

# 2020 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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## **TABLE OF CONTENTS**

### **INTRODUCTION TO CRFS 1-1**

- CRFS-Definition and Goal 1-1
- The Importance of Collecting Fishery Data 1-1
- State and Federal Mandates 1-2
- History 1-3
  - Marine Recreational Fisheries Statistics Survey (MRFSS) 1-3*
  - Ocean Salmon Project (OSP) 1-3*
- Survey Design 1-4
  - CPFV Logbook Component 1-4*
  - Telephone Survey Component 1-4*
  - Field Sampling Component 1-5*
  - Mode 1-5*
  - Geographic Divisions 1-6*

### **ROLES, RESPONSIBILITIES, GUIDELINES AND EXPECTATIONS 2-1**

- Roles 2-1
  - The Supervisor 2-1*
  - The Lead Person (Lead or Field Lead) 2-1*
  - The Fish and Wildlife Technician (Tech) 2-1*
  - The Field Sampler (Sampler) 2-1*
  - The Port Lead Sampler 2-2*
- Expectations 2-2
- Safety 2-2
- Data Quality and Due Dates 2-5
- Timesheets and Travel Expense Claims 2-6
- Professional Conduct 2-7
- Attire 2-11
- Vehicles 2-12
- Equipment and Gear 2-13
- CRFS Sampler Supply List 2-14
- Region Specific Supplies 2-14
- Printed Materials 2-15
- Electronic Materials 2-16

### **CRFS ASSIGNMENTS, SITES AND SCHEDULES 3-1**

- CRFS Sites 3-1
  - Site Code 3-1*
  - Site Name 3-1*

*Site List 3-1*

- Assignment ID 3-2
- The Draw Program and Assignment Selection 3-2
- Assigned Mode 3-2
- Duration 3-2
- Monthly Schedules 3-3
- Assignment Spreadsheet Example 3-3
- Managing Your Assignments 3-3
- Assignment Goal 3-3
- Rescheduling and Cancellation 3-4
- Closed Sites 3-4
- Refused Entry to a Site 3-4
- Poor Weather 3-4
- Fishing Tournaments 3-5
- Opportunistic Sampling 3-5
- Second Assignment 3-5
- No Anglers at Site 3-6
- Incorrect Assignment 3-6

**GENERAL ONSITE PROCEDURES 4-1**

- Canvassing and Screening for Eligibility 4-1
- Screening Divers 4-2
- Kayak Anglers 4-2
- CRFS Codes 4-2
  - Angler Residence Codes 4-2*
  - Site Codes 4-2*
  - Species Codes 4-2*
- Gear Type 4-3
  - Finfish Gear Codes 4-3*
  - Salmon Gear Codes 4-3*
  - Invertebrate Gear Codes 4-4*
- Areas Fished and Saltwater Cutoff Points 4-4
  - Saltwater Cutoffs 4-5*
- Catch Locations and Map Use 4-5
- Latitude and Longitude and the One-Minute Grid 4-6
- CRFS Block-Box Maps 4-6
- Definition of Location 4-7
- Accuracy of Location Grid 4-7
- The Grid Size Item 4-8
- Fishing Site Names 4-8
- Fish Identification 4-8
- Observed Catch (Sampler-Examined) 4-9
- Unavailable Landed Catch (Angler-Reported) 4-9
- Filletted Catch (Sampler-Examined or Angler Reported) 4-10

- Unidentified Examined Catch 4-10
- Released Catch (Angler-Reported) 4-10
- Specimen Documentation: Rare or Large Fish 4-11
- Sub-Sampling and CRFS Priority Species 4-11
  - CRFS Priority Species* 4-12
- CRFS Protocol for Dealing with Suspect Data 4-13
- Biological Data Collection 4-14
- Fork Length Measurement and Use of Measuring Board 4-15
- Measuring Various Types of Fish 4-16
- Weight Measurement and Scale Use 4-19

## **SPECIES SAMPLING PROCEDURES 5-1**

- Species Sampling Procedures 5-1
- Salmon Sampling 5-1
  - Legal Authority* 5-1
  - Salmon Equipment* 5-2
  - Tagging the Head* 5-2
  - Removing the Head* 5-2
  - Non-Recovered Species (NRS) Protocol* 5-3
  - Procedures for Tracking and Inventorying Salmon Heads* 5-4
  - Inventory Tags* 5-4
  - Information Request Cards* 5-5
  - Courtesy Head Tags* 5-5
  - Important Salmon Goals to Remember* 5-5
  - Salmon Head Drop Off Protocol* 5-6
- Yelloweye Rockfish Sampling 5-7
  - Collection Priorities* 5-8
  - Equipment* 5-8
  - Procedures for Collection* 5-8
  - PR Form Example* 5-10
- White Seabass Sampling 5-10
  - White Seabass Equipment* 5-11
  - Procedure for Sampling and Scanning* 5-11
  - PR Form Example* 5-12
  - Removing the Head* 5-13
  - White Seabass Head Drop Off Protocol* 5-13
- Sexing Certain Species of Finfish 5-15
  - Elasmobranchs* 5-16
  - Lingcod* 5-16
  - Cabezon* 5-17
  - California Sheephead* 5-18
  - Surfperch (Amphistichinae)* 5-18
  - California Halibut* 5-20

- Kelp Greenling* 5-22
- Handling Fish 5-23
  - California Scorpionfish* 5-23
  - Rockfish* 5-23
  - White Seabass* 5-24
  - Lingcod* 5-24
  - Sharks* 5-24
  - Spiny Dogfish* 5-24
  - Ratfish* 5-24
  - Electric Rays* 5-24
  - Skates* 5-25
  - Stingrays and Bat Rays* 5-25
- Invertebrate Sampling 5-26
  - Squid Sampling* 5-27
  - Abalone Sampling* 5-27
  - Lobster Sampling* 5-28
  - Crab Sampling* 5-28
  - Handling Crab* 5-28
  - Invertebrate Sampling Protocol FAQ* 5-29

## **THE WEEKLY REPORT 6-1**

- Due Dates 6-1
- Assignments Included in the Weekly Report 6-1
  - PR1* 6-2
  - PR2* 6-2
  - PCO* 6-2
  - PCS* 6-2
  - PCD* 6-2
  - PCS/PCD Combination Trips* 6-3
  - PEC* 6-3
  - MM* 6-3
  - BB* 6-3
- General Instructions 6-3
  - Excel Spreadsheet-Instructions for Completing the Weekly Report* 6-3
  - General Guidelines for the Spreadsheet* 6-5
- Weekly Report Item by Item Instructions 6-5
- Weekly Report Coding Tips 6-11
- Example of Weekly Report 6-12

## **ASSIGNMENT SUMMARY FORM (ASF) 7-1**

- Assignment Summary Form (ASF) Layout 7-1
  - Data Tracking* 7-1

*ASF Header* 7-1  
*Hours* 7-2  
*ASF Site Rows* 7-2  
*ASF Footer-Boat Mode Totals* 7-3  
ASF Item by Item Instructions 7-3  
ASF Coding Tips 7-15  
Specific Editing Checks 7-15  
Assignment Summary Form Examples 7-16  
*PR1-Salmon Season* 7-16  
*BB* 7-17  
*MM* 7-18  
*PCO-Reassigned* 7-19  
*PCO-Completed* 7-20  
*PCD* 7-21  
*PCD-Opportunistic* 7-22

## **BEACH AND BANK (BB) MODE SAMPLING 8-1**

BB Mode Definition 8-1  
BB Survey Goal 8-1  
BB Survey Methods 8-1  
Example BB Clusters from Site List 8-2  
BB Estimated Total Finfish Angler Counts 8-3  
Canvassing 8-4  
Incomplete BB Trips 8-4  
Low Effort Protocol 8-4  
No Anglers in BB Mode 8-4  
Observed PR Accessed from BB 8-5  
Anglers Fishing in Two Modes 8-5  
Opportunistic PC Sampling 8-5  
Screening Divers 8-5  
Invertebrate Sampling in BB Mode 8-6  
Two BB Assignments in One Day 8-6  
Ways to Reduce Bias 8-6  
2020 CRFS BB Mode Questionnaire 8-6  
Shore Form Procedures for BB Mode 8-10  
*Numbering the Visits, Interviews and Shore Form Pages* 8-10  
*Shore Form Layout* 8-10  
*Header Items* 8-11  
*Effort Items* 8-11  
*Catch Items* 8-11  
*Biological Data Collection* 8-12  
Shore Form Item by Item Instructions (BB Mode) 8-13  
Shore Form Example (BB Mode) 8-22

## **MAN-MADE STRUCTURE (MM) MODE SAMPLING 9-1**

- MM Mode Definition 9-1
- MM Survey Goals 9-1
- MM Survey Methods 9-1
- Example MM Clusters from Site List 9-2
- MM Angler Counts 9-3
- Canvassing 9-3
- Anglers Fishing in Two Modes 9-3
- Incomplete MM Trips 9-4
- Low Effort Protocol 9-4
- No Anglers in MM Mode 9-5
- Opportunistic PC Sampling 9-5
- Screening Divers 9-5
- Invertebrate Sampling in MM Mode 9-5
- 2020 CRFS MM Mode Questionnaire 9-6
- Shore Form Procedures for MM Mode 9-9
  - Numbering the Visits, Interviews and Shore Form Pages 9-9*
  - Shore Form Layout 9-10*
  - Header Items 9-10*
  - Effort Items 9-10*
  - Catch Items 9-11*
  - Biological Data Collection 9-11*
- Shore Form Item by Item Instructions (MM Mode) 9-11
- Shore Form Example (MM Mode) 9-22

## **PRIMARY PRIVATE AND RENTAL BOAT (PR1) MODE SAMPLING 10-1**

- Introduction 10-1
- PR1 Goals 10-2
- Effort Data 10-2
- Catch Data 10-2
- Observe Kept Salmon 10-2
- Location of Catch Data 10-2
- Biological Data Collection 10-3
- Sample Selection 10-3
- Scheduling 10-3
- PR1 Survey Procedures 10-3
  - Effort Data Collection 10-3*
  - Arrival and Trailer Counts 10-4*
  - Low Effort Protocol 10-4*
  - No Boats in PR1 Mode 10-4*

*Sub-Sampling* 10-5  
*Onsite Missed Boats* 10-5  
*Offsite Missed Boats* 10-5  
*Specific Off-Site Count Instructions* 10-6  
*Catch Data Collection* 10-7  
*Biological Data Collection* 10-7  
    *Sub-Sampling Lengths and Weights* 10-8  
    *Catch Location Average Depth Data Collection* 10-8  
    *Sub-Sampling Locations and Depths* 10-8  
Minimum PR Sample 10-8  
Screening Divers 10-9  
Fishing Tournaments 10-9  
The PR Form (PR1 Mode) 10-10  
Questionnaire Usage 10-10  
Introduction to the PR1 Interview 10-10  
Before the Assignment 10-11  
Arrival on Site 10-11  
Sampler Location Onsite 10-11  
Multiple Samplers on One Assignment 10-11  
    *Avoiding Duplication and Sharing Counts* 10-12  
Onsite Trailer Counts 10-12  
Offsite Trailer Counts 10-12  
Monitoring Boats 10-13  
Multiple PR Trips on the Same Day 10-13  
Determination of Boat Type 10-14  
Non-Fishing (NF) Boat Types 10-14  
CPFV and Commercial Boats 10-14  
Opportunistic PC Sampling 10-14  
Refused Boats 10-15  
Language Barrier Boats 10-15  
Anglers, Zip Code and Days Fished 10-16  
Determination of Catch 10-16  
Examining Catch 10-16  
    *Salmon Head Recovery* 10-17  
    *Observed Catch* 10-17  
    *Unavailable Catch* 10-18  
    *Kept Unobserved Catch* 10-18  
    *Released Alive* 10-18  
    *Released Alive with Descending Device (DD)* 10-18  
    *Released Dead* 10-19  
    *Seal Take* 10-19  
    *Catch Location and Average Depth* 10-19  
    *Coding Location of Catch for Multiple Species on the Same Trip* 10-19  
    *Measuring Catch* 10-21

- Interview Priorities 10-21
  - Required Fishing Effort Data 10-21*
  - Required Catch Data 10-21*
  - Sub-Sampled Data (Priority Order) 10-21*
- 2020 CRFS PR Form Questionnaire 10-22
- PR Form Layout 10-26
  - Header Row Items 10-26*
  - Interview Effort Items 10-27*
  - Individual Fish Data 10-27*
  - Footer Totals 10-27*
- PR Form Item by Item Instructions 10-28
- Specific Editing Checks 10-41
- Summary of PR Counts 10-43
- Form Examples 10-43
  - PR1 Form Example – Salmon 10-45*
  - PR1 Form Example – Non Salmon 10-46*
  - PR1 Form Example – Non Salmon 10-47*

**SECONDARY PRIVATE AND RENTAL BOAT (PR2) MODE SAMPLING 11-1**

- Introduction 11-1
- PR2 Goals 11-1
- Effort Data 11-2
- Catch Data 11-2
- Location of Catch Data 11-2
- Biological Data Collection 11-2
- Sample Selection 11-3
- Scheduling 11-3
- PR2 Survey Procedures 11-3
  - Effort Data Collection 11-3*
  - PR2 Assignment Duration 11-3*
  - Low Effort Protocol 11-4*
  - No Boats in PR2 Mode 11-4*
  - Arrival and Trailer Counts 11-4*
  - Onsite Trailer Count 11-4*
  - Onsite Missed Boats 11-5*
  - Limited Activity at the Site 11-5*
  - Offsite Trailer Counts 11-5*
  - Launched Boats 11-6*
  - Catch Data Collection 11-6*
  - Biological Data Collection 11-6*
  - Sub-sampling Lengths and Weights 11-6*
  - Catch Location/Average Depth Data Collection 11-6*
  - Sub-sampling Locations and Depths 11-6*

Minimum PR Sample	11-7
Screening Divers	11-7
Fishing Tournaments	11-8
The PR Form (PR2 Mode)	11-8
Questionnaire Usage	11-8
Introduction to the PR2 Boat Interview	11-9
Before the Assignment	11-9
Arrival on Site	11-9
Sampler Location Onsite	11-9
Monitoring Boats	11-10
Multiple PR Trips on the Same Day	11-10
Determination of Boat Type	11-11
Non-Fishing (NF) Boat Types	11-11
CPFV and Commercial Boats	11-11
Opportunistic PC Sampling	11-11
Refused Boats	11-12
Language Barrier Boats	11-12
Anglers, Zip Code and Days Fished	11-12
Determination of Catch	11-13
Examining Catch	11-13
<i>Observed Catch</i>	11-13
<i>Unavailable Catch</i>	11-14
<i>Kept Unobserved Catch</i>	11-14
<i>Released Alive</i>	11-14
<i>Released Alive with Descending Device</i>	11-14
<i>Released Dead</i>	11-15
<i>Seal Take</i>	11-15
<i>Catch Location and Average Depth</i>	11-15
<i>Coding Location of Catch for Multiple Species on the Same Trip</i>	11-16
<i>Measuring Catch</i>	11-17
Interview Priorities	11-17
<i>Required Counts</i>	11-17
<i>Required Boat Records</i>	11-17
<i>Required Catch Data</i>	11-17
<i>Sub-sampled CRFS Data (Priority Order)</i>	11-18
2020 CRFS PR Form Questionnaire	11-18
PR Form Layout	11-22
<i>Header Row Items</i>	11-22
<i>Individual Effort Items</i>	11-23
<i>Recording Launched Boats</i>	11-23
<i>Individual Fish Data: Catch and Biological Data</i>	11-23
<i>Footer Totals</i>	11-23
PR Form Item by Item Instructions	11-24
Specific Editing Checks	11-37

Summary of PR Counts 11-38  
PR2 Form Examples 11-40

**PARTY/CHARTER BOAT ONBOARD (PCO) MODE  
SAMPLING 12-1**

CPFV Survey Procedures 12-1  
PC Assignments 12-1  
PC Definitions 12-1  
    *Party Boat 12-1*  
    *Chartered Boat 12-1*  
    *Six Pack 12-2*  
When to Ride or Sample Dockside 12-2  
Opportunistic PC Sampling 12-2  
Introduction to Onboard Sampling 12-2  
Additional Data Collected Onboard 12-3  
Unbiased Angler Sampling 12-3  
Onboard Observer Protections 12-3  
Title 14, California Code of Regulations Excerpts 12-3  
Sampling Chartered Trips 12-5  
CPFV Refusals 12-5  
Chartered Trip Refusals 12-6  
Alternate PC Trips 12-6  
Onboard Fishing Locations 12-6  
Onboard Catch by Location 12-7  
PC Sample Scheduling 12-7  
Scheduling PC Trips 12-8  
Arrival at a PC Site 12-8  
Onboard the Boat Trip 12-9  
    *On the Way Out 12-9*  
    *During Fishing 12-10*  
    *On the Way Back 12-10*  
Boat Limits 12-11  
NO CATCH Bags 12-12  
Overnight Trips 12-12  
Two PC Assignments in One Day 12-12  
Special PC Assignment Summary and PC Effort Check  
Instructions 12-12  
No Anglers in PC Mode 12-13  
Sampling Dungeness Crab On Board 12-13  
Onboard Sampling Tips 12-13  
PC Scheduling Questions and Answers 12-14  
The CPFV Onboard Angler Form 12-16  
CPFV Onboard Angler Form Layout 12-16  
    *Boat Trip Data 12-16*

- Angler Data 12-16*
- CPFV Onboard Angler Form Item by Item Instructions 12-17
  - Specific Editing Checks 12-22*
- Example of Onboard Angler Form 12-23
- CPFV Onboard Location Form 12-24
- CPFV Onboard Location Form Layout 12-24
  - Boat Assignment Data 12-25*
  - Fishing Location Data 12-25*
  - Coordinate Data 12-25*
  - Physical Data 12-25*
  - Species Count Data 12-26*
  - Recording Numbers Kept and Returned 12-26*
  - Refused Items 12-26*
- CPFV Onboard Location Form Item by Item Instructions 12-27
- CPFV Onboard Location Form Coding Tips 12-30
  - Trolling between Locations 12-30*
  - Non-Stop Trolling 12-31*
  - Specific Editing Checks 12-31*
- Example of Onboard Location Form 12-32
  - Onboard Location Form-Multiple Sheets 12-33*
- CPFV Onboard Catch and Discard Form 12-34
- CPFV Onboard Catch and Discard Form Layout 12-34
  - Boat Assignment Data 12-34*
  - Effort Data 12-34*
  - Discard Fish Data 12-34*
  - Handling Live Fish 12-35*
  - Discard Data Coding Tips 12-35*
  - Catch and Bio Data 12-36*
  - Rockfish Combo Trips 12-36*
  - Total Items 12-36*
- PC Onboard Catch and Discard Form Item by Item Instructions 12-37
  - Specific Editing Checks 12-42*
- Onboard Catch and Discard Form Example 12-44
- Coding Boat Fish on the PC Onboard Catch and Discard Form 12-45

**PARTY/CHARTER BOAT NON-SALMON DOCKSIDE (PCD)  
MODE SAMPLING 13-1**

- When to Sample Dockside 13-1
- Scheduled vs. Opportunistic 13-1
- Sampling Unit 13-1
- PC Assignments 13-1
- Data Collection 13-1

Combo Trips: PCD versus PCS Sampling 13-2  
Sampling Chartered Trips 13-2  
Sampling Guidelines and Procedures 13-2  
CPFV Refusals 13-3  
Interviewing Anglers 13-3  
Boat Limits 13-4  
NO CATCH Bags 13-4  
No Anglers in PC Mode 13-4  
Sampling Dungeness Crab 13-4  
CRFS PC (CPFV) Dockside (PCD) Form Item by Item  
Instructions 13-5  
    *Specific Editing Checks 13-10*  
Example of PC Non-Salmon Dockside Form 13-12

## **PARTY/CHARTER BOAT SALMON DOCKSIDE (PCS) MODE SAMPLING 14-1**

Sampling Unit 14-1  
Data Collection 14-1  
Sampling Guidelines and Procedures 14-1  
CRFS-OSP Salmon CPFV Dockside Form Item by Item  
Instructions 14-4  
    *Specific Editing Checks 14-7*  
CRFS-OSP Salmon CPFV Dockside Form Example 14-8

## **PC EFFORT CHECKS 15-1**

Need and Purpose 15-1  
Methods 15-1  
Types of Assignments 15-2  
Additional PC Assignments 15-2  
CRFS-OSP PC (CPFV) Effort Check Form Item by Item  
Instructions 15-3  
    *Specific Editing Checks 15-5*  
PEC Form Example – Salmon 15-7  
PEC Form Example – Non Salmon 15-8

## **SITE EFFORT CHECKS 16-1**

Need and Purpose 16-1  
Scheduling 16-1  
Methods 16-1  
    *SEC Route 16-1*  
    *SEC Adjacent 16-2*  
Sampling SEC 16-2

Specific Editing Checks 16-3  
SEC ASF Form Example – Routes 16-4  
SEC ASF Form Example – Adjacent 16-6

### **SPECIES CODES 17-1**

Sorted by Species Code 17-1  
Sorted by Common Name 17-19  
Sorted by AFS Common Name 17-37

### **OTHER CODES 18-1**

PR Non-Fishing Codes 18-1  
California Island Codes/Saltwater Cutoffs 18-1  
CRFS Priority Species 18-1  
PR1 Port Codes 18-2  
PC Port Codes 18-3  
California Saltwater Angling Records as of January 1, 2017  
18-5  
California Saltwater Diving Records as of January 1, 2017 18-9  
Alpha Foreign Country Codes 18-12  
Angler Slang Names 18-17

### **GLOSSARY 19-1**

### **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 a telephone 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.

### **Telephone Survey Component**

The Angler License Directory Telephone Survey (ALDTS) (conducted by a contractor) operates on a monthly basis. 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. ALDTS 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 of 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 ALDTS and the field access point surveys.
2. Operators of Commercial Passenger Fishing Vessels (CPFVs) are required as a condition of their license to submit logs for each fishing trip. The CPFV logs and a field survey to estimate compliance are used to estimate CPFV effort.
3. Angler License Directory Telephone Survey (ALDTS)

### **Geographic Divisions**

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 in to 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 in to 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 un common 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. On board 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 of 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. Timesheets have a specific template, in MS Excel, available for download from the intranet (<http://dfgintranet/portal/HumanResources/Personnel/InstructionsforCompletionofFG681/tabid/232/Default.aspx>). 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 preferred 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, 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 policy-makers. 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 telephoned to be asked about their trips in the past one to two months. Samplers should also encourage angler cooperation with telephone surveys of recreational fisheries.

### **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 should 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.

Sun screen 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.

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, 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. Current fishing regulation booklets
17. Binoculars
18. CRFS/RecFIN brochure
19. Bucket and liner

### **Region-Specific Supplies**

20. Salmon
  - a. Cutting board
  - b. Bags and collection tags for heads
  - c. Fillet knife
  - d. Rolling cooler
21. 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 it in your vehicle. 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. CDFW Ocean Fishing Regulations – Printed booklet, half letter size, double sided.
2. *Bring That Rockfish Down* – Printed brochure through Sea Grant explains barotrauma and how to release rockfish properly.
3. *Canary/Vermilion/Yelloweye Flier* – Printed color flier with illustrations of Canary, Vermilion, and Yelloweye Rockfishes. Also lists key characteristic for species identification.
4. *California Fishing Passport* – Printed booklet, half letter size, double sided.
5. *CDFW Marine Region Card* – Business card with basic Marine Region contact information and web site address.
6. *CDFW CalTIP* – Business card with contact information for CalTIP; telephone number for anonymous reporting of violations.
7. *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. 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 on site 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	086509	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	PR1		B	early
6	2014	AUG	WD	THR	7	23	102	TRH		Trinidad Hoist	086501	MM			
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 different mode

assigned. Sometimes you can complete one assignment during the down-time 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 (spearfishers). If a diver uses a spear gun, they are to be considered “anglers” too. If the spearfisher 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 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 Net** 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).

**B** = **B**oth (mooch & troll) is coded to indicate that salmon anglers used both mooch and troll gear types.

**The following gear codes apply to invertebrates only:**

**P#** = **P**ots, and the number of pots pulled (used on vessels). Pots are an enclosed trap with ports to allow entry to access bait and then prohibit legal sized invertebrates from escaping.



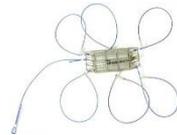
**F#** = **F**lat ring/hoop nets, and the number used. Flat nets have collapsible sides that lie on the bottom when deployed. When retrieved, the sides of the net are raised which makes escape difficult.



**R#** = **R**igid hoop net, and the number used. Rigid nets have sides that are fixed in place with 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 escape difficult.



**E** = **S**nar**E** (a rod and reel device). Snare traps are a small cage-like structure that holds bait, with up to six monofilament loops on the outside of the structure. It is attached to a rod and when reeled in the loops constrict, trapping the legs of the crab.



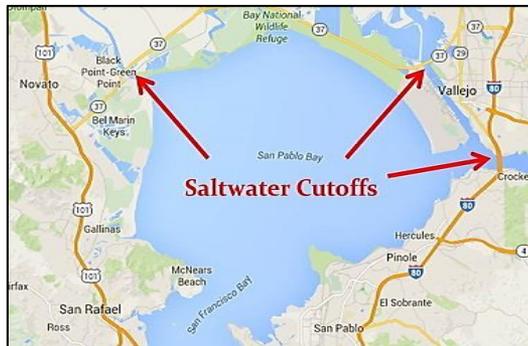
**C** = Hand while **S**CUBA diving with tanks

**D** = Hand while free **D**iving with no tanks

**Areas Fished and Saltwater Cutoff Points**

Samplers should pay attention to the area in which they are sampling. Open ocean typically refers to offshore areas, more than three miles out, in federal waters, indicated by a solid red line on your CRFS Block and Box maps.

Nearshore areas are within three miles of shore but outside an enclosed bay or estuary. Bay areas are inside enclosed bays, estuaries, or harbors.



River areas are typically not surveyed. CRFS is a marine survey and it is necessary to establish saltwater cutoff points at some locations. It is possible to interview in the tidal portion of a river. It 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 fresh water 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**

County	River	Saltwater Cutoff Point
Del Norte	Smith River	¼ way between mouth and Hwy 101
	Klamath River <sup>1</sup>	¼ way between mouth and Hwy 101
Humboldt	Mad River	¼ way between mouth and Hwy 101
	Eel River	Upper end of Cock Robin Island
	Redwood Creek	¼ way between mouth and Hwy 101
Mendocino	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
Sonoma	Navarro River	Highway 1 Bridge
	Petaluma River	Highway 37 Bridge
	Coastal Rivers	Highway 1 Bridges
Napa	Napa River	Highway 37 Bridge
Solano	Sacramento River	Carquinez Bridge
Contra Costa	Sacramento River	Carquinez Bridge
San Mateo	Coastal Rivers	Highway 1 Bridges
Districts: 1-3	Coastal Rivers	PCH (Hwy 1) bridges (excludes Elkhorn Slough)

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

**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 through the use of 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**

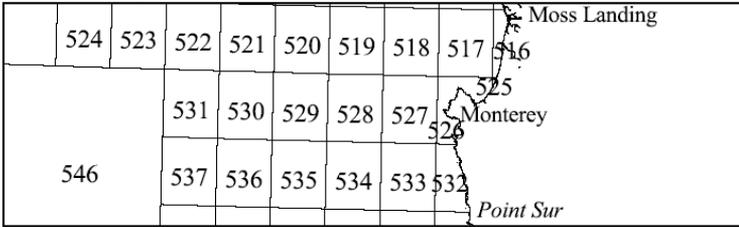
The Equator has been designated as 0° (zero degrees) latitude and the north and south poles are 90°. Greenwich, England was designated as 0° (zero degrees) longitude. Any geographic location on Earth can be pinpointed on a map using the latitude-longitude grid system. The accuracy of the degree grid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

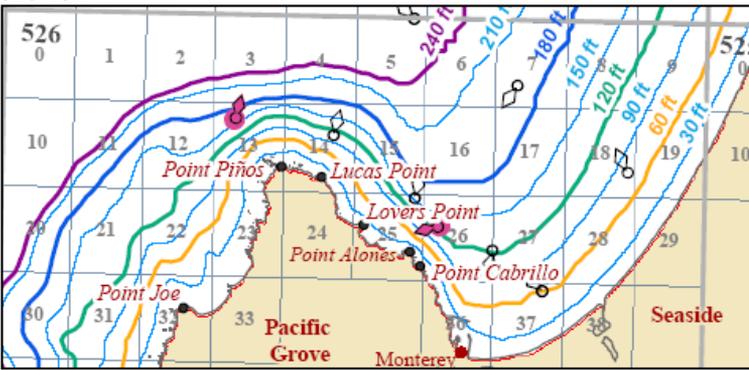
The CRFS format for mapping coordinates is the block-box system which uses pre-defined numbers to indicate a location within one nautical mile. Each block is 10 by 10 nautical miles with 100 boxes numbered 0-99 within each block. One box is approximately one square mile. Three digits are required for 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**

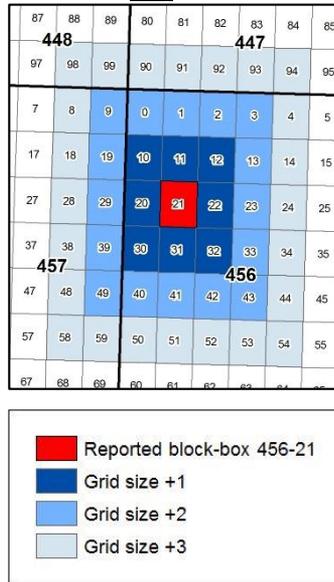
A catch location can be described in several ways: a latitude/longitude, block-box, block and two boxes or area around a block-box. Location is always described to the nearest minute of latitude and longitude and is seen as one minute squares on a map with a point in the center where the east and west "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 two field guides: Miller and Lea's *Guide to the Coastal Marine Fishes of California Fish Bulletin #157* and *Peterson's Guide to Pacific Coast Fishes* or its replacement, *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 recoded 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.

### **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" (BOTTOM).

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.

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

Filleted catch are fish that have been somewhat processed before the sampler saw them. If the Sampler encounters filleted 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 filleted 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		thresher shark	
<b>Higher Priority: Species of Concern (in no particular order)</b>			
yelloweye, cowcod, bronzespotted and canary rockfishes		Pacific halibut	bluefin tuna
<b>High Priority: Species with Harvest Limits (in no particular order)</b>			
cabezon	California sheephead	greenlings ( <i>Hexagrammos</i> spp.)	black, black-and-yellow, blue, bocaccio, brown, copper, calico, China, gopher, grass, kelp, olive, quillback, treefish, widow, and yellowtail 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? The avidity question will give a clue to how often the angler fishes. 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

and Cowcod Rockfishes, 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 Rockfish, Cowcod, 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 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 or Cowcod 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. If the bag or boat has more than 5 fish of one species, select no more than 5 for biological data collection. 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 to 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:

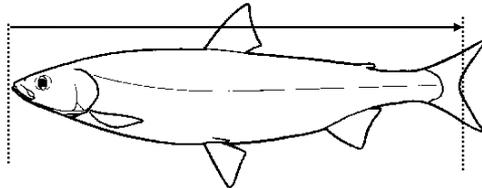
1. Place the measuring board on a hard, level surface
2. Straighten the fish as much as possible
3. Place the fish with the nose flush against the bracket end of the board and close the fish's mouth
4. Use the tape measure to measure the length of the fish that spills over the end of the board
5. Make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



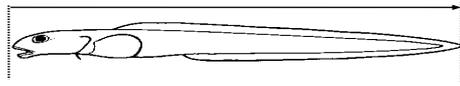
### Measuring Various Types of Fish

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).

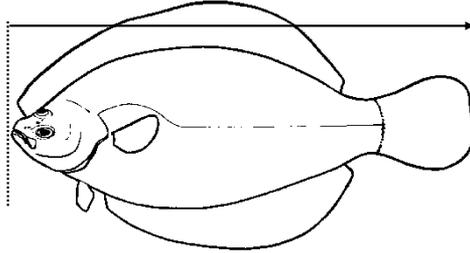
Salmonids – Salmonidae



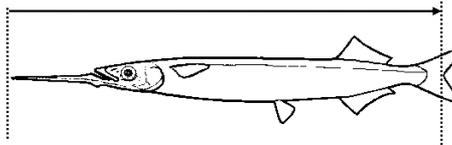
Eelpouts – Zoarcidae



Left eye flounders – Bothidae

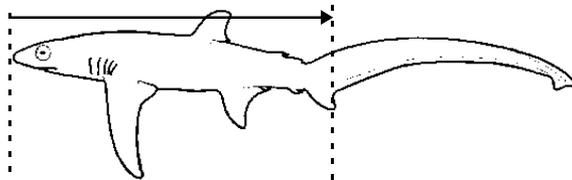


Halfbeaks – Hemiramphidae

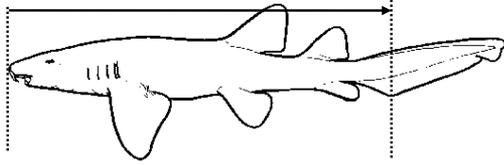


Sharks and sturgeons are measured from the tip of the snout to the center of the fork of the tail. For sharks without a fork, measure the shortest distance to the ventral lobe of the tail (See nurse shark below).

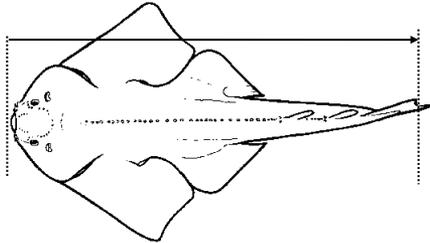
Thresher sharks –  
Alopiidae



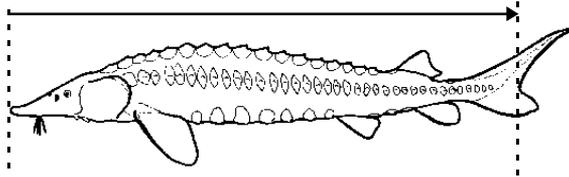
Nurse sharks – *Ginglymostomatidae*



Angel sharks – *Squatinidae*

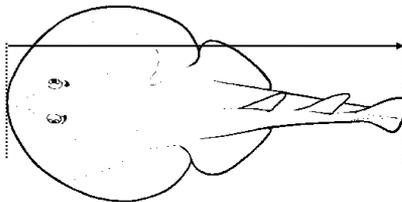


Sturgeons –  
*Acipenseridae*

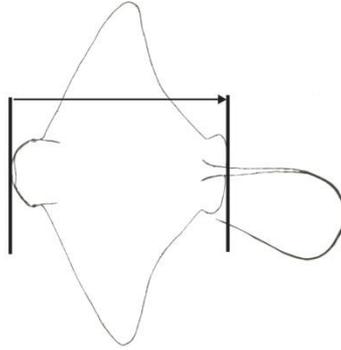


Skates and rays are measured from the tip of the snout to posterior end of the pelvic fins. Do not include the claspers (if any). When a caudal fin is present, the fish is measured to the caudal fin.

Electric rays – *Torpedinidae*

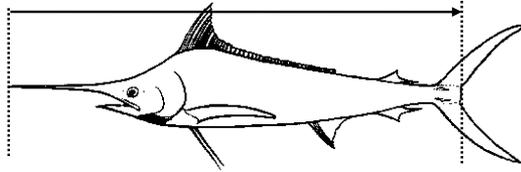


Bat rays – Myliobatidae



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. Four scales will be provided to each Sampler: One Pesola 1 kg scale, and three brass scales of 5 kg, 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 smaller 5 kg scale is labeled in pounds and kilograms and is accurate to tenths of a kilogram (0.1 kg or 100 grams). The 1 kg scale is accurate to 1 hundredths of a kilogram (.01 kg or 10 grams).

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

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:

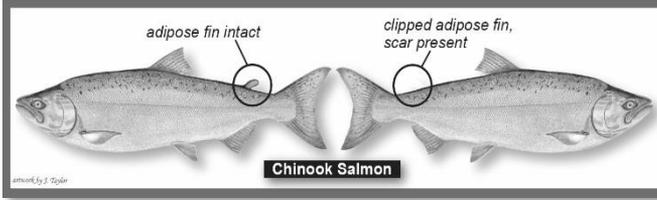
- 25 kg brass scale = 0.39 kg
- 1 liter of freshwater = 1.0 kg
- 1-gallon plastic jug of water = 3.9 kg

## 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 particular 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 MCH = 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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**Sample Mode Codes:** PR1, PR2, PC, COM, MM, BB



**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.

Thank you for cooperating with the California Department of Fish and Wildlife's ocean fishery monitoring program. The missing adipose fin on your salmon indicates that it contains a small (<1mm) coded-wire tag that salmon biologists use to determine pertinent fishery information such as salmon stock distribution & ocean harvest rates. If you would like information about your tagged salmon please **E-MAIL** the Ocean Salmon Project at:

**OSP@wildlife.ca.gov**

In the subject line of your e-mail, please write:

**OSP Headtag # \_\_\_\_\_**

Please also include your name and the date/port where your salmon was sampled. Requests will be processed until December 31, and the headtag information will be e-mailed to you early next year. For any questions please call (707) 576-2882.

### 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.

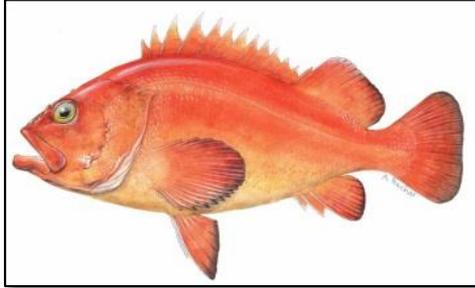
### Salmon Head Drop Off Protocol

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 5355 Skylane Blvd, Suite B Santa Rosa, CA 95403	James Phillips (707) 576-2899
Berkeley, Emeryville	Berkeley Marina 201 University Ave. Dock K-900, Men's restroom closet	James Phillips (707) 576-2899
San Francisco, Princeton	CDFW – Belmont 350 Harbor Blvd. Belmont, CA 94002	James Phillips (707) 576-2899
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 Rockfish Sampling

Yelloweye Rockfish have been a prohibited species in the recreational fishery since 2003. As a result, fewer Yelloweye 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 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 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 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 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.

Be sensitive to the fact that retention of Yelloweye 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 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 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 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 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.

Biological data priorities for yelloweye rockfish are as follows:

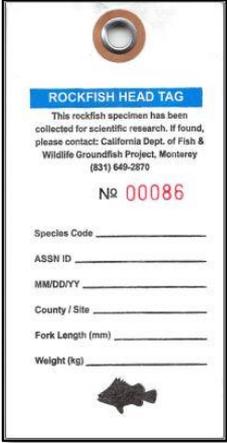
1. Length
2. Weight
3. Whole fish (for otoliths and sex), or carcass or head. Only collect specimens that are landed dead, and NOT from onboard a CPFV.

### Equipment

1. Knife and sheath
2. Cutting board
3. Clear bag for storage (do not use opaque bags because they can easily be confused with trash)
4. Rockfish headtags. Each Sampler will be provided with numbered headtags labeled "ROCKFISH HEAD TAG". Only use these headtags for Yelloweye 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.
3. Inform the angler of their possession of an illegal Yelloweye 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



A white rectangular form with a blue header that reads "ROCKFISH HEAD TAG". Below the header, there is a small circular hole at the top. The text on the form includes: "This rockfish specimen has been collected for scientific research. If found, please contact: California Dept. of Fish & Wildlife Groundfish Project, Monterey (831) 649-2870". A red number "Nr 00086" is printed. 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.



illegal for them to retain yelloweye rockfish.

5. Show the angler how to identify a Yelloweye Rockfish
6. Explain to the angler that the Department can learn more about Yelloweye 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 Rockfish grow.
7. Fill out the headtag completely before attempting to attach it to the jaw of the yelloweye 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.



12. 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 Rockfish by writing a note on the ASF and in the Weekly Report.

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

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

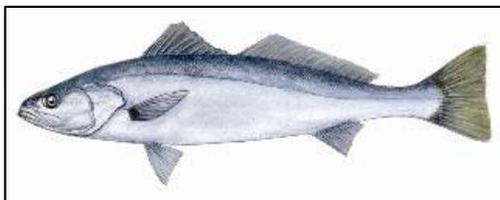
### PR Form Example

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



## Removing the Head

1. Lay the fish on a flat surface
2. 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
3. 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
4. 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 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
5. 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
6. Place the completed headtag form in a clear zipper bag with the head
7. Keep the head in a cool place and freeze it as soon as possible

**CRFS White Seabass Head Tag**

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

## 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
	Sea Landing	(805) 963-3564

<b>Ports</b>	<b>White Seabass Head Drop Off Location</b>	<b>Phone</b>
	301 W. Cabrillo Blvd.	
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 Cali 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
Los Alamitos	CDFW – Los Alamitos 4665 Lampson Ave., Suite C	(562) 342-7111
	Huntington Harbor Fuel Dock Mariner's Point	(562) 592-4975
Huntington Beach	Pacific Edge Bait and Tackle 5042 Edinger Ave.	(714) 840-4262
	Mako Matt's Marine 6411 Edinger Ave.	(714) 893-7743
Newport Beach/Irvine	Angler's Center 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

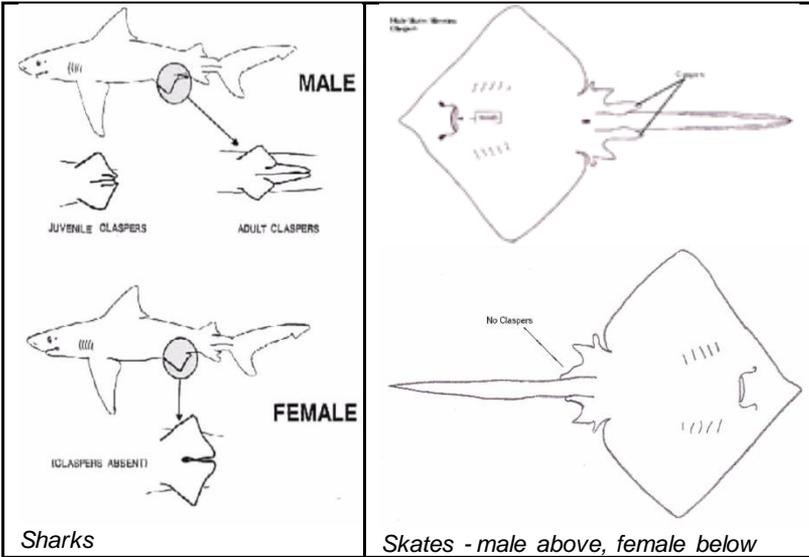
Ports	White Seabass Head Drop Off Location	Phone
	Hogan's Bait and Tackle 34320 Pacific Coast Hwy #G	(949) 493-3528
	Jig Stop Tackle and Tours Dana Point	(949) 496-3555
Oceanside/Carlsbad	Helgren's Sportfishing 315 Harbor Drive South	(760) 722-2133
	Leon Raymond Hubbard Jr. Hatchery 4200 Garfield Street	(760) 434-9501
Solana Beach	Blue Water Tackle 124 Lomas Fe Drive #207	(858) 350-8505
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

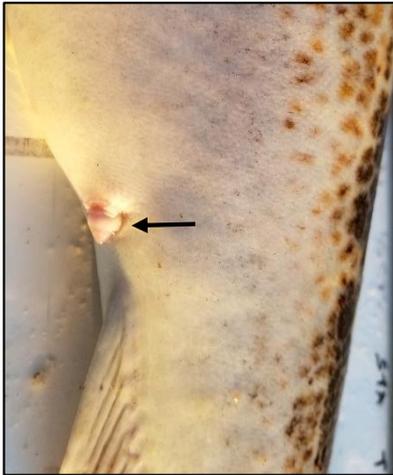
The sex of fishes should be recorded on the data form whenever possible. This information should be considered a bonus and should in no way interfere with your ability to get length and weight data. The codes for fish sex are: M=Male, F=Female, T=Transitional. Transitional California Sheephead may be 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. If a fish is releasing live young or eggs, it's a female; the presence of white milt indicates that it's a male.

