement data from onboard trips (PCO).

### **When to Sample Dockside**

The goal of this sampling mode 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. In Districts 3-6, dockside sampling is most often conducted on lower-priority species to ensure CPUE is obtained from all trip types. Six-pack vessels are to be sampled dockside, unless special circumstances allow for Samplers to ride onboard. Overtime issues may prevent Samplers from riding long-range trips, so most are sampled dockside.

### **Scheduled vs. Opportunistic**

PCDs can be assigned on the monthly CRFS schedule, or they may be done opportunistically during other assignments, if the Sampler happens to see PC boats come into port after fishing. Opportunistic PCDs are encouraged; however, do not miss interviews from the assigned mode in order to sample a PCD opportunistically. This commonly happens at PR ramps where a PC boat (NFPC6) comes in. For opportunistic PCDs, leave the ASSN ID blank (on both the ASF and PCD forms); the Lead will fill in an ASSN ID when the data are received at the office.

### **Sampling Unit**

The sampling unit for PCD sampling is all catch and effort from one or more angler(s) bags from a CPFV non-salmon trip. Collection of these data from at least one angler-bag constitutes a complete PCD sample. The Sampler should attempt to collect catch and effort data from as many angler-bags from as many boats as possible. For each new boat sampled during the assignment, use a new form.

### **PC Assignments**

In general, PC assignments are single site samples. They may be assigned as onboard or dockside samples. The Lead will assign the location of the sample. Rescheduling these assignments is not desirable to the survey; contact the Lead if the assignment needs to be rescheduled or moved to an alternate PC site.

### **Data Collection**

Information collected during a PC non-salmon dockside assignment 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 angler-bags as possible and the corresponding catch and fish bio data. It is important to note that there is no "maximum" sample, meaning the Sampler should try to interview

as many boats and angler-bags from those boats as possible at the site; however, one “sample” consisting 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 to report to the Lead any harbor closures, launch ramp closures, road closures or other incidents that prevent sampling or restrict or prevent fishing effort.

### **Combo-Trips: PCD versus PCS Sampling**

CPFV trips that have multiple targets including salmon should be sampled in both PCD and PCS modes (both forms are required). Note that all catch, including salmon, for all angler-bags sampled, goes on the PCD form; be sure to check the “OSP Form also completed” box on the top of the PCD form if the requirements for a PCS are met. Only salmon catch goes on the PCS form. Salmon-only boats may not be sampled with the PCD form, even if there was non-salmon bycatch while targeting salmon. In order to be eligible for PCD sampling, the boat must have had at least one non-salmon finfish target. Samplers should focus on collecting the PCD information prior to any PCS information. If time allows, collect the information relevant to complete the PCS form. Remember all anglers should be asked about kept and released catch. Even if the Sampler does not think they will have time to collect PCS information, they still need to ask interviewed anglers about all kept and released fish (including salmon) for an interview to be complete.

### **Sampling Chartered Trips**

TSample chartered boat trips along with open-party trips as they come back to the dock. Chartered trips can make up a large proportion of the total CPFV fishing trips, especially during the summer. Six-packs are predominantly chartered trips. It is important to sample chartered trips, as well as open-party trips in order to accurately estimate CPFV catch and effort.

### **Sampling Guidelines and Procedures**

Plan to arrive at the port with adequate time to meet the first boat. Estimate the time boats are going to return by looking at the previous day’s report or calling the landing 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. More time spent working in the port will allow for getting a feel for the typical boat routines.

As the boat pulls up to the dock, the Sampler should introduce and identify themselves as a CDFW employee conducting CRFS. Count the number of anglers on the boat and verify this number with the crew before leaving. Try to intercept as many anglers (angler-bags) as possible as they leave the boat and ask for information on what they kept and released. Some of the information on the data sheet will have to be provided by the captain or crew, such as area fished and catch location. To save time and maximize

the number of interviews, get the boat and trip information from the captain or landing agent after interviewing as many angler-bags as possible.

Try to sample as many boats as possible (note, each new boat sampled will require a new PCD form but will have the same ASSNID). Check datasheets for any errors while at the dock before departure.

### **Interviewing Anglers**

Ask each angler about kept and unobserved catch. Unobserved catch includes any fish kept for bait and fish released alive or dead. Remind anglers about any fish released or used for bait. For rockfish, try to probe to identify the released catch to the species level and avoid grouping at the higher level (e.g., "RFGEN"). Use field guides (time permitting) or reference catch that they kept and are in front of them. If an angler has a bag of rockfish fillets that they won't open or can't enumerate to species-level, it is best to skip this interview and move to the next angler-bag. The point is to get high-quality bag census to species-level rather than many bags of higher-level taxa. Avoid grouping catch if possible. Due to boat limits and fish-shuffling, 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). Don't double count the catch.

### **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 and crew onboard. Even seasick anglers who do not wet a line all day may leave the boat with fish, provided they have a fishing license, and would be eligible for an interview.

### **Crew Fish**

After completing angler interviews, ask the crew and captain if they contributed to the boat limit (took fish home as part of the boat limit). If so, crewmembers are counted in the Boat Anglers field on the header of the data sheet. The crew may be interviewed if they kept fish towards the boat limit, however, focus on interviewing anglers. Do not allow crew to influence what the anglers report. Do not ask to see CPFV logbooks or attempt to copy logbooks for PCD catch and effort. The crew might distribute their personal catch to other anglers (note: this practice is illegal under Title 14, CCR Section 195(e)(2)).

### **NO CATCH Bags**

Occasionally, there will be anglers who do not catch fish and also do not accept fish from other anglers as part of the boat limit. In this instance they are a 'NO CATCH' bag and must be recorded as such. Try to pay attention to this situation because these anglers (often seasick) will try to slip at the dock or think that because they did not catch fish, they are unimportant. If these no catch bags are ignored, and left off the PCD forms, fish will be expanded to those anglers based on the interviews that are obtained from successful anglers. All eligible anglers, with or without catch, should be intercepted. Do not just interview anglers with catch.

## **No Anglers in PC Mode**

If the assigned PC site as scheduled has no anglers observed, refer to the Alternate PC Trips protocol described earlier in this section, unless the Lead has given specific landings to sample as an alternate. If no effort in the assigned mode is found at the primary site and alternate sites, contact the Lead to determine the assignment's final disposition.

## **Sampling Dungeness Crab**

Crab biological data is ignored on PC trips, only record CRBGN as a target, area fished and gear type (including the number of pots/hoops pulled).

### When sampling a PC non-salmon dockside (PCD):

1. Record all data on the CRFS PC (CPFV) Dockside Form.
2. Complete an ASF for both scheduled and opportunistic PCDs (the Lead will provide the ASSNID).
3. Interview all angler-bags, if possible, even if they did not catch any fish. However, one complete angler interview constitutes a valid (complete) sample from the boat.
4. For opportunistic PCDs during a PR assignment, list the CPFV as a NFPC6 boat on the PR Form and conduct interviews with the CRFS PC (CPFV) Dockside Form. Write a comment on the ASF listing any dockside sampled PC boats. Always have a PCD form with handy at PR assignments.
5. If the PC boat is not listed on the PEC Form (if prefilled) 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. Inform the Lead.
6. 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.
7. For fish that are reported, or fillets that you did not count or ID, the fish should be recorded under "kept unobserved."
8. Ask crew and any anglers interviewed about descending device usage.
9. 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 bio data. 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").
10. Do not record 'boat fish' during a PCD sample. All fish on the PCD form must be associated with an angler-bag interview.
11. Gifts of fish are not to be accepted. Enforcement may find this to be either contributing to or helping the boat avoid an over-limit.
12. Do not sample salmon-only boats (only targeted salmon) that have bycatch of another species as a PCD sample – only boats that targeted finfish other than salmon are sampled as a PCD.
13. Please pay attention to high priority species such as Yelloweye Rockfish, Quillback Rockfish, and Pacific Halibut.
14. Crab catch and biological data are ignored; only include CRBGN as a target, location, and gear type (including the number of pots/hoops pulled).

**CRFS PC (CPFV) Dockside (PCD) form Item by Item Instructions**

Field Name	Instructions	Coding Examples and Formats
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 is 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 (PCDs are numbered 701-799 for scheduled PCD sampling assignments, and 901-999 for opportunistic PCD sampling)
Boat ___ of ___	Each boat sampled for the dockside assignment requires a new PCD Form and a unique boat number, starting with 1.  Enter in chronological order the boat number and the total number of boats sampled for the assignment. Enter boat number info on all pages.	Boat: (Boat #) of (Total # of boats sampled per assignment)  <b>Boat: 2 of 4</b>
Date (MM/DD/YY)	Enter the numeric date as 2-digit month/2-digit day/2-digit year.	MM/DD/YY 01/01/25 = January 1, 2025
CNTY	Enter the 3-digit numeric county code.	037 = Los Angeles
SITE	Enter the 3-digit numeric site code.	014 = 22 <sup>nd</sup> Street Landing Sportfishing
OSP Port	Enter the 3-letter alpha code used by the Ocean Salmon Project for this port.	FTB = Fort Bragg

Field Name	Instructions	Coding Examples and Formats
Sampler #	Enter your 3-digit Sampler identification number.	3-digit numeric code = 132
Sampler Last Name	Write out your last name.	"Smith"
<b>TRIP INFORMATION</b>		
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 or from crew/landing.	CDFW Boat # = 22776
Boat Name	Write out the name of the vessel. Observe the name that is painted on the vessel and refer to the list provided by the Lead.	Vessel Name = <i>Monte Carlo</i>
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.	½ = half day ¾ = ¾ to full day T = twilight O = overnight Other = write in a description
PC Mode	Determine by asking crew or landing if the trip was open party or chartered to a private group. Enter the appropriate PC mode.	P = open party trip C = 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.	1400 = 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 and verify with crew/captain.	30 = thirty anglers Include the crew in the total if they took fish home (include anglers who did not fish but took fish home)
TARGET	Record the primary and secondary target for the trip.	RFGEN = Rockfish, LNGCD = Lingcod

Field Name	Instructions	Coding Examples and Formats
AREA	Record the water area code where the majority of fishing <b>effort</b> (fishing time) occurred, by target.	N = Nearshore (< 3 mi) O = Offshore (> 3 mi) B = enclosed bay/estuary/harbor 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 for the fishing gear used for each target. Codes can be referenced at the bottom of the page.	H = Hook and Line T = Troll S = Spear N = Bait Net
DD?	Determine if any descending device was <u>used</u> to release fish on this trip. Record the appropriate designation.	Y = Yes, a descending device was used on this trip N = No, none used
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. Latitude and longitude from the captain are also acceptable.	Block-Box method is preferred: 212-01 (block & one box) 235-12-14-15 (block & up to 3 boxes or two 3- digit boxes for inland marine waters bbb-bbb) 252 (block only)
DEPTH	Enter the mean bottom depth in feet for the catch location obtained from the captain.	100 = 100 feet
<b>EFFORT</b> Interview anglers to obtain this data		
Sample #	Record a sampler number for this individual angler or group interview record (angler-bag).	1 = first interview  R = refusal  B = language barrier

Field Name	Instructions	Coding Examples and Formats
	<p>If the angler refuses to be interviewed or refuses key data (catch and effort information) then an "R" should be recorded in the box with no sample number.</p> <p>A language barrier that prevents an interview should be recorded as a "B" with no sample number.</p>	<p>Do not record "boat fish" on the PCD form; if it is not assigned to an angler, do not record it</p>
ANGS	Record the number of individuals who fished for this angler-bag.	2 = two anglers fished for this sample #
Zip Code	Determine the residential zip code for a randomly selected angler contributing to the bag.	<p>90720 = angler resides in Los Alamitos, CA            Refused = R            Don't know = DK            Sampler didn't ask = DA            Foreign country = 3-letter country code, e.g. Ireland = FIE</p>
<b>CATCH</b> Interview anglers to obtain this data		
SPECIES	Use the 5-letter alpha code to record the catch species.	HALCA = California Halibut
KEPT obs	Enter the number of fish landed and retained that you examined for this interview record in the "obs" (observed) box.	<p>No catch = zero</p> <p>Refused/don't know: interview is incomplete and should be terminated</p>
KEPT unobs	Enter the number of landed and retained catch that was unavailable to be examined for this interview record in the "unobs" (unobserved) box.	<p>Includes fish used for bait, consumed at sea and fillets.</p> <p>No catch = zero</p> <p>Refused/don't know: interview is incomplete and should be terminated</p>
RELS alive	Enter the total number of fish reported as released alive by the angler(s) for this interview. Fish must have been landed or intentionally released.	<p>Record by species the number of fish released alive</p> <p>No catch = zero</p>

Field Name	Instructions	Coding Examples and Formats
	Probe for catch that may not be remembered, such as bait species.	Refused/don't know = the interview is incomplete and should be terminated
RELS dead	Enter the total number of fish reported as released dead by the angler(s) for this interview. Fish must have been landed or intentionally released. Probe for catch that may not be remembered, such as bait species.	Record by species the number of fish released dead.  No catch = zero  Refused/don't know = the interview is incomplete and should be terminated
<b>BIO DATA</b>		
Fork length (mm), Sex (M/F/T)	In the top row enter the fish's fork length in mm.  Add an M, F, or T after the length for sexed species.	321 = FL in mm  F = Female M = Male T = Transitional (CA Sheephead) 321F = female fish, 321 mm FL
Weight (decimal kg) or tag#	Below the length, enter the weight in kg of the fish  Do not weigh headed or gutted fish.  For salmon and other relevant species, enter the headtag number below the length. For salmon heads not recovered or lost, enter the headtag number and code NRS (Non-Recovered Specimen). Salmon head tag numbers are 5 digits.	5.35 = weight in kg  12345 NRS = tagged salmon head not recovered
<b>FOOTER</b>		
HALPA/SHEEP	Enter the sum of the number of kept and released Pacific Halibut (Northern California) or CA Sheephead (Southern California) from the page.	
RFYEY	Enter the sum of the number of kept and released Yelloweye Rockfish from the page.	

Field Name	Instructions	Coding Examples and Formats
RFCOP	Enter the sum of the number of kept and released Copper Rockfish from the page.	
RFQIL	Enter the sum of the number of kept and released Quillback Rockfish from the page.	
RFBLK	Enter the sum of the number of kept and released Black Rockfish from the page.	

### Specific Editing Checks

1. The PCD interview is not complete until all anglers contributing to the bag are asked about what was discarded. Data are unusable unless BOTH retained catch and discards 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 information for a species should go on the first line only.
3. For an opportunistic sample (6-pack PC trip at PR1 site, for example), leave the ASSNID blank on the PC Dockside Form; an assignment ID will be given by the lead.
4. Fillets that cannot be identified or enumerated are considered kept unobserved, even though they were seen.
5. If there are salmon aboard a PC boat, please also fill out an OSP Salmon Dockside Form with that information 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 (Rockfish/Salmon trip, for example). OSP dockside forms should only be completed if all salmon are observed.

# Example of PC Non-Salmon Dockside Form

## CRFS PC (CPFV) DOCKSIDE FORM

V21 02/02/22

 OSP Form also completed  Page 2 of 6

ASSNID	Boat_of	Date (MM/DD/YY)	CNTY	SITE	OSP Port	Sampler #	Sampler Last Name				
064706	2 / 3	06/18/25	097	400	BOD	203	Salmonson				
DFG Boat #	Boat Name	Duration Type	PC (P or C)	Departure & Return Date (MM/DD/YY) Time		DAYS fished	TOTAL ANGS	TARGET	AREA	GEAR	DD?
12345	New Sea Angler	3/4	P	Depart	06/18/25 0530	1	28	1st RFGEN	O	H	Y/N
Captain: John Doe				Return	06/18/25 1530			2nd LNGCD	O	H	Y
SPECIFIC LOCATION & DEPTH INFO: <i>Location and depth where most of the fish caught, or most of the effort if no catch.</i>				LOCATION (block-box or Lat/Lon)				DEPTH Average Bottom (ft)			
				450-60,61				300			
				450-70,71				310			

EFFORT			CATCH			BIO DATA					
Sample # or R, S, Boat Fish	ANGS Total	Zip Code	SPECIES	KEPT obs	RELS alive	Fork length/Carapace size (mm), Sex (M/F/T)					
						unobs	dead	Weight (decimal kg) or (tag #)			
						1	2	3	4	5	
A	1	95403	RFVER	obs	2	0	426	393			
				unobs	0	1	1.4	1.10			
				dead	0	1					
B			RFYTL	obs	5	6	362	349	412	377	358
				unobs	0	1	0.73	0.65	1.1	0.82	0.70
				dead	0	1					
C			RFBBC	obs	3	1	512	564	543		
				unobs	0	0	1.6	2.2	1.9		
				dead	0	0					
D			LNGCD	obs	2	0	596 M	789 F			
				unobs	0	0	2.1	5.0			
				dead	0	0					
E	2	95433	RFYTL	obs	0	3	Filletted in Bag, Unable to ID and Count Fillets				
				unobs	10	1					
				dead	0	1					
F			LNGCD	obs	0	1					
				unobs	1	0					
				dead	0	0					
G	R	3		obs			Anglers Refused Survey				
				unobs							
				dead							
H	3	95973	RFBBC	obs	3	1	554	537	496		
				unobs	0	0	2.0	1.8	1.4		
				dead	0	0					
I			RFCOP	obs	1	2	368				
				unobs	0	0	0.95				
				dead	0	0					
J			RFYFY	obs	0	2					
				unobs	0	0					
				dead	0	0					

\*Use CRFS-OSP SALMON CPFV DOCKSIDE SAMPLE FORM for salmon trips.

**Boat:** (Boat #) of (Total # sampled per assignment)

**Duration Type:** 1/2 day, 3/4 to full day, Twilight, Overnight, Other-describe

**PC Mode:** Open Party, Charter

**DD?:** Was a descending device used on this trip? Yes or No

**AREA (Water Area & Island):** Water Area: Nearshore (<3mi), Offshore (>3mi), enclosed Bay/estuary/harbor, 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. Salmon gear only: Moch, Both (moch & troll).

Invert gear only: Pot #, Flat # or Rigid # hoop net, snar, sCuba, free Diving

**Sample #:** # of interview, OR Refusal, Language Barrier, or Boat Fish. **Sample # Flag:** Crew

0	0	0	0	2	1	2	0	0	0	0
Kept	ReIs	Kept	ReIs	Kept	ReIs	Kept	ReIs	Kept	ReIs	Kept
HALPA		RFYFY		RF COP		RFQIL		RFBLK		

**TOTAL ANGS:** all eligible anglers (including crew if they take home fish)

enclosed Bay/estuary/harbor, Mexico.

# Example of PC Non-Salmon Dockside Form

CRFS PC (CPFV) DOCKSIDE FORM V21 02/02/22 OSP Form also completed  Page 1 of 3

ASSN ID	Boat # of	Date (MM/DD/YY)	CNTY	SITE	OSP Port	Sampler #	Sampler Last Name				
054702	1 / 2	05/03/25	097	400	BOD	203	Salmonson				
DFG Boat #	Boat Name	Duration Type	PC (P or C)	Departure & Return Date (MM/DD/YY)   Time		DAYS fished	TOTAL ANGS	TARGET	AREA	GEAR	DD?
98765	Dragonfly	3/4	C	Depart: 06/18/25 0530 Return: 06/18/25 1530		1	6	1st SALCK 2nd RFGEN	N N	T H	Y/N Y
Captain: Doe John											
SPECIFIC LOCATION & DEPTH INFO:				LOCATION (block-box or Lat/Lon)				DEPTH Average Bottom (ft)			
Location and depth where most of the fish caught, or most of the effort if no catch.				438-12, 23, 34				60			
				431-69, 79				90			

EFFORT			CATCH		BIO DATA								
Sample # or R, B, Boat Fish	ANGS Total	Zip Code	SPECIES	KEPT		RELS		Fork length/Carapace size (mm), Sex (M/F/T)					
				obs	alive	obs	alive	Weight (decimal kg) or (Tag #)					
				unobs	dead	1	2	3	4	5			
1	1	95403	RFBK	3	5	400	412	399					
				0	0	1.1	1.2	1.1					
B			RFCHN	1	0	338							
				0	0	0.75							
C			SALCK	1	0	701							
				0	0	99012							
D			LNGCD	1	0	612 M							
				0	0	2.2							
2	1	95433	RFBK	0	3	Rockfish Filleted in Bag, Unable to ID and Count Fillets							
				10	1								
F			SALCK	1	1	Adipose Fin Intact							
				0	0								
3	1	95973	RFBK	9	2	392	411	389	442	399			
				0	0	1.0	1.2	0.92	1.4	1.1			
H			RFBK cont	0	0	388	407	434	521				
				0	0	0.98	1.1	1.4	2.4				
I			SCCAB	1	0	502 F							
				0	0	3.3							
J			LNGCD	1	1	696 F							
				0	0	3.3							

\*Use CRFS-OSP SALMON CPFV DOCKSIDE SAMPLE FORM for salmon trips.

**Boat:** (Boat #) of (Total # sampled per assignment)

**Duration Type:** 1/2 day, 3/4 to full day, Twilight, Overnight, Other-describe

**PC Mode:** Open Party, Charter

**DD?:** Was a descending device used on this trip? Yes or No

**AREA** (Water Area & Island): Water Area: Nearshore (<3mi), Offshore (>3mi), enclosed Bay/estuary/harbor, 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. Salmon gear only: 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

0	0	0	2	1	2	0	0	0	0
Kept	Reles	Kept	Reles	Kept	Reles	Kept	Reles	Kept	Reles
HALPA	RFYFY	RFCOP	RFQIL	RFBK					

**TOTAL ANGS:** all eligible anglers (including crew if they take home fish)

## **Party/Charter Boat Salmon Dockside (PCS) Mode 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**

The sampling unit for PCS sampling is all catch and effort from a CPFV salmon trip. All data must be collected in the sample unit to be considered a valid (complete) sample.

### **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, fork 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 to obtain a valid sample from the boat.

### **Sampling Guidelines and Procedures**

In the CPFV fishery, each salmon CPFV trip constitutes a sample. Each port will have a 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 Department of Fish and Wildlife (CDFW). 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 to obtain a valid sample from the boat. 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, add them to the total kept and add the crew to the count of total 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 attire provided by CDFW. Clean your gear after each boat if time allows.
3. When you approach the deckhand or captain identify that you work for CDFW. Let them know you intend to sample the boat. After a short period, your presence will be routine to them. However your presence to each angler will not be routine and you will need to identify yourself as a CDFW employee. 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.
5. Record all header information; Date, OSP Port, Sampler ID 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 fork 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 Title 14, CCR Section 1.73(b). If you still cannot retrieve the head, attempt to get a length and attach a headtag to the fish. Explain that the angler can call the toll-free number on the headtag and the OSP will coordinate retrieval of the head. 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. If time permits, ask the anglers if they would like to receive information about their fish. Write the tag number (or series of tag numbers) on an orange information request card. Refer the angler to the card for instructions on submitting their contact information to OSP.
8. Ask the captain or deckhand how many Chinook Salmon were kept and released ("shakers") and if they released any Coho Salmon. Record the appropriate information in the correct box. Unknown shakers are recorded in the "Released Kings" column.
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. 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 the 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 data sheets and the headtag report sheet.
  16. Inventory the heads before you put them in the freezer.

**CRFS-OSP Salmon CPFV Dockside Form (PCS) Item by Item Instructions**

Field Name	Instructions	Coding Examples and Formats
<b>HEADER</b>		
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, 2017
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 data sheets.	Example: Phillips 302 (Y) = James Phillips, Sampler 302 also has data sheets for this PCS assignment.  If you sampled alone, leave blank.
<b>EFFORT</b>		
Boat Name	Enter the name of the boat.	Becky Ann
Boat #	This is the CDFW vessel ID number of the boat.	32965 = ‘Becky Ann’  Never leave blank.
Time Sampled	Enter a time stamp for every CPFV boat that is intercepted at the dock.	Use 24 hour format: 1700 hours = 5:00 PM Never leave blank.

Field Name	Instructions	Coding Examples and Formats
		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 (moving/under power) (M) = Mooch (static/driftng)
Total Angs	Enter the total number of anglers (licensed and unlicensed), including crew if they fished.	30 = there were thirty people fishing on this boat
<b>CATCH</b>		
Kings Kept	Enter the sum of King Salmon kept for each boat trip.	0 = No kings kept # = Number of Kings kept
Kings Rels	Enter the sum of King Salmon released for each boat trip.	0 = No kings released # = Number of Kings released
Coho Kept	Enter the sum of Coho Salmon kept for each boat trip. Clearly note any kept Coho and notify your Lead as soon as possible.	0 = No Coho kept # = Number of Coho kept
Coho Rels	Enter the sum of Coho Salmon released for each boat trip.	0 = No Coho released # = Number of Coho released
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
<b>BIO DATA</b>		
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

Field Name	Instructions	Coding Examples and Formats
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 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 type="checkbox"/> = This head was recovered. <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.
<b>FOOTER</b>		
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

Field Name	Instructions	Coding Examples and Formats
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 species.	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 to note tags were used out of sequence.
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; 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.
8. Make sure your writing is legible.
9. Clearly delineate which headtags came from which boat.
10. At the end of the sample day, inventory your heads. Make sure the heads you collected match the headtags on your data sheet and on your headtag report form.
11. Check your data sheets for duplicate headtag numbers, missing headtag numbers and non-sequential headtag numbers.

# CRFS-OSP SALMON CPFV Dockside Form Example

## CRFS-OSP SALMON CPFV DOCKSIDE FORM

Page 1 of 1

Date (MM/DD/YY)

OSP Port

Sampler ID

Sampler Last Name

Other Samplers, ID (w/data)

07/21/15

EUR

312

Troxel

(Y N)

(Y N)

EFFORT			CATCH					BIO DATA		
Boat Name Boat # time sampled	Gear (circle) Total Anys		King		Coho		Sea Lion Take # Salm	Salmon		
			# Kept	# Rels	# Kept	# Rels		Headtag #	FL(mm)	NRS*
Boat Name Reel Steel Boat # 71226 Time 1107	(T) M 6		12	3	0	2	0	99101	711	
Boat Name	T							99102	691	
Boat Name	M							99103	595	
Boat Name							out of sequence	99105	702	
Boat Name	T							99106	688	
Boat Name	M									
Boat Name Fishy Business Boat # 71284 Time 1121	(T) M 6		12	4	0	4	1	99104	687	
Boat Name	T							99107	697	
Boat Name	M							99108	750	X
Boat Name								accidentally dropped into bay		
Boat Name Sea Weasel II Boat # 70586 Time 1139	(T) M 6		12	3	0	5	0	99109	722	
Boat Name	T							99110	699	
Boat Name Silver Star Boat # 70786 Time 1148	(T) M 5		9	3	0	2	0	99111	787	
Boat Name	T							99112	715	
Boat Name	M							99113	692	
Boat Name	T							99114	748	
Boat Name	M									
Boat Name	T									
Boat Name	M									

Comments: Reel Steel headed back out for PM trip. For Reel II did personal trip. Gary on Sea Weasel says he's going to be out of the water for the next couple days. Shellback still out, doing SALCK/HALPA combo trip.

TOTAL SAMPLED EFFORT & CATCH FOR THE DAY:

King

Coho

4	23	45	13	0	13	1
---	----	----	----	---	----	---

14	13	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.

V5 321/13

## 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 log information submitted by each CPFV. PEC data is 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 in conjunction with CPFV logbooks to determine total salmon fishing trips, and to ensure achievement of the minimum 20% sample rate.

The PEC data are as important as dockside and onboard PC sampling; all CPFV sample mode data is used together to estimate total effort and catch.

### Methods

There are two methods for conducting PC effort checks. The method employed is dependent on the District and whether or not the ocean salmon fishery is open. During salmon season, the sampling responsibility for PECs will vary between CRFS and OSP depending on port logistics and staffing availability. Where CRFS is conducting PECs, the Lead will task a Sampler with PEC sampling.

**1) During salmon season in Districts 2-6 activity for every PC boat should be recorded for every day.** During this time, a Sampler may be designated in each port to collect effort information for all PC vessels in their designated 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. Confirm information gathered from the bait shop/landing with the CPFV captain whenever possible. The Port Lead Sampler must keep track of all PC effort to maintain the required minimum salmon PC sampling rate of 20 percent per half-month period. The Port Lead Sampler will conduct most of the salmon PC dockside assignments. The CRFS-OSP PC (CPFV) Effort Check Form should be filled out by the Port Lead Sampler every week. Port Leads should get information on these vessels whenever they are at the docks. This is a good time to collect effort information from previous days when effort was not checked. It is advised that effort is checked at least three times a week to adequately capture all PC effort. Sometimes boat operators are difficult to contact if they are not present at the dock during sampling or they do not immediately return your call. Port Leads should not wait until the end of the week to collect effort information. Waiting more than a few days may result in a failure to collect all of the effort information needed. The Port Lead 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 PR assignments should collect effort information as they encounter these boats at the PR site. Samplers that are not the Port Lead Sampler should report all sampled or otherwise known PC effort in the body of the weekly email to the Lead.

**2)** For District 1 and when salmon season is closed in District 2, PECs are scheduled based on the minimum sample number needed per District. In Districts 3-6 when salmon season is closed, Leads will assign Samplers as Port Leads and determine the sampling rate. Use the PEC form for the District's sub region (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. 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. Port Lead Samplers should reach out and request information on CPFV activity to CRFS samplers that are assigned to sample at or near the landing in other modes (such as PCD, PCO, etc.). It is advised that effort is checked at least once a week to adequately capture all PC effort.

### **Type of Assignments**

In Districts 1 & 2 a PEC assignment must be scheduled as a part of each PC onboard or dockside assignment. The Sampler uses the *CRFS PC (CPFV) Effort Check Form* (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**

In Districts 1 & 2 additional assignments that are needed to meet the minimum number of PECs per landing 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. Specific PEC assignments are scheduled separately from other sampling assignments. The Sampler uses the *CRFS-OSP PC (CPFV) Effort Check Form* (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 MM, BB, PC, PR2 or PR1 assignment. The Sampler uses the *CRFS PC (CPFV) Effort Check Form* (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, MM or PR assignment) on the Monthly Schedule.

PECs do not have an assignment ID. 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 recorded on the Weekly Report.

**CRFS-OSP PC (CPFV) Effort Check Form Item by Item Instructions**

<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
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.	“DaSilva”
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, unless the form has been prefilled for you.	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.	10/21/17 = October 21, 2017
ASSN ID	Enter the 6-digit assignment ID number if the PEC is in conjunction with a BB/MM/PR/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, N is the mode and NN is the

Field Name	Instructions	Coding Examples and Formats
		sequence number from 01 to 99.
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	Enter the boat name	'Patriot'
CDFW Boat #	This is the 5-digit Fish and Wildlife vessel ID number (permit number).	02214 = 'Patriot'
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. Finfish are a priority and should be listed as the primary target over invertebrate targets. If a boat fished but the target is unknown record "O" for other. If a boat targets salmon and rockfish for example, record "SR". If the boat was targeting salmon, circle T for troll or M for mooch. If both types of gear were used circle both. Circle D if the trip was a spearfishing dive trip.	<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  O = Other  D = Crab</p> <p><u>Non-Fishing Status:</u>  1 = boat docked (trailerred)  2 = non-fishing trip  3 = non-CPFV fishing trip</p> <p><u>Gear:</u>  T = Troll, salmon  M = Mooch, salmon  D = Dive</p>
Source	Record your source for the information you recorded. Prioritize direct sources (Personal Observation or the Captain) over indirect sources (Website) whenever possible.	Initials = record the Sampler's initials who sampled the boat P = Personal Observation C = Captain/deckhand O = Office contact W = Website

Field Name	Instructions	Coding Examples and Formats
Total salmon CPFVs sampled per day	When salmon season is open, 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. Leave blank when salmon season is closed.	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 expected to be in dry dock for 1 month"
Total Salmon CPFVs	When salmon season is open, report the total number of salmon trips for the sample week. Leave blank when salmon season is closed.	10 = ten trips where salmon were targeted or kept
Salmon CPFVs Sampled	When salmon season is open, report the number of salmon trips sampled by CRFS and/or OSP for the sample week. Leave blank when salmon season is closed.	5 = five salmon-targeting trips were sampled
% Salmon CPFVs Sampled	When salmon season is open, report the percentage of salmon trips sampled for the sample week. Leave	50.0% = Fifty percent of the trips were sampled

Field Name	Instructions	Coding Examples and Formats
	blank when salmon season is closed.	

