

Catch Shares Appendix

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Appendix A: Fish Species List and Codes

| Code | Common Name | Scientific Name |
|-------|-----------------------------|-------------------------------------|
| 1226 | Abyssal Grenadier | <i>Coryphaenoides armatus</i> |
| 710 | Albacore Tuna | <i>Thunnus alalunga</i> |
| 1237 | Aleutian Skate | <i>Bathyraja aleutica</i> |
| 606 | American Shad | <i>Alosa sapidissima</i> |
| 605 | Anchovy Unid | <i>Engraulididae</i> |
| 10645 | Anglerfish Unid | <i>Lophiiformes</i> |
| 141 | Arrowtooth Flounder | <i>Atheresthes stomias</i> |
| 204 | Atka Mackerel | <i>Pleurogrammus monoptyerygius</i> |
| 334 | Aurora Rockfish | <i>Sebastes aurora</i> |
| 180 | Banded Guitarfish | <i>Zapteryx exasperata</i> |
| 337 | Bank Rockfish | <i>Sebastes rufus</i> |
| 770 | Barracudina Unid | <i>Paralepididae</i> |
| 475 | Barred Sand Bass | <i>Paralabrax nebulifer</i> |
| 264 | Basketweave Cusk-eel | <i>Ophidion scrippsae</i> |
| 480 | Bass Unid | <i>Percichthyidae/Serranidae</i> |
| 561 | Bat Ray | <i>Myliobatis californica</i> |
| 185 | Bay Pipefish | <i>Syngnathus leptorhynchus</i> |
| 252 | Bearded Eelpout | <i>Lycinema barbatum</i> |
| 453 | Beardless spearnose Poacher | <i>Ganoideus vulsus</i> |
| 1238 | Bering Skate | <i>Bathyraja interrupta</i> |
| 550 | Big Skate | <i>Raja binoculata</i> |
| 454 | Bigeye starnose Poacher | <i>Asterotheca pentacantha</i> |
| 575 | Bigeye Thresher Shark | <i>Alopias superciliosus</i> |
| 711 | Bigeye Tuna | <i>Thunnus obesus</i> |
| 254 | Bigfin Eelpout | <i>Lycodes cortezianus</i> |
| 119 | Bigmouth Sole | <i>Hippoglossina stomata</i> |
| 10646 | Bigscale Unid | <i>Melamphaidae</i> |
| 355 | Black and Yellow Rockfish | <i>Sebastes chrysomelas</i> |
| 725 | Black Croaker | <i>Cheilotrema saturnum</i> |
| 255 | Black Eelpout | <i>Lycodes diapterus</i> |
| 850 | Black Hagfish | <i>Eptatretus deani</i> |
| 306 | Black Rockfish | <i>Sebastes melanops</i> |
| 551 | Black Skate | <i>Bathyraja trachura</i> |
| 630 | Black Surfperch | <i>Embiotoca jacksoni</i> |
| 256 | Blackbelly Eelpout | <i>Lycodopsis pacifica</i> |
| 683 | Blackchin Unid | <i>Neoscopelidae</i> |
| 684 | Blackdragon Unid | <i>Idiacanthidae</i> |
| 455 | Blackedge Poacher | <i>Xeneretmus latifrons</i> |

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| 456 | Blackfin starnose Poacher | <i>Bathyagonus nigripinnis</i> |
| 319 | Blackgill Rockfish | <i>Sebastes melanostomus</i> |
| 257 | Blackmouth Eelpout | <i>Lycodapus fierasfer</i> |
| 685 | Blacksmith | <i>Chromis punctipinnis</i> |
| 856 | Blob Sculpin | <i>Psychrolutes phrictus</i> |
| 316 | Blue Rockfish | <i>Sebastes mystinus</i> |
| 69 | Blue Shark | <i>Prionace glauca</i> |
| 1241 | Bluebarred Prickleback | <i>Plectobranthus evides</i> |
| 712 | Bluefin Tuna | <i>Thunnus thynnus</i> |
| 457 | Bluespotted Poacher | <i>Xeneretmus triacanthus</i> |
| 302 | Bocaccio Rockfish | <i>Sebastes paucispinus</i> |
| 1219 | Bonito (Shortfin Mako) Shark | <i>Isurus oxyrinchus</i> |
| 687 | Bristlemouth Unid | <i>Gonostomatidae</i> |
| 356 | Bronzespotted Rockfish | <i>Sebastes gilli</i> |
| 68 | Brown Cat Shark | <i>Apristurus brunneus</i> |
| 408 | Brown Irish Lord Sculpin | <i>Hemilepidotus spinosus</i> |
| 332 | Brown Rockfish | <i>Sebastes auriculatus</i> |
| 576 | Brown Smoothhound Shark | <i>Mustelus henlei</i> |
| 409 | Buffalo Sculpin | <i>Enophrys bison</i> |
| 410 | Bull Sculpin | <i>Enophrys taurina</i> |
| 198 | Bullet Mackerel | <i>Auxis rochei</i> |
| 109 | Butter Sole | <i>Pleuronectes isolepis</i> |
| 1234 | Butterfly Ray | <i>Gymnura marmorata</i> |
| 689 | Cabezon | <i>Scorpaenichthys marmoratus</i> |
| 357 | Calico Rockfish | <i>Sebastes dalli</i> |
| 631 | Calico Surfperch | <i>Amphistichus koelzi</i> |
| 682 | California Barracuda | <i>Sphyræna argentea</i> |
| 692 | California Corbina | <i>Menticirrhus undulatus</i> |
| 1225 | California Grenadier | <i>Nezumia stelgidolepis</i> |
| 124 | California Halibut | <i>Paralichthys californicus</i> |
| 151 | California Lizardfish | <i>Synodus lucioceps</i> |
| 1212 | California Moray | <i>Gymnothorax mordax</i> |
| 423 | California Scorpionfish | <i>Scorpaena guttata</i> |
| 794 | California Sheephead | <i>Semicossyphus pulcher</i> |
| 552 | California Skate | <i>Raja inornata</i> |
| 160 | California Slickhead | <i>Alepocephalus tenebrosus</i> |
| 113 | California Tonguefish | <i>Symphurus atricauda</i> |
| 314 | Canary Rockfish | <i>Sebastes pinniger</i> |
| 604 | Capelin | <i>Mallotus villosus</i> |
| 870 | Cat Unid Shark | <i>Scyliorhinidae</i> |
| 358 | Chameleon Rockfish | <i>Sebastes phillipsi</i> |

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| 325 | Chilipepper Rockfish | <i>Sebastes goodei</i> |
| 359 | China Rockfish | <i>Sebastes nebulosus</i> |
| 118 | C-O (C-O Turbot) Sole | <i>Pleuronichthys coenosus</i> |
| 1247 | Cod Unid | <i>Gadidae</i> |
| 1210 | Combfish Unid | <i>Zaniolepididae</i> |
| 577 | Common Thresher Shark | <i>Alopias vulpinus</i> |
| 327 | Copper Rockfish | <i>Sebastes caurinus</i> |
| 360 | Cowcod Rockfish | <i>Sebastes levis</i> |
| 1221 | Crested Bigscale | <i>Poromitra crassiceps</i> |
| 727 | Croaker Unid | <i>Sciaenidae</i> |
| 117 | Curlfin Turbot | <i>Pleuronichthys decurrens</i> |
| 262 | Cusk-eel Unid | <i>Ophidiidae</i> |
| 227 | Cutthroat Trout | <i>Oncorhynchus clarkii</i> |
| 679 | Daggertooth | <i>Anotopterus pharao</i> |
| 311 | Darkblotched Rockfish | <i>Sebastes crameri</i> |
| 899 | Decomposed Fish | <i>Decomposed fish</i> |
| 609 | Deepbody Anchovy | <i>Anchoa compressa</i> |
| 553 | Deepsea Skate | <i>Bathyraja abyssicola</i> |
| 693 | Deepsea smelt Unid | <i>Bathylagidae</i> |
| 110 | Deepsea Sole | <i>Embassichthys bathybius</i> |
| 559 | Diamond Stingray | <i>Dasyatis dipterura</i> |
| 121 | Diamond Turbot | <i>Hypsopsetta guttulata</i> |
| 221 | Dog (Chum) Salmon | <i>Oncorhynchus keta</i> |
| 578 | Dogfish Shark Unid | <i>Squalus sp.</i> |
| 228 | Dolly Varden | <i>Salvelinus malma</i> |
| 694 | Dolphinfish | <i>Coryphaena hippurus</i> |
| 107 | Dover Sole | <i>Microstomus pacificus</i> |
| 1101 | Dragonfish, Unid | <i>Melanostomiidae</i> |
| 1216 | Dusky Sculpin | <i>Icelinus burchami</i> |
| 783 | Dwarf Wrymouth | <i>Cryptacanthodes aleutensis</i> |
| 361 | Dwarf-red Rockfish | <i>Sebastes rufianus</i> |
| 250 | Eelpout Unid | <i>Zoarcidae gnn.</i> |
| 108 | English Sole | <i>Pleuronectes vetulus</i> |
| 601 | Eulachon | <i>Thaleichthys pacificus</i> |
| 855 | Fangtooth | <i>Anoplogaster cornuta</i> |
| 120 | Fantail Sole | <i>Xystreurus liolepis</i> |
| 1229 | Filamented Grenadier | <i>Coryphaenoides filifer</i> |
| 579 | Filetail Cat Shark | <i>Parmaturus xaniurus</i> |
| 854 | Finescale Triggerfish | <i>Balistes polylepis</i> |
| 1239 | Fine-spined Skate | <i>Bathyraja microtrachys</i> |
| 362 | Flag Rockfish | <i>Sebastes rubrivinctus</i> |

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| 258 | Flatcheek Eelpout | <i>Embryx crotalina</i> |
| 100 | Flatfish Unid | <i>Pleuronectiformes</i> |
| 1236 | Flathead Skate | <i>Bathyraja rosispinis</i> |
| 103 | Flathead Sole | <i>Hippoglossoides elassodon</i> |
| 858 | Flying Fish Unid | <i>Exocoetidae</i> |
| 363 | Freckled Rockfish | <i>Sebastes lentiginosus</i> |
| 197 | Frigate Mackerel | <i>Auxis thazard</i> |
| 411 | Fringed Sculpin | <i>Icelinus fimbriatus</i> |
| 853 | Garibaldi | <i>Hypsypops rubicundus</i> |
| 1227 | Ghostly Grenadier | <i>Coryphaenoides leptolepis</i> |
| 82 | Giant Grenadier | <i>Albatrossia pectoralis</i> |
| 740 | Giant Kelpfish | <i>Heterostichus rostratus</i> |
| 476 | Giant Sea Bass | <i>Stereolepis gigas</i> |
| 760 | Giant Wrymouth | <i>Cryptacanthodes giganteus</i> |
| 364 | Gopher Rockfish | <i>Sebastes carnatus</i> |
| 1202 | Gorgonian Coral unid. | <i>Gorgonian</i> |
| 365 | Grass Rockfish | <i>Sebastes rastrelliger</i> |
| 580 | Gray Smoothhound Shark | <i>Mustelus californicus</i> |
| 231 | Green Sturgeon | <i>Acipenser medirostris</i> |
| 366 | Greenblotched Rockfish | <i>Sebastes rosenblatti</i> |
| 102 | Greenland Turbot | <i>Reinhardtius hippoglossoides</i> |
| 390 | Greenling Unid | <i>Hexagrammidae</i> |
| 339 | Greenspotted Rockfish | <i>Sebastes chlorostictus</i> |
| 313 | Greenstriped Rockfish | <i>Sebastes elongates</i> |
| 80 | Grenadier Unid | <i>Macrouridae</i> |
| 412 | Grunt Sculpin | <i>Rhamphocottus richardsoni</i> |
| 430 | Gunnel Unid | <i>Pholidae</i> |
| 695 | Hatchetfish Unid | <i>Sternoptychidae</i> |
| 77 | Hagfish Unid | <i>Myxinidae</i> |
| 367 | Halfbanded Rockfish | <i>Sebastes semicinctus</i> |
| 697 | Halfmoon | <i>Medialuna californiensis</i> |
| 323 | Harlequin Rockfish | <i>Sebastes variegatus</i> |
| 368 | Honeycomb Rockfish | <i>Sebastes umbrosus</i> |
| 581 | Horn Shark | <i>Heterodontus francisci</i> |
| 122 | Hornyhead Turbot | <i>Pleuronichthys verticalis</i> |
| 155 | Hundred fathom Mora | <i>Physiculus rastrelliger</i> |
| 116 | Hybrid Sole | <i>Inopsetta ischyra</i> |
| 175 | Jack Smelt | <i>Atherinops californiensis</i> |
| 207 | Jackmackerel | <i>Trachurus symmetricus</i> |
| 477 | Kelp Bass | <i>Paralabrax clathratus</i> |
| 392 | Kelp Greenling | <i>Hexagrammos decagrammus</i> |

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| 369 | Kelp Rockfish | <i>Sebastes atrovirens</i> |
| 632 | Kelp Surfperch | <i>Brachyistius frenatus</i> |
| 742 | Kelpfish Unid | <i>Clinidae</i> |
| 222 | King (Chinook) Salmon | <i>Oncorhynchus tshawytscha</i> |
| 608 | King of the Salmon | <i>Trachipterus altivelis</i> |
| 699 | Lancetfish Unid | <i>Alepisauridae</i> |
| 700 | Laternfish Unid | <i>Myctophidae</i> |
| 867 | Lavender Sculpin | <i>Leiocottus hirundo</i> |
| 1251 | Leaf Like Eel | <i>Thalassenchelys cohen</i> |
| 582 | Leopard Shark | <i>Triakis semifasciata</i> |
| 150 | Lightfish Unid | <i>Photichthyidae</i> |
| 603 | Lingcod | <i>Ophiodon elongatus</i> |
| 10647 | Longfin Dragonfish | <i>Tactostoma macropus</i> |
| 1249 | Longfin Mako Shark | <i>Isurus paucus</i> |
| 125 | Longfin Sanddab | <i>Citharichthys xanthostigma</i> |
| 1253 | Longfin Smelt | <i>Spirinchus thaleichthys</i> |
| 852 | Longnose Cat Shark | <i>Apristurus kampae</i> |
| 785 | Longnose Lancetfish | <i>Alepisaurus ferox</i> |
| 554 | Longnose Skate | <i>Raja rhina</i> |
| 690 | Longspine Combfish | <i>Zaniolepis latipinnis</i> |
| 352 | Longspine Thornyhead | <i>Sebastobus altivelis</i> |
| 152 | Loosejaw Unid | <i>Malacosteidae</i> |
| 153 | Louvar | <i>Luvarus imperialis</i> |
| 525 | Lumpsucker Unid | <i>Cyclopteridae</i> |
| 792 | Lumptail Searobin | <i>Prionotus stephanophrys</i> |
| 196 | Mackerel Unid | <i>Scombridae</i> |
| 774 | Manefish | <i>Caristius macropus</i> |
| 1231 | Manta Ray | <i>Mata birostris</i> |
| 154 | Medusafish | <i>Icichthys lockingtoni</i> |
| 370 | Mexican Rockfish | <i>Sebastes macdonaldi</i> |
| 869 | Midshipman (Toadfish) Unid | <i>Batrachoididae</i> |
| 259 | Midwater Eelpout | <i>Melanostigma pammelas</i> |
| 810 | Mola Mola (Sunfish) | <i>Mola mola</i> |
| 272 | Monkeyface Prickleback | <i>Cebidichthys violaceus</i> |
| 176 | Night Smelt | <i>Spirinchus starksi</i> |
| 610 | Northern Anchovy | <i>Engraulis mordax</i> |
| 303 | Northern Rockfish | <i>Sebastes polyspinis</i> |
| 241 | Northern Ronquil | <i>Ronquilis jordani</i> |
| 458 | Northern spearnose Poacher | <i>Agonopsis vulsa</i> |
| 798 | Ocean Whitefish | <i>Caulolatilus princeps</i> |
| 371 | Olive Rockfish | <i>Sebastes serranoides</i> |

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| 435 | Onespot Fringehead | <i>Neoclinus uninotatus</i> |
| 297 | Opah | <i>Lampris gattatus (regious)</i> |
| 157 | Opaleye | <i>Girella nigricans</i> |
| 777 | Other Id Fish | <i>Fish other id</i> |
| 295 | Oxeye Oreo | <i>Allocyttus folletti</i> |
| 583 | Pacific Angel Shark | <i>Squatina californica</i> |
| 681 | Pacific Argentine | <i>Argentina sialis</i> |
| 1250 | Pacific Black Dogfish | <i>Centroscyllium nigrum</i> |
| 686 | Pacific Bonito | <i>Sarda chiliensis</i> |
| 688 | Pacific Butterfish | <i>Peprilus simillimus</i> |
| 202 | Pacific Cod | <i>Gadus macrocephalus</i> |
| 584 | Pacific Dogfish Shark | <i>Squalus suckleyi</i> |
| 562 | Pacific Electric Ray | <i>Torpedo californica</i> |
| 214 | Pacific Flatnose | <i>Antimora microlepis</i> |
| 83 | Pacific Grenadier | <i>Coryphaenoides acrolepis</i> |
| 79 | Pacific Hagfish | <i>Eptatretus stouti</i> |
| 206 | Pacific Hake | <i>Merluccius productus</i> |
| 101 | Pacific Halibut | <i>Hippoglossus stenolepis</i> |
| 611 | Pacific Herring | <i>Clupea pallasii</i> |
| 75 | Pacific Lamprey | <i>Lampetra tridentata</i> |
| 199 | Pacific Mackerel | <i>Scomber japonicus</i> |
| 301 | Pacific Ocean Perch Rockfish | <i>Sebastes alutus</i> |
| 158 | Pacific Pomfret | <i>Brama japonica</i> |
| 137 | Pacific Sanddab | <i>Citharichthys sordidus</i> |
| 239 | Pacific Sandfish | <i>Trichodon trichodon</i> |
| 670 | Pacific Sandlance | <i>Ammodytes hexapterus</i> |
| 614 | Pacific Sardine | <i>Sardinops sagax</i> |
| 607 | Pacific Saury | <i>Cololabis saira</i> |
| 1218 | Pacific Scabbardfish | <i>Lepidopus xantusi</i> |
| 62 | Pacific Sleeper Shark | <i>Somniosus pacificus</i> |
| 530 | Pacific Spiny Lump sucker | <i>Eumicrotremus orbis</i> |
| 413 | Pacific Staghorn Sculpin | <i>Leptocottus armatus</i> |
| 209 | Pacific Tom Cod | <i>Microgadus proximus</i> |
| 797 | Pacific Viperfish | <i>Chauliodus macouni</i> |
| 394 | Painted Greenling | <i>Oxylebius pictus</i> |
| 260 | Pallid Eelpout | <i>Lycodapus mandibularis</i> |
| 762 | Paperbone Unid | <i>Notosudidae</i> |
| 862 | Pelagic Stingray | <i>Dasyatis violacea</i> |
| 585 | Pelagic Thresher Shark | <i>Alopias pelagicus</i> |
| 112 | Petrals Sole | <i>Eopsetta jordani</i> |
| 633 | Pile Surfperch | <i>Rhacochilus vacca</i> |