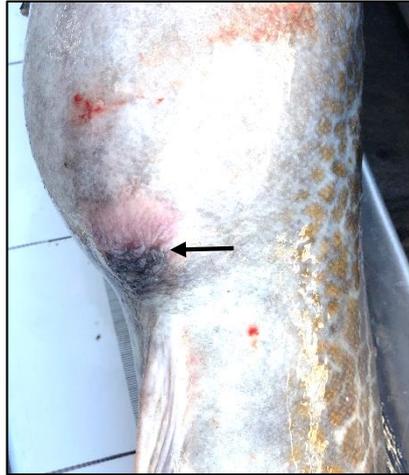
The sex of **elasmobranchs** can always be determined from external characters because male fish have a pair of mixopterygia (intromittent organs, claspers) which are visible from an early stage of development on the inside edge of the pelvic fins (see below). The females do not have mixopterygia.



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.

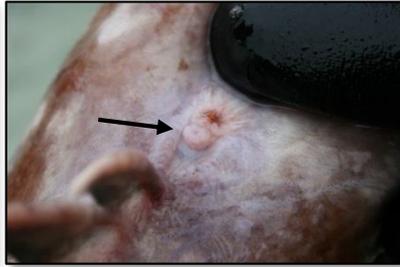


Lingcod sexing; **male**

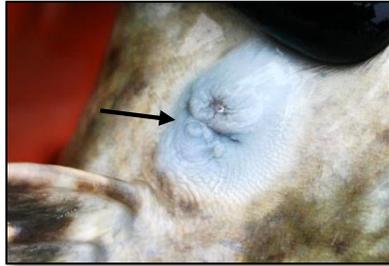


Lingcod sexing; **female**

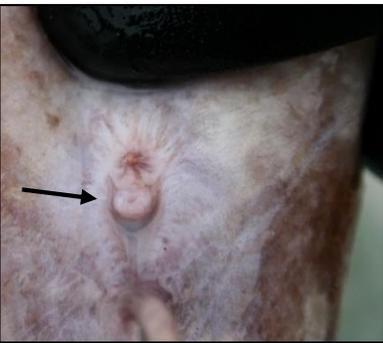
**Cabazon** may also be sexed in a similar manner. Unlike Lingcod, male and female Cabazon both have papillae. The papillae on male and female Cabazon differ in shape. It is necessary to press around the papilla with your thumb to reveal features of its shape. The male papilla has ridges on its edges 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.



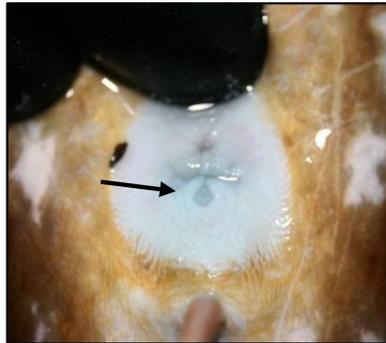
Cabazon sexing; **male** papilla resembles a cruller donut



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 strip along their sides from head to tail.



Figure 12 – Juvenile Sheephead

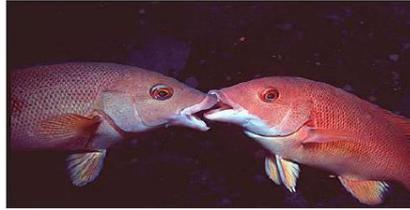


Figure 13 – Female Sheephead



Figure 14 – Transitional Sheephead

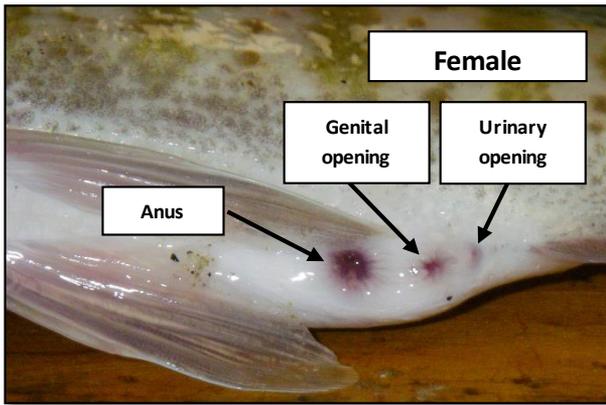


Figure 15 – Male Sheephead

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

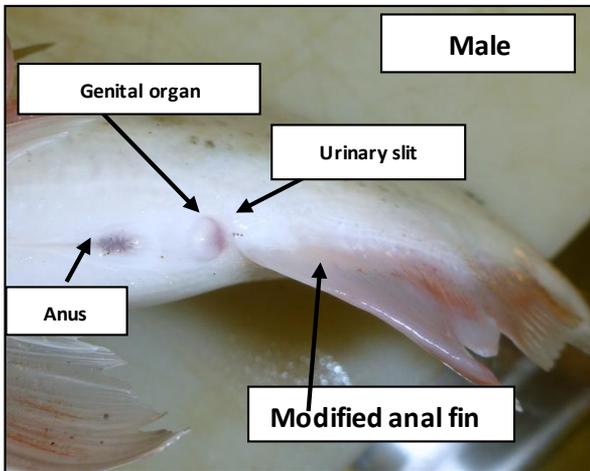
**Surfperch** of the subfamily Amphistichinae which includes species such as barred, Redtail, Silver, Walleye, and Calico Surfperch, can be sexed externally by noting the number of openings between the anal and pelvic fins: males have two while females have three. To clarify, males have three openings; 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.

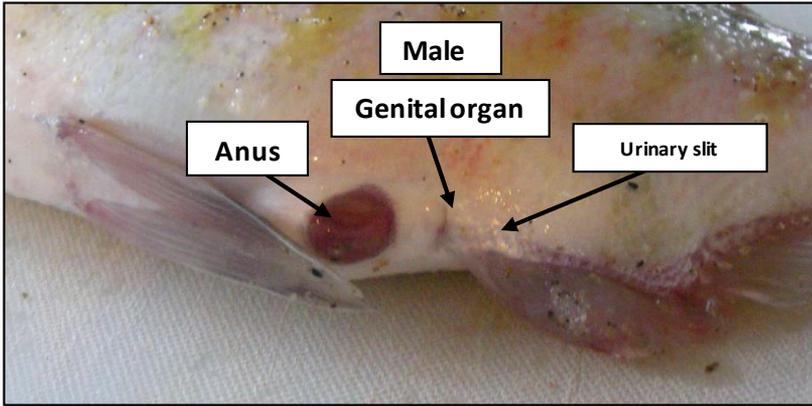


Pictured above and below are ventral views of a female Barred, male Redtail, and male Barred Surfperch, respectively. The anal, genital, and urinary openings appear as purplish "spots" in the female Barred Surfperch shown above. Male surfperch possess a genital organ and modified anal fin as shown below.

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

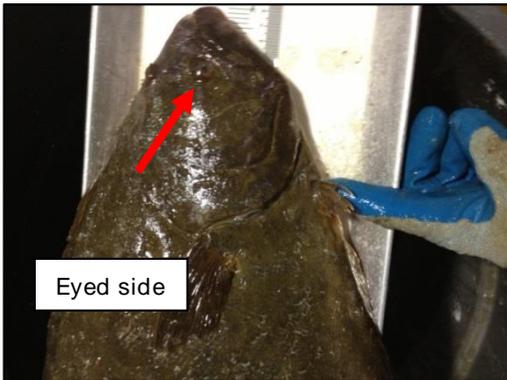


Ventral view: a non-ripe male Barred Surfperch

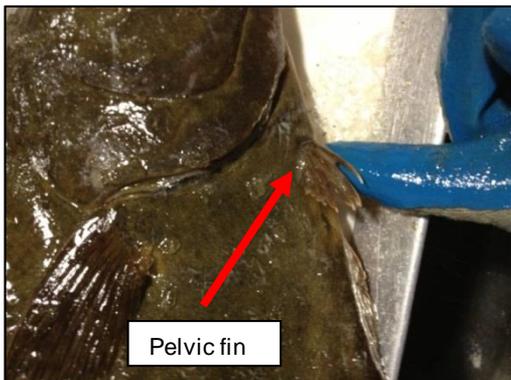


Note: male Barred Surfperch taken during the non-mating season may have genital organs that are not bulbous as shown above.

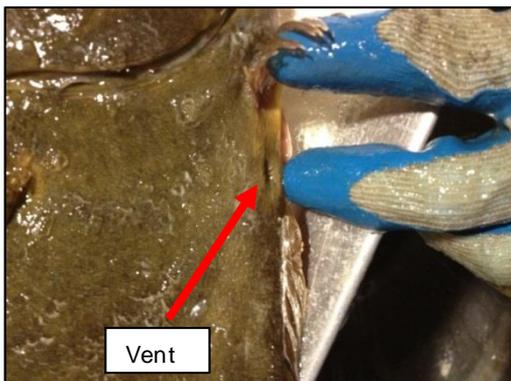
**California Halibut** can be sexed by squeezing the abdominal cavity to extrude sex products. Males will release milt 100% of the time; if no milt is released, the halibut is female.



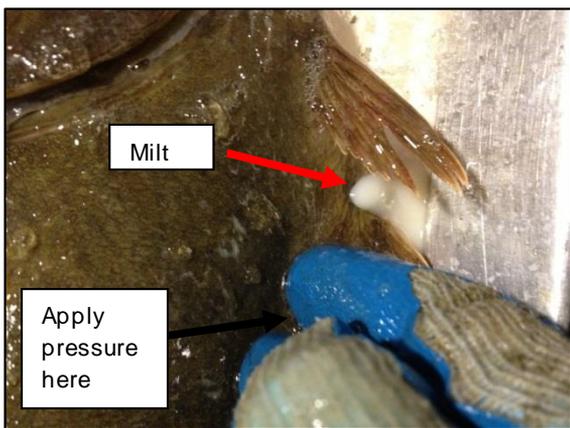
Step 1: Position the halibut so that the eyed side or pigmented side is facing upwards



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



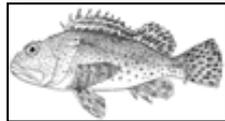
Female Kelp Greenling



## 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.



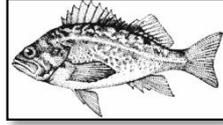
#### Remedies:

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.

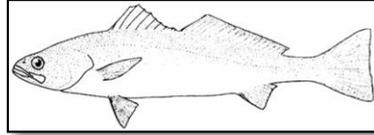
### Rockfish (*Sebastes* spp.)

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.



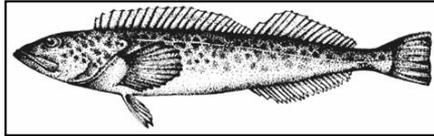
### White Seabass

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



### Lingcod

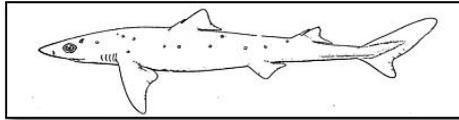
Lingcod have large, sharp teeth and sharp gill rakers. NEVER pick up this fish by inserting your hand under the gill cover. Instead, pick up the fish by inserting the thumb and forefinger of one hand into the eye sockets and use the other hand to lift the fish by the tail.



**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.

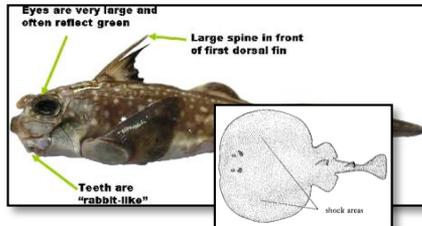
### Spiny Dogfish

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, use care to avoid the very large, venomous spine in front of the dorsal fin. The



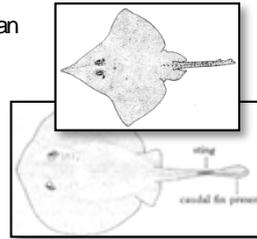
toxin is a protein, so heat or meat tenderizer can probably be used to relieve the pain.

### **Skates and Rays**

**Electric 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.

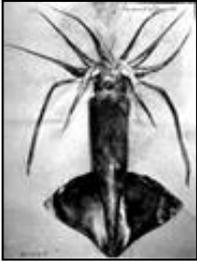
The “Area fished” for invertebrates is the same as for finfish. Use the proper codes for nearshore, bay, offshore, etc. Gear for invertebrates is somewhat different though. In addition to Hook-and-line (H) gear that may be used to take invertebrates, there are special invertebrate-only gears (see Gen. 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.

The avidity question should be delivered the same way, no matter what the anglers were targeting. Even if the angler you are interviewing was targeting invertebrates only, you would still ask for how many days they fished for finfish in a 12-month period in California marine waters. Make sure they are not counting invertebrate-only trips in their estimate of avidity.

### **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 word the avidity question for invertebrate-only anglers?**

Word it the same as usual, "Not counting today, how many days have you gone saltwater sport fin fish fishing in California in the last 12 months". Be clear with invertebrate-only anglers that you are just asking about finfish trips.

#### **2. 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.

#### **3. 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)

#### **4. 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.

**5. 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 clammers. 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 clammers were using to take clams (or other invertebrates).

**6. Should I record biological data for invertebrates?**

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

**MM and BB Modes**

**7. 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.

**8. 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**

**9. 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.

**10. 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).

**11. 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.

**12. 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).

**13. 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.

**14. 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>)

**15. 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.

**16. 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.

**17. 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 crab 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**

**18. 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
<b>Non-Sampling Mode Codes</b>	
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 of his/her PR1 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 if you are the first Sampler, onsite and/or offsite stop count if you are the last Sampler and the names and numbers of other Samplers you 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 his/her 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 your plans for rescheduling if you didn't make it out. Fill out the number of headtags used, HALPA, RFYFY, RFCOW, RFCAN and RFBLK kept and released, and other species headtags field (yellow groundfish items). Remember to only include HALPA, RFYFY, RFCOW, RFCAN 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 he/she collected; when assisting another Sampler with a PCS sample, record hours worked on the Weekly Report without completing the orange salmon items. A new/separate sheet does not need to be created. Include the names and numbers of other Samplers you 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 of 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 you with the MS Excel spreadsheet template that should not be altered. It is important that the order of the MS Excel columns be retained so that the data will align and merge among all Sampler assignments.

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

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

For example; "Weather was great all week but salmon fishing was poor. A lot of anglers switched to bottomfishing and caught mostly RFBLK but one RFYEY was released. A few small salmon were kept. 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
- Pacific halibut released
- Yelloweye rockfish kept
- Yelloweye rockfish released
- Cowcod kept
- Cowcod released
- Canary rockfish kept
- Canary 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. Only report data you collected. If another Sampler worked with you and also collected data, he/she should report that data on their own Weekly Report

**Weekly Report Item by Item Instructions**

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

FIELD	INSTRUCTIONS	CODES AND FORMATS
		Example: 7/10/2017
Sampler Last Name	Fill out in header only: Enter your last name.	Gray column will autofill when mode data is added. 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, PEC, and COM 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	PR1 = primary private and rental boats

FIELD	INSTRUCTIONS	CODES AND FORMATS
	<p>for other work. Do not leave blank; REQUIRED FOR EACH ROW OF DATA.</p> <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. REQUIRED FOR EACH ROW OF DATA.</p>	<p>PR2 = secondary private and rental boats            PCO = CPFV onboard            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; REQUIRED FOR EACH ROW OF DATA.</p> <p>When sampling ended; REQUIRED FOR EACH ROW OF DATA.</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>

<b>FIELD</b>	<b>INSTRUCTIONS</b>	<b>CODES AND FORMATS</b>
Refu + Barrier	Enter the total number of boats where angler(s) refused to be sampled or a language barrier occurred.	PR only <blank> if non-applicable
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, PR and COM only <blank> if non-applicable
Salmon Angls	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, PR and COM only 0 = No kings kept # = Number of kings kept <blank> if non-applicable
Kings Rels	Enter the sum of king salmon released.	PCS, PR and COM only 0 = No kings released # = Number of kings released <blank> if non-applicable
Coho Kept	Enter the sum of Coho salmon kept.	PCS, PR and COM only 0 = No coho kept # = Number of coho kept <blank> if non-applicable
Coho Rels	Enter the sum of Coho salmon released.	PCS, PR and COM only 0 = No coho released # = Number of coho released <blank> if non-applicable
Head Tags	Enter the total number of salmon head tags used (includes tags collected in shore modes).	ALL Sampling Modes 0 = No head tags used # = Number of head tags used <blank> if non-applicable
HALPA Kept	Enter the total number of Pacific Halibut kept.	PR and PC only 0 = No HALPA kept # = Number kept <blank> if non-applicable
HALPA Rels	Enter the total number of Pacific Halibut released.	PR and PC only 0 = No HALPA released # = Number released <blank> if non-applicable
RFYEY Kept	Enter the total number of Yelloweye Rockfish kept.	PR and PC only 0 = No RFYEY kept

<b>FIELD</b>	<b>INSTRUCTIONS</b>	<b>CODES AND FORMATS</b>
		# = 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
RFCOW Kept	Enter the total number of Cowcod kept.	PR and PC only 0 = No RFCOW kept # = Number kept <blank> if non-applicable
RFCOW Rels	Enter the total number of Cowcod released.	PR and PC only 0 = No RFCOW released # = Number released <blank> if non-applicable
RFCAN Kept	Enter the total number of Canary Rockfish kept.	PR and PC only 0 = No RFCAN kept # = Number kept <blank> if non-applicable
RFCAN Rels	Enter the total number of Canary Rockfish released.	PR and PC only 0 = No RFCAN 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
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

FIELD	INSTRUCTIONS	CODES AND FORMATS
Trailer Counts: Offsite Start	Enter the offsite trailer start count (should only be on the first Sampler's form).	<blank> if non-applicable 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: RFYEY <blank> if non-applicable
Other SPP Headtags: #used	Enter the total number of non-salmon head tags used.	PR and PC only # = Number of other spp. head tag used 0 = No head tags used from other spp. <blank> if non-applicable
Other SPP Headtags: HT#	Enter the head tag series number(s) used for non-salmon species.	PR and PC only ##### = the head tag number used for other spp. 0 = No other spp. head tags used <blank> if non-applicable
Weather and other pertinent notes	Enter notes about weather, other Samplers you worked with, training, CPFV activity, other Sampler headtags on your data sheets, driving conditions, etc. <b>REQUIRED FOR EACH ROW.</b>	ALL MODES Please be concise - max 75 characters allowed in database

## **Weekly Report Coding Tips**

The following coding tips and examples address the most common types of errors that occur on 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 you do not include data from other Samplers on your Weekly Report.
2. Do not fill in trailer count items if you were not in charge of tallying those for the PR assignment.
3. Fill out Pacific halibut, yelloweye rockfish, cowcod, canary and black rockfish counts for PR and PC modes (excluding PCO onboard catch location).
4. Salmon items are only needed for PR, PCS, and COM assignments except for Head Tags, 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

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	U	V	W	X	Y	Z
4	CRFS-OSP Weekly Summary Spreadsheet 2020																							
5	Week Beginning Monday: 05/04/20																							
6	Sampler	Asn ID number	Date immaturity	OSP Port, Cluster, or Cntr Site	MODE	Sample Time	Decima l Hours	Mileage	Refu + Barne r	Total Boats	Salmon Boats	Angls	Kept	Reis	Kings Kept	Reis	Cono	Head Tags	HALPA Kept	Reis	RFVEY Kept	Reis	RFOW	
7	LAST NAME	Number				Start	End																	
8	TROXEL	312	055505	5/4	SHC	0630	0830	0	1	47	30	63	119	7	0	3	30	1	0	1	2	0	0	
9	TROXEL	312	055505	5/4	SHC	0830	1832	10.03		2														
10	TROXEL	312	055712	5/4	SHC	1315	1335	0.33		1	1	10	20	3	0	0	5							
11	TROXEL	312		5/4	SHC	1315	1335	0.33																
12	TROXEL	312		5/4	SHC	1200	1200	0.00																
13	TROXEL	312	055505	5/4	SHC	TRV	2030	2230	2.00	0														
14	TROXEL	312		5/5		DAT	1000	1200	2.00															
15	TROXEL	312		5/5		OPW	1500	1700	2.00															
16	TROXEL	312	056509	5/6	CRL	TRV	1000	1230	2.50	0														
17	TROXEL	312	056509	5/6	CRL	PR1	1230	1935	7.08	0	24	18	36	40	2	1	3	21	0	0	0	3	0	
18	TROXEL	312	056509	5/6	CRL	TRV	1935	2210	2.58	0														
19	TROXEL	312	056533	5/6	EUR	PR1		0.00																
20	TROXEL	312		5/9	RED6	TRV	0730	0802	0.53	23														
21	TROXEL	312		5/9	RED6	MM	0803	1535	7.53									0						
22	TROXEL	312		5/9	RED6	TRV	1536	1602	0.43	23														
23	TROXEL	312		5/9		OFC	1700	1800	1.00															
24	050420																							

**Weekly Report Example 1** (Columns A-Z) – Sampler Troxel (312) worked three different modes (PR1, PCD, & PCD) on 5/4. While on site at Shelter Cove (OSP port code "SHC"), he collected PEC information for three boats. On 5/5, Troxel worked non-sampling hours consisting of CRFS data entry (DAT) and other CDFW project work (OPW) approved by his Lead. On 5/6, he was originally scheduled to work an EUR PR1 (ASSN 056533). He was reassigned to a CRL PR1 (ASSN 056509) instead. Troxel then worked a RED6MM cluster assignment on 5/9. Later that day, he concluded his workweek with office hours (OFC) spent editing data, drafting and submitting his Weekly Report. **\*Note:** Sample Time is blank for ASSN 056533 since the Sampler was scheduled but did not work. **\*\*Note:** Each mode requires different assignment summary totals. Reference the Weekly Report template workbook "Field Definitions" tab for full specifics.

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

AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	
																	07/2020
RFCAN		RFBLK		Missed Boats		Trailer Counts		Other SFP Headtags		Notes		Monday		CFPW		District	
Kept	Reils	Kept	Reils	Onsite	Offsite	Onsite	Offsite	Start	Stop	Start	Stop	Spp	HT #	Date	Lead	District	
8	6	96	63	0	33	0	0	RFVEY	1	01186	Travel from HQ to Shelter Cove in Vallejo (303) has data also.	5/4/2020	ROBERTS	6			
0	0	30	22					0	0	0	Sampled Spumeil and Cronn (RL)	5/4/2020	ROBERTS	6			
								0	0	0	Sampled Spumeil (STR) trip. Exc	5/4/2020	ROBERTS	6			
											Checkmate (2) non-fishing trip. See	5/4/2020	ROBERTS	6			
											Travel from SHC to HQ. Overline	5/4/2020	ROBERTS	6			
											CRFS data entry in Eureka office	5/4/2020	ROBERTS	6			
											Other Project Work. Video data at	5/4/2020	ROBERTS	6			
											Travel from HQ to Fort Blagg in st	5/4/2020	ROBERTS	6			
10	12	106	47	0	4	0	1	0	0	0	Worked for Bondoux (32) was sk	5/4/2020	ROBERTS	6			
											Travel from Fort Blagg to HQ in st	5/4/2020	ROBERTS	6			
											I was asked to work in EUR for Bk	5/4/2020	ROBERTS	6			
											Weekly reporting, emails, mailing	5/4/2020	ROBERTS	6			
											Travel from HQ to Crescent City N	5/4/2020	ROBERTS	6			
											Early Shift. Order ADCB. Moderate	5/4/2020	ROBERTS	6			
											Weekly reporting, emails, mailing	5/4/2020	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**

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	U	V	W	X	Y	Z
Week Beginning Monday: 05/04/20																								
7	SAMPLER	LAST NAME	Number	Asn ID num	Date m/m/dd/yy	OSP Port, Cluster, or Cnty Site	MODE	Sample Time		Mileage	Relu + Barner Boats	Salmon		Kings		Coho		HALPA		RFVEY		RFCOW		
								Start	End			Boats	Angls	Kept	ReIs	Kept	ReIs	Head Tags	Kept	ReIs	Kept		ReIs	Kept
8	COLLINS	425		056101	5/7	RED9	TRV	0745	0815	0.50														
9	COLLINS	425		056101	5/7	RED9	TRV	0815	0958	1.72	0													
10	COLLINS	425		056101	5/7	RED9	BB	0958	1100	1.03	0													
11	COLLINS	425		056101	5/7	RED9	TRV	1100	1300	2.00	0													
12	COLLINS	425		056206	5/8	RED4	TRV	0800	0820	0.33	22													
13	COLLINS	425		056206	5/8	RED4	MM	0820	1340	5.33	22													
14	COLLINS	425		056206	5/8	RED4	TRV	1340	1400	0.33	22													
15	COLLINS	425		056309	5/9	023107	TRV	0845	0859	0.23	6													
16	COLLINS	425		056309	5/9	023107	PR2	0900	1700	8.00	0	11	4	10	12	1	0	0	2	0	0	0	0	
17	COLLINS	425		056309	5/9	023107	TRV	1701	1716	0.25	6													
18	COLLINS	425		056309	5/10	BEC1	TRV	0800	0815	0.25	19													
19	COLLINS	425		056309	5/10	BEC1	BEC	0815	1536	7.35	20													
20	COLLINS	425		056309	5/10	BEC1	TRV	1536	1626	0.83	20													
21	COLLINS	425		056309	5/10	BEC1	OFC	1630	1730	1.00														
050420																								

**Weekly Report Example 2** (Columns A-Z) – Sampler Collins (425) started her workweek on 5/7 by picking up forms and a state vehicle at the office. This time was coded to the non-sampling mode code OFC. Directly after, she sampled the RED9 BB cluster. Since she drove a state vehicle, her mileage was listed as "0". On 5/8 Collins sampled the RED4 MM cluster. Her PR2 assignment on 5/9 was completed at County 23, Site 107. Her final workday for the week, on 5/10, included sampling a BEC route and office hours (OFC) spent completing her Weekly Report and data edits. **Note:** BB and MM rows have an assignment summary total for "Head Tags" in Column S only. Samplers should also note the start time and order the cluster was sampled in Column AN. **\*\*Note:** PR2 rows have the CNTY SITE code listed in Column E as a six-digit number with no spaces or special characters.

Example of Weekly Report – 2 (Continued)

AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ
													Monday	CDFW		
													Date	Lead	District	
													Notes			
													HT #			
													Other SPP Headtags			
													Spp	Used		
													Trailer Counts			
													OnSite	OffSite	OffSite	
													Start	Stop	Stop	
													Missed Boats			
													Onsite	Offsite		
													RFCAN			
													Kept	Kept	Rels	
													Kept	Rels		
													Picking up forms, talking with Leah	5/4/2020	ROBERTS	6
													Travel from HQ to Oregon border in	5/4/2020	ROBERTS	6
													Some BB effort at Pelican Beach;	5/4/2020	ROBERTS	6
													Travel from Crescent City to HQ	5/4/2020	ROBERTS	6
													Travel from home to Trinidad in per	5/4/2020	ROBERTS	6
													No effort at Trinidad pier; some eff	5/4/2020	ROBERTS	6
													Travel from North Jetty to home.	5/4/2020	ROBERTS	6
													Travel from HQ to Samoa Bridge T	5/4/2020	ROBERTS	6
													Boats able to make it out of the ba	5/4/2020	ROBERTS	6
0	0	3	0	0		6				0	0	0	Travel from Samoa Bridge T, Streed	5/4/2020	ROBERTS	6
													Travel from HQ to Eureka Slough	5/4/2020	ROBERTS	6
													Moderate BB and MM effort inside	5/4/2020	ROBERTS	6
													Travel from South Spit to HQ	5/4/2020	ROBERTS	6
													Completing and submitting weekly	5/4/2020	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. You may also be scheduled to conduct Site Effort Checks (SEC) at certain sites 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 your 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 – your 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: _____				
Asst # <b>V16 3419</b>		<b>CRFS ASSIGNMENT SUMMARY FORM</b>						
<b>COMMENTS</b>	<b>1</b> SAMPLER NAME: <b>Joe Sampler</b>	SAMPLER # <b>187</b>	DATE (MM/DD/YYYY) <b>07/04/19</b>	ASSN ID <b>075503</b>	MODE <b>PR1</b>	PORTY CLUS <b>PRI</b>	HOURS <b>10</b>	TOTAL
	OTHER SAMPLER(S): NAME & # (w/dtst)	OTHER SAMPLER(S): NAME & # (w/dtst)			<b>1</b>	ASSN DISP*	<b>8.5</b>	SAMPLING
	<b>Tom Johnson 156</b> (Y/N) circle one	(Y/N) circle one			<b>PV</b>	State Car or Pers Vehicle	<b>1</b>	TOT TRV
	MARINE CONDITIONS: 3-4 foot swell, light winds, patchy fog				<b>190000</b>	ODO START	<b>0.5</b>	TRV TIME HQ to site 1
	EFFORT: Fairly high. 35 trailers to start				<b>190050</b>	ODO STOP	<b>0.5</b>	TRV TIME last site to HQ
	CATCH: Mix of RFGEN and Salmon. Many anglers had limits				<b>50</b>	MILEAGE	<b>0.5</b>	EDIT
	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 (MIMBB):							

## 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 you arrived at your first site until the time you leave your last site, and includes time spent driving between sites. Edit time is time spent editing data outside of the assignment. Normally, CRFS Samplers would edit data during slow periods onsite, but if this is not possible, at-home editing time should be reported here. 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	Onsite Stop	Onsite Stop	
Row #	SITE NAME / SITE COMMENT	TIME					
1	<b>Princeton PC</b> 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.	CNTY	<b>81</b>	ARRV	<b>0800</b>	BB	
		SITE	<b>100</b>	START	<b>0805</b>	MM	<b>35</b>
		DISPO**	<b>1</b>	STOP	<b>1625</b>		
		HRS	<b>8.5</b>	DEPR	<b>1630</b>	PR	

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 you may be assigned to conduct site effort checks at various sites. Your Lead will give you 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 zeros are needed in this section for MM and BB modes. You are required to 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 due dates and content requirements given by their Leads.

**ASF Item by Item Instructions**

Field Name	Instructions	Coding Examples and Formats
<b>HEADER</b>		
Assn #	The assignment number will be "1" unless you 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: 08/05/14 for Aug, 5 2014
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	<p>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 you 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>	<p>"The beaches were empty due to NW gale force winds. "  "Waves washing over jetty made it unsafe to conduct counts."  "Effort was high but catch avg. 4 RF each; a few ling also landed"  "Worked with Jane Doe (217) and had a field check by John Doe"  "Used headtag series 50000-06"  "Unable to obtain weights due to rough conditions"  "Worked with Sampler Joe Smith today. We both have data"  "No PC effort at assigned site Emeryville, assignment completed at Berkeley instead".</p>

Field Name	Instructions	Coding Examples and Formats
ASSN MODE	Enter the assigned mode. The assigned mode will appear on your Sampler Schedule.	PR1 and 2 = Primary and secondary private / rental boat sites. MM= Manmade structures BB= Beaches and banks. PCO= Party and charter boats sampled on-board PCD= Non-Salmon party and charter boats sampled dockside PEC= Party/Charter effort check SEC= Site Effort Check
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

Field Name	Instructions	Coding Examples and Formats
ASSN DISP	<p>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.</p> <p>For assignments which are reassigned or canceled, record the site name, and county and site codes on the first ASF Site Row.</p>	<p>1=Complete: When you "complete" the assignment and it is done.</p> <p>2= Reassigned: When the assignment needs to be moved or rescheduled. Examples: You missed the PC boat and there are no eligible alternates; personal reasons approved by your Lead; the site is closed to fishing; no boats going out due to weather or low effort; you get sick or injured during the assignment; the situation is unsafe or unhealthy</p> <p>6= Cancelled: When your Lead notifies you that the assignment cannot be rescheduled before the end of the month</p>
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 (when you leave home/HQ).	Example:10001
Odo Stop	Record your odometer mileage at end of driving (when you arrive at home/HQ).	Example: 10044

<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
MILEAGE	Compute the total miles you drove to the nearest whole mile for the day. This will help the Sampler fill out a CalATERS claim for the month. For Samplers using a State car, do not record mileage (leave blank).	Miles, to the nearest whole number  Example: 43
HOURS TOTAL	The total hours for the day. Includes: sampling, travel and edit  A conversion chart has been provided in the COMMENTS section to help with rounding hours to the nearest 0.25 hours.	Round to nearest 0.25 hour.  Example: 8 hours and 20 minutes would be rounded to 8.25
HOURS SAMPLING	The time you spent from arrival at your first site to the time you leave your last site.	Round to nearest 0.25 hour.  Example: 8 hours and 40 minutes worked would round to 8.75
HOURS TOT Travel	The time you spent travelling from your HQ to your first site, plus the time you spent travelling from your last site to HQ.	Travel between sites is counted in your HOURS SAMPLING.
<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
HOURS TRV time HQ to first site	The time you left your HQ to the time you arrive at your first site.	Round to nearest 0.25 hour.  Example: 45 minutes rounds to 0.75 hours
HOURS TRV time last site to HQ	The time from when you left your last site to when you arrived at HQ.	Round to nearest 0.25 hour.  Example: 55 minutes rounds to 1.0 hours

Field Name	Instructions	Coding Examples and Formats
HOURS EDIT	Extra time spent editing forms at home or office. You are expected to edit your forms during slack time between interviews; however, occasions may arise when you require more time to edit forms.	Round to nearest 0.25 hour.  Example: 25 minutes rounds to 0.5 hours
<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"
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

Field Name	Instructions	Coding Examples and Formats
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.	<p>Use the lowest valid code:</p> <p>0= Site Effort Check: You have performed a trailer/angler count only (i.e., drive-bys)</p> <p>1= Complete/Done</p> <p>4= Low Effort (PC only): There are no anglers. The assn will need to be rescheduled; work with your Lead on this.</p> <p>5= Other: Examples: Time spent at site (outside of assigned cluster) interviewing anglers; you can't ride the boat for whatever reason (not allowed by captain, PC had motor problems, poor weather).</p> <p>7= Roving (Clusters): you are sampling a cluster of sites and you are moving between sites as scheduled. Your last site visited will get a DISPO=1</p>

Field Name	Instructions	Coding Examples and Formats
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
ARRV =Arrival	Time in 24 hour format when you physically arrived at the site.	24 hour format:  "0701" = 7:01am
START	This is the time when you physically start sampling, usually after 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 you physically stopped sampling.	24 hour format:  For MM assignments, you will do your end count in between STOP and DEPR times
DEPR =Departure	This is the time when you physically departed the site.	24 hour format:  "2359" = 11:59pm

Field Name	Instructions	Coding Examples and Formats
Site Effort Check (if applicable)	You will only use this if you are 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) you are assigned to check (MM, BB, PC, PR).	<p>Example: You are assigned to go check a series of sites in a specified route. You would record the number of anglers or trailers seen at each site.</p> <p>Example: While traveling to or from a CRFS assignment you might be instructed to conduct SEC counts at adjacent sites.</p>
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
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

Field Name	Instructions	Coding Examples and Formats
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

Field Name	Instructions	Coding Examples and Formats
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	Total number of Pacific halibut 'observed kept' and 'unobserved kept' from all PR/PCO forms.	Sum of 'Kept Pacific halibut' from each PR/PCD/PCO/PCD Angler Form
Rels Pac. halibut	Total number of Pacific halibut 'released dead + released alive' from all PR/PCO forms.	Sum of 'Rels Pacific halibut' from each PR/PCO/PCD form
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



## **ASF Coding Tips**

The following coding tips and examples address the most common types of errors on the Assignment Summary Form. The most common errors fall into 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



# Assignment Summary Form Examples

BB

RCVD ONBY: _____		EDIT ONBY: _____		SCAN ONBY: _____												
ENTR ONBY: _____		UPLD ONBY: _____		FILE ONBY: _____												
Assn # <span style="float: right;">V15 30410</span> <b>CRFS ASSIGNMENT SUMMARY FORM</b>																
COMMENTS	SAMPLER NAME: <b>1 Joe Sampler</b>		SAMPLER #	DATE (MM/DD/YY)	ASSN ID	MODE	PORTY CLUS	HOURS	TOTAL							
			<b>187</b>	<b>12/10/19</b>	<b>124112</b>	<b>BB</b>	<b>SFO21</b>	<b>8</b>								
	OTHER SAMPLER(S): NAME & # (W/302) (Y/N) circle one		OTHER SAMPLER(S): NAME & # (W/302) (Y/N) circle one			<b>1</b>	ASSN DISP*	<b>7</b>	SAMPLING							
						<b>PV</b>	State Car or Pers Vehicle	<b>1</b>	TOT TRV							
	MARINE CONDITIONS: 3-4 foot swell, light winds, incoming tide					<b>190000</b>	ODO START	<b>0.50</b>	TRV TIME HQ to site 1							
	EFFORT: CATCH: Mostly perch and baitfish landed					<b>190050</b>	ODO STOP	<b>0.50</b>	TRV TIME last site to HQ							
	PC ACTIVITY: OTHER PERTINENT INFORMATION: Start Category = Early					<b>50</b>	MILEAGE	<b>0</b>	EDIT							
									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								
HEAD TAGS USED (PR/PC):		HEAD TAGS USED (MM/BB):														
*Assignment dispositions: 1=Complete, 2=Reassigned, 6=Canceled						HO Departure Time: <b>0730</b> HO Return Time: <b>1530</b>		PR Trailer Counts Onsite Start Onsite Stop Onsite Start Onsite Stop								
Check box if continued on 2nd page <input type="checkbox"/>																
Row #	SITE NAME / SITE COMMENT					TIME										
1	<b>Agate Beach</b>					CNTY	<b>41</b>	ARRV	<b>0800</b>	BB	<b>0</b>	<b>0</b>				
	No Effort					SITE	<b>203</b>	START		MM						
						DISPOH*	<b>7</b>	STOP								
						HRS	<b>1</b>	DEPR	<b>0900</b>	PR						
2	<b>Bolinas Shore</b>					CNTY	<b>41</b>	ARRV	<b>0910</b>	BB	<b>2</b>	<b>0</b>				
	Low Effort. 2 Anglers targeting surfperch and planned to fish until 1450. Got incomplete interviews before leaving the site.					SITE	<b>204</b>	START		MM						
						DISPOH*	<b>7</b>	STOP								
						HRS	<b>0.50</b>	DEPR	<b>0945</b>	PR						
3	<b>Stinson Beach</b>					CNTY	<b>41</b>	ARRV	<b>1000</b>	BB	<b>3</b>	<b>0</b>				
	Interviewed 3 anglers that were just leaving as I arrived.					SITE	<b>205</b>	START		MM						
						DISPOH*	<b>7</b>	STOP								
						HRS	<b>1</b>	DEPR	<b>1100</b>	PR						
4	<b>Muir Beach</b>					CNTY	<b>41</b>	ARRV	<b>1110</b>	BB	<b>4</b>	<b>0</b>				
	4 anglers planned to fish all day. Got incomplete interviews before leaving the site.					SITE	<b>230</b>	START		MM						
						DISPOH*	<b>7</b>	STOP								
						HRS	<b>3.25</b>	DEPR	<b>1425</b>	PR						
5	<b>Bolinas Shore</b>					CNTY	<b>41</b>	ARRV	<b>1430</b>	BB	<b>2</b>	<b>0</b>				
	Followed up with the 2 anglers from the morning. Got complete interviews.					SITE	<b>204</b>	START		MM						
						DISPOH*	<b>1</b>	STOP								
						HRS	<b>0.50</b>	DEPR	<b>1500</b>	PR						
PR & PC ONLY	Refusal + Baited	Total Boats	Boats Salmon	Kept Kings	Kept Coho	Kept Rels	Head Tags	Kept HALPA	Kept Rels RYFYEY	Kept Rels RFOCOW	Kept Rels RFCAN	Kept Rels RFBK	Kept Rels ON	OFF	Missed	

# 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: right;">V15 3UW5</span>												
<b>COMMENTS</b>	ASSN # <b>1</b>		SAMPLER # <b>187</b> DATE (MM/DD/YY) <b>11/18/19</b>		ASSN ID <b>114232</b>							
	SAMPLER NAME: <b>Joe Sampler</b>		MODE <b>MM</b>		PORTY CLUS <b>SFO2</b>							
	OTHER SAMPLER(S): NAME & # (w/ID2)		OTHER SAMPLER(S): NAME & # (w/ID2)		ASSEN DISP# <b>1</b>							
	(Y/N) circle one		(Y/N) circle one		State Car or Pers Vehicle <b>PV</b>							
	MARINE CONDITIONS: 3-4 foot swell, light winds, incoming tide		ODO START <b>190000</b>		HOURS <b>7.75</b>							
	EFFORT: Mostly perch anglers. Found at all sites, but most at the N. Jetty		ODO STOP <b>190050</b>		TOTAL <b>7.75</b>							
	CATCH: Saw PRKMK and SMJAK. The rest were SPFAM		MILEAGE <b>50</b>		SAMPLING <b>7.25</b>							
	PC ACTIVITY:				TOT TRV <b>0.5</b>							
	OTHER PERTINENT INFORMATION: Start Category = Early				TRV TIME HQ to site 1 <b>0.25</b>							
	HEAD TAGS USED (PR/PC):		HEAD TAGS USED (MM/BB):		TRV TIME lost site to HQ <b>0.25</b>							
*Assignment dispositions: 1=Complete, 2=Reassigned, 6=Cancelled												
Check box if continued on 2nd page <input type="checkbox"/>		HQ Departure Time: <b>0745</b>		Site Effort Check (if applicable)								
		HQ Return Time: <b>1530</b>		PR Trailer Counts								
Row #	SITE NAME / SITE COMMENT			TIME		Onsite Start	Onsite Stop	Offsite Start	Offsite Stop			
1	<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				
				DISPOH	<b>7</b>	STOP	<b>1034</b>	PR				
2	<b>Princeton Pier</b>			HRS	<b>3</b>	DEPR	<b>1100</b>	PR				
	Low effort. 2 perch anglers.			CNTY	<b>81</b>	ARRV	<b>1110</b>	BB				
				SITE	<b>302</b>	START	<b>1115</b>	MM				
3	<b>South Jetty Princeton Harbor</b>			DISPOH	<b>7</b>	STOP	<b>1415</b>	PR				
	2 PRKMK caught and measured			HRS	<b>1.5</b>	DEPR	<b>1240</b>	PR				
				CNTY	<b>81</b>	ARRV	<b>1255</b>	BB				
4	<b>North Jetty Princeton Harbor</b>			SITE	<b>305</b>	START	<b>1300</b>	MM				
	Went back to this site since it had the most effort			DISPOH	<b>7</b>	STOP	<b>1415</b>	PR				
				HRS	<b>1.5</b>	DEPR	<b>1420</b>	PR				
5				CNTY	<b>81</b>	ARRV	<b>1435</b>	BB				
				SITE	<b>304</b>	START	<b>1440</b>	MM				
				DISPOH	<b>1</b>	STOP	<b>1500</b>	PR				
PR & PC ONLY												
Refusal + Barrier	Total Boats	Boats Salmon	Angs Kings	Kept Rels Coho	Head Tags	Kept Rels HALPA	Kept Rels RFYEY	Kept Rels RFCOW	Kept Rels RFCAN	Kept Rels RFBLK	GN Missed	OFF
*Site dispositions: 0=Effort check, 1=Complete, 4=Low Effort, 5=Other (comment), 7=Roaming (MM, BB clusters)												