Note: Districts 2-6, use additional rows on the PEC form as needed to document when boats do additional trips in the same day or when transient CPFV effort is documented at the site.

### 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. If a new boat started using a particular landing, write in the new boat's name, number and the daily trip information. Just because the boat is not listed on the form does not mean that we should not be tracking it. D1 PECs are not pre-filled with boat names and numbers. Boat numbers can be found in prominent lettering on the wheelhouse, or on the master vessel list for your District provided by the Lead.
3. 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.
4. Multiple days' worth of information can go on one PEC form provided those days fall within the same sample week.
5. Up to two targets may be reported for each trip. Finfish are a priority and should be listed as the primary target over invertebrate targets.
6. All salmon trips need to have a gear type circled – T (troll), M (mooch) or circle both if both gear types are used on the same trip.
7. Make sure that when striped bass is recorded as a target that it is clearly written and legible as a "Z" and not a "2".
8. Make sure to reserve CPFV Status Code 3 for 'Non-CPFV Fishing Trips', such as recreational or commercial fishing trips by the crew or any fishing trip without paying passengers onboard.
9. Do not remove boats that leave the port to fish elsewhere – notify the Lead. Include a note in the comments section about any boats that have moved or are fishing in another port.
10. Leave the target and source fields blank if a boat's activity cannot be determined and write the reason in the comments section.

11. Make sure boat activity information is collected after a trip has occurred. Do not record information about future trips from the captain or the website since trips can switch targets, reschedule, or cancel due to weather, demand, etc.

Sampler #	Sampler Last Name	CNTY	SITE	Site name (CDFW port)	Week starting Mon.												
303	Walkenhauer	23	307	Trinidad (231)	07/02/17												
ASSN ID		076602		076604													
Date (MM/DD)		07/02		07/03		07/04		07/05		07/06		07/07		07/08			
		MON		TUE		WED		THU		FRI		SAT		SUN			
CPFV Boat Name	CDFW Boat #	Target Status	So.	Target Status	So.	Target Status	So.	Target Status	So.	Target Status	So.	Target Status	So.	Target Status	So.		
		Gear (circle)		Gear (circle)		Gear (circle)		Gear (circle)		Gear (circle)		Gear (circle)		Gear (circle)			
1	Jumpin Jack	35910	RL SW	RL P	RL C	1 P	RL C	RL C	RL C	RL C	RL C	RL C	RL C	RL C	RL C		
		T M D		T M D		T M D		T M D		T M D		T M D		T M D			
2	Toni Rae II	42146	1 P	S MS	RL C	S ER	RL C	A C	3 C								
		T M D		T M D		T M D		T M D		T M D		T M D		T M D			
3	Wind Rose	46519	SA P	S MS	3 C	1 P	S MS	1 C	R C								
		T M D		T M D		T M D		T M D		T M D		T M D		T M D			
4	White Cadillac	71623	SA P	RL P	L C	1 P	1 C	S C	S C								
		T M D		T M D		T M D		T M D		T M D		T M D		T M D			
5	Reel Therapy II	71654	S P	1 P	S C	S ER	S MS	RL C	RL C								
		T M D		T M D		T M D		T M D		T M D		T M D		T M D			
6																	
		T M D		T M D		T M D		T M D		T M D		T M D		T M D			
7																	
		T M D		T M D		T M D		T M D		T M D		T M D		T M D			
8																	
		T M D		T M D		T M D		T M D		T M D		T M D		T M D			
9																	
		T M D		T M D		T M D		T M D		T M D		T M D		T M D			
10																	
		T M D		T M D		T M D		T M D		T M D		T M D		T M D			
Total salmon CPFVs sampled per day:		0 / 3		2 / 2		0 / 1		2 / 2		2 / 2		0 / 1		0 / 1			
Notes:																	
Comments:		Walkenhauer sampled Jumpin Jack onboard on 07/02. The Toni Rae II and Wind Rose took non-CPFV trips this week.										12		6		50%	
												Total Salmon CPFVs		Salmon CPFVs sampled		% Salmon CPFVs sampled	

**Fishing Target**

S = Salmon  
(circle Troll or Mooch)  
R = Rockfish  
L = Lingcod  
Z = Striped bass  
N = Sturgeon  
K = Shark

T = Tuna  
O = Other  
H = CA Halibut  
A = PA Halibut  
D = Crab

**Non-Fishing Status**

1 = boat docked (trailerd)  
2 = non-fishing trip  
3 = non-CPFV fishing trip

Note: Record the fishing target and circle gear D for dive trips; Record non-take dive trips (e.g., wildlife viewing) as 2.

**Effort Source (So)**

Initials = sampled by CDFW  
P = Personal observation  
C = Captain / deckhand  
O = Office contact  
W = Website

## Site Effort Checks

### Need and Purpose

A Site Effort Check (SEC) is an instantaneous count of finfish anglers/trailers at a specific MM, BB, or PR site. SECs allow for the detection of changes in effort at sites made inactive based on historic data and may detect new fishing sites that might have otherwise been overlooked. The SEC counts are used to update baseline site effort data for weighted probability sampling, to determine if the effort level warrants the site being surveyed and to determine the proportionate level of effort for under-coverage adjustments.

### Scheduling

SECs may be scheduled as routes or conducted, when possible, in conjunction with any CRFS assignment. Samplers are provided with a list of sites in a set SEC route, as well as a list of sites where adjacent SEC counts should be obtained. SEC routes are scheduled monthly. All sites in the route should be sampled for SEC counts.

Adjacent SEC counts are opportunistic and include counting anglers or trailers in a different mode at the same site being sampled or counting anglers or trailers at a nearby site. Adjacent SEC counts should only be conducted at sites or in modes that are easily accessible and close to the site being sampled and only performed as time allows. Do not miss CRFS interviews in the assigned mode to get adjacent SEC counts. Additionally, adjacent counts should not be prompted by changes in effort. Examples of adjacent SECs include a BB section next to an MM site, or an MM structure next to a PR launch ramp.

### Methods

There are two methods for conducting SECs. The method employed is dependent whether an SEC route has been assigned as a standalone assignment or if adjacent counts are being obtained in conjunction with a CRFS assignment.

**1) SEC Routes: MM, BB, and PR** sites in a District are grouped into routes based on location and a Sampler's ability to visit and count anglers or trailers in a typical workday. Leads will provide a list of sites for each route and the Sampler uses the CRFS Wiki or District site list to visit all sites to get accurate counts of anglers or

trailers. For BB sites, this includes visiting all access points of a BB site. Start times will be determined by the Lead using local knowledge and available daylight hours

To promote sampling efficiency, the direction routes are sampled will be determined by randomly selecting between two predetermined starting points and generally proceed in a northerly or southerly direction. Start times will be classified as either late or early and will be randomly selected with equal probability. A simple random selection from all days in a month will be surveyed for each route or may be stratified by KOD. The number of routes and samples will vary by District.

**2) Adjacent SEC:** These counts should be obtained, when possible, in conjunction with other CRFS assignments (MM, BB, PCO, PCD and PR). Leads will provide a list of sites where adjacent counts are feasible that will not drastically increase sampling time of the assignment. Obtaining these counts should not cause the Sampler to incur much additional sampling time or mileage, nor should they be prompted by changes in effort.

### **Sampling SEC**

For each site visit all finfish anglers or trailers to be counted. SEC counts are considered instantaneous and should be conducted as quickly as possible. For BB and MM modes, an angler is defined as a person actively fishing, taking a break from fishing, or having the intent to fish during the survey day. Only finfish anglers are to be counted, the Sampler will use their expert local knowledge and discretion to determine target. Canvassing anglers for target should not be performed unless it can be done with minimal effort or time.

The BB section is further divided to include kayak and PWC vessels that are fishing. This section includes PR vessels that have accessed the ocean or bay from the BB section of the site being sampled.

For “beach and bank launched PR” at BB sites, binoculars should be used to count fishing kayaks and/or PWCs vessels and make a judgment call as to which site those boats launched from for inclusion in the BB observed PR count. Remember that fishing kayaks can be launched from almost any shore site and their SEC count goes in the “BB OBS” section of the ASF. Please note, the PR section is to be used for traditional boats at established PR

sites, since CRFS protocols do not count kayak trailers or car tops as a 'boat'.

At PR sites, trailer counts will be used for fishing effort. Count any trailer that could potentially be recreationally fishing. As with all CRFS trailer counts, do NOT count PWC trailers, car top boat carriers, boats loaded into the beds of trucks, non-traditional inflatable boats, trailers not attached to a vehicle, or known non-fishing boats. If you observe a non-traditional fishing vessel (e.g., PWC or kayak) launching or believed to be launched from the PR site, record them in the "BB OBS PR". For the San Francisco District, consult with the D4 lead.

If you cannot accurately obtain a count for an entire site due to fog or access points that were not visited, leave the SEC box blank. Provide a note in the site comment box if fog or another factor prevented you from conducting the SEC.

### **Specific Editing Checks**

1. Make sure counts are obtained for all applicable adjacent modes. If a mode does not have possible adjacent counts, the Site Effort Check box should be left blank.
2. Contact the Lead if a new site(s) is discovered or a site has effort in a mode not currently being sampled.
3. When conducting SEC routes, all sites should be visited during daylight hours. If an entire route cannot be completed, contact the Lead and they will determine how to obtain counts at the remaining unchecked sites.
4. Make sure the site disposition for any SEC site is (0) zero.
5. Pay special attention to the hours onsite for each SEC count. This is important for data-entry.

# SEC Route Example- ASF Form

RCVD ON/BY: \_\_\_\_\_ EDIT ON/BY: \_\_\_\_\_ SCAN ON/BY: \_\_\_\_\_

ENTR ON/BY: \_\_\_\_\_ UPLD ON/BY: \_\_\_\_\_ FILE ON/BY: \_\_\_\_\_

## CRFS ASSIGNMENT SUMMARY FORM

V15 1/3/2017

Assn #

<b>COMMENTS</b>	<b>1</b> SAMPLER NAME: <b>Ryan Denton</b>	SAMPLER # <b>116</b>	DATE (MM/DD/YY) <b>06/03/17</b>	ASSN ID	MODE <b>SEC</b>	PORT/CLUS <b>LOS 1</b>	HOURS <b>8.0</b>	TOTAL
	OTHER SAMPLER(S): NAME & # (w/data)	OTHER SAMPLER(S): NAME & # (w/data)			<b>1</b>	ASSN DISP* State Car or Pers Vehicle	<b>6.75</b>	SAMPLING
	(Y / N ) circle one	(Y / N ) circle one			<b>PV</b>		<b>1.25</b>	TOT TRV
	MARINE CONDITIONS: <b>Sunny, clear. Calm seas and warm air temps. Low tide @ 1305.</b>				<b>10500</b>	ODO START	<b>.75</b>	TRV TIME HQ to site 1
	EFFORT: <b>Moderate effort for a summer weekend.</b>				<b>10580</b>	ODO STOP	<b>.5</b>	TRV TIME last site to HQ
CATCH: <b>HALCA, SPFAM. Many anglers reported low catch today.</b>				<b>80</b>	MILEAGE	<b>0</b>	EDIT	
PC ACTIVITY: <b>PPT had 1/2 and 3/4 day boats out. LBM had 1/2 and 3/4 boats out.</b>								<b>Round all hours to nearest 0.25 hour</b>  0.00hr = 53-07 mins 0.25hr = 06-22 mins 0.50hr = 23-37 mins 0.75hr = 38-52 mins
OTHER PERTINENT INFORMATION:								
HEAD TAGS USED (PR/PC):	HEAD TAGS USED (MM/BB):							

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

Row #	SITE NAME / SITE COMMENT	CNTY	37	ARRV	0735	BB	Site Effort Check (if applicable)		PR Trailer Counts					
							MM	PR	Onsite Start	Offsite Start	Onsite Stop	Offsite Stop		
1	<b>Palos Verdes</b>						18	0						
		SITE	211	START										
		DISPO**	0	STOP										
		HRS	1.0	DEPR	0836									
2	<b>Abalone Cove</b>						0	0						
	<b>No anglers present</b>	SITE	205	START										
		DISPO**	0	STOP										
		HRS	.75	DEPR	0922									
3	<b>Royal Palms</b>						9	0						
		SITE	206	START										
		DISPO**	0	STOP										
		HRS	.75	DEPR	1014									
4	<b>Cabrillo Beach</b>						0	0						
	<b>Counts obtained at MM and BB PR is currently PR1 site-no counts obtained Cabrillo Pier very busy today</b>	SITE	110	START				54						
		DISPO**	0	STOP										
		HRS	.25	DEPR	1030			N/A						
5	<b>Pier J/South Shores LR</b>						36	0						
		SITE	201	START										
		DISPO**	0	STOP										
		HRS	.5	DEPR	1117			39						
PR & PC ONLY	Refusal + Barrier	Total Boats	Boats Salmon	Angs Kings	Kept Coho	Rels Head Tags	Kept HALPA	Rels RFYFY	Kept RFCOW	Rels RFCAN	Kept RFBK	Rels ON Missed	OFF	

\*\*Site dispositions: 0=Effort check, 1=Complete, 4=Low Effort, 5=Other (comment), 7=Roving (MM, BB clusters)

6	<b>Shoreline Village</b>	CNTY	<b>37</b>	ARRV	<b>1126</b>	BB	ANGL	OSL	PR				
		SITE	<b>202</b>	START		MM	4	0					
		DISPO**	<b>0</b>	STOP		PR							
		HRS	<b>.5</b>	DEPR	<b>1150</b>								
7	<b>Shoreline Village Piers 4,5</b>	CNTY	<b>37</b>	ARRV	<b>1128</b>	BB	ANGL	OSL	PR				
		SITE	<b>221</b>	START		MM	5						
		DISPO**	<b>0</b>	STOP		PR							
		HRS	<b>0</b>	DEPR	<b>1134</b>								
8	<b>Shoreline Village Piers 1,2,3</b>	CNTY	<b>37</b>	ARRV	<b>1144</b>	BB	ANGL	OSL	PR				
		SITE	<b>220</b>	START		MM	14						
		DISPO**	<b>0</b>	STOP		PR							
		HRS	<b>0</b>	DEPR	<b>1145</b>								
9	<b>Shoreline Village E Jetty</b>	CNTY	<b>37</b>	ARRV	<b>1159</b>	BB	ANGL	OSL	PR				
		SITE	<b>216</b>	START		MM	10						
		DISPO**	<b>0</b>	STOP		PR							
		HRS	<b>.25</b>	DEPR	<b>1220</b>								
10	<b>Cherry Beach</b>	CNTY	<b>37</b>	ARRV	<b>1222</b>	BB	ANGL	OSL	PR				
	<b>Counts obtained for Cherry Beach and Belmont Pier</b>	SITE	<b>402</b>	START		MM	2	0					
		DISPO**	<b>0</b>	STOP		PR	83						
		HRS	<b>.75</b>	DEPR	<b>1302</b>								
11	<b>Alamitos Bay</b>	CNTY	<b>37</b>	ARRV	<b>1304</b>	BB	ANGL	OSL	PR				
	<b>Counts obtained for Alamitos Bay and Alamitos Bay W Jetty</b>	SITE	<b>214</b>	START		MM	3	0					
		DISPO**	<b>0</b>	STOP		PR	17						
		HRS	<b>.5</b>	DEPR	<b>1340</b>								
12	<b>Seaport Village Jetty</b>	CNTY	<b>37</b>	ARRV	<b>1341</b>	BB	ANGL	OSL	PR				
		SITE	<b>204</b>	START		MM	15						
		DISPO**	<b>0</b>	STOP		PR							
		HRS	<b>.25</b>	DEPR	<b>1352</b>								
13	<b>Marine Stadium</b>	CNTY	<b>37</b>	ARRV	<b>1400</b>	BB	ANGL	OSL	PR				
	<b>Lots of boat traffic! Most likely cause for low effort</b>	SITE	<b>215</b>	START		MM	0	0					
		DISPO**	<b>0</b>	STOP		PR							
		HRS	<b>.25</b>	DEPR	<b>1414</b>								
14		CNTY		ARRV		BB	ANGL	OSL	PR				
		SITE		START		MM							
		DISPO**		STOP		PR							
		HRS		DEPR									
15		CNTY		ARRV		BB	ANGL	OSL	PR				
		SITE		START		MM							
		DISPO**		STOP		PR							
		HRS		DEPR									
16		CNTY		ARRV		BB	ANGL	OSL	PR				
		SITE		START		MM							
		DISPO**		STOP		PR							
		HRS		DEPR									

# SEC Adjacent Example

RCVD ON/BY: \_\_\_\_\_ EDIT ON/BY: \_\_\_\_\_ SCAN ON/BY: \_\_\_\_\_  
 ENTR ON/BY: \_\_\_\_\_ UPLD ON/BY: \_\_\_\_\_ FILE ON/BY: \_\_\_\_\_

## CRFS ASSIGNMENT SUMMARY FORM

V14 11/18/2016

Assn #

1	SAMPLER NAME: <b>Ryan Denton</b>	SAMPLER # <b>116</b>	DATE (MM/DD/YY) <b>01/01/16</b>	ASSN ID <b>012345</b>	MODE <b>BB</b>	PORT/ CLUS <b>CHS 5</b>	HOURS <b>8.0</b>	TOTAL	
	OTHER SAMPLER(S): NAME & # (w/data) (Y/N) circle one	OTHER SAMPLER(S): NAME & # (w/data) (Y/N) circle one			1 ASSN DISP* State Car or Pers Vehicle	6.5 SAMPLING	1.5 TOT TRV		
COMMENTS	MARINE CONDITIONS: <b>Sunny, clear. Calm seas. High tide @ 1230.</b>				10000 ODO START	.5 TRV TIME HQ to site 1			
	EFFORT: <b>Moderate effort.</b>				10100 ODO STOP	1.0 TRV TIME last site to HQ			
	CATCH: <b>SPFAM, HALCA</b>				100 MILEAGE	0 EDIT			
	PC ACTIVITY: <b>Ventura SF had no boats out.</b> OTHER PERTINENT INFORMATION: <b>Adjacent SECs conducted at sites 103, 219, 305 and 402.</b>								
HEAD TAGS USED (PR/PC): _____				HEAD TAGS USED (MM/BB): _____					

Round all hours to nearest 0.25 hour  
 0.00hr = 53-07 mins  
 0.25hr = 08-22 mins  
 0.50hr = 23-37 mins  
 0.75hr = 38-52 mins

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

Row #	SITE NAME / SITE COMMENT	TIME		BB	ANGS	OBS/PH	PR Trailer Counts	Onsite Start	Onsite Stop	Onsite Stop	Onsite Stop
		CNTY	HRS								
1	<b>Rincon Beaches</b>	CNTY	111	ARRV	0715						
		SITE	22	START							
		DISPO**	7	STOP							
		HRS	1.25	DEPR	0830						
2	<b>Solimar Beach</b>	CNTY	111	ARRV	0840						
		SITE	209	START							
		DISPO**	7	STOP							
		HRS	1.25	DEPR	1000						
3	<b>Ventura Harbor: Interior BB</b> Conducted SEC at Ventura LR.	CNTY	111	ARRV	1025						
		SITE	103	START							
		DISPO**	7	STOP			10				
		HRS	1.0	DEPR	1130			10			
4	<b>Mandalay Beach</b> SEC counts obtained at Ventura South Jetty (111/103). See stop 3.	CNTY	111	ARRV	1135						
		SITE	200	START							
		DISPO**	7	STOP							
		HRS	1.0	DEPR	1240						
5	<b>San Buenaventura Beach</b> SEC counts obtained at Ventura Pier, Ventura N Jetty and Ventura Dock. See stops 6 and 7.	CNTY	111	ARRV	1300						
		SITE	219	START							
		DISPO**	1	STOP			25				
		HRS	1.5	DEPR	1330						

PR & PC ONLY

\*\*Site dispositions: 0=Pressure check, 1=Complete, 4=Low Effort, 5=Other (comment), 7=Roving (MM, BB clusters)