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| 225 | Pink (Humpback) Salmon | <i>Oncorhynchus gorbuscha</i> |
| 372 | Pink Rockfish | <i>Sebastes eos</i> |
| 634 | Pink Surfperch | <i>Zalembeus rosaceus</i> |
| 373 | Pinkrose Rockfish | <i>Sebastes simulator</i> |
| 664 | Plainfin Midshipman | <i>Porichthys notatus</i> |
| 450 | Poacher Unid | <i>Agonidae</i> |
| 84 | Popeye Grenadier | <i>Coryphaenoides cinereus</i> |
| 750 | Prickleback Unid | <i>Stichaeidae</i> |
| 459 | Pricklebreast Poacher | <i>Stellerina xyosterna</i> |
| 586 | Prickly Shark | <i>Echinorhinus cookei</i> |
| 205 | Prowfish | <i>Zaprora silenus</i> |
| 374 | Puget Sound Rockfish | <i>Sebastes emphaeus</i> |
| 1242 | Purple Brotula | <i>Oligopus diagrammus</i> |
| 460 | Pygmy Poacher | <i>Odontopyxis trispinosa</i> |
| 335 | Pygmy Rockfish | <i>Sebastes wilsoni</i> |
| 159 | Queenfish | <i>Seriphus politus</i> |
| 343 | Quillback Rockfish | <i>Sebastes maliger</i> |
| 280 | Ragfish | <i>Icosteus aenigmaticus</i> |
| 1252 | Rainbow Smelt | <i>Osmerus mordax</i> |
| 635 | Rainbow Surfperch | <i>Hypsurus caryi</i> |
| 563 | Ray Unid | <i>Myliobatoidea</i> |
| 224 | Red (Sockeye) Salmon | <i>Oncorhynchus nerka</i> |
| 1215 | Red Brotula | <i>Brosomphycis marginata</i> |
| 407 | Red Irish Lord Sculpin | <i>Hemilepidotus hemilepidotus</i> |
| 308 | Redbanded Rockfish | <i>Sebastes babcocki</i> |
| 324 | Redstripe Rockfish | <i>Sebastes proriger</i> |
| 636 | Redtail Surfperch | <i>Amphistichus rhodoterus</i> |
| 105 | Rex Sole | <i>Errex zachirus</i> |
| 564 | Ribbonfish Unid | <i>Trachipteridae</i> |
| 393 | Rock Greenling | <i>Hexagrammos lagocephalus</i> |
| 104 | Rock Sole | <i>Pleuronectes bilineatus</i> |
| 1213 | Rock Wrasse | <i>Halichoeres semicinctus</i> |
| 300 | Rockfish Unid | <i>Sebastes</i> |
| 461 | Rockhead Poacher | <i>Bothragonus swani</i> |
| 240 | Ronquil Unid | <i>Bathymasteridae</i> |
| 309 | Rosethorn Rockfish | <i>Sebastes helvomaculatus</i> |
| 312 | Rosy Rockfish | <i>Sebastes rosaceus</i> |
| 414 | Roughback Sculpin | <i>Chitonotus pugetensis</i> |
| 307 | Rougheye Rockfish | <i>Sebastes aleutianus</i> |
| 114 | Roughscale Sole | <i>Clidoderma asperrimum</i> |
| 1235 | Roughshoulder/Broad Skate | <i>Amblyraja badia</i> |

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|------|----------------------------------|-------------------------------------|
| 612 | Round Herring | <i>Etrumeus teres</i> |
| 560 | Round Stingray | <i>Urolophus halleri</i> |
| 200 | Roundfish Unid | <i>Roundfish unid.</i> |
| 637 | Rubberlip Surfperch | <i>Rhacochilus toxotes</i> |
| 203 | Sablefish | <i>Anoplopoma fimbria</i> |
| 1243 | Salmon Shark | <i>Lamna ditropis</i> |
| 220 | Salmon Unid | <i>Oncorhynchus</i> |
| 115 | Sand Sole | <i>Psettichthys melanostictus</i> |
| 136 | Sanddab Unid | <i>Citharichthys</i> |
| 555 | Sandpaper Skate | <i>Bathyraja kincaidii</i> |
| 436 | Sarcastic Fringehead | <i>Neoclinus blanchardi</i> |
| 1217 | Sargo | <i>Anisotremus davidsonii</i> |
| 790 | Scaless Dragonfish Unid | <i>Melanostomiidae</i> |
| 791 | Scaly Dragonfish Unid | <i>Stomiidae</i> |
| 400 | Sculpin Unid | <i>Cottidae</i> |
| 375 | Semaphore Rockfish | <i>Sebastes melanosema</i> |
| 793 | Senorita Seniorita | <i>Oxyjulis californica</i> |
| 1220 | Sevengill Shark | <i>Notorynchus cepedianus</i> |
| 65 | Shark Unid | <i>Squaliformes</i> |
| 304 | Sharpchin Rockfish | <i>Sebastes zacentrus</i> |
| 415 | Sharpnose Sculpin | <i>Clinocottus acuticeps</i> |
| 638 | Shiner Surfperch | <i>Cymatogaster aggregata</i> |
| 318 | Shortbelly Rockfish | <i>Sebastes jordani</i> |
| 326 | Shortraker Rockfish | <i>Sebastes borealis</i> |
| 354 | Shortraker/Rougheye Rockfish | <i>Sebastes Shortraker/Rougheye</i> |
| 691 | Shortspine Combfish | <i>Zaniolepis frenata</i> |
| 350 | Shortspine Thornyhead | <i>Sebastobus alascanus</i> |
| 349 | Shortspine/ Longspine Thornyhead | <i>Sebastobus</i> |
| 1222 | Shoulderspot Grenadier | <i>Coelorinchus scaphopsis</i> |
| 181 | Shovelnose Guitarfish | <i>Rhinobatos productus</i> |
| 223 | Silver (Coho) Salmon | <i>Oncorhynchus kisutch</i> |
| 639 | Silver Surfperch | <i>Hyperprosopon ellipticum</i> |
| 310 | Silvergray Rockfish | <i>Sebastes brevispinus</i> |
| 416 | Silverspotted Sculpin | <i>Blepsias cirrhosus</i> |
| 78 | Sixgill Shark | <i>Hexanchus griseus</i> |
| 90 | Skate Unid | <i>Rajidae</i> |
| 713 | Skipjack Tuna | <i>Euthynnus lineatus</i> |
| 860 | Slender Codling | <i>Halargyreus johnsonii</i> |
| 111 | Slender Sole | <i>Lyopsetta exilis</i> |
| 162 | Slickhead Unid | <i>Alepocephalidae</i> |
| 417 | Slim Sculpin | <i>Radulinus asprellus</i> |

Appendix A: Fish Species List and Codes

| Code | Common Name | Scientific Name |
|------|-----------------------------|-------------------------------------|
| 270 | Smalleye Squaretail | <i>Tetragonurus cuvieri</i> |
| 602 | Smelt Unid | <i>Osmeridae</i> |
| 1224 | Smooth Grenadier | <i>Nezumia liolepis</i> |
| 857 | Smooth Stargazer | <i>Kathetostoma averruncus</i> |
| 462 | Smootheye Poacher | <i>Xeneretmus leiops</i> |
| 1246 | Smoothhound Shark Unid | <i>Mustelus Sp.</i> |
| 1233 | Smoothtail Mobula | <i>Mobula lucasana</i> |
| 795 | Snaggletooth Unid | <i>Astronesthidae</i> |
| 500 | Snailfish Unid | <i>Liparis</i> |
| 868 | Snakehead Eelpout | <i>Embryx crotalinus</i> |
| 1214 | Snipe Unid Eel | <i>Nemichthyidae</i> |
| 186 | Snubnose Pipefish | <i>Cosmocampus arctus</i> |
| 263 | Soft Eelpout | <i>Bothrocara molle</i> |
| 1223 | Softhead Grenadier | <i>Malacocephalus laevis</i> |
| 64 | Soufin Shark | <i>Galeorhinus galeus</i> |
| 463 | Southern Spearnose Poacher | <i>Agonopsis sterletus</i> |
| 376 | Speckled Rockfish | <i>Sebastes ovalis</i> |
| 126 | Speckled Sanddab | <i>Citharichthys stigmaeus</i> |
| 665 | Specklefin Midshipman | <i>Porichthys myriaster</i> |
| 1232 | Spinetail Mobula | <i>Mobula japonica</i> |
| 66 | Spiny Dogfish Shark | <i>Squalus acanthias</i> |
| 464 | Spinycheek Starnose Poacher | <i>Asterotheca infraspinata</i> |
| 418 | Spinyhead Sculpin | <i>Dasycottus setiger</i> |
| 315 | Splitnose Rockfish | <i>Sebastes diploproa</i> |
| 796 | Spookfish Unid | <i>Opisthoproctidae</i> |
| 726 | Spotfin Croaker | <i>Roncador stearnsi</i> |
| 419 | Spotfin Sculpin | <i>Icelinus tenuis</i> |
| 640 | Spotfin Surfperch | <i>Hyperprosopon anale</i> |
| 261 | Spotted Cusk-eel | <i>Chilara taylori</i> |
| 99 | Spotted Ratfish | <i>Hydrolagus colliei</i> |
| 1245 | Spotted Rockfish Unid | <i>Sebastomus</i> |
| 478 | Spotted Sand Bass | <i>Paralabrax maculatofasciatus</i> |
| 123 | Spotted Turbot | <i>Pleuronichthys ritteri</i> |
| 377 | Squarespot Rockfish | <i>Sebastes hopkinsi</i> |
| 142 | Starry Flounder | <i>Platichthys stellatus</i> |
| 378 | Starry Rockfish | <i>Sebastes constellatus</i> |
| 556 | Starry Skate | <i>Raja stellulata</i> |
| 226 | Steelhead (Rainbow Trout) | <i>Oncorhynchus mykiss</i> |
| 479 | Striped Bass | <i>Morone saxatilis</i> |
| 741 | Striped Kelpfish | <i>Gibbonsia metzi</i> |
| 156 | Striped Mullet | <i>Mugil cephalus</i> |

Appendix A: Fish Species List and Codes

| Code | Common Name | Scientific Name |
|------|-------------------------|-----------------------------------|
| 641 | Striped Surfperch | <i>Embiotoca lateralis</i> |
| 242 | Stripefin Ronquil | <i>Rathbunella hypoplecta</i> |
| 328 | Stripetail Rockfish | <i>Sebastes saxicola</i> |
| 452 | Sturgeon Poacher | <i>Podothecus acipenserinus</i> |
| 230 | Sturgeon Unid | <i>Acipenser</i> |
| 177 | Surf Smelt | <i>Hypomesus pretiosus</i> |
| 642 | Surfperch Unid | <i>Embiotocidae</i> |
| 587 | Swell Shark | <i>Cephaloscyllium ventriosum</i> |
| 379 | Swordspine Rockfish | <i>Sebastes ensifer</i> |
| 420 | Thornback Sculpin | <i>Paricelinus hopliticus</i> |
| 557 | Thornback Skate | <i>Platyrhiniodis triseriata</i> |
| 421 | Threadfin Sculpin | <i>Icelinus filamentosus</i> |
| 161 | Threadfin Slickhead | <i>Talismania bifurcata</i> |
| 329 | Tiger Rockfish | <i>Sebastes nigrocinctus</i> |
| 178 | Top Smelt | <i>Atherinops affinis</i> |
| 380 | Treefish Rockfish | <i>Sebastes serripes</i> |
| 465 | Tubenose Poacher | <i>Pallasina barbata</i> |
| 807 | Tubeshoulder Unid | <i>Searsiidae</i> |
| 253 | Twoline Eelpout | <i>Bothrocara brunneum</i> |
| 331 | Vermilion Rockfish | <i>Sebastes miniatus</i> |
| 805 | Viperfish Unid | <i>Chauliodontidae</i> |
| 201 | Walleye Pollock | <i>Theragra chalcogramma</i> |
| 643 | Walleye Surfperch | <i>Hyperprosopon argenteum</i> |
| 466 | Warty Poacher | <i>Occella verrucosa</i> |
| 251 | Wattled Eelpout | <i>Lycodes palearis</i> |
| 1248 | Whiptail Gulper Unid | <i>Saccopharyngidae</i> |
| 728 | White Croaker | <i>Genyonemus lineatus</i> |
| 481 | White Sea Bass | <i>Atractoscion nobilis</i> |
| 558 | White Skate | <i>Bathyraja spinosissima</i> |
| 232 | White Sturgeon | <i>Acipenser transmontanus</i> |
| 644 | White Surfperch | <i>Phanerodon furcatus</i> |
| 613 | Whitebait Smelt | <i>Allosmesus elongatus</i> |
| 273 | Whitebarred Prickleback | <i>Poroclinus rothrocki</i> |
| 391 | Whitespotted Greenling | <i>Hexagrammos stelleri</i> |
| 305 | Widow Rockfish | <i>Sebastes entomelas</i> |
| 780 | Wolf-eel | <i>Anarrhichthys ocellatus</i> |
| 799 | Wrymouth Unid | <i>Cryptacanthodidae</i> |
| 1228 | Yaquina Grenadier | <i>Coryphaenoides yaquinae</i> |
| 422 | Yellowchin Sculpin | <i>Icelinus quadriseriatus</i> |
| 322 | Yelloweye Rockfish | <i>Sebastes ruberrimus</i> |
| 729 | Yellowfin Croaker | <i>Umbrina roncador</i> |

Appendix A: Fish Species List and Codes

| Code | Common Name | Scientific Name |
|------|----------------------|--------------------------|
| 714 | Yellowfin Tuna | <i>Thunnus albacares</i> |
| 320 | Yellowmouth Rockfish | <i>Sebastes reedi</i> |
| 698 | Yellowtail Jack | <i>Seriola dorsalis</i> |
| 321 | Yellowtail Rockfish | <i>Sebastes flavidus</i> |

Appendix B: Invertebrate Species List and Codes

| Code | Common Name | Scientific Name |
|------|----------------------------|------------------------------------|
| 1206 | Amiphpod Unid | <i>Amphipoda</i> |
| 55 | Anemone Unid | <i>Actiniaria</i> |
| 19 | Angulatus Tanner Crab | <i>Chionoecetes angulatus</i> |
| 1207 | Aplacophora Unid | <i>Aplacophora</i> |
| 888 | Arched Swimming Crab | <i>Callinectes arcuatus</i> |
| 5 | Armored Box Crab | <i>Mursia gaudichaudi</i> |
| 4 | Bairdi Tanner Crab | <i>Chionoecetes bairdi</i> |
| 1260 | Bamboo Coral | <i>Calaxonia</i> |
| 48 | Barnacles Unid | <i>Cirripedia</i> |
| 27 | Bivalves Unid | <i>Bivalvia</i> |
| 1201 | Black Coral | <i>Antipatharia</i> |
| 866 | Brachiopod Unid | <i>Brachiopoda</i> |
| 22 | Brittle/Basket Star Unid | <i>Ophiuroidea</i> |
| 6 | Brown Box Crab | <i>Lopholithodes foraminatus</i> |
| 7 | California King Crab | <i>Paralithodes californiensis</i> |
| 10 | Cancer Unid Crab | <i>Cancriidae</i> |
| 28 | Chiton Unid | <i>Neoloricata</i> |
| 32 | Corals Unid | <i>Anthozoa</i> |
| 1 | Crab Unid | <i>Brachyura/Anomura</i> |
| 53 | Crinoids Unid | <i>Crinoidea</i> |
| 892 | Crustacean Unid | <i>Crustacea</i> |
| 39 | Decorator/Spider Unid Crab | <i>Majidae</i> |
| 871 | Deep-sea Rock Crab | <i>Glyptolithodes cristatipes</i> |
| 872 | Deep-sea Spider Crab | <i>Paralomis manningi</i> |
| 12 | Dungeness Crab | <i>Cancer magister</i> |
| 38 | Flat-legged Spider Crab | <i>Paralomis verrilli</i> |
| 873 | Furrowed Rock Crab | <i>Cancer branneri</i> |
| 1202 | Gorgonian Coral unid. | <i>Gorgonian</i> |
| 44 | Graceful Crab | <i>Cancer gracilis</i> |
| 874 | Green Crab | <i>Carcinus maenus</i> |
| 17 | Hair Crab | <i>Paralomis multispina</i> |
| 875 | Heart Crab | <i>Phyllolithodes papillosus</i> |
| 15 | Hermit Unid Crab | <i>Paguridae</i> |
| 1258 | Horny Gorgonian Coral | <i>Holaxonia</i> |
| 1205 | Hydrocoral | <i>Hydroida</i> |
| 13 | Invertebrate Unid | <i>Animalia</i> |
| 1240 | Irregular Echinoids | <i>Echinoidea</i> |
| 33 | Isopod Unid | <i>Isopoda</i> |

Appendix B: Invertebrate Species List and Codes

| Code | Common Name | Scientific Name |
|------|------------------------|------------------------------------|
| 35 | Jellyfish Unid | <i>Scyphozoa</i> |
| 876 | Kelp Unid Crab | <i>Pugettia ssp</i> |
| 2 | King Unid Crab | <i>Lithode</i> |
| 877 | Long-armed Spider Crab | <i>Macroregonia macrochiera</i> |
| 840 | Lyre Unid Crab | <i>Hyas spp.</i> |
| 878 | Masking Crab | <i>Loxorhynchus crispatus</i> |
| 34 | Mollusk Unid | <i>Mollusca</i> |
| 25 | Nudibranch Unid | <i>Nudibranchia</i> |
| 60 | Octopus Unid | <i>Octopoda</i> |
| 879 | Pacific Rock Crab | <i>Cancer antennarius</i> |
| 1208 | Peanut Worm Unid | <i>Sipuncula</i> |
| 880 | Porcelain Unid Crab | <i>Porcellanidae</i> |
| 881 | Puget Sound King Crab | <i>Lopholithodes mandtii</i> |
| 882 | Purple Globe Crab | <i>Randallia ornata</i> |
| 9 | Red Rock Crab | <i>Cancer productus</i> |
| 883 | Rhinoceros Crab | <i>Rhinolithodes wosnessenskii</i> |
| 16 | Scarlet King Crab | <i>Lithodes couesi</i> |
| 41 | Sea Cucumber Unid | <i>Holothuroidea</i> |
| 1259 | Sea Fans | <i>Calaxonia</i> |
| 1256 | Sea Pen | <i>Pennatulacea</i> |
| 1255 | Sea Pansies | <i>Pennatulacea</i> |
| 30 | Sea Snail Unid | <i>Gastropoda</i> |
| 889 | Sea Spider Unid | <i>Pycnogonida</i> |
| 47 | Sea Squirts Unid | <i>Tunicata Tunicate</i> |
| 20 | Sea Star Unid | <i>Asteroidea</i> |
| 1254 | Sea Whip | <i>Pennatulacea</i> |
| 884 | Sheep Crab | <i>Loxorhynchus grandis</i> |
| 70 | Shrimp Unid | <i>Caridea</i> |
| 1203 | Soft Coral | <i>Alcyonacea</i> |
| 885 | Spiky King Crab | <i>Neolithodes diomedeeae</i> |
| 8 | Spiny King Crab | <i>Paralithodes rathbuni</i> |
| 1230 | Spiny Lithode Crab | <i>Acantholithodes hispidus</i> |
| 891 | Spiny Lobster Unid | <i>Palinura</i> |
| 26 | Sponge Unid | <i>Porifera</i> |
| 1257 | Spongy Gorgonian Coral | <i>Scleraxonia</i> |
| 890 | Squat Lobster Unid | <i>Galatheidae</i> |
| 50 | Squid Unid | <i>Teuthoidea</i> |
| 1204 | Stony Coral | <i>Scleractinia</i> |
| 3 | Tanner Unid Crab | <i>Chionoecetes spp.</i> |
| 18 | Tanneri Tanner Crab | <i>Chionoecetes tanneri</i> |
| 886 | Umbrella Unid Crab | <i>Cryptolithodes ssp</i> |

Appendix B: Invertebrate Species List and Codes

| Code | Common Name | Scientific Name |
|------|----------------------|--------------------------|
| 54 | Urchin Unid | <i>Echinoidea</i> |
| 49 | Urochordate Unid | <i>Urochordata</i> |
| 1209 | Worm Unid | <i>Annelida</i> |
| 887 | Xantus Swimming Crab | <i>Portunus xantusii</i> |
| 11 | Yellow Rock Crab | <i>Cancer anthonyi</i> |

Appendix C: Marine Mammal and Sea Turtle Species List and Codes

See Sea Turtles at end of this appendix.

| Code | Common Name | Scientific Name |
|------|------------------------------|-----------------------------------|
| 1001 | Bairds Beaked Whale | <i>Berardius bairdii</i> |
| 1008 | Beaked Whale Unid | <i>Ziphiidae</i> |
| 1002 | Blainevilles Beaked Whale | <i>Mesoplodon densirostris</i> |
| 1031 | Blue Whale | <i>Balaenoptera musculus</i> |
| 1009 | Bottlenose Dolphin | <i>Tursiops truncatus</i> |
| 1024 | California Sea Lion | <i>Zalophus californianus</i> |
| 1044 | Common Unid Dolphin | <i>Delphinus</i> |
| 1003 | Cuviers Beaked Whale | <i>Ziphius cavirostris</i> |
| 1021 | Dalls Porpoise | <i>Phocoenoides dalli</i> |
| 1016 | Dolphin Unid | <i>Delphinidae</i> |
| 1032 | Dwarf Sperm Whale | <i>Kogia breviceps</i> |
| 1033 | Fin Whale | <i>Balaenoptera physalus</i> |
| 1019 | Fur Seal Unid | <i>Arctocephalinae</i> |
| 1004 | Gingko-toothed Beaked Whale | <i>Mesoplodon ginkgodens</i> |
| 1034 | Gray Whale | <i>Eschrichtius robustus</i> |
| 1017 | Guadalupe Fur Seal | <i>Arctocephalus townsendi</i> |
| 1022 | Harbor Porpoise | <i>Phocoena phocoena</i> |
| 1028 | Harbor Seal | <i>Phoca vitulina</i> |
| 1005 | Hectors Beaked Whale | <i>Mesoplodon hectori</i> |
| 1006 | Hubbs Beaked Whale | <i>Mesoplodon carlhubbsi</i> |
| 1035 | Humpback Whale | <i>Megaptera novaeangliae</i> |
| 1036 | Killer Whale | <i>Orcinus orca</i> |
| 1010 | Long-beaked Common Dolphin | <i>Delphinus capensis</i> |
| 1000 | Marine mammal Unid | <i>Marine mammal, Unid</i> |
| 1037 | Minke Whale | <i>Balaenoptera acutorostrata</i> |
| 1029 | Northern Elephant Seal | <i>Mirounga angustirostris</i> |
| 1018 | Northern Fur Seal | <i>Callorhinus ursinus</i> |
| 1038 | Northern Right Whale | <i>Eubalaena glacialis</i> |
| 1011 | Northern Right Whale Dolphin | <i>Lissodelphis borealis</i> |
| 1012 | Pacific White-sided Dolphin | <i>Lagenorhynchus obliquidens</i> |
| 1020 | Pinniped Unid | <i>Caniformia</i> |
| 1023 | Porpoise Unid | <i>Phocoenidae</i> |
| 1039 | Pygmy Sperm Whale | <i>Kogia breviceps</i> |
| 1013 | Rissos Dolphin | <i>Grampus griseus</i> |
| 1026 | Sea Lion Unid | <i>Otariinae</i> |