# Assignment Summary Form Examples

## PCO – Reassigned

RCVD ONBY: _____		EDIT ONBY: _____		SCAN ONBY: _____					
ENTR ONBY: _____		UPLD ONBY: _____		FILE ONBY: _____					
Asn # <b>V15 3419</b>		<b>CRFS ASSIGNMENT SUMMARY FORM</b>							
<b>COMMENTS</b>	1 <b>Joe Sampler</b>	SAMPLER #	DATE (MM/DD/YYYY)	ASSN ID	MODE	PORT/ CLUS	HOURS	TOTAL	
	OTHER SAMPLER(S): NAME & # (w/total)	OTHER SAMPLER(S): NAME & # (w/total)	<b>187</b>	<b>07/04/19</b>	<b>074606</b>	<b>PCO</b>	<b>PRI</b>	<b>1.5</b>	
	(Y/N) circle one	(Y/N) circle one	<b>2</b>	ASSN DISP*	<b>1</b>	SAMPLING	<b>0.5</b>	TOT TRV	
	MARINE CONDITIONS: Foggy, strong winds, large swells	EFFORT: All boats targeting salmon	<b>PV</b>	State Car or Pers Vehicle	<b>190000</b>	ODO START	<b>0.25</b>	TRV TIME HQ to site 1	
	CATCH:	PC ACTIVITY: Hulicat Docked, Port Lead Informed	<b>190050</b>	ODO STOP	<b>0.25</b>	TRV TIME last site to HQ	<b>0</b>	EDIT	
	OTHER PERTINENT INFORMATION:	HEAD TAGS USED (PR/PC):	HEAD TAGS USED (MM/BB):	MILEAGE	<b>50</b>	MILEAGE	<b>0</b>	EDIT	
	ROUND TAGS USED (PR/PC):	HEAD TAGS USED (MM/BB):	ASSIGNMENT DISPOSITIONS: 1=Complete, 2=Reassigned, 6=Concealed	HQ Departure Time: <b>0645</b>	Site Effort Check (if applicable)	PR Trailer Counts	0.00hr = 53-07 mins	0.25hr = 09-22 mins	
	Check box if continued on 2nd page <input type="checkbox"/>	HQ Return Time: <b>0816</b>	PR Trailer Counts	0.50hr = 23-37 mins	0.75hr = 38-53 mins	0.00hr = 53-07 mins	0.25hr = 09-22 mins	0.50hr = 23-37 mins	
	Row #	SITE NAME / SITE COMMENT	TIME	CNTY	ARRV	BB	0645	0816	0645
	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	START	<b>81</b>	<b>400</b>	<b>0700</b>	MM	PR	DISPO**
2		STOP	<b>4</b>	<b>7.5</b>	<b>0800</b>	PR	DEPR	HRS	
3		ARRV				BB	0645	0816	
4		START				MM			
5		STOP				PR			
6		ARRV				BB	0645	0816	
7		START				MM			
8		STOP				PR			
9		ARRV				BB	0645	0816	
10		START				MM			
11		STOP				PR			
12		ARRV				BB	0645	0816	
13		START				MM			
14		STOP				PR			
15		ARRV				BB	0645	0816	
16		START				MM			
17		STOP				PR			
18		ARRV				BB	0645	0816	
19		START				MM			
20		STOP				PR			
21		ARRV				BB	0645	0816	
22		START				MM			
23		STOP				PR			
24		ARRV				BB	0645	0816	
25		START				MM			
26		STOP				PR			
27		ARRV				BB	0645	0816	
28		START				MM			
29		STOP				PR			
30		ARRV				BB	0645	0816	
31		START				MM			
32		STOP				PR			
33		ARRV				BB	0645	0816	
34		START				MM			
35		STOP				PR			
36		ARRV				BB	0645	0816	
37		START				MM			
38		STOP				PR			
39		ARRV				BB	0645	0816	
40		START				MM			
41		STOP				PR			
42		ARRV				BB	0645	0816	
43		START				MM			
44		STOP				PR			
45		ARRV				BB	0645	0816	
46		START				MM			
47		STOP				PR			
48		ARRV				BB	0645	0816	
49		START				MM			
50		STOP				PR			
51		ARRV				BB	0645	0816	
52		START				MM			
53		STOP				PR			
54		ARRV				BB	0645	0816	
55		START				MM			
56		STOP				PR			
57		ARRV				BB	0645	0816	
58		START				MM			
59		STOP				PR			
60		ARRV				BB	0645	0816	
61		START				MM			
62		STOP				PR			
63		ARRV				BB	0645	0816	
64		START				MM			
65		STOP				PR			
66		ARRV				BB	0645	0816	
67		START				MM			
68		STOP				PR			
69		ARRV				BB	0645	0816	
70		START				MM			
71		STOP				PR			
72		ARRV				BB	0645	0816	
73		START				MM			
74		STOP				PR			
75		ARRV				BB	0645	0816	
76		START				MM			
77		STOP				PR			
78		ARRV				BB	0645	0816	
79		START				MM			
80		STOP				PR			
81		ARRV				BB	0645	0816	
82		START				MM			
83		STOP				PR			
84		ARRV				BB	0645	0816	
85		START				MM			
86		STOP				PR			
87		ARRV				BB	0645	0816	
88		START				MM			
89		STOP				PR			
90		ARRV				BB	0645	0816	
91		START				MM			
92		STOP				PR			
93		ARRV				BB	0645	0816	
94		START				MM			
95		STOP				PR			
96		ARRV				BB	0645	0816	
97		START				MM			
98		STOP				PR			
99		ARRV				BB	0645	0816	
100		START				MM			
101		STOP				PR			
102		ARRV				BB	0645	0816	
103		START				MM			
104		STOP				PR			
105		ARRV				BB	0645	0816	
106		START				MM			
107		STOP				PR			
108		ARRV				BB	0645	0816	
109		START				MM			
110		STOP				PR			
111		ARRV				BB	0645	0816	
112		START				MM			
113		STOP				PR			
114		ARRV				BB	0645	0816	
115		START				MM			
116		STOP				PR			
117		ARRV				BB	0645	0816	
118		START				MM			
119		STOP				PR			
120		ARRV				BB	0645	0816	
121</									



# Assignment Summary Form Examples PCD

RCVD ONBY: _____		EDIT ONBY: _____		SCAN ONBY: _____																				
ENTR ONBY: _____		UPLD ONBY: _____		FILE ONBY: _____																				
Assn # <b>V15 3479</b>		<b>CRFS ASSIGNMENT SUMMARY FORM</b>																						
<b>COMMENTS</b>	<b>1</b> <b>Joe Sampler</b>	SAMPLER #	DATE (MM/DD/YYYY)	ASSN ID	MODE	PORTY CLUS	HOURS	TOTAL																
	OTHER SAMPLER(S): NAME & # (W/532a)		OTHER SAMPLER(S): NAME & # (W/532a)		<b>1</b>	ASSN DISP*	<b>5</b>	SAMPLING																
	(Y/N) circle one		(Y/N) circle one		<b>PV</b>	State Car or Pers Vehicle	<b>2.25</b>	TOT TRV																
	MARINE CONDITIONS: 4-5 foot swells, moderate winds, foggy				<b>190000</b>	ODO START	<b>1</b>	TRV TIME HQ to site 1																
	EFFORT: RFGEN and LNGCD				<b>190050</b>	ODO STOP	<b>1.25</b>	TRV TIME last site to HQ																
	CATCH: Reported limits of RFGEN and LNGCD				<b>50</b>	MILEAGE	<b>0</b>	EDIT																
	PC ACTIVITY: 1 boat out: Tigerfish, all other boats docked. Port Lead Informed				Round all hours to nearest 0.25 hour																			
	OTHER PERTINENT INFORMATION:				0.00hr = 53-07 mins 0.25hr = 08-22 mins 0.50hr = 23-37 mins 0.75hr = 38-52 mins																			
	HEAD TAGS USED (PR/PC):		HEAD TAGS USED (MM/BB):																					
	*Assignment dispositions: 1=Complete, 2=Reassigned, 6=Canceled		HQ Departure Time: <b>0930</b>		Site Effort Check (if applicable)		PR Trailer Counts																	
Check box if continued on 2nd page <input type="checkbox"/>		HQ Return Time: <b>1645</b>		Onsite Start		Onsite Stop																		
Row #	SITE NAME / SITE COMMENT			TIME																				
1	<b>Emeryville PC</b>			CNTY	<b>1</b>	ARRV	<b>1030</b>	BB																
	Anglers reported limits of RFGEN and LNGCD. Interviewed 4 anglers. Most of the anglers left quickly.			SITE	<b>401</b>	START		MM																
				DISPO**	<b>1</b>	STOP																		
				HRS	<b>5</b>	DEPR	<b>1530</b>	PR																
2				CNTY		ARRV		BB																
				SITE		START		MM																
				DISPO**		STOP																		
				HRS		DEPR		PR																
3				CNTY		ARRV		BB																
				SITE		START		MM																
				DISPO**		STOP																		
				HRS		DEPR		PR																
4				CNTY		ARRV		BB																
				SITE		START		MM																
				DISPO**		STOP																		
				HRS		DEPR		PR																
5				CNTY		ARRV		BB																
				SITE		START		MM																
				DISPO**		STOP																		
				HRS		DEPR		PR																
PR & PC ONLY	0	1			0	0	0	0	0	0	0	0	0	0	0	1	0	0	8	5	12	6		
Refused + Barrier	Total Boats	Boats Salmon	Angs	Kept Kings	Rele Kings	Kept Coho	Rele Coho	Head Tags	Kept HALPA	Rele HALPA	Kept RFYEY	Rele RFYEY	Kept RFCOW	Rele RFCOW	Kept RFCAN	Rele RFCAN	Kept RFBLK	Rele RFBLK	ON	Missed	OFF			

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

# Assignment Summary Form Examples

## PCD – Opportunistic

RCVD ONBY: _____		EDIT ONBY: _____		SCAN ONBY: _____																			
ENTR ONBY: _____		UPLD ONBY: _____		FILE ONBY: _____																			
Asgn # 115 34412		<b>CRFS ASSIGNMENT SUMMARY FORM</b>																					
<b>COMMENTS</b>	SAMPLER NAME: <b>1 Joe Sampler</b>	SAMPLER # <b>187</b>	DATE (MM/DD/YY) <b>09/20/19</b>	ASSN ID <b>***</b>	MODE <b>PCD</b>	PORT/CLUS <b>BER</b>	HOURS <b>0.25</b>	TOTAL															
	OTHER SAMPLER(S): NAME & # (w/0312)	OTHER SAMPLER(S): NAME & # (w/0312)		<b>1</b>	ASSN DISP*	<b>0.25</b>	SAMPLING																
	(Y / N ) circle one	(Y / N ) circle one		<b>PV</b>	State Car or Pers Vehicle		TOT TRV																
	MARINE CONDITIONS: 4-5 foot swells, moderate winds, foggy																						
	EFFORT: STBAS and HALCA																						
	CATCH: Reported limits of STBAS and HALCA for 6 anglers																						
	PC ACTIVITY: OPPORTUNISTIC PCD during a BER PR1 on the White Kraken. Port Lead Informed																						
	OTHER PERTINENT INFORMATION:																						
	HEAD TAGS USED (PR/PC):				HEAD TAGS USED (MM/BB):																		
	*Assignment dispositions: 1=Complete, 2=Reassigned, 6=Canceled <input type="checkbox"/> Check box if continued on 2nd page																						
HQ Departure Time: _____		HQ Return Time: _____		Site Effort Check (if applicable)		PR Trailer Counts																	
Onsite Start		Onsite Stop		Onsite Start		Onsite Stop																	
Row #	SITE NAME / SITE COMMENT	TIME																					
1	<b>Berkeley PC</b>	CNTY	<b>1</b>	ARRV	<b>1450</b>	BB																	
	Anglers reported limits of HALCA and STBAS. Interviewed 4 anglers. One SHLEP was released.	SITE	<b>100</b>	START		MM																	
		DISPO**	<b>1</b>	STOP																			
		HRS	<b>0.25</b>	DEPR	<b>1500</b>	PR																	
		CNTY		ARRV		BB																	
2		SITE		START		MM																	
		DISPO**		STOP																			
		HRS		DEPR		PR																	
3		CNTY		ARRV		BB																	
		SITE		START		MM																	
		DISPO**		STOP																			
4		HRS		DEPR		PR																	
		CNTY		ARRV		BB																	
		SITE		START		MM																	
5		DISPO**		STOP																			
		HRS		DEPR		PR																	
		CNTY		ARRV		BB																	
	SITE		START		MM																		
	DISPO**		STOP																				
	HRS		DEPR		PR																		
<b>0 1</b>		<b>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</b>																					
PR & PC ONLY	Refusal = Barrier	Total Boats	Boots	Angs	Kept	Rets	Kept	Rets	Coho	Head Tags	Kept	Rets	ON	OFF									
**Site dispositions: 0=Effort check, 1=Complete, 4=Low Effort, 5=Other (comment), 7=Roving (MM, BB clusters) *** Assignment Number Assigned by Lead																							

## **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 Sampler is to begin a BB sample day by consulting the Monthly Schedule, which will list the date of the assignment and BB cluster to visit. Leads may set the start times for the assignment and/or direct the order in which you will visit the sites in the cluster. Without direction from the Lead, the start time and the first site visited are determined by the Sampler. If start location is at the Sampler's discretion, they will move through the sites in a geographically efficient order, and randomize start times and starting sites. 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	AMODE	CLUS
1	NOV	37	Alamitos Bay	214	BB	LOS1
1	NOV	37	Marine Stadium	215	BB	LOS1
1	NOV	37	Pier J	201	BB	LOS1
1	NOV	37	Shoreline Village	202	BB	LOS1
1	NOV	37	Cabrillo Beach	110	BB	LOS2
1	NOV	37	Cherry Beach	402	BB	LOS2
1	NOV	37	King Harbor	303	BB	LOS2
1	NOV	37	Abalone Cove	205	BB	LOS3
1	NOV	37	Palos Verdes	211	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.

Sampling will normally take place within an eight hour work day during daylight hours. Samplers will strive for six hours of sampling time and allow up to two hours for travel time while on assignment. 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 water craft 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 all 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. It is important for the Sampler to keep in mind that there may only be one reasonable order of sites to visit to minimize driving time (i.e. starting at the northern or southernmost site) and keep project costs down. Unlike MM mode, BB clusters do not have a predefined or scheduled order. 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. 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 posited 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 30 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.

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.

## **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 water crafts (PWC) 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.

### **2017 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 30 minutes, go to next

No: If not complete and have not fished for at least 30 minutes = Ineligible; stop interview.

Refused: Code Sample # as R, record the number of anglers in the group, terminate interview.

**“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 30 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: Code Sample # as R, terminate interview.

**DAYS FISHED 12 months: Ask a random angler in the group. Not counting today, within the past 12 months, how many days have you gone saltwater sport fin-fishing in this state or from a boat launched in this state?**

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

Sampler didn't ask: Code DA

**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.

Fillets: If fillets 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 (v8 12/22/2016) For Assignment, Page \_\_\_\_ of \_\_\_\_

ASSN ID	Date (MM/DD/YY)	CNTY	SITE	SITE NAME	CLUSTER	Sampler #	Sampler Last Name																														
<table border="1"> <tr> <td>MM COUNTS (inst. at least every 1.5 hr)</td> <td>Start</td> <td>Inst#1</td> <td>Inst#2</td> <td>Inst#3</td> <td>Inst#4</td> <td>Inst#5</td> <td>Stop</td> <td>BB Estimated Total Finfish Anglers</td> <td>OBS PR Accessed From BB</td> </tr> <tr> <td>Time Count Began</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Finfish Anglers</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>								MM COUNTS (inst. at least every 1.5 hr)	Start	Inst#1	Inst#2	Inst#3	Inst#4	Inst#5	Stop	BB Estimated Total Finfish Anglers	OBS PR Accessed From BB	Time Count Began										Finfish Anglers									
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Finfish Anglers																																					

**Effort Items**

Individual (or group) angler data fields include sample number, time, total anglers, unlicensed anglers, arrival time, additional time, 12 month avidity, 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		DAYS FISHED 12 months	TARGET		AREA	GEAR
		Arrival Time	Additional Time		1st	2nd		
		hrs	min	Zip Code				
		time		12 mo				
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.

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 (BB 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. Only required to check the box on the first page of the assignment.	<input checked="" type="checkbox"/> 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=Oppportunistic PCD  Example: 076103 is from July, District 6, a BB assn, third assn randomly chosen by the draw
Date	Enter the date the assignment was completed on all	Format is MM/DD/YY Example: 07/01/17 = July 1, 2017

<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
	pages.	
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.	
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	Example: 3 = three BB finfish anglers

Field Name	Instructions	Coding Examples and Formats
	any additional anglers who start fishing.	
OBS PR Accessed From BB	Enter the total number of fin fishing kayaks or personal water craft (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, 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</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 and barriers should have a time recorded.	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</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>

Field Name	Instructions	Coding Examples and Formats
	and report that number. Terminate the interview.	include the total number of anglers
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 <math>\leq</math> 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	<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 BB interview to be considered valid, the angler(s) must have been fishing for at least 30 minutes.</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: Code an R or B in the Sample # field, respectively, 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.	Complete-trip: 0, meaning they have no additional minutes and are done fishing for the day

Field Name	Instructions	Coding Examples and Formats
		<p>Incomplete trip example: 30, means they intend to fish for 30 more minutes</p> <p>Refused or Barrier: Code an R or B in the Sample # field, respectively, and terminate the interview.</p>
DAYS FISHED 12 months	Ask the angler, or a random angler contributing to the bag, about their recreational fishing avidity for the past 12 months. Record whole number of days fished.	<p>Example: 52 = not counting today, the angler went saltwater sport fin-fishing in CA or from a boat leaving from CA 52 days in the past 12 months, or about once per week Refused = R Don't know = DK Sampler didn't ask = DA</p>
Zip Code	Record the five digit numeric zip code residence of the angler, or a random angler contributing to the bag. You may select the same angler who answered the avidity question.	<p>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</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 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, or group of anglers.	<p>Example: ABALO = targeting abalone</p> <p>Blank = no secondary target</p>

Field Name	Instructions	Coding Examples and Formats
	You may need to probe for secondary targets. However, a secondary target is not required, may leave blank.	
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)
CATCH		
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, respectively, and terminate the interview
KEPT obs	Enter the whole number of fish by species that were retained in the bag by the angler(s) and	Example: 5 = five specimens of this species were examined and counted

Field Name	Instructions	Coding Examples and Formats
	<p>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>	<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	<p>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 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</p>	<p>Example: 3 = three specimens of this species were reported by the angler as released with no mortal injuries</p>

Field Name	Instructions	Coding Examples and Formats
	<p>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>	<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	<p>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>	<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>		
<p>Fork length (mm),</p> <p>Sex (M/F/T)</p>	<p>In the top box, enter the catch species' fork length.</p> <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</p>	<p>Example: 321 = 321 mm fork length. If no length can be obtained, leave blank</p> <p>F = female M = male T = transitional</p> <p>If no sex can be obtained, omit sex</p> <p>Example: 443F = the fish was 443 mm and a female</p>

Field Name	Instructions	Coding Examples and Formats
	form confirming when sublegal fish are recorded.	
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.

Sampling will normally take place within an eight hour work day during daylight hours. The Sampler is to strive for six hours of sampling time and allow up to two hours for travel time while on assignment. 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.

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 the count at the far end of the MM structure and count as they return to the origin. The origin is where a Sampler can see all people leaving the structure or a constriction point all anglers must pass. 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. 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. The Sampler may ONLY get incomplete-trip interviews after the site's stop count.

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 of the 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 water craft 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).

### **2017 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.

**“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: Code Sample # as R, terminate interview.

**DAYS FISHED 12 months:** Ask a random angler in the group. **Not counting today, within the past 12 months, how many days have you gone saltwater sport finfishing in this state or from a boat launched in this state?**

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

Sampler didn't ask: Code DA

**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 V12\_11262018 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 (inst. at least every 1.5 hr)</b>								<b>BB</b> Total Observed Anglers	<b>OBS PR</b> Accessed From BB	
	<b>Time Count Began</b>	<b>Start</b>	<b>Inst #1</b>	<b>Inst #2</b>	<b>Inst #3</b>	<b>Inst #4</b>	<b>Inst #5</b>			<b>Stop</b>
	Finfish Anglers									

**Effort Items**

Individual (or group) angler data fields include sample number, time, total anglers, unlicensed anglers, arrival time, additional time, 12 month avidity, zip code, primary and secondary target species, and water area and gear (for each target).

### EFFORT

SAMPLE # [or R or B]	ANGS Total	TRIP LENGTH Arrival Time	DAYS FISHED 12 months	TARGET 1st	AREA	GEAR
Time	(unlic)	Additional Time hrs   min time	Zip Code	2nd		
			12 mo			
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, 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 model 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

Field Name	Instructions	Coding Examples and Formats
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.	<p>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:</p> <p>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.	<p>Format is MM/DD/YY  Example: 07/01/15 = July 1, 2015</p>

<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
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
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	Enter positive whole number of anglers.

Field Name	Instructions	Coding Examples and Formats
	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.	Example: 6 = six MM finfish anglers
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

Field Name	Instructions	Coding Examples and Formats
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.	
EFFORT		
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</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>

Field Name	Instructions	Coding Examples and Formats
	and report that number. Terminate the interview.	
ANGS (unlic)	<p>Enter the number of anglers out of the total contributors to the bag that 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	<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: Code an R or B in the Sample # field, respectively, and terminate the interview</p>

Field Name	Instructions	Coding Examples and Formats
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: Code an R or B in the Sample # field, respectively, and terminate the interview.</p>
DAYS FISHED 12 months	Ask the angler, or a random angler contributing to the bag, about their recreational fishing avidity for the past 12 months. Record whole number of days fished.	<p>Example: 52 = not counting today, the angler went saltwater sport finfishing in CA or from a boat leaving from CA 52 days in the past 12 months, or about once per week.</p> <p>Refused = R</p> <p>Don't know = DK</p> <p>Sampler didn't ask = DA</p>
Zip Code	Record the five digit numeric zip code residence of the angler, or a random angler contributing to the bag. You may select the same angler who answered the avidity question.	<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	<p>Example: LNGCD = targeting lingcod</p> <p>UNIFH = "Anything" target or unspecified target</p>

Field Name	Instructions	Coding Examples and Formats
	may be coded to unidentified fish.	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
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)
<b>CATCH</b>		
SPECIES	Record the five letter species code for each	Example: HALCA = California Halibut

Field Name	Instructions	Coding Examples and Formats
	species or taxon caught. Use additional rows for angler-bags with multiple catch species.	<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 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>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 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	<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
	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.	
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>



# Shore Form Example (MM Mode)

For Assignment, Page 2 of 6

VI2\_11262018

## CRFS SHORE FORM

MM  BB

ASSN ID	113202	Site Visit of	4	Date (MM/DD/YYYY)	11/29/2018	CNTY	111	SITE	307	SITE NAME	Pt. Hueneke East Jetty	CLUSTER	CHS3	Sampler #	206	Sampler Last Name	SMITH
MM COUNTS (inst. at least every 1.5 hr)	Start	Inst #1	Inst #2	Inst #3	Inst #4	Inst #5	Stop										
Time Count Began	0758	0932	1101				1246										
Finfish Anglers	11	19	24				27										

SAMPLE # (for R or B)	ANGS Total (unils)	TRIP LENGTH Arrival Time Additional Time hrs min	DAYS FISHED 12 months Zip Code	TARGET		AREA	GEAR	SPECIES CODE	KEEP		RELS obs unobs	BIO DATA					
				1st	2nd				obs	unobs		1	2	3	4	5	
1	1	0600 ADD-min	2	12 mo	SPFAM	N	H	No Catch	0	0	0						
A 0824	(1)	0000 ADD-min	93033	2p	CROWT	N	H		0	0	0						
2	1	0745 time	24	12 mo	UNIFH	N	H	MACPA	0	0	0						
B 0854	(0)	0000 ADD-min	93031	2p	CRBGN	N	F2		5	0	0						
C 0926	(3)	0000 ADD-min		12 mo					0	0	0						
3	1	0830 time	13	12 mo	CRBDG	N	R1	CRBRR	1	0	0						
D 1008	(0)	0000 ADD-min	93017	2p					0	0	0						
4	2	0700 time	50	12 mo	MACPA	N	H	SPWAL	8	0	0	178M	164F	208F	189F	229F	
E 1016	(2)	0000 ADD-min	93013	2p	SPFAM	N	H		0	0	0	0.12	0.09	0.18	189	0.24	
		0000 ADD-min		12 mo				SPWAL				161M	194F	203M			
		0000 ADD-min		2p								0.08	0.15	0.17			
		0000 ADD-min		12 mo				SPBAR	1	0	0	294F					
		0000 ADD-min		2p					0	0	0	0.55					
5	1	0700 time	3	12 mo	UNIFH	N	H	SCCAB	0	1	1						
H 1251	(0)	215 ADD-min	93021	2p					0	0	0						

Site Visit of: (Visit #) of (Total Site Visits in cluster #)  
 TRIP LENGTH: Sample as many completed trips as possible.  
 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, Bait Net Invert gear only: Pot #, Flat # or Rigid # hoop net, snarf, sCuba, free Dive  
 SAMPLE #: # of interview, OR Refusal, Language Barrier  
 SAMPLE # Flag: Tournament  
 BB: valid incomplete trip: trip at least 50% completed. BB: valid incomplete trip: angler/party fished at least 60 minutes

## 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)	Approximately 6 to 7 hours during daylight hours
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 10-36 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 AreasPR1 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	South Harbor District LR
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>
Moss Landing LR (MOS)	North and South marinas	Woodward Boat Ramp
Monterey Marina LR (MOH)	Monterey marina	<none>
Dana Basin LR and	<none>	Seaforth Boat Rentals (put counts on Dana Landing Rentals PR form)

### **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):** A trailer count is made at the South Harbor District Launch Ramp before and after sampling at the Noyo River Launch Ramp (PR1 site). 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.

**Moss Landing Launch Ramp (MOS):** A trailer count is made at the Woodward Boat Ramp before and after sampling at Moss Landing Launch Ramp (PR1 site). Recreational fishing boats that head towards Moss Landing Marina and the North Harbor Marina are both counted as offsite missed boats.

**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, 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:

- Total number of anglers who fished
- Gear
- Number of kept salmon by species
- 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.

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. If only the salmon requirements are met it will receive a “RS” code.

### **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 12-month avidity for one random angler
8. Determine the target species and gear (or non-fishing activity)
9. Determine the primary area fished for the fishing target(s)
10. Determine any catch (including discards) or marine mammal losses (salmon only)
11. Determine how many of each rockfish species were released using a descending-device

12. Count catch by species (mandatory for all salmon species)
13. Determine the location and average depth of the catch, or location of majority of effort if no catch
14. Record finfish length measurements and weights of the catch (prefer length-weight pairs)
15. 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	onsite	offsite			
<b>Bondoux</b>	<b>Stenberg 305</b> (Y N)	Start	<b>15</b>	<b>2</b>			
		Stop	<b>0</b>	<b>0</b>			
BIO DATA				MissedBt			
SPECIES LOC <i>or effort loc if no catch</i>	DEPTH	Fork length / carapace size (mm), sex (M/F/T)			onsite	offsite	PR2 Launched
	Average	Weight (decimal kg) or tag #					
Block-box; Lat / Lon	Bottom (ft)	1	2	3	4	5	

### 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, kept salmon by species, and salmon with adipose fin clips—code these boats as RS in the Sample #. Zip code, avidity, location, and 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 (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.

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	unobs	alive	dead		
2nd									
RFGEN	N	H	RFBLK	6	2	0	( 0 )	222-23	40
HALPA	O	H		0	0	0	seal		
			HALPA	2	0	0	( )		
				0	0	0	seal		
			RFBLU	3	0	0	( 0 )		
				0	0	0	seal		
			LNGCD	4	2	0	( )		
				0	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	unobs	alive	dead		
2nd									
RFGEN	N	H	HALPA	2	0	0	( )	223-25	350
HALPA	O	H		0	0	0	seal		
			RFBLK	6	2	0	( 0 )		
				0	0	0	seal		
			RFBLU	3	0	0	( 0 )		
				0	0	0	seal		
			LNGCD	4	2	0	( )		
				0	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	unobs	alive	dead		
2nd									
RFGEN	N	H	RFBLK	6	2	0	( 0 )	222-23	40
HALPA	O	H		0	0	0	seal		
			HALPA	2	0	0	( )	223-25	350
				0	0	0	seal		
			RFBLU	3	0	0	( 0 )	222-23	40
				0	0	0	seal		
			LNGCD	4	2	0	( )		
				0	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

## 2020 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 (# angs, # 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

DAYS FISHED 12 mo: Ask a random angler on the vessel. **Not counting today, within the past 12 months, how many days have you gone saltwater sport fin fishing in this state or from a boat launched in this state?**

Refused:-----R

Don't know----- DK

Sampler didn't ask---- DA

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 11/08/2014)				<input type="checkbox"/> PR1 <input type="checkbox"/> PR2		Page ____ of ____		Trailer Counts			
ASSN ID	Date (MM/DD/YY)	CNTY	SITE	GSP Port	Sampler #	Sampler Last Name	Other Samplers/Name & # (w/Status)	Time	Start	on-site	off-site
							( Y N )				
							( Y N )	Stop			

### Interview Effort Items

Individual boat data include boat sample number, time, total anglers (licensed and unlicensed), days fished, night fishing check box, 12-month avidity, 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.

EFFORT							MissedBt			
Sample #	ANGS Total	DAYS fished		TARGET 1 <sup>st</sup>	AREA	GEAR	onsite	offsite	PR2	Launching
Time	(unlic)	Zip Code		TARGET 2 <sup>nd</sup>						
		N <input type="checkbox"/>	12mos							
A	( )			Zip						

### 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	KEPT	RELS		SPECIES LOC	DEPTH	Fork length / carapace size (mm), sex (MF/T)				
	obs	alive total	(w/DD)			or effort if no catch	BOTTOM	Weight (decimal kg) or (tag #)		
code	unobs	dead	seal take	Block-box Lat / Lon	(ft)	1	2	3	4	5
	abr	alive	( )							
	unabr	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 Cowcod (RFCOW) kept and released, the number of Canary Rockfish (RFCAN) 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



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 <u>subset</u> 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.
DAYS fished (right column) = 12-month avidity	Select a random angler on the boat and ask, "Not counting today, how many days have you gone saltwater sport finfishing in California in the last 12 months?"  Use a random method of selection to avoid bias (do not always pick the boat operator).	52 days = fishing 1 day/week over the last 12 months  Refused = R Don't know = DK Sampler didn't ask = DA  Note: the largest number entered would be "364."
Zip Code	Select a random angler on the boat and request the zip code of their residence.  Use a random method of selection to avoid bias (do not always pick the boat operator). May be the same angler that answered the 12-month avidity question.	Example: 90210 = Beverly Hills  Refused = R Don't know = DK Sampler didn't ask = DA Foreign country = 3-letter country code e.g., Ireland = FIE
Target  Primary = the main target/activity for the trip  Secondary = the secondary target/activity for the trip	Each intercepted boat is screened to determine the primary and secondary activity/target, including fishing and nonfishing activity. Activities/targets are coded using 5 letter alpha codes.	Example: HALCA = targeting California Halibut  <u>Non-Fishing Codes:</u> NFCOM = commercial fishing trip (non-CPFV). Record F&G numbers for commercial salmon vessels.  NFPC6 = CPFV trip

Field Name	Instructions	Coding Examples and Formats
	<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>*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 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	Enter single letter code for the fishing gear used	H = Hook-and-line S = Spear

Field Name	Instructions	Coding Examples and Formats
	<p>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 recorded for each primary and secondary target identified.</p>	<p>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.) – 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><u>No catch</u>: 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>

Field Name	Instructions	Coding Examples and Formats
		If the boat refuses both KEPT obs and KEPT unobs, then code Sample # box with "R" and terminate the interview
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>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, 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 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</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	Instructions	Coding Examples and Formats
	released alive record a zero.	
RELS alive (w/DD)	<p>Enter the number of rockfish by species that were released alive using a descending device. 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> <p>Note: RELS alive (w/DD) is a subset of RELS alive total, therefore RELS alive (w/DD) ≤ RELS alive total</p>
RELS dead	<p>Enter the number of fish by species reported as released dead by the boat.</p> <p>If no fish of a species are reported as released dead, record a zero.</p> <p>Probe for catch that may not be remembered.</p>	<p>Refused: code the Sample # box with "R" and terminate the interview</p>
Seal take	<p>Enter the number of salmon reported taken by pinnipeds for the trip.</p> <p>The angler must have seen the pinniped take the 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>

Field Name	Instructions	Coding Examples and Formats
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> <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>100 = 100 feet</p> <p>100 min/120 max = enter as mean depth 110 feet = 110</p>

Field Name	Instructions	Coding Examples and Formats
	<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>Refused = R            Don't know = DK            Sampler didn't ask = DA</p>
<b>BIO DATA</b>		
<p>Fork Length (mm)</p> <p>Sex</p>	<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>
<p>Weight (decimal kg) or Head Tag #</p>	<p>Below the length, enter the weight of the fish in kg. Do not weigh salmon.</p> <p>For salmon, Yelloweye Rockfish, 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>Salmon and groundfish headtag numbers are 5 digits.</p>	<p>5.3 = weight in kg</p> <p>12345 NRS = adipose fin-clipped salmon head not recovered</p>
<b>MISSED BOATS</b>		
<p>Missed Bt onsite</p>	<p>Enter the number of boats that returned to the sample site that</p>	<p>This includes un-sampled or missed boats</p>

Field Name	Instructions	Coding Examples and Formats
	<p>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>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:  2 = 2 recreational fishing boats missed  AND  1K = one fishing kayak missed. Page Tot = 3</p>
Missed Bt offsite	<p>Enter the number of fishing boats that returned to an offsite boat area since the last sampled boat.</p> <p>See the table titled “Summary of PR Counts” for specifics.</p>	<p>See the table listing sites with associated offsite missed fishing boat counts</p>
PR2 Launched (PR2)	<p>This data is <u>only</u> needed for PR2 samples.</p>	<p>Leave blank for PR1 sampling mode</p>
<b>FOOTER</b>		
<p>The footer contains the sum of the page totals for each category below.</p>		
Refu + Barrier	<p>Enter the sum of refusals and language barriers for the page</p>	<p>Count the number of R and B entries in the</p>

Field Name	Instructions	Coding Examples and Formats
		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.	
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.	
Cowcod kept/rels	Enter the sum of observed and reported kept and released alive and dead Cowcod on the page.	
Canary kept/rels	Enter the sum of observed and reported kept and released alive	

Field Name	Instructions	Coding Examples and Formats
	and dead Canary 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				
<p><b>non-fishing boats</b> (NFPC6, NFCOM, NFOTH)</p> <p>See below for info on kayaks, PWC and sailboats</p>	<p>Interview &amp; record sample #</p>	<p>Do NOT include boats that can be identified as NFPC6 or NFCOM.</p> <p>Include all other traditional trailerable boats</p>	<p>Do NOT include in count</p>	<p>Do NOT include trailers that can be identified as NFPC6 or NFCOM or NFOTH</p> <p>Include all other traditional trailers</p>
<p><b>kayaks, PWCs, canoes, other small non-trailerated boats, and “non-traditional boats” with trailers (e.g. 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-trailerated boats, and “non-traditional boats”.</p>	<p>Interview <b>fishing</b> boats &amp; record sample # with K or P flag Do NOT interview <b>non-fishing</b> boats &amp; do NOT give them a sample #.</p>	<p>Only count <b>fishing</b> boats &amp; flag with K or P.</p>	<p>Only count <b>fishing</b> boats &amp; flag with K or P.</p>	<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</p> <p>Do NOT adjust counts for kayaks etc. interviewed</p>

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>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, Dolphinfin, 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)	Approximately 6 to 7 hours during daylight hours
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 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.

## **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 6-7 hours of sampling.

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-trailer 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.

### 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	073-310 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
3	053-104 Moss Landing Launch Ramp	053-105 Woodward Boat Ramp
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
5	045-100 Noyo River Launch Ramp	045-104 South Harbor 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-trailer 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 12-month avidity for one random angler
8. Determine the target species and gear (or non-fishing activity)
9. Determine the primary area fished for the fishing target(s)
10. Determine if any catch (including discards) or marine mammal losses (salmon only)
11. Determine how many of each rockfish species a descending-device was used for release
12. Count catch by species (mandatory for salmon species)
13. Determine the location and depth of the catch, or if no catch, where the majority of fishing effort occurred
14. Record finfish length measurements and weights of the catch (prefer length-weight pairs)
15. 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, kept salmon by species, and salmon with adipose fin clips—code these boats as RS in the Sample #. Zip code, avidity, location, and 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.

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

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

**2020 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 (# angs, # 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

**DAYS FISHED 12 mo:** Ask a random angler on the vessel. **Not counting today, within the past 12 months, how many days have you gone saltwater sport fin fishing in this state or from a boat launched in this state?**

Refused:-----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,  
 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?**

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 average bottom 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. A 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> (V0 11/06/2014)						Page _____ of _____		Trailer Counts		
						Other Samplers/Name & # (w/Date)		Time	onsite	offsite
ASSN ID	Date (MM/DD/YY)	CNTY	SITE	OSP Port	Sampler #	Sampler Last Name		Start		
								( Y N )		
								Stop		
								( Y N )		

**Individual Effort Items**

Individual boat data include boat sample number, time, total anglers (licensed and unlicensed), days fished, night fishing check box, 12-month avidity, 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.

EFFORT						MissedBt	
Sample #	ANGS	DAYS		TARGET	AREA	GEAR	PR2 Launched
	Total	fished		1 <sup>st</sup>			
Time	(unlic)	Zip Code		2 <sup>nd</sup>			onsite
		N <input type="checkbox"/>	12mos				offsite
A	( )		Zip				

**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.

SPECIES	CATCH			SPECIES LOC	DEPTH	BIO DATA					
	KEPT	RELS				or effort if no catch	Fork length / carapace size (mm), sex (MF/T)				
	obs	alive total	(w/DD)				Weight (decimal kg) or (tag #)				
code	unobs	dead	seal take	Block-box Lat / Lon	(ft)	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



CNTY	Enter the 3-digit numeric county code on the first page only.	Example: 045 = Mendocino County
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	Use 24-hour military time format

	<p>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>Example: 9:00 AM = 0900 hours</p>
Onsite [Trailer Counts, Start and Stop]	<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>
Offsite [Trailer Counts, Start and Stop]	<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>		
Sample # [or R 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 attached table titled "Summary of PR Counts" for specifics.</p> <p>For refusals, record an R without a sample number. For language barrier, record a B without a number.</p> <p>Flag special types of boats using letter codes</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-trailer boats, and "non-traditional boats" with trailers -</p>

	(see right column) and a sample number.	<p>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>
<p>DAYS fished (left column) = trip effort</p> <p>N = Night fishing</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	Example: fishing during daylight hours the evening of one day and the morning of the next day = 2 days of fishing effort

	<p>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>R or B: code the Sample # box with "R" or "B" and terminate the interview</p>
Launch Time	<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>
DAYS fished (right column) = 12-month avidity	<p>Select a random angler on the boat and ask, "Not counting today, how many days have you gone saltwater sport finfishing in California in the last 12 months?"</p> <p>Use a random method of selection to avoid bias (do not always pick the boat operator).</p>	<p>52 days = fishing 1 day/wk over the last 12 months</p> <p>Refused = R Don't know = DK Sampler didn't ask = DA</p> <p>Note: the largest number entered would be "364"</p>
Zip Code	<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). May be the same angler that answered the 12-month avidity question.</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>
Target  Primary = the main	<p>Each boat not missed is screened to determine the primary and secondary activity/target.</p>	<p>Examples: HALCA = targeting California Halibut</p>

<p>target/activity for the trip</p> <p>Secondary = the secondary target/activity for the trip</p>	<p>including fishing and nonfishing activity. 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><u>Non-Fishing Codes:</u>  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>
<p>AREA</p>	<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>

		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><u>No catch</u>: write "NO CATCH" in the SPECIES box and zeros in catch boxes:  - KEPT obs  - KEPT unobs  - RELS alive total  - RELS dead</p> <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>Only fish that the Sampler can see, and count are recorded here; may include fillets that can be counted and identified; make a note</p>

	<p>Sampler will identify and count each species retained by the boat.</p>	<p>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>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>

<p>RELS alive (w/DD)</p>	<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> <p>Note: RELS alive (w/DD) is a subset of RELS alive total, therefore RELS alive (w/DD) ≤ RELS alive total</p>
<p>RELS dead</p>	<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>
<p>Seal take</p>	<p>Enter the number of salmon reported taken by pinnipeds for the trip.</p> <p>The angler must have seen the pinniped take the fish 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 Don't know = DK Sampler didn't ask = DA</p> <p>No salmon lost = 0</p>
<p>SPECIES LOC</p>	<p>Enter the location where the majority of the catch species were caught.</p>	<p><b>Block- Box:</b> BBB-bb-bb-bb or BBB-bbb-bbb-bbb</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>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>
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  Don't know = DK  Sampler didn't ask = DA</p>

<b>BIO DATA</b>		
Fork Length (mm) Sex	In the top row enter the fish's fork length.  Add an M, F, or T after the length for sexed species.  Do not measure a salmon with an intact adipose fin.	321 = FL in mm  F = Female M = Male T = Transitional (CA Sheephead)  321F = female fish 321 mm FL
Weight (decimal kg) or Head Tag #	Below the length, enter the weight for the fish or eligible invertebrate in kg.  Do <u>not</u> weigh headed or gutted fish.  For salmon and Yelloweye Rockfish, enter the headtag number below the length and circle the headtag number.  For salmon heads not recovered or lost, enter the head tag number and code NRS (non-recoverable specimen).  Salmon and Groundfish headtag numbers are 5 digits.  Do not weigh salmon.	5.35 = weight in kg  12345 NRS = adipose fin-clipped salmon head not recovered
<b>MISSED AND LAUNCHED BOATS</b>		
Missed Bt onsite	Enter the number of boats that returned to the sample site that were not sampled since the last sampled boat.  Tally marks can be recorded in the box, then the total is recorded when the next sampled boat comes in.	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  <b>SAMPLE FLAGS</b>

		<p>K = KAYAKS  P = PWC, paddle boards, canoes, other small non-trailerated 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
PR2 Launched (PR2)	<p>This data is <u>only</u> needed for PR2 samples.</p> <p>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).</p>	<p>See the attached table titled “Summary of PR Counts” for specifics on what to include in the counts</p> <p><u>SAMPLE FLAGS</u>  K = KAYAKs  P = PWC, canoes, other small non-trailerated boats, and “non-traditional boats” with trailers  S = SAILBOAT</p> <p>It is OK to put multiple numbers and flag in a row (line). For example, you could list:  2 = 2 recreational fishing boats launched</p>

AND  
1K = one fishing kayak  
launched

**FOOTER**

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 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.	
Cowcod kept/rels	Enter the sum of observed and reported	

	kept and released alive and dead Cowcod on the page.	
Canary kept/rels	Enter the sum of observed and reported kept and released alive and dead Canary 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
<p><b>non-fishing boats</b> (NFPC6, NFCOM, NFOTH)</p> <p>See below for info on kayaks, PWC and sailboats</p>	Interview & record sample #.	<p>Do NOT include boats that can be identified as NFPC6 or NFCOM.</p> <p>Include all other traditional trailerable boats</p>	Not Applicable	<p>Do NOT include trailers that can be identified as NFPC6 or NFCOM or NFOTH.</p> <p>Include all other traditional trailers</p>
<p><b>kayaks, PWCs, canoes, other small non-trailerred boats, and “non-traditional boats” with trailers (e.g. 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-trailerred boats, and “non-</p>	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.	Not Applicable	<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</p> <p>Do NOT adjust counts for kayaks etc. interviewed.</p>

Type of Boat, Angler or Trailer	Interviews and Sample Number	Onsite Missed	Offsite Missed	Trailer Counts: Onsite, Offsite and Pressure Checks
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.	Not Applicable	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.