**BY SPECIES CODES**

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
ABALO	abalone genus	<i>Haliotis</i>
ANCDB	Anchovy, Deepbody	<i>Anchoa compressa</i>
ANCFM	anchovy family	<i>Engraulidae</i>
ANCGN	anchovy genus	<i>Anchoa</i>
ANCNO	Anchovy, Northern	<i>Engraulis mordax</i>
ARGNT	Argentine, Pacific	<i>Argentina sialis</i>
BARPA	Barracuda, Pacific	<i>Sphyraena argentea</i>
BASLM	Bass, Largemouth	<i>Micropterus salmoides</i>
BFFFM	butterflyfish family	<i>Chaetodontidae</i>
BIVAL	bivalves	<i>Bivalvia</i>
BLKSJ	Skipjack, Black	<i>Euthynnus lineatus</i>
BLKSM	Blacksmith	<i>Chromis punctipinnis</i>
BLNBY	Blenny, Bay	<i>Hypsoblennius gentilis</i>
BLNRP	Blenny, Rockpool	<i>Hypsoblennius gilberti</i>
BOGBY	Goby, Bay	<i>Lepidogobius lepidus</i>
BOGYL	Goby, Yellowfin	<i>Acanthogobius flavimanus</i>
BONEF	Bonefish, Cortez	<i>Albula vulpes</i>
BONPA	Bonito, Pacific	<i>Sarda chiliensis</i>
BOTOM	bottomfish (groundfish)	
BOXSP	Boxfish, Spiny	<i>Lactoria diaphana</i>
BUTFM	butterfish family	<i>Stromateidae</i>
CASTG	Smoothtongue, California	<i>Leuroglossus stilbius</i>
CBFLS	Combfish, Longspine	<i>Zaniolepis latipinnis</i>
CBFSS	Combfish, Shortspine	<i>Zaniolepis frenata</i>
CLAMS	clams, unspecified	<i>Bivalvia</i>
CLMBK	Clam, Basket Cockle	<i>Clinocardium nuttallii</i>
CLMGD	Clam, Geoduck	<i>Panopea generosa</i>
CLMGP	Clam, Pacific Gaper	<i>Tresus nuttallii</i>
CLMLN	Clam, Pacific Littleneck	<i>Leokoma staminea</i>
CLMNR	Clam, Pacific Razor	<i>Siliqua patula</i>
CLMPO	Clam, Pismo	<i>Tivela stultorum</i>
CLMWA	Clam, Common Washington	<i>Saxidomus nuttalli</i>
CLNGN	Clingfish, Northern	<i>Gobiesox maeandricus</i>
CODFM	cod family	<i>Gadidae</i>
CODPA	Cod, Pacific	<i>Gadus macrocephalus</i>
CODTC	Tomcod, Pacific	<i>Microgadus proximus</i>
COROM	Corvina, Orangemouth	<i>Cynoscion xanthulus</i>
CORSF	Corvina, Shortfin	<i>Cynoscion parvipinnis</i>
CRABS	crab tribe, true	<i>Brachyuratribe</i>
CRBCA	Corbina, California	<i>Menticirrhus undulatus</i>
CRBBR	Crab, Brown Rock	<i>Romaleon antennarius</i>
CRBDG	Crab, Dungeness	<i>Metacarcinus magister</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
CRBGN	cancer crab family	<i>Canceridae</i>
CRBGR	Crab, Graceful Rock	<i>Metacarcinus gracilis</i>
CRBPR	Crab, Pelagic Red	<i>Grimothea palnipes</i>
CRBRR	Crab, Red Rock	<i>Cancer productus</i>
CRBSH	Crab, Sheep	<i>Loxorhynchus grandis</i>
CRBYR	Crab, Yellow Rock	<i>Metacarcinus anthonyi</i>
CRKBK	Croaker, Black	<i>Cheilotrema saturnum</i>
CRKSF	Croaker, Spotfin	<i>Roncador stearnsii</i>
CRKYF	Croaker, Yellowfin	<i>Umbrina roncador</i>
CROWT	Croaker, White	<i>Genyonemus lineatus</i>
CRUST	crustaceans	<i>Crustacea</i>
CSHFM	cow shark family	<i>Hexanchidae</i>
CSKFM	cusk-eel family	<i>Ophidiidae</i>
CTFPE	Catalufa, Popeye	<i>Pristigenys serrula</i>
CTSFM	cat shark family	<i>Scyliorhinidae</i>
CUCUM	sea cucumbers	<i>Holothuroidea</i>
CUTLP	Cutlassfish, Pacific	<i>Trichiurus nitens</i>
DABGN	sanddab genus	<i>Citharichthys</i>
DABLF	Sanddab, Longfin	<i>Citharichthys xanthostigma</i>
DABPA	Sanddab, Pacific	<i>Citharichthys sordidus</i>
DABSP	Sanddab, Speckled	<i>Citharichthys stigmaeus</i>
DAMFM	damsel fish family	<i>Pomacentridae</i>
DRADO	Dolphinfish	<i>Coryphaena hippurus</i>
DRGFM	dragonfish family	<i>Stomiidae</i>
DRMFM	drum family	<i>Sciaenidae</i>
DSSF	deepsea smelt family	<i>Bathylagidae</i>
EELOR	eel order	<i>Anguilliformes</i>
ELPFM	eelpout family	<i>Zoarcidae</i>
ERYPA	Ray, Pacific Electric	<i>Torpedo californica</i>
FLLFN	lefteye flounder family	<i>Bothidae</i>
FLNFM	combtooth blenny family	<i>Blenniidae</i>
FLRAR	Flounder, Arrowtooth	<i>Atheresthes stomias</i>
FLRFM	righteye flounder family	<i>Pleuronectidae</i>
FLRKM	Flounder, Kamchatka	<i>Atheresthes evermanni</i>
FLRST	Flounder, Starry	<i>Platichthys stellatus</i>
FLTOR	flatfish order	<i>Pleuronectiformes</i>
FLYCA	Flyingfish, California	<i>Cheilopogon californicus</i>
FLYFM	flyingfish family	<i>Exocoetidae</i>
FRSFM	frill shark family	<i>Chlamydoselachidae</i>
FTRIG	Triggerfish, Finescale	<i>Balistes polylepis</i>
GAPOD	sea slugs, sea snails	<i>Gastropoda</i>
GARIB	Garibaldi	<i>Hypsypops rubicundus</i>
GNTFM	grunt family	<i>Haemulidae</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
GNTSB	Seabass, Giant	<i>Stereolepis gigas</i>
GOBAR	Goby, Arrow	<i>Clevelandia ios</i>
GOBBE	Goby, Blackeye	<i>Rhinogobiops nicholsii</i>
GOBCM	Goby, Chameleon	<i>Tridentiger trigonocephalus</i>
GOBFM	goby family	<i>Gobiidae</i>
GRNFM	greenling family	<i>Hexagrammidae</i>
GRNGN	greenling genus	<i>Hexagrammos</i>
GRNKP	Greenling, Kelp	<i>Hexagrammos decagrammus</i>
GRNMA	Greenling, Masked	<i>Hexagrammos octogrammus</i>
GRNPT	Greenling, Painted	<i>Oxylebius pictus</i>
GRNRK	Greenling, Rock	<i>Hexagrammos lagocephalus</i>
GRNWT	Greenling, Whitespotted	<i>Hexagrammos stelleri</i>
GRPBT	Grouper, Broomtail	<i>Mycteroperca xenarcha</i>
GRPGC	Coney, Gulf	<i>Hyporthodus acanthistius</i>
GRPGF	Grouper, Gulf	<i>Mycteroperca jordani</i>
GRPGN	grouper genus	<i>Epinephelus</i>
GRPSC	Cabrilla, Spotted	<i>Epinephelus analogus</i>
GRPSS	Grouper, Star-Studded	<i>Hyporthodus niphobles</i>
GRUCA	Grunion, California	<i>Leuresthes tenuis</i>
GUIBD	Guitarfish, Banded	<i>Zapteryx exasperata</i>
GUIFM	guitarfish family	<i>Rhinobatidae</i>
GUISN	Guitarfish, Shovelnose	<i>Pseudobatos productus</i>
GUNCR	Gunnel, Crescent	<i>Pholis laeta</i>
GUNFM	gunnel family	<i>Pholidae</i>
GUNPP	Gunnel, Penpoint	<i>Apodichthys flavidus</i>
GUNSB	Gunnel, Saddleback	<i>Pholis ornata</i>
HAGBK	Hagfish, Black	<i>Eptatretus deani</i>
HAGFM	hagfish order	<i>Myxinidae</i>
HAGPA	Hagfish, Pacific	<i>Eptatretus stoutii</i>
HALCA	Halibut, California	<i>Paralichthys californicus</i>
HALFM	Halfmoon	<i>Medialuna californiensis</i>
HALGL	Halibut, Greenland	<i>Reinhardtius hippoglossoides</i>
HALPA	Halibut, Pacific	<i>Hippoglossus stenolepis</i>
HERFM	herring family	<i>Clupeidae</i>
HERPA	Herring, Pacific	<i>Clupea pallasii</i>
HERRD	Herring, Round	<i>Etrumeus acuminatus</i>
JACFM	jack family	<i>Carangidae</i>
JACMK	Mackerel, Jack	<i>Trachurus symmetricus</i>
KAWAK	Kawakawa	<i>Euthynnus affinis</i>
KLFCFA	Killifish, California	<i>Fundulus parvipinnis</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
KLPCR	Kelpfish, Crevice	<i>Gibbonsia montereyensis</i>
KLPFM	clinid family	<i>Clinidae</i>
KLPGT	Kelpfish, Giant	<i>Heterostichus rostratus</i>
KLPOF	Fringehead, Onespot	<i>Neoclinus urinotatus</i>
KLPRB	Finspot, Reef	<i>Paraclinus integripinnis</i>
KLPSF	Fringehead, Sarcastic	<i>Neoclinus blanchardi</i>
KLPSA	Kelpfish, Spotted	<i>Gibbonsia elegans</i>
KLPSB	Kelpfish, Striped	<i>Gibbonsia metzi</i>
KOSAL	King-Of-The-Salmon	<i>Trachipterus altivelis</i>
LANLN	Lancetfish, Longnose	<i>Alepisaurus ferox</i>
LJMUD	Mudsucker, Longjaw	<i>Gillichthys mirabilis</i>
LMPAR	Lamprey, Arctic	<i>Lethenteron camtschaticum</i>
LMPFM	lamprey family	<i>Petromyzontidae</i>
LMPPA	Lamprey, Pacific	<i>Entosphenus tridentatus</i>
LNGCD	Lingcod	<i>Ophiodon elongatus</i>
LOBSP	Lobster, Spiny	<i>Panulirus interruptus</i>
LUVAR	Louvar	<i>Luvarus imperialis</i>
LZDCA	Lizardfish, California	<i>Synodus lucioceps</i>
LZDFM	lizardfish family	<i>Synodontidae</i>
MACBL	Mackerel, Bullet	<i>Auxis rochei</i>
MACFM	mackerel family	<i>Scombridae</i>
MACFR	Mackerel, Frigate	<i>Auxis thazard</i>
MACPA	Mackerel, Chub (Pacific)	<i>Scomber japonicus</i>
MANTA	Manta	<i>Manta birostris</i>
MARBK	Marlin, Black	<i>Istiompax indica</i>
MARBL	Marlin, Blue	<i>Makaira nigricans</i>
MARFM	billfish family	<i>Istiophoridae</i>
MARST	Marlin, Striped	<i>Kajikia audax</i>
MIDGN	midshipman genus	<i>Porichthys</i>
MIDPF	Midshipman, Plainfin	<i>Porichthys notatus</i>
MIDSP	Midshipman, Specklefin	<i>Porichthys myriaster</i>
MOJFM	mojarra family	<i>Gerreidae</i>
MOLLU	mollusks	<i>Mollusca</i>
MORAY	Moray, California	<i>Gymnothorax mordax</i>
MSCAD	Scad, Mexican (Amberstripe)	<i>Decapterus scombrinus</i>
NEDCA	Needlefish, California	<i>Strongylura exilis</i>
OCTOP	octopods	<i>Octopoda</i>
OCWHT	Whitefish, Ocean	<i>Caulolatilus princeps</i>
OPHBE	Opah, Bigeye Pacific	<i>Lampris megalopsis</i>
OPHSE	Opah, Smalleye Pacific	<i>Lampris incognitus</i>
OPALE	Opaleye	<i>Girella nigricans</i>
PERFM	perch family	<i>Percidae</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
PERZB	Perch, Zebra	<i>Hermosilla azurea</i>
PHAKE	Hake, Pacific	<i>Merluccius productus</i>
PILTF	Pilotfish	<i>Naucrates ductor</i>
PIPEB	Pipefish, Bay	<i>Syngnathus leptorhynchus</i>
POLWE	Pollock, Walleye	<i>Gadus chalcogrammus</i>
POMFM	pomfret family	<i>Bramidae</i>
POMPA	Pompano, Pacific (Butterfish)	<i>Pepilus simillimus</i>
PRKBK	Prickleback, Black	<i>Xiphister atropurpureus</i>
PRKFM	prickleback family	<i>Stichaeidae</i>
PRKMK	Prickleback, Monkeyface	<i>Cebidichthys violaceus</i>
PRKRK	Prickleback, Rock	<i>Xiphister mucosus</i>
PRKSN	Prickleback, Snake	<i>Lumpenus sagitta</i>
PUFFM	puffer family	<i>Tetraodontidae</i>
QUEEN	Queenfish	<i>Seriphus politus</i>
RAGFS	Ragfish	<i>Icosteus aenigmaticus</i>
RAJOR	order, skate and ray	<i>Rajiformes</i>
RATFS	Ratfish, Spotted	<i>Hydrolagus colliei</i>
REMFM	remora family	<i>Echeneidae</i>
REMWS	Whalesucker	<i>Remora australis</i>
RFAUR	Rockfish, Aurora	<i>Sebastes aurora</i>
RFBAY	Rockfish, Black and Yellow	<i>Sebastes chrysomelas</i>
RFBKG	Rockfish, Blackgill	<i>Sebastes melanostomus</i>
RFBLK	Rockfish, Black	<i>Sebastes melanops</i>
RFBKS	Rockfish, Blackspotted	<i>Sebastes melanostictus</i>
RFBLU	Rockfish, Blue	<i>Sebastes mystinus</i>
RFBNK	Rockfish, Bank	<i>Sebastes rufus</i>
RFBOC	Rockfish, Bocaccio	<i>Sebastes paucispinis</i>
RFBRN	Rockfish, Brown	<i>Sebastes auriculatus</i>
RFBSP	Rockfish, Bronzespotted	<i>Sebastes gilli</i>
RFCAN	Rockfish, Canary	<i>Sebastes pinniger</i>
RFCHN	Rockfish, China	<i>Sebastes nebulosus</i>
RFCLC	Rockfish, Calico	<i>Sebastes dallii</i>
RFCMA	Rockfish, Chameleon	<i>Sebastes phillipsi</i>
RFCOP	Rockfish, Copper	<i>Sebastes caurinus</i>
RFCOW	Rockfish, Cowcod	<i>Sebastes levis</i>
RFDBL	Rockfish, Darkblotched	<i>Sebastes crameri</i>
RFDCN	Rockfish, Deacon	<i>Sebastes diaconus</i>
RFDRD	Rockfish, Dwarf Red	<i>Sebastes rufinanus</i>
RFDUS	Rockfish, Dusky	<i>Sebastes ciliatus</i>
RFFLG	Rockfish, Flag	<i>Sebastes rubrivinctus</i>
RFFRK	Rockfish, Freckled	<i>Sebastes lentiginosus</i>
RFGBL	Rockfish, Greenblotched	<i>Sebastes rosenblatti</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
RFGEN	rockfish genus	<i>Sebastes</i>
RFGOP	Rockfish, Gopher	<i>Sebastes carnatus</i>
RFGRN	Rockfish, Greenspotted	<i>Sebastes chlorostictus</i>
RFGRS	Rockfish, Grass	<i>Sebastes rastrelliger</i>
RFGST	Rockfish, Greenstriped	<i>Sebastes elongatus</i>
RFHBD	Rockfish, Halfbanded	<i>Sebastes semicinctus</i>
RFHQN	Rockfish, Harlequin	<i>Sebastes variegatus</i>
RFHNC	Rockfish, Honeycomb	<i>Sebastes umbrosus</i>
RFKLP	Rockfish, Kelp	<i>Sebastes atrovirens</i>
RFLST	Thornyhead, Longspine	<i>Sebastes altivelis</i>
RFMEX	Rockfish, Mexican	<i>Sebastes macdonaldi</i>
RFOLV	Rockfish, Olive	<i>Sebastes serranoides</i>
RFPEP	Rockfish, Chilipepper	<i>Sebastes goodei</i>
RFPNK	Rockfish, Pink	<i>Sebastes eos</i>
RFPOP	Perch, Pacific Ocean	<i>Sebastes alutus</i>
RFPRS	Rockfish, Pinkrose	<i>Sebastes simulator</i>
RFPSD	Rockfish, Puget Sound	<i>Sebastes emphaeus</i>
RFPYG	Rockfish, Pygmy	<i>Sebastes wilsoni</i>
RFQIL	Rockfish, Quillback	<i>Sebastes maliger</i>
RFRBD	Rockfish, Redbanded	<i>Sebastes babcocki</i>
RFRGH	Rockfish, Roughey	<i>Sebastes aleutianus</i>
RFROS	Rockfish, Rosy	<i>Sebastes rosaceus</i>
RFRST	Rockfish, Redstripe	<i>Sebastes proriger</i>
RFRTN	Rockfish, Rosethorn	<i>Sebastes helvomaculatus</i>
RFSCN	Rockfish, Sharpchin	<i>Sebastes zacentrus</i>
RFSDS	Rockfish, Swordspine	<i>Sebastes ensifer</i>
RFSHB	Rockfish, Shortbelly	<i>Sebastes jordani</i>
RFSLG	Rockfish, Silvergray	<i>Sebastes brevispinis</i>
RFSMR	Rockfish, Semaphore	<i>Sebastes melanosema</i>
RFSNS	Rockfish, Splitnose	<i>Sebastes diploproa</i>
RFSPK	Rockfish, Speckled	<i>Sebastes ovalis</i>
RFSQS	Rockfish, Squarespotted	<i>Sebastes hopkinsi</i>
RFSRK	Rockfish, Shortraker	<i>Sebastes borealis</i>
RFSST	Thornyhead, Shortspine	<i>Sebastes alascanus</i>
RFSTA	Rockfish, Starry	<i>Sebastes constellatus</i>
RFSTR	Rockfish, Stripetail	<i>Sebastes saxicola</i>
RFTIG	Rockfish, Tiger	<i>Sebastes nigrocinctus</i>
RFTRE	Rockfish, Treefish	<i>Sebastes sericeus</i>
RFVER	Rockfish, Vermilion	<i>Sebastes miniatus</i>
RFWID	Rockfish, Widow	<i>Sebastes entomelas</i>
RFYEY	Rockfish, Yelloweye	<i>Sebastes ruberrimus</i>
RFYMN	Rockfish, Yellowmouth	<i>Sebastes reedi</i>
RFYTL	Rockfish, Yellowtail	<i>Sebastes flavidus</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
RNQBB	Ronquil, Bluebanded	<i>Rathbunella hypoplecta</i>
RNQFM	ronquil family	<i>Bathymasteridae</i>
RNQNO	Ronquil, Northern	<i>Ronquilus jordani</i>
ROCKH	Rockhead	<i>Bothragonus swanii</i>
RYBAT	Ray, California Bat	<i>Myliobatis californica</i>
RYFLY	Ray, California Butterfly	<i>Gymnura marmorata</i>
SABFM	sablefish family	<i>Anoplopomatidae</i>
SABLE	Sablefish	<i>Anoplopoma fimbria</i>
SAILF	Sailfish	<i>Istiophorus platypterus</i>
SALAT	Salmon, Atlantic	<i>Salmo salar</i>
SALCK	Salmon, Chinook	<i>Oncorhynchus tshawytscha</i>
SALCM	Salmon, Chum	<i>Oncorhynchus keta</i>
SALCO	Salmon, Coho	<i>Oncorhynchus kisutch</i>
SALCT	Trout, Cutthroat	<i>Oncorhynchus clarkii</i>
SALDV	Varden, Dolly	<i>Salvelinus malma</i>
SALEM	Salema	<i>Brachygenys californiensis</i>
SALFM	salmon family	<i>Salmonidae</i>
SALGN	salmon genus	<i>Oncorhynchus</i>
SALPK	Salmon, Pink	<i>Oncorhynchus gorbuscha</i>
SALRB	Trout, Rainbow (Steelhead)	<i>Oncorhynchus mykiss</i>
SALSE	Salmon, Sockeye	<i>Oncorhynchus nerka</i>
SALTR	sea run trout	
SARGO	Sargo	<i>Anisotremus davidsonii</i>
SARPA	Sardine, Pacific	<i>Sardinops sagax</i>
SAUPA	Saury, Pacific	<i>Cololabis saira</i>
SBBAR	Sandbass, Barred	<i>Paralabrax nebulifer</i>
SBFAM	sea bass family	<i>Serranidae</i>
SBGEN	sandbass genus	<i>Paralabrax</i>
SBHKT	Bass, Hookthroat	<i>Hemanthias signifer</i>
SBKLP	Bass, Kelp	<i>Paralabrax clathratus</i>
SBSPT	Sandbass, Spotted	<i>Paralabrax maculatofaciatus</i>
SBTHF	Bass, Threadfin	<i>Pronotogrammus multifasciatus</i>
SBWHT	Seabass, White	<i>Atractoscion nobilis</i>
SCANT	Sculpin, Antlered	<i>Enophrys diceraus</i>
SCASH	Sculpin, Arctic Staghorn	<i>Gymnocanthus tricuspis</i>
SCBBS	Chub, Bluestriped	<i>Kyphosus ocyurus</i>
SCBFM	sea chub family	<i>Kyphosidae</i>
SCBIL	Lord, Brown Irish	<i>Hemilepidotus spinosus</i>
SCBKF	Sculpin, Blackfin	<i>Malacocottus kincaidi</i>
SCBLD	Sculpin, Bald	<i>Clinocottus recalvus</i>
SCBNH	Sculpin, Bonehead	<i>Artedius notospilotus</i>
SCBRZ	Scabbardfish, Razorback	<i>Assurger anzac</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
SCBUF	Sculpin, Buffalo	<i>Enophrys bison</i>
SCBUL	Sculpin, Bull	<i>Enophrys taurina</i>
SCCAB	Cabezon	<i>Scorpaenichthys marmoratus</i>
SCCRG	Sculpin, Coastrange	<i>Cottus aleuticus</i>
SCDSK	Sculpin, Dusky	<i>Icelinus burchami</i>
SCFAM	sculpin family	<i>Cottidae</i>
SCGRT	Sculpin, Great	<i>Myoxocephalus polyacanthoceph</i>
SCGRU	Sculpin, Grunt	<i>Rhamphocottus richardsonii</i>
SCILG	Irish lord genus	<i>Hemilepidotus</i>
SCLST	Sculpin, Leister	<i>Enophrys lucasi</i>
SCNTH	Sculpin, Northern	<i>Icelinus borealis</i>
SCPAD	Sculpin, Padded	<i>Artedius fenestralis</i>
SCPRK	Sculpin, Prickly	<i>Cottus asper</i>
SCPRO	Scallop, Giant Rock	<i>Crassadoma gigantea</i>
SCPSH	Sculpin, Pacific Staghorn	<i>Leptocottus armatus</i>
SCPUS	Unspecified scallop	<i>Pectinidae</i>
SCRCA	Scorpionfish, California	<i>Scorpaena guttata</i>
SCRFM	scorpionfish family	<i>Scorpaenidae</i>
SCRIL	Lord, Red Irish	<i>Hemilepidotus hemilepidotus</i>
SCRRB	Scorpionfish, Rainbow	<i>Scorpaenodes xyris</i>
SCRSL	Sculpin, Rosylip	<i>Ascelichthys rhodorus</i>
SCSCL	Sculpin, Scaled	<i>Archistes biseriatus</i>
SCSCT	Sculpin, Scissortail	<i>Triglops forficatus</i>
SCSFN	Sculpin, Sailfin	<i>Nautichthys oculofoasciatus</i>
SCSHN	Sculpin, Sharpnose	<i>Clinocottus acuticeps</i>
SCSLH	Sculpin, Scalyhead	<i>Artedius harringtoni</i>
SCSPT	Sculpin, Spotfin	<i>Icelinus tenuis</i>
SCTDP	Sculpin, Tidepool	<i>Oligocottus maculosus</i>
SCTRF	Sculpin, Threadfin	<i>Icelinus filamentosus</i>
SCWOL	Sculpin, Woolly	<i>Clinocottus analis</i>
SELFM	snake eel family	<i>Ophichthidae</i>
SELYL	Snake Eel, Yellow	<i>Ophichthus zophochir</i>
SEHOR	Senorita	<i>Oxyjulis californica</i>
SERLT	Searobin, Lumptail	<i>Prionotus stephanophrys</i>
SGDIA	Stingray, Diamond	<i>Hypanus dipterurus</i>
SGFAM	stingray family	<i>Dasyatidae</i>
SGGEN	stingray genus	<i>Dasyatis</i>
SGPEL	Stingray, Pelagic	<i>Pteroplatytrygon violacea</i>
SGRND	Stingray, Round	<i>Urobatis halleri</i>
SHADA	Shad, American	<i>Alosa sapidissima</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
SHANG	Shark, Pacific Angel	<i>Squatina californica</i>
SHBCS	Shark, Brown Cat	<i>Apristurus brunneus</i>
SHBLU	Shark, Blue	<i>Prionace glauca</i>
SHBNH	Shark, Bonnethead	<i>Sphyrna tiburo</i>
SHBSM	Smoothhound, Brown	<i>Mustelus henlei</i>
SHBUL	Shark, Bull	<i>Carcharhinus leucas</i>
SHDFM	dogfish shark family	<i>Squalidae</i>
SHDKY	Shark, Dusky	<i>Carcharhinus obscurus</i>
SHEEP	Sheephead, California	<i>Bodianus pulcher</i>
SHFIN	Shark, Soupfin	<i>Galeorhinus galeus</i>
SHGSM	Smoothhound, Gray	<i>Mustelus californicus</i>
SHHRN	Shark, Horn	<i>Heterodontus francisci</i>
SHLEP	Shark, Leopard	<i>Triakis semifasciata</i>
SHMFM	mackerel shark family	<i>Lamnidae</i>
SHNTH	Shark, Narrowtooth	<i>Carcharhinus brachyurus</i>
SHRFM	requiem shark family	<i>Carcharhinidae</i>
SHRMP	shrimps	<i>Caridea</i>
SHSAL	Shark, Salmon	<i>Lamna ditropis</i>
SHSDG	Shark, Pacific Spiny Dogfish	<i>Squalus suckleyi</i>
SHSEV	Shark, Sevengill	<i>Notorynchus cepedianus</i>
SHSGN	smoothhound genus	<i>Mustelus</i>
SHSIX	Shark, Bluntnose Sixgill	<i>Hexanchus griseus</i>
SHSLP	Shark, Pacific Sleeper	<i>Somniosus pacificus</i>
SHSMK	Shark, Shortfin Mako	<i>Isurus oxyrinchus</i>
SHSSM	Smoothhound, Sicklefin	<i>Mustelus lunulatus</i>
SHSWL	Shark, Swell	<i>Cephaloscyllium ventriosum</i>
SHTHR	Shark, Common Thresher	<i>Alopias vulpinus</i>
SHTIG	Shark, Tiger	<i>Galeocerdo cuvier</i>
SHINS	unidentified inshore sharks	
SHOFF	unidentified offshore sharks	
SHWHT	Shark, White	<i>Carcharodon carcharias</i>
SKALT	Skate, Aleutian	<i>Bathyraja aleutica</i>
SKBFM	stickleback family	<i>Gasterosteidae</i>
SKBGN	skipjack genus	<i>Euthynnus</i>
SKBIG	Skate, Big	<i>Beringraja binoculata</i>
SKBTS	Stickleback, Threespine	<i>Gasterosteus aculeatus</i>
SKFAM	skate family	<i>Rajidae</i>
SKLGN	Skate, Longnose	<i>Raja rhina</i>
SKSTY	Skate, Starry	<i>Beringraja stellulata</i>
SKTCA	Skate, California	<i>Beringraja inornata</i>
SMCAP	Capelin	<i>Mallotus villosus</i>
SMEUL	Eulachon	<i>Thaleichthys pacificus</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
SMFAM	true smelt family	<i>Osmeridae</i>
SMJAK	Smelt, (Jacksmelt)	<i>Atherinopsis californiensis</i>
SMLGF	Smelt, Longfin	<i>Spirinchus thaleichthys</i>
SMNGT	Smelt, Night	<i>Spirinchus starksi</i>
SMSUR	Smelt, Surf	<i>Hypomesus pretiosus</i>
SMTOP	Smelt, (Topsmelt)	<i>Atherinops affinis</i>
SMWTB	Smelt, Whitebait	<i>Allosmerus elongatus</i>
SNDFM	sandfish family	<i>Trichodontidae</i>
SNDPA	Sandfish, Pacific	<i>Trichodon trichodon</i>
SNFFM	sunfish family	<i>Centrarchidae</i>
SOLAF	Flounder, Arctic	<i>Liopsetta glacialis</i>
SOLBF	Flounder, Bering	<i>Hippoglossoides robustus</i>
SOLBG	Sole, Bigmouth	<i>Hippoglossina stomata</i>
SOLBT	Sole, Butter	<i>Isopsetta isolepis</i>
SOLCF	Sole, Curfin	<i>Pleuronichthys decurrens</i>
SOLCO	Sole, C-O	<i>Pleuronichthys coenosus</i>
SOLDS	Sole, Deepsea	<i>Microstomus bathybius</i>
SOLDT	Turbot, Diamond	<i>Pleuronichthys guttulatus</i>
SOLDV	Sole, Dover	<i>Microstomus pacificus</i>
SOLEG	Sole, English	<i>Parophrys vetulus</i>
SOLFH	Sole, Flathead	<i>Hippoglossoides elassodon</i>
SOLFT	Sole, Fantail	<i>Xystreurus liolepis</i>
SOLHT	Turbot, Hornyhead	<i>Pleuronichthys verticalis</i>
SOLPA	Lance, Pacific Sand	<i>Ammodytes personatus</i>
SOLPL	Plaice, Alaska	<i>Pleuronectes quadrilobulatus</i>
SOLPT	Sole, Petrale	<i>Eopsetta jordani</i>
SOLRK	Sole, Rock	<i>Lepidopsetta bilineata</i>
SOLRX	Sole, Rex	<i>Glyptocephalus zachirus</i>
SOLSD	Sole, Sand	<i>Psettichthys melanostictus</i>
SOLSL	Sole, Slender	<i>Lyopsetta exilis</i>
SOLST	Turbot, Spotted	<i>Pleuronichthys ritteri</i>
SOLYF	Sole, Yellowfin	<i>Limanda aspera</i>
SPBAR	Surfperch, Barred	<i>Amphistichus argenteus</i>
SPBLK	Perch, Black	<i>Embiotoca jacksoni</i>
SPCAL	Surfperch, Calico	<i>Amphistichus koelzi</i>
SPDPA	Spadefish, Pacific	<i>Chaetodipterus zonatus</i>
SPDWF	Perch, Dwarf	<i>Micrometrus minimus</i>
SPFAM	surfperch family	<i>Embiotocidae</i>
SPKLP	Perch, Kelp	<i>Brachyistius frenatus</i>
SPPIL	Perch, Pile	<i>Phanerodon vacca</i>
SPPNK	Seaperch, Pink	<i>Zalemblus rosaceus</i>
SPRBW	Seaperch, Rainbow	<i>Embiotoca caryi</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
SPREF	Perch, Reef	<i>Micrometrus aurora</i>
SPRTL	Surfperch, Redtail	<i>Amphistichus rhodoterus</i>
SPRUB	Seaperch, Rubberlip	<i>Rhacochilus toxotes</i>
SPSHN	Seaperch, Sharpnose	<i>Phanerodon atripes</i>
SPSHR	Perch, Shiner	<i>Cymatogaster aggregata</i>
SPSIL	Surfperch, Silver	<i>Hyperprosopon ellipticum</i>
SPSPF	Surfperch, Spotfin	<i>Hypocritichthys analis</i>
SPSTR	Seaperch, Striped	<i>Embiotoca lateralis</i>
SPWAL	Surfperch, Walleye	<i>Hyperprosopon argenteum</i>
SPWHT	Seaperch, White	<i>Phanerodon furcatus</i>
SQDJU	Squid, Jumbo (Humboldt)	<i>Dosidicus gigas</i>
SQDMK	Squid, Market	<i>Doryteuthis opalescens</i>
SQTSE	Squaretail, Smalleye	<i>Tetragonurus cuvieri</i>
SQUID	squids	<i>Cephalopoda</i>
SRAGU	Sierra, Gulf	<i>Scomberomorus concolor</i>
SRAPA	Sierra, Pacific	<i>Scomberomorus sierra</i>
SRDFS	Swordfish	<i>Xiphias gladius</i>
SSTAR	sea stars	<i>Asteroidea</i>
SBAS	Bass, Striped	<i>Morone saxatilis</i>
STGEN	sturgeon genus	<i>Acipenser</i>
STGRN	Sturgeon, Green	<i>Acipenser medirostris</i>
STMUL	Mullet, Striped	<i>Mugil cephalus</i>
STWHT	Sturgeon, White	<i>Acipenser transmontanus</i>
SUNFM	mola family	<i>Molidae</i>
SUNOC	Sunfish, Ocean	<i>Mola mola</i>
SVRFM	silverside family	<i>Atherinidae</i>
TBESN	Tubesnout	<i>Aulorhynchus flavidus</i>
TFPGE	Tilefish, Pacific Golden-Eyed	<i>Caulolatilus affinis</i>
THRBK	Thornback	<i>Platyrrhinoidis triseriata</i>
TNAAB	Tuna, Albacore	<i>Thunnus alalunga</i>
TNABE	Tuna, Bigeye	<i>Thunnus obesus</i>
TNABF	Tuna, Pacific Bluefin	<i>Thunnus orientalis</i>
TNASG	tunas (non-mackerel)	
TNASJ	Tuna, Skipjack	<i>Euthynnus pelamis</i>
TNASL	Tuna, Slender	<i>Allothunnus fallai</i>
TNAYF	Tuna, Yellowfin	<i>Thunnus albacares</i>
TNGCA	Touguefish, California	<i>Symphurus atricaudus</i>
TRTPA	Tripletail, Pacific	<i>Lobotes pacificus</i>
UNIFH	unidentified fish	
UNISF	unidentified (surface fish)	
URCHN	sea urchins	<i>Diadematidae</i>
WAHOO	Wahoo	<i>Acanthocybium solandri</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
WEKFS	weakfish genus	<i>Cynoscion</i>
WOLFE	Wolf-Eel	<i>Anarrhichthys ocellatus</i>
WRABS	Wrasse, Blackspot	<i>Decodon melasma</i>
WRAFM	wrasse family	<i>Labridae</i>
WRARK	Wrasse, Rock	<i>Halichoeres semicinctus</i>
YELTL	Yellowtail	<i>Seriola lalandi</i>

**BY COMMON NAME**

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
ABALO	balone genus	<i>Haliotis</i>
ANCFM	anchovy family	<i>Engraulidae</i>
ANCGN	anchovy genus	<i>Anchoa</i>
ANCDDB	Anchovy, Deepbody	<i>Anchoa compressa</i>
ANCNO	Anchovy, Northern	<i>Engraulis mordax</i>
ARGNT	Argentine, Pacific	<i>Argentina sialis</i>
BARPA	Barracuda, Pacific	<i>Sphyraena argentea</i>
SBFAM	bass family, sea	<i>Serranidae</i>
SBHKT	Bass, Hookthroat	<i>Hemnathias signifer</i>
SBKLP	Bass, Kelp	<i>Paralabrax clathratus</i>
BASLM	Bass, Largemouth	<i>Micropterus saloides</i>
STBAS	Bass, Striped	<i>Morone saxatilis</i>
SBTHF	Bass, Threadfin	<i>Pronotogrammus multifasciatus</i>
MARFM	billfish family	<i>Istiophoridae</i>
BIVAL	bivalves	<i>Bivalvia</i>
BLKSM	Blacksmith	<i>Chromis punctipinnis</i>
FLNFM	blenny family, combtooth	<i>Blenniidae</i>
BLNBY	Blenny, Bay	<i>Hypsoblennius gentilis</i>
BLNRP	Blenny, Rockpool	<i>Hypsoblennius gilberti</i>
BONEF	Bonefish, Cortez	<i>Albula vulpes</i>
BONPA	Bonito, Pacific	<i>Sarda chiliensis</i>
BOTOM	bottomfish (groundfish)	
BOXSP	Boxfish, Spiny	<i>Lactoria diaphana</i>
BUTFM	butterfish family	<i>Stromateidae</i>
BFFFM	butterflyfish family	<i>Chaetodontidae</i>
RYFLY	Butterfly Ray, California	<i>Gymnura marmorata</i>
SCCAB	Cabezon	<i>Scorpaenichthys marmoratus</i>
GRPSC	Cabrilla, Spotted	<i>Epinephelus analogus</i>
SMCAP	Capelin	<i>Mallotus villosus</i>
CTFPE	Catalufa, Popeye	<i>Pristigenys serrula</i>
SCBFM	chub family, sea	<i>Kyphosidae</i>
SCBBS	Chub, Bluestripped	<i>Kyphosus ocyurus</i>
CLAMS	clam, unspecified	<i>Bivalvia</i>
CLMBK	Clam, Basket Cockle	<i>Clinocardium nuttallii</i>
CLMGD	Clam, Geoduck	<i>Panopea generosa</i>
CLMGP	Clam, Pacific Gaper	<i>Tresus nuttallii</i>
CLMLN	Clam, Pacific Littleneck	<i>Leukoma staminea</i>
CLMNR	Clam, Pacific Razor	<i>Siliqua patula</i>
CLMPO	Clam, Pismo	<i>Tivela stultorum</i>
CLMWA	Clam, Common Washington	<i>Saxidomus nuttalli</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
CLNGN	Clingfish, Nothern	<i>Gobiesox maeandricus</i>
KLPFM	clinid family	<i>Clinidae</i>
CODFM	cod family	<i>Gadidae</i>
CODPA	Cod, Pacific	<i>Gadus macrocephalus</i>
CBFLS	Combfish, Longspine	<i>Zaniolepis latipinnis</i>
CBFSS	Combfish, Shortspine	<i>Zaniolepis frenata</i>
CRBCA	Corbina, California	<i>Menticirrhus undulatus</i>
COROM	Corvina, Orangemouth	<i>Cynoscion xanthulus</i>
CORSF	Corvina, Shortfin	<i>Cynoscion parvipinnis</i>
CRBGN	crab family, cancer	<i>Canceridae</i>
CRABS	crab tribe, true	<i>Brachyuratribe</i>
CRBBR	Crab, Brown Rock	<i>Romaleon antennarius</i>
CRBDG	Crab, Dungeness	<i>Metacarcinus magister</i>
CRBGR	Crab, Graceful Rock	<i>Metacarcinus gracilis</i>
CRBPR	Crab, Pelagic Red	<i>Grimothea palnipes</i>
CRBRR	Crab, Red Rock	<i>Cancer productus</i>
CRBSH	Crab, Sheep	<i>Loxorhynchus grandis</i>
CRBYR	Crab, Yellow Rock	<i>Metacarcinus anthonyi</i>
CRKBK	Croaker, Black	<i>Cheilotrema saturnum</i>
CRKSF	Croaker, Spotfin	<i>Roncador stearnsii</i>
CROWT	Croaker, White	<i>Genyonemus lineatus</i>
CRKYF	Croaker, Yellowfin	<i>Umbrina roncador</i>
CRUST	crustaceans	<i>Crustacea</i>
CUTLP	Cutlassfish, Pacific	<i>Trichiurus nitens</i>
DAMFM	damsel fish family	<i>Pomacentridae</i>
DRADO	Dolphinfish	<i>Coryphaena hippurus</i>
DRGFM	dragonfish family	<i>Stomiidae</i>
DRMFM	drum family	<i>Sciaenidae</i>
CSKFM	eel family, cusk-	<i>Ophidiidae</i>
SELFM	eel family, snake	<i>Ophichthidae</i>
EELOR	eel order	<i>Anguilliformes</i>
SELYL	Eel, Yellow Snake	<i>Ophichthus zophochir</i>
ELPFM	eelpout family	<i>Zoarcidae</i>
SMEUL	Eulachon	<i>Thaleichthys pacificus</i>
KLPRB	Finspot, Reef	<i>Paraclinus integripinnis</i>
FLTOR	flatfish order	<i>Pleuronectiformes</i>
FLLFN	flounder family, lefteye	<i>Bothidae</i>
FLRFM	flounder family, righteye	<i>Pleuronectidae</i>
SOLAF	Flounder, Arctic	<i>Liopsetta glacialis</i>
FLRAR	Flounder, Arrowtooth	<i>Atheresthes stomias</i>
SOLBF	Flounder, Bering	<i>Hippoglossoides robustus</i>
FLRKM	Flounder, Kamchatka	<i>Atheresthes evermanni</i>
FLRST	Flounder, Starry	<i>Platichthys stellatus</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
FLYFM	flyingfish family	<i>Exocoetidae</i>
FLYCA	Flyingfish, California	<i>Cheilopogon californicus</i>
KLPOF	Fringehead, Onespot	<i>Neoclinus urinotatus</i>
KLPSF	Fringehead, Sarcastic	<i>Neoclinus blanchardi</i>
GARIB	Garibaldi	<i>Hypsypops rubicundus</i>
GOBFM	goby family	<i>Gobiidae</i>
GOBAR	Goby, Arrow	<i>Clevelandia ios</i>
BOGBY	Goby, Bay	<i>Lepidogobius lepidus</i>
GOBBE	Goby, Blackeye	<i>Rhinogobiops nicholsii</i>
GOBCM	Goby, Chameleon	<i>Tridentiger trignocephalus</i>
BOGYL	Goby, Yellowfin	<i>Acanthogobius flavimanus</i>
GRNFM	greenling family	<i>Hexagrammidae</i>
GRNGN	greenling genus	<i>Hexagrammos</i>
GRNKP	Greenling, Kelp	<i>Hexagrammos decagrammus</i>
GRNMA	Greenling, Masked	<i>Hexagrammos octogrammus</i>
GRNPT	Greenling, Painted	<i>Oxylebius pictus</i>
GRNRK	Greenling, Rock	<i>Hexagrammos lagocephalus</i>
GRNWT	Greenling, Whitespotted	<i>Hexagrammos stelleri</i>
GRPGN	grouper genus	<i>Epinephelus</i>
GRPBT	Grouper, Broomtail	<i>Mycteroperca xenarcha</i>
GRPGF	Grouper, Gulf	<i>Mycteroperca jordani</i>
GRPSS	Grouper, Star-Studded	<i>Hyporthodus niphobles</i>
GRUCA	Grunion, California	<i>Leuresthes tenuis</i>
GNTFM	grunt family	<i>Haemulidae</i>
GUIFM	guitarfish family	<i>Rhinobatidae</i>
GUIBD	Guitarfish, Banded	<i>Zapteryx exasperata</i>
GUISN	Guitarfish, Shovelnose	<i>Pseudobatos productus</i>
GRPGC	Gulf Coney	<i>Hyporthodus acanthistiis</i>
GUNFM	gunnel family	<i>Pholidae</i>
GUNCR	Gunnel, Crescent	<i>Pholis laeta</i>
GUNPP	Gunnel, Penpoint	<i>Apodichthys flavidus</i>
GUNSB	Gunnel, Saddleback	<i>Pholis ornata</i>
HAGFM	hagfish order	<i>Myxinidae</i>
HAGBK	Hagfish, Black	<i>Eptatretus deani</i>
HAGPA	Hagfish, Pacific	<i>Eptatretus stoutii</i>
PHAKE	Hake, Pacific	<i>Merluccius productus</i>
HALFM	Halfmoon	<i>Medialuna californiensis</i>
HALCA	Halibut, California	<i>Paralichthys californicus</i>
HALGL	Halibut, Greenland	<i>Reinhardtius hippoglossoides</i>
HALPA	Halibut, Pacific	<i>Hippoglossus stenolepis</i>
HERFM	herring family	<i>Clupeidae</i>
HERPA	Herring, Pacific	<i>Clupea pallasii</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
HERRD	Herring, Round	<i>Etrumeus acuminatus</i>
JACFM	jack family	<i>Carangidae</i>
KAWAK	Kawakawa	<i>Euthynnus affinis</i>
KLPCR	Kelpfish, Crevice	<i>Gibbonsia montereyensis</i>
KLPGT	Kelpfish, Giant	<i>Heterostichus rostratus</i>
KLPSF	Kelpfish, Spotted	<i>Gibbonsia elegans</i>
KLPST	Kelpfish, Striped	<i>Gibbonsia metzi</i>
KLFA	Killifish, California	<i>Fundulus parvipinnis</i>
KOSAL	King-Of-The-Salmon	<i>Trachipterus altivelis</i>
LMPFM	lamprey family	<i>Petromyzontidae</i>
LMPAR	Lamprey, Arctic	<i>Lethenteron camtschaticum</i>
LMPPA	Lamprey, Pacific	<i>Entosphenus tridentatus</i>
SOLPA	Lance, Pacific Sand	<i>Ammodytes personatus</i>
LANLN	Lancetfish, Longnose	<i>Alepisaurus ferox</i>
LNGCD	Lingcod	<i>Ophiodon elongatus</i>
LZDFM	lizardfish family	<i>Synodontidae</i>
LZDCA	Lizardfish, California	<i>Synodus lucioceps</i>
LOBSP	Lobster, California Spiny	<i>Panulirus interruptus</i>
SCILG	Irish lord genus	<i>Hemilepidotus</i>
SCBIL	Lord, Brown Irish	<i>Hemilepidotus spinosus</i>
SCRIL	Lord, Red Irish	<i>Hemilepidotus hemilepidotus</i>
LUVAR	Louvar	<i>Luvarus imperialis</i>
MACFM	mackerel family	<i>Scombridae</i>
MACBL	Mackerel, Bullet	<i>Auxis rochei</i>
MACPA	Mackerel, Chub (Pacific)	<i>Scomber japonicus</i>
MACFR	Mackerel, Frigate	<i>Auxis thazard</i>
JACMK	Mackerel, Jack	<i>Trachurus symmetricus</i>
MANTA	Manta	<i>Manta birostris</i>
MARBK	Marlin, Black	<i>Istiompax Makaira indica</i>
MARBL	Marlin, Blue	<i>Makaira nigricans</i>
MARST	Marlin, Striped	<i>Kajikia audax</i>
MIDGN	midshipman genus	<i>Porichthys</i>
MIDPF	Midshipman, Plainfin	<i>Porichthys notatus</i>
MIDSP	Midshipman, Specklefin	<i>Porichthys myriaster</i>
MOJFM	mojarra family	<i>Gerreidae</i>
SUNFM	mola family	<i>Molidae</i>
MOLLU	mollusks	<i>Mollusca</i>
MORAY	Moray, California	<i>Gymnothorax mordax</i>
LJMUD	Mudsucker, Longjaw	<i>Gillichthys mirabilis</i>
STMUL	Mullet, Striped	<i>Mugil cephalus</i>
NEDCA	Needlefish, California	<i>Strongylura exilis</i>
OCTOP	octopods	<i>Octopoda</i>
OPHBE	Opah, Bigeye Pacific	<i>Lampris megalopsis</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
OPHSE	Opah, Smalleye Pacific	<i>Lampris incognitus</i>
OPALE	Opaleye	<i>Girella nigricans</i>
RAJOR	skate and ray order	<i>Rajiformes</i>
PERFM	perch family	<i>Percidae</i>
SPBLK	Perch, Black	<i>Embiotoca jacksoni</i>
SPDWF	Perch, Dwarf	<i>Micrometrus minimus</i>
SPKLP	Perch, Kelp	<i>Brachyistius frenatus</i>
RFPOP	Perch, Pacific Ocean	<i>Sebastes alutus</i>
SPPIL	Perch, Pile	<i>Phanerodon vacca</i>
SPREF	Perch, Reef	<i>Micrometrus aurora</i>
SPSHR	Perch, Shiner	<i>Cymatogaster aggregata</i>
PERZB	Perch, Zebra	<i>Hermosilla azurea</i>
PILTF	Pilotfish	<i>Naucrates ductor</i>
PIPEB	Pipefish, Bay	<i>Syngnathus leptorhynchus</i>
SOLPL	Plaice, Alaska	<i>Pleuronectes quadrituberculatus</i>
POLWE	Pollock, Walleye	<i>Gadus chalcogrammus</i>
POMFM	pomfret family	<i>Bramidae</i>
POMPA	Pompano, Pacific (Butterfish)	<i>Peprilus simillimus</i>
PRKFM	prickleback family	<i>Stichaeidae</i>
PRKBK	Prickleback, Black	<i>Xiphister atropurpureus</i>
PRKMK	Prickleback, Monkeyface	<i>Cebidichthys violaceus</i>
PRKRK	Prickleback, Rock	<i>Xiphister mucosus</i>
PRKSN	Prickleback, Snake	<i>Lumpenus sagitta</i>
PUFFM	puffer family	<i>Tetraodontidae</i>
QUEEN	Queenfish	<i>Seriphus politus</i>
RAGFS	Ragfish	<i>Icosteus aenigmaticus</i>
RATFS	Ratfish, Spotted	<i>Hydrolagus colliei</i>
RYBAT	Ray, Bat	<i>Myliobatis californica</i>
ERYPA	Ray, Pacific Electric	<i>Torpedo californica</i>
REMFM	remora family	<i>Echeneidae</i>
RFGEN	rockfish genus	<i>Sebastes</i>
RFAUR	Rockfish, Aurora	<i>Sebastes aurora</i>
RFBNK	Rockfish, Bank	<i>Sebastes rufus</i>
RFBLK	Rockfish, Black	<i>Sebastes melanops</i>
RFBAY	Rockfish, Black and Yellow	<i>Sebastes chrysomelas</i>
RFBKG	Rockfish, Blackgill	<i>Sebastes melanostomus</i>
RFBKS	Rockfish, Blackspotted	<i>Sebastes melanostictus</i>
RFBLU	Rockfish, Blue	<i>Sebastes mystinus</i>
RFBOC	Rockfish, Bocaccio	<i>Sebastes paucispinis</i>
RFBSP	Rockfish, Bronzespotted	<i>Sebastes gilli</i>
RFBRN	Rockfish, Brown	<i>Sebastes auriculatus</i>
RFCLO	Rockfish, Calico	<i>Sebastes dallii</i>