Appendix C: Marine Mammal and Sea Turtle Species List and Codes

| Code | Common Name | Scientific Name |
|-------------|-----------------------------|-----------------------------------|
| 1027 | Sea Otter | <i>Enhydra lutris</i> |
| 1030 | Seal Unid | <i>Phocidae</i> |
| 1040 | Sei Whale | <i>Balaenoptera borealis</i> |
| 1014 | Short-beaked Common Dolphin | <i>Delphinus delphis</i> |
| 1041 | Short-finned Pilot Whale | <i>Globicephala macrorhynchus</i> |
| 1042 | Sperm Whale | <i>Physeter catodon</i> |
| 1007 | Stejnegers Beaked Whale | <i>Mesoplodon stejnegeri</i> |
| 1025 | Stellar Sea Lion | <i>Eumetopias jubatus</i> |
| 1015 | Striped Dolphin | <i>Stenella coeruleoalba</i> |
| 1043 | Whale Unid | <i>Whale unid.</i> |

Sea Turtle Species Codes

| Code | Common Name | Scientific Name |
|-------------|---------------------|---------------------------------|
| 1071 | Green/Black Turtle | <i>Chelonia mydas/agassizii</i> |
| 1072 | Hawksbill Turtle | <i>Eretmochelys imbricata</i> |
| 1073 | Leatherback Turtle | <i>Dermochelys coriacea</i> |
| 1074 | Loggerhead Turtle | <i>Caretta caretta</i> |
| 1075 | Olive Ridley Turtle | <i>Lepidochelys olivacea</i> |
| 1070 | Turtle Unid | <i>Chelonidae</i> |

Appendix D: Seabird Species List and Codes

| Code | Common Name | Scientific Name |
|------|--------------------------|-----------------------------------|
| 949 | Albatross Unid | <i>Diomedeidae</i> |
| 983 | Alcid Unid | <i>Alcidae</i> |
| 912 | American Coot | <i>Fulica americana</i> |
| 993 | Ancient Murrelet | <i>Synthliboramphus antiquus</i> |
| 900 | Bird Unid | <i>Aves</i> |
| 959 | Black Storm-Petrel | <i>Oceanodroma melania</i> |
| 952 | Black-footed Albatross | <i>Diomedea nigripes</i> |
| 976 | Black-legged Kittiwake | <i>Rissa tridactyla</i> |
| 953 | Black-vented Shearwater | <i>Puffinus opisthomelas</i> |
| 962 | Brandts Cormorant | <i>Phalacrocorax penicillatus</i> |
| 998 | Brown Booby | <i>Sula leucogaster</i> |
| 910 | Brown Pelican | <i>Pelecanus occidentalis</i> |
| 975 | California Gull | <i>Larus californicus</i> |
| 911 | Caspian Tern | <i>Sterna caspia</i> |
| 996 | Cassins Auklet | <i>Ptychoramphus aleuticus</i> |
| 989 | Common (Guillemot) Murre | <i>Uria aalge</i> |
| 941 | Common Loon | <i>Gavia immer</i> |
| 961 | Cormorant Unid | <i>Phalacrocoracidae</i> |
| 963 | Double-crested Cormorant | <i>Phalacrocorax auritus</i> |
| 960 | Fork-tailed Storm-Petrel | <i>Oceanodroma furcata</i> |
| 979 | Glaucous-winged Gull | <i>Larus glaucescens</i> |
| 946 | Grebe Unid | <i>Podicipedidae</i> |
| 948 | Guillemot Unid | <i>Cephus</i> |
| 974 | Gull Unid | <i>Larinae</i> |
| 978 | Heermanns Gull | <i>Larus heermanni</i> |
| 977 | Herring Gull | <i>Larus argentatus</i> |
| 945 | Horned Grebe | <i>Podiceps auritus</i> |
| 951 | Laysan Albatross | <i>Diomedea immutabilis</i> |
| 965 | Leachs Storm-Petrel | <i>Oceanodroma leucorhoa</i> |
| 966 | Least Storm-Petrel | <i>Oceanodroma microsoma</i> |
| 944 | Loon Unid | <i>Gaviidae</i> |
| 994 | Marbled Murrelet | <i>Brachyramphus marmoratus</i> |
| 980 | Mew Gull | <i>Larus canus</i> |
| 987 | Murre Unid | <i>Uria</i> |
| 954 | Northern Fulmar | <i>Fulmarus glacialis</i> |
| 940 | Pacific Loon | <i>Gavia pacifica</i> |
| 964 | Pelagic Cormorant | <i>Phalacrocorax pelagicus</i> |
| 947 | Pigeon Guillemot | <i>Cephus columba</i> |

Appendix D: Seabird Species List and Codes

| Code | Common Name | Scientific Name |
|------|-------------------------|----------------------------------|
| 955 | Pink-footed Shearwater | <i>Puffinus creatopus</i> |
| 942 | Red-necked Grebe | <i>Podiceps grisegena</i> |
| 939 | Red-throated Loon | <i>Gavia stellata</i> |
| 995 | Rhinoceros Auklet | <i>Cerorhinca monocerata</i> |
| 981 | Ring-billed Gull | <i>Larus delawarensis</i> |
| 997 | Shearwater Unid | <i>Puffinus</i> |
| 950 | Short-tailed Albatross | <i>Diomedea albatrus</i> |
| 957 | Short-tailed Shearwater | <i>Puffinus tenuirostris</i> |
| 956 | Sooty Shearwater | <i>Puffinus griseus</i> |
| 958 | Storm-Petrel Unid | <i>Hydrobatidae</i> |
| 992 | Tufted Puffin | <i>Fratercula cirrhata</i> |
| 943 | Western Grebe | <i>Aechmophorus occidentalis</i> |
| 982 | Western Gull | <i>Larus occidentalis</i> |

Appendix E: Miscellaneous List and Codes

Appendix E: Miscellaneous List and Codes

| Code | Common Name | Scientific Name |
|-------------|----------------------------|--------------------------------------|
| 91 | Egg case Unid | <i>Egg case unid</i> |
| 667 | Garbage/ Trash | <i>Cans, bottles, old line, etc.</i> |
| 666 | Kelp, Rocks, Wood, etc Mud | <i>Mud</i> |

Appendix F: CS Catch Categories List and Target Strategies

Below are three tables of catch category codes; 1) Species Specific CC, 2) Species Grouping CC, 3) Other CC. All catch categories may be used as a target strategy. Do not use target strategies as catch categories. Use Species Specific Catch Categories when ever possible.

| Species Specific Catch Categories Codes | | Species Specific Catch Categories Codes | |
|---|---------------------------|---|------------------------|
| Code | Species Name | Code | Species Name |
| ALBC | Albacore Tuna | OWFS | Ocean whitefish |
| ARTH | Arrowtooth Flounder | OWFS | Ocean Whitefish |
| ARRA | Aurora rockfish | OLVE | Olive rockfish |
| BANK | Bank Rockfish | ASRK | Pacific Angel Shark |
| BTRY | Bat ray | PBNT | Pacific Bonita |
| BSKT | Big skate | PCOD | Pacific Cod |
| ISRK | Bigeye thresher shark | GREN | Pacific grenadier |
| BYEL | Black and Yellow rockfish | PWHT | Pacific Hake |
| BLCK | Black rockfish | PHLB | Pacific Halibut |
| BLSK | Black skate | PMCK | Pacific Mackerel |
| BLGL | Blackgill rockfish | POP | Pacific Ocean Perch |
| BLUR | Blue rockfish | PDAB | Pacific Sanddab |
| BSRK | Blue shark | PSRK | Pelagic thresher shark |
| BCAC | Boccacio Rockfish | PTRL | Petrale Sole |
| BRNZ | Bronzespotted rockfish | PNKR | Pink rockfish |
| CSRK | Brown cat shark | PINK | Pink Salmon |
| BRWN | Brown rockfish | PLCK | Pollock |
| BSOL | Butter Sole | QLBK | Quillback rockfish |
| LOBS | CA spiny lobster | RDBD | Redbanded rockfish |
| CBZN | Cabezon | REDS | Redstripe rockfish |
| CLCO | Calico rockfish | REX | Rex Sole |
| CHLB | California Halibut | RCRB | Rock crab |
| SCOR | California scorpionfish | RCKG | Rock Greenling |
| CSKT | California skate | RSOL | Rock Sole |
| CNRY | Canary Rockfish | RSTN | Rosethorn rockfish |
| CLPR | Chilipepper Rockfish | ROSY | Rosy rockfish |
| CHNA | China rockfish | REYE | Rougheye rockfish |
| CHNK | Chinook salmon | SABL | Sablefish |
| CHUM | Chum salmon | SSOL | Sand Sole |
| COHO | Coho salmon | SPSK | Sandpaper skate |
| MOLA | Common mola | SHPD | Sheepshead |
| TSRK | Common thresher shark | SRKR | Shortraker Rockfish |
| COPP | Copper rockfish | SSPN | Shortspine Thornyhead |
| CWCD | Cowcod Rockfish | SLGR | Silvergray rockfish |
| CSOL | Curlfin Sole | SOCK | Sockeye salmon |
| DBRK | Darkblotched Rockfish | SSRK | Soupin Shark |
| DOVR | Dover Sole | SPKL | Speckled rockfish |
| DCRB | Dungeness Crab | DSRK | Spiny Dogfish Shark |
| EGLS | English Sole | SNOS | Splitnose Rockfish |
| FLAG | Flag rockfish | RATF | Spotted ratfish |
| FSOL | Flathead Sole | STRY | Starry Flounder |
| GBAS | Giant sea bass | STAR | Starry rockfish |
| GPHR | Gopher rockfish | SSKT | Starry skate |
| GRAS | Grass rockfish | TIGR | Tiger rockfish |
| GSTG | Green Sturgeon | TREE | Treefish rockfish |
| GSPT | Green spotted rockfish | VRML | Vermilion rockfish |
| GSRK | Green striped rockfish | WCRK | White Croaker |
| HNYC | Honeycomb rockfish | WBAS | White seabass |
| KLPG | Kelp Greenling | WSTG | White Sturgeon |
| KLPR | Kelp rockfish | WDOW | Widow Rockfish |
| LSRK | Leopard shark | WEEL | Wolf-eel |
| LCOD | Lingcod | YEYE | Yelloweye Rockfish |
| LSKT | Longnose skate | YTRK | Yellowtail Rockfish |
| LSPN | Longspine Thornyhead | | |

| Species Grouping Catch Categories Codes | |
|---|------------------------------|
| Code | Species Name |
| OCRB | Crab Other |
| GRDR | Grenadier Unspecified |
| UHAG | Hagfish, Unid |
| UJEL | Jellyfish, Unid |
| UMCK | Mackerel Unspecified |
| ZMRM | Marine Mammal |
| NSHR | Nearshore Rockfish N |
| SSHR | Nearshore Rockfish S |
| OCTP | Octopus Unspecified |
| SAMN | Salmon Unspecified |
| USCU | Sea cucumber, Unid |
| XBRD | Seabird |
| OSRK | Shark Other |
| NSLF | Shelf Rockfish N |
| SSLF | Shelf Rockfish S |
| UDW1 | Shortraker/Rougheye rockfish |
| SRMP | Shrimp and Prawns |
| SKAT | Skates and Rays |
| NSLP | Slope Rockfish N |
| SSLP | Slope Rockfish S |
| TCRB | Tanner Crab |
| THDS | Thornyhead Unspecified |
| SQID | Unidentified Squid |
| USTG | Unidentified Sturgeon |
| UURC | Urchin, Unid |

| Other Catch Categories Codes | |
|------------------------------|----------------------------|
| Code | Species Name |
| INVT | Invertebrates |
| ZMIS | Miscellaneous |
| MBOT | Miscellaneous bottom items |

| Target Strategies | |
|-------------------|--------------------------------------|
| Code | Species Name |
| BRSH | Bottom Rockfish Shelf - Target |
| BRSL | Bottom Rockfish Slope - Target |
| DTS | Dover/Thornyheads/Sablefish - Target |
| DWD | Deepwater Dover - Target |
| MSC2 | Miscellaneous - Target |
| NSM | Nearshore Mix - Target |
| UNKN | Unknown - Target |

| Catch Shares UNSAMPLED haul Codes | |
|-----------------------------------|-----------------------------|
| Code | Species Name |
| NIFQ | Non-IFQ Fish Species |
| IFQM | Mixed IFQ Species |
| IFQRF | Mixed IFQ Species Rockfish |
| IFQFF | Mixed IFQ Species Flatfish |
| IFQRD | Mixed IFQ Species Roundfish |

Appendix G: Minor Rockfish Species

Rockfish Categories

Currently, many regulations are designed to lessen the impacts of fishing on certain species of rockfish. Rockfish (except thornyheads) are divided into categories north and south of 40°10' N. latitude, depending on the depth where they are often caught: nearshore, shelf, or slope.

“Nearshore” is defined (by the California Nearshore Fishery Management Plan) as the area from the high-tide line offshore to a depth of 120 ft (20 fm). “Shelf” refers to the continental shelf, while “slope” refers to the continental slope.

Note: Species listed in bold have their own catch category names when caught in the opposite region. For example, bocaccio rockfish is listed in bold in the Shelf rockfish list North of 40°10' N. lat., therefore north of 40°10' N. lat., bocaccio rockfish is listed under the catch category NSLF, and south of 40°10' N. lat., bocaccio is in its own catch category: BCAC.

| North of 40°10' N. lat. | | South of 40°10' N. lat. |
|--|-----------|--|
| | NEARSHORE | |
| black- <i>Sebastes melanops</i> | | black- <i>Sebastes melanops</i> |
| black and yellow- <i>S. chrysolmelas</i> | | black and yellow- <i>S. chrysolmelas</i> |
| blue- <i>S. mystinus</i> | | blue- <i>S. mystinus</i> |
| brown- <i>S. auriculatus</i> | | brown- <i>S. auriculatus</i> |
| calico- <i>S. dalli</i> | | California scorpionfish- <i>Scorpaena guttata</i> |
| china- <i>S. nebulosus</i> | | calico- <i>S. dalli</i> |
| copper- <i>S. caurinus</i> | | china- <i>S. nebulosus</i> |
| gopher- <i>S. carnatus</i> | | copper- <i>S. caurinus</i> |
| grass- <i>S. rastrelliger</i> | | gopher- <i>S. carnatus</i> |
| kelp- <i>S. atrovirens</i> | | grass- <i>S. rastrelliger</i> |
| olive- <i>S. serranoides</i> | | kelp- <i>S. atrovirens</i> |
| quillback- <i>S. maliger</i> | | olive- <i>S. serranoides</i> |
| reef- <i>S. serriceps</i> | | quillback- <i>S. maliger</i> |
| | | reef- <i>S. serriceps</i> |
| | SHELF | |
| bronzespotted- <i>S. gilli</i> | | bronzespotted- <i>S. gilli</i> |
| bocaccio- <i>S. paucispinis</i> | | chameleon- <i>S. phillipsi</i> |
| chameleon- <i>S. phillipsi</i> | | dwarf-red- <i>S. refianus</i> |
| chilipepper- <i>S. goodie</i> | | flag- <i>S. rubrivinctus</i> |
| cowcod- <i>S. levis</i> | | freckled- <i>S. lentiginosus</i> |
| dwarf-red- <i>S. refianus</i> | | greenblotched- <i>S. rosenblatti</i> |
| flag- <i>S. rubrivinctus</i> | | greenspotted- <i>S. chlorostictus</i> |
| freckled- <i>S. lentiginosus</i> | | greenstriped- <i>S. elongates</i> |
| greenblotched- <i>S. rosenblatti</i> | | halfbanded- <i>S. semicinctus</i> |
| greenspotted- <i>S. chlorostictus</i> | | honeycomb- <i>S. umbrosus</i> |
| greenstriped- <i>S. elongates</i> | | mexican- <i>S. macdonaldi</i> |

Appendix G: Minor Rockfish Species

| North of 40°10' N. lat. | | South of 40°10' N. lat. |
|---------------------------------------|--------------------|--|
| halfbanded- <i>S. semicinctus</i> | <i>SHELF CONT.</i> | pink- <i>S. eos</i> |
| honeycomb- <i>S. umbrosus</i> | | pinkrose- <i>S. simulator</i> |
| mexican- <i>S. macdonaldi</i> | | pygmy- <i>S. wilsoni</i> |
| pink- <i>S. eos</i> | | redstriped- <i>S. proriger</i> |
| pinkrose- <i>S. simulator</i> | | rosethorn- <i>S. helvomaculatus</i> |
| pygmy- <i>S. wilsoni</i> | | rosy- <i>S. rosaceus</i> |
| redstriped- <i>S. proriger</i> | | silvergry- <i>S. brevispinus</i> |
| rosethorn- <i>S. helvomaculatus</i> | | speckled- <i>S. ovalis</i> |
| rosy- <i>S. rosaceus</i> | | squarespot- <i>S. hopkinsi</i> |
| silvergry- <i>S. brevispinus</i> | | starry- <i>S. constellatus</i> |
| speckled- <i>S. ovalis</i> | | stripetail- <i>S. saxicola</i> |
| squarespot- <i>S. hopkinsi</i> | | swordspine- <i>S. ensifer</i> |
| starry- <i>S. constellatus</i> | | tiger- <i>S. nigorcinctus</i> |
| stripetail- <i>S. saxicola</i> | | vermilion- <i>S. miniatus</i> |
| swordspine- <i>S. ensifer</i> | | yelloweye- <i>S. ruberrimus</i> |
| tiger- <i>S. nigorcinctus</i> | | yellowtail- <i>S. flavidus</i> |
| vermilion- <i>S. miniatus</i> | | |
| yelloweye- <i>S. ruberrimus</i> | | |
| | <i>SLOPE</i> | |
| aurora- <i>S. aurora</i> | | aurora- <i>S. aurora</i> |
| bank- <i>S. rufus</i> | | bank- <i>S. rufus</i> |
| blackgill- <i>S. melanostomus</i> | | blackgill- <i>S. melanostomus</i> |
| darkblotched- <i>S. crameri</i> | | darkblotched- <i>S. crameri</i> |
| redbanded- <i>S. babcocki</i> | | pacific ocean perch- <i>S. alutus</i> |
| rougheye- <i>S. aleutianus</i> | | redbanded- <i>S. babcocki</i> |
| sharpchin- <i>S. zacentrus</i> | | rougheye- <i>S. aleutianus</i> |
| shortraker- <i>S. borealis</i> | | sharpchin- <i>S. zacentrus</i> |
| splitnose- <i>S. diploproa</i> | | shortraker- <i>S. borealis</i> |
| yellowmouth- <i>S. reedi</i> | | yellowmouth- <i>S. reedi</i> |