PR2 Form Example

**CRFS PR FORM** (V9 12/22/2016)  PR1  PR2

ASSN ID: **056304** Date (MM/DD/YYYY): **05/22/17** CNTY: **107** SITE: **OSP Port** Sampler #: **312** TROXEL

Page **1** of **2** Other Samplers: Name & # (w/Date): **1020** Time: **1645** Trailer Counts: **6** onsite **0** offsite **0**

Time (Y M) **10 20** Stop (Y M) **16 45** Missed: **0**

BIO DATA

SAMPLE #	AMNS	DAYS FISHED		TARGET	AREA	GEAR	SPECIES CODE	KEPT		RELS		SPECIES LOC	DEPTH	Fork length / carapace size (mm), sex (M/F/T)	PR2 Launched	
		1st	2nd					obs	unobs	alive	dead				on-site	off-site
1K	1	1	6	HALCA	B	H	SCPSH	0	0	0	0	209-100-107	90			
A	1119	(0)	9550Z					6	0							
B	( )	( )	( )				ANCNO	0	0							
C	( )	( )	( )				HALCA	1	0	0	0		606M			
D	2K	1	6	HALCA	B	H	HALCA	1	1	1	1	209-109	15	2.5		
E	1208	(0)	95519Z	CRBDG	B	F		0	0					677F		0
F	( )	( )	( )				CRBDG	10	10			209-102	30	145M	155M	151M
G	( )	( )	( )				CRBDG	0	0					146M	152M	150M
H	( )	( )	( )					N	N							
I	( )	( )	( )					N	N							
J	3	0	100Z	INFOTH												
K	( )	( )	( )					0	3	0	0	0	0	0	0	0
L	( )	( )	( )													

Weight (decimal kg) or (g) #

1 2 3 4 5

1P 1K

Sample #: **1002** or Released for Language Barrier  
 Filter: **W** (W/C etc), **S** (Silk), **T** (Tremmer)  
 Filter Area: **M** (more than 5cm), **C** (5cm), **S** (5cm)  
 enclosed: **W** (water/hair), **M** (mud)  
 Island: **4** 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: **W** & line, **S** Spear, **T** Trawl, **B** Bait Net, **S** Salmon gear only, **M** Moon, **B** Bin (moon & trawl), **I** Invert gear only, **F** Flat # or # of gill # or hoop net, **sm**, **sn**, **sa**, **ba**, **fr**, **dr**



## **Party/Charter Boat Onboard (PCO) Mode Sampling**

### **CPFV Survey Procedures**

The PC boat survey samples Commercial Passenger Fishing Vessels (CPFVs) by sampling onboard or sampling dockside to get various data elements related to catch. CPFV log data and Pressure Effort Checks (PECs) are used for effort estimates.

The primary goal for PC 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 will be recorded. Catch estimates are produced for each CRFS District each month. Estimated mean catch per angler will be 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. Fish that will be released to the water are measured. Discard data is 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. Your Lead will assign the location of the sample. Rescheduling these assignments is not desirable to the survey, and you will contact your 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.
- Chartered 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 rockfish and Lingcod. The entire trip should be sampled, regardless if the boat changes targets after leaving the dock. Overtime issues may prevent Samplers from riding long-range trips, so most long-range trips are 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 to be sampled dockside, unless special circumstances allow for Samplers to sample onboard. In some instances, your Lead will schedule dockside sampling assignments. Salmon trips will be sampled dockside exclusively, however salmon-rockfish combos may be sampled onboard. Samplers may encounter Ocean Salmon Project (OSP) Samplers on the dock. If this occurs, be sure to work with the OSP sampler in order to intercept as many boats as possible. Note that all finfish catch, including salmon, for all anglers sampled, goes on the PCO forms.

Your Lead may assign the type of boat trip to sample, such as ½ day, ¾ day, full day, twilight, or overnight. Your Lead may also assign the target species, such as bottomfish, Lingcod, salmon, or bass. Long range boats arrive at odd hours so you will need to check with the landing for the boat's arrival time to sample dockside.

### **Opportunistic PC Sampling**

You may encounter CPFVs while sampling in another mode (e.g. PR1). These trips can be sampled opportunistically using the appropriate dockside form (PCS for salmon 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. See Opportunistic PC Sampling in the PR1 and PR2 sections of this manual.

### **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 in order 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 Samplers to collect detailed information regarding location and depth. Moreover, Samplers carry a handheld GPS receiver (with the captain's permission). This 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
- Measurement of returned fish by fishing stop
- Whether or not a descending device (DD) was used for each species

### **Unbiased Angler Sampling**

Many potential biases are avoided by going onboard while some new potential biases are created. The behavior of the anglers and crew may be altered by the presence of the Sampler. For example, the Sampler may be perceived as an enforcement officer when dressed in a uniform. One study has shown that the returned catch rate of rockfish can decrease for observed trips. Due to these potential biases, the Sampler should avoid actions that alter fishing behavior at sea. Some of these actions include drawing attention to over limits, illegal fish, and illegal fishing practices.

Some difficulties arise as the number of anglers on the boat increases beyond a reasonable number which can be observed. Therefore, sampling a subset of anglers is allowed. Generally, a subset greater than 10 is not advised. When observing fewer than the total anglers on the boat, the Sampler should vary the group of anglers by position on the boat and by composition of individual anglers. This is required so that the sample you take is random with respect to the position on the boat (e.g., stern, bow or side) and the skill of the anglers. This is important on trips utilizing live bait where the live bait is also chummed in the stern of the boat. High catch rate anglers tend to congregate near the bait box. Avoid continuous sampling of the stern area by sampling in proportion the 'numbers of anglers' not the amount of catch. Contact your Lead if there is any question or concerns about how to sample or observe fewer than the total number of anglers on the boat.

### **Onboard Observer Protections**

Under California law, CPFVs are required to carry Samplers. However, it is important to work with the vessel and landing operators as this will 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 each Sampler should have 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**

You should be able to sample chartered boat trips along with open-party trips. Chartered trips can make up a large proportion of the total CPFV fishing trips, especially during the summer. It is very important to sample chartered trips, as well as open-party trips in order to accurately estimate CPFV catch and effort.

Our policy is to sample chartered trips with consent from the charter master (the charter master is the private party individual who has paid for a private group to charter the vessel for fishing), however we do have the authority to sample chartered trips that are not filled to Coast Guard rated maximum capacity.

When you call the landing to make arrangements, you should introduce yourself as CRFS Sampler and ask about all the scheduled trips going out for the assigned trip type including chartered trips. Be sure to confirm any chartered trips and get the name of the contact. If there is no party boat trip going out for the scheduled trip type, but there is a charter for that trip type, you should request to sample that trip with consent from the charter master.

You should ask the landing for the charter master's contact information, or if the charter master can contact you. If you are unable to confirm with the charter master, you should show up an hour before the trip is scheduled to leave so that you can have the opportunity to explain onboard sampling to the charter master, and request permission to sample onboard. Furthermore, you should 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.

Always keep an eye out for information on CPFVs when in the field. It is important for you to introduce yourself to the crew and captain especially on vessels that are not normally sampled. For vessels that are not normally sampled, you should 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 the landing office or may be overlooked by office personnel because they are not running the typical "party boat" trips that are sampled.

### **CPFV Refusals**

Under section 105.5 (Title 14 CCR) Samplers have authority to access all CPFV boats. However, you may need to explain the survey and provide evidence that you are a CRFS Sampler. Always be prepared with copies of Title 14, section 105.5, your CDFW ID, a CRFS handout, and your Lead's business card so that you are prepared to demonstrate the legitimacy of the sampling program, and explain the survey. You should be familiar with the relevant sections in the CDFW regulation booklet on CRFS cooperation and have a copy to show to charter masters and landing personnel.

It is very important to document all attempts (successful or unsuccessful), to sample chartered trips on the Assignment Summary Form. Make sure that you indicate that the trip was either a charter or a party boat in the comment section of the form. If the attempt to sample was not successful, explain in the comment section why.

If you are outright refused by landing personnel or encounter any hostility or difficulties, leave a copy of Title 14, section 105.5 with the landing manager and contact call your Lead. Please provide your Lead with detailed documentation (date, name of individuals and vessels concerned, details of refusal or problem and how you dealt with it). Provide this information the same day of the event. Your Lead will initiate procedures to follow-up with the vessel.

### **Chartered Trip Refusals**

If the charter master of a chartered boat declines, it will be considered an acceptable 'unable to sample' event. If this occurs, try to sample an alternate trip or contact your Lead to reschedule. However, if the landing or captain of the chartered vessel refuses you or does not allow access to the charter master who should be asked directly by the Sampler for their decision, the act will be deemed an "illegal refusal". For illegal refusals, you are to contact your Lead as soon as possible. Document everything that occurred (individuals involved, time, etc.), and be as descriptive and precise as possible.

### **Alternate PC Trips**

Occasionally, your scheduled PC trip won't go out due to low effort, boat maintenance, Coast Guard capacity, etc. This is one reason why it is important to call ahead and show up at least a half an hour before the trip's scheduled departure. It is important to follow this hierarchy of steps when choosing an alternate trip and/or landing for your assignment:

1. Sample your assigned trip type at your assigned landing.
2. Sample a different trip type at your assigned landing.
3. Sample your assigned trip type at an adjacent landing. Landings are considered "adjacent" when they are close enough to be targeting the same fishing grounds.
4. Sample a different trip type at an adjacent landing.
5. Reschedule your assignment to another day within that week (weekday assignment) or weekend (weekend assignment). This move requires approval from the Lead.

### **Onboard Fishing Locations**

Each "stop" the boat makes where 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 onboard 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 or stopped fishing due to sea sickness.

When the boat is not anchored and the anglers drop their lines, the location is termed a “drift” if the engine(s) (running or not) are not engaged into gear to provide power. As the boat drifts along anglers continue to fish the “drift” and cover an area over the bottom dependent on currents and wind. Once the anglers are told by the captain or crew to pull up their lines the “drift” ends when all anglers have their gear out of the water.

Sometimes, the boat will reposition or “station” over a productive fishing location. In this case, the anglers may or may not pull up their gear and the boat may be under power (gears engaged) in order to maintain or slowly move into a favorable location. In this situation, the sampler would record 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 location may be a drift or troll with starting and ending points, two locations need to be recorded, one for when the anglers put their “lines down” and a second for when they pull their “lines up”. Each starting and ending location will have a set of geographic coordinates (deg,xx.01 min) and a time (in 24-hour format) in order to map the extent of travel over the bottom and calculate direction and average speed. If the drift was only a very short distance and time (less than 3 minutes or 300 feet) then the ending location geographic coordinates does not need to be recorded. However, the ending time should always be recorded.

Often the captain will be “prospecting” for fish when he asks the anglers to drop their lines into the water because there is some evidence of fish on the electronics. This may result in very short unproductive stops. Record these locations. There is biological interest in locations where fish are unavailable or not catchable.

### **Onboard Catch by Location**

For each fishing stop or location, you will keep a count of the fish caught by species and the disposition (kept, released alive, or released dead) of each fish for the observed subset of anglers.

When the catch rates are very high, you may find it necessary to monitor fewer anglers for the catch count. It is acceptable to monitor different numbers of anglers at each location; however, the preference is to monitor the same number of anglers throughout the trip.

### **PC Sampling Scheduling**

PC assignments are selected to sample at least 2% of non-salmon fishing trips. Sampling will occur on weekends and weekdays throughout the month based on historical finfish fishing trips. If effort is low or absent at the assigned site, then follow the Alternate PC Trips protocol previously described in this section.

## **Scheduling PC Trips**

Your Lead will provide you with a list of charter boats and landing sites with contact information. You will call ahead of time to determine the availability of PC boats for sampling onboard or dockside. You may use alternate sites if sampling cannot be conducted at the assigned site. In this case, you must still list the assigned site as the first site visited on the Assignment Summary Form. For PC dockside assignments, you must use as many PC sites in addition to the primary assigned site to attempt to obtain interviews in the assigned mode for PC.

Call the assigned site landing(s) prior to your assignment and ask if any charters or open party boats are going out on your assigned date. When you contact the office introduce yourself as a CDFW CRFS Sampler. Going to the landing is preferred to calling the landing as you'll have a better chance of getting on a boat. You may need to contact the landing closer to the trip departure to determine the number of angler reservations and how many are required to send the trip out. Keep in mind that many landings receive 'walk-up' anglers right before departure that don't make reservations. Since you may be contacting a number of different people at different times, you may want to keep a contact log with numbers, names, dates, times, and messages you may have left so that you don't duplicate or omit contact efforts include this information on the ASF if the trip is not successful.

It is important to remember that different boats from the same landing may fish different methods or different locations. If you have the option, try to sample boats that are infrequently sampled, and always inquire about chartered trips, as these trips are just as important as open party. Your Lead may assign certain trip types, either by trip duration or target species. If the assigned trip is unavailable to sample for some reason (i.e. not enough passengers, vessel dry docked), then refer to the Alternate PC Trips protocol previously described in this section.

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

## **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 and you will be denied boarding. If this is the case, you will try another boat. If the landing says that the boat is "chartered", ask if you can get permission from the charter trip leader (charter master) to ride the chartered trip. Be sure and get the captain's permission to board the boat and never board the boat without his permission. Some boats will require you to sign in on a sheet, as such it is a

good practice to confirm with the deck hand or captain if it is needed. Good rapport with the captain will often result in increasing the cooperation of the party boat patrons.

The operator must allow you free boarding privileges, if not, inform your Lead immediately and attempt to board another boat. Refusals are illegal. Document these actions. Since you are an unpaid passenger and most boats have a legal capacity you may be unable to board at the time of the trip if the boat is full of paying passengers. It may not be legal for them to take another passenger due to Coast Guard regulations. If you are told that the boat is at Coast Guard capacity, 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 different procedures to follow before, during, and after fishing. These procedures are designed to optimize your time and reduce potential bias. Samplers will use available time to collect avidity and demographic data from anglers in advance, since that is difficult once the fishing starts.

### **On the Way Out**

Once the boat gets underway, the captain will give a speech about life jackets, fishing procedures etc. After this speech is a good time to introduce yourself what you are doing and start collecting angler data. It is helpful to start on one side and work around the boat, this will allow you to be able to figure 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, as you will be revisiting these anglers after fishing has concluded. You can make a note of the angler's appearance, such as blue Nike shoes or tattoos. Recording easily removable articles of clothing such as jackets and hats are not recommended since the angler may remove them as the temperature changes. Try and choose features that cannot be changed such as facial hair, piercings etc.

Boats that assign numbers to anglers and keep their fish in numbered gunny sacks provide an ideal way to sample because the catch and angler are tied together by this number, and you can keep track of their catch. Make sure to record these on the CPFV Angler form, and remember that there could be duplicate numbers with different colors and multiple anglers for a bag.

Under optimum circumstances, all anglers on the boat will be interviewed. However, some form of angler sub-sampling may be necessary if the boat holds many anglers, there is a large number of fish or if the time required for

travel back to the dock 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, time, and depths for each fishing location. You will also be monitoring a subset of the anglers (observed anglers) for kept and released numbers of fish by species for each fishing location. You will also be taking measurements of returned fish on the CPFV Onboard Catch and Discard form when time allows. Details of this procedure and items to collect are in the detail section for those forms below.

CPFV crew members who fish with the intention of keeping their catch, or who are putting their catch in a separate “crew bag” are considered eligible anglers and can be interviewed. Conversely, crew members who are fishing to add catch to the bags of paid passengers are not considered eligible (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.

If you witness illegal fishing practices, do nothing. Let the captain and the crew police the boat if they choose to. Your job is to sample, not to police illegal activity. Do not alter angler fishing behavior in any way. Do not act as a deck hand by helping passengers land fish or provide advice to increase the catch rate. Our workers’ compensation insurance does not cover you if you are injured while doing any deckhand duties. Stay out of the way as much as possible. Use your spare time to edit data from the trip, key out any unusual fish, etc. Don’t make comments about other party 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 crews and landings is important. Don’t do anything to jeopardize the relationship. Some of these boats have secret fishing spots or secret methods of catching fish. Don’t reveal any boat secrets to others. It is best not to discuss your party boat trips with anyone. If anyone asks you questions about where you fished, what kinds of fish were caught, or how the fishing was, politely explain that the data is confidential and refer the person to the captain. Any cooperation problems with deck hands should be referred to the captain.

### **On the Way Back**

Allow plenty of time on PC trips to identify fish before the filleting process begins. This means you may have to stop observing a bit earlier. Try to judge when the anglers will stop fishing (you can ask the captain). You’ll also need to determine how long the boat ride back to the dock will be and estimate how long it will take you to work up each bag. This will give you an idea of

when you need to stop your observations of catch and start collecting biological data from the catch. Ask the filleter where he would prefer you to measure and which bags he will do first; also ask if any bags or anglers are not having fish filleted as these can be left for last. Filleters may have preferential treatment of some anglers or bags. Count and measure fish in the bag that is associated with each angler # or bag # of your interviewed anglers. While the filleter is cutting, count and measure the next bag. Attempt to keep ahead of the filleter, and do not interfere with the filleting process. You may have to skip the measurements for some fish. For safety reasons, stand clear of the filleter and fillet knives. Coordinating and communicating with the crew will allow you to collect the data we require and minimize your impact on the boat's operations.

Ask each interviewed angler about any unobserved catch. This includes any fish kept for bait, released fish and disposition (released alive or released dead). You may have to remind anglers about fish you saw thrown back or used for bait. For rockfish, try to probe to identify the released catch to the species level and avoid grouping at a higher level (e.g., RFGEN"). You can use your field guides (time permitting) or reference catch that they kept and are in front of them. If you encounter 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, 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, 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. The crew may be interviewed if they kept fish towards the boat limit. The crew might distribute their personal catch to other anglers (note: this practice is illegal under Title 14, CCR Section 195(e)(2)).

Occasionally, the skipper or crew will want to include you when calculating the boat limit. This is not appropriate, as you will not be fishing, and you are not allowed to accept gifted fish. If you find out that the crew is including you in their boat limit calculation, tactfully inform them that you are not allowed to leave the boat with any fish in your possession and may not be included in the boat limit calculation.

When the boat has exceeded boat limits, there will be unclaimed fish. If these fish are to be thrown overboard, the Sampler should obtain a total count (and any measurements, if possible), by species of all fish discarded after the kept 'boat fish' have been distributed amongst anglers. All extra fish that are left

over, whether kept onboard or thrown over the side (another illegal practice – Section 1.87 Title 14 CCR), should be coded on the Catch/Discard form as “Boat Fish”. Of note, do not inform the crew or anglers when you see illegal practices.

Please 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 ‘NO CATCH’ 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 we ignore these no catch bags, and leave them off the PCO 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 interviewed. Do not interview only the anglers with catch.

### **Overnight Trips**

You may occasionally be asked to 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 you were on the boat- sleeping hours are included and are compensable. Sleep should be limited to nighttime and when no anglers are actively fishing.

### **Two PC Assignments in One Day**

Occasionally a 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 and PC Effort Check Instructions**

1. The Assignment Summary Form (ASF) will be coded for each SITE scheduled and visited.
2. The PC Effort Check (PEC) form will be 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).

### **No Anglers in PC Mode**

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

### **Sampling Dungeness Crab Onboard**

Crab biological data will be ignored on PC trips, only record CRBDG as a target, area fished, and gear type (including the number of pots pulled).

### **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. 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. 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.
5. Include fish caught by the crew and given to the customers.
6. Make sure you don't measure the same fish twice. Occasionally an angler may have more than their limit in the bag. If you measure all the fish and the angler decides to keep their legal limit and give away their extras, make sure the fish you have already measured don't go into someone else's bag that you have not measured, as they could potentially get measured a second time.
7. Fish filleted at sea count as "Kept unobserved" unless identified by the Sampler (identified from skin patches left on the fillet).
8. Do not interfere with the filleting process. Try not to hold up the filleters.
9. 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).
10. 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.
11. Do not take your friends along with you on the trip.

12. Do not sleep on day trips. Sleep is permitted on overnight trips, but only at night and while no anglers are actively fishing.
13. Document, in detail, if you are refused access to a boat. Similarly, document any action by the crew that impedes your duties.
14. Thank the captain and crew.
15. Be courteous, you should be the last off the boat allowing, within reason, all paying passengers off the boat first.
16. Additional storage space and seats within cabins should go to paying passengers first.
17. Do not fish while onboard.
18. Do not accept free fishing trips.
19. Do not accept any gifts while onboard. This includes fish, food, drinks.
20. The wheelhouse is typically off limits to everyone but the crew. If you need to see a GPS or depth-finder, ASK the captain first before entering the wheelhouse or have him report the numbers to you.
21. 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; you have no information. If possible, go the booking office in person or to the slips before or after an assignment in the area. Additionally, you can show up on the morning of the PC assignment and try to get on the boat or reschedule the assignment. Contact your Lead in this instance.

Q. I call around and no boats are going out at the assigned or alternate sites on that date. What do I do?

A. You code the assigned sites and alternates on your Assignment Summary Form (ASF) for the assigned date with a reschedule. Contact your Lead immediately to reschedule.

Q. I leave messages, but they don't call back. Do I code a refusal?

A. Code nothing; you have no contact and no information. You can either: show up on the morning of the assigned PC assignment and try to get on the boat or reschedule the assignment. Contact your Lead in this instance.

Q. I'm told that no boats are going out, but later find out that was a lie.

A. Code a refusal for that date and boat(s) on the ASF and REPORT this to your Lead or Supervisor. Contact your 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 your PEC for the trip date. Contact your Lead to reschedule.

Q. I'm told that no boats are going out. Do I code an attempt?

A. Code this on your ASF and your PEC. Contact your Lead to reschedule.

Q. I'm told by the office that no boats went out, but later find that one went out and the captain would have let me ride. Do I code a refusal?

A. Yes, code the refusal. Remember to always note "who" did the refusing on the ASF. Also include your comments in the follow-up email to your Lead. Contact your Lead to reschedule.

Q. The office refused to talk to me. What do I do?

A. Code a refusal on your ASF and contact an alternate boat or site. Contact your Lead with the refusal details and reschedule the assignment.

Q. The office 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 your PEC. Indicate who refused on which boat and detail the event to your Lead and reschedule the assignment.

Q. I call and schedule to ride a boat three days before the trip. The trip is completed on the assigned date. Do I code the date of the phone call?

A. No just code the assignment as complete on the assignment date.

Q. No boats are going out on my assigned PC day; I schedule the boat 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 your 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's catch with the angler, and the angler's avidity and 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?
Captain:												

Catch Recorded obs reported	ANGLER #	BAG #	Angler REFERENCE (angler name, description, etc.)	DAYS fished (12 mo)
				Zip Code
obs				12 mos
unobs & RELS				Zip

#### Angler Data

There are seven 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 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**

<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
<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.	07/14/20 = July 14, 2020
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

Field Name	Instructions	Coding Examples and Formats
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.	<p>½ = half day trip</p> <p>¾ = ¾ or full day trip</p> <p>T = twilight</p> <p>O = overnight trip</p>
PC Mode	Enter the appropriate PC mode.	<p>P = open party trip</p> <p>C = boat was chartered to a private party</p>
<p>Departure &amp; Return</p> <p>Date = (MM/DD/YY)</p> <p>Time = Military hours</p>	Record the date and time of the departure and return of the CPFV.	<p>Depart 10/26/20 0700</p> <p>Return 10/26/20 1700</p>
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

Field Name	Instructions	Coding Examples and Formats
Target  1 <sup>st</sup> = primary target  2 <sup>nd</sup> = secondary target	Record both the primary and secondary targets of that trip. If the angler states "any" as a target, then record the targets of the boat. Targets will be recorded using the 5-digit alpha codes.	HALCA = targeting California Halibut
AREA	Record the water area code where the majority of fishing <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 single letter code for the fishing	H = Hook and Line  T = Troll

Field Name	Instructions	Coding Examples and Formats
	<p>gear used by the boat for the target.</p> <p>The gear should be determined and recorded for each primary and secondary target identified.</p>	<p>S = Spear</p> <p>N = Bait Net</p>
DD?	<p>If the boat used a descending device of any kind to release discarded fish, record a Y; otherwise, record N. Descending devices can increase the survival rate of fish that are suffering from barotrauma, by returning them to the proper depth. Examples of descending devices include inverted/weighted milk crates and specially designed quick-release hooks.</p>	<p>Y = descending device was used on this trip</p> <p>N = No device was used</p>
<b>ANGLER</b>		
<p>Catch Recorded</p> <p>obs= observed</p>	<p>Indicate here when you have confirmed that the obs and unobs/RELS catch has been recorded on the Catch and</p>	<p>Y = catch was recorded for angler</p>

Field Name	Instructions	Coding Examples and Formats
reported= unobs & RELS	Discard Form for this angler.	N = no 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 refusals/barriers).	REFUSALS/LANGUAGE BARRIERS: do NOT issue sample number  Record an "R" (refusal) or "B" (language barrier) in the Angler # box
Bag #	Enter the bag # used by this angler, if one is issued.	32 Blue = bag number of the angler
Anger REFERENCE	Use this space to record notes that may help you identify the angler. This field will not be used by data entry, so the format is open.	'Bob'  'Father with son'  'Kid with cowboy hat'
DAYS fished (12 mo)	Ask angler how many saltwater finfishing trips within the last 12 months that	52 trips = fishing 1 day/wk over the last 12 months

Field Name	Instructions	Coding Examples and Formats
	occurred in or departed from CA, excluding today.	
Zip Code	Record the angler's permanent residence zip code.	90210 = Beverly Hills  Refused = R  Don't know = DK  Sampler didn't ask = DA  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 crew members 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 matches 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 #.

### Example of Onboard Angler Form

CRFS PC (CPFV) ONBOARD ANGLER FORM (V21 11292018)

Page 1 of 1

ASSN ID	Date (MM/DD/YY)	CNTY	SITE	OSP Port	Sampler #	Sampler Last Name						
112601	11/08/18	83	400	SBA	102	SMITH						
DFG Boat #	Boat Name		Duration Type	PC Mode (P or C)	Departure & Return Date (MM/DD/YY) Time		DAYS	TOTAL ANGS	TARGET	AREA	GEAR	DD?
39022	Stardust		3/4	P	Depart: 11/08/18	Return: 0600	1	10	1st RFGEN	7	H	Y/N
Captain: Jason					Return: 11/08/18	1605			2nd LNGCD	7	H	Y

Catch Recorded obs reported	ANGLER #	BAG #	Angler REFERENCE (angler name, description, etc.)	DAYS fished (12 mo)		Catch Recorded obs reported	ANGLER #	BAG #	Angler REFERENCE (angler name, description, etc.)	DAYS fished (12 mo)	
				Zip Code						Zip Code	
Y	1	10	Bob, black hat	50	12 mos	Y	9	4	Bill, blue shirt	20	12 mos
unobs & RELS Y				90706	Zip	Y				93110	Zip
Y	2	8	Lisa, red jacket	0	12 mos	Y	10	9	John, red hat	15	12 mos
unobs & RELS Y				93110	Zip	N				93109	Zip
Y	3	7	Jeff, brown hat	20	12 mos						12 mos
unobs & RELS Y				93117	Zip						Zip
Y	4	5	Lucy, pony tail	10	12 mos						12 mos
unobs & RELS N				90720	Zip						Zip
Y	5	2	Mike, cowboy hat	100	12 mos						12 mos
unobs & RELS N				93101	Zip						Zip
N	6	1	Jon, grey shirt	8	12 mos						12 mos
unobs & RELS Y				93101	Zip						Zip
Y	7	3	Ken, blue cap	0	12 mos						12 mos
unobs & RELS Y				93105	Zip						Zip
Y	8	6	Mary, pink scarf	15	12 mos						12 mos
unobs & RELS Y				93108	Zip						Zip

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, eCuba, 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
Sampler #	Sampler Last Name	
DFG Boat #	Boat Name	

### 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.

### Fishing Location Data

There are 16 data items for each location. There are three columns on each side of the form allowing you to record a total of six stops 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, 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 skipper. Based on section 105.5, the Sampler is allowed to view the vessel depth

finder. Should you think the depth information from skipper is inaccurate, leave the location information blank and inform your 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 if we can 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 Returned

dot-line system	
1 ·	6 1̣
2 :	7 11
3 ∴	8 □
4 ∴∴	9 □
5 1̣ :	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 your 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 your Lead.

All other items are dependent on the Sampler monitoring activity on the boat and may not be coded as ‘refused’ (i.e. fish counts). In cases where the Sampler is unable to determine Sampler-dependent information, the item(s) may be coded as “don’t know” with an explanation on the Assignment Summary form. It is expected that Sampler-dependent data will be collected.

**CPFV Onboard Location Form Item by Item Instructions**

<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
<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
Page ___ of ___	This is used to indicate total number of pages. Each side of the form is considered a page. The assignment data must be the same on all forms.	"1 of 2" on the first page "2 of 2" on the second page
ASSN ID	This is the same as on the Assignment Summary Form and is used for data tracking. Enter the 6-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 (PCOs are numbered 601-699.)  042601
Date	This is the same as on the Assignment Summary and is used to classify and track the data.	MM/DD/YY  01/01/20 = New Year's Day, 2020
OSP Port	Enter the 3-letter alpha code used by the Ocean Salmon Project for this port.	FTB = Fort Bragg
Sampler #	Use your 3-digit Sampler ID code.	100 = Joe Sampler
Sampler Last Name	Print your last name to the right of your code.	"Smith"
CDFW Boat #	This is CDFW vessel id number of the boat (permit number).	12345 = 'Fish Hoover'
Boat Name	Enter the name of the boat.	'Fish Hoover'
<b>FISHING LOCATION</b>		
Stop #	Record the Stop # that is associated with the	1 = First fishing stop for this trip

Field Name	Instructions	Coding Examples and Formats
	location data in this column.	
ANGS	Record the number of anglers observed for the catch counts at this location. When feasible, 10 anglers should be the target number of observed anglers, and a different set of anglers should be observed at each stop.	10 = ten anglers observed for catch at this location
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

Field Name	Instructions	Coding Examples and Formats
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 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):  1 = Degrees, minutes – DDMM.MM 3 = Degrees, minutes, seconds – DDMMSS
AREA	Distance from shore where the majority of fishing occurred.	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
FTyp	Fishing Type- This is one of the four predefined types of boat movement used for the fishing activity.	D = Free drift (engine not in gear) S = Stationed (engine in/out of gear to maintain position) A = Anchored (boat attached to the bottom) T = Troll (engine in gear and powered to trolling speed)

Field Name	Instructions	Coding Examples and Formats
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
TARGET	Record the 5-digit alpha code for the target species for this stop.	HALCA = California Halibut
SPECIES CATCH		
Common Name	This is the approved AFS common name.	'BROWN ROCKFISH'
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, you should be recording a new "stop" for every drift and troll. When the boat stops, this is the end position of the troll. Make sure that you bring extra data forms to record locations. For trolled locations, the number of observed anglers is the number of trolling rods you can observe.

### **Non-Stop trolling**

For an entire trip of trolling continuously, the Sampler may record starts and stops hourly or when the boat makes a major change in heading, such as when reversing direction along a stretch of coast

### **PC Location Form Specific Editing Checks**

#### **Header:**

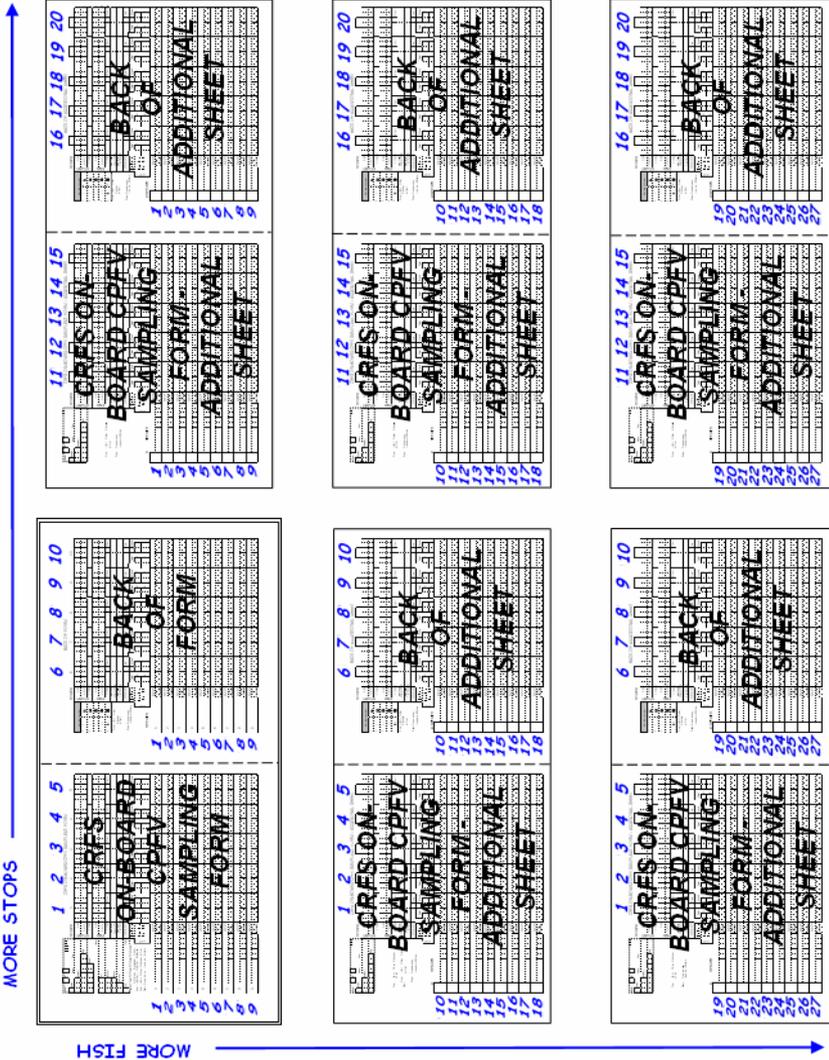
1. Make sure the header information is completely filled out and matches all other PC forms of an assignment.
2. OSP Port codes are never left blank.
3. Boat name and CDFW Boat # cannot be left blank.

#### **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 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



**CPFV ONBOARD CATCH AND DISCARD FORM**

The CPFV Onboard Catch and Discard form collects all of the biological data from the PC trip. Effort, length and weight of obtained catch and reported catch are all captured on this form. Discarded fish that are opportunistically measured will also be recorded here.

The CPFV Onboard Catch and Discard form has front and back sides to capture a number of species records. For trips that use additional sides and/or sheets the Sampler will utilize the Page \_\_\_ of \_\_\_ fields at the top of each form. Information from the top of each additional sheet will also be used to link the data with the primary sheet and other PC forms that contain data collected on that trip.

**CPFV Onboard Catch and Discard Form Layout**

The form has four major areas for data on the boat trip: Boat assignment data, effort, discard fish data and catch/biological data.

**Boat Assignment Data**

There are seven boat assignment data items, which are used both to link the data to the other PC forms and to provide some unique information about the CPFV trip. All 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 #		

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 Data**

The primary purpose of this measurement data collection is to estimate the total metric tons of fish *discarded*. In the past, the mean weights of kept fish were used to calculate all weight estimates. However, the size of discarded fish may differ from retained catch, leading to a potential bias if only kept fish sizes are used to estimate discarded catch.

Location of discard onboard CPFV trips ('stop #' on the form) is collected because management methods include latitude, distance from shore and depth criteria. The CPFV stop number links the fish size to these criteria for management analysis. For example, bottom depth

DISCARDS
Stop #

may be used to apply additional mortality to the rockfish 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 from unobserved anglers count towards this goal as well, so consider all anglers equally when measuring discards. You will find it easier to get your discarded fish measurements by mentioning your intention to anglers during the pre-fishing interview.

### **Handling Live Fish**

Do not allow live fish to remain aboard waiting to be measured before discard, as this may give the impression that we are allowing fish to sustain trauma or die needlessly. We don't want to increase the chance of mortality of released fish by obtaining our discard measurements. Here are some tips that will minimize the stress on the fish:

1. Handle fish with a wet rag or a glove
2. Avoid sticking fingers in the gill chamber
3. Avoid touching the eyes
4. Make sure hands and measuring board are cool and wet
5. Return the fish to the water as soon as possible
6. Do not ask the crew to bring aboard large giant sea bass, oversized 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 fishing location 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. Unusually small or large size fish should not affect your decision to measure the discard. Keep it random.
4. Discarded fish can also be recorded as RELS by an angler, but never as KEPT. 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. Double counting should not happen.
5. Fish that are cut up for bait, filleted, taken home or given to others are NOT discarded fish.
6. Discarded fish are not connected to individual anglers. For each row, if the Discard field has a value, then the Effort fields should be blank, and vice versa.

**Catch and Bio Data**

This section will include the catch type, number and biological data for each species encountered. Multiple rows may be used to capture the numbers of different types of catch for the same species in a bag.

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

**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 Cowcod, Yelloweye Rockfish and Pacific Halibut encounters. Don't forget to notify your Lead on the same day of these encounters.

Kept	Rels								
HALPA		RFYEY		RFCOW		RFCAN		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.	01/01/20 = January 1, 2020
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

Field Name	Instructions	Coding Examples and Formats
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'
EFFORT		
Angler #(s)	Enter the Angler # from the Onboard Angler Form of the angler(s) who are responsible for the catch.	<p>1 = Angler # 1 from the Angler Form</p> <p>1,3 = Angler #s 1 and 3 from the Angler Form</p> <p>2-5 = Angler #s 2, 3, 4 and 5 from the Angler Form</p> <p>BLANK = discard measurement or boat fish; EFFORT column left blank</p>
ANGS total	Enter the total number of anglers associated with this catch (licensed anglers+ unlicensed anglers). This number should correspond with the	<p>3 = three total anglers associated with this catch</p> <p>BLANK = discard measurement or boat fish; EFFORT column left blank</p>

Field Name	Instructions	Coding Examples and Formats
	number of ANGLER #(s).	
BAG #	Enter the bag #(s) 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 fish was discarded.	5 = stop number '5'
<b>CATCH</b>		
SPECIES	Enter the alpha code for each species or taxon of all fish examined or reported by the angler(s). Additional rows are used for anglers with multiple 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" No catch: enter zeros for numbers of fish  Refused: This is a refusal, terminate interview

Field Name	Instructions	Coding Examples and Formats
<p>KEPT</p> <p>Obs = observed/verifiable by the Sampler</p> <p>Unobs = retained but not verifiable/available for the Sampler</p>	<p>Kept Observed: Enter the number of fish examined for this angler(s). Sampler will identify and count each species retained by the angler(s). May include fillets with identifiable skin. Bags of unidentifiable fillets, fish not seen, or fish not counted by the Sampler get recorded as "kept unobserved" here.</p>	<p>Includes fished used for bait, thrown away, and fillets that are not identifiable</p> <p>0 = None</p> <p>Refused/don't know: interview is incomplete and should be terminated</p>
<p>RELS</p> <p>Alive = fish appeared alive with no mortal injuries upon release</p> <p>Dead = fish was thrown back dead/dying</p>	<p>Enter the total number of fish reported as released alive and/or dead by the angler(s). Fish must have been landed and intentionally released. Probe for catch that may not be remembered, such as bait species.</p> <p>If measured discards were released alive and dead for the same species, record the fish released alive in one row and the fish</p>	<p>Record species and number of fish ALIVE and/or DEAD</p> <p>0 = None</p> <p>Refused / don't know = the interview is incomplete and should be terminated</p>

Field Name	Instructions	Coding Examples and Formats
	released dead in another row.	
<b>BIO DATA</b>		
Fork Length Size (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>321 = FL in mm</p> <p>F = Female</p> <p>M =Male</p> <p>T = Transitional (CA Sheephead)</p> <p>321F = female fish 321 mm FL</p>
Weight/Head  Tag #	<p>Below the length, enter the weight in kg of the fish</p> <p>For salmon and other relevant species, enter the head tag number below the length. Circle the tag number. For salmon heads not recovered or lost, enter the head tag number and code NRS (non-</p>	<p>5.35 = weight in kg</p> <p>12345 NRS = tagged head not recovered</p>

Field Name	Instructions	Coding Examples and Formats
	recoverable specimen).  Salmon head tag numbers are 5-digit.	
<b>FOOTER</b>		
Pacific Halibut Kept/Rels	Enter the sum of kept and released Pacific Halibut on the page.	
Yelloweye Kept/Rels	Enter the sum of kept and released Yelloweye Rockfish on the page.	
Cowcod Kept/Rels	Enter the sum of kept and released Cowcod on the page.	
Canary Kept/Rels	Enter the sum of kept and released Canary 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 blank.

3. Make sure the cowcod, yelloweye rockfish and Pacific halibut boxes (bottom of the page) are filled out on each sheet.
4. Make sure all tag #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.

# Onboard Catch & Discard Form Example

CRFS PC (CPFV) ONBOARD CATCH AND DISCARD FORM (V12 12/22/2018)

Page 1 of 1

ASSN ID	Date (MM/DD/YY)	OSP Port	Sampler #	Sampler Last Name	DFG Boat #	Boat Name
071605	07/13/19	WAR	102	SMITH	10532	Seeker

EFFORT			DISCARD 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	alive	Weight (decimal kg) or (tag #)				
				unobs	dead	1	2	3	4	5	
			1	SBKLP	0	3	268	311	159		
			3	RFVER	0	2	309	315			
2	1	4		RFBRN	2	0	309	315			
				SCRCA	3	2	302	320	330		
				SBKLP	2	1	359	375			
				OCWHT	2	0	309	304			
7	1	1		SBKLP	3	5	360	359	380		
				SBBAR	2	2	402	399			
				SCRCA	4	0	275	255	300	303	
5	1	3		SBKLP	4	0	420	400	405	440	
				SBBAR	2	2	400	395			
				SCRCA	2	3	301	315			
				RFKLP	2	0	329	317			
					0	0	.57	.51			

**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 ANGS 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	0	0	0	0	0	0	0	0
Kept	Rele									
HALPA		RFYEV		RFCOW		RFCAN		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 and captain if they are keeping fish. Additional fish or fish that do not belong to a specific person are termed boat fish. 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 as kept-observed.
- If the Sampler has time, the fish should be measured and recorded in the BIO DATA section of the form. If the Sampler doesn't have time to measure the fish, then the species and number should be recorded.

EFFORT			DISCARDS 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		alive	Weight (decimal kg) or tag # (circle tag #)									
				unobs	dead	1	2	3	4	5					
/	42	<i>Boat Fish</i>	<i>RFSQS</i>	obs	alive										
				4	0	215	231	240	215						
				unobs	dead										
				0	0										
				obs	alive										
				2	0	259	207								
				unobs	dead										
				0	0										
				obs	alive										
				3	0										
				unobs	dead										
				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 you happen to see PC boats come into port after fishing. Opportunistic PCDs are encouraged; however, do not miss interviews from your 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. Your Lead will assign the location of the sample. Rescheduling these assignments is not desirable to the survey, and you will contact your 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 landing; 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 that you also report to your Lead any harbor closures, launch ramp closures, road closures or other incidents that prevent you from sampling or restrict or prevent fishing effort.

### **Combo-Trips: PCD versus PCS Sampling**

CPFVs that have multiple targets including salmon may 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, then 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**

You should be able to sample 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 very 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. You can 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. As you work in the port you will get a feel for the typical routine of the boats.

As the boat pulls up to the dock, identify yourself as a CDFW employee conducting CRFS. Count the number of anglers on the boat and verify this number with the crew before you leave. Ask the crew and captain if they contributed to the boat limit (took fish as part of the boat limit). If so, crewmembers are counted in the Boat Anglers field on the header of the data sheet. Try and intercept as many anglers (angler-bags) as possible as they leave the boat and ask if you can get some information on what they

caught and released. Some of the information on your data sheet will have to be provided by the captain or crew, such as Area Fished and catch location, if any. To save time and maximize the number of interviews, get the boat and trip information from the captain or landing agent after you have interviewed as many angler-bags as possible.

Try to sample as many boats as you can (note, each new boat sampled will require a new form but will have the same ASSNID). Check your data for any errors while at the dock before departure.

### **CPFV Refusals**

Under section 105.5 (Title 14 CCR) Samplers have authority to access all CPFV boats. However, you may need to explain the survey and provide evidence that you are a CRFS Sampler. Always be prepared with copies of Title 14, section 105.5, your CDFW ID, a CRFS handout, and your Lead's business card so that you are prepared to demonstrate the legitimacy of the sampling program, and explain the survey. You should be familiar with the relevant sections in the CDFW regulation booklet on CRFS cooperation and have a copy to show to charter masters and landing personnel.

It is very important to document all attempts (successful or unsuccessful), to sample chartered trips on the Assignment Summary Form. Make sure that you indicate that the trip was either a charter or a party boat in the comment section of the form. If the attempt to sample was not successful, explain in the comment section why.

If you are outright refused by landing personnel or encounter any hostility or difficulties, leave a copy of Title 14, section 105.5 with the landing manager and contact call your Lead. Please provide your Lead with detailed documentation (date, name of individuals and vessels concerned, details of refusal or problem and how you dealt with it). Provide this information the same day of the event. Your Lead will initiate procedures to follow-up with the vessel.

### **Interviewing Anglers**

Ask each angler about kept and unobserved catch. Unobserved catch includes any fish kept for bait and fish released alive or dead. You may have to 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"). You can use your 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 he 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, 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, 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. The crew may be interviewed if they kept fish towards the boat limit. 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 by you at the dock or think that because they did not catch fish, they are unimportant. If we ignore these no catch bags, and leave them 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 the anglers with catch.