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RFCAN	Rockfish, Canary	<i>Sebastes pinniger</i>
RFCMA	Rockfish, Chameleon	<i>Sebastes phillipsi</i>
RFPEP	Rockfish, Chilipepper	<i>Sebastes goodei</i>
RFCHN	Rockfish, China	<i>Sebastes nebulosus</i>
RFCOP	Rockfish, Copper	<i>Sebastes caurinus</i>
RFCOW	Rockfish, Cowcod	<i>Sebastes levis</i>
RFDBL	Rockfish, Darkblotched	<i>Sebastes crameri</i>
RFDCN	Rockfish, Deacon	<i>Sebastes diaconus</i>
RFDUS	Rockfish, Dusky	<i>Sebastes ciliatus</i>
RFDRD	Rockfish, Dwarf Red	<i>Sebastes rufinanus</i>
RFFLG	Rockfish, Flag	<i>Sebastes rubrivinctus</i>
RFFRK	Rockfish, Freckled	<i>Sebastes lentiginosus</i>
RFGOP	Rockfish, Gopher	<i>Sebastes carnatus</i>
RFGRS	Rockfish, Grass	<i>Sebastes rastrelliger</i>
RFGBL	Rockfish, Greenblotched	<i>Sebastes rosenblatti</i>
RFGRN	Rockfish, Greenspotted	<i>Sebastes chlorostictus</i>
RFGST	Rockfish, Greenstriped	<i>Sebastes elongatus</i>
RFHBD	Rockfish, Halfbanded	<i>Sebastes semicinctus</i>
RFHQN	Rockfish, Harlequin	<i>Sebastes variegatus</i>
RFHNC	Rockfish, Honeycomb	<i>Sebastes umbrosus</i>
RFKLP	Rockfish, Kelp	<i>Sebastes atrovirens</i>
RFMEX	Rockfish, Mexican	<i>Sebastes macdonaldi</i>
RFOLV	Rockfish, Olive	<i>Sebastes serranoides</i>
RFPNK	Rockfish, Pink	<i>Sebastes eos</i>
RFPRS	Rockfish, Pinkrose	<i>Sebastes simulator</i>
RFPSD	Rockfish, Puget Sound	<i>Sebastes emphaeus</i>
RFPYG	Rockfish, Pygmy	<i>Sebastes wilsoni</i>
RFQIL	Rockfish, Quillback	<i>Sebastes maliger</i>
RFRBD	Rockfish, Redbanded	<i>Sebastes babcocki</i>
RFRST	Rockfish, Redstripe	<i>Sebastes proriger</i>
RFRTN	Rockfish, Rosethorn	<i>Sebastes helvomaaculatus</i>
RFROS	Rockfish, Rosy	<i>Sebastes rosaceus</i>
RFRGH	Rockfish, Roughey	<i>Sebastes aleutianus</i>
RFSMR	Rockfish, Semaphore	<i>Sebastes melanosema</i>
RFSCN	Rockfish, Sharpchin	<i>Sebastes zacentrus</i>
RFSHB	Rockfish, Shortbelly	<i>Sebastes jordani</i>
RFSRK	Rockfish, Shortraker	<i>Sebastes borealis</i>
RFSLG	Rockfish, Silvergray	<i>Sebastes brevispinis</i>
RFSPK	Rockfish, Speckled	<i>Sebastes ovalis</i>
RFSNS	Rockfish, Splitnose	<i>Sebastes diploproa</i>
RFSQS	Rockfish, Squarespotted	<i>Sebastes hopkinsi</i>
RFSTA	Rockfish, Starry	<i>Sebastes constellatus</i>
RFSTR	Rockfish, Stripetail	<i>Sebastes saxicola</i>

<b>Sorted by Common Name</b>		
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RFSDS	Rockfish, Swordspine	<i>Sebastes ensifer</i>
RFTRE	Rockfish, Treefish	<i>Sebastes serriceps</i>
RFTIG	Rockfish, Tiger	<i>Sebastes nigrocinctus</i>
RFVER	Rockfish, Vermilion	<i>Sebastes miniatus</i>
RFWID	Rockfish, Widow	<i>Sebastes entomelas</i>
RFYEY	Rockfish, Yelloweye	<i>Sebastes ruberrimus</i>
RFYMN	Rockfish, Yellowmouth	<i>Sebastes reedi</i>
RFYTL	Rockfish, Yellowtail	<i>Sebastes flavidus</i>
ROCKH	Rockhead	<i>Bothragonus swanii</i>
RNQFM	ronquil family	<i>Bathymasteridae</i>
RNQBB	Ronquil, Bluebanded	<i>Rathbunella hypoplecta</i>
RNQNO	Ronquil, Northern	<i>Ronquilus jordani</i>
SABLE	Sablefish	<i>Anoplopoma fimbria</i>
SABFM	sablefish family	<i>Anoplopomatidae</i>
SAILF	Sailfish	<i>Istiophorus platypterus</i>
SALEM	Salema	<i>Brachygenys californiensis</i>
SALFM	salmon family	<i>Salmonidae</i>
SALGN	salmon genus	<i>Oncorhynchus</i>
SALAT	Salmon, Atlantic	<i>Salmo salar</i>
SALCK	Salmon, Chinook	<i>Oncorhynchus tshawytscha</i>
SALCM	Salmon, Chum	<i>Oncorhynchus keta</i>
SALCO	Salmon, Coho	<i>Oncorhynchus kisutch</i>
SALPK	Salmon, Pink	<i>Oncorhynchus gorboscha</i>
SALSE	Salmon, Sockeye	<i>Oncorhynchus nerka</i>
SBGEN	sandbass genus	<i>Paralabrax</i>
SBBAR	Sandbass, Barred	<i>Paralabrax nebulifer</i>
SBSPT	Sandbass, Spotted	<i>Paralabrax maculatofaciatus</i>
DABGN	sanddab genus	<i>Citharichthys</i>
DABLF	Sanddab, Longfin	<i>Citharichthys xanthostigma</i>
DABPA	Sanddab, Pacific	<i>Citharichthys sordidus</i>
DABSP	Sanddab, Speckled	<i>Citharichthys stigmaeus</i>
SNDFM	sandfish family	<i>Trichodontidae</i>
SNDPA	Sandfish, Pacific	<i>Trichodon trichodon</i>
SARPA	Sardine, Pacific	<i>Sardinops sagax</i>
SARGO	Sargo	<i>Anisotremus davidsonii</i>
SAUPA	Saury, Pacific	<i>Cololabis saira</i>
SCBRZ	Scabbardfish, Razorback	<i>Assurger anzac</i>
MSCAD	Scad, Mexican (Amberstripe)	<i>Decapterus scombrinus</i>
SCPRO	Scallop, Giant Rock	<i>Crassadoma gigantea</i>
SCPUS	scallop, unspecified	<i>Pectinidae</i>
SCRFM	scorpionfish family	<i>Scorpaenidae</i>
SCRCA	Scorpionfish, California	<i>Scorpaena guttata</i>

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SCRRB	Scorpionfish, Rainbow	<i>Scorpaenodes xyris</i>
SCFAM	sculpin family	<i>Cottidae</i>
SCANT	Sculpin, Antlered	<i>Enophrys diceraus</i>
SCASH	Sculpin, Arctic Staghorn	<i>Gymnocanthus tricuspis</i>
SCBLD	Sculpin, Bald	<i>Clinocottus recalvus</i>
SCBKF	Sculpin, Blackfin	<i>Malacocottus kincaidi</i>
SCBNH	Sculpin, Bonehead	<i>Artedius notospilotus</i>
SCBUF	Sculpin, Buffalo	<i>Enophrys bison</i>
SCBUL	Sculpin, Bull	<i>Enophrys taurina</i>
SCCRG	Sculpin, Coastrange	<i>Cottus aleuticus</i>
SCDSK	Sculpin, Dusky	<i>Icelinus burchami</i>
SCGRT	Sculpin, Great	<i>Myoxocephalus polyacanthocephalus</i>
SCGRU	Sculpin, Grunt	<i>Rhamphocottus richardsonii</i>
SCLST	Sculpin, Leister	<i>Enophrys lucasi</i>
SCNTH	Sculpin, Northern	<i>Icelinus borealis</i>
SCPSH	Sculpin, Pacific Staghorn	<i>Leptocottus armatus</i>
SCPAD	Sculpin, Padded	<i>Artedius fenestralis</i>
SCPRK	Sculpin, Prickly	<i>Cottus asper</i>
SCRSL	Sculpin, Rosylip	<i>Ascelichthys rhodorus</i>
SCSFN	Sculpin, Sailfin	<i>Nautichthys oculoasciatus</i>
SCSCL	Sculpin, Scaled	<i>Archistes biseriatus</i>
SCSLH	Sculpin, Scalyhead	<i>Artedius harringtoni</i>
SCSCT	Sculpin, Scissortail	<i>Triglops forficatus</i>
SCSHN	Sculpin, Sharpnose	<i>Clinocottus acuticeps</i>
SCSPT	Sculpin, Spotfin	<i>Icelinus tenuis</i>
SCTRF	Sculpin, Threadfin	<i>Icelinus filamentosus</i>
SCTDP	Sculpin, Tidepool	<i>Oligocottus maculosus</i>
SCWOL	Sculpin, Woolly	<i>Clinocottus analis</i>
CUCUM	sea cucumbers	<i>Holothuroidea</i>
URCHN	sea urchins	<i>Diadematidae</i>
GNTSB	Seabass, Giant	<i>Stereolepis gigas</i>
SBWHT	Seabass, White	<i>Atractoscion nobilis</i>
SPPNK	Seaperch, Pink	<i>Zalembius rosaceus</i>
SPRBW	Seaperch, Rainbow	<i>Embiotoca 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>
SERLT	Searobin, Luimptail	<i>Prionotus stephanophys</i>
GAPOD	sea slugs, sea snails	<i>Gastropoda</i>
SSTAR	sea stars	<i>Astroidea</i>
SEJOR	Senorita	<i>Oxyjulis californica</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
SHADA	Shad, American	<i>Alosa sapidissima</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>
SHMFM	shark family, mackerel	<i>Lamnidae</i>
SHRFM	shark family, requiem	<i>Carcharhinidae</i>
SHBLU	Shark, Blue	<i>Prionace glauca</i>
SHBNH	Shark, Bonnethead	<i>Sphyrna tiburo</i>
SHBCS	Shark, Brown Cat	<i>Apristurus brunneus</i>
SHBUL	Shark, Bull	<i>Carcharhinus leucas</i>
SHDKY	Shark, Dusky	<i>Carcharhinus obscurus</i>
SHHRN	Shark, Horn	<i>Heterodontus francisci</i>
SHLEP	Shark, Leopard	<i>Triakis semifasciata</i>
SHNTH	Shark, Narrowtooth	<i>Carcharhinus brachyurus</i>
SHANG	Shark, Pacific Angel	<i>Squatina californica</i>
SHSLP	Shark, Pacific Sleeper	<i>Somniosus pacificus</i>
SHSAL	Shark, Salmon	<i>Lamna ditropis</i>
SHSEV	Shark, Sevengill	<i>Notorynchus cepedianus</i>
SHSMK	Shark, Shortfin Mako	<i>Isurus oxyrinchus</i>
SHSIX	Shark, Bluntnose Sixgill	<i>Hexanchus griseus</i>
SHFIN	Shark, Soupfin	<i>Galeorhinus galeus</i>
SHSDG	Shark, Pacific Spiny Dogfish	<i>Squalus suckleyi</i>
SHSWL	Shark, Swell	<i>Cephaloscyllium ventriosum</i>
SHTHR	Shark, Common Thresher	<i>Alopias vulpinus</i>
SHTIG	Shark, Tiger	<i>Galeocerdo cuvier</i>
SHWHT	Shark, White	<i>Carcharodon carcharias</i>
SHEEP	Sheephead, California	<i>Bodianus pulcher</i>
SHRMP	shrimps	<i>Caridea</i>
SRAGU	Sierra, Gulf	<i>Scomberomorus concolor</i>
SRAPA	Sierra, Pacific	<i>Scomberomorus sierra</i>
SVRFM	silverside family	<i>Atherinidae</i>
SKFAM	skate family	<i>Rajidae</i>
SKALT	Skate, Aleutian	<i>Bathyraja aleutica</i>
SKBIG	Skate, Big	<i>Beringraja binoculata</i>
SKTCA	Skate, California	<i>Beringraja inornata</i>
SKLGN	Skate, Longnose	<i>Raja rhina</i>
SKSTY	Skate, Starry	<i>Beringraja stellulata</i>
SKBGN	skipjack genus	<i>Euthynnus</i>
BLKSJ	Skipjack, Black	<i>Euthynnus lineatus</i>
SMFAM	smelt family, true	<i>Osmeridae</i>
DSSFM	smelt family, deepsea	<i>Bathylagidae</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
SMJAK	Smelt, (Jacksmelt)	<i>Atherinopsis californiensis</i>
SMTOP	Smelt, (Topsmelt)	<i>Atherinops affinis</i>
SMLGF	Smelt, Longfin	<i>Spirinchus thaleichthys</i>
SMNGT	Smelt, Night	<i>Spirinchus starksi</i>
SMSUR	Smelt, Surf	<i>Hypomesus pretiosus</i>
SMWTB	Smelt, Whitebait	<i>Allosmerus elongatus</i>
SHSGN	smoothhound genus	<i>Mustelus</i>
SHBSM	Smoothhound, Brown	<i>Mustelus henlei</i>
SHGSM	Smoothhound, Gray	<i>Mustelus californicus</i>
SHSSM	Smoothhound, Sicklefin	<i>Mustelus lunulatus</i>
CASTG	Smoothtongue, California	<i>Leuroglossus stilbius</i>
SOLBG	Sole, Bigmouth	<i>Hippoglossina stomata</i>
SOLBT	Sole, Butter	<i>Isopsetta isolepis</i>
SOLCO	Sole, C-O	<i>Pleuronichthys coenosus</i>
SOLCF	Sole, Curfin	<i>Pleuronichthys decurrens</i>
SOLDS	Sole, Deepsea	<i>Microstomus bathybius</i>
SOLDV	Sole, Dover	<i>Microstomus pacificus</i>
SOLEG	Sole, English	<i>Parophrys vetulus</i>
SOLFT	Sole, Fantail	<i>Xystreurus liolepis</i>
SOLFH	Sole, Flathead	<i>Hippoglossoides elassodon</i>
SOLPT	Sole, Petrale	<i>Eopsetta jordani</i>
SOLRX	Sole, Rex	<i>Glyptocephalus zachirus</i>
SOLRK	Sole, Rock	<i>Lepidopsetta bilineata</i>
SOLSD	Sole, Sand	<i>Psettichthys melanostictus</i>
SOLSL	Sole, Slender	<i>Lyopsetta exilis</i>
SOLYF	Sole, Yellowfin	<i>Limanda aspera</i>
SPDPA	Spadefish, Pacific	<i>Chaetodipterus zonatus</i>
SQTSE	Squaretail, Smalleye	<i>Tetragonurus cuvieri</i>
SQUID	squid	<i>Cephalopoda</i>
SQDJU	Squid, Jumbo (Humboldt)	<i>Dosidicus gigas</i>
SQDMK	Squid, Market	<i>Doryteuthis opalescens</i>
SKBFM	stickleback family	<i>Gasterosteidae</i>
SKBTS	Stickleback, Threespine	<i>Gasterosteus aculeatus</i>
SGFAM	stingray family	<i>Dasyatidae</i>
SGGEN	stingray genus	<i>Dasyatis</i>
SGDIA	Stingray, Diamond	<i>Hypanus dipterurus</i>
SGPEL	Stingray, Pelagic	<i>Pteroplatytrygon violacea</i>
SGRND	Stingray, Round	<i>Urobatis halleri</i>
STGEN	sturgeon genus	<i>Acipenser</i>
STGRN	Sturgeon, Green	<i>Acipenser medirostris</i>
STWHT	Sturgeon, White	<i>Acipenser transmontanus</i>
SNFFM	sunfish family	<i>Centrarchidae</i>
SUNOC	Sunfish, Ocean	<i>Mola mola</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
SPFAM	surfperch family	<i>Embiotocidae</i>
SPBAR	Surfperch, Barred	<i>Amphistichus argenteus</i>
SPCAL	Surfperch, Calico	<i>Amphistichus koelzi</i>
SPRTL	Surfperch, Redtail	<i>Amphistichus rhodoterus</i>
SPSIL	Surfperch, Silver	<i>Hyperprosopon ellipticum</i>
SPSPF	Surfperch, Spotfin	<i>Hypocritichthys analis</i>
SPWAL	Surfperch, Walleye	<i>Hyperprosopon argenteum</i>
SRDFS	Swordfish	<i>Xiphias gladius</i>
THRBK	Thornback	<i>Platyrrhinoidis triseriata</i>
RFLST	Thornyhead, Longspine	<i>Sebastolobus altivelis</i>
RFSST	Thornyhead, Shortspine	<i>Sebastolobus alascanus</i>
TFPGE	Tilefish, Pacific Golden-Eyed	<i>Caulolatilus affinis</i>
CODTC	Tomcod, Pacific	<i>Microgadus proximus</i>
TNGCA	Tonguefish, California	<i>Symphurus atricaudus</i>
FTRIG	Triggerfish, Finescale	<i>Balistes polylepis</i>
TRTPA	Tripletail, Pacific	<i>Lobotes pacificus</i>
SALCT	Trout, Cutthroat	<i>Oncorhynchus clarkii</i>
SALRB	Trout, Rainbow (Steelhead)	<i>Oncorhynchus mykiss</i>
SALTR	trouts, sea run	
TBESN	Tubesnout	<i>Aulorhynchus flavidus</i>
TNAAB	Tuna, Albacore	<i>Thunnus alalunga</i>
TNABE	Tuna, Bigeye	<i>Thunnus obesus</i>
TNABF	Tuna, Pacific Bluefin	<i>Thunnus orientalis</i>
TNASJ	Tuna, Skipjack	<i>Katsuwonus pelamis</i>
TNASL	Tuna, Slender	<i>Allothunnus fallai</i>
TNAYF	Tuna, Yellowfin	<i>Thunnus albacares</i>
TNASG	tunas (non-mackerel)	
SOLDT	Turbot, Diamond	<i>Pleuronichthys guttulatus</i>
SOLHT	Turbot, Hornyhead	<i>Pleuronichthys verticalis</i>
SOLST	Turbot, Spotted	<i>Pleuronichthys ritteri</i>
SHINS	unidentified inshore sharks	
SHOFF	unidentified offshore sharks	
UNISF	unidentified (surface fish)	
UNIFH	unidentified fish	
SALDV	Varden, Dolly	<i>Salvelinus malma</i>
WAHOO	Wahoo	<i>Acanthocybium solandri</i>
WEKFS	weakfish genus	<i>Cynoscion</i>
REMWS	Whalesucker	<i>Remora australis</i>
OCWHT	Whitefish, Ocean	<i>Caulolatilus princeps</i>
WOLFE	Wolf-Eel	<i>Anarrhichthys ocellatus</i>
WRABS	Wrasse, Blackspot	<i>Decodon melasma</i>
WRAFM	wrasse family	<i>Labridae</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
WRARK	Wrasse, Rock	<i>Halichoeres semicinctus</i>
YELTL	Yellowtail	<i>Seriola lalandi</i>

**BY AFS COMMON NAME**

<b>Sorted by AFS Common Name</b>		
<b>SP CODE</b>	<b>AFS COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
ABALO	abalone genus	<i>Haliotis</i>
SOLPL	Alaska Plaice	<i>Pleuronectes quadrituberculatus</i>
TNAAB	Albacore	<i>Thunnus alalunga</i>
SKALT	Aleutian Skate	<i>Bathyraja aleutica</i>
SHADA	American Shad	<i>Alosa sapidissima</i>
ANCFM	anchovy family	<i>Engraulidae</i>
ANCGN	anchovy genus	<i>Anchoa</i>
SCANT	Antlered Sculpin	<i>Enophrys diceraus</i>
SOLAF	Arctic Flounder	<i>Liopsetta glacialis</i>
LMPAR	Arctic Lamprey	<i>Lethenteron camtschaticum</i>
SCASH	Arctic Staghorn Sculpin	<i>Gymnocanthus tricuspis</i>
GOBAR	Arrow Goby	<i>Clevelandia ios</i>
FLRAR	Arrowtooth Flounder	<i>Atheresthes stomias</i>
SALAT	Atlantic Salmon	<i>Salmo salar</i>
RFAUR	Aurora Rockfish	<i>Sebastes aurora</i>
SCBLD	Bald Sculpin	<i>Clinocottus recalvus</i>
GUIBD	Banded Guitarfish	<i>Zapteryx exasperata</i>
RFBNK	Bank Rockfish	<i>Sebastes rufus</i>
SBBAR	Barred Sandbass	<i>Paralabrax nebulifer</i>
SPBAR	Barred Surfperch	<i>Amphistichus argenteus</i>
CLMBK	Basket Cockle	<i>Clinocardium nuttallii</i>
RYBAT	Bat Ray	<i>Myliobatis californica</i>
BLNBY	Bay Blenny	<i>Hypsoblennius gentilis</i>
BOGBY	Bay Goby	<i>Lepidogobius lepidus</i>
PIPEB	Bay Pipefish	<i>Syngnathus leptorhynchus</i>
SOLBF	Bering Flounder	<i>Hippoglossoides robustus</i>
SKBIG	Big Skate	<i>Beringraja binoculata</i>
OPHBE	Bigeye Pacific Opah	<i>Lampris megalopsis</i>
TNABE	Bigeye Tuna	<i>Thunnus obesus</i>
SOLBG	Bigmouth Sole	<i>Hippoglossina stomata</i>
MARFM	billfish family	<i>Istiophoridae</i>
BIVAL	bivalve class	<i>Bivalvia</i>
RFBAY	Black and Yellow Rockfish	<i>Sebastes chrysomelas</i>
CRKBK	Black Croaker	<i>Cheilotrema saturnum</i>
HAGBK	Black Hagfish	<i>Eptatretus deani</i>
MARBK	Black Marlin	<i>Istiompax indica</i>
SPBLK	Black Perch	<i>Embiotoca jacksoni</i>
PRKBK	Black Prickleback	<i>Xiphister atropurpureus</i>
RFBLK	Black Rockfish	<i>Sebastes melanops</i>
BLKSJ	Black Skipjack	<i>Euthynnus lineatus</i>
GOBBE	Blackeye Goby	<i>Rhinogobiops nicholsii</i>
SCBKF	Blackfin Sculpin	<i>Malacocottus kincaidi</i>
RFBKG	Blackgill Rockfish	<i>Sebastes melanostomus</i>

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BLKSM	Blacksmith	<i>Chromis punctipinnis</i>
WRABS	Blackspot Wrasse	<i>Decodon melasma</i>
RFBKS	Blackspotted Rockfish	<i>Sebastes melanostictus</i>
MARBL	Blue Marlin	<i>Makaira nigricans</i>
RFBLU	Blue Rockfish	<i>Sebastes mystinus</i>
SHBLU	Blue Shark	<i>Prionace glauca</i>
RNQBB	Bluebanded Ronquil	<i>Rathbunella hypoplecta</i>
SCBBS	Bluestripped Chub	<i>Kyphosus ocyurus</i>
SHSIX	Bluntnose Sixgill Shark	<i>Hexanchus griseus</i>
RFBOC	Bocaccio	<i>Sebastes paucispinis</i>
SCBNH	Bonehead Sculpin	<i>Artemis notospilotus</i>
SHBNH	Bonnethead Shark	<i>Sphyrna tiburo</i>
BOTOM	bottomfish (groundfish)	
SHSEV	Broadnose Sevengill Shark	<i>Notorynchus cepedianus</i>
RFBSP	Bronzespotted Rockfish	<i>Sebastes gilli</i>
GRPBT	Broomtail Grouper	<i>Mycteroperca xenarcha</i>
SHBCS	Brown Cat Shark	<i>Apristurus brunneus</i>
SCBIL	Brown Irish Lord	<i>Hemilepidotus spinosus</i>
CRBBR	Brown Rock Crab	<i>Romaleon antennarius</i>
RFBRN	Brown Rockfish	<i>Sebastes auriculatus</i>
SHBSM	Brown Smoothhound	<i>Mustelus henlei</i>
SCBUF	Buffalo Sculpin	<i>Enophrys bison</i>
SCBUL	Bull Sculpin	<i>Enophrys taurina</i>
SHBUL	Bull Shark	<i>Carcharhinus leucas</i>
MACBL	Bullet Mackerel	<i>Auxis rochei</i>
SOLBT	Butter Sole	<i>Isopsetta isolepis</i>
BUTFM	butterfish family	<i>Stromateidae</i>
BFFFM	butterflyfish family	<i>Chaetodontidae</i>
SCCAB	Cabazon	<i>Scorpaenichthys marmoratus</i>
RFCLO	Calico Rockfish	<i>Sebastes dallii</i>
SPCAL	Calico Surfperch	<i>Amphistichus koelzi</i>
RYFLY	California Butterfly Ray	<i>Gymnura marmorata</i>
CRBCA	California Corbina	<i>Menticirrhus undulatus</i>
FLYCA	California Flyingfish	<i>Cheilopogon californicus</i>
GRUCA	California Grunion	<i>Leuresthes tenuis</i>
HALCA	California Halibut	<i>Paralichthys californicus</i>
KLFCFA	California Killifish	<i>Fundulus parvipinnis</i>
LZDCA	California Lizardfish	<i>Synodus lucioceps</i>
MORAY	California Moray	<i>Gymnothorax mordax</i>
NEDCA	California Needlefish	<i>Strongylura exilis</i>
SCRCA	California Scorpionfish	<i>Scorpaena guttata</i>
SHEEP	California Sheephead	<i>Bodianus pulcher</i>
SKTCA	California Skate	<i>Beringraja inornata</i>
CASTG	California Smoothtongue	<i>Leuroglossus stilbius</i>