Appendix H: WCGOP Codes

| Gear Type | Sample Methods – Species Composition | |
|--|---|--|
| 1 - Groundfish Trawl, Footrope < 8 inches (small footrope, not a OR Set-back Flatfish net) | Trawl Sample Methods | |
| | 1 - Whole Haul | |
| 2 - Groundfish Trawl, Footrope > 8 inches (large footrope) | 2 - Single Basket | |
| 3 - Midwater Trawl | 3 - Multiple Basket | |
| 4 - Danish/ Scottish Seine (Trawl) | Fixed Gear Sample Methods | |
| 5 - Other Trawl Gear | 4 - Fixed Gear Sample(weights not derived from a fish ticket) | |
| 7 - Vertical Hook and Line Gear | 5 - Fixed Gear - Fish Ticket Verified | |
| 8 - Pole (Commercial) | 6 - Fixed Gear - Fish Ticket Unverified | |
| 9 - Other Hook and Line Gear | Sample Methods – Biospecimens & Length Frequency | |
| 10 - Fish Pot | 6 - Outside and Nonrandom | |
| 12 - Shrimp Trawl Single Rigged | 7 - Outside and Random | |
| 13 - Shrimp Trawl Doubled Rigged | 8 - Inside and Nonrandom | |
| 14 - All Net Gear Except Trawl | 9 - Inside and Random | |
| 15 - All Troll Gear | 10 - P. Halibut Visual Length Estimate | |
| 16 - All Other Miscellaneous Gear | Reason For Discard | Target Strategy Codes |
| 17 - OR Set Back Flatfish Net (Pineapple Trawl) | 11 - Incidental/ Accidental | Bottom Rockfish Shelf =BRSH |
| 19 - Longline Gear (fixed hooks) | 12 - Drop-Off | Bottom Rockfish Slope =BRSL |
| 20 - Longline Gear (snap-on hooks) | 13 - Market | Dover/Thornyheads/Sablefish=DTS |
| | 14 - Other | Deepwater Dover =DWD |
| Gear Performance | 15 - Predation | Miscellaneous =MSC2 |
| 1 - No problem | 16 - Regulation | Nearshore Mix =NSM |
| 2 - Pot was in the haul | 17 - Safety | Unknown = UNKN |
| 3 - Net hung up | 18 - Market (Dockside only) | |
| 4 - Net ripped | Dissection Type | Sea Bird Gear Codes (Limited Entry FG) |
| 5 - Trawl net or codend lost, pot(s) lost, other gear lost | 1 - Otoliths | 0- No |
| 7 - Other problem – Document in the comments section. | 2 - Scales | 2- Streamer Line |
| Weight Method | 3 - Snout | 3- Buoy Line |
| 1 - Actual Weight | 4 - Tissue | 4- Weights |
| 2 - Bin/ Trawl Alley Volume | 5 - Fin Ray | 5- Night Setting (exclusive) |
| 3 - Basket Weight Determination (BWD) | 6 - Tissue and Scales | 6- Other |
| 5 - OTC-Retained | P. Halibut Viabilities | Rockfish Release Methods (Nearshore only) |
| 6 - Other | Trawl & Pot | TO-Thrown directly over |
| 7 - Vessel Estimate | E - Excellent | MV-Mostly vented |
| 8 - Extrapolation | P - Poor | DC-Mostly released at depth-cage |
| 9 - P. Halibut Length/Weight Conversion | D - Dead | DW-Mostly Released at depth-weighted line |
| 11 - Retained + Discard | Longline | DO-Mostly Released at depth- other |
| 13 - Tally Sample | MI - Minor | OM-Other method of release |
| 14 - Visual Experience | MO - Moderate | NC-Not Collected |
| 15 - Visual Spatial | S - Severe | |
| 19-P. Halibut Length/Weight Conversion Extrapolation | D - Dead | |

Appendix H: WCGOP Codes

| Vessel Logbook Names | |
|--|--|
| WOC Trawl- <i>used in the the LE Trawl fishery</i> | Catch Shares- <i>used only in Catch Shares fishery</i> |
| CBFA- <i>used in the the CA Halibut fishery</i> | |
| CA Shrimp/Prawn Trawl- <i>used in the CA Pink Shrimp fishery</i> | |
| Daily Trap Fishing- <i>used in the CA trap fishing</i> | |
| OR Nearshore- <i>used in the OR Black/Blue Rockfish & Nearsshore fishery</i> | |
| OR Scallop/Shrimp- <i>used in the OR Pink Shrimp fishery</i> | |
| OR Fixed Gear- <i>used in the WOC OA FG (Oregon only) fishery</i> | |

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(503) 861-7537 Office

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Appendix J: WCGOP Contact Phone Numbers

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|---|--|

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| | | |
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|---|--|---|

Appendix K: Random Number Table

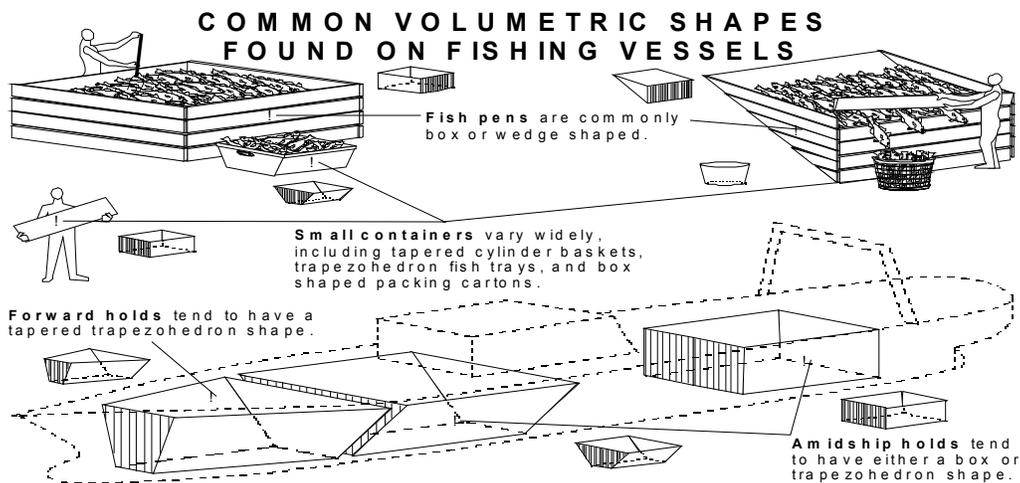
| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 3 | 7 | 9 | 7 | 2 | 1 | 9 | 6 | 7 | 0 | 5 | 4 | 1 | 4 | 7 | 3 | 5 | 5 | 0 | 7 |
| 8 | 6 | 3 | 6 | 2 | 0 | 7 | 1 | 8 | 8 | 2 | 8 | 1 | 4 | 6 | 3 | 6 | 7 | 3 | 8 | 4 |
| 7 | 5 | 5 | 5 | 9 | 2 | 6 | 2 | 6 | 5 | 7 | 1 | 9 | 6 | 4 | 1 | 2 | 4 | 3 | 6 | 9 |
| 1 | 5 | 9 | 2 | 3 | 6 | 3 | 8 | 7 | 1 | 0 | 8 | 2 | 1 | 4 | 9 | 0 | 9 | 8 | 0 | 1 |
| 3 | 5 | 0 | 6 | 2 | 9 | 0 | 6 | 7 | 6 | 6 | 5 | 3 | 8 | 5 | 6 | 2 | 5 | 1 | 0 | 6 |
| 4 | 2 | 1 | 2 | 6 | 3 | 5 | 3 | 6 | 4 | 8 | 9 | 2 | 2 | 9 | 7 | 8 | 5 | 7 | 0 | 3 |
| 5 | 0 | 3 | 1 | 1 | 4 | 2 | 5 | 2 | 3 | 2 | 6 | 3 | 3 | 4 | 9 | 5 | 4 | 2 | 5 | 2 |
| 5 | 0 | 6 | 0 | 9 | 4 | 9 | 3 | 4 | 9 | 8 | 7 | 7 | 2 | 4 | 2 | 3 | 5 | 8 | 1 | 3 |
| 0 | 1 | 6 | 1 | 4 | 7 | 4 | 9 | 7 | 6 | 7 | 9 | 6 | 3 | 4 | 5 | 6 | 7 | 8 | 5 | 9 |
| 1 | 0 | 6 | 7 | 3 | 4 | 8 | 1 | 2 | 3 | 7 | 1 | 1 | 0 | 8 | 4 | 2 | 1 | 9 | 3 | 8 |
| 3 | 1 | 7 | 0 | 8 | 0 | 0 | 9 | 7 | 2 | 3 | 0 | 8 | 5 | 5 | 4 | 8 | 7 | 9 | 9 | 1 |
| 0 | 6 | 2 | 0 | 6 | 6 | 2 | 5 | 1 | 8 | 7 | 6 | 2 | 6 | 3 | 0 | 1 | 4 | 1 | 4 | 8 |
| 4 | 2 | 1 | 9 | 4 | 2 | 2 | 6 | 7 | 6 | 0 | 0 | 3 | 3 | 9 | 9 | 3 | 7 | 4 | 2 | 4 |
| 6 | 2 | 1 | 2 | 6 | 1 | 6 | 9 | 8 | 2 | 0 | 6 | 6 | 4 | 1 | 5 | 0 | 5 | 2 | 9 | 6 |
| 0 | 8 | 7 | 9 | 6 | 0 | 7 | 1 | 4 | 5 | 8 | 8 | 5 | 3 | 2 | 2 | 5 | 3 | 8 | 8 | 7 |
| 0 | 0 | 2 | 2 | 5 | 5 | 0 | 9 | 3 | 8 | 6 | 1 | 0 | 6 | 7 | 4 | 3 | 9 | 9 | 4 | 1 |
| 4 | 8 | 4 | 8 | 9 | 3 | 3 | 5 | 9 | 2 | 3 | 8 | 5 | 5 | 7 | 3 | 9 | 5 | 2 | 3 | 4 |
| 8 | 2 | 8 | 2 | 8 | 6 | 6 | 8 | 6 | 1 | 6 | 0 | 0 | 4 | 8 | 8 | 9 | 6 | 5 | 6 | 8 |
| 0 | 2 | 6 | 8 | 8 | 3 | 7 | 2 | 6 | 6 | 8 | 8 | 7 | 4 | 2 | 4 | 1 | 2 | 0 | 3 | 4 |
| 1 | 9 | 9 | 4 | 8 | 3 | 6 | 0 | 4 | 8 | 9 | 6 | 1 | 5 | 8 | 2 | 5 | 0 | 8 | 2 | 4 |

How to Use the Random Number Table

To use the random number table, enter the table at a random point. The easiest way to do this is by closing your eyes and placing your finger on the table. The column and row nearest your finger is the starting point. Determine how many digits in the row you are using: if you need numbers between 1 and 250, use three digits in the row. If you need numbers between 1 and 25, use two digits in the row, and so on. Decide in which direction you will move through the table. Then proceed in any direction through the table (even diagonally), recording appropriate numbers and skipping numbers too high or repeated, until you have enough random numbers. You should decide on a direction and enter the table at a different random starting point every time you use it.

For example, if you need to choose 3 numbers between 1 and 25, you could enter the table by placing your finger on the table to choose a column and row. Your criterion is two digit numbers between 01 and 25 (inclusive). For this example, you decided to work up the column from your starting point. As you move up the column, the first number you encounter is 14. This is a two-digit number between 01 and 25; it fits the criterion, so you write it down. The next number is 09; it also fits the criterion, so you write it down. The next number is 58 and does not fit the criterion so you skip this number. Keep moving up the column, skipping the numbers that do not fit the criterion, until you choose the all the numbers you need.

Appendix L: Weights, Measures, and Conversions



Abbreviations

| | | | | |
|-----------------|-----------------|----------------|-----------------|-----------|
| inch (in) | millimeter (mm) | kilograms (kg) | minute (min) | foot (ft) |
| centimeter (cm) | metric ton (mt) | pounds (lbs) | meter (m) | liter (L) |
| ton (t) | kilometer (km) | quart (qt) | mile (mi) | celcius © |
| latitude (lat) | fahrenheit (F) | grams (g) | longitude (lon) | |

Weights and Measures

1 in = 2.540 cm 1cm = 10 mm = 0.3937 in

1 ft = 0.3048 m = 0.1667 fathoms 1m = 100 cm = 3.2808 ft = 0.5468 fathoms

1 fathom = 6 ft = 1.829 m 1000 m = 1 km = 0.6214 statute mi

1 L = 1.0567 U.S. qt

$F^{\circ} = (1.8 \times C^{\circ}) + 32$ $C^{\circ} = 5/9(F^{\circ} - 32)$

1 statute m = 5,280 ft = 1.609 km = 0.86899 nautical mi = 880 fathoms

1 nautical mi = 1.15078 statute mi = 1 min lat = 1.852 km = 1,012.6859 fathoms = 1,852 m

1 fathom = 0.0009875 nautical mi = 0.0011364 statute mi

1 lb = 0.4536 kg

total catch wt. in lbs ÷ 2.2046 = total catch wt. in kg

1 mt = 1,000 kg = 2204.6 lbs.

Area, Volume and Product Formulas

Number of Product Units x Average Unit Weight = Total Weight of Product

Area of a circle = πr^2 Circumference = $2 \pi r$ ($\pi = 3.1416$)

Area of a square or rectangle = length x width

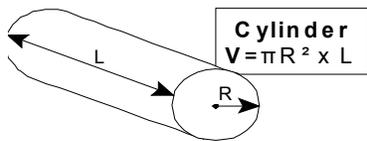
Area of a triangle = $\frac{1}{2} \times \text{base} \times \text{height}$

Volume of a right angle cone = $\frac{1}{3} \times \pi \times r^2 \times h$

Volume of a Sphere = $\frac{4}{3} \times \pi \times r^3$

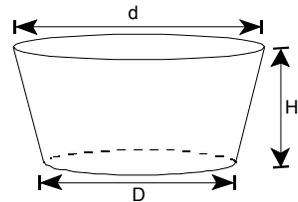
Length of the triangle hypotenuse "C" where A and B equal the length of the opposite two sides:

$$A^2 + B^2 = C^2$$

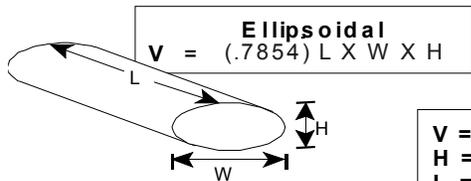


Cylinder
 $V = \pi R^2 \times L$

Tapered Cylinder
 $V = 0.2618 H (d^2 + D^2 + dD)$

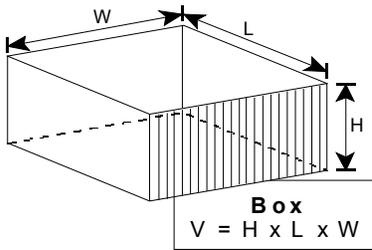


VOLUMETRIC FORMULAS

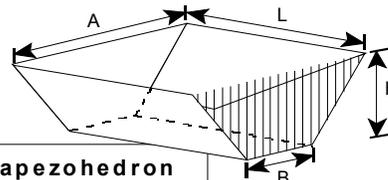


Ellipsoidal
 $V = (.7854) L \times W \times H$

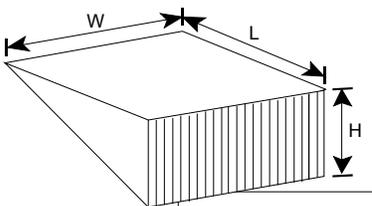
V = Volume
 H = Height
 L = Length
 W = Width
 $\pi = 3.1416$
 D = Diameter
 d = diameter
 R = Radius



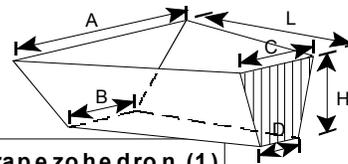
Box
 $V = H \times L \times W$



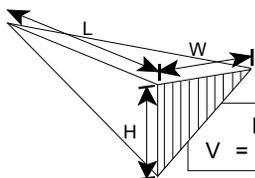
Trapezohedron
 $V = \frac{1}{2}(A + B) \times H \times L$



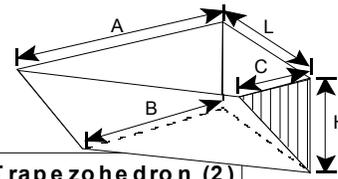
Wedge
 $V = \frac{1}{2}(H \times L \times W)$



Tapered Trapezohedron (1)
 $V = \frac{1}{4}(A + B + C + D) \times H \times L$



Pyramidal
 $V = (W \times L \times H) \div 6$



Tapered Trapezohedron (2)
 $V = \frac{1}{4}(A + B + C) \times H \times L$

Appendix M: Pacific Halibut Length/Weight Table

| Centimeter | Pounds |
|------------|--------|
| 10 | 0.02 |
| 11 | 0.02 |
| 12 | 0.02 |
| 13 | 0.04 |
| 14 | 0.04 |
| 15 | 0.07 |
| 16 | 0.07 |
| 17 | 0.09 |
| 18 | 0.11 |
| 19 | 0.13 |
| 20 | 0.15 |
| 21 | 0.18 |
| 22 | 0.20 |
| 23 | 0.24 |
| 24 | 0.26 |
| 25 | 0.31 |
| 26 | 0.35 |
| 27 | 0.40 |
| 28 | 0.46 |
| 29 | 0.51 |
| 30 | 0.57 |
| 31 | 0.62 |
| 32 | 0.71 |
| 33 | 0.77 |
| 34 | 0.84 |
| 35 | 0.93 |
| 36 | 1.01 |
| 37 | 1.10 |
| 38 | 1.21 |
| 39 | 1.32 |
| 40 | 1.43 |
| 41 | 1.59 |
| 42 | 1.68 |
| 43 | 1.81 |
| 44 | 1.94 |
| 45 | 2.09 |
| 46 | 2.25 |
| 47 | 2.43 |
| 48 | 2.58 |
| 49 | 2.76 |

| Centimeter | Pounds |
|------------|--------|
| 50 | 2.95 |
| 51 | 3.15 |
| 52 | 3.35 |
| 53 | 3.57 |
| 54 | 3.79 |
| 55 | 4.01 |
| 56 | 4.25 |
| 57 | 4.52 |
| 58 | 4.76 |
| 59 | 5.05 |
| 60 | 5.31 |
| 61 | 5.62 |
| 62 | 5.93 |
| 63 | 6.24 |
| 64 | 6.57 |
| 65 | 6.90 |
| 66 | 7.25 |
| 67 | 7.61 |
| 68 | 7.98 |
| 69 | 8.38 |
| 70 | 8.77 |
| 71 | 9.19 |
| 72 | 9.61 |
| 73 | 10.05 |
| 74 | 10.49 |
| 75 | 10.98 |
| 76 | 11.44 |
| 77 | 11.95 |
| 78 | 12.46 |
| 79 | 12.99 |
| 80 | 13.51 |
| 81 | 14.07 |
| 82 | 14.64 |
| 83 | 15.23 |
| 84 | 15.83 |
| 85 | 16.45 |
| 86 | 17.09 |
| 87 | 17.75 |
| 88 | 18.41 |
| 89 | 19.09 |

| Centimeter | Pounds |
|------------|--------|
| 90 | 19.80 |
| 91 | 20.53 |
| 92 | 21.25 |
| 93 | 22.02 |
| 94 | 22.80 |
| 95 | 23.59 |
| 96 | 24.41 |
| 97 | 25.24 |
| 98 | 26.08 |
| 99 | 26.96 |
| 100 | 27.87 |
| 101 | 28.77 |
| 102 | 29.70 |
| 103 | 30.67 |
| 104 | 31.64 |
| 105 | 32.63 |
| 106 | 33.64 |
| 107 | 34.68 |
| 108 | 35.74 |
| 109 | 36.84 |
| 110 | 37.94 |
| 111 | 39.07 |
| 112 | 40.21 |
| 113 | 41.38 |
| 114 | 42.59 |
| 115 | 43.81 |
| 116 | 45.06 |
| 117 | 46.32 |
| 118 | 47.62 |
| 119 | 48.94 |
| 120 | 50.29 |
| 121 | 51.65 |
| 122 | 53.07 |
| 123 | 54.48 |
| 124 | 55.93 |
| 125 | 57.41 |
| 126 | 58.91 |
| 127 | 60.43 |
| 128 | 61.99 |
| 129 | 63.56 |