## **No Anglers in PC Mode**

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

## **Sampling Dungeness Crab**

Crab biological data will be ignored on PC trips, only record CRBGN as a target, area fished and gear type (including the number of pots 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.
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. You should always have a PCD form with you at PR assignments.
5. If the PC boat is not listed on your 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 for the phone survey. Inform your 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 to you, 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 that you are 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, Cowcod and Pacific Halibut.
14. Crab catch and biological data is ignored; only include CRBGN as a target, location and gear type (including the number of pots pulled).

**CRFS PC (CPFV) Dockside (PCD) form Item by Item Instructions**

<b>Field Name</b>	<b>Instructions</b>	<b>Coding Examples and Formats</b>
<b>HEADER</b>		
OSP Form also completed	Check this box if there is a PC Salmon Dockside form that also has data from this boat.	This may happen if the boat did a combo Rockfish/Salmon trip and the salmon data was put on the OSP Salmon dockside form
Page_of _	Enter, in sequence, the page number of the form and total number of pages with boats.	Example: Page 2 of 7
ASSN ID	Enter the six-digit assignment ID number on all pages.  (Refer to your schedule)	Enter assignment ID in the format MMDNNN where MM is the month ranging from 01-12, D is the geographic District from 1 to 6 and NNN is the sequence from 001 to 999 (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	Boat: (Boat #) of (Total # of boats sampled per assignment)

Field Name	Instructions	Coding Examples and Formats
	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.	<b>Boat:</b> <u>2</u> of <u>4</u>
Date (MM/DD/YY)	Enter the numeric date as 2-digit month/2-digit day/2-digit year.	MM/DD/YY 01/01/15 = January 1, 2015
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
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 your Lead.	Vessel Name = Monte Carlo
Duration Type	Use the coding at the bottom of the sheet to categorize the length of trip or provide a description of the trip type.	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	P = open party trip C = boat was chartered to a private party

Field Name	Instructions	Coding Examples and Formats
	private group. Enter the appropriate PC mode.	
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 fished (include anglers who did not fish but took fish home)
TARGET	Record the primary and secondary target for the trip.	RFGEN = Rockfish
AREA	Record the water area code where the majority of fishing <b>effort</b> (fishing time) occurred.	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 by the boat. 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

Field Name	Instructions	Coding Examples and Formats
LOCATION	<p>Determine the general location of where the majority of the fish were caught. If no catch, code the primary location of the boat effort.</p> <p>Samplers should use their maps and have the captain show where fishing took place. Latitude and longitude from the captain are also acceptable.</p>	<p>Block-Box method is preferred:            212-01 (block &amp; one box)            235-12-14-15 (block &amp; up to 3 boxes or two 3- digit boxes for inland marine waters bbb-bbb)            252 (block only)</p>
DEPTH	<p>Enter the mean bottom depth in feet for the catch location obtained from the captain.</p>	<p>100 = 100 feet</p>
<p><b>EFFORT</b> Interview anglers to obtain this data</p>		
Sample #	<p>Record a sampler number for this individual angler or group interview record (angler-bag).</p> <p>If the angler refuses to be interviewed or refused key data (catch and effort information) then an "R" should be recorded in the box with no sample number.</p> <p>A language barrier that prevents an interview should be recorded as a "B" with no sample number.</p>	<p>1 = first interview</p> <p>R = refusal</p> <p>B = language barrier</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	<p>Record the number of individuals who fished for this angler-bag.</p>	<p>2 = 2 anglers fished for this sample #</p>
DAYS	<p>Randomly select one angler for this angler-bag. For this angler, record the number of days this individual has been saltwater sportfishing in</p>	<p>12 = angler fished 12 days within the last 12 months            Refused = R            Don't know = DK            Sampler didn't ask = DA</p>

Field Name	Instructions	Coding Examples and Formats
	California (or on trips departing from California) within the last 12 months not including today's trip.	
Zip Code	Determine the residential zip code for a randomly selected angler contributing to the bag.	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
<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/unobs	Enter the number of fish landed and retained for this interview record. Examined catch is tallied under "obs" (observed), while unavailable catch such as fish used for bait is tallied under "unobs (unobserved)"	Includes whole fish examined by the Sampler, fish used for bait, thrown away, given away, and fillets.  No catch = zero  Refused/don't know: interview is incomplete and should be terminated
RELS alive/dead	Enter the total number of fish reported as released alive or dead by the angler(s) for this interview. Fish must have been landed or have been intentionally released. Probe for catch that may not be remembered, such as bait species.	Record by species the number of fish released alive and/or dead No catch = zero  Refused/don't know = the interview is incomplete and should be terminated
<b>BIO DATA</b>		
Fork length/carapace size (mm), Sex (M/F/T)	In the top row enter the fish's fork length or the carapace length for crab/lobster in mm.  Add an M, F, or T after the length for sexed species.	321 = FL in mm  F = Female M = Male T = Transitional (Ca sheephead)  321F = female fish, 321 mm FL

Field Name	Instructions	Coding Examples and Formats
Weight (decimal kg) or tag#	<p>Below the length, enter the weight in kg of the fish</p> <p>Do not weigh headed or gutted fish.</p> <p>For salmon and other relevant species, enter the head tag number below the length. For salmon heads not recovered or lost, enter the head tag number and code NRS (Non-Recovered Specimen). Salmon head tag numbers are 5 digits.</p>	<p>5.35 = weight in kg</p> <p>12345 NRS = tagged salmon head not recovered</p>
<b>FOOTER</b>		
HALPA	Enter the sum the number of kept and released Pacific Halibut from the page.	
RFYFY	Enter the sum the number of kept and released Yelloweye Rockfish from the page.	
RFCOW	Enter the sum the number of kept and released Cowcod from the page.	
RFCAN	Enter the sum the number of kept and released Canary Rockfish from the page.	
RFBLK	Enter the sum the number of kept and released Black Rockfish from the page.	

### Specific Editing Checks

1. The PCD interview is not complete until you have asked all anglers contributing to the bag 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 assignment ID blank on the PC Dockside form an assignment ID will be given to it by your lead.
4. Fillets that you see but can't identify the number of fish or the species, are considered unobserved, even if you looked at them.
5. If there is 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 (RF/Salmon trip, for example).

# Example of PC Non-Salmon Dockside Form

CRFS PC (CPFV) DOCKSIDE FORM V19 11292018  OSP Form also completed  Page 1 of 2

ASSN ID	Boat of	Date (MM/DD/YY)	CNTY	SITE	OSP Port	Sampler #	Sampler Last Name						
112753	2/4	11/30/18	111	43	CIS	203	SMITH						
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?	
37693	ALOHA SPIRIT	3/4	P	Depart.	11/30/18	0503	1	23	1st	RFGEN	7	H	Y/N
Captain: JOHN DOE				Return	11/30/18	1636			2nd	LNGCD	7	H	Y
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.				708-7-8				316					
				708-16-15									

Sample # or R, B, Boat Fish	ANGS Total	DAYS FISHED 12 months Zip Code	SPECIES	KEPT		RELS		Fork length/Carapace size (mm), Sex (M/F/T) Weight (decimal kg) or (tag #)				
				obs	alive	obs	alive	1	2	3	4	5
				unobs	dead	unobs	dead					
1	2	18	RFVER	0	0			Filletted in the bag				
		93033		7	2							
2	1	5	RFSTA	3	1	312	276	291				
		93013		0	0	0.72	0.51	0.62				
3	1	26	RFCAN	1	0	329						
		90310		0	0	0.62						
4	1	0	RFCOP	9	0	421	407	391	401	371		
		90326		0	0	1.2	1.1	1.0	1.1	1.0		
R	3		LNGCD	2	3	661M	711F					
				0	0	2.8	3.5					
Refused Survey												
3	1		RFCOP	0	1							
				0	0							
4	1		RFCOP	0	0							
				0	0							
R	3		RFCOP	4	0	Filletted in bag but able to ID and count						
				0	3							
R	3		RFCOP	2	0	Filletted in bag but able to ID and count						
				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: 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	0	0	1	1	0	0	0
Kept	Kept	Kept	Kept	Kept	Kept	Kept	Kept	Kept	Kept
HALPA	RELS	RFYEW	RFCEW	RFCAN	RFCAN	RFCAN	RFCAN	RFCAN	RFCAN

**TOTAL ANGS:** all eligible anglers (including crew if they take home fish)

CRFS PC (CPFV) DOCKSIDE FORM V19 11292018

OSP Form also completed

ASSN ID	Boat of	Date (MM/DD/YY)	CNTY	SITE	OSP Port	Sampler #	Sampler Last Name					
116719	1 2	11/30/18	023	121	EUR	203	SMITH					
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?	
71226	REEL STEEL	1/2	C	Depart.	11/30/18	0700	1	6	1st	SALCK	N T	Y/N
Captain: TIM KLASSEN				Return	11/30/18	1130			2nd	BOTOM	N H	N
SPECIFIC LOCATION & DEPTH INFO: Location and depth where most of the fish caught, or most of the effort if no catch.				LOCATION (block-box or Lat/Lon)				DEPTH Average Bottom (ft)				
				217-95-85				90				

EFFORT		CATCH				BIO DATA				
Sample # or R, B, Boat Fish	ANGS Total	DAYS FISHED 12 months Zip Code	SPECIES	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
1	2	12 mo	RFBLK	obs	alive	392	411	389	442	399
		Zip		unobs	dead	1.0	1.2	0.92	1.4	1.1
B		12 mo	RFBLK	obs	alive	388	407	434	423	521
		Zip		unobs	dead	0.98	1.1	1.4	1.3	2.4
C		12 mo	SCCAB	obs	alive	502F				
		Zip		unobs	dead	2.2				
D		12 mo	LNGCD	obs	alive	612M				
		Zip		unobs	dead	2.2				
2	1	12 mo	RFBLK	obs	alive	407	405	505	481	390
		Zip		unobs	dead	1.1	1.1	2.2	1.9	0.98
E		12 mo	LNGCD	obs	alive	661M	711F			
		Zip		unobs	dead	2.8	3.5			
3	1	12 mo	RFBLK	obs	alive	400	412	399		
		Zip		unobs	dead	1.1	1.2	1.1		
H		12 mo	RFCHN	obs	alive	338				
		Zip		unobs	dead	0.75				
I		12 mo	LNGCD	obs	alive	696F				
		Zip		unobs	dead	3.3				
J		12 mo	SALCK	obs	alive	701				
		Zip		unobs	dead	99012				

\*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	0	0	0	0	0	0	0	18	10
Kept	Reis	Kept	Reis	Kept	Reis	Kept	Reis	Kept	Reis	Kept	Reis
HALPA	RFYFY	RFCOW	RFCAN	RFBLK							

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 <u>every</u> 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 (clip)	Total Anqs	King		Coho		Sea Lion Take #	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								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								99114	748	
Boat Name	T									
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. Get info on these vessels whenever you are at the docks. This is a good time to collect effort information from previous days when effort was not checked. It's advised that effort is checked at least three times a week to adequately capture all PC effort. 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. Do not wait until the end of the week to collect effort information. If you wait longer than a few days, you may not be able 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. If you are not the Port Lead Sampler, please 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 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 your 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.

### **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**

Field Name	Instructions	Coding Examples and Formats
Page _ of _	Fill in the consecutive number of pages used to document all the PC boats that use that landing.	Page 1 of 1
OSP Port	Fill in (or make sure you are using the correct pre-filled form) for the landing you are documenting.	AVI = Avila
Sampler ID	Enter your 3-digit Sampler Identification number.	Example: 207 = DaSilva
Sampler Last Name	Write out your last name.	"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 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'

Field Name	Instructions	Coding Examples and Formats
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. 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.	Initials = record the Sampler's initials who sampled the boat P = Personal Observation C = Captain/deckhand O = Office contact W = Website
Total salmon CPFVs sampled per day	Record the number of salmon trips sampled out of the total salmon trips by day. This will make it easier to tally the weekly totals at the bottom of the form.	Example: "1/2"
Notes:	Each landing or port has a list of PC boats that the Samplers should lookout for. Notes about those boats should go	Example: "While you are checking CPFV activity, check for these boats: BBQ (7404), Liberty (11635), RG

Field Name	Instructions	Coding Examples and Formats
	here. This info is already listed on the pre-filled form. Use additional space as needed to record relocations of CPFVs.	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	Report the total number of salmon trips for the sample week.	10 = ten trips where salmon were targeted or kept
Salmon CPFVs Sampled	Report the number of salmon trips sampled by CRFS and/or OSP for the sample week.	5 = five salmon-targeting trips were sampled
% Salmon CPFVs Sampled	Report the percentage of salmon trips sampled for the sample week.	50.0% = Fifty percent of the trips were sampled

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 shouldn't 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 your 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.

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 your writing is clear and legible as a “Z” and not a “2”.
8. Do not remove boats that leave the port to fish elsewhere – notify your Lead. Include a note in the comments section about any boats that have moved or are fishing in another port.

PEC Form Example – Non Salmon

CRFS-OSP PC (CPFV) EFFORT CHECK - Cen/Nor Cal Page 1 of 1 OSP Port: CRC

Sampler #	Sampler Last Name	CNTY	SITE	Site name (CDFW port)	Week starting Mon.
344	Bono	15	301	Inner Boat Basin (201)	06/05/17

CPFV Boat Name	CDFW Boat #	06/05		06/06		06/07		06/09		06/10		06/11		06/12	
		MON	TUE	WED	THU	FRI	SAT	SUN							
		Target Status	So.	Target Status	So.	Target Status	So.	Target Status	So.						
		Gear (circle)		Gear (circle)		Gear (circle)		Gear (circle)		Gear (circle)		Gear (circle)			
1 Tally Ho II	21352	RL	DT	RL	C	1	O	1	O	RL	C	RLD	C	RLD	O
2 Dancing Hooker	70199	RD	C	3	C	RLD	C	1	C	1	C	RL	TB	RL	C
3 Jolly Dolly	71430	3	C	1	C	1	C	RL	W	RL	W	RL	TB	2	W
4 Shannon L' Ree	71614	RL	DT	RLD	C	RLD	C	3	C	1	C	RL	C	RL	C
5															
6															
7															
8															
9															
10															
Total salmon CPFVs sampled per day:		0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Notes:															
Comments:															
										0	0	0			
										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

**Non-Fishing Status**

T = Tuna  
 O = Other  
 H = CA Halibut  
 A = PA Halibut  
 D = Crab

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

20151112

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.
		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
		T M D	T M D	T M D	T M D	T M D	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	D M D	T M D	D M D	T M D	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				
		D M D	D M D	T M D	T M D	D M D	D 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				
		D M D	T M D	T M D	T M D	T M D	T M D	D M D	D 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				
		D M D	T M D	T D	D T	D T	D T	D T	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	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	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	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	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	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

**Non-Fishing Status**

T = Tuna  
O = Other  
H = CA Halibut  
A = PA Halibut  
D = Crab

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 1/2/2017

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)  ( Y / N ) circle one	OTHER SAMPLER(S): NAME & # (w/data)  ( Y / N ) circle one			<b>1</b> ASSN DISP* State Car or Pers Vehicle	<b>6.75</b>	SAMPLING	
	MARINE CONDITIONS: <b>Sunny, clear. Calm seas and warm air temps. Low tide @ 1305.</b>				<b>PV</b> State Car or Pers Vehicle	<b>1.25</b>	TOT TRV	
	EFFORT: <b>Moderate effort for a summer weekend.</b>				<b>10500</b> ODO START	<b>.75</b>	TRV TIME HQ to site 1	
	CATCH: <b>HALCA, SPFAM. Many anglers reported low catch today.</b>				<b>10580</b> ODO STOP	<b>.5</b>	TRV TIME last site to HQ	
PC ACTIVITY: <b>PPT had 1/2 and 3/4 day boats out. LBM had 1/2 and 3/4 boats out.</b>				<b>80</b> MILEAGE	<b>0</b>	EDIT		
OTHER PERTINENT INFORMATION:								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
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> <b>No anglers present</b>						0	0											
		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> <b>Counts obtained at MM and BB</b> <b>PR is currently PR1 site-no counts obtained</b> <b>Cabrillo Pier very busy today</b>						0	0											
		SITE	110	START															
		DISPO**	0	STOP				54											
		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	Kept RFYFY	Rels	Kept RFCOW	Rels	Kept RFCAN	Rels	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	CSL	PR				
		SITE	<b>202</b>	START		MM							
		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	CSL	PR				
		SITE	<b>221</b>	START		MM		<b>5</b>					
		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	CSL	PR				
		SITE	<b>220</b>	START		MM		<b>14</b>					
		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	CSL	PR				
		SITE	<b>216</b>	START		MM		<b>10</b>					
		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	CSL	PR				
	<b>Counts obtained for Cherry Beach and Belmont Pier</b>	SITE	<b>402</b>	START		MM		<b>83</b>					
		DISPO**	<b>0</b>	STOP		PR							
		HRS	<b>.75</b>	DEPR	<b>1302</b>								
11	<b>Alamitos Bay</b>	CNTY	<b>37</b>	ARRV	<b>1304</b>	BB	ANGL	CSL	PR				
	<b>Counts obtained for Alamitos Bay and Alamitos Bay W Jetty</b>	SITE	<b>214</b>	START		MM		<b>17</b>					
		DISPO**	<b>0</b>	STOP		PR							
		HRS	<b>.5</b>	DEPR	<b>1340</b>								
12	<b>Seaport Village Jetty</b>	CNTY	<b>37</b>	ARRV	<b>1341</b>	BB	ANGL	CSL	PR				
		SITE	<b>204</b>	START		MM		<b>15</b>					
		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	CSL	PR				
	<b>Lots of boat traffic! Most likely cause for low effort</b>	SITE	<b>215</b>	START		MM		<b>0</b>	<b>0</b>				
		DISPO**	<b>0</b>	STOP		PR							
		HRS	<b>.25</b>	DEPR	<b>1414</b>								
14		CNTY		ARRV		BB	ANGL	CSL	PR				
		SITE		START		MM							
		DISPO**		STOP		PR							
		HRS		DEPR									
15		CNTY		ARRV		BB	ANGL	CSL	PR				
		SITE		START		MM							
		DISPO**		STOP		PR							
		HRS		DEPR									
16		CNTY		ARRV		BB	ANGL	CSL	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			<b>1</b> ASSN DISP* State Car or Pers Vehicle	<b>6.5</b>	SAMPLING	
COMMENTS	MARINE CONDITIONS: <b>Sunny, clear. Calm seas. High tide @ 1230.</b>				<b>PV</b> ODO START	<b>1.5</b>	TOT TRV	
	EFFORT: <b>Moderate effort.</b>				<b>10000</b> ODO STOP	<b>.5</b>	TRV TIME HQ to site 1	
	CATCH: <b>SPFAM, HALCA</b>				<b>10100</b> MILEAGE	<b>1.0</b>	TRV TIME last site to HQ	
	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>				<b>100</b>	<b>0</b>	EDIT	
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	CNTY	ARRV	HRS	DEPR	START	STOP	PR	MM	BB	ANGS	OBS	PHI	PR Trailer Counts													
															Onsite Start	Offsite Start	Onsite Stop	Offsite Stop										
1	<b>Rincon Beaches</b>			<b>111</b>	<b>ARRV</b>	<b>0715</b>					BB																	
																			SITE	<b>22</b>	START							
																			DISPO**	<b>7</b>	STOP							
																			HRS	<b>1.25</b>	DEPR	<b>0830</b>						
2	<b>Solimar Beach</b>			<b>111</b>	<b>ARRV</b>	<b>0840</b>					BB																	
																			SITE	<b>209</b>	START							
																			DISPO**	<b>7</b>	STOP							
																			HRS	<b>1.25</b>	DEPR	<b>1000</b>						
3	<b>Ventura Harbor: Interior BB</b> Conducted SEC at Ventura LR.			<b>111</b>	<b>ARRV</b>	<b>1025</b>					BB																	
																			SITE	<b>103</b>	START							
																			DISPO**	<b>7</b>	STOP				<b>10</b>			
																			HRS	<b>1.0</b>	DEPR	<b>1130</b>			<b>10</b>			
4	<b>Mandalay Beach</b> SEC counts obtained at Ventura South Jetty (111/103). See stop 3.			<b>111</b>	<b>ARRV</b>	<b>1135</b>					BB																	
																			SITE	<b>200</b>	START							
																			DISPO**	<b>7</b>	STOP							
																			HRS	<b>1.0</b>	DEPR	<b>1240</b>						
5	<b>San Buenaventura Beach</b> SEC counts obtained at Ventura Pier, Ventura N Jetty and Ventura Dock. See stops 6 and 7.			<b>111</b>	<b>ARRV</b>	<b>1300</b>					BB																	
																			SITE	<b>219</b>	START							
																			DISPO**	<b>1</b>	STOP				<b>25</b>			
																			HRS	<b>1.5</b>	DEPR	<b>1330</b>						

PR & PC ONLY

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

## SPECIES CODES

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
ABALO	abalone	<i>Haliotis</i>
ANCDB	anchovy, deepbody	<i>Anchoa compressa</i>
ANCFM	anchovy family	<i>Engraulidae</i>
ANCGN	anchovy genus	<i>Anchoa spp.</i>
ANCNO	anchovy, northern	<i>Engraulis mordax</i>
ARGNT	argentine, Pacific	<i>Argentina sialis</i>
BARPA	barracuda, Pacific	<i>Sphyaena argentea</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	bonfish	<i>Albula vulpes</i>
BONPA	bonito, Pacific	<i>Sarda chiliensis</i>
BOTOM	bottomfish (groundfish)	
BOXSP	boxfish, spiny	<i>Ostracion diaphanum</i>
BULBR	bullhead, brown	<i>Ictalurus nebulosus</i>
BUTFM	butterfish family	<i>Stromateidae</i>
CARPC	carp, common	<i>Cyprinus carpio</i>
CASTG	smoothtongue, California	<i>Leuroglossus stilbius</i>
CATCN	catfish, channel	<i>Ictalurus punctatus</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, gaper	<i>Tresus nuttallii</i>
CLMLM	clam, common littleneck	<i>Protothaca staminea</i>
CLMNR	clam, northern 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>Cancer antennarius</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
CRBDG	crab, Dungeness	<i>Metacarcinus magister</i>
CRBGN	crab genus, cancer	<i>Cancer</i>
CRBGR	crab, graceful rock	<i>Cancer gracilis</i>
CRBPR	crab, pelagic red	<i>Pleuroncodes palmipes</i>
CRBRR	crab, red rock	<i>Cancer productus</i>
CRBSH	crab, sheep	<i>Loxorhynchus grandis</i>
CRBYR	crab, yellow rock	<i>Cancer anthonyi</i>
CRKBK	croaker, black	<i>Cheilotrema saturnum</i>
CRKSF	croaker, spotfin	<i>Roncador stearnsi</i>
CRKYF	croaker, yellowfin	<i>Umbrina roncadore</i>
CROWT	croaker, white	<i>Genyonemus lineatus</i>
CRUST	crustaceans	<i>Crustacea</i>
CSHFM	shark family, cow	<i>Hexanchidae</i>
CSKFM	eel family, cusk	<i>Ophidiidae</i>
CTFPE	catalfu, popeye	<i>Pristigenys serrula</i>
CTSFM	shark family, cat	<i>Scyllorhinidae</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	damselfish family	<i>Pomacentridae</i>
DRADO	dolphinfish	<i>Coryphaena hippurus</i>
DRGFM	dragonfish family	<i>Stomiidae</i>
DRMFM	drum family	<i>Sciaenidae</i>
DSSF	smelt family, deepsea	<i>Bathylagidae</i>
EELOR	eel order	<i>Anguilliformes</i>
ELPFM	eelpout family	<i>Zoarcidae</i>
ERYPA	ray, Pacific electric	<i>Torpedo californica</i>
FLLFN	flounder family, lefteye	<i>Bothidae</i>
FLNFM	blenny family, combtooth	<i>Blenniidae</i>
FLRAR	flounder, arrowtooth	<i>Atheresthes stomias</i>
FLRFM	flounder family, righteye	<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>Cypselurus californicus</i>
FLYFM	flyingfish family	<i>Exocoetidae</i>
FRSFM	shark family, frill	<i>Chlamydoselachidae</i>
FTRIG	triggerfish, finescale	<i>Balistes polylepis</i>
GAPOD	sea slug, sea snail	<i>Gastropoda</i>
GARIB	garibaldi	<i>Hypsypops rubicundus</i>
GNTFM	grunt family	<i>Haemulidae</i>
GNTSB	seabass, giant	<i>Stereolepis gigas</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
GOBAR	goby, arrow	<i>Clevelandia ios</i>
GOBBE	goby, blackeye	<i>Coryphopterus nicholsi</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	gulf coney	<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>Rhinobatos 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>Myxiniidae</i>
HAGPA	hagfish, Pacific	<i>Eptatretus stouti</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 teres</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>
KLPCR	kelpfish, crevice	<i>Gibbonsia montereyensis</i>
KLPFM	clinid family	<i>Clinidae</i>
KLPGT	kelpfish, giant	<i>Heterostichus rostratus</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
KLPOF	fringehead, onepot	<i>Neoclinus urinotatus</i>
KLPRB	blenny, reef	<i>Paraclinus integripinnis</i>
KLPSF	fringehead, sarcastic	<i>Neoclinus blanchardi</i>
KLPSF	kelpfish, spotted	<i>Gibbonsia elegans</i>
KLPST	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>Lampetra japonica</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 lunioceps</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>Makaira indica</i>
MARBL	marlin, blue	<i>Makaira nigricans</i>
MARFM	billfish family	<i>Istiophoridae</i>
MARST	marlin, striped	<i>Tetrapturus 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	<i>Decapterus scombrinus</i>
NEDCA	needlefish, California	<i>Strongylura exilis</i>
OCTOP	octopods	<i>Octopoda</i>
OCWHT	whitefish, ocean	<i>Caulolatilus princeps</i>
OPAHS	opah	<i>Lampris guttatus</i>
OPALE	opaleye	<i>Girella nigricans</i>
PERFM	perch family	<i>Percidae</i>
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>Theragra chalcogramma</i>
POMDO	dolphin, pompano	<i>Coryphaena equisetis</i>
POMFM	pomfret family	<i>Bramidae</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
POMPA	pompano, Pacific (butterfish)	<i>Peprilus 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 aenagmaticus</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>
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>
RFCLO	rockfish, calico	<i>Sebastes dalli</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>
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>
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>
RFHNC	rockfish, honeycomb	<i>Sebastes umbrosus</i>
RFKLP	rockfish, kelp	<i>Sebastes atrovirens</i>
RFLST	thornyhead, longspine	<i>Sebastolobus altivelis</i>
RFMEX	rockfish, Mexican	<i>Sebastes macdonaldi</i>
RFOLV	rockfish, olive	<i>Sebastes serranoides</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
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, rougheye	<i>Sebastes aleutianus</i>
RFROS	rockfish, rosy	<i>Sebastes rosaceus</i>
RFRST	rockfish, redstripe	<i>Sebastes proriger</i>
RFRTN	rockfish, rosethom	<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>
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 serriceps</i>
RFVER	rockfish, vermilion	<i>Sebastes miniatus</i>
RFWID	rockfish, widow	<i>Sebastes entomelas</i>
RFWTB	rockfish, whitebelly	<i>Sebastes vexillaris</i>
RFYEY	rockfish, yelloweye	<i>Sebastes ruberrimus</i>
RFYMN	rockfish, yellowmouth	<i>Sebastes reedi</i>
RFYTL	rockfish, yellowtail	<i>Sebastes flavidus</i>
RNQBB	ronquil, bluebanded	<i>Rathbunella hypoplecta</i>
RNQFM	ronquil family	<i>Bathymasteridae</i>
RNQNO	ronquil, northern	<i>Ronqilus jordani</i>
ROCKH	rockhead	<i>Bothragonus swani</i>
RYBAT	ray, bat	<i>Myliobatis californica</i>
RYFLY	butterflyray, California	<i>Gymnura marmorata</i>
SABFM	sablefish family	<i>Anoplopomatidae</i>
SABLE	sablefish	<i>Anoplopoma fimbria</i>
SAILF	sailfish	<i>Istiophorus platypterus</i>
SALAC	trout, Arctic char	<i>Salvelinus alpinus</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>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
SALCT	trout, cutthroat	<i>Oncorhynchus clarki</i>
SALDV	Varden, Dolly	<i>Salvelinus malma</i>
SALEM	salema	<i>Xenistius californiensis</i>
SALFM	salmon family	<i>Salmonidae</i>
SALGN	salmon genus	<i>Oncorhynchus spp.</i>
SALPK	salmon, pink	<i>Oncorhynchus gorbuscha</i>
SALRB	trout, rainbow	<i>Oncorhynchus mykiss</i>
SALSE	salmon, sockeye	<i>Oncorhynchus nerka</i>
SALTR	trouts, sea run	
SARGO	sargo	<i>Anisotremus davidsoni</i>
SARPA	sardine, Pacific	<i>Sardinops sagax</i>
SAUPA	saury, Pacific	<i>Cololabis saira</i>
SBBAR	sandbass, barred	<i>Paralabrax nebulifer</i>
SBFAM	bass family, sea	<i>Serranidae</i>
SBGEN	sandbass genus	<i>Paralabrax</i>
SBKLP	bass, kelp	<i>Paralabrax clathratus</i>
SBSPT	sandbass, spotted	<i>Paralabrax maculatofascia</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>Sectator ocyurus</i>
SCBFM	chub family, sea	<i>Kyphosidae</i>
SCBIL	lord, brown Irish	<i>Hemilepidotus spinosus</i>
SCBKF	sculpin, blackfin	<i>Malacocottus kincaidi</i>
SCBLD	sculpin, bald	<i>Clinocottus recalvar</i>
SCBNH	sculpin, bonehead	<i>Artedius notospilotus</i>
SCBRZ	scabbardfish, razorback	<i>Assurger anzac</i>
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 burchani</i>
SCFAM	sculpin family	<i>Cottidae</i>
SCGRT	sculpin, great	<i>Myoxocephalus polyacanthoceph</i>
SCGRU	sculpin, grunt	<i>Rhamphocottus richardsoni</i>
SCILG	lord genus, Irish	<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>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
SCPSH	sculpin, Pacific staghorn	<i>Leptocottus armatus</i>
SCPUS	scallop, unspecified	<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, rosy lip	<i>Ascelichthys rhodorus</i>
SCSCL	sculpin, scaled	<i>Archaulus biseriatus</i>
SCSCT	sculpin, scissortail	<i>Triglops forficata</i>
SCSFN	sculpin, sailfin	<i>Nautichthys oculofasciatus</i>
SCSHN	sculpin, sharpnose	<i>Clinocottus acuticeps</i>
SCSLH	sculpin, scalyhead	<i>Artemius 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, wolly	<i>Clinocottus analis</i>
SELFM	eel family, snake	<i>Ophichthidae</i>
SELYL	eel, yellow snake	<i>Ophichthus zophochir</i>
SEHOR	senorita	<i>Oxyjulis californica</i>
SERLT	searobin, limptail	<i>Prionotus stephanophrys</i>
SGDIA	stingray, diamond	<i>Dasyatis dipterura</i>
SGFAM	stingray family	<i>Dasyatidae</i>
SGGEN	stingray genus	<i>Dasyatis spp.</i>
SGPEL	stingray, pelagic	<i>Dasyatis violacea</i>
SGRND	stingray, round	<i>Urolophus halleri</i>
SHADA	shad, American	<i>Alosa sapidissima</i>
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	shark family, dogfish	<i>Squalidae</i>
SHDKY	shark, dusky	<i>Carcharhinus obscurus</i>
SHEEP	sheephead, California	<i>Semicossyphus pulcher</i>
SHFIN	shark, soupfin	<i>Galeorhinus zyopterus</i>
SHGSM	smoothhound, gray	<i>Mustelus californicus</i>
SHHRN	shark, horn	<i>Heterodontus francisci</i>
SHLEP	shark, leopard	<i>Triakis semifasciata</i>
SHMFM	shark family, mackerel	<i>Lamnidae</i>
SHNTH	shark, narrowtooth	<i>Carcharhinus brachyurus</i>
SHRFM	shark family, requiem	<i>Carcharhinidae</i>
SHRMP	shrimp	<i>Caridea</i>
SHSAL	shark, salmon	<i>Lamna ditropis</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
SHSDG	shark, spiny dogfish	<i>Squalus acanthias</i>
SHSEV	shark, seven gill	<i>Notorynchus maculatus</i>
SHSGN	smoothhound genus	<i>Mustelus</i>
SHSIX	shark, six gill	<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, thresher	<i>Alopias vulpinus</i>
SHTIG	shark, tiger	<i>Galeocerdo cuvieri</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	skipback genus	<i>Euthynnus</i>
SKBIG	skate, big	<i>Raja 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>Raja stellulata</i>
SKTCA	skate, California	<i>Raja inornata</i>
SMCAP	capelin	<i>Mallotus villosus</i>
SMEUL	eulachon	<i>Thaleichthys pacificus</i>
SMFAM	smelt family	<i>Osmeridae</i>
SMJAK	smelt, (jacksmelt)	<i>Atherinopsis californiensis</i>
SMLGF	smelt, longfin	<i>Spirinchus thlaeichthys</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>Pleuronectes 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, curlfin	<i>Pleuronichthys decurrens</i>
SOLCO	sole, C-O	<i>Pleuronichthys coenosus</i>
SOLDS	sole, deepsea	<i>Embassichthys bathybius</i>
SOLDT	turbot, diamond	<i>Pleuronichthys guttulatus</i>
SOLDV	sole, Dover	<i>Microstomus pacificus</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
SOLEG	sole, English	<i>Parophrys vetulus</i>
SOLFH	sole, flathead	<i>Hippoglossoides elassodon</i>
SOLFT	sole, fantail	<i>Xystreureys liolepis</i>
SOLHT	turbot, hornyhead	<i>Pleuronichthys verticalis</i>
SOLPA	lance, Pacific sand	<i>Ammodytes hexapterus</i>
SOLPL	plaice, Alaska	<i>Pleuronectes quadrituberculatus</i>
SOLPT	sole, petrale	<i>Eopsetta jordani</i>
SOLRK	sole, rock	<i>Lepidopsetta bilineatus</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>Rhacochilus vacca</i>
SPPNK	seaperch, pink	<i>Zalemmbius rosaceus</i>
SPRBW	seaperch, rainbow	<i>Hypsurus caryi</i>
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>Hyperprosopon anale</i>
SPSTR	seaperch, striped	<i>Embiotoca lateralis</i>
SPWAL	surfperch, walleye	<i>Hyperprosopon argenteum</i>
SPWHT	seaperch, white	<i>Phanerodon furcatus</i>
SQTSE	squaretail, small eye	<i>Tetragonurus cuvieri</i>
SQDJU	Humbolt/jumbo squid	<i>Dosidicus gigas</i>
SQDMK	market squid	<i>Doryteuthis opalescens</i>
SQTSE	squaretail, small eye	<i>Tetragonurus cuvieri</i>
SQUID	squid	<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 star	<i>Asterzoa</i>
STBAS	bass, striped	<i>Morone saxatilis</i>
STGEN	sturgeon genus	<i>Acipenser</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
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	snout, tube	<i>Aulorhynchus flavidus</i>
TFPGE	tilefish, Pacific golden-eyed	<i>Caulolatilus affinis</i>
THRBK	thornback	<i>Platyrhinoidis triseriata</i>
TNAAB	tuna, (albacore)	<i>Thunnus alalunga</i>
TNABE	tuna, bigeye	<i>Thunnus obesus</i>
TNABF	tuna, bluefin	<i>Thunnus thynnus</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	touquefish, California	<i>Symphurus atricauda</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>
WEKFS	weakfishes	<i>Cynoscion</i>
WOLFE	wolf-eel	<i>Anarrhichthys ocellatus</i>
WRABS	wrasse, blackspot	<i>Decodon melasma</i>
WRAFM	wrasse family	<i>Labridae</i>
WRARB	wrasse, rainbow	<i>Thalassoma luvasanum</i>
WRARK	wrasse, rock	<i>Halichoeres semicinctus</i>
YELTL	yellowtail	<i>Seriola lalandi</i>
18	shark, frill	<i>Chlamydoselachus arguineus</i>
22	shark, whale	<i>Rhincodon typus</i>
23	shark, ragged tooth	<i>Odontaspis ferox</i>
26	shark, basking	<i>Cetorhinus maximus</i>
29	shark, bigeye thresher	<i>Alopias superciliosus</i>
33	shark, longnose cat	<i>Apristurus kampae</i>
35	shark, filetail cat	<i>Parmatyus xaniurus</i>
39	shark, Pacific sharpnose	<i>Rhizoprionodon longurio</i>
44	shark genus, gray	<i>Carcharhinus</i>
50	shark family, hammerhead	<i>Sphyrnidae</i>
52	shark, smooth hammerhead	<i>Sphyrna zygaena</i>
56	shark, prickly	<i>Echinorhinus cookei</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
68	skate, sandpaper	<i>Bathyraja interrupta</i>
69	skate, black	<i>Bathyraja trachura</i>
70	skate, Alaska	<i>Bathyraja parmifera</i>
72	skate, flathead	<i>Bathyraja rosispinis</i>
74	skate, roughtail	<i>Raja trachura</i>
82	manta family	<i>Mobulidae</i>
84	mobula, spinetail	<i>Mobula japanica</i>
85	mobula, smoothtail	<i>Mobula thurstoni</i>
90	machete	<i>Elops affinis</i>
94	conger, Catalina	<i>Gnathophis catalinensis</i>
96	eel, Pacific worm	<i>Myrophis vafer</i>
97	eel, Pacific snake	<i>Ophichthus triserialis</i>
99	eel family, snipe	<i>Nemichthyidae</i>
100	eel, slender snake	<i>Nemichthys scolopaceus</i>
106	herring, middling thread	<i>Opisthonema medirastre</i>
107	herring, flatiron	<i>Harengula thrissina</i>
112	anchovy, slough	<i>Anchoa delicatissima</i>
113	anchoveta	<i>Cetengraulis mysticetus</i>
129	smelt, delta	<i>Hypomesus transpacificus</i>
131	smelt, rainbow	<i>Osmerus mordax</i>
139	spookfish family	<i>Opisthoproctidae</i>
140	barreleye	<i>Macropinna microstoma</i>
142	dragonfish, longfin	<i>Tactostoma macropus</i>
143	viperfish, Pacific	<i>Chauliodus macouni</i>
146	lancetfish family	<i>Alepisauridae</i>
148	daggertooth family	<i>Anotopteridae</i>
149	pearleye family	<i>Scopelarchidae</i>
150	pearleye, northern	<i>Benthalbella dentata</i>
151	lanternfish family	<i>Myctophidae</i>
152	lampfish, dogtooth	<i>Ceratoscopelus townsendi</i>
153	headlightfish, California	<i>Diaphus theta</i>
154	lampfish, pinpoint	<i>Lampanyctus regalis</i>
155	lampfish, patchwork	<i>Notoscopelus resplendens</i>
156	lampfish, northern	<i>Stenobrachius leucopsarus</i>
157	lanternfish, blue	<i>Tarletonbeania crenularis</i>
158	lampfish, diogenes	<i>Diogenys lanternatus</i>
159	flashlightfish	<i>Protomyctophum crockeri</i>
160	lampfish, Mexican	<i>Triphoturus mexicanus</i>
163	chihuil	<i>Bagre panamensis</i>
167	clingfish family	<i>Gobiesocidae</i>
169	clingfish, lined	<i>Gobiesox eugrammus</i>
170	clingfish, bearded	<i>Gobiesox papillifer</i>
171	clingfish, California	<i>Gobiesox rhessondon</i>
172	clingfish, kelp	<i>Rimicola muscarum</i>
173	clingfish, slender	<i>Rimicola eigenmanni</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
174	frogfish, roughjaw	<i>Antennarius avalonis</i>
175	batfish, spotted	<i>Zalieutes elater</i>
176	seadevil, triplewart	<i>Cryptopsaras couesi</i>
183	brotula, red	<i>Brosmophycis marginata</i>
184	eel, spotted cusk	<i>Chilara taylori</i>
185	eel, basketweave cusk	<i>Otophidium scrippsae</i>
187	eelpout, bigfin	<i>Lycodes cortezianus</i>
188	eelpout, Alaska	<i>Bothrocarra pusillum</i>
189	eelpout, pallid	<i>Lycodapus mandibularis</i>
190	eelpout, shortfin	<i>Lycodes brevipes</i>
191	eelpout, black	<i>Lycodes diapterus</i>
192	eelpout, wattled	<i>Lycodes palearis</i>
193	eelpout, Canadian	<i>Lycodes polaris</i>
194	eelpout, polar	<i>Lycodes turneri</i>
195	shulupaoluk	<i>Lycodes jugoricus</i>
196	eelpout, pale	<i>Lycodes pallidus</i>
197	eelpout, blackbelly	<i>Lycodopsis pacifica</i>
198	eelpout, bearded	<i>Lyconema barbatum</i>
201	halfbeak, longfin	<i>Hemiramphus saltator</i>
202	halfbeak	<i>Hyporhamphus unifasciatus</i>
203	halfbeak	<i>Hyporhamphus rosae</i>
204	halfbeak, ribbon	<i>Euleptorhamphus viridis</i>
205	flyingfish, sharpchin	<i>Fodiator acutus</i>
206	flyingfish, blackwing	<i>Hirundichthys rondeleti</i>
214	dory, mirror	<i>Zenopsis nebulosa</i>
216	crestfish	<i>Lophotus lacepedei</i>
217	ribbonfish family	<i>Trachipteridae</i>
219	ribbonfish, tapertail	<i>Trachipterus fukuzaki</i>
220	ribbonfish, scalloped	<i>Zu cristatus</i>
221	oarfish	<i>Regalecus glesne</i>
224	stickleback, ninespine	<i>Pungitius pungitius</i>
226	snipefish, slender	<i>Macrorhamphosus gracilis</i>
227	pipefish family	<i>Syngnathidae</i>
229	pipefish, barred	<i>Syngnathus auliscus</i>
230	pipefish, kelp	<i>Syngnathus californiensis</i>
231	seahorse, Pacific	<i>Hippocampus ingens</i>
293	rockfish, dwarf red	<i>Sebastes rufinanus</i>
298	searobin family	<i>Triglidae</i>
300	searobin, splitnose	<i>Bellator xenisma</i>
311	mackerel, Atka	<i>Pleurogrammus monopterygius</i>
314	skilfish	<i>Erilepis zonifer</i>
316	sculpin, twohorn	<i>Icelus bicornis</i>
317	sculpin, spatulate	<i>Icelus spatula</i>
320	hamecon	<i>Arteidiellus scaber</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
323	sculpin, smoothhead	<i>Artedius lateralis</i>
324	sculpin, puget sound	<i>Ruscarius meanyi</i>
326	sculpin, corraline	<i>Artedius corallinus</i>
327	sculpin, roughcheek	<i>Ruscarius creaseri</i>
329	sculpin, crested	<i>Blepsias bilobus</i>
330	sculpin, silver spotted	<i>Blepsias cirrhosus</i>
332	sculpin, calico	<i>Clinocottus embryum</i>
333	sculpin, mosshead	<i>Clinocottus glopiceps</i>
338	sculpin, spinyhead	<i>Dasycottus setiger</i>
343	sculpin, armorhead	<i>Gymnocanthus galeatus</i>
347	lord, yellow Irish	<i>Hemilepidotus jordani</i>
349	sculpin, bigmouth	<i>Hemitripterus bolini</i>
354	sculpin, frogmouth	<i>Icelinus oculatus</i>
355	sculpin, pit head	<i>Icelinus cavifrons</i>
356	sculpin, fringed	<i>Icelinus fimbriatus</i>
357	sculpin, yellowchin	<i>Icelinus quadriseriatus</i>
360	sculpin, belligerent	<i>Megalocottus platycephalus</i>
361	sculpin, brightbelly	<i>Microcottus sellaris</i>
362	sculpin, plain	<i>Myoxocephalus jakk</i>
363	sculpin, warthead	<i>Myoxocephalus niger</i>
365	sculpin, fourhorn	<i>Myoxocephalus quadricornis</i>
366	sculpin, Arctic	<i>Myoxocephalus scorpioides</i>
367	sculpin, shorthorn	<i>Myoxocephalus scorpius</i>
369	sculpin, eyeshode	<i>Nautichthys pribilovius</i>
371	sculpin, saddleback	<i>Oligocottus rimensis</i>
372	sculpin, fluffy	<i>Oligocottus snyderi</i>
373	sculpin, thornback	<i>Paricelinus hopliticus</i>
374	sculpin, spineless	<i>Phallocottus obtusus</i>
375	sculpin, slim	<i>Radulinus asprellus</i>
376	sculpin, darter	<i>Radulinus boleoides</i>
377	sculpin, smoothgum	<i>Radulinus vinculus</i>
380	sculpin, kelp	<i>Sigmistes caulias</i>
381	sculpin, smithi	<i>Sigmistes smithi</i>
382	sculpin, monacled	<i>Synchirus gilli</i>
384	sculpin, roughspine	<i>Triglops macellus</i>
385	sculpin, ribbed	<i>Triglops pingeli</i>
386	sculpin, spectacled	<i>Triglops scepticus</i>
387	sculpin, roughback	<i>Chitonotus pugettensis</i>
388	sculpin, spinynose	<i>Asemichthys taylori</i>
389	sculpin, longfin	<i>Jordani zonope</i>
390	sculpin, lavender	<i>Leiocottus hirundo</i>
391	sculpin, butterfly	<i>Hemilepidotus papilio</i>
392	sculpin, snubnose	<i>Orthoropias triacis</i>
393	sculpin, tadpole	<i>Psychrolutes paradoxus</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
394	sculpin, blob	<i>Phychrolutes phrictus</i>
395	sculpin, soft	<i>Psychrolutes sigalutes</i>
396	poacher family	<i>Agonidae</i>
397	poacher, northern spearnose	<i>Agonopsis vulsa</i>
398	poacher, southern spearnose	<i>Agonopsis sterletus</i>
399	alligatorfish, smooth	<i>Anoplagonus inermis</i>
400	alligatorfish, Aleutian	<i>Aspidophoroides bartoni</i>
401	alligatorfish, Arctic	<i>Aspidophoroides olriki</i>
402	starsnout, gray	<i>Bathyagonus alascanus</i>
403	starsnout, spinycheck	<i>Bathyagonus infraspinatus</i>
404	poacher, bigeye	<i>Bathyagonus pentacanthus</i>
405	poacher, blackfin	<i>Bathyagonus nigripinnis</i>
407	poacher, fourhorn	<i>Hypsagonus quadricornis</i>
408	poacher, Bering	<i>Ocella dodecaedron</i>
409	poacher, warty	<i>Ocella verrucosa</i>
410	poacher, pygmy	<i>Odontopyxis trispinosa</i>
411	poacher, tubenose	<i>Pallasina barbata</i>
412	poacher, blacktip	<i>Xeneretmus latifrons</i>
413	poacher, bluespotted	<i>Xeneretmus triacanthus</i>
414	poacher, pricklebreast	<i>Stellerina xyosterna</i>
415	snailfish family	<i>Cyclopteridae</i>
416	lumpsucker, smooth	<i>Aptocyclus ventricosus</i>
417	snailfish, blacktail	<i>Careproctus melanurus</i>
418	snailfish, blotched	<i>Cryсталlichthys cyclopius</i>
419	lumpsucker, leatherfin	<i>Eumicrotremus derjugini</i>
420	lumpsucker, Pacific spiny	<i>Eumicrotremus orbis</i>
421	snailfish, spotted	<i>Liparis callyodon</i>
422	snailfish, ribbon	<i>Liparis cyclopus</i>
423	snailfish, polkadot	<i>Liparis cyclostigma</i>
424	snailfish, marbled	<i>Liparis dennyi</i>
425	snailfish, tidepool	<i>Liparis florum</i>
426	snailfish, slipskin	<i>Liparis fucensis</i>
427	seasnail, gelatinous	<i>Liparis fabricii</i>
428	snailfish, spiny	<i>Liparis mucosus</i>
429	snailfish, showy	<i>Liparis pulchellus</i>
430	snailfish, ringtail	<i>Liparis rutteri</i>
431	snailfish, tadpole	<i>Nectoliparis pelagicus</i>
432	snailfish, prickly	<i>Paraliparis deani</i>
433	snailfish, Bering	<i>Liparis beringianus</i>
434	snailfish, lobefin	<i>Liparis greeni</i>
442	bass, splittail	<i>Hemanthias perunanus</i>
448	seabass, pygmy	<i>Serraniculus pumilio</i>
451	bigeye family	<i>Priacanthidae</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
453	cardinalfish, Guadalupe	<i>Apogon guadalupensis</i>
458	sucker, marlin	<i>Remora osteochir</i>
459	remora	<i>Remora remora</i>
460	remora, spearfish	<i>Remora brachyptera</i>
463	jack, green	<i>Caranx caballus</i>
464	bumper, Pacific	<i>Chloroscombrus orqueta</i>
465	leatherjacket	<i>Oligoplites saurus</i>
466	amberjack, Pacific	<i>Seriola colburni</i>
468	pompano, paloma	<i>Trachinotus paitensis</i>
469	pompano, gafftopsail	<i>Trachinotus rhodopus</i>
470	moonfish, Pacific	<i>Selene peruviana</i>
473	roosterfish	<i>Nematistius pectoralis</i>
474	dolphin family	<i>Coryphaenidae</i>
478	mojarra, spotfin	<i>Eucinostomus argenteus</i>
479	mojarra, Pacific flagfin	<i>Eucinostomus gracilis</i>
483	porgy, Pacific	<i>Calamus brachysomus</i>
495	goatfish, Mexican	<i>Mulloidichthys dentatus</i>
502	butterflyfish, threeband	<i>Chaetodon humeralis</i>
503	butterflyfish, scythe	<i>Chaetodon falcifer</i>
504	armorhead, pelagic	<i>Pentaceros richardsoni</i>
528	pomfret, Pacific	<i>Brama japonica</i>
529	pomfret, bigtooth	<i>Brama orcini</i>
530	pomfret, rough	<i>Teractes asper</i>
531	fanfish, Pacific	<i>Pteraclis aesticola</i>
532	pomfret, sickle	<i>Taractichthys steindachneri</i>
535	threadfin family	<i>Polynemidae</i>
536	bobo, blue	<i>Polydactylus approximans</i>
537	bobo, yellow	<i>Polydactylus opercularis</i>
543	sandfish, sailfin	<i>Arctoscopus japonicus</i>
548	searcher	<i>Bathymaster signatus</i>
550	stargazer, smooth	<i>Kathetostoma avertuncus</i>
554	blenny, mussel	<i>Hypsoblennius jenkinsi</i>
560	kelpfish, scarlet	<i>Gibbonsia erythra</i>
562	kelpfish, island	<i>Alloclinus holderi</i>
563	pikeblenny, orangethroat	<i>Chaenopsis alepidota</i>
564	blenny, deepwater	<i>Cryptotrema corallinum</i>
566	fringehead, yellowfin	<i>Neoclinus stephensae</i>
569	quillfish	<i>Ptilichthys goodei</i>
571	prickleback, pighead	<i>Acantholumpenus mackayi</i>
572	prickleback, lesser	<i>Alectridium aurantiacum</i>
573	prickleback, Y	<i>Allolumpenus hypochrcmus</i>
574	cockscorb, slender	<i>Anoplarchus insignis</i>
575	cockscorb, high	<i>Anoplarchus purpurescens</i>
576	warbonnet, matcheek	<i>Chirolophis tarsodes</i>
577	warbonnet, mosshead	<i>Chirolophis nugator</i>