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LOBSP	California Spiny Lobster	<i>Panulirus interruptus</i>
TNGCA	California Touguefish	<i>Symphurus atricaudus</i>
RFCAN	Canary Rockfish	<i>Sebastes pinniger</i>
CRBGN	cancer crab family	<i>Canceridae</i>
SMCAP	Capelin	<i>Mallotus villosus</i>
CTFSM	cat shark family	<i>Scyliorhinidae</i>
GOBCM	Chameleon Goby	<i>Tridentiger trigonocephalus</i>
RFCMA	Chameleon Rockfish	<i>Sebastes phillipsi</i>
RFPEP	Chilipepper	<i>Sebastes goodei</i>
RFCHN	China Rockfish	<i>Sebastes nebulosus</i>
SALCK	Chinook Salmon	<i>Oncorhynchus tshawytscha</i>
MACPA	Chub (Pacific) Mackerel	<i>Scomber japonicus</i>
SALCM	Chum Salmon	<i>Oncorhynchus keta</i>
CLAMS	clams	<i>Bivalvia</i>
KLPFM	clinid family	<i>Clinidae</i>
SOLCO	C-O Sole	<i>Pleuronichthys coenosus</i>
SCCRG	Coastrange Sculpin	<i>Cottus aleuticus</i>
CODFM	cod family	<i>Gadidae</i>
SALCO	Coho Salmon	<i>Oncorhynchus kisutch</i>
FLNFM	combtooth blenny family	<i>Blenniidae</i>
SHTHR	Common Thresher Shark	<i>Alopias vulpinus</i>
RFCOP	Copper Rockfish	<i>Sebastes caurinus</i>
BONEF	Cortez Bonefish	<i>Albula vulpes</i>
CSHFM	cow shark family	<i>Hexanchidae</i>
RFCOW	Cowcod	<i>Sebastes levis</i>
GUNCR	Crescent Gunnel	<i>Pholis laeta</i>
KLPCR	Crevice Kelpfish	<i>Gibbonsia montereyensis</i>
CRUST	crustaceans	<i>Crustacea</i>
SOLCF	Curlfin Sole	<i>Pleuronichthys decurrens</i>
CSKFM	cusk-eel family	<i>Ophidiidae</i>
SALCT	cutthroat trout	<i>Oncorhynchus clarkii</i>
DAMFM	damsel fish family	<i>Pomacentridae</i>
RFDBL	Darkblotched Rockfish	<i>Sebastes crameri</i>
RFDCN	Deacon Rockfish	<i>Sebastes diaconus</i>
ANCDDB	Deepbody Anchovy	<i>Anchoa compressa</i>
DSSFM	deepsea smelt family	<i>Bathylagidae</i>
SOLDS	Deepsea Sole	<i>Microstomus bathybius</i>
SGDIA	Diamond Stingray	<i>Hypanus dipterurus</i>
SOLDT	Diamond Turbot	<i>Pleuronichthys guttulatus</i>
SHDFM	dogfish shark family	<i>Squalidae</i>
SALDV	Dolly Varden	<i>Salvelinus malma</i>
DRADO	Dolphinfish	<i>Coryphaena hippurus</i>
SOLDV	Dover Sole	<i>Microstomus pacificus</i>
DRGFM	dragonfish family	<i>Stomiidae</i>
DRMFM	drum family	<i>Sciaenidae</i>

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CRBDG	Dungeness Crab	<i>Metacarcinus magister</i>
RFDUS	Dusky Rockfish	<i>Sebastes ciliatus</i>
SCDSK	Dusky Sculpin	<i>Icelinus burchami</i>
SHDKY	Dusky Shark	<i>Carcharhinus obscurus</i>
SPDWF	Dwarf Perch	<i>Micrometrus minimus</i>
RFDRD	Dwarf Red Rockfish	<i>Sebastes rufinanus</i>
EELOR	eel order	<i>Anguilliformes</i>
ELPFM	eelpout family	<i>Zoarcidae</i>
SOLEG	English Sole	<i>Parophrys vetulus</i>
SMEUL	Eulachon	<i>Thaleichthys pacificus</i>
SOLFT	Fantail Sole	<i>Xystreurus liolepis</i>
FTRIG	Finescale Triggerfish	<i>Balistes polylepis</i>
RFFLG	Flag Rockfish	<i>Sebastes rubrivinctus</i>
FLTOR	flatfish order	<i>Pleuronectiformes</i>
SOLFH	Flathead Sole	<i>Hippoglossoides elassodon</i>
FLYFM	flyingfish family	<i>Exocoetidae</i>
RFFRK	Freckled Rockfish	<i>Sebastes lentiginosus</i>
MACFR	Frigate Mackerel	<i>Auxis thazard</i>
FRSFM	frill shark family	<i>Chlamydoselachidae</i>
GARIB	Garibaldi	<i>Hypsypops rubicundus</i>
KLPGT	Giant Kelpfish	<i>Heterostichus rostratus</i>
SCPRO	Giant Rock Scallop	<i>Crassadoma gigantea</i>
GNTSB	Giant Seabass	<i>Stereolepis gigas</i>
GOBFM	goby family	<i>Gobiidae</i>
RFGOP	Gopher Rockfish	<i>Sebastes carnatus</i>
CRBGR	Graceful Rock Crab	<i>Metacarcinus gracilis</i>
RFGRS	Grass Rockfish	<i>Sebastes rastrelliger</i>
SHGSM	Gray Smoothhound	<i>Mustelus californicus</i>
SCGRT	Great Sculpin	<i>Myoxocephalus polyacanthoceph</i>
STGRN	Green Sturgeon	<i>Acipenser medirostris</i>
RFGBL	Greenblotched Rockfish	<i>Sebastes rosenblatti</i>
HALGL	Greenland Halibut	<i>Reinhardtius hippoglossoides</i>
GRNFM	greenling family	<i>Hexagrammidae</i>
GRNGN	greenling genus	<i>Hexagrammos</i>
RFGRN	Greenspotted Rockfish	<i>Sebastes chlorostictus</i>
RFGST	Greenstriped Rockfish	<i>Sebastes elongatus</i>
GRPGN	grouper genus	<i>Epinephelus</i>
GNTFM	grunt family	<i>Haemulidae</i>
SCGRU	Grunt Sculpin	<i>Rhamphocottus richardsonii</i>
GUIFM	guitarfish family	<i>Rhinobatidae</i>
GRPGC	Gulf Coney	<i>Hyporthodus acanthistius</i>
GRPGF	Gulf Grouper	<i>Mycteroperca jordani</i>
SRAGU	Gulf Sierra	<i>Scomberomorus concolor</i>
GUNFM	gunnel family	<i>Pholidae</i>

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HAGFM	hagfish order	<i>Myxiniidae</i>
RFHBD	Halfbanded Rockfish	<i>Sebastes semicinctus</i>
HALFM	Halfmoon	<i>Medialuna californiensis</i>
RFHQN	Harlequin Rockfish	<i>Sebastes variegatus</i>
HERFM	herring family	<i>Clupeidae</i>
SBHKT	Hookthroat Bass	<i>Hemanthias signifer</i>
RFHNC	Honeycomb Rockfish	<i>Sebastes umbrosus</i>
SHHRN	Horn Shark	<i>Heterodontus francisci</i>
SOLHT	Hornyhead Turbot	<i>Pleuronichthys verticalis</i>
SQDJU	Humboldt Squid	<i>Dosidicus gigas</i>
SCILG	Irish lord genus	<i>Hemilepidotus</i>
JACFM	jack family	<i>Carangidae</i>
JACMK	Jack Mackerel	<i>Trachurus symmetricus</i>
SMJAK	Jacks melt	<i>Atherinopsis californiensis</i>
SQDJU	Jumbo Squid	<i>Dosidicus gigas</i>
FLRKM	Kamchatka Flounder	<i>Atheresthes evermanni</i>
KAWAK	Kawakawa	<i>Euthynnus affinis</i>
SBKLP	Kelp Bass	<i>Paralabrax clathratus</i>
GRNKP	Kelp Greenling	<i>Hexagrammos decagrammus</i>
SPKLP	Kelp Perch	<i>Brachyistius frenatus</i>
RFKLP	Kelp Rockfish	<i>Sebastes atrovirens</i>
KOSAL	King-Of-The-Salmon	<i>Trachipterus altivelis</i>
LMPFM	lamprey family	<i>Petromyzontidae</i>
BASLM	Largemouth Bass	<i>Micropterus salmoides</i>
FLLFN	lefteye flounder family	<i>Bothidae</i>
SCLST	Leister Sculpin	<i>Enophrys lucasi</i>
SHLEP	Leopard Shark	<i>Triakis semifasciata</i>
LNGCD	Lingcod	<i>Ophiodon elongatus</i>
CLMLN	Pacific Littleneck Clam	<i>Protothaca staminea</i>
LZDFM	lizardfish family	<i>Synodontidae</i>
DABLF	Longfin Sanddab	<i>Citharichthys xanthostigma</i>
SMLGF	Longfin Smelt	<i>Spirinchus thaleichthys</i>
LJMUD	Longjaw Mudsucker	<i>Gillichthys mirabilis</i>
LANLN	Longnose Lancetfish	<i>Alepisaurus ferox</i>
SKLGN	Longnose Skate	<i>Raja rhina</i>
CBFLS	Longspine Combfish	<i>Zaniolepis latipinnis</i>
RFLST	Longspine Thornyhead	<i>Sebastolobus altivelis</i>
LUVAR	Louvar	<i>Luvarus imperialis</i>
SERLT	Lumptail Searobin	<i>Prionotus stephanophrys</i>
MACFM	mackerel family	<i>Scombridae</i>
SHMFM	mackerel shark family	<i>Lamnidae</i>
MANTA	Manta	<i>Manta birostris</i>
SQDMK	Market Squid	<i>Doryteuthis opalescens</i>
GRNMA	Masked Greenling	<i>Hexagrammos octogrammus</i>

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RFMEX	Mexican Rockfish	<i>Sebastes macdonaldi</i>
MSCAD	Mexican (Amberstripe) Scad	<i>Decapterus scombrinus</i>
MIDGN	midshipman genus	<i>Porichthys</i>
MOJFM	mojarra family	<i>Gerreidae</i>
SUNFM	mola family	<i>Molidae</i>
MOLLU	mollusk	<i>Mollusca</i>
PRKMK	Monkeyface Prickleback	<i>Cebidichthys violaceus</i>
SHNTH	Narrowtooth Shark	<i>Carcharhinus brachyurus</i>
SMNGT	Night Smelt	<i>Spirinchus starksi</i>
ANCNO	Northern Anchovy	<i>Engraulis mordax</i>
RNQNO	Northern Ronquil	<i>Ronquilus jordani</i>
SCNTH	Northern Sculpin	<i>Icelinus borealis</i>
CLNGN	Nothern Clingfish	<i>Gobiesox maeandricus</i>
SUNOC	Ocean Sunfish	<i>Mola mola</i>
OCWHT	Ocean Whitefish	<i>Caulolatilus princeps</i>
OCTOP	octopus	<i>Octopoda</i>
RFOLV	Olive Rockfish	<i>Sebastes serranoides</i>
KLPOF	Onespot Fringehead	<i>Neoclinus urinotatus</i>
OPALE	Opaleye	<i>Girella nigricans</i>
COROM	Orangemouth Corvina	<i>Cynoscion xanthulus</i>
SHANG	Pacific Angel Shark	<i>Squatina californica</i>
ARGNT	Pacific Argentine	<i>Argentina sialis</i>
TNABF	Pacific Bluefin Tuna	<i>Thunnus orientalis</i>
BONPA	Pacific Bonito	<i>Sarda chiliensis</i>
CODPA	Pacific Cod	<i>Gadus macrocephalus</i>
CUTLP	Pacific Cutlassfish	<i>Trichiurus nitens</i>
CLMGP	Pacific Gaper Clam	<i>Tresus nuttallii</i>
CLMGD	Pacific Geoduck Clam	<i>Panopea generosa</i>
TFPGE	Pacific Golden-Eyed Tilefish	<i>Caulolatilus affinis</i>
HAGPA	Pacific Hagfish	<i>Eptatretus stoutii</i>
PHAKE	Pacific Hake	<i>Merluccius productus</i>
HALPA	Pacific Halibut	<i>Hippoglossus stenolepis</i>
HERPA	Pacific Herring	<i>Clupea pallasii</i>
LMPPA	Pacific Lamprey	<i>Entosphenus tridentatus</i>
CLMLN	Pacific Littleneck Clam	<i>Leukoma staminea</i>
RFPOP	Pacific Ocean Perch	<i>Sebastes alutus</i>
POMPA	Pacific Pompano (Butterfish)	<i>Peprilus simillimus</i>
CLMNR	Pacific Razor Clam	<i>Siliqua patula</i>
SOLPA	Pacific Sand Lance	<i>Ammodytes personatus</i>
DABPA	Pacific Sanddab	<i>Citharichthys sordidus</i>
SNDPA	Pacific Sandfish	<i>Trichodon trichodon</i>
SARPA	Pacific Sardine	<i>Sardinops sagax</i>

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SAUPA	Pacific Saury	<i>Cololabis saira</i>
SRAPA	Pacific Sierra	<i>Scomberomorus sierra</i>
SHSLP	Pacific Sleeper Shark	<i>Somniosus pacificus</i>
SPDPA	Pacific Spadefish	<i>Chaetodipterus zonatus</i>
SHSDG	Pacific Spiny Dogfish	<i>Squalus suckleyi</i>
SCPSH	Pacific Staghorn Sculpin	<i>Leptocottus armatus</i>
CODTC	Pacific Tomcod	<i>Microgadus proximus</i>
TRTPA	Pacific Tripletail	<i>Lobotes pacificus</i>
SCPAD	Padded Sculpin	<i>Artedius fenestralis</i>
GRNPT	Painted Greenling	<i>Oxylebius pictus</i>
CRBPR	Pelagic Red Crab	<i>Grimothea palmipes</i>
SGPEL	Pelagic Stingray	<i>Pteroplatytrygon violacea</i>
GUNPP	Penpoint Gunnel	<i>Apodichthys flavidus</i>
PERFM	perch family	<i>Percidae</i>
SOLPT	Petrale Sole	<i>Eopsetta jordani</i>
SPPIL	Pile Perch	<i>Phanerodon vacca</i>
PILTF	Pilotfish	<i>Naucrates ductor</i>
RFPNK	Pink Rockfish	<i>Sebastes eos</i>
SALPK	Pink Salmon	<i>Oncorhynchus gorbuscha</i>
SPPNK	Pink Seaperch	<i>Zalemnius rosaceus</i>
RFPRS	Pinkrose Rockfish	<i>Sebastes simulator</i>
CLMPO	Pismo Clam	<i>Tivela stultorum</i>
MIDPF	Plainfin Midshipman	<i>Porichthys notatus</i>
POMFM	pomfret family	<i>Bramidae</i>
CTFPE	Popeye Catalufa	<i>Pristigenys serrula</i>
PRKFM	prickleback family	<i>Stichaeidae</i>
SCPRK	Prickly Sculpin	<i>Cottus asper</i>
PUFFM	puffer family	<i>Tetraodontidae</i>
RFPSD	Puget Sound Rockfish	<i>Sebastes emphaeus</i>
RFPYG	Pygmy Rockfish	<i>Sebastes wilsoni</i>
QUEEN	Queenfish	<i>Seriphus politus</i>
RFQIL	Quillback Rockfish	<i>Sebastes maliger</i>
RAGFS	Ragfish	<i>Icosteus aenigmaticus</i>
SCRRB	Rainbow Scorpionfish	<i>Scorpaenodes xyris</i>
SPRBW	Rainbow Seaperch	<i>Embiotoca caryi</i>
SALRB	Rainbow Trout	<i>Oncorhynchus mykiss</i>
SCBRZ	Razorback Scabbardfish	<i>Assurger anzac</i>
SCRIL	Red Irish Lord	<i>Hemilepidotus hemilepidotus</i>
RFRBD	Redbanded Rockfish	<i>Sebastes babcocki</i>
RFRST	Redstripe Rockfish	<i>Sebastes proriger</i>
SPRTL	Redtail Surfperch	<i>Amphistichus rhodoterus</i>
KLPRB	Reef Finspot	<i>Paraclinus integripinnis</i>
SPREF	Reef Perch	<i>Micrometrus aurora</i>
REMFM	remora family	<i>Echeneidae</i>
SHRFM	requiem shark family	<i>Carcharhinidae</i>

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SOLRX	Rex Sole	<i>Glyptocephalus zachirus</i>
FLRFM	righteye flounder family	<i>Pleuronectidae</i>
GRNRK	Rock Greenling	<i>Hexagrammos lagocephalus</i>
PRKRK	Rock Prickleback	<i>Xiphister mucosus</i>
SOLRK	Rock Sole	<i>Lepidopsetta bilineata</i>
WRARK	Rock Wrasse	<i>Halichoeres semicinctus</i>
RFGEN	rockfish genus	<i>Sebastes</i>
ROCKH	Rockhead	<i>Bothragonus swanii</i>
BLNRP	Rockpool Blenny	<i>Hypsoblennius gilberti</i>
RNQFM	Ronquil Family	<i>Bathymasteridae</i>
RFRTN	Rosethorn Rockfish	<i>Sebastes helvomaculatus</i>
RFROS	Rosy Rockfish	<i>Sebastes rosaceus</i>
SCRSL	Rosylip Sculpin	<i>Ascelichthys rhodorus</i>
RFRGH	Rougheye Rockfish	<i>Sebastes aleutianus</i>
HERRD	Round Herring	<i>Etrumeus acuminatus</i>
SGRND	Round Stingray	<i>Urobatis halleri</i>
SPRUB	Rubberlip Seaperch	<i>Rhacochilus toxotes</i>
SABLE	Sablefish	<i>Anoplopoma fimbria</i>
SABFM	sablefish family	<i>Anoplopomatidae</i>
GUNSB	Saddleback Gunnel	<i>Pholis ornata</i>
SCSFN	Sailfin Sculpin	<i>Nautichthys oculofasciatus</i>
SAILF	Sailfish	<i>Istiophorus platypterus</i>
SALEM	Salema	<i>Brachygenys californiensis</i>
SALFM	salmon family	<i>Salmonidae</i>
SALGN	salmon genus	<i>Oncorhynchus</i>
SHSAL	Salmon Shark	<i>Lamna ditropis</i>
SOLSD	Sand Sole	<i>Psettichthys melanostictus</i>
SBGEN	sandbass genus	<i>Paralabrax</i>
DABGN	sanddab genus	<i>Citharichthys</i>
SNDFM	sandfish family	<i>Trichodontidae</i>
KLPSF	Sarcastic Fringehead	<i>Neoclinus blanchardi</i>
SARGO	Sargo	<i>Anisotremus davidsonii</i>
SCSCL	Scaled Sculpin	<i>Archistes biseriatus</i>
SCPUS	scallops	<i>Pectinidae</i>
SCSLH	Scalyhead Sculpin	<i>Artedius harringtoni</i>
SCSCT	Scissortail Sculpin	<i>Triglops forficatus</i>
SCRFM	scorpionfish family	<i>Scorpaenidae</i>
SCFAM	sculpin family	<i>Cottidae</i>
SBFAM	sea bass family	<i>Serranidae</i>
SCBFM	sea chub family	<i>Kyphosidae</i>
CUCUM	sea cucumber class	<i>Holothuroidea</i>
SALTR	sea run trouts	
SSTAR	sea stars	<i>Asteroidea</i>
GAPOD	sea slugs, sea snails	<i>Gastropoda</i>
URCHN	sea urchins	<i>Diadematidae</i>

<b>Sorted by AFS Common Name</b>		
<b>SP CODE</b>	<b>AFS COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
RFSMR	Semaphore Rockfish	<i>Sebastes melanosema</i>
SENR	Senorita	<i>Oxyjulis californica</i>
RFSCN	Sharpchin Rockfish	<i>Sebastes zacentrus</i>
SCSHN	Sharpnose Sculpin	<i>Clinocottus acuticeps</i>
SPSHN	Sharpnose Seaperch	<i>Phanerodon atripes</i>
CRBSH	Sheep Crab	<i>Loxorhynchus grandis</i>
SPSHR	Shiner Perch	<i>Cymatogaster aggregata</i>
RFSHB	Shortbelly Rockfish	<i>Sebastes jordani</i>
CORSF	Shortfin Corvina	<i>Cynoscion parvipinnis</i>
SHSMK	Shortfin Mako Shark	<i>Isurus oxyrinchus</i>
RFSRK	Shortraker Rockfish	<i>Sebastes borealis</i>
CBFSS	Shortspine Combfish	<i>Zaniolepis frenata</i>
RFSST	Shortspine Thornyhead	<i>Sebastobolus alascanus</i>
GUISN	Shovelnose Guitarfish	<i>Pseudobatos productus</i>
SHRMP	shrimps	<i>Caridea</i>
SHSSM	Sicklefin Smoothhound	<i>Mustelus lunulatus</i>
SPSIL	Silver Surfperch	<i>Hyperprosopon ellipticum</i>
RFSLG	Silvergray Rockfish	<i>Sebastes brevispinis</i>
SVRFM	silverside family	<i>Atherinidae</i>
RAJOR	skate and ray order	<i>Rajiformes</i>
SKFAM	skate family	<i>Rajidae</i>
SKBGN	skipjack genus	<i>Euthynnus</i>
TNASJ	skipjack tuna	<i>Euthynnus pelamis</i>
CRBGR	Slender Rock Crab	<i>Meatacarcinus gracillis</i>
SOLS	Slender Sole	<i>Lyopsetta exilis</i>
TNASL	Slender Tuna	<i>Allothunnus fallai</i>
OPHSE	Smalleye Pacific Opah	<i>Lampris incognitus</i>
SQTSE	Smalleye Squaretail	<i>Tetragonurus cuvieri</i>
SMFAM	smelt family	<i>Osmeridae</i>
SHSGN	smoothhound genus	<i>Mustelus</i>
SELFM	snake eel family	<i>Ophichthidae</i>
PRKSN	Snake Prickleback	<i>Lumpenus sagitta</i>
SHFIN	Soupfin Shark	<i>Galeorhinus galeus</i>
RFSPK	Speckled Rockfish	<i>Sebastes ovalis</i>
DABSP	Speckled Sanddab	<i>Citharichthys stigmaeus</i>
MIDSP	Specklefin Midshipman	<i>Porichthys myriaster</i>
BOXSP	Spiny Boxfish	<i>Lactoria diaphana</i>
RFSNS	Splitnose Rockfish	<i>Sebastes diploproa</i>
CRKSF	Spotfin Croaker	<i>Roncador stearnsii</i>
SCSPT	Spotfin Sculpin	<i>Icelinus tenuis</i>
SPSPF	Spotfin Surfperch	<i>Hypocritichthys analis</i>
GRPSC	Spotted Cabrilla	<i>Epinephelus analogus</i>
KLPSP	Spotted Kelpfish	<i>Gibbonsia elegans</i>
RATFS	Spotted Ratfish	<i>Hydrolagus collicii</i>
SBSPT	Spotted Sandbass	<i>Paralabrax maculatofaciatus</i>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
SOLST	Spotted Turbot	<i>Pleuronichthys ritteri</i>
RFSQS	Squarespot Rockfish	<i>Sebastes hopkinsi</i>
SQUID	squids	<i>Cephalopoda</i>
FLRST	Starry Flounder	<i>Platichthys stellatus</i>
RFSTA	Starry Rockfish	<i>Sebastes constellatus</i>
SKSTY	Starry Skate	<i>Beringraja stellulata</i>
GRPSS	Star-Studded Grouper	<i>Hyporthodus niphobles</i>
SKBFM	stickleback family	<i>Gasterosteidae</i>
SGFAM	stingray family	<i>Dasyatidae</i>
SGGEN	stingray genus	<i>Dasyatis</i>
STBAS	Striped Bass	<i>Morone saxatilis</i>
KLPST	Striped Kelpfish	<i>Gibbonsia metzi</i>
MARST	Striped Marlin	<i>Kajikia audax</i>
STMUL	Striped Mullet	<i>Mugil cephalus</i>
SPSTR	Striped Seaperch	<i>Embiotoca lateralis</i>
RFSTR	Stripetail Rockfish	<i>Sebastes saxicola</i>
STGEN	sturgeon genus	<i>Acipenser</i>
SNFFM	sunfish family	<i>Centrarchidae</i>
SMSUR	Surf Smelt	<i>Hypomesus pretiosus</i>
SPFAM	surfperch family	<i>Embiotocidae</i>
SHSWL	Swell Shark	<i>Cephaloscyllium ventriosum</i>
SRDFS	Swordfish	<i>Xiphias gladius</i>
RFSDS	Swordspine Rockfish	<i>Sebastes ensifer</i>
THRBK	Thornback	<i>Platyrhinoidis triseriata</i>
SBTHF	Threadfin Bass	<i>Pronotogrammus multifasciatus</i>
SCTRF	Threadfin Sculpin	<i>Icelinus filamentosus</i>
SKBTS	Threespine Stickleback	<i>Gasterosteus aculeatus</i>
SCTDP	Tidepool Sculpin	<i>Oligocottus maculosus</i>
RFTIG	Tiger Rockfish	<i>Sebastes nigrocinctus</i>
SHTIG	Tiger Shark	<i>Galeocerdo cuvier</i>
SMTOP	Topsmelt	<i>Atherinops affinis</i>
RFTRF	Treefish	<i>Sebastes serriceps</i>
CRABS	true crabs	<i>Brachyuratribe</i>
TBESN	Tubesnout	<i>Aulorhynchus flavidus</i>
TNASG	tunas (non-mackerel)	
SHINS	unidentified inshore sharks	
SHOFF	unidentified offshore sharks	
UNISF	unidentified (surface fish)	
UNIFH	unidentified fish	
RFVER	Vermilion Rockfish	<i>Sebastes miniatus</i>
WAHOO	Wahoo	<i>Acanthocybium solandri</i>
POLWE	Walleye Pollock	<i>Gadus chalcogrammus</i>
SPWAL	Walleye Surfperch	<i>Hyperprosopon argenteum</i>

<b>Sorted by AFS Common Name</b>		
<b>SP CODE</b>	<b>AFS COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
CLMWA	Washington Clam	<i>Saxidomus nuttalli</i>
WEKFS	Weakfishes	<i>Cynoscion</i>
REMWS	Whalesucker	<i>Remora australis</i>
CROWT	White Croaker	<i>Genyonemus lineatus</i>
SBWHT	White Seabass	<i>Atractoscion nobilis</i>
SPWHT	White Seaperch	<i>Phanerodon furcatus</i>
SHWHT	White Shark	<i>Carcharodon carcharias</i>
STWHT	White Sturgeon	<i>Acipenser transmontanus</i>
SMWTB	Whitebait Smelt	<i>Allosmerus elongatus</i>
GRNWT	Whitespotted Greenling	<i>Hexagrammos stelleri</i>
RFWID	Widow Rockfish	<i>Sebastes entomelas</i>
WOLFE	Wolf-Eel	<i>Anarrhichthys ocellatus</i>
SCWOL	Woolly Sculpin	<i>Clinocottus analis</i>
WRAFM	wrasse family	<i>Labridae</i>
CRBYR	Yellow Rock Crab	<i>Metacarcinus anthonyi</i>
SELYL	Yellow Snake Eel	<i>Ophichthus zophochir</i>
RFYEY	Yelloweye Rockfish	<i>Sebastes ruberrimus</i>
CRKYF	Yellowfin Croaker	<i>Umbrina roncadora</i>
BOGYL	Yellowfin Goby	<i>Acanthogobius flavimanus</i>
SOLYF	Yellowfin Sole	<i>Limanda aspera</i>
TNAYF	Yellowfin Tuna	<i>Thunnus albacares</i>
RFYMN	Yellowmouth Rockfish	<i>Sebastes reedi</i>
YELTL	Yellowtail	<i>Seriola lalandi</i>
RFYTL	Yellowtail Rockfish	<i>Sebastes flavidus</i>
PERZB	Zebraperch	<i>Hermosilla azurea</i>

## OTHER CODES

### PR Non-Fishing Codes

Target	Activity
NFCOM	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

Island	Code
Coronado	1
San Clemente	2
Catalina	3
Santa Barbara	4
San Nicolas	5
Anacapa	6
Santa Cruz	7
Santa Rosa	8
San Miguel	9
Farallon	F

### CRFS Priority Species

Highest Priority:			
Ad-clipped salmon (both Chinook and Coho), length only		Pacific Halibut	
Higher Priority: Species of Concern (in no particular order)			
Yelloweye, <u>Cowcod</u> , <u>Bronzespotted</u> , Quillback, Black, and Copper Rockfishes		Bluefin Tuna	Thresher Shark
High Priority: Species with Harvest Limits (in no particular order)			
Cabezon	California Sheephead	greenlings ( <u>Hexagrammos spp.</u> )	Black-and-Yellow, Canary, Bocaccio, Brown, Calico, China, Gopher, Grass, Kelp, Olive, Treefish, Widow, Yellowtail, and other rockfishes
Lingcod	California Scorpionfish		

**PR1 Port Codes**

District	Cnty	Site	Mode	Port	Site Name	MjPort	SubPort
6	15	301	PR1	<b>CRD</b>	Crescent City Inner Boat Basin Docks	CR	CR
6	15	400	PR1	<b>CRL</b>	Crescent City Harbor Launch Ramp	CR	CR
6	23	102	PR1	<b>TRH</b>	Trinidad Hoist Fields Landing	EU	EU
6	23	103	PR1	<b>FLD</b>	Launch Ramp	EU	EU
6	23	120	PR1	<b>EUR</b>	Eureka Marina Launch Ramp	EU	EU
6	23	307	PR1	<b>TRD</b>	Trinidad Docks (water taxi)	EU	EU
5	23	106	PR1	<b>SHC</b>	Shelter Cove Launch	FB	SH
5	45	100	PR1	<b>FTB</b>	Noyo River Launch Ramp	FB	FB
4	1	100	PR1	<b>BER</b>	Berkeley Marina Launch Ramp	SF	SF
4	41	100	PR1	<b>SAU</b>	Sausalito Clipper Launch Ramp	SF	SF
4	81	100	PR1	<b>PRI</b>	Princeton-Pillar Point Launch Ramp	SF	SF
4	97	100	PR1	<b>BOD</b>	Bodega Westside Launch Ramp	SF	SF
3	87	101	PR1	<b>SCR</b>	Santa Cruz Marina Launch Ramp	MO	SM
3	53	102	PR1	<b>MOC</b>	Coast Guard Jetty Launch Ramp	MO	SM
3	53	104	PR1	<b>MOS</b>	Moss Landing Launch Ramp	MO	SM
3	53	107	PR1	<b>MOH</b>	Monterey Marina Launch Ramp	MO	SM
3	79	100	PR1	<b>MOR</b>	Morro Bay Launch Ramp	MO	MA
3	79	101	PR1	<b>AVI</b>	Avila Boat Sling	MO	MA
2	83	400	PR1	<b>SBA</b>	Santa Barbara Launch Ramp	SB	SB
2	111	103	PR1	<b>VEN</b>	Ventura Launch Ramp	SB	VN
2	111	104	PR1	<b>OXN</b>	Channel Islands Launch Ramp	SB	VN
1	37	10	PR1	<b>MDR</b>	Marina Del Rey Launch Ramp	LA	LA
1	37	105	PR1	<b>DLR</b>	Dave's Launch Ramp	LA	LA
1	37	110	PR1	<b>CLR</b>	Cabrillo Launch Ramp	LA	LA
1	37	201	PR1	<b>SSL</b>	South Shores Launch Ramp	LA	LA

District	Cnty	Site	Mode	Port	Site Name	MjPort	SubPort
1	59	101	PR1	<b>WAR</b>	Dana Point Launch Ramp	LA	OR
1	59	104	PR1	<b>SUN</b>	Sunset Aquatic Launch Ramp	LA	OR
1	59	106	PR1	<b>NEW</b>	Newport Dunes Launch Ramp	LA	OR
1	73	104	PR1	<b>SHL</b>	Shelter Island Launch Ramp	LA	SD
1	73	112	PR1	<b>GLO</b>	Glorietta Launch Ramp	LA	SD
1	73	113	PR1	<b>OCN</b>	Oceanside Launch Ramp	LA	SD
1	73	204	PR1	<b>DBN</b>	Dana Basin Launch Ramp	LA	SD
1	73	205	PR1	<b>SSH</b>	South Shores Launch Ramp	LA	SD

**PC Port Codes**

District	Cnty	Site	Mode	Port	Site Name	MjPort	SubPort
6	15	301	PC	<b>CRC</b>	Inner Boat Basin	CR	CR
6	23	121	PC	<b>EUR</b>	Woodley Isl Marina	EU	EU
6	23	307	PC	<b>TRD</b>	Trinidad Pier	EU	EU
5	23	106	PC	<b>SHC</b>	Shelter Cove North	FB	SH
5	45	400	PC	<b>FTB</b>	Noyo Harbor	FB	FB
4	1	400	PC	<b>BER</b>	Berkeley PC	SF	SF
4	1	401	PC	<b>EME</b>	Emeryville PC	SF	SF
4	13	400	PC	<b>CKT</b>	Crockett PC	SF	SF
4	13	403	PC	<b>SPB</b>	San Pablo PC	SF	SF
4	13	405	PC	<b>RCH</b>	Richmond PC	SF	SF
4	41	400	PC	<b>SAU</b>	Sausalito PC	SF	SF
4	41	402	PC	<b>LMD</b>	Loch Lomond PC	SF	SF
4	75	400	PC	<b>SNF</b>	SF Fisherman's Wharf PC	SF	SF
4	81	400	PC	<b>PRI</b>	Princeton-Pillar Point PC	SF	SF
4	97	400	PC	<b>BOD</b>	Porto Bodega PC	SF	SF
3	53	104	PC	<b>MOS</b>	Moss Landing PC	MO	SM
3	87	101	PC	<b>SCR</b>	Santa Cruz PC	MO	SM

District	Cnty	Site	Mode	Port	Site Name	MjPort	SubPort
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 Channel	SB	SB
2	111	43	PC	CIS	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

**California Saltwater Angling Records as of December 27, 2024 (excludes diving records)**

\* State law presently prohibits the take of giant (black) sea bass, cowcod, and yelloweye rockfish off California, Section 28.10 and 28.55 (b), Title 14, California Administrative code.