Appendix M: Pacific Halibut Length/Weight Table

| Centimeter | Pounds |
|-------------------|---------------|
| 130 | 65.17 |
| 131 | 66.82 |
| 132 | 68.48 |
| 133 | 70.17 |
| 134 | 71.89 |
| 135 | 73.66 |
| 136 | 75.44 |
| 137 | 77.25 |
| 138 | 79.08 |
| 139 | 80.95 |
| 140 | 82.87 |
| 141 | 84.79 |
| 142 | 86.75 |
| 143 | 88.76 |
| 144 | 90.79 |
| 145 | 92.84 |
| 146 | 94.93 |
| 147 | 97.05 |
| 148 | 99.21 |
| 149 | 101.39 |
| 150 | 103.62 |
| 151 | 105.87 |
| 152 | 108.16 |
| 153 | 110.50 |
| 154 | 112.83 |
| 155 | 115.24 |
| 156 | 117.66 |
| 157 | 120.13 |
| 158 | 122.62 |
| 159 | 125.16 |
| 160 | 127.71 |
| 161 | 130.32 |
| 162 | 132.96 |
| 163 | 135.65 |
| 164 | 138.36 |
| 165 | 141.12 |
| 166 | 143.90 |
| 167 | 146.72 |
| 168 | 149.54 |
| 169 | 152.49 |

| Centimeter | Pounds |
|-------------------|---------------|
| 170 | 155.45 |
| 171 | 158.42 |
| 172 | 161.44 |
| 173 | 164.51 |
| 174 | 167.60 |
| 175 | 170.75 |
| 176 | 173.92 |
| 177 | 177.14 |
| 178 | 180.40 |
| 179 | 183.71 |
| 180 | 187.06 |
| 181 | 190.46 |
| 182 | 193.87 |
| 183 | 197.36 |
| 184 | 200.86 |
| 185 | 204.43 |
| 186 | 208.03 |
| 187 | 211.67 |
| 188 | 214.71 |
| 189 | 218.50 |
| 190 | 222.89 |
| 191 | 226.70 |
| 192 | 230.56 |
| 193 | 234.48 |
| 194 | 238.45 |
| 195 | 242.44 |
| 196 | 246.50 |
| 197 | 250.60 |
| 198 | 255.74 |
| 199 | 258.93 |
| 200 | 263.17 |
| 201 | 267.46 |
| 202 | 271.79 |
| 203 | 276.17 |
| 204 | 280.60 |
| 205 | 285.10 |
| 206 | 289.62 |
| 207 | 294.21 |
| 208 | 298.84 |
| 209 | 303.51 |

| Centimeter | Pounds |
|-------------------|---------------|
| 210 | 308.25 |
| 211 | 313.03 |
| 212 | 317.86 |
| 213 | 322.73 |
| 214 | 327.67 |
| 215 | 332.65 |
| 216 | 337.70 |
| 217 | 342.79 |
| 218 | 347.93 |
| 219 | 353.13 |
| 220 | 358.38 |
| 221 | 363.69 |
| 222 | 369.05 |
| 223 | 374.45 |
| 224 | 379.92 |
| 225 | 385.45 |
| 226 | 391.03 |
| 227 | 396.67 |
| 228 | 402.36 |
| 229 | 408.09 |
| 230 | 413.91 |
| 231 | 419.76 |
| 232 | 425.69 |
| 233 | 431.66 |
| 234 | 437.68 |
| 235 | 443.76 |
| 236 | 449.91 |
| 237 | 456.13 |
| 238 | 462.39 |
| 239 | 468.72 |
| 240 | 475.09 |
| 241 | 481.55 |
| 242 | 488.05 |
| 243 | 494.60 |
| 244 | 501.24 |
| 245 | 507.92 |
| 246 | 514.66 |
| 247 | 521.48 |
| 248 | 528.36 |
| 249 | 535.28 |
| 250 | 542.29 |

Appendix N: Injury Key for Trawl Caught Pacific Halibut

Key to Injury Codes for Trawl Caught Pacific Halibut

- 1a. Fish is alive..... **Go to 2a**
- 1b. Fish is dead when sorted from the catch..... **Code DEAD**
Fish is in rigor and lifeless, even if no apparent injuries. Gills appear washed out, i.e., dull red, pink, or white in color. Mouth may contain sediment.
- 2a. Body of fish appears uninjured, or has only minor injuries **Go to 3a**
- 2b. Injuries to fish are significant and obvious **Code DEAD**
Body cavity is ripped open, exposing internal organs. Body tissue may be torn or ripped in a rough, ragged manner. Red hemorrhaging observed on 25% or more of the white side of fish.
- 3a. Fish is able to close operculum when stimulated **Go to 4a**
Operculum is closed strongly or weakly, but pressure is evident. Operculum may not stay closed for long, though pressure may last up to 5 seconds or longer.
- 3b. Fish cannot close operculum, even when stimulated **Code DEAD**
- 4a. Fish displays activity and has muscle tone **Go to 5a**
Fish displays a minimal amount of activity, especially when stimulated. May be able to clench jaw tightly.
- 4b. Fish exhibits no muscle tone **Code DEAD**
- 5a. Fish is not bleeding, or only slightly bleeding, if at all..... **Go to 6a**
- 5b. Blood is flowing freely and continuously in large quantities (profusely) **Code DEAD**
Bleeding is coming from a torn or severed gill arch, or a body injury.
- 6a. Body injuries are minimal, perhaps difficult to find **Go to 7a**
May consist of superficial nicks or cuts on body. Less than 10% of dorsal and anal fin area is frayed.
- 6b. Body injuries are readily apparent **Code POOR**
Skin is damaged with abrasions. Cuts and lacerations in body extend through the skin and just barely into the flesh (not deeply). Dorsal and anal fin area is frayed between 10-50%. Fin edges may be bleeding. Roughly 10-25% of the white side of fish shows red hemorrhaging.
- 7a. Operculum pressure is strong and sustained..... **Go to 8a**
- 7b. Operculum pressure is weak and not sustained..... **Code POOR**
- 8a. Fish is strong and lively, displaying good muscle tone **Go to 9a**
Fish is flopping around the deck, hard to control. Jaw may be tightly clenched, difficult to open.
- 8b. Fish appears weak..... **Code POOR**
Movement is intermittent, perhaps occurring when provoked or stimulated. Body is limp.
- 9a. Fish is bleeding from gills..... **Code POOR**
Blood is flowing continuously, slow and steadily, but not profusely. Gills are deep to bright red in color.
- 9b. No bleeding observed **Code EXCELLENT**
Gills are deep red in color.

Appendix O: Injury Key for Pot Caught Pacific Halibut

Key to Injury codes for Pot Caught Pacific Halibut

- 1a. Fish is alive..... **Go to 2a**
- 1b. Fish is dead when sorted from the catch..... **Code DEAD**
Fish is in rigor and lifeless, even if no apparent injuries. Gills appear washed out, i.e., dull red, pink, or white in color.
- 2a. No penetration of the body or head by sand fleas..... **Go to 3a**
Membranes surrounding eyes and anus are intact, without any holes from sand fleas. A few sand fleas may be seen on body and can be wiped off with your hand. Typically, no penetration has occurred when only a few (e.g., <10) sand fleas are found on the body.
- 2b. Sand fleas have penetrated the body via the eyes, fins, or anus **Code DEAD**
Membrane surrounding eye may be partially or completely missing. Dorsal and/or anal fin membranes may be eaten away, leaving fin rays exposed. Skin on the body is separated from tissue where sand fleas have eaten.
- 3a. No predation of the fish's body by crabs in the pot is noted..... **Go to 4a**
- 3b. Predation by crabs has occurred **CODE DEAD**
Crabs in the pot may have attacked and eaten the fish.
- 4a. Body of fish appears uninjured, or has only minor injuries **Go to 5a**
- 4b. Injuries to fish are obvious and significant **Code DEAD**
Body cavity is ripped open, exposing internal organs. Body tissue may be torn or ripped in a rough, ragged manner. Red hemorrhaging observed on 25% or more of the white side of fish.
- 5a. Fish is able to close operculum when stimulated..... **Go to 6a**
Operculum is closed strongly or weakly, but pressure is evident. Operculum may not stay closed for long, though pressure may last up to 5 seconds or longer.
- 5b. Fish cannot close operculum, even when stimulated **Code DEAD**
- 6a. Fish displays activity and has muscle tone **Go to 7a**
Fish displays a minimal amount of activity, especially when stimulated. May be able to clench jaw, perhaps tightly.
- 6b. Fish exhibits no muscle tone..... **Code DEAD**
Physical activity absent or limited to fin ripples or twitches. Little, if any, response to stimuli. Jaw is hanging open and is slack.
- 7a. Fish is not bleeding, or only slightly bleeding, if at all **Go to 8a**
- 7b. Blood is flowing freely and continuously in large quantity (profusely) **Code DEAD**
Bleeding is coming from fin edges or a body injury.
- 8a. Body injuries are minimal, perhaps difficult to find **Go to 9a**
May consist of superficial nicks or cuts on body. Less than 10% of dorsal and anal fin area is frayed. Hemorrhaging of skin on white side limited to 5-10% of surface area.
- 8b. Body injuries are readily apparent **Code POOR**
Skin is damaged with abrasions. Cuts and lacerations in body extend through the skin and just barely into the flesh (not deeply). Dorsal and anal fin area is frayed between 10-50%. Fin edges may be bleeding slightly. Roughly 10-25% of the white side of fish shows red hemorrhaging.
- 9a. Operculum pressure is strong and sustained..... **Go to 10a**
Fish should be able to close operculum for at least 5-10 seconds.
- 9b. Operculum pressure is weak and not sustained..... **Code POOR**
- 10a. Fish is strong and lively, displaying good muscle tone **Go to 11a**
Fish is flopping around the deck, hard to control. Jaw may be tightly clenched, difficult to open.
- 10b. Fish appears weak..... **Code POOR**

Appendix O: Injury Key for Pot Caught Pacific Halibut

Movement is intermittent and of short duration. Perhaps occurring when provoked or stimulated. Body appears limp, not in rigor mortis.

11a. Fish is bleeding from fin edges or body..... **Code POOR**
Blood is oozing continuously from fin edges or body wounds. Gills are deep to bright red in color.

11b. No bleeding observed..... **Code EXCELLENT**
Gills are deep red in color. Fins are not bleeding.

Appendix P: Injury Key for Hook & Line Caught Pacific Halibut

Key to Injury Codes for Hook & Line Caught Pacific Halibut

- 1a. Fish is alive..... **Go to 2a**
- 1b. Fish is dead when brought to the surface on the gear **Code DEAD**
Fish is in rigor and lifeless, even if no apparent injuries. Gills appear completely devoid of blood (light pink or white in color).
- 2a. Body shows no signs of marine mammal predation..... **Go to 3a**
Fish's body is intact. Flesh may be torn, but no missing tissue.
- 2b. Body is missing pieces of flesh..... **Code DEAD**
Pieces of tissue are missing from predation by marine mammals. Missing pieces are typical of bites from sea lions or other large marine mammals.
- 3a. No penetration of the body or head by sand fleas..... **Go to 4a**
Membranes surrounding eyes and anus are intact, without any holes from sand fleas. A few sand fleas may be seen on body and can be wiped off with your hand. Typically, no penetration occurs when only a few (e.g., <10) sand fleas are found on the body.
- 3b. Sand fleas have penetrated the body via the eyes, fins, or anus **Code DEAD**
Membrane surrounding eye may be partially or completely missing. Dorsal and/or anal fin membranes may be eaten away, leaving finrays exposed. Skin on the body is separated from tissue where sand fleas have eaten.
- 4a. No wounds of any kind to abdominal organs. Abdominal wall not punctured..... **Go to 5a**
- 4b. Abdominal organs are damaged, possibly by a gaff **Code DEAD**
Abdominal cavity wall is punctured or torn. Viscera are visible and exposed, and may be protruding.
- 5a. Fish is not bleeding from gills (but may be bleeding from elsewhere)..... **Go to 6a**
- 5b. Fish is bleeding from gills..... **Code DEAD**
Bleeding is occurring from a torn or severed gill arch.
- 6a. Fish is not bleeding at all, or bleeding is minor to moderate (not from gills) **Go to 7a**
Blood may be seen around mouth and/or jaw. Blood may be oozing continuously, or bleeding may be continuing very slowly a few drops at a time, or bleeding may have stopped.
- 6b. Bleeding is severe..... **Code DEAD**
Blood from any source is flowing freely and continuously in large quantity.
- 7a. Injuries to head and/ or jaw are minor to moderate..... **Go to 8a**
No structures are missing
- 7b. Major injuries to head and jaw, resulting in missing pieces **Code SEVERE**
Side of the head, possibly including the jaw, has been torn loose and missing from the fish, and/or lower jaw has been torn away and is missing.
- 8a. Wounds to the head (forward of preopercle and above cheek and jaw) are only surface scratches on the skin **Go to 9a**
- 8b. Skin on head (forward of preopercle) is ripped and torn deeply **Code SEVERE**
Internal organs are likely exposed.
- 9a. Eye or eye socket is not punctured..... **Go to 10a**
- 9b. Eye or eye socket is punctured..... **Code MODERATE**
- 10a. No wounds to the body are evident **Go to 11a**
- 10b. Wounds in body consist of puncture holes in skin, with possibly a flesh tear **Code MODERATE**

Appendix P: Injury Key for Hook & Line Caught Pacific Halibut

11a. Lower jaw is significantly damage..... **Code MODERATE**
Lower jaw may be broken into 2 pieces at the snout, but each is still attached at the base of the jaw. Jaw may be torn on one side or the other, possibly extending through the cheek.

11b. Damage to lower jaw, if any, is slight **Code MINOR**
Injuries include the hook entrance/exit hole around the jaw or in the cheek, or a tear in the cheek. A piece of the lip may be torn and hanging from the jaw. If gangion was cut, the hook and some length of residual gangion may be hanging from the mouth.

Appendix Q: 50 CFR Part 660.314 Observer Program Regulations

Fishery Conservation and Management

§ 660.314

660.335(a)(2). Owners of vessels registered to limited entry permits that did not receive instructions by mail are responsible for contacting NMFS OLE during business hours at least 3 days before the exemption is required to obtain information needed to make exemption reports. NMFS OLE must be contacted during business hours (Monday through Friday between 0800 and 1700 Pacific Standard Time).

(iv) Exemption reports must be received by NMFS at least 2 hours and not more than 24 hours before the exempted activities defined at paragraph (d)(4)(i) and (ii) of this section occur. An exemption report is valid until NMFS receives a report canceling the exemption. An exemption cancellation must be received at least 2 hours before the vessel re-enters the EEZ following an outside areas exemption or at least 2 hours before the vessel is placed back in the water following a haul out exemption.

(5) When aware that transmission of automatic position reports has been interrupted, or when notified by NMFS OLE that automatic position reports are not being received, contact NMFS OLE at 7600 Sand Point Way NE, Seattle, WA 98115-6349, phone: (206)526-6133 and follow the instructions provided to you. Such instructions may include, but are not limited to, manually communicating to a location designated by NMFS OLE the vessel's position or returning to port until the VMS is operable.

(6) After a fishing trip during which interruption of automatic position reports has occurred, the vessel's owner or operator must replace or repair the mobile transceiver unit prior to the vessel's next fishing trip. Repair or reinstallation of a mobile transceiver unit or installation of a replacement, including change of communications service provider shall be in accordance with the instructions provided by NMFS OLE and require the same certification.

(7) Make the mobile transceiver units available for inspection by NMFS OLE personnel, USCG personnel, state enforcement personnel or any authorized officer.

(8) Ensure that the mobile transceiver unit is not tampered with, dis-

abled, destroyed or operated improperly.

(9) Pay all charges levied by the communication service provider as necessary to ensure continuous operation of the VMS transceiver units.

[68 FR 62384, Nov. 4, 2003. Redesignated and amended at 69 FR 42350, July 15, 2004]

§ 660.314 Groundfish observer program.

(a) *General.* Vessel owners, operators, and managers are jointly and severally responsible for their vessel's compliance with this section.

(b) *Purpose.* The purpose of the Groundfish Observer Program is to allow observers to collect fisheries data deemed by the Northwest Regional Administrator, NMFS, to be necessary and appropriate for management, compliance monitoring, and research in the groundfish fisheries and for the conservation of living marine resources and their habitat.

(c) *Observer coverage requirements—(1) At-sea processors.* A catcher-processor or mothership 125 ft (38.1 m) LOA or longer must carry two NMFS-certified observers, and a catcher-processor or mothership shorter than 125 ft (38.1 m) LOA must carry one NMFS-certified observer, each day that the vessel is used to take, retain, receive, land, process, or transport groundfish.

(2) *Catcher vessels.* For the purposes of this section, catcher vessels include all vessels, using open access or limited entry gear (including exempted gear types) that take and retain, possess or land groundfish at a processor(s) as defined at § 660.302. When NMFS notifies the vessel owner, operator, permit holder, or the vessel manager of any requirement to carry an observer, the vessel may not take and retain, possess, or land any groundfish without carrying an observer.

(i) *Notice of departure—Basic rule.* At least 24 hours (but not more than 36 hours) before departing on a fishing trip, a vessel that has been notified by NMFS that it is required to carry an observer, or that is operating in an active sampling unit, must notify NMFS (or its designated agent) of the vessel's intended time of departure. Notice will be given in a form to be specified by NMFS.

§ 660.314

50 CFR Ch. VI (10–1–05 Edition)

(A) *Optional notice—Weather delays.* A vessel that anticipates a delayed departure due to weather or sea conditions may advise NMFS of the anticipated delay when providing the basic notice described in paragraph (c)(2)(i) of this section. If departure is delayed beyond 36 hours from the time the original notice is given, the vessel must provide an additional notice of departure not less than 4 hours prior to departure, in order to enable NMFS to place an observer.

(B) *Optional notice—Back-to-back fishing trips.* A vessel that intends to make back-to-back fishing trips (i.e., trips with less than 24 hours between off-loading from one trip and beginning another), may provide the basic notice described in paragraph (c)(2)(i) of this section for both trips, prior to making the first trip. A vessel that has given such notice is not required to give additional notice of the second trip.

(ii) *Cease fishing report.* Not more than 24 hours after ceasing the taking and retaining of groundfish with limited entry or open access gear in order to leave the fishery management area or to fish for species not managed under the PCGFMP, the owner, operator, or vessel manager of each vessel that is required to carry an observer or that is operating in a segment of the fleet that NMFS has identified as an active sampling unit must provide NMFS or its designated agent with notification as specified by NMFS.

(3) *Vessels engaged in recreational fishing.* [Reserved]

(4) *Waiver.* The Northwest Regional Administrator may provide written notification to the vessel owner stating that a determination has been made to temporarily waive coverage requirements because of circumstances that are deemed to be beyond the vessel's control.

(d) *Vessel responsibilities.* An operator of a vessel required to carry one or more observer(s) must provide:

(1) *Accommodations and food.* Provide accommodations and food that are:

(i) *At-sea processors.* Equivalent to those provided for officers, engineers, foremen, deck-bosses or other management level personnel of the vessel.

(ii) *Catcher vessels.* Equivalent to those provided to the crew.

(2) *Safe conditions.* Maintain safe conditions on the vessel for the protection of observer(s) including adherence to all USCG and other applicable rules, regulations, or statutes pertaining to safe operation of the vessel, and provisions at §§ 600.725 and 600.746 of this chapter.

(3) *Observer communications.* Facilitate observer communications by:

(i) *Observer use of equipment.* Allowing observer(s) to use the vessel's communication equipment and personnel, on request, for the entry, transmission, and receipt of work-related messages, at no cost to the observer(s) or the U.S. or designated agent.

(ii) *Functional equipment.* Ensuring that the vessel's communications equipment, used by observers to enter and transmit data, is fully functional and operational.

(iii) *Hardware and software.* At-sea processing vessels must provide hardware and software pursuant to regulations at 50 CFR 679.50(f)(1)(iii)(B)(1) and 50 CFR 679.50(f)(2), as follows:

(A) Providing for use by the observer a personal computer in working condition that contains a full Pentium 120 Mhz or greater capacity processing chip, at least 32 megabytes of RAM, at least 75 megabytes of free hard disk storage, a Windows 9x or NT compatible operating system, an operating mouse, and a 3.5-inch (8.9 cm) floppy disk drive. The associated computer monitor must have a viewable screen size of at least 14.1 inches (35.8 cm) and minimum display settings of 600×800 pixels. The computer equipment specified in this paragraph (A) must be connected to a communication device that provides a modem connection to the NMFS host computer and supports one or more of the following protocols: ITU V.22, ITU V.22bis, ITU V.32, ITU V.32bis, or ITU V.34. Processors that use a modem must have at least a 28.8kbs Hayes-compatible modem. The above-specified hardware and software requirements do not apply to processors that do not process groundfish.

(B) *NMFS-supplied software.* Ensuring that each at-sea processing ship that is required to have two observers aboard obtains the data entry software provided by the Regional Administrator for use by the observer.

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(4) *Vessel position.* Allow observer(s) access to, and the use of, the vessel's navigation equipment and personnel, on request, to determine the vessel's position.

(5) *Access.* Allow observer(s) free and unobstructed access to the vessel's bridge, trawl or working decks, holding bins, processing areas, freezer spaces, weight scales, cargo holds, and any other space that may be used to hold, process, weigh, or store fish or fish products at any time.

(6) *Prior notification.* Notify observer(s) at least 15 minutes before fish are brought on board, or fish and fish products are transferred from the vessel, to allow sampling the catch or observing the transfer, unless the observer specifically requests not to be notified.

(7) *Records.* Allow observer(s) to inspect and copy any state or Federal logbook maintained voluntarily or as required by regulation.