Sorted by Species Code		
SP CODE	COMMON NAME	SCIENTIFIC NAME
578	warbonnet, decorated	<i>Chirolophis decoratus</i>
579	prickleback, nutcracker	<i>Bryozoichthys lysimus</i>
580	prickleback, trident	<i>Gymnocrinus cristulatus</i>
581	prickleback, longsnout	<i>Lumpenella longirostris</i>
582	eelblenny, slender	<i>Lumpenus fabricii</i>
584	shanny, daubed	<i>Lumpenus maculatus</i>
585	eelblenny, stout	<i>Lumpenus medius</i>
586	prickleback, ribbon	<i>Phytichthys chirus</i>
587	prickleback, bluebarred	<i>Plectobranchnus evides</i>
588	prickleback, whitebarred	<i>Poroclinus rothrocki</i>
589	shanny, Arctic	<i>Stichaeus punctatus</i>
592	wrymouth, giant	<i>Cryptacanthodes giganteus</i>
593	wrymouth, dwarf	<i>Cryptacanthodes aleutensis</i>
594	snakeblenny, fourline	<i>Eumesogrammus praecisus</i>
595	cockscomb, stone	<i>Alectrias alectrolophus</i>
599	gunnel, longfin	<i>Pholis clemensi</i>
600	gunnel, stippled	<i>Rhodymenichthys dolichogaster</i>
601	gunnel, Bering	<i>Pholis gilli</i>
604	gunnel, red	<i>Pholis schultzi</i>
605	gunnel, rockweed	<i>Apodichthys fucorum</i>
606	gunnel, kelp	<i>Ulvicola santaerosa</i>
607	graveldiver	<i>Scytalina cerdale</i>
608	prowfish	<i>Zaprora silenus</i>
616	goby, cheekspot	<i>Ilypnus gilberti</i>
617	goby, halfblind	<i>Lethops connetes</i>
618	goby, zebra	<i>Lythrypnus zebra</i>
619	goby, shadow	<i>Quietula ycauda</i>
620	goby, trident	<i>Tridentiger trigonocephalus</i>
621	goby, blind	<i>Typhlogobius californiensis</i>
622	goby, tidewater	<i>Eucyclogobius newberryi</i>
623	sleeper, Pacific fat	<i>Dormitator latifrons</i>
625	mackerel family, snake	<i>Trichiuridae</i>
626	mackerel, snake	<i>Gempylus serpens</i>
627	escolar	<i>Lepidocybium flavobrunneum</i>
628	oilfish	<i>Ruvettus pretiosus</i>
630	scabbardfish, Pacific	<i>Lepidopus fitchi</i>
654	spearfish, shortbill	<i>Tetrapturus angustirostris</i>
656	cigarfish, longfin	<i>Cubiceps paradoxus</i>
680	dab, longhead	<i>Pleuronectes proboscideus</i>
699	puffer, oceanic	<i>Lagocephalus lagocephalus</i>
700	puffer, bullseye	<i>Sphoeroides annulatus</i>
701	burrfish, Pacific	<i>Chilomycterus affinis</i>
702	porcupinefish	<i>Diodon hystrix</i>

<b>Sorted by Species Code</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
705	mola, slender	<i>Ranzanic laevis</i>
706	gerenadier, Pacific	<i>Coryphaenoides acrolepis</i>
707	rockfish, harlequin	<i>Sebastes variegatus</i>
708	rockfish, semaphore	<i>Sebastes melanosema</i>
709	flatnose, Pacific	<i>Antimora microlepis</i>
712	bass, hookthroat	<i>Hemanthias signifer</i>
715	gerenadier family	<i>Macrouridae</i>
716	sole, hybrids	<i>Isopsetta</i>
718	slickhead, California	<i>Alepocephalus tenebrosus</i>
719	gerenadier, giant	<i>Albatrossia pectoralis</i>

Sorted by Common Name		
SP CODE	COMMON NAME	SCIENTIFIC NAME
ABALO	abalone	<i>Haliotis</i>
400	alligatorfish, Aleutian	<i>Aspidophoroides bartoni</i>
401	alligatorfish, Arctic	<i>Aspidophoroides olriki</i>
399	alligatorfish, smooth	<i>Anoplagonus inermis</i>
466	amberjack, Pacific	<i>Seriola colburni</i>
113	anchoveta	<i>Cetengraulis mysticetus</i>
ANCFM	anchovy family	<i>Engraulidae</i>
ANCGN	anchovy genus	<i>Anchoa spp.</i>
ANCDB	anchovy, deepbody	<i>Anchoa compressa</i>
ANCNO	anchovy, northern	<i>Engraulis mordax</i>
112	anchovy, slough	<i>Anchoa delicatissima</i>
ARGNT	argentine, Pacific	<i>Argentina sialis</i>
504	armorhead, pelagic	<i>Pentaceros richardsoni</i>
BARPA	barracuda, Pacific	<i>Sphyaena argentea</i>
140	barreleye	<i>Macropinna microstoma</i>
SBFAM	bass family, sea	<i>Serranidae</i>
712	bass, hookthroat	<i>Hemanthias signifer</i>
SBKLP	bass, kelp	<i>Paralabrax clathratus</i>
442	bass, splittail	<i>Hemanthias perunanus</i>
STBAS	bass, striped	<i>Morone saxatilis</i>
SBTHF	bass, threadfin	<i>Pronotogrammus multifasciatus</i>
175	batfish, spotted	<i>Zalieutes elater</i>
451	bigeye family	<i>Priacanthidae</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>
564	blenny, deepwater	<i>Cryptotrema corallinum</i>
554	blenny, mussel	<i>Hypsoblennius jenkinsi</i>
KLPRB	blenny, reef	<i>Paraclinus integripinnis</i>
BLNRP	blenny, rockpool	<i>Hypsoblennius gilberti</i>
536	bobo, blue	<i>Polydactylus approximans</i>
537	bobo, yellow	<i>Polydactylus opercularis</i>
BONEF	bonefish	<i>Albula vulpes</i>
BONPA	bonito, Pacific	<i>Sarda chiliensis</i>
BOTOM	bottomfish (groundfish)	
BOXSP	boxfish, spiny	<i>Ostracion diaphanum</i>
183	brotula, red	<i>Brosomphycis marginata</i>
BULBR	bullhead, brown	<i>Ictalurus nebulosus</i>
464	bumper, Pacific	<i>Chloroscombrus orqueta</i>
701	burrfish, Pacific	<i>Chilomycterus affinis</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
BUTFM	butterfish family	<i>Stromateidae</i>
BFFFM	butterflyfish family	<i>Chaetodontidae</i>
503	butterflyfish, scythe	<i>Chaetodon falcifer</i>
502	butterflyfish, threeband	<i>Chaetodon humeralis</i>
RYFLY	butterflyray, California	<i>Gymnura marmorata</i>
SCCAB	cabezon	<i>Scorpaenichthys marmoratus</i>
GRPSC	cabrilla, spotted	<i>Epinephelus analogus</i>
SMCAP	capelin	<i>Mallotus villosus</i>
453	cardinalfish, Guadalupe	<i>Apogon guadalupensis</i>
CARPC	carp, common	<i>Cyprinus carpio</i>
CTFPE	catalufa, popeye	<i>Pristigenys serrula</i>
CATCN	catfish, channel	<i>Ictalurus punctatus</i>
163	chihuil	<i>Bagre panamensis</i>
SCBFM	chub family, sea	<i>Kyphosidae</i>
SCBBS	chub, bluestripped	<i>Sectator ocyurus</i>
656	cigarfish, longfin	<i>Cubiceps paradoxus</i>
CLAMS	clam,unspecified	<i>Bivalvia</i>
CLMBK	clam, basket cockle	<i>Clinocardium nuttallii</i>
CLMGD	clam, geoduck	<i>Panopea generosa</i>
CLMGP	clam, gaper	<i>Tresus nuttallii</i>
CLMLN	clam, common littleneck	<i>Protothaca staminea</i>
CLMNR	clam, northern razor	<i>Siliqua patula</i>
CLMPO	clam, pismo	<i>Tivela stultorum</i>
CLMWA	clam, common washington	<i>Saxidomus nuttalli</i>
167	clingfish family	<i>Gobiesocidae</i>
170	clingfish, bearded	<i>Gobiesox papillifer</i>
171	clingfish, California	<i>Gobiesox rhessondon</i>
172	clingfish, kelp	<i>Rimicola muscarum</i>
169	clingfish, lined	<i>Gobiesox eugrammus</i>
CLNGN	clingfish, nothern	<i>Gobiesox maeandricus</i>
173	clingfish, slender	<i>Rimicola eigenmanni</i>
KLPFM	clinid family	<i>Clinidae</i>
575	cockscorb, high	<i>Anoplarchus purpurescens</i>
574	cockscorb, slender	<i>Anoplarchus insignis</i>
595	cockscorb, stone	<i>Alectrias alectrolophus</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>
94	conger, Catalina	<i>Gnathophis catalinensis</i>
CRBCA	corbina, California	<i>Menticirrhus undulatus</i>

Sorted by Common Name		
SP CODE	COMMON NAME	SCIENTIFIC NAME
COROM	corvina, orangemouth	<i>Cynoscion xanthulus</i>
CORSF	corvina, shortfin	<i>Cynoscion parvipinnis</i>
CRBGN	crab genus, cancer	<i>Cancer</i>
CRABS	crab tribe, true	<i>Brachyuratribe</i>
CRBBR	crab, brown rock	<i>Cancer antennarius</i>
CRBDG	crab, Dungeness	<i>Metacarcinus magister</i>
CRBGR	crab, graceful rock	<i>Cancer gracilis</i>
CRBPR	crab, pelagic red	<i>Pleuroncodes, palnipes</i>
CRBRR	crab, red rock	<i>Cancer productus</i>
CRBSH	crab, sheep	<i>Loxorhynchus grandis</i>
CRBYR	crab, yellow rock	<i>Cancer anthonyi</i>
216	crestfish	<i>Lophotus lacepedei</i>
CRKBK	croaker, black	<i>Cheilotrema saturnum</i>
CRKSF	croaker, spotfin	<i>Roncador stearnsi</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>
680	dab, longhead	<i>Pleuronectes proboscideus</i>
148	daggertooth family	<i>Anotopteridae</i>
DAMFM	damsel fish family	<i>Pomacentridae</i>
474	dolphin family	<i>Coryphaenidae</i>
POMDO	dolphin, pompano	<i>Coryphaena equisetis</i>
DRADO	dolphinfish	<i>Coryphaena hippurus</i>
214	dory, mirror	<i>Zenopsis nebulosa</i>
DRGFM	dragonfish family	<i>Stomiidae</i>
142	dragonfish, longfin	<i>Tactostoma macropus</i>
DRMFM	drum family	<i>Sciaenidae</i>
CSKFM	eel family, cusk	<i>Ophidiidae</i>
SELFM	eel family, snake	<i>Ophichthidae</i>
99	eel family, snipe	<i>Nemichthyidae</i>
EELOR	eel order	<i>Anquilliformes</i>
185	eel, basketweave cusk	<i>Otophidium scrippsae</i>
97	eel, Pacific snake	<i>Ophichthus triserialis</i>
96	eel, Pacific worm	<i>Myrophis vafer</i>
100	eel, slender snake	<i>Nemichthys scolopaceus</i>
184	eel, spotted cusk	<i>Chilara taylori</i>
SELYL	eel, yellow snake	<i>Ophichthus zophochir</i>
582	eelblenny, slender	<i>Lumpenus fabricii</i>
585	eelblenny, stout	<i>Lumpenus medius</i>
ELPFM	eelpout family	<i>Zoarcidae</i>
188	eelpout, Alaska	<i>Bothrocara pusillum</i>
198	eelpout, bearded	<i>Lycinema barbatum</i>
187	eelpout, bigfin	<i>Lycodes cortezianus</i>
191	eelpout, black	<i>Lycodes diapterus</i>

Sorted by Common Name		
SP CODE	COMMON NAME	SCIENTIFIC NAME
197	eelpout, blackbelly	<i>Lycodopsis pacifica</i>
193	eelpout, Canadian	<i>Lycodes polaris</i>
196	eelpout, pale	<i>Lycodes pallidus</i>
189	eelpout, pallid	<i>Lycodapus mandibularis</i>
194	eelpout, polar	<i>Lycodes turneri</i>
190	eelpout, shortfin	<i>Lycodes brevipes</i>
192	eelpout, wattled	<i>Lycodes palearis</i>
627	escolar	<i>Lepidocybium flavobrunneum</i>
SMEUL	eulachon	<i>Thaleichthys pacificus</i>
531	fanfish, Pacific	<i>Pteraclis aesticola</i>
159	flashlightfish	<i>Protomyctophum crockeri</i>
FLTOR	flatfish order	<i>Pleuronectiformes</i>
709	flatnose, Pacific	<i>Antimora microlepis</i>
FLLFN	flounder family, lefteye	<i>Bothidae</i>
FLRFM	flounder family, righteye	<i>Pleuronectidae</i>
SOLAF	flounder, Arctic	<i>Pleuronectes 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>
FLYFM	flyingfish family	<i>Exocoetidae</i>
206	flyingfish, blackwing	<i>Hirundichthys rondeleti</i>
FLYCA	flyingfish, California	<i>Cypselurus californicus</i>
205	flyingfish, sharpchin	<i>Fodiator acutus</i>
KLPOF	fringehead, onespot	<i>Neoclinus urinotatus</i>
KLPSF	fringehead, sarcastic	<i>Neoclinus blanchardi</i>
566	fringehead, yellowfin	<i>Neoclinus stephensae</i>
174	frogfish, roughjaw	<i>Antennarius avalonis</i>
GARIB	garibaldi	<i>Hypsypops rubicundus</i>
715	gerenadier family	<i>Macrouridae</i>
719	gerenadier, giant	<i>Albatrossia pectoralis</i>
706	gerenadier, Pacific	<i>Coryphaenoides acrolepis</i>
495	goatfish, Mexican	<i>Mullidichthys dentatus</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>Coryphopterus nicholsi</i>
621	goby, blind	<i>Typhlogobius californiensis</i>
616	goby, cheekspot	<i>Ilypnus gilberti</i>
617	goby, halfblind	<i>Lethops connetens</i>
619	goby, shadow	<i>Quietula ycauda</i>
622	goby, tidewater	<i>Eucyclogobius newberryi</i>
620	goby, trident	<i>Tridentiger trignocephalus</i>
BOGYL	goby, yellowfin	<i>Acanthogobius flavimanus</i>

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SP CODE	COMMON NAME	SCIENTIFIC NAME
618	goby, zebra	<i>Lythrypnus zebra</i>
607	graveldiver	<i>Scytalina cerdale</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 (epinephelus)	<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>
GUIN	guitarfish, shovelnose	<i>Rhinobatos productus</i>
GRPGC	gulf coney	<i>Hyporthodus acanthistius</i>
GUNFM	gunnel family	<i>Pholidae</i>
601	gunnel, Bering	<i>Pholis gilli</i>
GUNCR	gunnel, crescent	<i>Pholis laeta</i>
606	gunnel, kelp	<i>Ulvicola santarosae</i>
599	gunnel, longfin	<i>Pholis clemensi</i>
GUNPP	gunnel, penpoint	<i>Apodichthys flavidus</i>
604	gunnel, red	<i>Pholis schultzi</i>
605	gunnel, rockweed	<i>Apodichthys fucorum</i>
GUNSB	gunnel, saddleback	<i>Pholis ornata</i>
600	gunnel, stippled	<i>Rhodymenichthys dolichogaster</i>
HAGFM	hagfish order	<i>Myxinidae</i>
HAGBK	hagfish, black	<i>Eptatretus deani</i>
HAGPA	hagfish, Pacific	<i>Eptatretus stouti</i>
PHAKE	hake, Pacific	<i>Merluccius productus</i>
202	halfbeak	<i>Hyporhamphus unifasciatus</i>
203	halfbeak	<i>Hyporhamphus rosae</i>
201	halfbeak, longfin	<i>Hemiramphus saltator</i>
204	halfbeak, ribbon	<i>Euleptorhamphus viridis</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>
320	hamecon	<i>Artediellus scaber</i>

Sorted by Common Name		
SP CODE	COMMON NAME	SCIENTIFIC NAME
153	headlightfish, California	<i>Diaphus theta</i>
HERFM	herring family	<i>Clupeidae</i>
107	herring, flatiron	<i>Harengula thrissina</i>
106	herring, middling thread	<i>Opisthonema medirastre</i>
HERPA	herring, Pacific	<i>Clupea pallasii</i>
HERRD	herring, round	<i>Etrumeus teres</i>
JACFM	jack family	<i>Carangidae</i>
463	jack, green	<i>Caranx caballus</i>
KAWAK	kawakawa	<i>Euthynnus affinis</i>
KLPCR	kelpfish, crevice	<i>Gibbonsia montereyensis</i>
KLPGT	kelpfish, giant	<i>Heterostichus rostratus</i>
562	kelpfish, island	<i>Alloclinus holderi</i>
560	kelpfish, scarlet	<i>Gibbonsia erythra</i>
KLPSP	kelpfish, spotted	<i>Gibbonsia elegans</i>
KLPST	kelpfish, striped	<i>Gibbonsia metzi</i>
KLPCA	killifish, California	<i>Fundulus parvipinnis</i>
KOSAL	king-of-the-salmon	<i>Trachipterus altivelis</i>
158	lampfish, diogenes	<i>Diogenys lanternatus</i>
152	lampfish, dogtooth	<i>Ceratoscopelus townsendi</i>
160	lampfish, Mexican	<i>Triphoturus mexicanus</i>
156	lampfish, northern	<i>Stenobranchius leucopsarus</i>
155	lampfish, patchwork	<i>Notoscopelus resplendens</i>
154	lampfish, pinpoint	<i>Lampanyctus regalis</i>
LMPFM	lamprey family	<i>Petromyzontidae</i>
LMPAR	lamprey, Arctic	<i>Lampetra japonica</i>
LMPPA	lamprey, Pacific	<i>Entosphenus tridentatus</i>
SOLPA	lance, Pacific sand	<i>Ammodytes hexapterus</i>
146	lancetfish family	<i>Alepisauridae</i>
LANLN	lancetfish, longnose	<i>Alepisaurus ferox</i>
151	lanternfish family	<i>Myctophidae</i>
157	lanternfish, blue	<i>Tarletonbeania crenularis</i>
465	leatherjacket	<i>Oligoplites saurus</i>
LNGCD	lingcod	<i>Ophiodon elongatus</i>
LZDFM	lizardfish family	<i>Synodontidae</i>
LZDCA	lizardfish, California	<i>Synodus lunioceps</i>
LOBSP	lobster, spiny	<i>Panulirus interruptus</i>
SCILG	lord genus, Irish	<i>Hemilepidotus</i>
SCBIL	lord, brown Irish	<i>Hemilepidotus spinosus</i>
SCRIL	lord, red Irish	<i>Hemilepidotus hemilepidotus</i>
347	lord, yellow Irish	<i>Hemilepidotus jordani</i>
LUVAR	louvar	<i>Luvarus imperialis</i>
419	lumpsucker, leatherfin	<i>Eumicrotremus deriuqini</i>

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SP CODE	COMMON NAME	SCIENTIFIC NAME
420	lumpsucker, Pacific spiny	<i>Eumicrotremus orbis</i>
416	lumpsucker, smooth	<i>Aptocyclus ventricosus</i>
90	machete	<i>Elops affinis</i>
MACFM	mackerel family	<i>Scombridae</i>
625	mackerel family, snake	<i>Trichiuridae</i>
311	mackerel, Atka	<i>Pleurogrammus monoptyerygius</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>
626	mackerel, snake	<i>Gempylus serpens</i>
MANTA	manta	<i>Manta birostris</i>
82	manta family	<i>Mobulidae</i>
MARBK	marlin, black	<i>Makaira indica</i>
MARBL	marlin, blue	<i>Makaira nigricans</i>
MARST	marlin, striped	<i>Tetrapturus audax</i>
MIDGN	midshipman genus	<i>Porichthys</i>
MIDPF	midshipman, plainfin	<i>Porichthys notatus</i>
MIDSP	midshipman, specklefin	<i>Porichthys myriaster</i>
85	mobula, smoothtail	<i>Mobula thurstoni</i>
84	mobula, spinetail	<i>Mobula japonica</i>
MOJFM	mojarra family	<i>Gerreidae</i>
479	mojarra, Pacific flagfin	<i>Eucinostomus gracilis</i>
478	mojarra, spotfin	<i>Eucinostomus argenteus</i>
SUNFM	mola family	<i>Molidae</i>
705	mola, slender	<i>Ranzanic laevis</i>
MOLLU	mollusks	<i>Mollusca</i>
470	moonfish, Pacific	<i>Selene peruviana</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>
221	oarfish	<i>Regalecus glesne</i>
OCTOP	octopods	<i>Octopoda</i>
628	oilfish	<i>Ruvettus pretiosus</i>
OPAHS	opah	<i>Lampris guttatus</i>
OPALE	opaleye	<i>Girella nigricans</i>
RAJOR	order, skate and ray	<i>Rajiformes</i>
149	pearleye family	<i>Scopelarchidae</i>
150	pearleye, northern	<i>Benthalbella dentata</i>
PERFM	perch family	<i>Percidae</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
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>Rhacochilus vacca</i>
SPREF	perch, reef	<i>Micrometrus aurora</i>
SPSHR	perch, shiner	<i>Cymatogaster aggregata</i>
PERZB	perch, zebra	<i>Hermosilla azurea</i>
563	pikeblenny, orangethroat	<i>Chaenopsis alepidota</i>
PILTF	pilotfish	<i>Naucrates ductor</i>
227	pipefish family	<i>Syngnathidae</i>
229	pipefish, barred	<i>Syngnathus auliscus</i>
PIPEB	pipefish, bay	<i>Syngnathus leptorhynchus</i>
230	pipefish, kelp	<i>Syngnathus californiensis</i>
SOLPL	plaice, Alaska	<i>Pleuronectes quadrituberculatus</i>
396	poacher family	<i>Agonidae</i>
408	poacher, Bering	<i>Occella dodecaedron</i>
404	poacher, bigeye	<i>BathYGONUS pentacanthus</i>
405	poacher, blackfin	<i>BathYGONUS nigripinnis</i>
412	poacher, blacktip	<i>Xeneretmus latifrons</i>
413	poacher, bluespotted	<i>Xeneretmus triacanthus</i>
407	poacher, fourhorn	<i>Hypsagonus quadricornis</i>
397	poacher, northern spearnose	<i>Agonopsis vulsa</i>
414	poacher, pricklebreast	<i>Stellerina xyosterna</i>
410	poacher, pygmy	<i>Odontopyxis trispinosa</i>
398	poacher, southern spearnose	<i>Agonopsis sterletus</i>
411	poacher, tubenose	<i>Pallasina barbata</i>
409	poacher, warty	<i>Occella verrucosa</i>
POLWE	pollock, walleye	<i>Theragra chalcogramma</i>
POMFM	pomfret family	<i>Bramidae</i>
529	pomfret, bigtooth	<i>Brama orcini</i>
528	pomfret, Pacific	<i>Brama japonica</i>
530	pomfret, rough	<i>Teractes asper</i>
532	pomfret, sickle	<i>Taractichthys steindachneri</i>
469	pompano, gafftopsail	<i>Trachinotus rhodopus</i>
POMPA	pompano, Pacific (butterfish)	<i>Pepilus simillimus</i>
468	pompano, paloma	<i>Trachinotus paitensis</i>
702	porcupinefish	<i>Diodon hystrix</i>
483	porgy, Pacific	<i>Calamus brachysomus</i>
PRKFM	prickleback family	<i>Stichaeidae</i>
PRKBK	prickleback, black	<i>Xiphister atropurpureus</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
587	prickleback, bluebarred	<i>Plectobranchnus evides</i>
572	prickleback, lesser	<i>Alectridium aurantiacum</i>
581	prickleback, longsnout	<i>Lumpenella longirostris</i>
PRKMK	prickleback, monkeyface	<i>Cebidichthys violaceus</i>
579	prickleback, nutcracker	<i>Bryozoichthys lysimus</i>
571	prickleback, pighead	<i>Acantholumpenus mackayi</i>
586	prickleback, ribbon	<i>Phytichthys chirus</i>
PRKRK	prickleback, rock	<i>Xiphister mucosus</i>
PRKSN	prickleback, snake	<i>Lumpenus sagitta</i>
580	prickleback, trident	<i>Gymnoclinus cristulatus</i>
588	prickleback, whitebarred	<i>Poroclinus rothrocki</i>
573	prickleback, Y	<i>Allolumpenus hypochrcmus</i>
608	prowfish	<i>Zaprora silenus</i>
PUFFM	puffer family	<i>Tetraodontidae</i>
700	puffer, bullseye	<i>Sphoeroides annulatus</i>
699	puffer, oceanic	<i>Lagocephalus lagocephalus</i>
QUEEN	queenfish	<i>Seriphus politus</i>
569	quillfish	<i>Ptilichthys goodei</i>
RAGFS	ragfish	<i>Icosteus aenagmaticus</i>
RATFS	ratfish, spotted	<i>Hydrolagus colliei</i>
RYBAT	ray, bat	<i>Myliobatis californica</i>
ERYPA	ray, Pacific electric	<i>Torpedo californica</i>
459	remora	<i>Remora remora</i>
REMFM	remora family	<i>Echeneidae</i>
460	remora, spearfish	<i>Remora brachyptera</i>
217	ribbonfish family	<i>Trachipteridae</i>
220	ribbonfish, scalloped	<i>Zu cristatus</i>
219	ribbonfish, tapertail	<i>Trachipterus fukuzaki</i>
RFGEN	rockfish genus	<i>Sebastes</i>
RFOC	rockfish, (bocaccio)	<i>Sebastes paucispinis</i>
RFPEP	rockfish, (chilipepper)	<i>Sebastes goodei</i>
RFCOW	rockfish, (cowcod)	<i>Sebastes levis</i>
FTRE	rockfish, (treefish)	<i>Sebastes serriceps</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>
RFBLU	rockfish, blue	<i>Sebastes mystinus</i>
RFBSP	rockfish, bronzespotted	<i>Sebastes gilli</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
RFBRN	rockfish, brown	<i>Sebastes auriculatus</i>
RFCLC	rockfish, calico	<i>Sebastes dalli</i>
RFCAN	rockfish, canary	<i>Sebastes pinniger</i>
RFCMA	rockfish, chameleon	<i>Sebastes phillipsi</i>
RFCHN	rockfish, China	<i>Sebastes nebulosus</i>
RF COP	rockfish, copper	<i>Sebastes caurinus</i>
RFDBL	rockfish, darkblotched	<i>Sebastes crameri</i>
RF DUS	rockfish, dusky	<i>Sebastes ciliatus</i>
293	rockfish, dwarf red	<i>Sebastes rufinanus</i>
RFFLG	rockfish, flag	<i>Sebastes rubrivinctus</i>
RFFRK	rockfish, freckled	<i>Sebastes lentiginosus</i>
RF GOP	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>
RF GST	rockfish, greenstriped	<i>Sebastes elongatus</i>
RFHBD	rockfish, halfbanded	<i>Sebastes semicinctus</i>
707	rockfish, harlequin	<i>Sebastes variegatus</i>
RFHNC	rockfish, honeycomb	<i>Sebastes umbrosus</i>
RFKLP	rockfish, kelp	<i>Sebastes atrovirens</i>
RF MEX	rockfish, Mexican	<i>Sebastes macdonaldi</i>
RFOLV	rockfish, olive	<i>Sebastes serranoides</i>
RF PNK	rockfish, pink	<i>Sebastes eos</i>
RFPRS	rockfish, pinkrose	<i>Sebastes simulator</i>
RF PSD	rockfish, Puget Sound	<i>Sebastes emphaeus</i>
RF PYG	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 helvomaculatus</i>
RFROS	rockfish, rosy	<i>Sebastes rosaceus</i>
RFRGH	rockfish, rougheye	<i>Sebastes aleutianus</i>
708	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>
RFSDS	rockfish, swordspine	<i>Sebastes ensifer</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
RFTIG	rockfish, tiger	<i>Sebastes nigrocinctus</i>
RFVER	rockfish, vermilion	<i>Sebastes miniatus</i>
RFWTB	rockfish, whitebelly	<i>Sebastes vexillaris</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 swani</i>
RNQFM	ronquil family	<i>Bathymasteridae</i>
RNQBB	ronquil, bluebanded	<i>Rathbunella hypoplecta</i>
RNQNO	ronquil, northern	<i>Ronqilus jordani</i>
473	roosterfish	<i>Nematistius pectoralis</i>
SABLE	sablefish	<i>Anoplopoma fimbria</i>
SABFM	sablefish family	<i>Anoplopomatidae</i>
SAILF	sailfish	<i>Istiophorus platypterus</i>
SALEM	salema	<i>Xenistius californiensis</i>
SALFM	salmon family	<i>Salmonidae</i>
SALGN	salmon genus	<i>Oncorhynchus spp.</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 gorbuscha</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 maculatofascia</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>
543	sandfish, sailfin	<i>Arctoscopus japonicus</i>
SARPA	sardine, Pacific	<i>Sardinops sagax</i>
SARGO	sargo	<i>Anisotremus davidsoni</i>
SAUPA	saury, Pacific	<i>Cololabis saira</i>
630	scabbardfish, Pacific	<i>Lepidopus fitchi</i>
SCBRZ	scabbardfish, razorback	<i>Assurger anzac</i>
MSCAD	scad, Mexican	<i>Decapterus scombrinus</i>
SCPRO	scallop, giant rock	<i>Crassadoma gigantea</i>
SCPUS	scallop, unspecified	<i>Pectinidae</i>
SCRFM	scorpionfish family	<i>Scorpaenidae</i>

Sorted by Common Name		
SP CODE	COMMON NAME	SCIENTIFIC NAME
SCRCA	scorpionfish, California	<i>Scorpaena guttata</i>
SCRRB	scorpionfish, rainbow	<i>Scorpaenodes xyris</i>
SCFAM	sculpin family	<i>Cottidae</i>
SCANT	sculpin, antlered	<i>Enophrys diceraus</i>
366	sculpin, Arctic	<i>Myoxocephalus scorpioides</i>
SCASH	sculpin, Arctic staghorn	<i>Gymnocanthus tricuspis</i>
343	sculpin, armorhead	<i>Gymnocanthus galeatus</i>
SCBLD	sculpin, bald	<i>Clinocottus recalvus</i>
360	sculpin, belligerent	<i>Megalocottus platycephalus</i>
349	sculpin, bigmouth	<i>Hemitripterus bolini</i>
SCBKF	sculpin, blackfin	<i>Malacocottus kincaidi</i>
394	sculpin, blob	<i>Phychrolutes phrictus</i>
SCBNH	sculpin, bonehead	<i>Artedius notospilotus</i>
361	sculpin, brightbelly	<i>Microcottus sellaris</i>
SCBUF	sculpin, buffalo	<i>Enophrys bison</i>
SCBUL	sculpin, bull	<i>Enophrys taurina</i>
391	sculpin, butterfly	<i>Hemilepidotus papilio</i>
332	sculpin, calico	<i>Clinocottus embryum</i>
SCCRG	sculpin, coastrange	<i>Cottus aleuticus</i>
326	sculpin, corraline	<i>Artedius corallinus</i>
329	sculpin, crested	<i>Blepsias bilobus</i>
376	sculpin, darter	<i>Radulinus boleoides</i>
SCDSK	sculpin, dusky	<i>Icelinus burchani</i>
369	sculpin, eyeshode	<i>Nautichthys pribilovius</i>
372	sculpin, fluffy	<i>Oligocottus snyderi</i>
365	sculpin, fourhorn	<i>Myoxocephalus quadricornis</i>
356	sculpin, fringed	<i>Icelinus fimbriatus</i>
354	sculpin, frogmouth	<i>Icelinus oculatus</i>
SCGRT	sculpin, great	<i>Myoxocephalus polyacanthocephalus</i>
SCGRU	sculpin, grunt	<i>Rhamphocottus richardsoni</i>
380	sculpin, kelp	<i>Sigmistes caulias</i>
390	sculpin, lavender	<i>Leiocottus hirundo</i>
SCLST	sculpin, leister	<i>Enophrys lucasi</i>
389	sculpin, longfin	<i>Jordani zonope</i>
382	sculpin, monacled	<i>Synchirus gilli</i>
333	sculpin, mosshead	<i>Clinocottus glopiceps</i>
SCNTH	sculpin, northern	<i>Icelinus borealis</i>
SCPSH	sculpin, Pacific staghorn	<i>Leptocottus armatus</i>
SCPAD	sculpin, padded	<i>Artedius fenestralis</i>
355	sculpin, pit head	<i>Icelinus cavifrons</i>
362	sculpin, plain	<i>Myoxocephalus jaok</i>

Sorted by Common Name		
SP CODE	COMMON NAME	SCIENTIFIC NAME
SCPRK	sculpin, prickly	<i>Cottus asper</i>
324	sculpin, puget sound	<i>Ruscarius meanyi</i>
385	sculpin, ribbed	<i>Triglops pingeli</i>
SCRSL	sculpin, rosy lip	<i>Ascelichthys rhodorus</i>
387	sculpin, roughback	<i>Chitonotus pugettensis</i>
327	sculpin, roughcheek	<i>Ruscarius creaseri</i>
384	sculpin, roughspine	<i>Triglops macellus</i>
371	sculpin, saddleback	<i>Oligocottus rimensis</i>
SCSFN	sculpin, sailfin	<i>Nautichthys oculofasciatus</i>
SCSCL	sculpin, scaled	<i>Archaulus biseriatus</i>
SCSLH	sculpin, scalyhead	<i>Artedius harringtoni</i>
SCSCT	sculpin, scissortail	<i>Triglops forficata</i>
SCSHN	sculpin, sharpnose	<i>Clinocottus acuticeps</i>
367	sculpin, shorthorn	<i>Myoxocephalus scorpius</i>
330	sculpin, silver spotted	<i>Blepsias cirrhus</i>
375	sculpin, slim	<i>Radulinus asprellus</i>
381	sculpin, smithi	<i>Sigmistes smithi</i>
377	sculpin, smoothgum	<i>Radulinus vinculus</i>
323	sculpin, smoothhead	<i>Artedius lateralis</i>
392	sculpin, snubnose	<i>Orthoropias triacis</i>
395	sculpin, soft	<i>Psychrolutes sigalutes</i>
317	sculpin, spatulate	<i>Icelus spatula</i>
386	sculpin, spectacled	<i>Triglops scepticus</i>
374	sculpin, spineless	<i>Phallocottus obtusus</i>
338	sculpin, spinyhead	<i>Dasycottus setiger</i>
388	sculpin, spinynose	<i>Asemichthys taylori</i>
SCSPT	sculpin, spotfin	<i>Icelinus tenuis</i>
393	sculpin, tadpole	<i>Psychrolutes paradoxus</i>
373	sculpin, thornback	<i>Paricelinus hopliticus</i>
SCTRF	sculpin, threadfin	<i>Icelinus filamentosus</i>
SCTDP	sculpin, tidepool	<i>Oligocottus maculosus</i>
316	sculpin, twohorn	<i>Icelus bicornis</i>
363	sculpin, warthead	<i>Myoxocephalus niger</i>
SCWOL	sculpin, wolly	<i>Clinocottus analis</i>
357	sculpin, yellowchin	<i>Icelinus quadriseriatus</i>
CUCUM	sea cucumbers	<i>Holothuroidea</i>
URCHN	sea urchins	<i>Diadematidae</i>
GNTSB	seabass, giant	<i>Stereolepis gigas</i>
448	seabass, pygmy	<i>Serraniculus pumilio</i>
SBWHT	seabass, white	<i>Atractoscion nobilis</i>
176	seadevil, triplewart	<i>Cryptopsaras couesi</i>
231	seahorse, Pacific	<i>Hippocampus ingens</i>
SPPNK	seaperch, pink	<i>Zalembius rosaceus</i>
SPRBW	seaperch, rainbow	<i>Hypsurus caryi</i>
SPRUB	seaperch, rubberlip	<i>Rhacochilus toxotes</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
SPSHN	seaperch, sharpnose	<i>Phanerodon atripes</i>
SPSTR	seaperch, striped	<i>Embiotoca lateralis</i>
SPWHT	seaperch, white	<i>Phanerodon furcatus</i>
548	searcher	<i>Bathymaster signatus</i>
298	searobin family	<i>Triglidae</i>
SERLT	searobin, limptail	<i>Prionotus stephanophrys</i>
300	searobin, splitnose	<i>Bellator xenisma</i>
GAPOD	sea slug, sea snail	<i>Gastropoda</i>
SSTAR	sea star	<i>sea star</i>
427	seasnail, gelatinous	<i>Liparis fabricii</i>
SENR	senorita	<i>Oxyjulis californica</i>
SHADA	shad, American	<i>Alosa sapidissima</i>
589	shanny, Arctic	<i>Stichaeus punctatus</i>
584	shanny, daubed	<i>Lumpenus maculatus</i>
CTSFM	shark family, cat	<i>Scyliorhinidae</i>
CSHFM	shark family, cow	<i>Hexanchidae</i>
SHDFM	shark family, dogfish	<i>Squalidae</i>
FRSFM	shark family, frill	<i>Chlamydoselachidae</i>
50	Shark family, hammerhead	<i>Sphyrnidae</i>
SHMFM	shark family, mackerel	<i>Lamnidae</i>
SHRFM	shark family, requiem	<i>Carcharhinidae</i>
44	shark genus, gray	<i>Carcharhinus</i>
26	shark, basking	<i>Cetorhinus maximus</i>
29	shark, bigeye thresher	<i>Alopias superciliosus</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>
35	shark, filetail cat	<i>Parmatyus xaniurus</i>
18	shark, frill	<i>Chlamydoselachus arguineus</i>
SHHRN	shark, horn	<i>Heterodontus francisci</i>
SHLEP	shark, leopard	<i>Triakis semifasciata</i>
33	shark, longnose cat	<i>Apristurus kampae</i>
SHNTH	shark, narrowtooth	<i>Carcharhinus brachyurus</i>
SHANG	shark, Pacific angel	<i>Squatina californica</i>
39	shark, Pacific sharpnose	<i>Rhizoprionodon longurio</i>
SHSLP	shark, Pacific sleeper	<i>Somniosus pacificus</i>
56	shark, prickly	<i>Echinorhinus cookei</i>
23	shark, ragged tooth	<i>Odontaspis ferox</i>
SHSAL	shark, salmon	<i>Lamna ditropis</i>
SHSEV	shark, seven gill	<i>Notorynchus maculatus</i>
SHSMK	shark, shortfin mako	<i>Isurus oxyrinchus</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
SHSIX	shark, six gill	<i>Hexanchus griseus</i>
52	shark, smooth hammerhead	<i>Sphyrna zygaena</i>
SHFIN	shark, soupfin	<i>Galeorhinus zyopterus</i>
SHSDG	shark, spiny dogfish	<i>Squalus acanthias</i>
SHSWL	shark, swell	<i>Cephaloscyllium ventriosum</i>
SHTHR	shark, thresher	<i>Alopias vulpinus</i>
SHTIG	shark, tiger	<i>Galeocerdo cuvieri</i>
22	shark, whale	<i>Rhincodon typus</i>
SHWHT	shark, white	<i>Carcharodon carcharias</i>
SHEEP	sheephead, California	<i>Semicossyphus pulcher</i>
195	shulupaoluk	<i>Lycodes jugoricus</i>
SHRMP	shrimp	<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>
70	skate, Alaska	<i>Bathyraja parmifera</i>
SKALT	skate, Aleutian	<i>Bathyraja aleutica</i>
SKBIG	skate, big	<i>Raja binoculata</i>
69	skate, black	<i>Bathyraja trachura</i>
SKTCA	skate, California	<i>Raja inornata</i>
72	skate, flathead	<i>Bathyraja rosispinis</i>
SKLGN	skate, longnose	<i>Raja rhina</i>
74	skate, rougtail	<i>Raja trachura</i>
68	skate, sandpaper	<i>Bathyraja interrupta</i>
SKSTY	skate, starry	<i>Raja stellulata</i>
314	skiffish	<i>Erilepis zonifer</i>
SKBGN	skipback genus	<i>Euthynnus</i>
BLKSJ	skipjack, black	<i>Euthynnus lineatus</i>
623	sleepers, Pacific fat	<i>Dormitator latifrons</i>
718	slickhead, California	<i>Alepocephalus tenebrosus</i>
SMFAM	smelt family	<i>Osmeridae</i>
DSSFAM	smelt family, deepsea	<i>Bathylagidae</i>
SMJAK	smelt, (jacksmelt)	<i>Atherinopsis californiensis</i>
SMTOP	smelt, (topsmelt)	<i>Atherinops affinis</i>
129	smelt, delta	<i>Hypomesus transpacificus</i>
SMLGF	smelt, longfin	<i>Spirinchus thlaeichthys</i>
SMNGT	smelt, night	<i>Spirinchus starksi</i>
131	smelt, rainbow	<i>Osmerus mordax</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>