<b>Species Common Name</b>	<b>Species Scientific Name</b>	<b>Weight</b>	<b>County</b>	<b>Date</b>
Barracuda, California	<i>Sphyræna argentea</i>	15 lb 15 oz	San Diego	August 24, 1957
Bass, Barred Sand	<i>Paralabrax nebulifer</i>	13 lb 3 oz	Orange	August 29, 1988
Bass, Giant Sea*	<i>Stereolepis gigas</i>	563 lb 8 oz	Ventura	August 20, 1968
Bass, Kelp	<i>Paralabrax clathratus</i>	14 lb 7 oz	Los Angeles	July 30, 1958
Bass, Spotted Sand	<i>Paralabrax maculatofasciatus</i>	6 lb 12 oz	Orange	October 1, 1994
Bonito, Pacific	<i>Sarda chiliensis</i>	21 lb 5 oz	San Diego	October 19, 2003
Cabezon	<i>Scorpaenichthys marmoratus</i>	23 lb 4 oz	Los Angeles	April 20, 1958
Corbina, California	<i>Menticirrhus undulatus</i>	7 lb 1 oz	Orange	May 30, 2005
Croaker, Spotfin	<i>Roncador stearnsii</i>	14 lb 0 oz	Los Angeles	September 24, 1951
Croaker, Yellowfin	<i>Umbrina roncadore</i>	3 lb 14 oz	Los Angeles	October 8, 2000
Dolphinfish	<i>Coryphaena hippurus</i>	66 lb 0 oz	Orange	September 9, 1990
Flounder, Starry	<i>Platichthys stellatus</i>	11 lb 4 oz	San Luis Obispo	August 29, 1993
Greenling, Kelp	<i>Hexagrammos decagrammus</i>	3 lb 4 oz	Monterey	September 17, 2014
Halibut, California	<i>Paralichthys californicus</i>	67 lb 4 oz	Santa Barbara	July 1, 2011
Jacksmelt	<i>Atherinopsis californiensis</i>	1 lb 8 oz	Ventura	June 12, 1998
Lingcod	<i>Ophiodon elongatus</i>	56 lb 0 oz	Del Norte	July 12, 1992

<b>Species Common Name</b>	<b>Species Scientific Name</b>	<b>Weight</b>	<b>County</b>	<b>Date</b>
Mackerel, Jack	<i>Trachurus symmetricus</i>	5 lb 8 oz	Orange	September 1, 1988
Mackerel, Pacific (Chub)	<i>Scomber japonicus</i>	2 lb 8 oz	Los Angeles	November 5, 1995
Marlin, Blue	<i>Makaira nigricans</i>	692 lb 0 oz	Orange	August 18, 1931
Marlin, Striped	<i>Tetrapturus audax</i>	339 lb 0 oz	Los Angeles	July 4, 1985
Opah	<i>Lampris guttatus</i>	163 lb 0 oz	San Luis Obispo	October 8, 1998
Opaleye	<i>Girella nigricans</i>	6 lb 4 oz		May 13, 1956
Perch, Black	<i>Embiotoca jacksoni</i>	2 lb 9 oz	Monterey	February 20, 2011
Perch, Calico	<i>Amphistichus koelzi</i>	2 lbs 0 oz	Monterey	February 7, 2019
Perch, Pile	<i>Rhacochilus vacca</i>	2 lb 7 oz	San Luis Obispo	February 8, 2020
Prickleback, Monkeyface	<i>Cebidichthys violaceus</i>	7 lb 8 oz	San Mateo	February 18, 2019
Ray, Bat	<i>Myliobatis californica</i>	181 lb 0 oz	Orange	July 24, 1978
Rockfish, Black	<i>Sebastes melanops</i>	9 lb 2 oz	San Francisco	September 3, 1988
Rockfish, Blue	<i>Sebastes mystinus</i>	3 lb 14 oz	San Luis Obispo	October 14, 1993
(Rockfish), Bocaccio	<i>Sebastes paucispinis</i>	17 lb 8 oz	Del Norte	October 25, 1987
Rockfish, Bronzespotted*	<i>Sebastes gilli</i>	14 lb 8 oz	Los Angeles	February 22, 1997
Rockfish, Brown	<i>Sebastes auriculatus</i>	7 lb 6 oz	Del Norte	July 23, 2023
Rockfish, Canary*	<i>Sebastes pinniger</i>	9 lb 0 oz	Mendocino	November 17, 2024
Rockfish, China	<i>Sebastes nebulosus</i>	4 lb 1 oz	Del Norte	August 15, 2021
Rockfish, Copper	<i>Sebastes caurinus</i>	8 lb 5 oz	Monterey	August 18, 1985
Rockfish, Cowcod*	<i>Sebastes levis</i>	21 lb 14 oz	Ventura	August 10, 1998

<b>Species Common Name</b>	<b>Species Scientific Name</b>	<b>Weight</b>	<b>County</b>	<b>Date</b>
Rockfish, Grass	<i>Sebastes rastrelliger</i>	6 lb 7 oz	San Mateo	June 30, 2012
Rockfish, Greenspotted	<i>Sebastes chlorostictus</i>	2 lb 10 oz	Santa Cruz	August 22, 2021
Rockfish, Olive	<i>Sebastes serranoides</i>	7 lb 4 oz	San Luis Obispo	October 12, 2014
Rockfish, Treefish	<i>Sebastes serriceps</i>	4 lb 3 oz	Los Angeles	August 9, 2003
Rockfish, Vermilion	<i>Sebastes miniatus</i>	14 lb 9 oz	San Luis Obispo	July 31, 1996
Rockfish, Yelloweye*	<i>Sebastes ruberrimus</i>	18 lb 3 oz	San Luis Obispo	April 15, 1994
Rockfish, Yellowtail	<i>Sebastes flavidus</i>	6 lb 8 oz	San Luis Obispo	July 18, 2020
Salmon, Chinook (King)	<i>Oncorhynchus tshawytscha</i>	65 lb 4 oz	Del Norte	August 21, 2002
Sargo	<i>Anisotremus davidsonii</i>	5 lb 15 oz	Los Angeles	July 7, 2023
Scorpionfish, California	<i>Scorpaena guttata</i>	3 lb 10 oz	San Diego	May 3, 2024
Seabass, White	<i>Atractoscion nobilis</i>	79 lb 0 oz	Santa Cruz	October 14, 2011
Seaperch, Rubberlip	<i>Rhacochilus toxotes</i>	5 lb 0 oz	Monterey	June 18, 2009
Seaperch, Striped	<i>Embiotoca lateralis</i>	2 lb 11 oz	Humboldt	April 26, 2019
Shark, Blue	<i>Prionace glauca</i>	258 lb 8 oz	Santa Barbara	August 29, 2008
Shark, Leopard	<i>Triakis semifasciata</i>	47 lb 1 oz	Los Angeles	July 18, 2007
Shark, Sevengill	<i>Notorynchus cepedianus</i>	276 lb 0 oz	Humboldt	October 17, 1996
Shark, Shortfin Mako	<i>Isurus oxyrinchus</i>	1,098 lb 12 oz	Ventura	July 24, 2010
Shark, Soupfin (Tope)	<i>Galeorhinus galeus</i>	38 lbs 4 oz	San Diego	October 29, 2017
Shark, Thresher	<i>Alopias vulpinus</i>	575 lb 0 oz	San Diego	May 26, 2007

Species Common Name	Species Scientific Name	Weight	County	Date
Sheephead, California	<i>Semicossyphus pulcher</i>	30 lb 8 oz	Orange	August 29, 2009
Sole, Fantail	<i>Xystreurus liolepis</i>	8 lb 8 oz	Los Angeles	June 6, 2001
Squid, Humboldt	<i>Dosidicus gigas</i>	OPEN – Minimum Size Requirement: 40 pounds		
Surfperch, Barred	<i>Amphistichus argenteus</i>	4 lb 2 oz	San Luis Obispo	November 8, 1995
Surfperch, Barred	<i>Amphistichus argenteus</i>	4 lb 2 oz	Ventura	March 30, 1996
Surfperch, Calico	<i>Amphistichus koelzi</i>	2 lb 4 oz	Santa Cruz	April, 26, 2023
Surfperch, Rainbow	<i>Hypsurus caryi</i>	OPEN – Minimum Size Requirement: 1 pound		
Surfperch, Redtail	<i>Amphistichus rhodoterus</i>	3 lb 7 oz	Del Norte	April 23, 2012
Surfperch, Walleye	<i>Hyperprosopon argenteum</i>	OPEN – Minimum Size Requirement: 1 pound		
Swordfish	<i>Xiphias gladius</i>	663 lb 12 oz	San Diego	October 20, 2024
Tuna, Albacore	<i>Thunnus alalunga</i>	90 lb 0 oz	Santa Cruz	October 21, 1997
Tuna, Bigeye	<i>Thunnus obesus</i>	240 lb 0 oz	San Diego	August 1, 1987
Tuna, Bluefin	<i>Thunnus orientalis</i>	395 lb 6 oz	Los Angeles	September 11, 2021
Tuna, Skipjack	<i>Katsuwonus pelamis</i>	26 lb 0 oz	San Diego	August 28, 1970
Tuna, Yellowfin	<i>Thunnus albacares</i>	265 lb 0 oz	San Diego	September 26, 2017
Whitefish, Ocean	<i>Caulolatilus princeps</i>	13 lb 12 oz	San Diego	April 23, 1988
Whitefish, Ocean	<i>Caulolatilus princeps</i>	13 lb 12 oz	Ventura	July 3, 2010

Species Common Name	Species Scientific Name	Weight	County	Date
Yellowtail	<i>Seriola lalandi</i>	63 lb 1 oz	Santa Barbara	June 18, 2000

### California Saltwater Diving Records as of December 27, 2024

\* State law presently prohibits the take of giant (black) sea bass, cowcod, and yelloweye rockfish off California, Section 28.10 and 28.55 (b), Title 14, California Administrative code.

Species Common Name	Species Scientific Name	Weight/Length	County	Date
Abalone, Flat*	<i>Haliotis walallensis</i>	6 7/8 in	Sonoma	June 20, 1994
Abalone, Green*	<i>Haliotis fulgens</i>	8 1/4 in	Los Angeles	August 5, 1986
Abalone, Red**	<i>Haliotis rufescens</i>	12 1/3 in	Humboldt	September 5, 1993
Barracuda, California	<i>Sphyraena argentea</i>	14 lb 7 oz	Los Angeles	August 1, 1957
Bass, Barred Sand	<i>Paralabrax nebulifer</i>	12 lb 12 oz	Los Angeles	August 9, 2004
Bass, Giant Sea*	<i>Stereolepis gigas</i>	545 lb 0 oz	Santa Barbara	September 1, 1968
Bass, Kelp	<i>Paralabrax clathratus</i>	12 lb 6 oz	Orange	October 30, 2012
Bonito, Pacific	<i>Sarda chiliensis</i>	10 lb 4 oz	Los Angeles	July 1, 1967
Cabezon	<i>Scorpaenichthys marmoratus</i>	18 lb 6 oz	Sonoma	May 1, 1984
Clam, Pismo	<i>Tivela stultorum</i>	6 ¾ in (tie)	San Diego	June 13, 2010
Corbina, California	<i>Menticirrhus undulatus</i>	5 lb 15 oz	Orange	July 1, 1982
Croaker, Spotfin	<i>Roncador stearnsii</i>	8 lb 12 oz	Orange	January 1, 1968
Dolphinfish	<i>Coryphaena hippurus</i>	28 lb 0 oz	San Diego	September 8, 2019
Flounder, Starry	<i>Platichthys stellatus</i>	OPEN – Minimum Size Requirement:		

Species Common Name	Species Scientific Name	Weight/Length	County	Date
		8 pounds		
Halibut, California	<i>Paralichthys californicus</i>	72 lb 8 oz	Santa Barbara	August 1, 1982
Lingcod	<i>Ophiodon elongatus</i>	37 lb 0 oz	Mendocino	August 2, 2012
Lobster, Spiny	<i>Panulirus interruptus</i>	16 lb 1 oz	Los Angeles	February 1968
Opaleye	<i>Girella nigricans</i>	13 lb 7 oz	Orange	October 18, 1964
Perch, Black	<i>Embiotoca jacksoni</i>	2 lb 10oz	Monterey	January 18, 2020
Perch, Pile	<i>Rhacochilus vacca</i>	2 lb 8 oz	Monterey	May 7, 2011
Prickleback, Monkeyface	<i>Cebidichthys violaceus</i>	7 lb 5 oz	Monterey	September 7, 2013
Rockfish, Black	<i>Sebastes melanops</i>	8 lb 3 oz	Sonoma	November 19, 2008
Rockfish, Blue	<i>Sebastes mystinus</i>	4 lb 7 oz	Humboldt	August 30, 2017
Rockfish, Bocaccio	<i>Sebastes paucispinis</i>	4 lb 9 oz	Monterey	November 19, 2017
Rockfish, Blue	<i>Sebastes mystinus</i>	5lb 4.35 oz	Humboldt	November 1, 2023
Rockfish, Canary	<i>Sebastes pinniger</i>	3lb 4 oz	Medocino	August 12, 2018
Rockfish, China	<i>Sebastes nebulosus</i>	3 lb 2oz	Sonoma	April 1, 2021
Rockfish, Copper	<i>Sebastes caurinus</i>	9 lb 5 oz	Mendocino	October 14, 1972
Rockfish, Grass	<i>Sebastes rastrelliger</i>	6 lb 7 oz	Monterey	March 11, 2018
Rockfish, Olive	<i>Sebastes serranoides</i>	6 lb 1 oz	Monterey	January 2, 2012
Rockfish, Vermillion	<i>Sebastes miniatus</i>	10 lb 10 oz	Sonoma	May 5, 2018
Sargo	<i>Anisotremus davidsonii</i>	3 lb 8 oz	Los Angeles	December 29, 2019

<b>Species Common Name</b>	<b>Species Scientific Name</b>	<b>Weight/ Length</b>	<b>County</b>	<b>Date</b>
Scallop, Rock	<i>Crassedoma giganteum</i>	11 1/8 in	Los Angeles	June 1, 1972
Seabass, White	<i>Atractoscion nobilis</i>	94 lb 6 oz	Santa Barbara	June 20, 2023
Seaperch, Rubberlip	<i>Rhacochilus toxotes</i>	4 lb 12 oz	Monterey	June 8, 2024
Seaperch, Striped	<i>Embiotoca lateralis</i>	2 lb 11 oz	Humboldt	April 26, 2019
Shark, Blue	<i>Prionace glauca</i>	231 lb 0 oz	Santa Barbara	August 1, 1974
Shark, Shortfin Mako	<i>Isurus oxyrinchus</i>	484 lb 4 oz	San Diego	June 16, 2017
Sheephead, California	<i>Semicossyphus pulcher</i>	40 lb 7 oz	Santa Barbara	August 9, 1992
Tuna, Albacore	<i>Thunnus alalunga</i>	30 lb 11 oz	Monterey	October 14, 1998
Tuna, Bluefin	<i>Thunnus thynnus</i>	294 lb 6 oz	San Diego	June 22, 2019
Tuna, Yellowfin	<i>Thunnus albacares</i>	66 lb 7 oz		August 27, 2016
Yellowtail	<i>Seriola lalandi</i>	65 lb 0 oz	San Diego	October 11, 1988

\* State law presently prohibits the take of Giant (black) Sea Bass, Cowcod and Yelloweye Rockfish, statewide. Abalone may not be taken south of the mouth of San Francisco Bay.

\*\* Restrictions apply to the take of red abalone (Section 28.10, 28.55 [b], 29.05, 29.15 of Title 14, California Administrative Code), which may only be taken north of the mouth of San Francisco Bay.

## 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
FBB	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

## Alpha Foreign Country Codes

<b>Code</b>	<b>Foreign Country</b>
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
FEQ	Egypt
FSV	El Salvador
FGQ	Equatorial Guinea
FER	Eritrea
FEE	Estonia
FET	Ethiopia
FFK	Falkland Islands (Malvina)
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

## Alpha Foreign Country Codes

Code	Foreign Country
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

## Alpha Foreign Country Codes

<b>Code</b>	<b>Foreign Country</b>
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

## Alpha Foreign Country Codes

<b>Code</b>	<b>Foreign Country</b>
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

## Alpha Foreign Country Codes

Code	Foreign Country
FYE	Yemen
FYU	Yugoslavia
FZM	Zambia
FZW	Zimbabwe

## Angler Slang Names

Common Name	Scientific Name	Slang Name(s)
Albacore	<i>Thunnus alalunga</i>	German, abrego, albie, longfin, pigfish, football, longfin tuna
Bank Rockfish	<i>Sebastes rufus</i>	Florida red, bank perch, red widow, Louisiana ridge runner
Barred Sand Bass	<i>Paralabrax nebulifer</i>	California rock bass, California sandbass, ground bass, grumpy, rock bass, sandy, sand perch, turd roller
Barred Surfperch	<i>Amphistichus argenteus</i>	barred perch, sand perch
Bigeye Tuna	<i>Thunnus obesus</i>	albacore, bigeye, gorilla
Black and Yellow Rockfish	<i>Sebastes chrysomelas</i>	cefalutano, China cod, gopher, gopher cod, zurndicky
Black Croaker	<i>Cheilotrema saturnum</i>	Chinese croaker, China croaker, black bass, black perch
Black Rockfish	<i>Sebastes melanops</i>	black bass, black snapper, black rock cod, black sea bass
Black Surfperch	<i>Embiotoca jacksoni</i>	bay perch, black perch, black seaperch, buttermouth perch, porgy, pogie, buttermouth
Blackgill Rockfish	<i>Sebastes melanostomus</i>	blackmouth rockfish, deepsea rockfish
Blacksmith	<i>Chromis punctipinnis</i>	black garibaldi, black perch, kelp perch, blacksmith perch, rock perch
Blue Rockfish	<i>Sebastes mystinus</i>	blue bass, blue snapper, blue rock cod, blue fish, priestfish
Blue Shark	<i>Prionace glauca</i>	blue dog, blue pointer, blue whaler, great blue shark
Bluefin Tuna	<i>Thunnus orientalis</i>	football, great albacore, oriental tuna, shortfin tuna

Common Name	Scientific Name	Slang Name(s)
Bocaccio	<i>Sebastes paucispinis</i>	andygumps, wormbag, sewer trout, salmon grouper, grouper, jack grouper, red snapper, Pacific red snapper, rock perch, sewer salmon, longjaw, salmon rockfish
Bronzespotted Rockfish	<i>Sebastes gilli</i>	Arkansas red, warthog
Brown Irish Lord	<i>Hemilepidotus spinosus</i>	bullhead
Brown Rockfish	<i>Sebastes auriculatus</i>	bolina, brown bass, brown bomber, chocolate bass
Brown Smoothhound	<i>Mustelus henlei</i>	sand shark, smoothhound shark
Cabezon	<i>Scorpaenichthys marmoratus</i>	biggyhead, bull cod, cab, cabby, cab driver, giant sculpin, scaleless sculpin, sculpin, scorpion
Calico Surfperch	<i>Amphistichus koelzi</i>	California porgie, porgie, humpback perch
California Batray	<i>Myliobatis californica</i>	bat sting ray, batfish, eagle ray, mud marlin, sting ray
California Corbina	<i>Menticirrhus undulatus</i>	California king croaker, whiting, sucker, surf fish
California Halibut	<i>Paralichthys californicus</i>	California flounder, Monterey halibut, alabato, barn door, bastard halibut, door mat, flatty, hali, fly swatter, Southern halibut
California Lizardfish	<i>Synodus lucioceps</i>	barracuda, candlefish, gar, lizardfish, snakefish
California Scorpionfish	<i>Scorpaena guttata</i>	rattlesnake, sculpin, scorpion
California Sheephead	<i>Semicossyphus pulcher</i>	California redfish, billy goat, goat, humpy, redfish, sheepee, sheephead, sheepshead
Canary Rockfish	<i>Sebastes pinniger</i>	canary, fantail, orange rockfish, red rockfish, red snapper, swallowtail
Chameleon Rockfish	<i>Sebastes phillipsi</i>	orange rockfish
Chilipepper	<i>Sebastes goodei</i>	chili, johnnies, johnny cod, red snapper
China Rockfish	<i>Sebastes nebulosus</i>	black and yellow rockcod, cefalutano, China cod, Chinafish, Chinese rockfish, garrupa, yellowspotted rockfish, yellowstripe rockfish

Common Name	Scientific Name	Slang Name(s)
Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	Columbia river salmon, Sacramento river salmon, black jaw, black mouth, king salmon, spring salmon, tshawytscha, tyee
Coho Salmon	<i>Oncorhynchus kisutch</i>	Pacific salmon, silver salmon, white salmon, blueback, blueback salmon, kisutch
Common Thresher Shark	<i>Alopias vulpinus</i>	blue thresher, fox shark, longtail shark, sea fox, thresher, whiptail shark, swingtail shark, thintail shark
Copper Rockfish	<i>Sebastes caurinus</i>	bariaga branca, chucklehead, neverdies, fighting bob, garrupa, whitebelly, white gopher
Cowcod	<i>Sebastes levis</i>	calf, cow, cow rockfish, cowfish, red snapper, rooster, roosterfish
Darkblotched Rockfish	<i>Sebastes crameri</i>	blackblotched rockfish, blotchie, blackmouth rockfish
Dolphinfish	<i>Coryphaena hippurus</i>	common dolphinfish, dolphin, dorado, mahi mahi
Drum Family	<i>Sciaenidae</i>	croakers, drums, roncadores, ronkies
Eulachon	<i>Thaleichthys pacificus</i>	candlefish, hooligan
Flag Rockfish	<i>Sebastes rubrivinctus</i>	barber pole, convictfish, hollywood, spanish flag, tiger
Garibaldi	<i>Hypsypops rubicundus</i>	goldfish
Giant Kelpfish	<i>Heterostichus rostratus</i>	butterfish, eel, iodine fish, kelpfish, kelp blenny
Giant Sea Bass	<i>Stereolepis gigas</i>	California black sea bass, black seabass, jewfish, freight train
Gopher Rockfish	<i>Sebastes carnatus</i>	butter bass, butterball, gopher, gopher cod, rock bass, garrupa
Grass Rockfish	<i>Sebastes rastrelliger</i>	garrupa, grass bass, grassie, pepper bass, rock bass, green bomber, kelp bass
Gray Smoothhound	<i>Mustelus californicus</i>	sand shark, smoothhound shark, dogfish
Green Sturgeon	<i>Acipenser medirostris</i>	golden sturgeon
Greenblotched Rockfish	<i>Sebastes rosenblatti</i>	bosco, chucklehead, santa maria, starry eyes, warthog, bolina

Common Name	Scientific Name	Slang Name(s)
Greenspotted Rockfish	<i>Sebastes chlorostictus</i>	bosco, chucklehead, santa maria, starry eyes, warthog, bolina
Greenstriped Rockfish	<i>Sebastes elongatus</i>	belinda bass, chilipepper, cucumber, striped rockfish, watermelon, reina
Halfbanded Rockfish	<i>Sebastes semicinctus</i>	inspector
Halfmoon	<i>Medialuna californiensis</i>	California halfmoon, blue perch, Catalina blue perch, blue bass
Honeycomb Rockfish	<i>Sebastes umbrosus</i>	dusky rockfish, speckled rockfish
Horn Shark	<i>Heterodontus francisci</i>	California horn shark, Port Jackson shark, bullhead shark, horned shark
Jack Mackerel	<i>Trachurus symmetricus</i>	Spaniard, Spanish mackerel
Kelp Bass	<i>Paralabrax clathratus</i>	bull bass, cabrilla, calico, calico bass, checkerboard, kelp salmon, rock bass
Kelp Greenling	<i>Hexagrammos decagrammus</i>	seatrout, rock trout, rockfish, green ling, kelp trout, speckled sea trout, spotted rock trout
Kelp Rockfish	<i>Sebastes atrovirens</i>	dumb bass, sugar bass, garrupa, oogly-googly, grass bass, green rockfish, kelp rock cod
Leopard Shark	<i>Triakis semifasciata</i>	cat shark, tiger shark
Lingcod	<i>Ophiodon elongatus</i>	blue cod, ling, linger, lingasaurus, cultus cod, greenlinger, slinky linky, gator, dragon fish
Longspine Thornyhead	<i>Sebastolobus altivelis</i>	anglefin rockfish, bonehead, channel rockfish, hardhead, idiot, idiot fish, spinycheeked rockfish, thornhead
Mexican Rockfish	<i>Sebastes macdonaldi</i>	Arkansas black, Arkansas red, coral cod, coral red, salmon grouper
Monkeyface Prickleback	<i>Cebidichthys violaceus</i>	California monkeyface eel, monkeyface eel, giant monkeyface eel, monkeyface blenny
Moray Eel	<i>Gymnothorax mordax</i>	conger eel, moray
Night Smelt	<i>Spirinchus starksi</i>	nightfish, sand smelt, whitebait
Northern Anchovy	<i>Engraulis mordax</i>	California anchoveta, California anchovy, Pacific anchovy, pinhead, chovy

Common Name	Scientific Name	Slang Name(s)
Ocean Sunfish	<i>Mola Mola</i>	mola mola, sunfish, mola
Ocean Whitefish	<i>Caulolatilus princeps</i>	ocean tilefish, poor man's yellowtail, bottom dorado, whitefish
Olive Rockfish	<i>Sebastes serranoides</i>	bass rockfish, jonathan, johnny bass, kelp bass, sugar bass, yellowtail rockfish
Opah	<i>Lampris regius</i>	Jerusalem haddock, moonfish
Opaleye	<i>Girella nigricans</i>	California opaleye, Catalina perch, blue bass, blue-eye, blue-eyed perch, green perch, jack benny, opaleye perch
Pacific Angel Shark	<i>Squantina californica</i>	California angel shark, monkfish, northern angel shark, squat, squato
Pacific Barracuda	<i>Sphyræna argenta</i>	alligator gar, barracuda, barry, cuda, log, pencil, scooter, skinny, snake, stovepipe, Pacific barracuda
Pacific Bonito	<i>Sarda chilensis</i>	California bonito, bone, bonehead, boney, boner, little tuna, micronito, striped tuna, bonita
Pacific Butterfish	<i>Peprilus simillimus</i>	butterfish, pompano
Pacific Hake	<i>Merluccius productus</i>	California hake, Pacific whiting, haddock, oatmeal fish, whiting, silver hake
Pacific Halibut	<i>Hippoglossus stenolepis</i>	barn door, chicken, flatty
Pacific Herring	<i>Clupea pallasii</i>	Easter herring, California herring, sardine
Pacific Mackerel	<i>Scomber japonicus</i>	American mackerel, mac, greenback mackerel, striped mackerel, tiny tuna, chub mackerel
Pacific Ocean Perch	<i>Sebastes alutus</i>	longjaw rockfish, redfish, rosefish, pop
Pacific Sanddab	<i>Citharichthys sordidus</i>	Catalina sanddab sand dab, soft flounder, sole
Pacific Sardine	<i>Sardinops sagax</i>	fire crackers, dines, pilchards
Pacific Staghorn Sculpin	<i>Leptocottus armatus</i>	smooth cabezon, smooth sculpin, bullhead
Petrale Sole	<i>Eopsetta jordani</i>	California sole, Jordan's flounder, brill, cape sole

Common Name	Scientific Name	Slang Name(s)
Pile Surfperch	<i>Rhacochilus vacca</i>	dusky perch, forktail perch, porgy, splittail perch, silver perch, white perch
Pink Rockfish	<i>Sebastes eos</i>	bosco, chucklehead, santa maria, starry eyes
Plainfin Midshipman	<i>Porichthys notatus</i>	bullhead, grunter, midshipman, toadfish, singing fish
Pygmy Rockfish	<i>Sebastes wilsoni</i>	Wilson's rockfish, dwarf rockfish, slender rockfish
Queenfish	<i>Seriphus politus</i>	brown bait, herring, herring croaker, kingfish, sea trout, shiner
Quillback Rockfish	<i>Sebastes maliger</i>	frecklebelly, gopher, orangespotted rockfish, speckled rockfish, yellowbacked rockfish
Rainbow Surfperch	<i>Hypsurus caryi</i>	blue perch, rainbow perch, striped seaperch, striped surf fish
Rainbow Trout	<i>Salmo gairdnerii</i>	steelhead trout
Red Irish Lord	<i>Hemilepidotus hemilepidotus</i>	bullhead, red sculpin, spotted Irish lord
Redbanded Rockfish	<i>Sebastes babcocki</i>	bandit, barber pole, convict, flag, hollywood, red bandit
Redtail Surfperch	<i>Amphistichus rhodoterus</i>	Oregon porgie, porgy, redtail seaperch, rosy surf fish
Rock Greenling	<i>Hexagrammos lagocephalus</i>	Pacific red rock trout, fringed greenling, sea trout, kelp cod, kelp trout, red sea trout, rock trout, spotted rock trout
Rock Sole	<i>Lepidopsetta bilineata</i>	broadfin sole, double-lined flounder, rock flounder, roughback sole, gravel sole, two-lined flounder
Rock Wrasse	<i>Halichoeres semicinctus</i>	California wrasse, iodine fish, parrot fish, wrasse
Rockfish Genus	<i>Sebastes spp.</i>	crotch cricket (small), snapper, rock cod
Rosethorn Rockfish	<i>Sebastes helvomaculatus</i>	deepwater scacciatale, orange-red rockfish, rosy
Rosy Rockfish	<i>Sebastes rosaceus</i>	avocado rockfish, corsair, rinky dink, rosy, strawberry
Rougheye Rockfish	<i>Sebastes aleutianus</i>	blackthroat rockfish, buoy keg