(8) *Assistance.* Provide all other reasonable assistance to enable observer(s) to carry out their duties, including, but not limited to:

(i) Measuring decks, codends, and holding bins.

(ii) Providing the observer(s) with a safe work area.

(iii) Collecting bycatch when requested by the observer(s).

(iv) Collecting and carrying baskets of fish when requested by the observer(s).

(v) Allowing the observer(s) to collect biological data and samples.

(vi) Providing adequate space for storage of biological samples.

(9) *At-sea transfers to or from processing vessels.* Processing vessels must:

(i) Ensure that transfers of observers at sea via small boat or raft are carried out during daylight hours, under safe conditions, and with the agreement of observers involved.

(ii) Notify observers at least 3 hours before observers are transferred, such that the observers can collect personal belongings, equipment, and scientific samples.

(iii) Provide a safe pilot ladder and conduct the transfer to ensure the safety of observers during transfers.

(iv) Provide an experienced crew member to assist observers in the

small boat or raft in which any transfer is made.

(e) *Procurement of observer services by at-sea processing vessels.* Owners of vessels required to carry observers under paragraph (c)(1) of this section must arrange for observer services from an observer provider permitted by the North Pacific Groundfish Observer Program under 50 CFR 679.50(i), except that:

(1) Vessels are required to procure observer services directly from NMFS when NMFS has determined and given notification that the vessel must carry NMFS staff or an individual authorized by NMFS in lieu of an observer provided by a permitted observer provider.

(2) Vessels are required to procure observer services directly from NMFS and a permitted observer provider when NMFS has determined and given notification that the vessel must carry NMFS staff or individuals authorized by NMFS, in addition to an observer provided by a permitted observer provider.

(f) *Observer certification and responsibilities—(1) Observer Certification—(i) Applicability.* Observer certification authorizes an individual to fulfill duties as specified in writing by the NMFS Observer Program Office while under the employ of a NMFS-permitted observer provider and according to certification endorsements as designated under paragraph (f)(1)(v) of this section.

(ii) *Observer certification official.* The Regional Administrator will designate a NMFS observer certification official who will make decisions for the Observer Program Office on whether to issue or deny observer certification.

(iii) *Certification requirements.* NMFS will certify individuals who:

(A) Are employed by an observer provider company permitted pursuant to 50 CFR 679.50 at the time of the issuance of the certification;

(B) Have provided, through their observer provider:

(1) Information identified by NMFS at 50 CFR 679.50(i)(2)(x)(A)(1)(iii) and (iv); and

(2) Information identified by NMFS at 50 CFR 679.50(i)(2)(x)(C) regarding the observer candidate's health and physical fitness for the job;

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(C) Meet all education and health standards as specified in 50 CFR 679.50(i)(2)(i)(A) and (1)(2)(x)(C), respectively; and

(D) Have successfully completed NMFS-approved training as prescribed by the Observer Program.

(1) Successful completion of training by an observer applicant consists of meeting all attendance and conduct standards issued in writing at the start of training; meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other training requirements established by the Observer Program.

(2) If a candidate fails training, he or she will be notified in writing on or before the last day of training. The notification will indicate: the reasons the candidate failed the training; whether the candidate can retake the training, and under what conditions, or whether, the candidate will not be allowed to retake the training. If a determination is made that the candidate may not pursue further training, notification will be in the form of an IAD denying certification, as specified under paragraph (f)(1)(iv)(A) of this section.

(E) Have not been decertified under paragraph (f)(3) of this section, or pursuant to 50 CFR 679.50.

(iv) Agency determinations on observer certification (A) *Denial of a certification*. The NMFS observer certification official will issue a written IAD denying observer certification when the observer certification official determines that a candidate has unresolvable deficiencies in meeting the requirements for certification as specified in paragraph (f)(1)(iii) of this section. The IAD will identify the reasons certification was denied and what requirements were deficient.

(B) *Appeals*. A candidate who receives an IAD that denies his or her certification may appeal pursuant to paragraph (f)(4) of this section. A candidate who appeals the IAD will not be issued an interim observer certification, and will not receive a certification unless the final resolution of that appeal is in the candidate's favor.

(C) *Issuance of an observer certification*. An observer certification will be issued upon determination by the ob-

server certification official that the candidate has successfully met all requirements for certification as specified in paragraph (f)(1)(iii) of this section.

(v) *Endorsements*. The following endorsements must be obtained, in addition to observer certification, in order for an observer to deploy.

(A) *Certification training endorsement*. A certification training endorsement signifies the successful completion of the training course required to obtain observer certification. This endorsement expires when the observer has not been deployed and performed sampling duties as required by the Observer Program Office for a period of time, specified by the Observer Program, after his or her most recent debriefing. The observer can renew the endorsement by successfully completing certification training once more.

(B) *Annual general endorsements*. Each observer must obtain an annual general endorsement to their certification prior to his or her first deployment within any calendar year subsequent to a year in which a certification training endorsement is obtained. To obtain an annual general endorsement, an observer must successfully complete the annual briefing, as specified by the Observer Program. All briefing attendance, performance, and conduct standards required by the Observer Program must be met.

(C) *Deployment endorsements*. Each observer who has completed an initial deployment after certification or annual briefing must receive a deployment endorsement to their certification prior to any subsequent deployments for the remainder of that year. An observer may obtain a deployment endorsement by successfully completing all pre-cruise briefing requirements. The type of briefing the observer must attend and successfully complete will be specified in writing by the Observer Program during the observer's most recent debriefing.

(D) *Pacific whiting fishery endorsements*. A Pacific whiting fishery endorsement is required for purposes of performing observer duties aboard vessels that process groundfish at sea in the Pacific whiting fishery. A Pacific

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whiting fishery endorsement to an observer's certification may be obtained by meeting the following requirements:

(1) Be a prior NMFS-certified observer in the groundfish fisheries off Alaska or the Pacific Coast, unless an individual with this qualification is not available;

(2) Receive an evaluation by NMFS for his or her most recent deployment (if any) that indicated that the observer's performance met Observer Program expectations for that deployment;

(3) Successfully complete a NMFS-approved observer training and/or whiting briefing as prescribed by the Observer Program; and

(4) Comply with all of the other requirements of this section.

(2) *Standards of observer conduct*—(i) Limitations on conflict of interest.

(A) Observers:

(1) Must not have a direct financial interest, other than the provision of observer services, in a North Pacific fishery managed pursuant to an FMP for the waters off the coast of Alaska, or in a Pacific Coast fishery managed by either the state or Federal governments in waters off Washington, Oregon, or California, including but not limited to:

(i) Any ownership, mortgage holder, or other secured interest in a vessel, shoreside or floating stationary processor facility involved in the catching, taking, harvesting or processing of fish,

(ii) Any business involved with selling supplies or services to any vessel, shoreside or floating stationary processing facility; or

(iii) Any business involved with purchasing raw or processed products from any vessel, shoreside or floating stationary processing facilities.

(2) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who either conducts activities that are regulated by NMFS or has interests that may be substantially affected by the performance or nonperformance of the observers' official duties.

(3) May not serve as observers on any vessel or at any shoreside or floating stationary processing facility owned or

operated by a person who previously employed the observers.

(4) May not solicit or accept employment as a crew member or an employee of a vessel, shoreside processor, or stationary floating processor while employed by an observer provider.

(B) Provisions for remuneration of observers under this section do not constitute a conflict of interest.

(ii) *Standards of behavior.* Observers must avoid any behavior that could adversely affect the confidence of the public in the integrity of the Observer Program or of the government, including but not limited to the following:

(A) Observers must perform their assigned duties as described in the Observer Manual or other written instructions from the Observer Program Office.

(B) Observers must accurately record their sampling data, write complete reports, and report accurately any observations of suspected violations of regulations relevant to conservation of marine resources or their environment.

(C) Observers must not disclose collected data and observations made on board the vessel or in the processing facility to any person except the owner or operator of the observed vessel or processing facility, an authorized officer, or NMFS.

(D) Observers must refrain from engaging in any illegal actions or any other activities that would reflect negatively on their image as professional scientists, on other observers, or on the Observer Program as a whole. This includes, but is not limited to:

(1) Violating the drug and alcohol policy established by and available from the Observer Program;

(2) Engaging in the use, possession, or distribution of illegal drugs; or

(3) Engaging in physical sexual contact with personnel of the vessel or processing facility to which the observer is assigned, or with any vessel or processing plant personnel who may be substantially affected by the performance or non-performance of the observer's official duties.

(3) *Suspension and decertification*—(i) *Suspension and decertification review official.* The Regional Administrator (or a designee) will designate an observer suspension and decertification review

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official(s), who will have the authority to review observer certifications and issue initial administrative determinations of observer certification suspension and/or decertification.

(ii) *Causes for suspension or decertification.* The suspension/decertification official may initiate suspension or decertification proceedings against an observer:

(A) When it is alleged that the observer has committed any acts or omissions of any of the following:

(1) Failed to satisfactorily perform the duties of observers as specified in writing by the NMFS Observer Program; or

(2) Failed to abide by the standards of conduct for observers as prescribed under paragraph (f)(2) of this section;

(B) Upon conviction of a crime or upon entry of a civil judgment for:

(1) Commission of fraud or other violation in connection with obtaining or attempting to obtain certification, or in performing the duties as specified in writing by the NMFS Observer Program;

(2) Commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Commission of any other offense indicating a lack of integrity or honesty that seriously and directly affects the fitness of observers.

(iii) *Issuance of initial administrative determination.* Upon determination that suspension or decertification is warranted under paragraph (f)(3)(ii) of this section, the suspension/decertification official will issue a written IAD to the observer via certified mail at the observer's most current address provided to NMFS. The IAD will identify whether a certification is suspended or revoked and will identify the specific reasons for the action taken. If the IAD issues a suspension for an observer certification, the terms of the suspension will be specified. Suspension or decertification is effective immediately as of the date of issuance, unless the suspension/decertification official notes a compelling reason for maintaining certification for a specified period and under specified conditions.

(iv) *Appeals.* A certified observer who receives an IAD that suspends or revokes his or her observer certification may appeal pursuant to paragraph (f)(4) of this section.

(4) *Appeals.* (i) Decisions on appeals of initial administrative decisions denying certification to, or suspending, or decertifying, an observer, will be made by the Regional Administrator (or designated official).

(ii) Appeals decisions shall be in writing and shall state the reasons therefor.

(iii) An appeal must be filed with the Regional Administrator within 30 days of the initial administrative decision denying, suspending, or revoking the observer's certification.

(iv) The appeal must be in writing, and must allege facts or circumstances to show why the certification should be granted, or should not be suspended or revoked, under the criteria in this section.

(v) Absent good cause for further delay, the Regional Administrator (or designated official) will issue a written decision on the appeal within 45 days of receipt of the appeal. The Regional Administrator's decision is the final administrative decision of the Department as of the date of the decision.

(g) *Sample station and operational requirements—(1) Observer sampling station.* This paragraph contains the requirements for observer sampling stations. The vessel owner must provide an observer sampling station that complies with this section so that the observer can carry out required duties.

(i) *Accessibility.* The observer sampling station must be available to the observer at all times.

(ii) *Location.* The observer sampling station must be located within 4 m of the location from which the observer samples unsorted catch. Unobstructed passage must be provided between the observer sampling station and the location where the observer collects sample catch.

(iii) *Minimum work space aboard at-sea processing vessels.* The observer must have a working area of 4.5 square meters, including the observer's sampling table, for sampling and storage of fish to be sampled. The observer must be able to stand upright and have a work

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area at least 0.9 m deep in the area in front of the table and scale.

(iv) *Table aboard at-sea processing vessels.* The observer sampling station must include a table at least 0.6 m deep, 1.2 m wide and 0.9 m high and no more than 1.1 m high. The entire surface area of the table must be available for use by the observer. Any area for the observer sampling scale is in addition to the minimum space requirements for the table. The observer's sampling table must be secured to the floor or wall.

(v) *Diverter board aboard at-sea processing vessels.* The conveyor belt conveying unsorted catch must have a removable board (diverter board) to allow all fish to be diverted from the belt directly into the observer's sampling baskets. The diverter board must be located downstream of the scale used to weigh total catch. At least 1 m of accessible belt space, located downstream of the scale used to weight total catch, must be available for the observer's use when sampling.

(vi) *Other requirement for at-sea processing vessels.* The sampling station must be in a well-drained area that includes floor grating (or other material that prevents slipping), lighting adequate for day or night sampling, and a hose that supplies fresh or sea water to the observer.

(vii) *Observer sampling scale.* The observer sample station must include a NMFS-approved platform scale (pursuant to requirements at 50 CFR 679.28(d)(5)) with a capacity of at least 50 kg located within 1 m of the observer's sampling table. The scale must be mounted so that the weighing surface is no more than 0.7 m above the floor.

(2) *Requirements for bins used to make volumetric estimates on at-sea processing vessels.* [Reserved]

(3) *Operational requirements for at-sea processing vessels.* [Reserved]

[66 FR 20613, Apr. 24, 2001, as amended at 69 FR 31755, June 7, 2004. Redesignated and amended at 69 FR 42350, July 15, 2004; 69 FR 57881, Sept. 28, 2004]

§ 660.320 Allocations.

(a) *General.* The commercial portion of the Pacific Coast groundfish fishery, excluding the treaty Indian fishery, is divided into limited entry and open ac-

cess fisheries. Separate allocations for the limited entry and open access fisheries will be established biennially or annually for certain species and/or areas using the procedures described in this subpart or the PCGFMP.

(1) *Limited entry allocation.* The allocation for the limited entry fishery is the allowable catch (harvest guideline or quota excluding set asides for recreational or tribal Indian fisheries) minus the allocation to the open access fishery.

(2) *Open access allocation.* The allocation for the open access fishery is derived by applying the open access allocation percentage to the annual harvest guideline or quota after subtracting any set asides for recreational or tribal Indian fisheries. For management areas where quotas or harvest guidelines for a stock are not fully utilized, no separate allocation will be established for the open access fishery until it is projected that the allowable catch for a species will be reached.

(b) *Open access allocation percentage.* For each species with a harvest guideline or quota, the initial open access allocation percentage is calculated by:

(1) Computing the total catch for that species during the window period by any vessel that does not initially receive a limited entry permit.

(2) Dividing that amount by the total catch during the window period by all gear.

(3) The guidelines in this paragraph (b)(3) apply to recalculation of the open access allocation percentage. Any recalculated allocation percentage will be used in calculating the following biennial fishing period's open access allocation.

(c) *Catch accounting between the limited entry and open access fisheries.* Any groundfish caught by a vessel with a limited entry permit will be counted against the limited entry allocation while the limited entry fishery for that vessel's limited entry gear is open. When the fishery for a vessel's limited entry gear has closed, groundfish caught by that vessel with open access gear will be counted against the open access allocation. All groundfish caught by vessels without limited entry permits will be counted against the open access allocation.

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discard an observer's collected samples, equipment, records, photographic film, papers, or effects without the express consent of the observer;

(16) Prohibit or bar by command, impediment, threat, coercion, or refusal of reasonable assistance, an observer from collecting samples, conducting product recovery rate determinations, making observations, or otherwise performing the observer's duties;

(17) Harass or sexually harass an authorized officer or observer;

(18) Fail to provide the required assistance to an observer as described at § 600.506 (c) and (e);

(19) Fail to identify, falsely identify, fail to properly maintain, or obscure the identification of the FFV or its gear as required by this subpart;

(20) Falsify or fail to make, keep, maintain, or submit any record or report required by this subpart;

(21) Fail to return to the sea or fail to otherwise treat prohibited species as required by this subpart;

(22) Fail to report or falsely report any gear conflict;

(23) Fail to report or falsely report any loss, jettisoning, or abandonment of fishing gear or other article into the EEZ that might interfere with fishing, obstruct fishing gear or vessels, or cause damage to any fishery resource or marine mammals;

(24) Continue Activity Codes 1 through 4 after those activity codes have been canceled under § 600.511;

(25) Fail to maintain health and safety standards set forth in § 600.506(d);

(26) Violate any provisions of regulations for specific fisheries of this subpart;

(27) On a scientific research vessel, engage in fishing other than recreational fishing authorized by applicable state, territorial, or Federal regulations;

(28) Violate any provision of this subpart, the Magnuson-Stevens Act, the applicable GIFA, any notice issued under this subpart or any permit issued under this subpart; or

(29) Attempt to do any of the foregoing.

(b) It is unlawful for any FFV, and for the owner or operator of any FFV except an FFV engaged only in recreational fishing, to fish—

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(1) Within the boundaries of any state, unless:

(i) The fishing is authorized by the Governor of that state as permitted by section 306(c) of the Magnuson-Stevens Act to engage in a joint venture for processing and support with U.S. fishing vessels in the internal waters of that state; or

(ii) The fishing is authorized by, and conducted in accordance with, a valid permit issued under § 600.501, and the Governor of that state has indicated concurrence to allow fishing consisting solely of transporting fish or fish products from a point within the boundaries of that state to a point outside the United States; or

(2) Within the EEZ, or for any anadromous species or continental shelf fishery resources beyond the EEZ, unless the fishing is authorized by, and conducted in accordance with, a valid permit issued under § 600.501.

[61 FR 32540, June 24, 1996, as amended at 63 FR 7075, Feb. 12, 1998; 64 FR 39020, July 21, 1999]

§ 600.506 Observers.

(a) *General.* To carry out such scientific, compliance monitoring, and other functions as may be necessary or appropriate to carry out the purposes of the Magnuson-Stevens Act, the appropriate Regional Administrator or Science and Research Director (see table 2 to § 600.502) may assign U.S. observers to FFV's. Except as provided for in section 201(h)(2) of the Magnuson-Stevens Act, no FFV may conduct fishing operations within the EEZ unless a U.S. observer is aboard.

(b) *Effort plan.* To ensure the availability of an observer as required by this section, the owners and operators of FFV's wanting to fish within the EEZ will submit to the appropriate Regional Administrator or Science and Research Director and also to the Chief, Financial Services Division, NMFS, 1315 East West Highway, Silver Spring, MD 20910 a schedule of fishing effort 30 days prior to the beginning of each quarter. A quarter is a time period of 3 consecutive months beginning January 1, April 1, July 1, and October 1 of each year. The schedule will contain the name and IRCS of each FFV

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intending to fish within the EEZ during the upcoming quarter, and each FFV's expected date of arrival and expected date of departure.

(1) The appropriate Regional Administrator or Science and Research Director must be notified immediately of any substitution of vessels or any cancellation of plans to fish in the EEZ for FFV's listed in the effort plan required by this section.

(2) If an arrival date of an FFV will vary more than 5 days from the date listed in the quarterly schedule, the appropriate Regional Administrator or Science and Research Director must be notified at least 10 days in advance of the rescheduled date of arrival. If the notice required by this paragraph (b)(2) is not given, the FFV may not engage in fishing until an observer is available and has been placed aboard the vessel or the requirement has been waived by the appropriate Regional Administrator or Science and Research Director.

(c) *Assistance to observers.* To assist the observer in the accomplishment of his or her assigned duties, the owner and operator of an FFV to which an observer is assigned must—

(1) Provide, at no cost to the observer or the United States, accommodations for the observer aboard the FFV that are equivalent to those provided to the officers of that vessel.

(2) Cause the FFV to proceed to such places and at such times as may be designated by the appropriate Regional Administrator or Science and Research Director for the purpose of embarking and debarking the observer.

(3) Allow the observer to use the FFV's communications equipment and personnel upon demand for the transmission and receipt of messages.

(4) Allow the observer access to and use of the FFV's navigation equipment and personnel upon demand to determine the vessel's position.

(5) Allow the observer free and unobstructed access to the FFV's bridge, trawl, or working decks, holding bins, processing areas, freezer spaces, weight scales, cargo holds and any other space that may be used to hold, process, weigh, or store fish or fish products at any time.

(6) Allow the observer to inspect and copy the FFV's daily log, communications log, transfer log, and any other log, document, notice, or record required by these regulations.

(7) Provide the observer copies of any records required by these regulations upon demand.

(8) Notify the observer at least 15 minutes before fish are brought on board or fish or fish products are transferred from the FFV to allow sampling the catch or observing the transfer, unless the observer specifically requests not to be notified.

(9) Provide all other reasonable assistance to enable the observer to carry out his or her duties.

(d) *Health and safety standards.* All foreign fishing vessels to which an observer is deployed must maintain, at all times that the vessel is in the EEZ, the following:

(1) At least one working radar.

(2) Functioning navigation lights as required by international law.

(3) A watch on the bridge by appropriately trained and experienced personnel while the vessel is underway.

(4) Lifeboats and/or inflatable life rafts with a total carrying capacity equal to or greater than the number of people aboard the vessel. Lifeboats and inflatable life rafts must be maintained in good working order and be readily available.