Sorted by Common Name		
SP CODE	COMMON NAME	SCIENTIFIC NAME
SHSSM	smoothhound, sicklefin	<i>Mustelus lunulatus</i>
CASTG	smoothtongue, California	<i>Leuroglossus stilbius</i>
415	snailfish family	<i>Cyclopteridae</i>
433	snailfish, Bering	<i>Liparis beringianus</i>
417	snailfish, blacktail	<i>Careproctus melanurus</i>
418	snailfish, blotched	<i>Crystallichthys cyclopilus</i>
434	snailfish, lobefin	<i>Liparis greeni</i>
424	snailfish, marbled	<i>Liparis dennyi</i>
423	snailfish, polkadot	<i>Liparis cyclostigma</i>
432	snailfish, prickly	<i>Paraliparis deani</i>
422	snailfish, ribbon	<i>Liparis cyclopus</i>
430	snailfish, ringtail	<i>Liparis rutteri</i>
429	snailfish, showy	<i>Liparis pulchellus</i>
426	snailfish, slipskin	<i>Liparis fucensis</i>
428	snailfish, spiny	<i>Liparis mucosus</i>
421	snailfish, spotted	<i>Liparis callyodon</i>
431	snailfish, tadpole	<i>Nectoliparis pelagicus</i>
425	snailfish, tidepool	<i>Liparis floriae</i>
594	snakeblenny, fourline	<i>Eumesogrammus praecisus</i>
226	snipefish, slender	<i>Macrorhamphosus gracilis</i>
TBESN	snout, tube	<i>Aulorhynchus flavidus</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, curlfin	<i>Pleuronichthys decurrens</i>
SOLDS	sole, deepsea	<i>Embassichthys bathybius</i>
SOLDV	sole, Dover	<i>Microstomus pacificus</i>
SOLEG	sole, English	<i>Parophrys vetulus</i>
SOLFT	sole, fantail	<i>Xystreureys liolepis</i>
SOLFH	sole, flathead	<i>Hippoglossoides elassodon</i>
716	sole, hybrids	<i>Isopsetta</i>
SOLPT	sole, petrale	<i>Eopsetta jordani</i>
SOLRX	sole, rex	<i>Glyptocephalus zachirus</i>
SOLRK	sole, rock	<i>Lepidopsetta bilineatus</i>
SOLSD	sole, sand	<i>Psettichthys melanostictus</i>
SOLSLS	sole, slender	<i>Lyopsetta exilis</i>
SOLYF	sole, yellowfin	<i>Limanda aspera</i>
SPDPA	spadefish, Pacific	<i>Chaetodipterus zonatus</i>
654	spearfish, shortbill	<i>Tetrapturus angustirostris</i>
139	spookfish family	<i>Opisthoproctidae</i>
SQTSE	squairetail, smalleye	<i>Tetragonurus cuvieri</i>
SQUID	squid	<i>Cephalopoda</i>
SQDJU	squid, jumbo	<i>Dosidicus gigas</i>

<b>Sorted by Common Name</b>		
<b>SP CODE</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
SQDMK	squid, market	<i>Doryteuthis opalescens</i>
550	stargazer, smooth	<i>Kathetostoma averruncus</i>
402	starsnout, gray	<i>Bathyagonus alascanus</i>
403	starsnout, spinycheck	<i>Bathyagonus infraspinatus</i>
SKBFM	stickleback family	Gasterosteidae
224	stickleback, ninespine	<i>Pungitius pungitius</i>
SKBTS	stickleback, threespine	<i>Gasterosteus aculeatus</i>
SGFAM	stingray family	<i>Dasyatidae</i>
SGGEN	stingray genus	<i>Dasyatis spp.</i>
SGDIA	stingray, diamond	<i>Dasyatis dipterura</i>
SGPEL	stingray, pelagic	<i>Dasyatis violacea</i>
SGRND	stingray, round	<i>Urolophus halleri</i>
STGEN	sturgeon genus	<i>Acipenser</i>
STGRN	sturgeon, green	<i>Acipenser medirostris</i>
STWHT	sturgeon, white	<i>Acipenser transmontanus</i>
458	sucker, marlin	<i>Remora osteochir</i>
SNFFM	sunfish family	Centrarchidae
SUNOC	sunfish, ocean	<i>Mola mola</i>
SPFAM	surfperch family	Embiotocidae
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>Hyperprosopon anale</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>
535	threadfin family	<i>Polynemidae</i>
TFPGE	tilefish, Pacific golden-eyed	<i>Caulolatilus affinis</i>
CODTC	tomcod, Pacific	<i>Microgadus proximus</i>
TNGCA	tonguefish, California	<i>Symphurus atricauda</i>
FTRIG	triggerfish, finescale	<i>Balistes polylepis</i>
TRTPA	tripletail, pacific	<i>Lobotes pacificus</i>
SALAC	trout, Arctic char	<i>Salvelinus alpinus</i>
SALCT	trout, cutthroat	<i>Oncorhynchus clarki</i>
SALRB	trout, rainbow	<i>Oncorhynchus mykiss</i>
SALTR	trouts, sea run	
TNAAB	tuna, (albacore)	<i>Thunnus alalunga</i>
TNABE	tuna, bigeye	<i>Thunnus obesus</i>
TNABF	tuna, bluefin	<i>Thunnus thynnus</i>

Sorted by Common Name		
SP CODE	COMMON NAME	SCIENTIFIC NAME
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	
UNIFH	unidentified fish	
SALDV	Varden, Dolly	<i>Salvelinus malma</i>
143	viperfish, Pacific	<i>Chauliodus macouni</i>
WAHOO	wahoo	<i>Acanthocybium solandri</i>
578	warbonnet, decorated	<i>Chirolophis decoratus</i>
576	warbonnet, matcheek	<i>Chirolophis tarsodes</i>
577	warbonnet, mosshead	<i>Chirolophis nugator</i>
WEKFS	weakfishes	<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	
WRAFM	wrasse family	<i>Labridae</i>
WRARB	wrasse, rainbow	<i>Thalassoma luvasanum</i>
WRARK	wrasse, rock	<i>Halichoeres semicinctus</i>
593	wrymouth, dwarf	<i>Cryptacanthodes aleutensis</i>
592	wrymouth, giant	<i>Cryptacanthodes giganteus</i>
YELTL	yellowtail	<i>Seriola lalandi</i>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
ABALO	abalone genus	<i>Haliotis</i>
188	Alaska eelpout	<i>Bothrocara pusillum</i>
SOLPL	Alaska plaice	<i>Pleuronectes quadrituberculatus</i>
70	Alaska skate	<i>Bathyraja parmifera</i>
TNAAB	albacore	<i>Thunnus alalunga</i>
400	Aleutian alligatorfish	<i>Aspidophoroides bartoni</i>
SKALT	Aleutian skate	<i>Bathyraja aleutica</i>
SHADA	American shad	<i>Alosa sapidissima</i>
113	anchoveta	<i>Cetengraulis mysticetus</i>
ANCFM	anchovy family	<i>Engraulidae</i>
ANCGN	anchovy genus	<i>Anchoa spp.</i>
SCANT	antlered sculpin	<i>Enophrys dicerca</i>
401	Arctic alligatorfish	<i>Aspidophoroides olriki</i>
SALAC	Arctic char	<i>Salvelinus alpinus</i>
SOLAF	Arctic flounder	<i>Pleuronectes glacialis</i>
LMPAR	Arctic lamprey	<i>Lampetra japonica</i>
366	Arctic sculpin	<i>Myoxocephalus scorpioides</i>
589	Arctic shanny	<i>Stichaeus punctatus</i>
SCASH	Arctic staghorn sculpin	<i>Gymnocanthus tricuspis</i>
343	armorhead sculpin	<i>Gymnocanthus galeatus</i>
GOBAR	arrow goby	<i>Clevelandia ios</i>
FLRAR	arrowtooth flounder	<i>Atheresthes stomias</i>
311	Atka mackerel	<i>Pleurogrammus monopterygius</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>
229	barred pipefish	<i>Syngnathus auliscus</i>
SBBAR	barred sandbass	<i>Paralabrax nebulifer</i>
SPBAR	barred surfperch	<i>Amphistichus argenteus</i>
140	barreleye	<i>Macropinna microstoma</i>
185	basketweave cusk eel	<i>Otophidium scrippsae</i>
26	basking shark	<i>Cetorhinus maximus</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>
170	bearded clingfish	<i>Gobiesox papillifer</i>
198	bearded eelpout	<i>Lycanema barbatum</i>
360	belligerent sculpin	<i>Megalocottus platycephalus</i>
SOLBF	Bering flounder	<i>Hippoglossoides robustus</i>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
601	Bering gunnel	<i>Pholis gilli</i>
408	Bering poacher	<i>Ocella dodecaedron</i>
433	Bering snailfish	<i>Liparis beringianus</i>
SKBIG	big skate	<i>Raja binoculata</i>
451	bigeye family	<i>Priacanthidae</i>
404	bigeye poacher	<i>Bathyagonus pentacanthus</i>
29	bigeye thresher shark	<i>Alopias superciliosus</i>
TNABE	bigeye tuna	<i>Thunnus obesus</i>
187	bigfin eelpout	<i>Lycodes cortezianus</i>
349	bigmouth sculpin	<i>Hemitripterus bolini</i>
SOLBG	bigmouth sole	<i>Hippoglossina stomata</i>
529	bigtooth pomfret	<i>Brama orcini</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>
191	black eelpout	<i>Lycodes diapterus</i>
HAGBK	black hagfish	<i>Eptatretus deani</i>
MARBK	black marlin	<i>Makaira indica</i>
SPBLK	black perch	<i>Embiotoca jacksoni</i>
PRKBK	black prickleback	<i>Xiphister atropurpureus</i>
RFBLK	black rockfish	<i>Sebastes melanops</i>
69	black skate	<i>Bathyraja trachura</i>
BLKSJ	black skipjack	<i>Euthynnus lineatus</i>
197	blackbelly eelpout	<i>Lycodopsis pacifica</i>
GOBBE	blackeye goby	<i>Coryphopterus nicholsi</i>
405	blackfin poacher	<i>Bathyagonus nigripinnis</i>
SCBKF	blackfin sculpin	<i>Malacocottus kincaidi</i>
RFBKG	blackgill rockfish	<i>Sebastes melanostomus</i>
BLKSM	blacksmith	<i>Chromis punctipinnis</i>
WRABS	blackspot wrasse	<i>Decodon melasma</i>
417	blacktail snailfish	<i>Careproctus melanurus</i>
412	blacktip poacher	<i>Xeneretmus latifrons</i>
206	blackwing flyingfish	<i>Hirundichthys rondeleti</i>
621	blind goby	<i>Typhlogobius californiensis</i>
394	blob sculpin	<i>Phychrolutes phrictus</i>
418	blotched snailfish	<i>Crystallichthys cyclopilus</i>
536	blue bobo	<i>Polydactylus approximans</i>
157	blue lanternfish	<i>Tarletonbeania crenularis</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>
587	bluebarred prickleback	<i>Plectobranthus evides</i>
TNABF	bluefin tuna	<i>Thunnus thynnus</i>

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SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
413	bluespotted poacher	<i>Xeneretmus triacanthus</i>
SCBBS	bluestripped chub	<i>Sectator ocyurus</i>
SHSIX	bluntnose sixgill shark	<i>Hexanchus griseus</i>
RFOC	bocaccio	<i>Sebastes paucispinis</i>
BONEF	bonefish	<i>Albula vulpes</i>
SCBNH	bonehead sculpin	<i>Artedius notospilotus</i>
SHBNH	bonnethead shark	<i>Sphyrna tiburo</i>
BOTOM	bottomfish (groundfish)	
361	brightbelly sculpin	<i>Microcottus sellaris</i>
RFBSP	bronzespotted rockfish	<i>Sebastes gilli</i>
GRPBT	broomtail grouper	<i>Mycteroperca xenarcha</i>
BULBR	brown bullhead	<i>Ictalurus nebulosus</i>
SHBCS	brown cat shark	<i>Apristurus brunneus</i>
SCBIL	brown Irish lord	<i>Hemilepidotus spinosus</i>
CRBBR	brown rock crab	<i>Cancer 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>
700	bullseye puffer	<i>Sphoeroides annulatus</i>
SOLBT	butter sole	<i>Isopsetta isolepis</i>
BUTFM	butterfish family	<i>Stromateidae</i>
391	butterfly sculpin	<i>Hemilepidotus papilio</i>
BFFFM	butterflyfish family	<i>Chaetodontidae</i>
SCCAB	cabezon	<i>Scorpaenichthys marmoratus</i>
RFCLC	calico rockfish	<i>Sebastes dalli</i>
332	calico sculpin	<i>Clinocottus embryum</i>
SPCAL	calico surfperch	<i>Amphistichus koelzi</i>
RYFLY	California butterflyray	<i>Gymnura marmorata</i>
171	California clingfish	<i>Gobiesox rhessodon</i>
CRBCA	California corbina	<i>Menticirrhus undulatus</i>
FLYCA	California flyingfish	<i>Cypselurus californicus</i>
GRUCA	California grunion	<i>Leuresthes tenuis</i>
HALCA	California halibut	<i>Paralichthys californicus</i>
153	California headlightfish	<i>Diaphus theta</i>
KLFCAL	California killifish	<i>Fundulus parvipinnis</i>
LZDCA	California lizardfish	<i>Synodus lunioceps</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>Semicossyphus pulcher</i>
SKTCA	California skate	<i>Raja inornata</i>
718	California slickhead	<i>Alepocephalus tenebrosus</i>

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SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
CASTG	California smoothtongue	<i>Leuroglossus stilbius</i>
TNGCA	California touquefish	<i>Symphurus atricauda</i>
193	Canadian eelpout	<i>Lycodes polaris</i>
RFCAN	canary rockfish	<i>Sebastes pinniger</i>
CRBGN	cancer genus	<i>Cancer</i>
SMCAP	capelin	<i>Mallotus villosus</i>
CTSFM	cat shark family	<i>Scyliorhinidae</i>
94	Catalina conger	<i>Gnathophis catalinensis</i>
620	chameleon goby	<i>Tridentiger trigonocephalus</i>
RFCMA	chameleon rockfish	<i>Sebastes phillipsi</i>
CATCN	channel catfish	<i>Ictalurus punctatus</i>
616	cheekspot goby	<i>Ilypnus gilberti</i>
163	chihuil	<i>Bagre panamensis</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>
167	clingfish family	<i>Gobiesocidae</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>
CARPC	common carp	<i>Cyprinus carpio</i>
RFCOP	copper rockfish	<i>Sebastes caurinus</i>
326	corralline sculpin	<i>Artedius corallinus</i>
CSHFM	cow shark family	<i>Hexanchidae</i>
RFCOW	cowcod	<i>Sebastes levis</i>
GUNCR	crescent gunnel	<i>Pholis laeta</i>
329	crested sculpin	<i>Blepsias bilobus</i>
216	crestfish	<i>Lophotus lacepedei</i>
KLPCR	crevice kelpfish	<i>Gibbonsia montereyensis</i>
CRUST	crustacean subphylum	<i>Crustacea</i>
SOLCF	curlfin sole	<i>Pleuronichthys decurrens</i>
CSKFM	cuskeel family	<i>Ophidiidae</i>
SALCT	cutthroat trout	<i>Oncorhynchus clarki</i>
148	daggertooth family	<i>Anotopteridae</i>
DAMFM	damsel fish family	<i>Pomacentridae</i>
RFDBL	darkblotched rockfish	<i>Sebastes crameri</i>
376	darter sculpin	<i>Radulinus boleoides</i>
584	daubed shanny	<i>Lumperus maculatus</i>
578	decorated warbonnet	<i>Chirolophis decoratus</i>

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SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
ANCDB	deepbody anchovy	<i>Anchoa compressa</i>
DSSFM	deepsea smelt family	<i>Bathylagidae</i>
SOLDS	deepsea sole	<i>Embassichthys bathybius</i>
564	deepwater blenny	<i>Cryptotrema corallinum</i>
129	delta smelt	<i>Hypomesus transpacificus</i>
SGDIA	diamond stingray	<i>Dasyatis dipterura</i>
SOLDT	diamond turbot	<i>Pleuronichthys guttulatus</i>
158	diogenes lampfish	<i>Diogenys lanternatus</i>
SHDFM	dogfish shark family	<i>Squalidae</i>
152	dogtooth lampfish	<i>Ceratoscopelus townsendi</i>
SALDV	Dolly Varden	<i>Salvelinus malma</i>
474	dolphin family	<i>Coryphaenidae</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>
CRBDG	Dungeness crab	<i>Metacarcinus magister</i>
RFDUS	dusky rockfish	<i>Sebastes ciliatus</i>
SCDSK	dusky sculpin	<i>Icelinus burchani</i>
SHDKY	dusky shark	<i>Carcharhinus obscurus</i>
SPDWF	dwarf perch	<i>Micrometrus minimus</i>
293	dwarf red rockfish	<i>Sebastes rufinanus</i>
593	dwarf wrymouth	<i>Cryptacanthodes aleutensis</i>
EELOR	eel order	<i>Anguilliformes</i>
ELPFM	eelpout family	<i>Zoarcidae</i>
SOLEG	English sole	<i>Parophrys vetulus</i>
627	escolar	<i>Lepidocybium flavobrunneum</i>
SMEUL	eulachon	<i>Thaleichthys pacificus</i>
369	eyeshode sculpin	<i>Nautichthys pribilovius</i>
SOLFT	fantail sole	<i>Xystreureys liolepis</i>
35	filetail cat shark	<i>Parmatyus xaniurus</i>
FTRIG	finescale triggerfish	<i>Balistes polylepis</i>
RFFLG	flag rockfish	<i>Sebastes rubrivinctus</i>
159	flashlightfish	<i>Protomyctophum crockeri</i>
FLTOR	flatfish order	<i>Pleuronectiformes</i>
72	flathead skate	<i>Bathyraja rosispinis</i>
SOLFH	flathead sole	<i>Hippoglossoides elassodon</i>
107	flatiron herring	<i>Harengula thrissina</i>
372	fluffy sculpin	<i>Oligocottus snyderi</i>
FLYFM	flyingfish family	<i>Exocoetidae</i>
407	fourhorn poacher	<i>Hypsagonus quadricornis</i>
365	fourhorn sculpin	<i>Myoxocephalus quadricornis</i>
594	fourline snakeblenny	<i>Eumesogrammus praecisus</i>
RFFRK	freckled rockfish	<i>Sebastes lentiginosus</i>
MACFR	frigate mackerel	<i>Auxis thazard</i>

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SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
18	frill shark	<i>Chlamydoselachus arguineus</i>
FRSFM	frill shark family	<i>Chlamydoselachidae</i>
356	fringed sculpin	<i>Icelinus fimbriatus</i>
354	frogmouth sculpin	<i>Icelinus oculatus</i>
469	gaftopsail pompano	<i>Trachinotus rhodopus</i>
CLMGP	gaper clam	<i>Tresus nuttallii</i>
GARIB	garibaldi	<i>Hypsypops rubicundus</i>
427	gelatinous seasnail	<i>Liparis fabricii</i>
CLMGD	geoduck, clam	<i>Panopea generosa</i>
719	giant grenadier	<i>Albatrossia pectoralis</i>
KLPGT	giant kelpfish	<i>Heterostichus rostratus</i>
SCPRO	giant rock scallop	<i>Crassadoma gigantea</i>
GNTSB	giant seabass	<i>Stereolepis gigas</i>
592	giant wrymouth	<i>Cryptacanthodes giganteus</i>
GOBFM	goby family	<i>Gobiidae</i>
RFGOP	gopher rockfish	<i>Sebastes carnatus</i>
CRBGR	graceful rock crab	<i>Cancer gracilis</i>
RFGRS	grass rockfish	<i>Sebastes rastrelliger</i>
607	graveldiver	<i>Scytalina cerdale</i>
44	gray shark genus	<i>Carcharhinus</i>
SHGSM	gray smoothhound	<i>Mustelus californicus</i>
402	gray starsnout	<i>Bathyagonus alascanus</i>
SCGRT	great sculpin	<i>Myoxocephalus polyacanthoceph</i>
463	green jack	<i>Caranx caballus</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>
715	grenadier family	<i>Macrouridae</i>
GRPGN	grouper,genus (epinephelus)	<i>Epinephelus</i>
GNTFM	grunt family	<i>Haemulidae</i>
SCGRU	grunt sculpin	<i>Rhamphocottus richardsoni</i>
453	Guadalupe cardinalfish	<i>Apogon guadalupensis</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>
HAGFM	hagfish order	<i>Myxiniidae</i>
RFHBD	halfbanded rockfish	<i>Sebastes semicinctus</i>

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SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
202	halfbeak	<i>Hyporhamphus unifasciatus</i>
203	halfbeak	<i>Hyporhamphus rosae</i>
617	halfblind goby	<i>Lethops connetens</i>
HALFM	halfmoon	<i>Medialuna californiensis</i>
320	hamecon	<i>Artediellus scaber</i>
50	hammerhead shark family	<i>Sphyrnidae</i>
707	harlequin rockfish	<i>Sebastes variegatus</i>
HERFM	herring family	<i>Clupeidae</i>
575	high cockscomb	<i>Anoplarchus purpurescens</i>
RFHNC	honeycomb rockfish	<i>Sebastes umbrosus</i>
712	hookthroat bass	<i>Hemanthias signifer</i>
SHHRN	horn shark	<i>Heterodontus francisci</i>
SOLHT	hornyhead turbot	<i>Pleuronichthys verticalis</i>
716	hybrid soles	<i>Isopsetta</i>
SCILG	Irish lord genus	<i>Hemilepidotus</i>
562	island kelpfish	<i>Alloclinus holderi</i>
JACFM	jack family	<i>Carangidae</i>
JACMK	jack mackerel	<i>Trachurus symmetricus</i>
SMJAK	jacksmelt	<i>Atherinopsis californiensis</i>
SQDJU	jumbo squid	
FLRKM	Kamchatka flounder	<i>Atheresthes evermanni</i>
KAWAK	kawakawa	<i>Euthynnus affinis</i>
SBKLP	kelp bass	<i>Paralabrax clathratus</i>
172	kelp clingfish	<i>Rimicola muscarum</i>
GRNKP	kelp greenling	<i>Hexagrammos decagrammus</i>
606	kelp gunnel	<i>Ulvicola santaerosea</i>
SPKLP	kelp perch	<i>Brachyistius frenatus</i>
230	kelp pipefish	<i>Syngnathus californiensis</i>
RFKLP	kelp rockfish	<i>Sebastes atrovirens</i>
380	kelp sculpin	<i>Sigmistes caulis</i>
KOSAL	king-of-the-salmon	<i>Trachipterus altivelis</i>
LMPFM	lamprey family	<i>Petromyzontidae</i>
146	lancefish family	<i>Alepisauridae</i>
151	lanternfish family	<i>Myctophidae</i>
390	lavender sculpin	<i>Leiocottus hirundo</i>
419	leatherfin lumpsucker	<i>Eumicrotremus derjugini</i>
465	leatherjacket	<i>Oligoplites saurus</i>
FLLFN	lefteye flounder family	<i>Bothidae</i>
SCLST	leister sculpin	<i>Enophrys lucasi</i>
SHLEP	leopard shark	<i>Triakis semifasciata</i>
572	lesser prickleback	<i>Alectridium aurantiacum</i>
169	lined clingfish	<i>Gobiesox eugrammus</i>
LNGCD	lingcod	<i>Ophiodon elongatus</i>
CLMLN	littleneck clam	<i>Protothaca staminea</i>

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SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
LZDFM	lizardfish family	<i>Synodontidae</i>
434	lobefin snailfish	<i>Liparis greeni</i>
656	longfin cigarfish	<i>Cubiceps paradoxus</i>
142	longfin dragonfish	<i>Tactostoma macropus</i>
599	longfin gunnel	<i>Pholis clemensi</i>
201	longfin halfbeak	<i>Hemiramphus saltator</i>
DABLF	longfin sanddab	<i>Citharlichthys xanthostigma</i>
389	longfin sculpin	<i>Jordani zonope</i>
SMLGF	longfin smelt	<i>Spirinchus thlaeichthys</i>
680	longhead dab	<i>Pleuronectes proboscideus</i>
LJMUD	longjaw mudsucker	<i>Gillichthys mirabilis</i>
33	longnose cat shark	<i>Apristurus kampae</i>
LANLN	longnose lancetfish	<i>Alepisaurus ferox</i>
SKLGN	longnose skate	<i>Raja rhina</i>
581	longsnout prickleback	<i>Lumpenella longirostris</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>
90	machete	<i>Elops affinis</i>
MACFM	mackerel family	<i>Scombridae</i>
SHMFM	mackerel shark family	<i>Lamnidae</i>
MANTA	manta	<i>Manta birostris</i>
82	manta family	<i>Mobulidae</i>
424	marbled snailfish	<i>Liparis dennyi</i>
458	marlin sucker	<i>Remora osteochir</i>
SQDMK	market squid	<i>Doryteuthis opalescens</i>
GRNMA	masked greenling	<i>Hexagrammos octogrammus</i>
576	matcheck warbonnet	<i>Chirolophis tarsodes</i>
495	Mexican goatfish	<i>Mulloidichthys dentatus</i>
160	Mexican lampfish	<i>Triphoturus mexicanus</i>
RFMEX	Mexican rockfish	<i>Sebastes macdonaldi</i>
MSCAD	Mexican scad	<i>Decapterus scombrinus</i>
106	middling thread herring	<i>Opisthonema medirastre</i>
MIDGN	midshipman genus	<i>Porichthys</i>
214	mirror dory	<i>Zenopsis nebulosa</i>
MOJFM	mojarra family	<i>Gerreidae</i>
SUNFM	mola family	<i>Molidae</i>
MOLLU	mollusk phylum	<i>Mollusca</i>
382	monacled sculpin	<i>Synchirus gilli</i>
PRKMK	monkeyface prickleback	<i>Cebidichthys violaceus</i>
333	mosshhead sculpin	<i>Clinocottus glopiceps</i>
577	mosshhead warbonnet	<i>Chirolophis nugator</i>
554	mussel blenny	<i>Hypsoblennius jenkinsi</i>
SHNTH	narrowtooth shark	<i>Carcharhinus brachyurus</i>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
SMNGT	night smelt	<i>Spirinchus starksi</i>
224	ninespine stickleback	<i>Pungitius pungitius</i>
ANCNO	northern anchovy	<i>Engraulis mordax</i>
156	northern lampfish	<i>Stenobranchius leucopsarus</i>
150	northern pearleye	<i>Benthalbella dentata</i>
RNQNO	northern ronquil	<i>Ronquilus jordani</i>
SCNTH	northern sculpin	<i>Icelinus borealis</i>
397	northern spearnose poacher	<i>Agonopsis vulsa</i>
CLNGN	northern clingfish	<i>Gobiesox maeandricus</i>
579	nutcracker prickleback	<i>Bryozoichthys lysimus</i>
221	oarfish	<i>Regalecus glesne</i>
SUNOC	ocean sunfish	<i>Mola mola</i>
OCWHT	ocean whitefish	<i>Caulolatilus princeps</i>
699	oceanic puffer	<i>Lagocephalus lagocephalus</i>
OCTOP	octopus order	<i>Octopoda</i>
628	oilfish	<i>Ruvettus pretiosus</i>
RFOLV	olive rockfish	<i>Sebastes serranoides</i>
KLPOF	onespot fringehead	<i>Neoclinus urinotatus</i>
OPAHS	opah	<i>Lampris guttatus</i>
OPALE	opaleye	<i>Girella nigricans</i>
COROM	orangemouth corvina	<i>Cynoscion xanthalmus</i>
563	orangethroat pikeblenny	<i>Chaenopsis alepidota</i>
466	Pacific amberjack	<i>Seriola colburni</i>
SHANG	Pacific angel shark	<i>Squatina californica</i>
ARGNT	Pacific argentine	<i>Argentina sialis</i>
BARPA	Pacific barracuda	<i>Sphyrna argentea</i>
BONPA	Pacific bonito	<i>Sarda chiliensis</i>
464	Pacific bumper	<i>Chloroscombrus orqueta</i>
701	Pacific burrfish	<i>Chilomycterus affinis</i>
CODPA	Pacific cod	<i>Gadus macrocephalus</i>
CUTLP	Pacific cutlassfish	<i>Trichiurus nitens</i>
ERYPA	Pacific electric ray	<i>Torpedo californica</i>
531	Pacific fanfish	<i>Pteraclis aesticola</i>
623	Pacific fat sleeper	<i>Dormitator latifrons</i>
479	Pacific flagfin mojarra	<i>Eucinostomus gracilis</i>
709	Pacific flatnose	<i>Antimora microlepis</i>
706	Pacific grenadier	<i>Coryphaenoides acrolepis</i>
TFPGE	Pacific golden-eyed tilefish	<i>Caulolatilus affinis</i>
HAGPA	Pacific hagfish	<i>Eptatretus stouti</i>
PHAKE	Pacific hake	<i>Merluccius productus</i>
HALPA	Pacific halibut	<i>Hippoglossus stenolepis</i>
HERPA	Pacific herring	<i>Clupea pallasi</i>
LMPPA	Pacific lamprey	<i>Entosphenus tridentatus</i>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
470	Pacific moonfish	<i>Selene peruviana</i>
RFPOP	Pacific ocean perch	<i>Sebastes alutus</i>
528	Pacific pomfret	<i>Brama japonica</i>
POMPA	Pacific pompano (butterfish)	<i>Peprilus simillimus</i>
483	Pacific porgy	<i>Calamus brachysomus</i>
SOLPA	Pacific sand lance	<i>Ammodytes hexapterus</i>
DABPA	Pacific sanddab	<i>Citharichthys sordidus</i>
SNDPA	Pacific sandfish	<i>Trichodon trichodon</i>
SARPA	Pacific sardine	<i>Sardinops sagax</i>
SAUPA	Pacific saury	<i>Cololabis saira</i>
630	Pacific scabbardfish	<i>Lepidopus fitchi</i>
231	Pacific seahorse	<i>Hippocampus ingens</i>
39	Pacific sharpnose shark	<i>Rhizoprionodon longurio</i>
SRAPA	Pacific sierra	<i>Scomberomorus sierra</i>
SHSLP	Pacific sleeper shark	<i>Somniosus pacificus</i>
97	Pacific snake eel	<i>Ophichthus triserialis</i>
SPDPA	Pacific spadefish	<i>Chaetodipterus zonatus</i>
420	Pacific spiny lumpsucker	<i>Eumicrotremus orbis</i>
SCPSH	Pacific staghorn sculpin	<i>Leptocottus armatus</i>
CODTC	Pacific tomcod	<i>Microgadus proximus</i>
TRTPA	Pacific tripletail	<i>Lobotes pacificus</i>
143	Pacific viperfish	<i>Chauliodus macouni</i>
96	Pacific worm eel	<i>Myrophis vafer</i>
SCPAD	padded sculpin	<i>Artedius fenestralis</i>
GRNPT	painted greenling	<i>Oxylebius pictus</i>
315	painted greenling	<i>Oxylebius pictus</i>
196	pale eelpout	<i>Lycodes pallidus</i>
189	pallid eelpout	<i>Lycodapus mandibularis</i>
468	paloma pompano	<i>Trachinotus paitensis</i>
155	patchwork lampfish	<i>Notoscopelus resplendens</i>
149	pearleye family	<i>Scopelarchidae</i>
504	pelagic armorhead	<i>Pentaceros richardsoni</i>
CRBPR	pelagic red crab	<i>Pleuroncodes palmipes</i>
SGPEL	pelagic stingray	<i>Dasyatis violacea</i>
GUNPP	penpoint gunnel	<i>Apodichthys flavidus</i>
PERFM	perch family	<i>Percidae</i>
SOLPT	petrale sole	<i>Eopsetta jordani</i>
571	pighead prickleback	<i>Acantholumpenus mackayi</i>
SPPIL	pile perch	<i>Rhacochilus vacca</i>
PILTF	pilotfish	<i>Naucratus 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>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
154	pinpoint lampfish	<i>Lampanyctus regalis</i>
227	pipefish family	<i>Syngnathidae</i>
CLMPO	pismo clam	<i>Tivela stultorum</i>
355	pit head sculpin	<i>Icelinus cavifrons</i>
362	plain sculpin	<i>Myoxocephalus jaok</i>
MIDPF	plainfin midshipman	<i>Porichthys notatus</i>
396	poacher family	<i>Agonidae</i>
194	polar eelpout	<i>Lycodes turneri</i>
423	polkadot snailfish	<i>Liparis cyclostigma</i>
POMFM	pomfret family	<i>Bramidae</i>
POMDO	pompano dolphin	<i>Coryphaena equisetis</i>
CTFPE	popeye catalufa	<i>Pristigenys serrula</i>
702	porcupinefish	<i>Diodon hystrix</i>
PRKFM	prickleback family	<i>Stichaeidae</i>
414	pricklebreast poacher	<i>Stellerina xyosterna</i>
SCPRK	prickly sculpin	<i>Cottus asper</i>
56	prickly shark	<i>Echinorhinus cookei</i>
432	prickly snailfish	<i>Paraliparis deani</i>
608	prowfish	<i>Zaprora silenus</i>
PUFFM	puffer family	<i>Tetraodontidae</i>
RFPSD	Puget Sound rockfish	<i>Sebastes emphaeus</i>
324	Puget Sound sculpin	<i>Ruscarius meanyi</i>
410	pygmy poacher	<i>Odontopyxis trispinosa</i>
RFPYG	pygmy rockfish	<i>Sebastes wilsoni</i>
448	pygmy seabass	<i>Serraniculus pumilio</i>
QUEEN	queenfish	<i>Seriphus politus</i>
RFQIL	quillback rockfish	<i>Sebastes maliger</i>
569	quillfish	<i>Ptilichthys goodei</i>
RAGFS	ragfish	<i>Icosteus aenagmaticus</i>
23	ragged tooth shark	<i>Odontaspis ferox</i>
SCRRB	rainbow scorpionfish	<i>Scorpaenodes xyris</i>
SPRBW	rainbow seaperch	<i>Hypsurus caryi</i>
131	rainbow smelt	<i>Osmerus mordax</i>
SALRB	rainbow trout	<i>Oncorhynchus mykiss</i>
WRARB	rainbow wrasse	<i>Thalassoma luasanum</i>
SCBRZ	razorback scabbardfish	<i>Assurger anzac</i>
CLMNR	razor clam	<i>Siliqua patula</i>
183	red brotula	<i>Brosomphycis marginata</i>
604	red gunnel	<i>Pholis schultzi</i>
SCRIL	red Irish lord	<i>Hemilepidotus hemilepidotus</i>
CRBRR	red rock crab	<i>Cancer productus</i>
RFRBD	redbanded rockfish	<i>Sebastes babcocki</i>
RFRST	redstripe rockfish	<i>Sebastes proriger</i>
SPRTL	redtail surfperch	<i>Amphistichus rhodoterus</i>
KLPRB	reef blenny	<i>Paraclinus integripinnis</i>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
SPREF	reef perch	<i>Micrometrus aurora</i>
459	remora	<i>Remora remora</i>
REMFM	remora family	<i>Echeneidae</i>
SHRFM	requiem shark family	<i>Carcharhinidae</i>
SOLRX	rex sole	<i>Glyptocephalus zachirus</i>
385	ribbed sculpin	<i>Triglops pingeli</i>
204	ribbon halfbeak	<i>Euleptorhamphus viridis</i>
586	ribbon prickleback	<i>Phytichthys chirus</i>
422	ribbon snailfish	<i>Liparis cyclopus</i>
217	ribbonfish family	<i>Trachipteridae</i>
FLRFM	righteye flounder family	<i>Pleuronectidae</i>
430	ringtail snailfish	<i>Liparis rutteri</i>
GRNRK	rock greenling	<i>Hexagrammos lagocephalus</i>
PRKRK	rock prickleback	<i>Xiphister mucosus</i>
SOLRK	rock sole	<i>Lepidopsetta bilineatus</i>
WRARK	rock wrasse	<i>Halichoeres semicinctus</i>
RFGEN	rockfish genus	<i>Sebastes</i>
ROCKH	rockhead	<i>Bothragonus swani</i>
BLNRP	rockpool blenny	<i>Hypsoblennius gilberti</i>
605	rockweed gunnel	<i>Apodichthys fucorum</i>
RNQFM	ronquil family	<i>Bathymasteridae</i>
473	roosterfish	<i>Nematistius pectoralis</i>
RFRTN	rosethorn rockfish	<i>Sebastes helvomaculatus</i>
RFROS	rosy rockfish	<i>Sebastes rosaceus</i>
SCRSL	rosylip sculpin	<i>Ascelichthys rhodorus</i>
530	rough pomfret	<i>Teractes asper</i>
387	roughback sculpin	<i>Chitonotus pugettensis</i>
327	roughcheek sculpin	<i>Ruscarius creaseri</i>
RFRGH	rougheyed rockfish	<i>Sebastes aleutianus</i>
174	roughjaw frogfish	<i>Antennarius avalonis</i>
384	roughspine sculpin	<i>Triglops macellus</i>
74	rougtail skate	<i>Raja trachura</i>
HERRD	round herring	<i>Etrumeus teres</i>
SGRND	round stingray	<i>Urolophus 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>
371	saddleback sculpin	<i>Oligocottus rimensis</i>
543	sailfin sandfish	<i>Arctoscopus japonicus</i>
SCSFN	sailfin sculpin	<i>Nautichthys oculofasciatus</i>
SAILF	sailfish	<i>Istiophorus platypterus</i>
SALEM	salema	<i>Xenistius californiensis</i>
SALFM	salmon family	<i>Salmonidae</i>
SALGN	salmon genus	<i>Oncorhynchus spp.</i>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
SHSAL	salmon shark	<i>Lamna ditropis</i>
SOLS	sand sole	<i>Psettychthys melanostictus</i>
SBGEN	sandbass genus	<i>Paralabrax</i>
DABGN	sanddab genus	<i>Citharichthys</i>
SNDFM	sandfish family	<i>Trichodontidae</i>
68	sandpaper skate	<i>Bathyraja interrupta</i>
KLPSF	sarcastic fringehead	<i>Neoclinus blanchardi</i>
SARGO	sargo	<i>Anisotremus davidsoni</i>
SCSCL	scaled sculpin	<i>Archaulus biseriatus</i>
220	scalloped ribbonfish	<i>Zu cristatus</i>
SCPUS	scallops	<i>Pectinidae</i>
SCSLH	scalyhead sculpin	<i>Artemius harringtoni</i>
560	scarlet kelpfish	<i>Gibbonsia erythra</i>
SCSCT	scissortail sculpin	<i>Triglops forficata</i>
SCRFM	scorpionfish family	<i>Scorpaenidae</i>
SCFAM	sculpin family	<i>Cottidae</i>
503	scythe butterflyfish	<i>Chaetodon falcifer</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 star	<i>Asterzoa</i>
GAPOD	sea slug, sea snail	<i>Gastropoda</i>
URCHN	sea urchin family	<i>Diadematidae</i>
548	searcher	<i>Bathymaster signatus</i>
298	searobin family	<i>Triglidae</i>
708	semaphore rockfish	<i>Sebastes melanosema</i>
SEHOR	senorita	<i>Oxyjulis californica</i>
SHSEV	seven gill shark	<i>Notorynchus maculatus</i>
619	shadow goby	<i>Quietula ycauda</i>
205	sharpchin flyingfish	<i>Fodiator acutus</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>
654	shortbill spearfish	<i>Tetrapturus angustirostris</i>
CORSF	shortfin corvina	<i>Cynoscion parvipinnis</i>
190	shortfin eelpout	<i>Lycodes brevipes</i>
SHSMK	shortfin mako shark	<i>Isurus oxyrinchus</i>
367	shorthorn sculpin	<i>Myoxocephalus scorpius</i>
RFSRK	shortraker rockfish	<i>Sebastes borealis</i>
CBFSS	shortspine combfish	<i>Zaniolepis frenata</i>
RFSST	shortspine thomyhead	<i>Sebastolobus alascanus</i>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
GUISN	shovelnose guitarfish	<i>Rhinobatos productus</i>
429	showy snailfish	<i>Liparis pulchellus</i>
SHRMP	shrimp	<i>Caridea</i>
195	shulupaoluk	<i>Lycodes jugoricus</i>
532	sickle pomfret	<i>Taractichthys steindachneri</i>
SHSSM	sicklefin smoothhound	<i>Mustelus lunulatus</i>
330	silver spotted sculpin	<i>Blepsias cirrhosus</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>
314	skilfish	<i>Erilepis zonifer</i>
SKBGN	skipback genus	<i>Euthynnus</i>
TNASJ	skipjack tuna	<i>Euthynnus pelamis</i>
173	slender clingfish	<i>Rimicola eigenmanni</i>
574	slender cockscomb	<i>Anoplarchus insignis</i>
582	slender eelblenny	<i>Lumpenus fabricii</i>
705	slender mola	<i>Ranzanic laevis</i>
CRBGR	slender rockcrab	<i>Cancer gracillis</i>
100	slender snake eel	<i>Nemichthys scolopaceus</i>
226	slender snipefish	<i>Macrorhamphosus gracilis</i>
SOLS	slender sole	<i>Lyopsetta exilis</i>
TNASL	slender tuna	<i>Allothunnus fallai</i>
375	slim sculpin	<i>Radulinus asprellus</i>
426	slipskin snailfish	<i>Liparis fucensis</i>
112	slough anchovy	<i>Anchoa delicatissima</i>
SQTSE	smalleye squaretail	<i>Tetraodon cuvieri</i>
SMFAM	smelt family	<i>Osmeridae</i>
381	smithi sculpin	<i>Sigmistes smithi</i>
399	smooth alligatorfish	<i>Anoplagonus inermis</i>
52	smooth hammerhead shark	<i>Sphyrna zygaena</i>
416	smooth lumpsucker	<i>Aptocyclus ventricosus</i>
550	smooth stargazer	<i>Kathetostoma averruncus</i>
377	smoothgum sculpin	<i>Radulinus vinculus</i>
323	smoothhead sculpin	<i>Artedius lateralis</i>
SHSGN	smoothhound genus	<i>Mustelus</i>
85	smoothtail mobula	<i>Mobula thurstoni</i>
415	snailfish family	<i>Cyclopteridae</i>
SELFM	snake eel family	<i>Ophichthidae</i>
626	snake mackerel	<i>Gempylus serpens</i>
625	snake mackerel family	<i>Trichiuridae</i>
PRKSN	snake prickleback	<i>Lumpenus sagitta</i>
99	snipe eel family	<i>Nemichthidae</i>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
392	snubnose sculpin	<i>Orthoropias triacis</i>
SALSE	sockeye salmon	<i>Oncorhynchus nerka</i>
395	soft sculpin	<i>Psychrolutes sigalutes</i>
SHFIN	soupin shark	<i>Galeorhinus zyopterus</i>
398	Southern spearnose poacher	<i>Agonopsis sterletus</i>
317	spatulate sculpin	<i>Icelus spatula</i>
460	spearfish remora	<i>Remora brachyptera</i>
RFSPK	speckled rockfish	<i>Sebastes ovalis</i>
DABSP	speckled sanddab	<i>Citharichthys stigmæus</i>
MIDSP	specklefin midshipman	<i>Porichthys myriaster</i>
386	spectacled sculpin	<i>Triglops scepticus</i>
374	spineless sculpin	<i>Phallocottus obtusus</i>
84	spinetail mobula	<i>Mobula japonica</i>
BOXSP	spiny boxfish	<i>Ostracion diaphanum</i>
SHSDG	spiny dogfish shark	<i>Squalus acanthias</i>
LOBSP	spiny lobster	<i>Panulirus interruptus</i>
428	spiny snailfish	<i>Liparis mucosus</i>
403	spinycheck starsnout	<i>Bathyagonus infraspinus</i>
338	spinyhead sculpin	<i>Dasycottus setiger</i>
388	spinynose sculpin	<i>Asemichthys taylori</i>
RFSNS	splitnose rockfish	<i>Sebastes diploproa</i>
300	splitnose searobin	<i>Bellator xenisma</i>
442	splittail bass	<i>Hemanthias peruanus</i>
139	spookfish family	<i>Opisthoproctidae</i>
CRKSF	spotfin croaker	<i>Roncador stearnsi</i>
478	spotfin mojarra	<i>Eucinostomus argenteus</i>
SCSPT	spotfin sculpin	<i>Icelinus tenuis</i>
SPSPF	spotfin surfperch	<i>Hyperprosopon anale</i>
175	spotted batfish	<i>Zalieutes elater</i>
GRPSC	spotted cabrilla	<i>Epinephelus analogus</i>
184	spotted cusk eel	<i>Chilara taylori</i>
KLPSF	spotted kelpfish	<i>Gibbonsia elegans</i>
RATFS	spotted ratfish	<i>Hydrolagus colliei</i>
SBSPT	spotted sandbass	<i>Paralabrax maculatofascia</i>
421	spotted snailfish	<i>Liparis callyodon</i>
SOLST	spotted turbot	<i>Pleuronichthys ritteri</i>
RFSQS	squarespot rockfish	<i>Sebastes hopkinsi</i>
SQUID	squid class	<i>Cephalopoda</i>
FLRST	starry flounder	<i>Platichthys stellatus</i>
RFSTA	starry rockfish	<i>Sebastes constellatus</i>
SKSTY	starry skate	<i>Raja stellulata</i>
GRPSS	star-studded grouper	<i>Hyporthodus niphobles</i>
SKBFM	stickleback family	<i>Gasterosteidae</i>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
SGFAM	stingray family	<i>Dasyatidae</i>
SGGEN	stingray genus	<i>Dasyatis spp.</i>
600	stippled gunnel	<i>Rhodymenichthys dolichogaster</i>
595	stone cockscomb	<i>Alectrias alectrolophus</i>
585	stout eelblenny	<i>Lumpenus medius</i>
STBAS	striped bass	<i>Morone saxatilis</i>
KLPST	striped kelpfish	<i>Gibbonsia metzi</i>
MARST	striped marlin	<i>Tetrapturus 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>
393	tadpole sculpin	<i>Psychrolutes paradoxus</i>
431	tadpole snailfish	<i>Nectoliparis pelagicus</i>
219	tapertail ribbonfish	<i>Trachipterus fukuzaki</i>
THRBK	thornback	<i>Platyrhinoidis triseriata</i>
373	thornback sculpin	<i>Paricelinus hopliticus</i>
SBTHF	threadfin bass	<i>Pronotogrammus multifasciatus</i>
535	threadfin family	<i>Polynemidae</i>
SCTRF	threadfin sculpin	<i>Icelinus filamentosus</i>
502	threeband butterflyfish	<i>Chaetodon humeralis</i>
SKBTS	threespine stickleback	<i>Gasterosteus aculeatus</i>
SHTHR	thresher shark	<i>Alopias vulpinus</i>
SCTDP	tidepool sculpin	<i>Oligocottus maculosus</i>
425	tidepool snailfish	<i>Liparis florum</i>
622	tidewater goby	<i>Eucyclogobius newberryi</i>
RFTIG	tiger rockfish	<i>Sebastes nigrocinctus</i>
SHTIG	tiger shark	<i>Galeocerdo cuvieri</i>
SMTOP	topsmelt	<i>Atherinops affinis</i>
RFTRE	treefish	<i>Sebastes serriceps</i>
580	trident prickleback	<i>Gymnoclinus cristulatus</i>
176	triplewart seadevil	<i>Cryptopsaras couesi</i>
CRABS	true crabs	<i>Brachyuratribe</i>
TBESN	tube snout	<i>Aulorhynchus flavidus</i>
411	tubenose poacher	<i>Pallasina barbata</i>
TNASG	tunas (non-mackerel)	
316	twohorn sculpin	<i>Icelus bicornis</i>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
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>Theragra chalcogramma</i>
SPWAL	walleye surfperch	<i>Hyperprosopon argenteum</i>
363	warhead sculpin	<i>Myoxocephalus niger</i>
409	warty poacher	<i>Ocella verrucosa</i>
CLMWA	washington, clam	<i>Saxidomus nuttalli</i>
192	wattled eelpout	<i>Lycodes palearis</i>
WEKFS	weakfishes	<i>Cynoscion</i>
22	whale shark	<i>Rhincodon typus</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>
588	whitebarred prickleback	<i>Poroclinus rothrocki</i>
RFWTB	whitebelly rockfish	<i>Sebastes vexillaris</i>
GRNWT	whitespotted greenling	<i>Hexagrammos stelleri</i>
RFWID	widow rockfish	<i>Sebastes entomelas</i>
WOLFE	wolf-eel	<i>Anarrhichthys ocellatus</i>
SCWOL	wolly sculpin	<i>Clinocottus analis</i>
WRAFM	wrasse family	<i>Labridae</i>
573	Y prickleback	<i>Allolumpenus hypochrcmus</i>
537	yellow bobo	<i>Polydactylus opercularis</i>
347	yellow Irish lord	<i>Hemilepidotus jordani</i>
CRBYR	yellow rock crab	<i>Cancer anthonyi</i>
SELYL	yellow snake eel	<i>Ophichthus zophochir</i>
357	yellowchin sculpin	<i>Icelinus quadriseriatus</i>
RFYEF	yelloweye rockfish	<i>Sebastes ruberrimus</i>
CRKYF	yellowfin croaker	<i>Umbrina roncador</i>
566	yellowfin fringehead	<i>Neoclinus stephensae</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>