<b>Common Name</b>	<b>Scientific Name</b>	<b>Slang Name(s)</b>
Rubberlip Seaperch	<i>Rhacochilus toxotes</i>	alfone, bigmouth surf fish, buttermouth, liverlip, porgy
Sablefish	<i>Anoplopoma fimbria</i>	black candlefish, blackcod, coal cod, coal fish, deep sea trout, sable
Salema	<i>Xenistius californiensis</i>	California salema, striped bass, bigeye bass
Sand Sole	<i>Psettichthys melanostictus</i>	flounder, fringe sole, sand flounder, spotted flounder
Sargo	<i>Anisotremus davidsoni</i>	California sargo, grunt, China croaker, black croaker, perch
Señorita	<i>Oxyjulis californica</i>	butterfish, iodine fish, kelp wrasse, kelpfish
Sevengill Shark	<i>Notorynchus cepedianus</i>	bluntnose sevengill shark, broadnose sevengill shark, broadsnouted shark, cow shark, spotted cow shark
Sharpchin Rockfish	<i>Sebastes zacentrus</i>	bigeye rockfish
Shiner Surfperch	<i>Cymatogaster aggregata</i>	bay perch, perch, shiner, seven eleven perch, shiner perch, shiner seaperch
Shortbelly Rockfish	<i>Sebastes jordani</i>	slender rockfish
Shortfin mako Shark	<i>Isurus oxyrinchus</i>	pacific mako, porbeagle, salmon shark, mackerel shark
Shortraker Rockfish	<i>Sebastes borealis</i>	blackthroated rockfish, buoy keg, red snapper
Shortspine Thornyhead	<i>Sebastolobus alascanus</i>	bonehead, channel rockfish, hardhead, idiot, idiotfish, thornhead, scorpion, spinycheeked rockfish
Shovelnose Guitarfish	<i>Rhinobatos productus</i>	guitarfish, sand shark, shovelnose shark
Silver Surfperch	<i>Hyperprosopon ellipticum</i>	porgy, shiner, silver perch
Silvergray Rockfish	<i>Sebastes brevispinis</i>	greenie, longjaw, rock grouper, rock salmon
Sixgill Shark	<i>Hexanchus griseus</i>	bluntnose sixgill shark, bulldog, bull shark, cow shark, grey shark, sixgill cow shark, mud shark
Skipjack	<i>Katsuwonus pelamis</i>	arctic bonito, lesser tuna, skippy, striped tuna
Soupfin Shark	<i>Galeorhinus zyopterus</i>	oil shark, tope, tope shark, soupfin

<b>Common Name</b>	<b>Scientific Name</b>	<b>Slang Name(s)</b>
Speckled Rockfish	<i>Sebastes ovalis</i>	belinda cod, bank perch, cinnamon, widow
Speckled Sanddab	<i>Citharichthys stigmaeus</i>	Catalina sanddab, sanddab, soft flounder
Spiny Dogfish	<i>Squalus acanthias</i>	California dogfish, dog shark, horned shark, piked dogfish, sand shark, spikey jack, pinback, pinback shark
Splitnose Rockfish	<i>Sebastes diploproa</i>	banjo, channel cod, red rock cod, redfish, splitlips
Spotfin Croaker	<i>Roncador stearnsi</i>	black croaker, roncador, spotfin drum, golden croaker
Spotted Sand Bass	<i>Paralabrax maculatofasciatus</i>	bay bass, spotted bay bass, spotted bass, spotty, cabrilla
Squarespot Rockfish	<i>Sebastes hopkinsi</i>	belinda bass, smallmouth rockfish, spotted rockfish
Starry Flounder	<i>Platichthys stellatus</i>	California flounder, diamond flounder, emery flounder, grindstone, roughjacket, sand paper flounder, swamp flounder
Starry Rockfish	<i>Sebastes constellatus</i>	spotted corsair, spotted rockfish, starry eyes, santa maria, whitespotted rockfish, red snapper
Striped Bass	<i>Morone saxatilis</i>	greenhead, rockfish, rock bass, striper
Striped Marlin	<i>Tetrapturus audax</i>	marlin, Pacific marlin, spearfish, spikefish, striper
Striped Seaperch	<i>Embiotoca lateralis</i>	blue perch, rainbow perch, pogey, rainbow seaperch
Stripetail Rockfish	<i>Sebastes saxicola</i>	big-eye rockfish, popeye rockfish,
Surfsmelt	<i>Hypomesus pretiosus</i>	Pacific surf smelt, surf fish, day smelt, day fish, silver smelt
Swell Shark	<i>Cephaloscyllium ventriosum</i>	California swell shark, balloon shark, puffer shark
Swordfish	<i>Xiphus gladius</i>	billfish, broadbill, broadbill swordfish
Swordspine Rockfish	<i>Sebastes ensifer</i>	flyfish, hanky panky
Thornback	<i>Platyrhinoidis triseriata</i>	California thornback, banjo shark, round skate
Tiger Rockfish	<i>Sebastes nigrocinctus</i>	barred rockfish, blackbanded, candystripe

Common Name	Scientific Name	Slang Name(s)
Tomcod	<i>Microgadus proximus</i>	California tomcod, picia
Topsmelt	<i>Atherinops affinis</i>	San Francisco topsmelt, bay smelt, capron, panzarotti, rainbow smelt
Treefish	<i>Sebastes serriceps</i>	barber pole, convict bass, garrupa, lipstick bass, lipstick fish
Vermilion Rockfish	<i>Sebastes miniatus</i>	borracho, red rock cod, red snapper, Pacific red snapper, red
Walleye Surfperch	<i>Hyperprosopon argenteum</i>	China pompano, silver perch, walleye seaperch, walleye surf fish
White Croaker	<i>Genyonemus lineatus</i>	California silver bass, Pasadena trout, herring, kingfish, tomcod, sewer trout, tommy croaker, brown bait,
White Seabass	<i>Atractoscion nobilis</i>	bull tomcod, king croaker, sea trout, weakfish
White Shark	<i>Carcharodon carcharias</i>	blue pointer, great white shark, white pointer, tax man, man in the gray suit
White Sturgeon	<i>Acipenser transmontanus</i>	Columbia sturgeon, Oregon sturgeon, Pacific sturgeon, Sacramento sturgeon
White Surfperch	<i>Phanerodon furcatus</i>	Pacific white perch, forktail perch, splittail perch, white perch
Widow Rockfish	<i>Sebastes entomelas</i>	beccafico, belind bass, brown bomber, brownie, cinnamon, red snapper, widowfish
Wolf Eel	<i>Anarrhichthys ocellatus</i>	moray eel
Yelloweye Rockfish	<i>Sebastes ruberrimus</i>	cowfish, goldeneye, rasphead, red snapper, red rock cod, turkey red
Yellowfin Croaker	<i>Umbrina roncadore</i>	Catalina croaker, golden croaker, yellowfined roncadore, yellowtailed croaker
Yellowfin Tuna	<i>Thunnus albacares</i>	Pacific yellowfin, allison tuna, autumn albacore
Yellowtail	<i>Seriola lalandi</i>	California yellowtail, ahi, amberjack, kingfish, forktail, mossback, yellowtail tuna, yellow jack
Yellowtail Rockfish	<i>Sebastes flavidus</i>	cherne, green snapper, johnny bass, jonathan, red snapper
Zebra Perch	<i>Hermosilla azurea</i>	convict fish, perch

**045206 → Van Damme State Park (D5)**

**045400 → CPFV Dock (D5)**

**045104 → South Harbor Boat Launch (D5)**

**023121 → Humboldt CPFV Dock (D6)**

**045102 → Albion River Campground (D5)**

**045103 → Point Arena Pier (D5)**

**SNH → South Noyo Harbor (D5)**

## GLOSSARY

TERM	DEFINITION
<b>Ad Clip</b>	A salmonid with its adipose fin missing, for salmon this signifies the fish has a coded-wire tag (CWT) inserted in its head.
<b>Adipose fin (Ad-fin)</b>	A fleshy, dorsal fin without rays, located toward the caudal fin. Found most notably in Salmonids.
<b>AFS</b>	American Fisheries Society – the oldest and largest professional society for fisheries scientists in the world.
<b>ALDS</b>	The Automated License Data System (ALDS) is CDFW's enterprise customer licensing system. All sport-fishing, hunting and special permits sales are housed in this database. It is a multi-user server where enforcement, fish and wildlife managers and point of sales can be automatically linked to the most up to date license sales data.
<b>Anaphylactic shock (anaphylaxis)</b>	Hyper-immune response to foreign proteins or drugs producing excessive histamine resulting in swelling, dilated blood vessels and lowered blood pressure. If the condition is left untreated anaphylactic shock could occur. Typical symptoms include hives, swelling and redness of the skin, swelling of the eyelids, tongue and throat. In very few occurrences, anaphylaxis has been documented from proteins introduced by being pierced by the spines on some fish.
<b>Anchor</b>	A type of onboard PC fishing where an anchor is used so that the boat's position relative to the bottom is constant, without having to use the engines to hold position.
<b>Angler License Directory Online Survey (ALDOS)</b>	Replacement for ALDTS (below). Online survey based on angler contact information (ALDS) collected during license purchase. Designed to identify effort data needed to estimate the total number of marine recreational fishing trips taken by license holders.
<b>Angler License Directory Telephone Survey (ALDTS)</b> <b>Angler License Directory Telephone Survey (ALDTS)</b>	Legacy telephone survey based on angler contact information (ALDS) collected during license purchase. Designed to identify effort data needed to estimate the total number of marine recreational fishing trips taken by license holders. Replaced with ALDOS.

<b>TERM</b>	<b>DEFINITION</b>
<b>Angler</b>	A person who is fishing, has wet-gear hours, or is part of a boat limit. Anglers do not need to be successful to be eligible for the survey.
<b>Angler eligibility</b>	Determination of whether a person is eligible (as an angler) to be interviewed by the Sampler.
<b>Angler-reported catch</b>	Catch not verified by the Sampler but reported by the angler. Includes kept-unobserved fish and released fish.
<b>Angler survey</b>	A survey conducted by intercepting anglers upon completion of fishing to obtain catch and fishing effort information (see creel survey).
<b>Area Fished</b>	See Effort Area Fished
<b>Arrival Time</b>	When the Sampler arrives on site (a specific time military coded to the nearest minute).
<b>ASF</b>	Assignment Summary Form, the cover page used to track sampled assignments.
<b>Assignment # (ASSN#)</b>	The number of assignments completed by one Sampler per day, chronologically.
<b>Assignment</b>	An appointment scheduled to sample a specific site or group of sites and issued to a Sampler(s) to collect data.
<b>Assignment disposition</b>	See 'Disposition'
<b>Assignment ID</b>	The specific six-digit code used to identify all sample assignments issued in a given month. Can be issued through the CRFS Draw Program or created by Leads.
<b>Attire</b>	Professional field clothing provided by the department: polo shirt, windbreaker, hat, slickers, boots.
<b>Bank</b>	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.
<b>Beach</b>	An expanse of pebble, sand, or rock along a shore of an ocean that is affected by tidal action.
<b>Beach and Bank Mode (BB)</b>	A shore mode assignment where a cluster of beach and bank sites are surveyed primarily for catch data.
<b>Beach Effort Check (BEC)</b>	A set route of beach sites where Samplers collect effort information but do not intercept or interview anglers. Part of an on-going pilot study.

<b>TERM</b>	<b>DEFINITION</b>
<b>Bias</b>	In statistics, a biased sample is a sample that contains members of a population that are not equally likely to be chosen as other members of the population.
<b>Bio data</b>	Survey biological data on specific fish samples such as lengths, weights, tag wand scan results, sex, and headtags.
<b>Block-box</b>	Referring to Regional CDFW maps that organize marine areas into larger blocks (usually 10x10 minutes) and boxes (also called micro-blocks) within those that are 1x1 minutes. The blocks are three-digits (XXX), boxes are two-digits (XX) and when combined (XXX-XX), pinpoint a specific fishing location.
<b>Boat limits</b>	A boat limit is the maximum number of fish of a species or group of species that may be on a boat at any one time. It is calculated by multiplying the personal possession limit by the number of persons present on the vessel that are legally allowed to retain fish. Fishing by these persons may continue until this limit is reached even if some individual anglers have already reached their personal possession limit.
<b>Boat mode</b>	A mode of fishing from a boat (skiff, vessel, kayak, etc.) Includes PR and PC modes. What makes an angler a boat is a motor and/or paddle.
<b>Boat Type</b>	Boat type value indicates if a boat is sportfishing or non-fishing (i.e., doing something other than recreational fishing).
<b>Bow</b>	The exterior of the forward end of a vessel.
<b>California Code of Regulations (CCR)</b>	The set of administrative rules issued by an agency such as Title 14 issued by the Resources Agency for the management of fish and wildlife resources in the state.
<b>CF Number</b>	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.
<b>California Fish and Game Code</b>	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.

<b>TERM</b>	<b>DEFINITION</b>
<b>California Fish and Game Commission (FGC)</b>	A separate entity from CDFW. Body composed of five Commissioners appointed by the Governor. Responsible for setting seasons, bag limits and other regulations for game animals, sport fishing and some commercial fishing.
<b>CDFW permit #/ CDFW Boat #</b>	CDFW's identification number for CPFVs. This number is usually found on the CPFV's wheelhouse in prominent lettering. Also on the District CPFV list compiled by the District Lead.
<b>California Recreational Fisheries Survey (CRFS)</b>	An integrated state and federally funded finfish sampling program for California marine recreational fisheries. Conducted since January 2004. Replaced the MRFSS.
<b>Canvassing</b>	A preliminary determination of the number and location of anglers at a site and a rough approximation of their trip durations (referencing Shore Modes) to maximize intercept coverage.
<b>Catch</b>	Fish that are caught. Includes kept and released fish.
<b>Catch estimate (see total catch estimate)</b>	An expanded number based on a statistical sample with inference to the population.
<b>Catch Location</b>	For boat modes, where most of the species were caught (using Block-box or Lat-Long coordinates).
<b>Catch per unit of effort (CPUE)</b>	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.
<b>Catch Type</b>	The status of catch during a CRFS interview. There are four catch types: Kept observed, kept unobserved, released alive and released dead. See each catch type defined in this glossary.
<b>Caudal fin</b>	The unpaired fin at the posterior end of the fish body which may be forked.
<b>California Department of Fish and Wildlife (CDFW)</b>	A state natural resource agency department that in part is responsible for marine resource management. Formerly known as the California Department of Fish and Game (CDFG) – name changed as of January 2013.
<b>Census</b>	A complete count of all members of a population.
<b>Central District</b>	CRFS District 3: Santa Cruz, Monterey, and San Luis Obispo counties

<b>TERM</b>	<b>DEFINITION</b>
<b>Channel District</b>	CRFS District 2: Santa Barbara and Ventura counties, plus the Channel Islands.
<b>Charter boat</b>	A CPFV reserved for a specific group; usually means the boat is closed to anyone not in the group.
<b>Cluster</b>	A grouping of sample sites specific to a single mode that are scheduled to be sampled together as one sample unit, usually for geographic and economic efficiency.
<b>Coded wire tag (CWT)</b>	Small pieces of stainless steel wire that are injected into the snouts of juvenile salmon. Each tag is etched with a code that relates to certain life history information about each release group.
<b>Commercial fishing</b>	Fishing in which the harvested catch, either whole or in part, is intended to enter commerce through sale, barter, or trade.
<b>Commercial Passenger Fishing Vessel (CPFV)</b>	Commercially registered vessels which participate in recreational passenger fishing trips.
<b>Complete-trip interview</b>	A CRFS interview for angler(s) who are completed with their fishing trip. They are done fishing. CRFS prefers complete-trip interviews over incomplete-trip interviews (in reference to shore modes).
<b>County code</b>	A three-digit numeric code assigned to each California county.
<b>Courtesy headtag (see headtag also)</b>	A head tag that is prepared and attached to a salmon head which was voluntarily brought to the Sampler by an angler outside of a CRFS sampling assignment.
<b>CPFV</b>	Commercial passenger fishing vessel (party or charter boat).
<b>Complete interview</b>	An interview that has all the necessary information to be used in the CRFS estimates.
<b>Complete-trip interview</b>	An interview obtained from a shore-based angler who has completed their fishing trip.
<b>Creel survey</b>	A survey conducted by intercepting anglers upon completion of fishing to obtain catch and fishing effort information. The term creel refers to an interwoven basket that anglers use to retain fish in (see angler survey).

<b>TERM</b>	<b>DEFINITION</b>
<b>Crew Fish</b>	Fish purposely caught by crew on a CPFV and placed in a crew ('C') bag. Also includes any CPFV-caught fish that are unclaimed, not attributed to an angler, and assigned to crew (the crew will depart the vessel with these fish).
<b>CRFS</b>	California Recreational Fisheries Survey
<b>CWT</b>	See coded wire tag
<b>Deadhead (see also pinhead)</b>	Non-paying angler on a party/charter vessel.
<b>Derby</b>	A fishing tournament that is non-specific for a date and/or location; fishing derbies are usually conducted over a long period of time, sometimes for the entire fishing season. Derby participants are eligible for CRFS interviews. This differs from a jackpot or tournament.
<b>Descending device (DD)</b>	A device used to return rockfish suffering from barotrauma to depth. Includes inverted crate, inverted hook, and commercially available devices. Does NOT include venting or "fizzing" the fish (popping the swim bladder).
<b>DD Usage</b>	If the angler(s) or CPFV used a descending device onboard. Mortality rates decrease and thus catch savings are awarded to fish that are released alive with a proper DD.
<b>Departure time</b>	When the Sampler physically leaves the site (a specific military time coded to the nearest minute).
<b>Depth</b>	For boat modes, this is the average bottom depth in feet where the majority of catch was taken or where the majority of effort occurred if no catch.
<b>Discard</b>	Fish not retained by the angler and returned to the ocean. Fish may be classified as released alive or dead. For PCO sampling, the stop # and lengths of discarded fish are obtained if possible.
<b>Discard fish data</b>	In reference to onboard, information needed for the discarded fish survey: stop #, species, number of fish released, alive/dead, bio data.
<b>Disposition (Assn)</b>	On the ASF: Assignment disposition is either complete (1), reassigned (2), or canceled (6).
<b>Disposition (Site)</b>	On the ASF: Site disposition is either complete (1), roving (7), pressure check (0), low effort (4), or other (5).

<b>TERM</b>	<b>DEFINITION</b>
<b>District</b>	The six geographical areas the CRFS divides California into for survey estimation purposes. District boundaries tend to follow certain county lines and/or Management Areas.
<b>Divers</b>	May be consumptive and can be interviewed in shore mode.
<b>Dock</b>	A floating platform with land access used primarily for boat moorage, loading, or fishing.
<b>Dockside sampling</b>	Sampling of CPFVs at their berth or slip when they return from their fishing trip.
<b>Drift</b>	A type of onboard PC fishing where the CPFV shuts down engines or takes them out of gear, so that the boat drifts with the prevailing currents or winds.
<b>Duration</b>	Length of fishing trip. For PC mode specifics, see PC Duration.
<b>Effort</b>	A unit of measure of the level of fishing activity. This could be number of boats, anglers, or trips. Also called fishing pressure.
<b>Effort Area Fished</b>	Where the anglers were fishing for a majority of their trip, by target, in the ocean: Bay, Open Ocean, Nearshore, Mexico, or Islands.
<b>Eligible Angler</b>	<p>A recreational angler who meets CRFS interview criteria:</p> <ul style="list-style-type: none"> <li>· Boat Mode: An active angler who leaves the boat with fish or intends to leave the boat with fish</li> <li>· MM: At least 50% finished with their MM mode fishing trip</li> <li>· BB: Fished at least 60 minutes in BB mode (incomplete-trip interview)</li> <li>· Anglers who do not meet these criteria are considered ineligible and should not be interviewed</li> </ul> <p>Invertebrate-only anglers are ineligible in shore modes.</p>
<b>Essential fish habitat (EFH)</b>	Those waters and substrate necessary for fish spawning, breeding, feeding or growth to maturity.
<b>Estimate</b>	An expanded number based on a statistical sample with inference to the population.
<b>Estimated discard mortality</b>	An estimate of the proportion of discarded fish that do not survive release.
<b>Examined catch</b>	Catch that the CRFS Sampler was able to see, count and identify. Also called observed catch.

<b>TERM</b>	<b>DEFINITION</b>
<b>Fathom</b>	A unit of measurement used chiefly in measuring marine depth. A fathom equals six feet.
<b>Field check</b>	Also called a Quality Control (QC) check, when a Lead or Fish and Wildlife Technician visits an assignment to evaluate Samplers, provide feedback, or train.
<b>Filletted fish</b>	Landed fish where the meat has been removed from the carcass. Filletted fish may be coded as observed if the Sampler can identify the species by attached skins, otherwise, filletted fish are coded as kept unobserved.
<b>Finfish</b>	Pertains to marine fish with fins for the purposes of CRFS. Does not include invertebrates (crustaceans and mollusks which are designated "shellfish").
<b>Fish and Game Code</b>	In California, this code entails all the statutes passed by the legislature and signed by the Governor (or is approved by the voters as a ballot measure) pertaining to fish and wildlife.
<b>Fish and Game Commission</b>	A separate entity from the Department of Fish and Wildlife that 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 delegates a variety of powers to the Commission, 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.
<b>Fishery management council</b>	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 Fishery Management Council (PFMC).
<b>Fishing AREA</b>	The water area (Offshore, Nearshore, Bay, or Mexico, or California island) where the anglers fished.
<b>Fishing boat</b>	A boat, either privately owned or rented, upon which recreational fishing effort (for finfish OR invertebrates) occurred. Boats that target invertebrates only are considered fishing boats. Commercial boats are non-fishing boats. See nonfishing boat.

<b>TERM</b>	<b>DEFINITION</b>
<b>Fishing mode</b>	The method of access to the fisheries. The major modes are man-made structures (MM), beach and bank (BB), party and charter boat (PC), and private and rental boat (PR).
<b>Fishing pressure</b>	Number of anglers or boats at a fishing site; a gauge of fishing effort.
<b>Fishing type</b>	The type of fishing performed by CPFVs during a stop: Drift, Stationed, Anchored, or Troll.
<b>Flag</b>	See Sample flag.
<b>Flat hoop</b>	A gear type used to take invertebrates, primarily lobster. Refers to a hoop net with collapsible sides that lies flat on the bottom when deployed; when retrieved, the sides of the hoop net are raised which makes escape difficult during retrieval. The number of flat hoops used should be asked.
<b>Fork length</b>	A length measurement frequently used for fish for the purpose of biological data collection. Projected straight distance between the tip of the fish's closed mouth and the medial caudal fin ray.
<b>Free diving</b>	A gear type used to take invertebrates. Coded when the diver is not using SCUBA, and is breath-hold diving to take invertebrates. For spearfishermen using breath-hold techniques to take finfish, use the gear code Spear.
<b>Gear</b>	The fishing equipment used to target fish, such as hook-and-line, pots, spear, snare, hand, etc.
<b>Geographic information system (GIS)</b>	A method of collecting and presenting graphic data that allows for replication. This is used by CRFS to reference effort and/or catch to a specific location.
<b>GPS Format (Gfmt)</b>	The GPS format used to report latitude and longitude during the onboard sampling location portion of the survey may ONLY be recorded in degrees, minutes and seconds of latitude and longitude (Gfmt 3) OR degrees and decimal minutes of latitude and longitude (Gfmt 1).

TERM	DEFINITION
<b>Groundfish</b>	A group of over 90 generally benthic species 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. Groundfish include all species of rockfishes, several species of flatfishes, some species of sharks and skates, and several species of roundfishes like lingcod, greenlings, sablefish and Pacific cod. See Section 1.91 of Title 14 California Code of Regulations for a complete listing of all species included in the Groundfish FMP.
<b>Group Catch</b>	When more than one angler is responsible for the catch, anglers are grouped into bags of catch. Specifically in PC mode, group catch refers to unclaimed fish in excess of boat limits (in excess of crew limits), and otherwise unknown who the catch belongs to. Avoid group catch if possible; assign catch to other anglers in the boat limit or crew first.
<b>Headtag</b>	A uniquely numbered tag affixed to the lower jaw of a fish specimen collected in the field which tracks the salmon head or groundfish carcass through processing in the lab and entry into project databases.
<b>Headtag report</b>	Data sheet that records the date, port, and sample mode for all headtags used in ocean salmon sampling.
<b>Hook and Line</b>	A gear type used to take finfish. A hook or multiple hooks tied to a line that is attached to a reel mounted on a fishing rod, or the line can be tied directly to the rod itself. Poke poles are a type of hook and line gear. Trolling (T) and mooching (M) are a more specific type of hook and line gear.
<b>Incomplete interview</b>	An interview that is not completed and unusable by CRFS. Either a key item was omitted, or a key item was refused. The data editor will strike out this interview.

TERM	DEFINITION
<b>Incomplete-trip interview</b>	A Shore Form interview where the angler's fishing trip is partially complete. For BB angler still actively fishing, anglers need to have completed at least 60 minutes of fishing. For MM anglers still actively fishing, anglers need to have completed at least 50% of their fishing trip and incomplete interviews <b>MUST</b> be obtained <a href="#">after</a> the stop count for that site. See also partial interview and complete-trip interview.
<b>Ineligible angler</b>	An angler who does not meet the criteria of an eligible angler and may not be interviewed. Examples include freshwater anglers, kelp harvesters, anglers setting crab gear, tide poolers, or those who are unwilling or unable to provide an interview. Depending on the situation, the angler may still be counted in effort counts. See eligible angler.
<b>Initial refusal</b>	An angler that refuses the CRFS interview from the beginning.
<b>Inland marine waters</b>	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.
<b>In-season management</b>	Regulatory changes that affect an ongoing fishery during its open season.
<b>Intercept</b>	To approach/encounter an angler or a boat in the field to interview for the survey.
<b>Inventory tag</b>	A tag that is affixed externally to an inventory bag containing one or more tagged and individually bagged salmon heads or groundfish carcasses. The inventory tag documents the Sampler's name, the date the inventory bag was taken to the drop off location, and the headtag series present in the bag.
<b>Invertebrate sampling</b>	Finfish targets are priority, but CRFS does survey the following invertebrate targets: squid, abalone, lobster, crab
<b>Invertebrate trips</b>	Trips that target invertebrates only (no finfish). CRFS interviews anglers/boats targeting crab, squid, lobster, and abalone.
<b>Jackpot</b>	A fishing competition aboard a CPFV, usually the largest fish wins the pot. Jackpot participants are eligible for CRFS interviews. See also derby and tournament.

<b>TERM</b>	<b>DEFINITION</b>
<b>Jetty</b>	A narrow man-made structure that projects into the water from land to reduce wave action in a waterway or harbor.
<b>Kept-Observed</b>	A catch type where the Sampler observes, identifies, and likely measures the fish. Also called examined catch.
<b>Kept-Unobserved</b>	A catch type where the Sampler is unable to observe the fish and so the catch is angler-reported. The fish may be given away, used as bait, fed to birds, or packed away.
<b>Key refusal</b>	An angler who refuses the CRFS interview by not answering a key question.
<b>Key questions</b>	Key questions must be answered for the data to be used in the statistical programs to compute estimates. In general, this includes number of anglers, targets, area, gear, days fished, and catch.
<b>KOD</b>	Kind of day – weekend day or weekday day. Some holidays are considered weekend days.
<b>Landing</b>	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.
<b>Language barrier</b>	Occurs when the Sampler and angler cannot communicate due to the lack of a common language. As a result, the interview is terminated and a “B” is recorded in the sample # field. For shore mode barriers, collect the number of anglers in the barrier.
<b>Latitude</b>	An angular distance north or south of the equator. These measurements are parallel to the equator.
<b>Launch ramp</b>	A sloping roadway into a body of water that allows vehicles towing boats on trailers to back the trailer down into the water until the boat can float off the trailer.
<b>Leadperson (Lead)</b>	Manages both field and office work in their respective District(s), an Environmental Scientist.
<b>Logbook</b>	A log of each fishing trip is required by CDFW to be completed and returned for each commercial passenger fishing vessel or commercial fishing trip. The log captures location, catch and effort information.

<b>TERM</b>	<b>DEFINITION</b>
<b>Longitude</b>	An angular distance east or west of the Prime Meridian (in England). These measurements are perpendicular to the equator from pole to pole.
<b>Magnuson Stevens Fishery Conservation and Management Act</b>	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.
<b>Marine Mammal Protection Act (MMPA)</b>	Federal law prohibiting 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").
<b>Marine Recreational Fisheries Statistics Survey (MRFSS)</b>	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. Conducted in California through 2003.
<b>Man-Made (MM)</b>	A shore mode assignment where a cluster of human-made structures where fishing occurs are surveyed. Examples: jetty, pier, dock, wharf.
<b>Missed boat</b>	A PR boat, either on-site or off-site, fishing or not, that was observed at the site but not intercepted. Missed boats are not refusals or barriers as we do not know if they're fishing or nonfishing.
<b>Marine Protected Area (MPA)</b>	Named, discrete geographic marine or estuarine areas set aside primarily to protect or conserve marine life and habitat.
<b>Mode</b>	Type of access to marine waters for angling. See Fishing Mode. There are also nonfishing modes for Weekly Reporting, including TRV (travel), OFC (office work), DAT (data-entry) and more.
<b>Mooch</b>	A hook and line gear type used to take salmon ONLY. Fishing with bait while the vessel is stationary.
<b>Mooring buoy</b>	An anchor station for boats to be stored in the harbor. These boats are a type of private access boat. Do not count moored boat trailers in the stop count.

<b>TERM</b>	<b>DEFINITION</b>
<b>Multi-day fishing trip</b>	When the number of daylight fishing days for the boat trip without returning to port is greater than one day.
<b>Multi-trip angler</b>	When an angler conducts more than one trip per day, often in different modes. Try to interview only for the current trip and within the mode of the scheduled assignment.
<b>National Marine Fisheries Service (NMFS) a.k.a. NOAA Fisheries</b>	Recently renamed to NOAA Fisheries, a division of the U.S. Department of Commerce, National Ocean and Atmospheric Administration (NOAA). Responsible for conservation and management of offshore fisheries (and inland salmon). The NOAA Fisheries Regional Director is a voting member of the Council.
<b>NOAA Fisheries Economic Survey</b>	In some years, NOAA Fisheries requests that CRFS interviews include additional questions (e.g. name, telephone, email, home address) directed at shore mode anglers and sometimes PC anglers.
<b>National Oceanic &amp; Atmospheric Administration (NOAA)</b>	A division of the U.S. Department of Commerce, National Ocean and Atmospheric Administration (NOAA) is responsible for conservation and management of offshore fisheries (and inland salmon).
<b>Nighttime fishing</b>	Boats that engage in night fishing (non-daylight), identified by the 'N' box on the PR Form.
<b>Non-CPFV fishing trip</b>	A trip taken by a CPFV that does not have paid passengers (status 3 on the PEC Form); includes commercial fishing, friends-and-family trips, and research trips where take may accrue.
<b>Nonfishing (NF) boat</b>	There are three types of NF boats: NFCOM (commercial finfish or invertebrate), NFPC6 (Commercial Passenger Fishing Vessels, a.k.a. party/charter boats, including 6-pack boats), and NFOTH (all other nonfishing boats, including sailing, whale watching, burials at sea, cruises, enforcement, research, etc.). See fishing boat.
<b>Non-Recovered Specimen (NRS)</b>	A coded wire tagged salmon head which cannot be recovered for some reason.
<b>Observed PR from BB</b>	PR boats such as kayaks and PWCs that access the ocean via a beach and bank site. CRFS is interested in documenting boat activity launched from BB sites.