(5) Life jackets equal or greater in number to the total number of persons aboard the vessel. Life jackets must be stowed in readily accessible and plainly marked positions throughout the vessel, and maintained in a state of good repair.

(6) At least one ring life buoy for each 25 ft (7.6 m) of vessel length, equipped with automatic water lights. Ring life buoys must have an outside diameter of not more than 32 inches (81.3 cm) nor less than 30 inches (76.2 cm), and must be maintained in a state of good repair. Ring life buoys must be readily available, but not positioned so they pose a threat of entanglement in work areas. They must be secured in such a way that they can be easily cast loose in the event of an emergency.

(7) At least one VHF-FM radio with a functioning channel 16 (156.8 MHz),

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International Distress, Safety and Calling Frequency, and one functioning AM radio (SSB-Single Side Band) capable of operating at 2182 kHz (SSB). Radios will be maintained in a radio room, chartroom, or other suitable location.

(8) At least one Emergency Position Indicating Radio Beacon (EPIRB), approved by the USCG for offshore commercial use, stowed in a location so as to make it readily available in the event of an emergency.

(9) At least six hand-held, rocket-propelled, parachute, red-flare distress signals, and three orange-smoke distress signals stowed in the pilothouse or navigation bridge in portable watertight containers.

(10) All lights, shapes, whistles, foghorns, fog bells and gongs required by and maintained in accordance with the International Regulations for Preventing Collisions at Sea.

(11) Clean and sanitary conditions in all living spaces, food service and preparation areas and work spaces aboard the vessel.

(e) *Observer transfers.* (1) The operator of the FFV must ensure that transfers of observers at sea via small boat or raft are carried out during daylight hours as weather and sea conditions allow, and with the agreement of the observer involved. The FFV operator must provide the observer 3 hours advance notice of at-sea transfers, so that the observer may collect personal belongings, equipment, and scientific samples.

(2) The FFV's involved must provide a safe pilot ladder and conduct the transfer according to the procedures of §600.504(d) to ensure the safety of the during the transfer.

(3) An experienced crew member must assist the observer in the small boat or raft in which the transfer is made.

(f) *Supplementary observers.* In the event funds are not available from Congressional appropriations of fees collected to assign an observer to a foreign fishing vessel, the appropriate Regional Administrator or Science and Research Director will assign a supplementary observer to that vessel. The costs of supplementary observers will be paid for by the owners and operators

of foreign fishing vessels as provided for in paragraph (h) of this section.

(g) *Supplementary observer authority and duties.* (1) A supplementary observer aboard a foreign fishing vessel has the same authority and must be treated in all respects as an observer who is employed by NMFS, either directly or under contract.

(2) The duties of supplementary observers and their deployment and work schedules will be specified by the appropriate Regional Administrator or Science and Research Director.

(3) All data collected by supplementary observers will be under the exclusive control of the Assistant Administrator.

(h) *Supplementary observer payment—*

(1) *Method of payment.* The owners and operators of foreign fishing vessels must pay directly to the contractor the costs of supplementary observer coverage. Payment must be made to the contractor supplying supplementary observer coverage either by letter of credit or certified check drawn on a federally chartered bank in U.S. dollars, or other financial institution acceptable to the contractor. The letter of credit used to pay supplementary observer fees to contractors must be separate and distinct from the letter of credit required by §600.518(b)(2). Billing schedules will be specified by the terms of the contract between NOAA and the contractors. Billings for supplementary observer coverage will be approved by the appropriate Regional Administrator or Science and Research Director and then transmitted to the owners and operators of foreign fishing vessels by the appropriate designated representative. Each country will have only one designated representative to receive observer bills for all vessels of that country, except as provided for by the Assistant Administrator. All bills must be paid within 10 working days of the billing date. Failure to pay an observer bill will constitute grounds to revoke fishing permits. All fees collected under this section will be considered interim in nature and subject to reconciliation at the end of the fiscal year in accordance with paragraph (h)(4) of this section and §600.518(d).

(2) *Contractor costs.* The costs charged for supplementary observer coverage to

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the owners and operators of foreign fishing vessels may not exceed the costs charged to NMFS for the same or similar services, except that contractors may charge to the owners and operators of foreign fishing vessels an additional fee to cover the administrative costs of the program not ordinarily part of contract costs charged to NMFS. The costs charged foreign fishermen for supplementary observers may include, but are not limited to the following:

(i) Salary and benefits, including overtime, for supplementary observers.

(ii) The costs of post-certification training required by paragraph (j)(2) of this section.

(iii) The costs of travel, transportation, and per diem associated with deploying supplementary observers to foreign fishing vessels including the cost of travel, transportation, and per diem from the supplementary observer's post of duty to the point of embarkation to the foreign fishing vessel, and then from the point of disembarkation to the post of duty from where the trip began. For the purposes of these regulations, the appropriate Regional Administrator or Science and Research Director will designate posts of duty for supplementary observers.

(iv) The costs of travel, transportation, and per diem associated with the debriefing following deployment of a supplementary observer by NMFS officials.

(v) The administrative and overhead costs incurred by the contractor and, if appropriate, a reasonable profit.

(3) *NMFS costs.* The owners and operators of foreign fishing vessels must also pay to NMFS as part of the surcharge required by section 201(i)(4) of the Magnuson-Stevens Act, the following costs:

(i) The costs of certifying applicants for the position of supplementary observer.

(ii) The costs of any equipment, including safety equipment, sampling equipment, operations manuals, or other texts necessary to perform the duties of a supplementary observer. The equipment will be specified by the appropriate Regional Administrator or Science and Research Director according to the requirements of the fishery

to which the supplementary observer will be deployed.

(iii) The costs associated with communications with supplementary observers for transmission of data and routine messages.

(iv) For the purposes of monitoring the supplementary observer program, the costs for the management and analysis of data.

(v) The costs for data editing and entry.

(vi) Any costs incurred by NMFS to train, deploy or debrief a supplementary observer.

(vii) The cost for U.S. Customs inspection for supplementary observers disembarking after deployment.

(4) *Reconciliation.* Fees collected by the contractor in excess of the actual costs of supplementary observer coverage will be refunded to the owners and operators of foreign fishing vessels, or kept on deposit to defray the costs of future supplementary observer coverage. Refunds will be made within 60 days after final costs are determined and approved by NMFS.

(i) *Supplementary observer contractors—(1) Contractor eligibility.* Supplementary observers will be obtained by NMFS from persons or firms having established contracts to provide NMFS with observers. In the event no such contract is in place, NMFS will use established, competitive contracting procedures to select persons or firms to provide supplementary observers. The services supplied by the supplementary observer contractors will be as described within the contract and as specified below.

(2) Supplementary observer contractors must submit for the approval of the Assistant Administrator the following:

(i) A copy of any contract, including all attachments, amendments, and enclosures thereto, between the contractor and the owners and operators of foreign fishing vessels for whom the contractor will provide supplementary observer services.

(ii) All application information for persons whom the contractor desires to employ as certified supplementary observers.

(iii) Billing schedules and billings to the owners and operators of foreign

§ 600.507

fishing vessels for further transmission to the designated representative of the appropriate foreign nation.

(iv) All data on costs.

(j) *Supplementary observers—certification, training*—(1) *Certification*. The appropriate Regional Administrator or Science and Research Director will certify persons as qualified for the position of supplementary observer once the following conditions are met:

(i) The candidate is a citizen or national of the United States.

(ii) The candidate has education or experience equivalent to the education or experience required of persons used as observers by NMFS as either Federal personnel or contract employees. The education and experience required for certification may vary according to the requirements of managing the foreign fishery in which the supplementary observer is to be deployed. Documentation of U.S. citizenship or nationality, and education or experience will be provided from personal qualification statements on file with NMFS contractors who provide supplementary observer services, and will not require the submission of additional information to NMFS.

(2) *Training*. Prior to deployment to foreign fishing vessels, certified supplementary observers must also meet the following conditions:

(i) Each certified supplementary observer must satisfactorily complete a course of training approved by the appropriate Regional Administrator or Science and Research Director as equivalent to that received by persons used as observers by NMFS as either Federal personnel or contract employees. The course of training may vary according to the foreign fishery in which the supplementary observer is to be deployed.

(ii) Each certified supplementary observer must agree in writing to abide by standards of conduct as set forth in Department of Commerce Administrative Order 202-735 (as provided by the contractor).

(k) *Supplementary observer certification suspension or revocation*. (1) Certification of a supplementary observer may be suspended or revoked by the Assistant Administrator under the following conditions:

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(i) A supplementary observer fails to perform the duties specified in paragraph (g)(2) of this section.

(ii) A supplementary observer fails to abide by the standards of conduct described by Department of Commerce Administrative Order 202-735.

(2) The suspension or revocation of the certification of a supplementary observer by the Assistant Administrator may be based on the following:

(i) Boarding inspection reports by authorized officers of the USCG or NMFS, or other credible information, that indicate a supplementary observer has failed to abide by the established standards of conduct; or

(ii) An analysis by NMFS of the data collected by a supplementary observer indicating improper or incorrect data collection or recording. The failure to properly collect or record data is sufficient to justify decertification of supplementary observers; no intent to defraud need be demonstrated.

(3) The Assistant Administrator will notify the supplementary observer, in writing, of the Assistant Administrator's intent to suspend or revoke certification, and the reasons therefor, and provide the supplementary observer a reasonable opportunity to respond. If the Assistant Administrator determines that there are disputed questions of material fact, then the Assistant Administrator may in this respect appoint an examiner to make an informal fact-finding inquiry and prepare a report and recommendations.

[61 FR 32540, June 24, 1996, as amended at 63 FR 7074, 7075, Feb. 12, 1998; 64 FR 39020, July 21, 1999]

§ 600.507 Recordkeeping.

(a) *General*. The owner and operator of each FFV must maintain timely and accurate records required by this section as modified by the regulations for the fishery in which the FFV is engaged.

(1) The owner and operator of each FFV must maintain all required records in English, based on Greenwich mean time (GMT) unless otherwise specified in the regulation, and make them immediately available for inspection upon the request of an authorized officer or observer.

Appendix S: Radio Communications

The radios that you will encounter most often are VHF-FM (Very High Frequency Modulation), used for short-range vessel-to-vessel and vessel-to-shore communication, and HF-SSB (High Frequency-Single Side Band), used for communication when the stations are out of VHF range with each other. Both types offer certain special advantages, and each requires a specific operating procedure. The use of radio communication equipment requires a licensed operator. If your vessel has given you permission to use the radio, you must follow the FCC rules for calling and speaking on the type of radio (VHF or SSB) you use. Ask first how to operate the radio and use these pages as a guide for calling. Be aware that obstructing others' transmissions with your call (by conversing for too long), using profanities or making false distress calls can cost the permit holder and/or you a heavy fine and/or prison sentence.

VHF-FM Radios

In the United States, the VHF Band is broken up into 71 channels, with a frequency range of from 156.000 to 163.000 MHz, including six WX (Weather) channels. By law, all operating VHF stations are required to have at least three of these channels: channel 6, channel 16, and at least one other working channel.

Channel 6 (156.300 MHz) is the Intership Safety Channel, used for intership safety purposes, search-and-rescue (SAR) communications with ships and aircraft of the U.S. Coast Guard, and vessel movement reporting within ports and inland waterways. This channel must not be used for non-safety communications.

Channel 16 (156.800 MHz) is the International Distress, Safety, and Calling Channel (Intership and Ship-to-Coast). This channel must be monitored at all times the station is in operation (except when actually communicating on another channel). This channel is also monitored by the U.S. Coast Guard, Public Coastal Stations, and many Limited Coastal Stations. Calls to vessels are normally initiated on this channel. Then, except in an emergency, you must switch to a working channel. It is against FCC regulations to conduct business on this channel. In addition, vessels calling must use their assigned call sign at the beginning and end of each transmission.

Channel 22A (157.100 MHz) is the U.S. Coast Guard Liaison Channel. This channel is used for communications with U.S. Coast Guard ships, aircraft, and coastal stations after first establishing contact on channel 16. Navigational warnings and, where not available on WX channels, Marine Weather forecasts are also broadcast on this frequency.

Channels 24, 25, 26, 27 and 28 (also 84, 85, 86 and 87) are the Public Correspondence channels (ship-to-coast). These are available to all vessels to communicate with Public Coastal stations (Marine Operator).

Channels 26 and 28 are the primary public correspondence channels.

Channels 1, 3, 5, 12, 13, 14, 15, 17, 65, 66, 73, 74, 77, 81, 82 and 83 are channels with special designations (port traffic communications, U.S. government communications, locks and bridges, environmental, etc.), and their use close to shore or to ports should be minimized.

Channels 7, 8, 9, 10, 11, 18, 19, 67, 68, 69, 70, 71, 72, 78, 79, 80 and 88 are commercial and non-commercial working channels that are available for conducting business. The abbreviated format (no call signs) is acceptable on these frequencies. It should be noted that some of these channels may be locally restricted (off the Washington Coast, for example, channel 11 is Tofino Coast Guard Traffic Control for the entry into Juan de Fuca Strait, used for reporting ship locations), in which case their use for business should be avoided.

Appendix S: Radio Communications

HF-SSB Radios

To communicate over distances of beyond twenty miles, you will need to use satellite communication or a medium to high frequency radiotelephone referred to as Single Side Band (SSB) radio. The signal is poorer in quality than VHF and susceptible to slight atmospheric shifts. Lower frequencies are used for medium distances and higher frequencies for greater distances. The general rule for single sideband frequency selection is: multiply the frequency in MHz by 100 to obtain the approximate coverage distance in miles. At night however, the ranges of SSB radio wave travel are from 2-3 times greater. Therefore, use a lower frequency at night to cover the same distance.

All ship SSB radiotelephones must be capable of operating on 2182 kHz, the international distress and calling frequency, and at least 2 other frequencies. Numerous channels are available for your use; which ones are available varies from place to place. However, channel 2670 kHz is only used for communicating with the Coast Guard and should not be used for other purposes.

When using SSB radiotelephone, you must observe radio silence on channel 2182 kHz, the emergency channel, for 3 minutes immediately after the hour and the half hour. The purpose of radio silence on the emergency hailing channel is to clear the airwave for weak or distant distress signals. No radio silence is used on the VHF emergency channel: channel 16.

Radio Procedure

In as much as the airwaves are in the public domain, it is the responsibility of the radio station operator to conduct business according to established guidelines and procedures. While on the air, the operator should follow the following format outline:

1. Listen before beginning transmission in order to ensure that you are not interfering with other stations or with emergency radio traffic.
2. Identify your station when calling. On the SSB, a calling station must limit the duration of the hail to not more than 30 seconds. If there is no reply, the hail may be repeated at 2 minute intervals up to a maximum of three times, at which time the calling station must sign off and wait a minimum of 15 minutes before making another attempt. This requirement does not apply in emergency situations.
3. Keep transmissions short and concise, giving the other station a chance to respond, ask questions, or reconfirm an unclear message. A long, complicated message can best be effected in short segments with breaks in between to ensure that the receiving station has copied each portion of the message correctly.
4. Follow correct radio procedure while on the air. The phonetic alphabet should be learned and used spelling unclear words with an extemporaneous phonetic alphabet can lead to misunderstood messages. You should also know and use the radio "punctuation" words ("over", "clear", "out", "roger", "words twice", "say again", "standing by", and "break"). Since most radio communication is only one way at a time, these words can be invaluable for signaling your intentions to the receiving station. Make sure to speak directly into the microphone; speaking loudly, slowly, and distinctly-but not shouting-can significantly improve the legibility of radio broadcasts. The use of profanity on the public airwaves is strictly forbidden.
5. Upon completing a transmission, you must sign off by identifying your station and using the words "clear" or "out" (or, if you expect to soon resume contact with the same station, by using the phrase "standing by").

Radios are different from telephones in that they cannot transmit and receive simultaneously. Therefore when you have temporarily finished talking and are ready to listen, say "over," and release the button on your microphone. When the other party is ready to listen they will say "over." At the end of your entire message, say "out" rather than "over." Keep in mind that people on other ships can overhear your conversation, so watch what you say.

Sounds are easily garbled on marine radios so the phonetic alphabet is used when sailors want to spell something. Here are the words that the Coast Guard will recognize as letters:

| | | | |
|-------------|--------------------|-------------|------------|
| A - alpha | I - indigo | Q - quebec | Y - yankee |
| B - bravo | J - juliet | R - romeo | Z - zulu |
| C - charlie | K - kilo (keeloes) | S - sierra | |
| D - delta | L - lima (Leema) | T - tango | |
| E - echo | M - mike | U - uniform | |
| F - foxtrot | N - november | V - victor | |
| G - gulf | O - oscar | W - whiskey | |
| H - hotel | P - papa | X - x-ray | |

Every ship and all Coast Guard stations continually listen to the emergency frequencies. Therefore when you want to talk to someone, call on an emergency frequency. As soon as you contact them, arrange to switch to another channel. It is illegal, impolite, unfair, and dangerous to talk on emergency channels. Sometimes atmospheric conditions are such that the emergency frequencies are the only ones that work. At those times you simply cannot communicate via radio except to report emergencies.

Emergency frequencies are:

- FM Channel 16, international distress
- FM Channel 13, for ships to use to avoid collisions. You can contact other ships on 13, but not Coast Guard shore stations.
- AM 2182, international distress (Almost certainly as an observer you will only be using FM frequencies.)
- When you initially contact another station make sure you state what channel you are broadcasting on, since all ships and stations constantly listen to several.
- Speak in normal tones, using normal conversational pauses and emphasis.
- Ensure that your messages are brief and businesslike. No chatter.
- When trying to establish communications repeat the other station's name, and your name, at least twice.
- A typical message may be as follows:

You: Coast Guard Station San Francisco Coast Guard Station San Francisco; this is the fishing vessel Starry Flounder, Whiskey Tango Zulu four, one, nine, zero; this is the fishing vessel Starry Flounder, Whiskey Tango Zulu four, one, nine, zero on channel sixteen, over.

C.G.: Fishing vessel Starry Flounder this is Coast Guard Station San Francisco shift and answer on channel eleven, out.

You: Coast Guard Station San Francisco Coast Guard Station San Francisco this is the Starry Flounder on channel eleven, over.

C.G.: Fishing vessel Starry Flounder, this is Coast Guard Station Kodiak send your traffic, over.

You: San Francisco this is the Starry Flounder, I am an observer talking for the captain. A crewman has a badly crushed arm and needs hospitalization. Can you evacuate the crewman? Over. "

C.G.: Vessel Starry Flounder, this is San Francisco. Affirmative. What is your current position? Over.

Appendix S: Radio Communications

You: San Francisco this is the Starry Flounder. Position is fifty-five degrees fifty minutes north, 157 degrees, twenty-four minutes west, over..A-55

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.

SECTION 16 OTHER INFORMATION

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results in your logbook. If the scale does not test out within the approved NMFS accuracy range, please alert your debriefer when you return for your final debriefing.