Sorted by AFS Common Name		
SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
618	zebra goby	<i>Lythrypnus zebra</i>
PERZB	zebra perch	<i>Hermosilla azurea</i>

**OTHER CODES**

**PR Non-Fishing Codes**

<b>Target</b>	<b>Activity</b>
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**

<b>Island</b>	<b>Code</b>
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**

<b>Highest Priority:</b>			
Ad-clipped salmon (both Chinook and Coho), length only		thresher shark	
<b>Higher Priority: Species of Concern (in no particular order)</b>			
yelloweye, cowcod, bronzespotted and canary rockfishes		Pacific halibut	bluefin tuna
<b>High Priority: Species with Harvest Limits (in no particular order)</b>			
cabezon	California sheephead	greenlings ( <i>Hexagrammos</i> spp.)	black, black-and-yellow, blue, bocaccio, brown, copper, calico, China, gopher, grass, kelp, olive, quillback, treefish, widow, and yellowtail 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	WAR	Dana Point Launch Ramp	LA	OR
1	59	104	PR1	SUN	Sunset Aquatic Launch Ramp	LA	OR
1	59	106	PR1	NEW	Newport Dunes Launch Ramp	LA	OR
1	73	104	PR1	SHL	Shelter Island Launch Ramp	LA	SD
1	73	112	PR1	GLO	Glorietta Launch Ramp	LA	SD
1	73	113	PR1	OCN	Oceanside Launch Ramp	LA	SD
1	73	204	PR1	DBN	Dana Basin Launch Ramp	LA	SD
1	73	205	PR1	SSH	South Shores Launch Ramp	LA	SD

### PC Port Codes

District	Cnty	Site	Mode	Port	Site Name	MjPort	SubPort
6	15	301	PC	CRC	Inner Boat Basin	CR	CR
6	23	121	PC	EUR	Woodley Isl Marina	EU	EU
6	23	307	PC	TRD	Trinidad Pier	EU	EU
5	23	106	PC	SHC	Shelter Cove North	FB	SH
5	45	400	PC	FTB	Noyo Harbor	FB	FB
4	1	400	PC	BER	Berkeley PC	SF	SF
4	1	401	PC	EME	Emeryville PC	SF	SF
4	13	400	PC	CKT	Crockett PC	SF	SF
4	13	403	PC	SPB	San Pablo PC	SF	SF
4	13	405	PC	RCH	Richmond PC	SF	SF
4	41	400	PC	SAU	Sausalito PC	SF	SF
4	41	402	PC	LMD	Loch Lomond PC	SF	SF
4	75	400	PC	SNF	SF Fisherman's Wharf PC	SF	SF
4	81	400	PC	PRI	Princeton-Pillar Point PC	SF	SF
4	97	400	PC	BOD	Porto Bodega PC	SF	SF
3	53	104	PC	MOS	Moss Landing PC	MO	SM
3	87	101	PC	SCR	Santa Cruz PC	MO	SM

District	Cnty	Site	Mode	Port	Site Name	MjPort	SubPort
3	53	402	PC	<b>MOH</b>	Randy's Sportfishing	MO	SM
3	53	403	PC	<b>MOH</b>	Chris' Sportfishing	MO	SM
3	79	100	PC	<b>MOR</b>	Morro Bay PC	MO	MA
3	79	101	PC	<b>AVI</b>	Patriot's Landing	MO	MA
2	83	400	PC	<b>SBA</b>	Sea Landing Channel	SB	SB
2	111	43	PC	<b>CIS</b>	Island/Ciscos	SB	VN
2	111	45	PC	<b>CAP</b>	Hook's Sportfishing	SB	VN
2	111	103	PC	<b>VEN</b>	Ventura Sportfishing	SB	VN
1	37	10	PC	<b>MDR</b>	Marina Del Rey Sportfishing	LA	LA
1	37	13	PC	<b>LBS</b>	Long Beach Sportfishing	LA	LA
1	37	14	PC	<b>TWE</b>	22nd Street Sportfishing	LA	LA
1	37	15	PC	<b>LAH</b>	LA Harbor Sportfishing	LA	LA
1	37	17	PC	<b>LBM</b>	Long Beach Marina Sportfishing	LA	LA
1	37	202	PC	<b>PPT</b>	Pier Point Landing Redondo Beach	LA	LA
1	37	303	PC	<b>RED</b>	Sportfishing	LA	LA
1	37	401	PC	<b>MAL</b>	Malibu Sportfishing	LA	LA
1	37	405	PC	<b>ROC</b>	Rocky Point Charters	LA	LA
1	59	101	PC	<b>WAR</b>	Dana Wharf Sportfishing	LA	OR
1	59	106	PC	<b>NEW</b>	Newport Sportfishing	LA	OR
1	59	111	PC	<b>LOC</b>	Davey's Locker Sportfishing	LA	OR
1	73	18	PC	<b>SEA</b>	Seaforth Sportfishing	LA	SD
1	73	19	PC	<b>HMS</b>	H&M Sportfishing Point Loma	LA	SD
1	73	20	PC	<b>LOM</b>	Sportfishing	LA	SD
1	73	21	PC	<b>FIS</b>	Fisherman's Landing	LA	SD
1	73	113	PC	<b>OCN</b>	Helgren's Sportfishing	LA	SD
1	73	119	PC	<b>DAN</b>	Dana Landing Charters	LA	SD

**California Saltwater Angling Records as of January 1, 2017 (excludes diving records)**

<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
Cabazon	<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 steamsii</i>	14 lb 0 oz	Los Angeles	September 24, 1951
Croaker, Yellowfin	<i>Umbrina roncador</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
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

Species Common Name	Species Scientific Name	Weight	County	Date
Mackerel, Pacific (Chub)	<i>Scomber japonicus</i>	2 lb 8 oz	San Diego	November 11, 2005
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>	1 lb 8 oz	Santa Cruz	February 23, 2013
Perch, Pile	<i>Rhacochilus vacca</i>	2 lb 4 oz	Monterey	July 31, 2013
Prickleback, Monkeyface	<i>Cebidichthys violaceus</i>	6 lb 1 oz	San Mateo	February 7, 2005
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>	6 lb 15 oz	San Mateo	September 29, 2008
Rockfish, Canary*	<i>Sebastes pinniger</i>	6 lb 15 oz	Mendocino	September 30, 2001
Rockfish, China	<i>Sebastes nebulosus</i>	3 lb 4 oz	Sonoma	July 24, 1998
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
Rockfish, Grass	<i>Sebastes rastrelliger</i>	6 lb 7 oz	San Mateo	June 30, 2012

<b>Species Common Name</b>	<b>Species Scientific Name</b>	<b>Weight</b>	<b>County</b>	<b>Date</b>
Rockfish, Greenspotted	<i>Sebastes chlorostictus</i>	2 lb 5 oz	San Luis Obispo	June 24, 2005
Rockfish, Olive	<i>Sebastes serranoides</i>	5 lb 14 oz	Santa Barbara	November 21, 1991
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>	5 lb 8 oz	Monterey	August 4, 1991
Salmon, Chinook (King)	<i>Oncorhynchus tshawytscha</i>	65 lb 4 oz	Del Norte	August 21, 2002
Sargo	<i>Anisotremus davidsonii</i>	3 lb 3 oz	Los Angeles	December 28, 2010
Scorpionfish, California	<i>Scorpaena guttata</i>	3 lb 0 oz	San Diego	December 26, 1997
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 6 oz	Monterey	January 20, 2011
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, Thresher	<i>Alopias vulpinus</i>	575 lb 0 oz	San Diego	May 26, 2007
Sheephead, California	<i>Semicossyphus pulcher</i>	30 lb 8 oz	Orange	August 29, 2009
Sole, Fantail	<i>Xystreureys liolepis</i>	8 lb 8 oz	Los Angeles	June 6, 2001

Species Common Name	Species Scientific Name	Weight	County	Date
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>	1 lb 14 oz	San Mateo	April, 9, 2016
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>	452 lb 8 oz	Los Angeles	September 30, 2003
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>	245 lb 0 oz	San Diego	August 14, 2016
Tuna, Skipjack	<i>Katsuwonus pelamis</i>	26 lb 0 oz	San Diego	August 28, 1970
Tuna, Yellowfin	<i>Thunnus albacares</i>	239 lb 0 oz	Los Angeles	November 24, 1984
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
Yellowtail	<i>Seriola lalandi</i>	63 lb 1 oz	Santa Barbara	June 18, 2000

\* 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.

**California Saltwater Diving Records as of January 1, 2017**

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>Sphyræna 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 3/4 in (tie)	San Diego	June 13, 2010
			Ventura	December 5, 2014
Corbina, California	<i>Menticirthus undulatus</i>	5 lb 15 oz	Orange	July 1, 1982
Croaker, Spottfin	<i>Roncador steamsii</i>	8 lb 12 oz	Orange	January 1, 1968
Dolphinfish	<i>Coryphaena hippurus</i>	24 lb 8 oz	Orange	July 26, 2009
Flounder, Starry	<i>Platichthys stellatus</i>	OPEN – Minimum Size Requirement: 8 pounds		
Halibut, California	<i>Paralichthys californicus</i>	72 lb 8 oz	Santa Barbara	August 1, 1982

<b>Species Common Name</b>	<b>Species Scientific Name</b>	<b>Weight/ Length</b>	<b>County</b>	<b>Date</b>
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, 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>	3 lb 6 oz	Humboldt	August 18, 2010
Rockfish, Copper	<i>Sebastes caurinus</i>	9 lb 5 oz	Mendocino	October 14, 1972
Rockfish, Grass	<i>Sebastes rastrelliger</i>	6 lb 3 oz	Marin	August 1, 2014
Rockfish, Olive	<i>Sebastes serranoides</i>	6 lb 1 oz	Monterey	January 2, 2012
Rockfish, Vermilion	<i>Sebastes miniatus</i>	10 lb 6 oz	Mendocino	August 1, 1983
Scallop, Rock	<i>Crassedoma giganteum</i>	11 1/8 in	Los Angeles	June 1, 1972
Seabass, White	<i>Atractoscion nobilis</i>	93 lb 4 oz	Los Angeles	September 17, 2007
Seaperch, Rubberlip	<i>Rhacochilus toxotes</i>	4 lb 10 oz	Monterey	January 2, 2012
Shark, Blue	<i>Prionace glauca</i>	231 lb 0 oz	Santa Barbara	August 1, 1974
Shark, Shortfin Mako	<i>Isurus oxyrinchus</i>	426 lb 0 oz	San Diego	August 28, 1999
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>	269 lb 11 oz	San Diego	June 22, 2016

<b>Species Common Name</b>	<b>Species Scientific Name</b>	<b>Weight/ Length</b>	<b>County</b>	<b>Date</b>
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**

<b>Code</b>	<b>Foreign Country</b>
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
FEG	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

Code	Foreign Country
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

Code	Foreign Country
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, sheepie, 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, tye
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, thom head
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 helvomagulatus</i>	deepwater scacciatale, orange-red rockfish, rosy
Rosy Rockfish	<i>Sebastes rosaceus</i>	avocado rockfish, corsair, rinky dink, rosy, strawberry
Rougeye Rockfish	<i>Sebastes aleutianus</i>	blackthroat rockfish, buoy keg

Common Name	Scientific Name	Slang Name(s)
Rubberlip Seaperch	<i>Rhacochilus toxotes</i>	alfione, 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, thomhead, 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

Common Name	Scientific Name	Slang Name(s)
Speckled Rockfish	<i>Sebastes ovalis</i>	belinda cod, bank perch, cinnamon, widow
Speckled Sanddab	<i>Citharichthys stigmæus</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, pogy, 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

## 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 fishing code used on the onboard location form (PCO sampling). Anchor occurs when the boat deploys its anchor so that its position relative to the bottom is constant, without having to use the boat's engines to hold position.
<b>Angler license directory telephone survey (ALDTS)</b>	Telephone survey based on angler contact information (ALDS) collected during license purchase. Designed to identify effort data needed to estimate total number of marine recreational fishing trips taken by license holders.
<b>Angler</b>	A person fishing or who has caught fish, includes persons releasing their catch.
<b>Angler eligibility</b>	Determination of whether a person is eligible (as an angler) to be interviewed by the Sampler.
<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>Arrival Time</b>	When the Sampler arrives on site (a specific time

<b>TERM</b>	<b>DEFINITION</b>
	coded to the nearest minute).
<b>ASF</b>	Assignment Summary Form, the cover page used to track sampled assignments.
<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 ID</b>	The specific six digit code used to identify all sample assignments issued in a given month.
<b>Avidity</b>	How often an angler fishes in a 12 month period, in CA ocean waters, not including today.
<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 (BB)</b>	A cluster assignment survey conducted on beaches and bank sites primarily for catch data.
<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 data such as lengths, weights, tag wand scan results, sex, and headtags.
<b>Boat mode</b>	A mode of fishing from a boat (skiff, vessel, kayak, etc.) Includes PR and PC modes.
<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 on 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>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>TERM</b>	<b>DEFINITION</b>
<b>CDFW permit #</b>	CDFW's identification number for CPFVs. This number is usually found on the CPFV's wheel house in prominent lettering. Also on the District CPFV list provided by your 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>Calipers</b>	A calibrated instrument used for measuring distance or thickness, usually with a sliding adjustable piece. CRFS Samplers can use calipers to measure certain species of sport-caught invertebrates.
<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 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>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>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 fish harvested, either whole or in part, are intended to enter commerce through sale, barter, or trade.
<b>Commercial Passenger Fishing Vessel (CPFV)</b>	Commercially registered vessels which participate in recreational passenger trips.
<b>County code</b>	A specific code assigned to each California county. For sample sites it is numeric.

<b>TERM</b>	<b>DEFINITION</b>
<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. Also, an interview obtained from a shore-based angler that has completed his/her 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>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.
<b>Departure time</b>	When the Sampler physically leaves the site (a specific 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 angler and returned to the ocean. Fish may be classified as released alive or dead. For PCO sampling, the location of catch and lengths are obtained if possible.
<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>District</b>	The six geographical areas the CRFS divides California into for survey estimation purposes.

<b>TERM</b>	<b>DEFINITION</b>
	District boundaries tend to follow certain county lines.
<b>Dock</b>	A floating platform with land access used primarily for boat moorage, loading, or fishing.
<b>Dockside sampling</b>	Sampling of PCs at their berth or slip when they return from their fishing trip.
<b>Drift</b>	A type of fishing code used on the onboard location form (PCO sampling). A drift occurs when the CPFV shuts down engines or takes them out of gear, so that the boat drifts with the prevailing currents or winds.
<b>Effort</b>	A unit of measure of fishing activity. This could be angler(s) hours or trip.
<b>Eligible Angler</b>	A recreational angler who meets CRFS interview criteria: must be an angler who leaves the boat with fish or intended to leave the boat with fish (PR and PC mode), or be at least 50% done with their fishing trip (MM mode) or has fished for at least 30 minutes (BB mode). Anglers who do not meet these criteria are considered ineligible and should not be interviewed.
<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>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>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>	Legal form of California Law 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

TERM	DEFINITION
	and confirmed by the Senate. The Legislature delegated 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 or island where the anglers fished.
<b>Fishing boat</b>	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. See non-fishing boat.
<b>Fishing mode</b>	The method of access to the fisheries. The major modes are man-made structures (MM), beach and bank fishing (BB), party and charter boat fishing (PC), and private and rental boat fishing (PR).
<b>Fishing pressure</b>	Number of anglers or boats at a fishing site; a gauge of effort.
<b>Fishing type</b>	The type of fishing performed by CPFVs: Drift, Station keeping, Anchored or Troll.
<b>Flag</b>	A letter qualifier recorded after the sample number on the PR form, used to denote kayaks, personal watercraft, sailboats, etc. See also sample flag.
<b>Flat</b>	A gear type used to take invertebrates primarily (although some species of finfish can legally be taken with it), usually 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.
<b>Fork length</b>	A measurement used frequently for fish length when the tail has a fork shape. 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

TERM	DEFINITION
	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</b>	In reference to onboard sampling locations, the type of GPS format used to report latitude and longitude. Can be degrees, minutes and seconds of latitude and longitude OR degrees and decimal minutes of latitude and longitude.
<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 rockfish, several species of flatfish, some species of sharks and skates, and several species of roundfish like lingcod, greenlings, sablefish and Pacific cod. See Section 1.91 of the Ocean Sport Fishing Regulations booklet for a complete listing of all species included in the Groundfish FMP.
<b>Headtag</b>	A uniquely numbered tag affixed to the lower jaw of an adipose fin clipped salmon that tracks the salmon head collected on the docks through coded wire tag 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.
<b>Incomplete interview/sample</b>	A Shore Form interview where the angler's fishing trip is partially complete. For BB, anglers need to have completed at least 30 minutes of fishing. For MM, anglers need to have completed at least 50% of their fishing trip and incomplete interviews MUST be obtained after the stop count for that site. See also partial interview and complete interview.

<b>TERM</b>	<b>DEFINITION</b>
<b>Ineligible angler</b>	An angler who does not meet the criteria as an eligible angler for an interview. 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. The inventory tag documents the Sampler's name, the date the inventory bag was taken to the drop off location, and the head tag series present in the bag.
<b>Invertebrate trips</b>	Trips that target invertebrates. CRFS interviews anglers/boats targeting crab, squid, lobster and abalone.
<b>Jackpot</b>	A fishing competition aboard a CPFV, usually largest fish wins the pot. Jackpot participants are eligible for CRFS interviews. See also derby and tournament.
<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>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.
<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.
<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

TERM	DEFINITION
	allows vehicles towing boats on trailers to back the trailer down into the water until the boat can float off the trailer.
<b>Logbook</b>	A log of each fishing trip is required by the 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>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 fishing mode. A structure built by humans that anglers can potentially fish from: jetty, pier, dock, wharf.
<b>Missed boat</b>	A boat, either in the PR1 or PR2 survey, fishing or not, that was observed at the site but not sampled. Can be on-site or off-site.
<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 (see Fishing mode)</b>	Type of access to water for angling.
<b>Mooch</b>	A gear type used to take salmon. Fishing with bait while the vessel is stationary.
<b>Mooring buoy</b>	An anchor station for boats to be stored in the harbor. A type of private access boat.
<b>National Marine Fisheries Service (NMFS) a.k.a. NOAA Fisheries</b>	A division of the U.S. Department of Commerce, National Ocean and Atmospheric Administration (NOAA). NMFS is responsible for conservation and management of offshore fisheries (and

TERM	DEFINITION
	inland salmon). The NMFS Regional Director is a voting member of the Council. Recently renamed to NOAA Fisheries.
<b>NMFS Economic Survey</b>	In some years, NMFS requests that CRFS interviews include additional questions (e.g. name, telephone, mail, home address) directed at shore-mode anglers and sometimes PC anglers.
<b>National Oceanic &amp; Atmospheric Administration (NOAA)</b>	The parent agency of the National Marine Fisheries Service (NOAA Fisheries).
<b>Non-fishing (NF) boat</b>	There are three types of NF boats: NFCOM (commercial finfish or invertebrate fishing), NFPC6 (Commercial Passenger Fishing Vessels, a.k.a. party/charter boats, including 6-pack boats) and NFOTH (all other non-fishing boats, including sailing, whale watching, burials at sea, cruises, enforcement, research, etc.). See fishing boat.
<b>Non-Recovered Species (NRS)</b>	A coded-wire tagged salmon head which cannot be recovered for some reason.
<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 boats by riding the boat throughout the whole fishing trip.
<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.
<b>Opportunistic interviews</b>	Interviews for party/charter trips completed outside of a scheduled PC assignment. Can be salmon or non-salmon trips.
<b>Optimum yield (OY)</b>	The amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems.
<b>Otolith</b>	A bone in the inner ear of vertebrates. Movement of otoliths, caused by a change in position of the animal, stimulates sensory hair cells which convey the information to the brain. In some species of fish, can be used to determine the age of the fish.

<b>TERM</b>	<b>DEFINITION</b>
<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</b>	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/sample</b>	A Shore Form interview where the angler's fishing trip is partially complete. For BB, anglers need to have completed at least 30 minutes of fishing and incomplete interviews can be obtained at any time. For MM, anglers need to have completed at least 50% of their fishing trip and incomplete trip interviews <b>MUST</b> be obtained after the stop count for that site. See also incomplete interview and complete 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;

<b>TERM</b>	<b>DEFINITION</b>
	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 animals from escaping. Also called trap.
<b>Private and Rental boats (PR)</b>	Private and rental boat mode of fishing. A type of Boat mode.
<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</b>	Personal water craft (e.g. jet ski).
<b>Ramp (launch ramp)</b>	Roadway leading down into the water for the purpose of launching a boat from a trailer.
<b>Random</b>	With no pattern. Occurring sporadically or intermittently in an unpredictable way.
<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>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 sport fishing
<b>Refugia</b>	An area in the water where living things or their

TERM	DEFINITION
	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>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. This is based on historical fishery related differences.
<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.
<b>Rental boat</b>	A boat that is rented but without crew or a guide.
<b>Rigid</b>	A gear type used to take invertebrates primarily (although some species of finfish can legally be taken with it), usually 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 thereby making escape from the net very difficult.
<b>Roving</b>	In reference to cluster sampling, when the Sampler travels among multiple sites within an assignment looking for recreational anglers to interview.
<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>Sample boat</b>	A boat intercepted in the PR survey for which a sequential number is given and specific data collected.
<b>Sample Flags</b>	On the PR form, a code that provides additional information about a specific boat that was sampled. Flags include kayaks (K), sailboats (S), personal watercraft (P), boats participating in a tournament (T), and refused boats (R). See also flags.
<b>Sampler Location</b>	In reference to Onboard CPFV sampling, it is the location on the boat where the Sampler observed anglers during stops (e.g. bow, stern, side).
<b>SCUBA</b>	Acronym for self-contained underwater breathing apparatus. Also a gear type used to take invertebrates, coded when SCUBA gear is used

TERM	DEFINITION
	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).
<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 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 effort or CPFV boat status.
<b>Site code</b>	The numeric code used to distinguish specific fishing areas within a CRFS District.
<b>Site disposition</b>	The code on the ASF which indicates the status of the site visit and the reason for leaving the site.
<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.
<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 sling or hoist that is used to lower and lift boats from the water.
<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>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

TERM	DEFINITION
	elastic band (Hawaiian sling).
<b>Species code</b>	A specific five letter code used to record fish taxon on the survey forms.
<b>Sport 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 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 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>Stop time</b>	A time when the Sampler actually stops sampling, but before they depart (a specific time 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 N <sup>th</sup> boat). An efficient and functional substitute for random sampling.
<b>Target (fishing)</b>	Fishing for the primary purpose of catching a particular species or species group (the target species).
<b>Target (mode)</b>	The specific fishing mode(s) that the Sampler should be monitoring at a given site. Listed on the Site list.
<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 (a.k.a. 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

TERM	DEFINITION
	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 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. Speak with your Lead when you encounter a tournament. See also derby and jackpot.
<b>Trailer counts</b>	Usually done at arrival and departure from boat-mode sites as a way to gauge effort.
<b>Troll</b>	A gear type 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 code used on the onboard location form (PCO sampling) coded when the boat is trolling.
<b>Unavailable catch</b>	Catch that is not available for the Sampler to observe. Includes fish used as bait, given away, thrown back alive or dead, filleted, or immediately consumed. This type of catch is angler-reported – 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>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

TERM	DEFINITION
	vessels may be moored alongside. See Pier.
<b>Wildlife Officer</b>	(Formerly titled Warden) An officer that represents the enforcement branch of CDFW.

## 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; it sets clear boundaries and outlines the major roles of the Sampler. Supervisors and Leads hold their Samplers accountable for these guidelines. The Guidelines 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

- Your safety is your number one priority
- Notify your Lead if you have **ANY** health issues that may affect your safety or performance in the field
- You are to call your Lead **AS SOON AS POSSIBLE** when you are injured on the job
- Report criminal activity (non-fishery violations) to local law enforcement – if applicable, call 911 and then call your Lead when it is safe to do so
- If you feel threatened, leave the site and then call your Lead when it is safe to do so
- Lock your car, keep valuables with you
- Carry a cell phone or know where pay phones are located
- Know which fish are potentially dangerous and how to handle them; ask your Lead for gloves if you want them
- Do not sample after sunset unless you are sampling a twilight or overnight PC trip
- Wear sunscreen and 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 you make a mistake, notify your Lead – do not try to cover it up
- You are responsible for the quality of your data
- When your Lead notifies you of an error you are making, take the time to make sure you understand the nature of the error and take steps to stop making the same error
- Refer to your manual with questions on protocol. Ask your Lead if you are unable to find your answer there – come into the office, call or send an email. Ask the Fish and Wildlife Technician (FWT) if your Lead is not available.
- Take detailed notes regarding field conditions
- Take detailed notes on situations that you are unclear on how to handle when you are unable to contact your Lead or the FWT for guidance
- Make continuous improvements to your interviewing skills, fish identification skills, data collection techniques and understanding of the sampling protocol

## Data Deadlines

- Weekly reports are due to your Lead and OSP by 8 AM every Monday whether you worked the previous week or not
- Head tag reports, courtesy tag reports, CRFS-OSP PC Dockside forms and PC Effort Check forms are due to OSP by 8 AM Monday (either faxed, photographed or scanned and emailed) whether you worked the previous week or not
- The data week is Monday through Sunday. All original data sheets are due to your 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 your Lead

## Time Sheets and Travel Claims

- The work week is Sunday through Saturday. You are not to exceed 40 hours in a week without prior approval from your Supervisor.
- You are to call your Lead **AS SOON AS POSSIBLE** if you believe that you will not be able to complete all assignments in a week without exceeding 40 hours for the week
- Time sheets are due on the date and time specified by your Lead each month. A delay on your end may result in a late paycheck.
- Be accurate in your time reporting – claim only time that you work
- For time sheet purposes, round daily hours worked to the nearest quarter hour
- Travel expense claims are due on the date specified by your Lead each month. You are required to submit your claims monthly.

- You may claim the cost of dinner **IF** you traveled more than 50 miles in one direction **AND** your day ended after 1900 hrs
- You may claim the cost of breakfast **IF** you traveled more than 50 miles in one direction **AND** your day began 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 your Supervisor. Include the amount of the purchase when making a request.
- Retain receipts and be accurate in your expense reporting

### Assignment Management

- You are to call or text your Lead **BEFORE THE ASSIGNMENT START TIME** when you are unable to complete an assignment
  - If using sick leave, notify your 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 your Lead
- Do not cancel an assignment without prior approval from your Lead
- Do not reassign an assignment without prior approval from your Lead
- Do not give an assignment to or take an assignment from another sampler without prior approval from your 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 your Supervisor

### Appearance

- You are to wear the CRFS attire issued to you when in the field at all times
- Do not wear your CRFS attire when you are not working
- You are to wear closed-toe shoes in the field at all times
- You may wear shorts or jeans. 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. No skinny pants or tight jeans.
- 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 your use, you are responsible for providing your own reliable transportation. Mileage is reimbursed at the current state rate.
- Report all automobile accidents that occur while working to your 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 your personal vehicle when using your vehicle for state business.
- Do not use a cell phone without a hands-free device while driving on the job
- You are responsible for all traffic violations and citations while driving on the job
- Do not park on red curbs or in handicapped parking spots
- Wear your 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 your Lead
- Do not use your 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 your 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 your personal vehicle using the Voyager fuel card
- Do not use the Voyager fuel card to purchase anything except authorized items
- Your Voyager 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 your Lead of any observed deficiencies in state vehicles
- Do not attempt to drive to a site during extremely hazardous weather; notify your Lead
- Be a courteous, safe driver while driving on the job

#### **Party/Charter (PC) Boat Sampling**

- You are to notify your Lead **AS SOON AS POSSIBLE** of all PC refusals
- Do not perform the duties of a crew member while onboard a PC
- Do not fish while onboard a PC
- Do not sleep while onboard a PC, except when sampling an overnight trip during transit
- Do not discuss PC activities or your opinions of specific PC operations with the public
- Do not share the sampling schedule with any crew members

## General Onsite Procedures

- Have your state identification card with you while working at all times
- Do not allow the public to believe you are a Wildlife Officer
- Report egregious or repeat fishing regulation violations to your Lead – do not contact enforcement directly
- Refer reports of pollution or poaching to CalTIP – have the person reporting it to you make the call
- Do not claim to represent the Department when not conducting CRFS
- Do not discuss your opinions of other Department employees with the public
- Do not have unauthorized people (family, friends, children) accompany you on assignment
- Do not trespass on private property
- Be respectful of other's property
- Introduce yourself – don't expect anglers to know who you are
- 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 yelloweye rockfish, salmon heads and white seabass heads
- Work the sites in an MM 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 with you in the field to complete the day's assignment
- Be productive during slow times in the field – review your manual, regulations booklet, fish identification materials, site descriptions, 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 your Lead
- Do not discuss your 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 when asked questions that you don't know the answers to - refer them to your Lead
- Do not accept gifts of any kind – fish, free fishing trips, etc.
- Do not smoke while conducting interviews, or where the public may observe you
- Do not use alcohol or cannabis while on the job, or be under the influence of alcohol or cannabis while on the job
- Do not use illegal drugs while on the job, or be under the influence of drugs while on the job
- Do not attempt to aid stranded or injured marine mammals or birds – call your local wildlife care center

- 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 your fellow samplers, Lead and Supervisor in a timely manner. At the minimum, read your email and all attachments and respond as needed before you begin each scheduled work day. Email messages from your 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 your port leads regarding PC activities and salmon PC sampling rates
- You are to notify your Lead **AS SOON AS POSSIBLE** of changing site conditions (road construction/closures, launch ramp closures, safety issues, etc.)
- Be professional in your communications – use correct grammar and punctuation
- Use your DFW email address for all work-related correspondence
- Set up an automated “out of the office” reply for your DFW email account for absences greater than one week

## Sampling Gear

- You are to have all sampling gear that is issued to you and one set of CRFS attire with you and ready to be used at every sampling assignment and office assignment that you work
- You are to have your knife in sheath on your belt at every PR1 assignment during salmon season
- Do not lend your knife to anyone other than another sampler
- Have a time keeping device on your person in the field at all times. Verify its accuracy.
- You are responsible for maintaining your sampling gear in proper working order
  - Clean your gear while sampling if possible
  - Do not rinse scales in saltwater
  - At the minimum, calibrate your scales monthly
  - Immediately notify your Lead of any lost/broken gear
- You may be responsible for the cost to replace lost/broken gear
- You are to return your sampling gear to your Lead **AS SOON AS POSSIBLE** on request or after your employment ends
- Keep your eyes on your gear – do not walk out of view of your gear

## Arrival and Departure

- Arrival times at sites:
  - PR1: if you are 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 your Lead
  - PC onboard: plan to arrive at least 30 minutes prior to boat departure, or 45 minutes if you 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 expected peak fishing time has passed.
  - BB: stay on site for the minimum amount of time prescribed by your Lead; after that, stay until you believe that 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 your Lead

## Administration/Personnel

- Arrive at your scheduled work location at the time set by your Lead or Supervisor
  - Show up to/call in to meetings/conference calls on time and prepared to participate. Attendance is mandatory unless prior arrangements have been made with your Lead
  - Show up to office assignments on time
- Follow all DFW office building security procedures
  - Do not lend your building key to anyone
  - Do not give your building alarm code to anyone
  - You may be responsible for the cost of law enforcement response for false alarms
  - Relinquish your building key at the end of employment or on request
  - You may be responsible for the cost of re-keying the building if you lose your key
  - Do not admit non-DFW personnel into the building without approval
- Relinquish your state identification card at the end of employment or on request
- Notify your Lead if your contact information, address or emergency contact information changes

- You cannot work more than 1,500 hours in any calendar year or 189 days from your date of appointment. If you exceed either, you will be separated from state service for a minimum of three months after which you may be re-hired if a position is available.
- Weekend and holiday work is mandatory. Your Lead will consider CRFS scheduling needs prior to approving requests for time off.
- Schedule requests are to be submitted via email to your 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 or behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

Section 101(a)(4) of the MMPA authorizes the intentional interaction of private citizens with marine mammals. Recreational fishers may now deter marine mammals from damaging fishing gear or catch; property owners or their agents may now deter marine mammals from damaging their property; and the general public may now deter marine mammals from endangering personal safety, provided such deterrence does not cause a marine mammal's death or serious injury. The proposed guidelines and prohibited measures set forth activities that are not likely to cause a marine mammal death or serious injury and specifically prohibit activities determined, using the best scientific information available, to have a significant adverse effect on marine mammals. Actions by the public to deter non-ESA listed marine mammals consistent with such guidelines would not be a violation of the MMPA.

### **Approved Deterrence Measures**

NOAA Fisheries Guidelines for Intentional Interaction (Marine Mammal Deterrence)

Samplers should be familiar with these guidelines in order to inform your Lead of any illegal or unusual actions taken by anglers or party/charter boat crews. The following is copied verbatim from the NOAA web site at:

[http://www.westcoast.fisheries.noaa.gov/publications/protected\\_species/marine\\_mammals/pinnipeds/sea\\_lion\\_removals/112515\\_potential\\_deterrence\\_methods.pdf](http://www.westcoast.fisheries.noaa.gov/publications/protected_species/marine_mammals/pinnipeds/sea_lion_removals/112515_potential_deterrence_methods.pdf)

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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, and Eastern U.S. stock Steller sea lions please contact our marine mammal specialists: mammal specialists: (Seattle, WA) Brent Norberg, 206- 526-6550; Lynne Barre, 206-526-4745; (Long Beach, CA) Monica DeAngelis, 562-980-3232; Penny Ruvelas, 562-980-4197.

Note: Some of the methods listed (such as loud noise or pyrotechnics) may not be appropriate for use in some areas, or are subject to prohibition under federal, state or local ordinances. The presence of 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
- balloons
- 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
- starter pistols
- pyrotechnics (e.g., bird screamers, bangers, firecrackers, propane canons)
- propane canons

**Physical Contact:**

- high or low pressure water hoses
- sprinklers, 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
- 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)

Note: 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.

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, underwater firecrackers, cracker shells) • starter pistols • horns, bells, whistles

Physical Contact: • slingshots • non-toxic and water soluble paint ball guns • non-lethal ammunition (e.g., rubber bullets, sabot rounds, game stingers)

Methods to Avoid – The following methods and techniques have an increased likelihood of causing injury or death and should be avoided.

- No firearms with “live” (lethal) ammunition
- No devices with injurious projectiles (e.g., archery gear, crossbows, spear guns, bangsticks)
- No sharp/pointed objects (e.g., harpoons, spears, gaffs, nail studded bats/poles/clubs)
- No entangling devices (e.g., loose webbing, snares, concertina wire)
- No aggressive tactile methods (e.g., striking animals with bats, hammers etc., impact with vehicles or boats)
- No tainted baits or poisons

Act responsibly & 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 people around you 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 you are in

possession of a firearm, law enforcement officers approaching your property or vessel will assume that your firearm is loaded with lethal ammunition.

Individuals attempting to deter nuisance sea lions and seals, using the above the listed potential methods are similar techniques, do so at their own risk.