<b>TERM</b>	<b>DEFINITION</b>
<b>Non-traditional boat</b>	A fishing vessel that usually does not have a regular trailer, making effort levels difficult to assess: kayaks, PWCs (like jet skis, dinghies, canoes, or stand-up paddleboards)
<b>Ocean Salmon Project (OSP)</b>	The Department of Fish and Wildlife's program to determine recreational and commercial catch, effort, and hatchery contributions to California's ocean salmon fisheries.
<b>Onboard sampling (PCO)</b>	Sampling PC mode by riding a CPFV throughout the entire fishing trip at sea.
<b>Open bay</b>	A wide bend or curve in a shoreline where a 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. Not an 'enclosed' bay.
<b>Opportunistic interviews</b>	Interviews for party/charter dockside trips completed outside of a scheduled PC assignment. Can be salmon or non-salmon trips.
<b>Optimum yield (OY)</b>	The amount of fish harvest 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.
<b>Otolith</b>	A bone in the inner ear of vertebrates. In some species of fish, can be used to determine the age of the fish.
<b>Overfished</b>	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. Under current fishery management practices, a stock is considered to be overfished if the current population is estimated to be at or below 20% of the pre-fished population.
<b>Pacific States Marine Fisheries Commission (PSMFC)</b>	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.
<b>Party boat</b>	A CPFV boat on which fishing space and privilege are provided for a fee per angler. Usually refers to open party, or non-chartered trips.
<b>PC Duration</b>	Category of length of PC trip: half-day, ¾-full day, twilight, overnight. Other.

<b>TERM</b>	<b>DEFINITION</b>
<b>PC Mode</b>	A type of boat mode that includes party and charter boats (see CPFV)
<b>PC Effort Check (PEC)</b>	A sample of CPFV activity based on checking sites for docked status and type of activity if not docked.
<b>PC Onboard forms</b>	Includes the Onboard Angler Form, Onboard Location Form, and Onboard Catch and Discard Form.
<b>Pacific Fishery Management Council (PFMC)</b>	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.
<b>Partial interview</b>	A Shore Form interview where the angler's fishing trip is partially complete, meaning they are still actively fishing. For BB, partial anglers need to have completed at least 60 minutes of fishing and incomplete-trip interviews can be obtained at any time. For MM, partial anglers need to have completed at least 50% of their fishing trip and incomplete-trip interviews MUST be obtained after the stop count for that site. See also incomplete-trip interview and complete-trip interview.
<b>Pier</b>	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.
<b>Pinhead (see deadhead also)</b>	Non-paying angler on a party/charter vessel.
<b>Pinnipeds</b>	Seals or sea lions.
<b>Port</b>	A specific area where people access the fishery; usually landings grouped together geographically. Ports are given 3-letter codes. Ports are made up of one or more landings.
<b>Port</b>	Facing the bow of a vessel, the left side of the vessel.
<b>Pot</b>	A gear type used to take invertebrates, primarily crab. An enclosed, trap-like device with ports constructed to allow entry to access bait and then prohibit legal-sized invertebrates from escaping. Also called trap. The number of pots used should be asked.

<b>TERM</b>	<b>DEFINITION</b>
<b>Priority Species</b>	A list of sampled species that are highest, higher, and high priority for bio data and collection purposes
<b>Privacy Act</b>	Information collected in 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 anglers and used only for statistical purposes. Any information which would permit identification of the individual will be held in strictest confidence and will be used only by persons engaged in and for the purpose of the survey. Participation in this survey is voluntary and there are no penalties for refusing to answer any questions.
<b>Private and Rental boats (PR)</b>	A type of boat mode to access the fisheries using a privately owned vessel, skiff, dinghy, kayak, PWC, canoe, etc., but must rely on engines and/or a paddle/oar.
<b>PR Form</b>	This form is used when sampling PR1 and PR2 assignments.
<b>PR1 – Primary private boat survey</b>	Primary private and rental boat survey that samples sites where 90% of the catch of important species is landed.
<b>PR2 Secondary private boat survey</b>	Secondary private and rental boat survey that samples sites where 10% of the catch of important species is landed.
<b>Pressure check (see site check)</b>	Site visit for the purpose of estimating angler effort (numbers of anglers and/or boats).
<b>Private access fishery</b>	The private or rental boats that access the water from marinas, moorings, and slips (private areas not accessed by CRFS).
<b>Private boat</b>	A boat belonging to an individual, not for rent or with paying passengers.
<b>PWC (P)</b>	Personal watercraft. Includes jet skis, canoes, other small non-trailer boats, and boats with non-traditional trailers. The "P" flag is recorded after the sample number for interviewed PWCs.
<b>Ramp</b>	See Launch Ramp
<b>Random</b>	With no pattern. Occurring sporadically or intermittently in an unpredictable way.

<b>TERM</b>	<b>DEFINITION</b>
<b>Random sampling</b>	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.
<b>Reassigned</b>	When a CRFS assignment is moved to a different Sampler for completion. This should come from the District Lead.
<b>RecFIN</b>	Recreational Fishery Information Network. A database managed by the Pacific States Marine Fisheries Commission that provides recreational fishery information for Washington, Oregon, and California.
<b>Recreational fishing</b>	In California, fishing for recreation, sport, or personal, non-commercial use. Conducted under the authority of a California sport fishing license. Sport-caught fish may not be bought, sold, bartered, or traded. See also sportfishing
<b>Redwood District</b>	CRFS District 6: Humboldt County (from 40-10' and north) and Del Norte County.
<b>Refugia</b>	An area in the water where living things or their habitat are managed to minimize anthropogenic impacts. May be a place where fishing is not allowed so that fish can reproduce, grow, and migrate.
<b>Refusal</b>	A denial on the part of the angler to be interviewed by the Sampler, or to refuse a key item during the interview. For shore mode refusals, collect the number of anglers in the refusal. No refusals should be documented after the stop count at the MM; those anglers will be included in the stop count.
<b>Region</b>	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 (Point Conception). This is based on historical fishery related differences.
<b>Released fish</b>	A catch type where the fish is released back into the ocean intentionally. Released fish are further classified as released alive or released dead.
<b>Rental boat</b>	A boat that is rented but without crew or a guide.

<b>TERM</b>	<b>DEFINITION</b>
<b>Rigid hoop</b>	A gear type used to take invertebrates (primarily lobster). A hoop net with sides that are fixed in place with rigid supports, making the net stand erect when deployed on the bottom. The diameter of the opening at the top is less than the diameter of the bottom, making the angle at the base convex and thus difficult to escape. The number of rigid hoops used should be asked.
<b>Rescheduled</b>	When a CRFS assignment is moved to a new date. This should be done only by a Lead.
<b>Roving</b>	In reference to cluster sampling, when the Sampler travels among multiple sites within an assignment.
<b>Sailboat (S)</b>	A boat that is powered by wind, usually nonfishing but could be fishing. Use the 'S' flag to denote the type of boat both for fishing and nonfishing.
<b>Salmon Refusal (RS)</b>	A flag on the PR form (RS) indicating that the anglers on the boat refused to participate in the CRFS survey, but all data elements needed for salmon management were collected.
<b>Saltwater cutoffs</b>	CRFS is a marine survey and points along coastal rivers and inland bays are established to ensure only marine sport anglers are interviewed. Most cutoffs are where highway bridges cross a river.
<b>Sample boat</b>	A boat intercepted in the PR survey for which a sequential number is given, and specific data collected.
<b>Sample Flag</b>	A letter code that comes after the sample (boat number or PC angler #) that provides additional information. For PR mode, the flag indicates a specific type of boat that was sampled, including kayaks (K), sailboats (S), personal watercraft (P), and boats participating in a tournament (T). For PC mode, crew anglers are flagged with a 'C' flag.. See also flags.
<b>Sampler Location</b>	In reference to Onboard CPFV sampling, the location on the boat where the Sampler observes anglers during stops (e.g. bow, stern, side).
<b>San Francisco District</b>	CRFS District 4: Marin, San Francisco, San Mateo, Sonoma, Alameda, Contra Costa, Solano, and Santa Clara counties

<b>TERM</b>	<b>DEFINITION</b>
<b>Screening</b>	Determining if the angler(s) or boat has been sportfishing in order to be eligible for interview
<b>SCUBA</b>	Acronym for self-contained underwater breathing apparatus. Also, a gear type used to take invertebrates, coded when SCUBA gear is used by the diver to take invertebrates. For spearfishermen using SCUBA gear to take finfish use the gear code Spear.
<b>Seal take</b>	Fish lost to seals/sea lions (pinnipeds). Refers to salmonid catch ONLY.
<b>Shellfish</b>	Animals with shells such as clams, lobsters, squid and abalone (crustaceans and mollusks).
<b>Shore Form</b>	This form is used when sampling MM or BB cluster assignments.
<b>Shore Mode</b>	Includes Man-Made and Beach-Bank sample modes; anglers are accessed via the shore and Sampler uses the Shore Form for interviews.
<b>Shore trip</b>	A fishing trip conducted from the shore (BB and MM modes).
<b>Site check</b>	A visit to a fishing site to check for angler/boat trailer effort or CPFV boat status.
<b>Site code</b>	Numeric codes are used to distinguish specific land-based fishing sites within a CRFS District. Three-digit site codes are combined with county codes to pinpoint unique CRFS sample sites.
<b>Site disposition</b>	See 'disposition'
<b>Site effort check (SEC)</b>	A count of the number of finfish anglers or boat trailers at all sites adjacent to a CRFS assignment. Effort is recorded on the ASF in the Pressure Check Count column. Not all assignments will have a SEC.
<b>Site name</b>	The name of a CRFS sampling site, usually set forth on a formal District site list.
<b>Site register/list</b>	A complete list of sites with names, codes and descriptions for a given District.
<b>Six pack</b>	An informal term applied to a commercial passenger fishing vessel which has a license to take not more than six paying passengers at a time. Term also used to describe CPFVs that carry six or fewer anglers.
<b>Sling</b>	A winch, davit, or hoist that is used to lower and lift boats from the water.

<b>TERM</b>	<b>DEFINITION</b>
<b>Snare</b>	A gear type used to take invertebrates, usually crab. A small cage-like structure that contains bait to attract crab, with up to six monofilament loops on the outside of the structure. Usually deployed with a rod and reel, similar to hook and line fishing for finfish, when retrieved, the loops constrict, trapping the legs of any crab that are attempting to reach the bait cage.
<b>Source (PEC Form)</b>	Where the boat activity information came from, in hierarchy: sampled, personal observation, captain/crew, office contact, website.
<b>State site code</b>	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.
<b>Spear</b>	A gear type used to take finfish; either an arrow-like projectile fired from a gun-like launcher, powered by one or more elastic bands, or a two-or three-pronged fork launched by a single elastic band (Hawaiian sling).
<b>Species code</b>	A specific five letter code used to record fish taxon on the survey forms.
<b>Species of Concern</b>	Any high-priority species management has deemed as one to watch, usually under fine-scale management; tend to have tallies on the footer of the datasheets and within Weekly Report.
<b>Sportfishing</b>	In California, fishing for recreation, sport, or personal, non-commercial use. Conducted under the authority of a California sport fishing license. Sport-caught fish may not be bought, sold, bartered or traded. See also recreational fishing.
<b>Starboard</b>	Facing the bow of a vessel, the right side of the vessel.
<b>Start time</b>	A time after the arrival time onsite when the Sampler actually begins sampling (a specific military time coded to the nearest minute).
<b>Stat</b>	A type of fishing code used on the onboard location form (PCO sampling), short for station keeping. Stat occurs when the CPFV uses its engines to hold the boat in a stationary position relative to the ocean bottom.
<b>Stern</b>	The rear or aft part of a vessel, opposite the bow.

<b>TERM</b>	<b>DEFINITION</b>
<b>Stop time</b>	A time when the Sampler actually stops sampling, but before they depart (a specific time military coded to the nearest minute).
<b>Systematic</b>	A regular predictable pattern. Used in statistical sampling to promote sampling simplicity and to even out the sample.
<b>Systematic sampling</b>	Any sample drawn from a list using a random start and a fixed sampling interval (e.g. every Nth boat). An efficient and functional substitute for random sampling.
<b>Target (fishing)</b>	Fishing for the purpose of catching a particular species or species group (the target species). There may be primary (1 <sup>st</sup> ) and secondary (2 <sup>nd</sup> ) targets.
<b>Target (mode)</b>	The specific fishing mode(s) that the Sampler should be monitoring at a given site. Listed on the Site list. Also called the Assigned mode or AMODE.
<b>Total catch estimate</b>	An expanded number based on a statistical sample with inference to the population for all modes combined.
<b>Title 14</b>	Regulations adopted by the Fish and Game Commission, through their regulatory powers function, are printed in the California Code of Regulations (CCR), 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 after they are adopted by the rulemaking agency, approved by the Office of Administrative Law and filed with the Secretary of State.
<b>Tournament</b>	A fishing contest for which participants register and compete. For the purposes of CRFS, a tournament is site and date specific. Generally speaking, CRFS does not sample tournaments. Contact a Lead if a fishing tournament is discovered. See also derby and jackpot.
<b>Trailer counts</b>	A count of all trailers tallied at a site that the sampler believes are from fishing vessels. Does <u>not</u> include known non-fishing boat trailers, kayak or PWC trailers. Will be done at arrival/departure from a PR site or during an SEC.

<b>TERM</b>	<b>DEFINITION</b>
<b>Troll</b>	A hook and line gear used to take finfish, primarily salmon, although trolling is frequently used to fish over large distances such as when fishing for pelagic species like tunas. A baited hook or lure is pulled behind a vessel under power. Also a fishing type recorded on the onboard location form (PCO sampling) when the CPFV is trolling on a stop.
<b>Unavailable catch</b>	Catch that is not available for the Sampler to observe. Includes fish packed away, used as bait, given away, thrown back alive or dead, unidentified fillets, immediately consumed, or otherwise not present for the Sampler to see. This type of catch is angler-reported – kept/unobserved, released alive and released dead.
<b>Unbiased</b>	Free of non-random effects that tend to move an estimate higher or lower in prediction of the true population.
<b>Unlicensed angler</b>	An angler fishing or harvesting who does not have a valid California fishing license. Allowed if under sixteen years of age or fishing on a public structure surrounded by ocean on three sides. CRFS samples unlicensed anglers.
<b>Validate</b>	Independent verification, generally by field sampling, of information received through the submission of fishing activity logs, especially CPFV logs.
<b>Wand</b>	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.
<b>WD</b>	Weekday
<b>WE</b>	Weekend and some holidays
<b>Weekly Report</b>	Weekly Reports are Excel files sent to your Lead every Monday morning by 8 AM that show all the assignments worked the previous week.
<b>Wet gear hours</b>	The time spent fishing with line in the water (wet).
<b>Wharf</b>	A fixed platform that originates on land and projects into a harbor, ocean, etc., so that vessels may be moored alongside. See Pier.
<b>Wildlife Officer</b>	(Formerly titled Warden) An officer that represents the enforcement branch of CDFW.
<b>Wine District</b>	CRFS District 5: Mendocino County and Shelter Cove.

## Appendix A.

### CRFS Sampler Guidelines

Samplers, upon hire, are required to read and sign the Sampler Guidelines document which becomes part of their personnel file. The purpose of this paperwork is to document in writing the importance of understanding CRFS Sampler job duties and expectations. The Sampler Guidelines are a critical part of the Sampler hiring and training process; they set clear boundaries and outline the major roles of the Sampler. Supervisors and Leads hold their Samplers accountable for these guidelines, which are listed below, followed by a detailed description of each of the items.

The purpose of this guidance is to provide common understanding, clarity and fairness regarding work performance expectations and the workplace environment. The intent is to provide guidelines that help create a positive and productive work environment. Other guidance is available from the Department of Fish and Wildlife's Operations Manual, Bargaining Unit contracts, and the Marine Region's intranet site. Note: These guidelines supersede the Marine Region Standard Operating Procedures and Staff Expectations document. For conflicting procedures, always refer to this document.

#### Safety

- Safety is the number one priority.
- Notify the Lead of ANY health issues that may affect safety or performance in the field.
- Call the Lead **AS SOON AS POSSIBLE** when injured on the job.
- Report criminal activity (non-fishery violations) to local law enforcement – if applicable, call 911 and then call the Lead when it is safe to do so.
- If feeling threatened, leave the site and then call the Lead when it is safe to do so.
- Lock the personal or State car; the Sampler should keep valuables with them.
- Carry a cell phone or know where pay phones are located.
- Know which fish are potentially dangerous and how to handle them; ask the Lead for gloves if desired.
- Do not sample after sunset unless for a twilight or overnight PC trip.
- Wear sunscreen and a hat for sun protection.
- Do not wear dangling jewelry.
- Long hair must be contained and out of the Sampler's face.
- Be aware of swell conditions while at sea to avoid falls and injury.
- Be careful climbing up or down, into and out of boats.

#### Data Quality

- **NEVER** falsify data; times on site are considered data.
- If a mistake is made, notify the Lead – do not try to cover it up.
- The Sampler is responsible for the quality of their data.
- When the Lead notifies the Sampler of an error, take the time to understand the nature of the error and take steps to stop making the same error.

- Refer to the Sampler Manual with questions on protocol. Ask the Lead if an answer cannot be found – come into the office, call, or send an email. Ask the Fish and Wildlife Technician (FWT) if the Lead is not available.
- Take detailed notes regarding field conditions.
- Take detailed notes on situations that are unclear as to how to handle if unable to contact the Lead or the FWT for guidance.
- Make continuous improvements to skills: interviewing, fish identification, data collection, and understanding of sampling protocols.

### Data Deadlines

- Weekly reports are due to the Lead and OSP by 8 AM every Monday whether working the previous week or not.
- Headtag reports, courtesy tag reports, CRFS-OSP PC Dockside forms and PC Effort Check forms are due to the Lead and OSP by 8 AM Monday (either faxed, photographed/scanned, and emailed) whether working the previous week or not.
- The data week is Monday through Sunday. All original data sheets are due to the Lead by close of business on the following Wednesday. If mailing data, the envelope shall be postmarked on Monday, unless Monday is a holiday.
- Quizzes are mandatory and are due on the date and time specified by the Lead.

### Time Sheets and Travel Claims

- The work week is Sunday through Saturday. Do not exceed 40 hours in a week without prior approval from the Supervisor.
- Call the Lead **AS SOON AS POSSIBLE** if exceeding 40 hours for the week is expected in order to complete all assignments.
- Time sheets are due on the date and time specified by the Lead each month. A delay may result in a late paycheck.
- Be accurate in time reporting – claim only time that was worked as listed on the Weekly Reports.
- For time sheet purposes, round daily hours worked to the nearest quarter hour.
- Travel expense claims are due on the date specified by the Lead each month. Claims are required to be submitted monthly.
- Claim the cost of dinner **IF** traveling more than 50 miles in one direction **AND** the workday ends after 1900 hrs.
- Claim the cost of breakfast **IF** traveling more than 50 miles in one direction **AND** the workday begins before 0600 hrs.
- Do not purchase anything for the job with the expectation of reimbursement (other than meals, parking, and fuel) without prior approval from the Supervisor. Include the amount of the purchase when making a request.
- Retain receipts and be accurate in expense reporting.

### Assignment Management

- Call or text the Lead **BEFORE THE ASSIGNMENT START TIME** when unable to complete an assignment.

- If using sick leave, notify the Supervisor by email, text, or phone on the same day.
- Assignments are required to be worked on the date they are assigned unless other arrangements have been made with the Lead.
- Do not cancel an assignment without prior approval from the Lead.
- Do not reassign an assignment without prior approval from the Lead.
- Do not give an assignment to or take an assignment from another Sampler without prior approval from the Lead.
- Leaving an assignment early for reasons such as traffic, social obligations, a second job, school, etc. are not acceptable.
- Do not perform work for any other DFW project without prior approval from the Supervisor.

## Appearance

- When in the field, wear the issued CRFS attire at all times.
- Do not wear CRFS attire when not working.
- Wear closed-toe shoes in the field at all times.
- Shorts or jeans may be worn. Shorts shall not be “short shorts,” no more than 3 inches above the knee; jeans shall not have holes or be “cut-offs.” No sweatpants, skinny pants, or tight jeans allowed.
- No non-DFW logos visible on any clothing except shoes.
- Wear appropriate clothing in the office.
- Make an effort to look presentable and official.

## Vehicles

- If a state vehicle is not available for use, the Sampler is responsible for providing reliable transportation. Mileage is reimbursed at the current state rate.
- Report all automobile accidents that occur while working to the Lead **AS SOON AS POSSIBLE**. Complete the appropriate vehicle accident report form **AS SOON AS POSSIBLE** and follow all instructions on the form.
- A copy of the State Driver Accident Review STD274 and Vehicle Accident Report STD270 must be kept in the glove box of the Sampler’s personal vehicle when in use for state business.
- Do not use a cell phone without a hands-free device while driving on the job.
- The Sampler is responsible for all traffic violations and citations while driving on the job.
- Do not park on red curbs, loading zones, or in handicapped parking spots.
- Wear CRFS attire while driving or riding in a state vehicle.
- Do not carry unauthorized people in a state vehicle.
- Do not make changes to the vehicle assignment schedule without prior approval from the Lead.
- Do not use the DFW shield parking placard except on official CRFS business.
- Vehicle logs are to be completed at the time of vehicle use.
- Do not take a state vehicle home without prior approval from the Lead.
- Do not conduct personal business while driving a state vehicle.
- Leave the state vehicle with a full tank of gas for the next user.

- Do not purchase fuel for a personal vehicle using the Voyager fuel/WEX card.
- Do not use the Voyager fuel/WEX card to purchase anything except authorized items.
- The Voyager/WEX PIN should only be used to fill state vehicles used for CRFS work.
- Remove all trash and sampling gear from state vehicles after use.
- Return all state vehicles and keys to the proper location after use. Make sure windows are rolled up and all doors locked.
- Notify the Lead of any observed deficiencies in state vehicles.
- Do not attempt to drive to a site during extremely hazardous weather; notify the Lead.
- Be a courteous, safe driver while driving on the job.

### **Party/Charter (PC) Boat Sampling**

- Notify the Lead **AS SOON AS POSSIBLE** of all PC refusals.
- Do not perform the duties of a crew member while onboard a PC trip.
- Do not fish while onboard a PC trip.
- Do not sleep while onboard a PC trip, except when sampling an overnight trip during transit.
- Do not discuss PC activities or personal opinions of specific PC operations with the public.
- Do not share the sampling schedule with any crew members.

### **General Onsite Procedures**

- Have the state identification badge available while working at all times.
- Do not let the public mistake a Sampler for a Wildlife Officer.
- Report egregious or repeat fishing regulation violations to the Lead – do not contact enforcement directly.
- Refer reports of pollution or poaching to CalTIP – have the person reporting it make the call.
- Do not claim to represent the Department when not conducting CRFS work.
- Do not discuss the opinions of other Department employees or business with the public.
- Do not have unauthorized people (family, friends, children) accompany a CRFS assignment.
- Do not trespass on private property.
- Be respectful of other's property.
- Introduce yourself – don't expect anglers to know about CRFS.
- Ask permission before boarding any boat.
- Do not assist with the launching or recovery of boats at launch ramps.
- Do not collect fish from anglers except Groundfish Species of Concern carcasses, salmon heads and white seabass heads.
- Work the sites in an MM or BB cluster in the assigned order.
- Visit all sites in an MM or BB cluster before considering the assignment complete.
- Be sure to have enough forms in the field to complete the day's assignment.

- Be productive during slow times in the field – review the CRFS Sampler manual, regulations, fish identification materials, site descriptions, or edit data, etc.
- Do not disclose information obtained in a CRFS interview with anyone outside of CRFS.
- Do not speak to the media – refer them to the Lead.
- Do not discuss personal opinions on natural resource management with the public while on the job.
- Educate the angling public on fishing regulations, fish identification, and the role of the Department and CRFS in resource management.
- Do not guess at answers to unknown questions; refer them to the Lead.
- Do not accept gifts of any kind – fish, free fishing trips, etc.
- Do not use tobacco (cigarettes, cigars, vape, chew) while conducting interviews, or if in the public eye.
- Do not use or be under the influence of alcohol or cannabis while on the job.
- Do not use or be under the influence of illegal drugs while on the job.
- Do not attempt to aid stranded or injured marine mammals or birds – call a local wildlife care center or the Lead.
- Refrain from using vulgar words or negative body language.
- Represent the Department in a professional, friendly, courteous manner.
- Be aware of diversity.

### Communication

- Respond to all communications with fellow Samplers, Lead, and Supervisor in a timely manner. At the minimum, read emails and all attachments and respond as needed before beginning each scheduled workday. Email messages from the Supervisor and Lead must be promptly opened and acknowledged. Return all phone calls and text messages within 24 hours.
- When working with another Sampler, coordinate arrivals and departures before the assignment.
- Coordinate with the port leads regarding PC activities and salmon PC sampling rates.
- Notify the Lead **AS SOON AS POSSIBLE** of changing site conditions (road construction/closures, site closures, safety issues, etc.)
- Be professional in communication – use correct grammar and punctuation.
- Use the DFW email address for all work-related correspondence. CC the Lead for correspondence with another CRFS Lead or DFW project.
- Set up an automated “out of the office” reply for the DFW email account for absences greater than one week.

### Sampling Gear

- Have all issued sampling gear and one set of CRFS attire ready to be used at every scheduled sampling assignment and office assignment.
- Have the knife in sheath on a belt at every PR1 assignment during salmon season.
- Do not lend the knife to anyone other than another Sampler.
- Have a time-keeping device available in the field at all times. Verify its accuracy.

- The Sampler is responsible for maintaining sampling gear in proper working order:
  - Clean gear while sampling, if possible
  - Do not rinse scales in saltwater.
  - At the minimum, calibrate scales monthly.
  - Immediately notify the Lead of any lost/broken gear.
- The Sampler may be responsible for the cost to replace lost/broken gear.
- Return sampling gear to the Lead **AS SOON AS POSSIBLE** upon request or after employment ends.
- Keep eyes on the gear – do not walk out of view of the gear.

### **Arrival and Departure**

- Arrival times at sites:
  - PR1: as the first sampler, plan to arrive before the first boat returns. The second sampler arrives at a predetermined time coordinated with the first sampler.
  - MM and PR2: arrive at the time specified by the Lead.
  - PC onboard: plan to arrive at least 30 minutes prior to boat departure, or 45 minutes if there is a need to talk with the charter master.
  - PC dockside: plan to arrive before the first boat returns.
- Departure times at sites:
  - PR1: after the last boat returns, sunset, or relieved by another sampler. If no effort or the last boat returns early, stay on site for two hours or until the expected peak fishing time has passed.
  - BB: stay on site for the minimum amount of time prescribed by the Lead; after that, stay until the goal of obtaining at least one interview per hour cannot be met.
  - MM and PR2: stay on site for an 8-hour day (w/travel) or two hours of sampling time if there is no effort (no anglers at any MM site and no trailers at the PR2 site).
  - PC onboard: after the boat has returned to the dock and collection of required data.
  - PC dockside: after the last boat has returned or sunset, or at a time prescribed by the Lead.

### **Administration/Personnel**

- Arrive at the scheduled work location at the time set by the Lead or Supervisor:
  - Show up to/call in to meetings/conference calls on time and prepare to participate. Attendance is mandatory unless prior arrangements have been made with the Lead.
  - Show up to office assignments on time.
- Follow all DFW office building security procedures:
  - Do not lend a building key to anyone.
  - Do not give the building alarm code to anyone.
  - The Sampler may be responsible for the cost of law enforcement response for false alarms.

- Relinquish the building key at the end of employment or upon request.
  - The Sampler may be responsible for the cost of re-keying the building if the key is lost.
  - Do not admit non-DFW personnel into the building without approval.
- Relinquish the State identification card at the end of employment or upon request.
- Notify the Lead of any contact information, address, or emergency contact information changes.
- Scientific Aids cannot work more than 1,500 hours in any calendar year or 189 days from the date of appointment. If either is exceeded, separation from state service for a minimum of three months is necessary, after which re-hiring may happen if a position is available.
- Weekend and holiday work is mandatory. The Lead will consider CRFS scheduling needs prior to approving requests for time off.
- Schedule requests are to be submitted via email to the Lead by the 15<sup>th</sup> of the preceding month. Submit requests in a separate email with an appropriate subject.
- Hours are not guaranteed. Hours can be affected each pay period by assignment scheduling, fishing effort (weather), Sampler availability, and Sampler work performance.

## **Appendix B.**

### **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 NOAA Fisheries 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 of 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**

NOAA Fisheries Guidelines for Intentional Interaction (Marine Mammal Deterrence)

Samplers should be familiar with these guidelines in order to inform the Lead of any illegal or unusual actions taken by anglers or CPFV boat crews. The following is copied verbatim from the NOAA web site at:

<https://www.fisheries.noaa.gov/west-coast/marine-mammal-protection/deterrence-guidelines>

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, California Sea Lions, Eastern U.S. stock Steller Sea Lions, Northern Fur Seals, and Northern Elephant Seals please contact our marine mammal specialists: mammal specialists: (Seattle, WA) Lynne Barre, 206-526-4745; (Long Beach, CA) Monica DeAngelis, 562-980-3232; Penny Ruvelas, 562-980-4197.

Note: Some of the methods listed below (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 ESA listed species (marine mammals or fish) 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 private property owners to deter Pacific harbor seals, California sea lions, and Eastern U.S. stock Steller sea lions from damaging property (developed waterfront, decks, docks, floats, piers, bait receivers, vessels at anchor, etc.):

Barriers & Exclusion Devices:

- fencing (e.g., plastic construction/snow fence, chain link)
- closely spaced posts
- bull rails
- electric livestock fencing
- netting
- swim step protector

Visual Repellents:

- flags, pinwheels, or streamers
- flashing lights or strobes
- human attendants/monitors

Noise Makers:

- horns, whistles, bells
  - electronic acoustic devices (Acoustic Harassment Devices)
  - clapping, banging on pots, pans, drums; empty aluminum cans on a string banging together
  - music
- 
- pyrotechnics (e.g., bird screamers, bangers, firecrackers, propane canons)

Physical Contact:

- high or low pressure water hoses, sprinklers or sprayers
- crowder boards
- bull poles (blunt tip), brooms
- cattle prod (these products produce only a mild electric shock designed for handling livestock and are in no way related to “stun guns” designed for self-defense)
- toy water guns (e.g., “Super Soaker®”)
- non-toxic and water soluble paint ball or air soft guns
- slingshot (no metallic/glass/sharp projectiles)
- chemical irritants (e.g., non-toxic pepper spray, mace) used for animal control (there are many municipal and state ordinances controlling the use and possession of these irritants)

**Potential methods for use by fishers** to deter Pacific harbor seals, California sea lions, and Eastern U.S. stock Steller sea 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, firecrackers, propane canons)
  
- 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
- No guard dogs - Guard dogs are not included on the list of suggested measures because of risks to both dogs and marine mammals, including the potential risk of disease transmission between them.

**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.

**Remember Personal Safety**

Attempts by property owners and/or fishers to deter nuisance animals from engaging in unwanted behaviors using non-lethal means is a personal choice and not without risk (to the person doing the deterring and anyone around them). Sea lions and seals are wild animals that may react unpredictably to non-lethal deterrence measures, resulting in personal injury or additional damage to property. Sea lions are large and powerful animals that can move as quickly as a person on land.

**Be Aware of Nearby People and Be Courteous**

The safe use of some of the above-listed potential methods (e.g., cracker shells, non-lethal ammunition) requires considerable skill and experience. The use of some of these methods may precipitate undesirable social interactions. If the property or vessel

owner is in possession of a firearm, approaching law enforcement officers will assume that all firearms are loaded with lethal ammunition.

Individuals attempting to deter nuisance sea lions and seals, using the above listed potential methods or similar techniques, do so at their own risk.