Appendix T: Processors

| Plant | City | Phone |
|------------------------------------|---------------|----------------|
| California | | |
| Murphys Sunnybrae | Arcata | (707) 822-1157 |
| Murphys Glendale | Arcata | (707) 822-2271 |
| Unknown | Arcata | (707) 826-8670 |
| Shin Fish | Artesia | (562) 402-4747 |
| Central Coast Seafood | Atascadero | (805) 772-1280 |
| Armstrongs Fish Market & Seafood | Avalon | (310) 510-0113 |
| Petes Pierside Cafe | Avila Beach | (805) 595-7627 |
| Olde Port Fisheries Inc | Avila Beach | (805) 595-9456 |
| Del Mar Seafoods Inc | Avila Beach | (805) 595-9456 |
| Bj Enterprizes | Avila Beach | (805) 929-5757 |
| The Tides | Bodega Bay | (707) 875-3560 |
| The Tides Wharf | Bodega Bay | (707) 875-2777 |
| Lucas Wharf Inc | Bodega Bay | (707) 875-3571 |
| Paisano Bros | Bodega Bay | (707) 875-3576 |
| Fresh Fish | Bodega Bay | (707) 875-9633 |
| Drews Fish | Bolinas | (415) 868-1320 |
| Moores Seafood Inc | Camarillo | (805) 384-9277 |
| Pellys Fish Market And Deli | Carlsbad | (760) 431-8454 |
| Sea Harvest | Carmel | (408) 626-3626 |
| Pacific Fish & Crab Market | Carson | (310) 518-4042 |
| Mr Lee Bbq House | Cerritos | (562) 809-1339 |
| Fresh Daily Fish Co | Costa Mesa | |
| Pacific Choice Seafood Company | Crescent City | (707) 464-5558 |
| Caito Fisheries Inc | Crescent City | (707) 464-9483 |
| Crescent City Hook & Line Group | Crescent City | (707) 465-6857 |
| Alber Seafoods Inc | Crescent City | (707) 464-8122 |
| Tin Tin Oriental Market | Cupertino | (408) 255-7804 |
| West Basin Trap & Lobster | Dana Point | (760) 868-5713 |
| Morning Star Fisheries | El Granada | (415) 728-3729 |
| Exclusive Freshness | El Granada | (415) 728-7321 |
| Three Captains Sea Products | El Granada | (650) 726-3111 |
| Three Captains Sea Products Inc | El Granada | (650) 726-3111 |
| Pemberton Fish | El Granada | (650) 740-0615 |
| Pacific Choice Seafood Company | Eureka | (707) 442-2981 |
| Mr Fish Seafood | Eureka | (707) 443-2661 |
| Caito Fisheries Inc | Eureka | (707) 443-0550 |
| Murphys Markets Inc | Eureka | (707) 822-7665 |
| Eureka Co-op | Eureka | (707) 443-6027 |
| Caito Fisheries Inc | Fort Bragg | (707) 964-6368 |
| Bassler Fisheries | Fort Bragg | (707) 964-0597 |
| Empress Seafood Llc | Fort Bragg | (707) 964-3557 |
| North Coast Fishing Adventures Inc | Fort Bragg | (707) 964-3000 |
| The Fish Market | Fort Bragg | (707) 964-1600 |

Appendix T: Processors

| Plant | City | Phone |
|-----------------------------------|------------------|----------------|
| Ocean Fresh Seafood Products Jv | Fort Bragg | (707) 964-1394 |
| Ocean Fresh Seafood Products Jv | Fort Bragg | (707) 964-1652 |
| P Seafood | Fort Bragg | (415) 203-5155 |
| Voyatzis Fish Company | Fountain Valley | (949) 673-1833 |
| Central Fish Company | Fresno | (209) 237-2049 |
| Pacific Fresh Seafood Company | Fresno | (209) 264-3474 |
| Empress Seafood Llc | Ft Bragg | (707) 964-3557 |
| Crystal Food Inc | Fullerton | (714) 447-3610 |
| Princeton Seafood Company | Half Moon Bay | (650) 726-2722 |
| Fitz Buskirk Inc | Half Moon Bay | (650) 726-6953 |
| Ma Seafood | Hawaiian Gardens | (562) 421-1698 |
| C J Seafood | Huntington Beach | (714) 960-7733 |
| Yale Fish Company | La Crescenta | (213) 324-9577 |
| Fukushima | Lemon Grove | (619) 461-2443 |
| Del Mar Seafoods Inc | Long Beach | (562) 628-1800 |
| Lb Seafood | Long Beach | (562) 426-8353 |
| Pacific Fresh Fish Company Inc | Los Angeles | (213) 623-6220 |
| American Fish And Seafood Company | Los Angeles | (213) 612-0350 |
| Los Angeles Fish | Los Angeles | (213) 612-0350 |
| Showa Marine Inc | Los Angeles | (213) 627-4091 |
| Dy Fish Trading Co | Los Angeles | (213) 447-1622 |
| Capn Zachs Crabhouse Inc | Mckinleyville | (707) 839-9050 |
| T & L Trading Inc | Montebello | (323) 887-8838 |
| Monterey Fish Company Inc | Monterey | (831) 375-3511 |
| Royal Seafoods Inc | Monterey | (831) 373-7920 |
| Deyerle Brothers Seafood Inc | Monterey | (831) 632-2574 |
| | Monterey | (831) 372-2636 |
| Central Coast Seafoods | Morro Bay | (805) 462-3474 |
| Bayshores Fish Company | Morro Bay | (805) 772-8411 |
| Giovannis Wholesale Fish | Morro Bay | (805) 772-1276 |
| Tognazzinis Dockside Restaurant | Morro Bay | (805) 772-8100 |
| Bay Fresh | Moss Landing | (831) 633-5160 |
| Bay Fresh Seafood | Moss Landing | (831) 633-5160 |
| Monterey Fish Company Inc | Moss Landing | (831) 633-4808 |
| Phils Fish Market & Eatery | Moss Landing | (831) 633-2152 |
| Sea Harvest | Moss Landing | (831) 633-6300 |
| Sea Harvest | Moss Landing | (831) 632-2574 |
| Solomon Live Fish | Moss Landing | (831) 632-0304 |
| Del Mar Seafoods Inc | Moss Landing | (831) 753-5100 |
| Del Mar Seafoods Inc | Moss Landing | (831) 753-5100 |
| Bay Fresh Seafoods | Moss Landing | (408) 633-5160 |
| Beticia | Moss Landing | (831) 671-9261 |
| Newport Dory Fleet Co Op | Newport Beach | (714) 754-0915 |
| Woods Ocean Products | Oak View | (805) 708-0483 |
| New Sang Chong Market | Oakland | (510) 451-2018 |
| Yet Sun Market | Oakland | (510) 451-3625 |
| Nor Cal Seafood Inc | Oakland | (510) 532-7823 |
| New Tins Market | Oakland | (510) 832-6256 |
| Ken S Sio Inc | Oakland | (510) 390-2549 |

Appendix T: Processors

| Plant | City | Phone |
|-------------------------------------|---------------------|----------------|
| Ma Seafood | Oakland | (510) 865-3381 |
| Lucky Seafood Market | Oakland | (510) 436-6068 |
| Lucky Seafood Mkt 2 | Oakland | (510) 436-6068 |
| Juan Vazquez Company | Orange | (714) 997-9061 |
| Fishermans House | Oxnard | (805) 984-3443 |
| Del Mar Seafoods Inc | Oxnard | (831) 753-5100 |
| Hc Seafoods Inc | Oxnard | (805) 382-8173 |
| Sunrise Ii | Oxnard | (805) 231-0205 |
| Fisherman Fresh Seafood | Oxnard | (805) 701-0018 |
| Cactus Cove | Palm Desert | (760) 340-1418 |
| Pacific West Seafood Company Inc | Petaluma | (707) 763-2917 |
| Lemons Philo Mkt Inc | Philo | (707) 895-3552 |
| Pemberton Fish | Pillar Point Harbor | (650) 740-0615 |
| Stacey Joanne | Pillar Point Harbor | (650) 740-0615 |
| Monterey Fish Company Inc | Port Hueneme | (805) 488-1151 |
| Ocean Fresh Seafood Products Jv | Pt Arena | (707) 882-1662 |
| Captain Kidds Fish Market | Redondo Beach | (310) 372-7703 |
| Kingfisher Trading Company Inc | S El Monte | (626) 448-9222 |
| Ocean Harvestors Company | S El Monte | (626) 705-8198 |
| Ly North Star Seafood Inc | S El Monte | (626) 582-8188 |
| Pacific Fresh Sea Food Company | Sacramento | (916) 419-5500 |
| Sachiko Fish | Sacramento | (916) 429-6604 |
| Monterey Fish Company Inc | Salinas | (831) 775-0522 |
| Monterey Fish Company Inc | Salinas | (831) 769-9155 |
| Franks Fish Market | Salinas | (408) 422-0879 |
| Marina Fish & Poultry | Sam Leandro | (510) 357-0421 |
| Sportsmens Seafoods Inc | San Diego | (619) 224-3551 |
| Catalina Offshore Products | San Diego | (619) 297-9797 |
| Chesapeake Fish Company Inc | San Diego | (619) 238-0526 |
| Mrs Kellys Inc/dba Pt Loma Seafoods | San Diego | (619) 223-1109 |
| Andys Fish | San Diego | (619) 417-5097 |
| Madruga Fish | San Diego | (619) 225-9247 |
| Wild West | San Diego | (858) 272-6958 |
| All Ways Fishing | San Diego | (619) 840-7375 |
| Johnnys | San Diego | (619) 218-8242 |
| Caito Fisheries Inc | San Francisco | (415) 441-2121 |
| Osprey Seafood Of California Inc | San Francisco | (415) 291-0156 |
| Pacific San Francisco | San Francisco | (415) 474-0150 |
| 23rd Irving Supermarket Inc | San Francisco | (415) 682-0926 |
| Wah Lian Supermarket Inc | San Francisco | (415) 681-3982 |
| C & L Sea Food Wholesale Inc | San Francisco | (415) 816-1472 |
| New Lun Wah Company Inc | San Francisco | (415) 986-0756 |
| Costarella Seafoods | San Francisco | (415) 674-0175 |
| W F Alber Inc | San Francisco | (415) 292-1640 |
| Wah Lian Super Market | San Francisco | (415) 665-7598 |
| Jamie Supermarket | San Francisco | (415) 956-5398 |
| New Sang Sang Market Inc | San Francisco | (415) 433-0403 |
| P & T Flannery Seafoods Inc | San Francisco | (415) 346-1303 |
| Robalo | San Francisco | (415) 982-7903 |

Appendix T: Processors

| Plant | City | Phone |
|------------------------------------|-----------------|----------------|
| New Luen Sing Fish Market Inc | San Francisco | (415) 566-6299 |
| Royal Hawaiian Seafood | San Francisco | (415) 824-1177 |
| Next Seafood Company Inc | San Francisco | (415) 929-1803 |
| San Pedro Fish Market & Restaurant | San Pedro | (310) 832-4251 |
| Np Seafood | San Pedro | (310) 832-4119 |
| Mus Seafood Company | Santa Barbara | (805) 963-1266 |
| Santa Barbara Fishermens Market | Santa Barbara | (805) 965-9564 |
| Far West Marine Seafood | Santa Cruz | (408) 287-5524 |
| Stagnaro Bros Seafood Inc | Santa Cruz | (408) 423-1188 |
| Stagnaro Bros Seafood Inc | Santa Cruz | (408) 423-1188 |
| | Santa Cruz | (831) 234-8571 |
| Hans Fish | Santa Cruz | (831) 588-7338 |
| North Coast Fisheries Inc | Santa Rosa | (707) 579-0679 |
| Young Brothers Fish | Scotts Valley | (831) 818-4428 |
| The Cove Restaurant | Shelter Cove | (707) 986-1197 |
| Del Mar Seafoods Inc | Terminal Island | (831) 753-5100 |
| Seascape Restaurant | Trinidad | (707) 677-0211 |
| Murphys Trinidad | Trinidad | (707) 677-3643 |
| Katys Smokehouse | Trinidad | (707) 677-0151 |
| Del Mar Seafoods | Ventura | (831) 763-3000 |
| Pierpont Seafood | Ventura | (805) 658-2069 |
| American Fish - Sacramento | W Sacramento | (213) 612-0350 |
| Monterey Fish Company Inc | Watsonville | (831) 761-5579 |
| Del Mar Seafoods Inc | Watsonville | (831) 763-3000 |
| Del Mar Seafoods Inc | Watsonville | (831) 753-5100 |
| Marios Restaurant & Bar | Whitethorn | (707) 986-1401 |
| Oregon | | |
| Morlock, Randy Morlock | Aloha | (503) 310-2655 |
| Allen, Benji | Astoria | (503) 244-3010 |
| American Canadian Fisheries | Astoria | (360) 398-1117 |
| Astoria Holdings Inc | Astoria | (503) 338-1288 |
| Astoria Pacific Seafoods | Astoria | (503) 325-3156 |
| Astoria Seafoods Llc | Astoria | (503) 741-7264 |
| Bornstein Seafoods Of Oregon | Astoria | (503) 325-6164 |
| Bruski's Dock | Astoria | (503) 338-8072 |
| Custom Freezers Llc | Astoria | (503) 325-3419 |
| Da Yang Seafoods Inc | Astoria | (425) 971-6596 |
| Evans, Randall C | Astoria | (503) 338-8405 |
| Fish Landing Llc | Astoria | (503) 325-1067 |
| Fishhawk Fisheries | Astoria | (503) 325-5252 |
| Ocean Crest Seafoods Inc | Astoria | (253) 861-3273 |
| Tarabochia, Brian | Astoria | (503) 325-8516 |
| Uniontown Fish Market | Astoria | (503) 325-9592 |
| West Bay Marketing | Astoria | (503) 325-6636 |
| Pacific Oyster Co | Bay City | (503) 377-2330 |
| Ihander, Kirk | Bend | (541) 390-9516 |
| Angler Seafood | Brookings | (541) 469-5900 |
| Caito Fisheries Inc | Brookings | (541) 469-7628 |
| Johns Fresh Seafood | Brookings | (541) 469-7671 |

Appendix T: Processors

| Plant | City | Phone |
|----------------------------------|---------------|----------------|
| Little J Live Crab | Brookings | (541) 469-6934 |
| Pacific Choice Seafoods | Brookings | (541) 412-7072 |
| Pratco | Brookings | (541) 469-4166 |
| Sio Inc | Brookings | (510) 912-4960 |
| Wild Billl Fisheries | Brookings | (541) 469-3109 |
| Ecola Seafoods Inc | Cannon Beach | (503) 436-9130 |
| Keller, William M | Cannon Beach | (503) 436-0248 |
| Supreme Seafood Co | Cave Junction | (541) 592-4987 |
| Bandon Pacific Inc | Charleston | (541) 888-9626 |
| Chucks Seafoods Inc | Charleston | (541) 888-5525 |
| Fishermens Wharf | Charleston | (541) 888-8862 |
| Hallmark Fisheries | Charleston | (541) 888-3253 |
| K Lyn Fisheries | Charleston | (541) 888-0267 |
| Noyes, Mary C | Charleston | (541) 888-3122 |
| Seahawk Seafood | Charleston | (541) 888-6645 |
| Starvin Marvin's Seafood | Charleston | (541) 888-5808 |
| Pacific Seafood Co Inc | Clackamas | (503) 657-1101 |
| Klam King Clams Llc | Coos Bay | (541) 266-7707 |
| Oregon Brand Seafood Llc | Coos Bay | (541) 888-1748 |
| Penningtons Crab Co | Coos Bay | (541) 888-9018 |
| Young Shin Fisheries Corp | Coquille | (541) 396-6979 |
| Scott's Smokehouse | Corbett | (503) 667-4836 |
| Seals, Carroll | Cottage Grove | (541) 942-5048 |
| Tucker Industries Inc | Cottage Grove | (541) 942-6465 |
| Jim's Seafood | Depoe Bay | (541) 994-6276 |
| Neptunes Choice Llc | Depoe Bay | (541) 765-4000 |
| Ocean Brite Seafood | Depoe Bay | (541) 270-7714 |
| Henry H Pelfrey | Fairview | (503) 661-5093 |
| Almendinger, Gary | Florence | (541) 902-1922 |
| F/v Lassie | Florence | (541) 997-2664 |
| International C Food Marketing | Florence | (541) 997-7978 |
| Krab Kettle Fisheries Inc | Florence | (541) 997-8996 |
| Weber's Fish Market | Florence | (541) 997-8886 |
| Bay Ocean Seafood Co | Garibaldi | (503) 322-9629 |
| Brothers Three Fisheries Inc | Garibaldi | (503) 791-8636 |
| Deep Water Seafoods Llc | Garibaldi | (503) 755-9122 |
| Dougs Diving, Doug Alm DbA | Garibaldi | (503) 322-2200 |
| Network Fisheries | Garibaldi | (503) 791-0227 |
| Oregon Gourmet Crab | Garibaldi | (503) 322-2544 |
| Tillamook Bay Boathouse Llc | Garibaldi | (503) 322-3600 |
| Nor-cal Seafoods Inc | Gold Beach | (541) 247-0773 |
| Rogue King Seafood | Gold Beach | (541) 247-9494 |
| Point Adams Packing Co - Hammond | Hammond | (503) 861-2226 |
| Chetco Seafood Co | Harbor | (541) 469-9251 |
| Dick & Casey's Gourmet Seafood | Harbor | (541) 469-9494 |
| Fox, Bingham | Harbor | (541) 661-4774 |
| Great Amer Smkhse & Seafood | Harbor | (541) 469-6903 |
| North Coast Fisheries Inc | Harbor | (707) 579-0679 |
| Lawler, David | Hillsboro | (503) 440-3061 |

Appendix T: Processors

| Plant | City | Phone |
|----------------------------------|---------------|----------------|
| Barnacle Bills Seafood | Lincoln City | (541) 994-3022 |
| Bills Seafood, Ii | Lincoln City | (541) 994-8110 |
| Granville Fisheries Inc | Logsdon | (541) 444-2460 |
| Wild Planet | Mckinleyville | (707) 839-3170 |
| Sausage Kitchen Inc | Milwaukie | (503) 656-9766 |
| Adams, Charles | Newport | (541) 574-7863 |
| Bay Street Crab Company | Newport | (541) 752-1822 |
| Carvalho Fisheries Inc | Newport | (707) 839-3270 |
| Caught In Oregon | Newport | (541) 961-8333 |
| Codys Sea To You Seafoods | Newport | (541) 574-0284 |
| Eder Fish Company | Newport | (541) 265-6650 |
| F/v Judy, Robert Kemp, Ii | Newport | (541) 270-3752 |
| Local Ocean Seafoods Inc | Newport | (541) 574-7959 |
| Newell Seafoods | Newport | (541) 336-5615 |
| Ocean Beauty Seafoods Inc Nwf | Newport | (503) 325-0656 |
| Pacific Shrimp Company | Newport | (541) 265-4215 |
| Pfister, Tom | Newport | (541) 265-9143 |
| Robinson (R And S Seafood), Jim | Newport | (541) 961-1946 |
| Roles, Dallas | Newport | (541) 270-1482 |
| Sawyer's Landing | Newport | (541) 265-3907 |
| Trident Seafoods Corp | Newport | (541) 265-7279 |
| Yaquina Bay Fruit Processors | Newport | (541) 867-3314 |
| Seafood Services Inc | North Bend | (541) 756-5139 |
| Superior Seafood | North Bend | (541) 267-4423 |
| Tony's Smoke House & Cannery Inc | Oregon City | (503) 656-7512 |
| Pastime Fisheries | Otis | (541) 994-3440 |
| Sea Star Enterprise | Otter Rock | (541) 765-2111 |
| Cape Kiwanda Rv Park | Pacific City | (541) 921-0281 |
| Sea Q Fish Ltd | Pacific City | (503) 965-6352 |
| D S Seafoods | Port Orford | (541) 332-2245 |
| Oregon Bait Co | Port Orford | (541) 332-0848 |
| Happy Crab Seafoods Inc | Portland | (503) 285-7154 |
| Hongland Market | Portland | (503) 252-3000 |
| Jessica Dressel Llc | Portland | (503) 866-8082 |
| O M Seafood Co | Portland | (503) 788-1984 |
| Ocean Beauty Seafoods Inc | Portland | (503) 224-1611 |
| Cowlitz River Smelt Co | Rainier | (360) 273-7354 |
| George And Barker Fish Co | Redmond | (503) 741-0240 |
| Jetty Fishery Llc | Rockaway | (503) 368-5746 |
| Coastwide Seafood | Salem | (503) 947-6178 |
| Mikes Custom Seafood | Salem | (503) 588-0302 |
| Murtle Bee Tuna Llc | Salem | (503) 302-8431 |
| Native Fish | Seal Rock | (541) 270-7889 |
| Cox, Paul & Ilene | South Beach | (541) 961-3939 |
| Donald Snow DbA Fv Summer Place | South Beach | (541) 867-7419 |
| Lighthse Deli/fish Co, James Ive | South Beach | (541) 867-6800 |
| Newport Bay Fish Co | South Beach | (541) 270-8023 |
| Reinholdt Fishing Ent | St Helens | (503) 397-3369 |
| Gilson Marine Farms | Tillamook | (503) 842-2955 |

Appendix T: Processors

| Plant | City | Phone |
|----------------------------------|----------------|----------------|
| Netarts Seafood Company | Tillamook | (503) 842-3698 |
| Tillamook Bait Company | Tillamook | (503) 842-5031 |
| Aue, Robert | Toledo | (541) 336-8107 |
| Signature Salmon Llc | Tualatin | (503) 638-2943 |
| Barto, James J | Veneta | (541) 935-3106 |
| Cold Creek | Waldport | (541) 563-2146 |
| Leland Arce Dba Seafood | Waldport | (541) 563-2835 |
| Paulson, Keith | Waldport | (541) 563-4656 |
| Waldport Seafood Company Llc | Waldport | (541) 563-4107 |
| Heuker Brothers Inc | Warrendale | (541) 374-8255 |
| Jessie's Ilwaco Fish Co | Warrenton | (360) 642-3773 |
| Oregon Ocean Seafoods | Warrenton | (503) 861-1434 |
| Pacific Coast Seafoods Company | Warrenton | (503) 861-2201 |
| Sliders Select Seafoods | Warrenton | (503) 791-4762 |
| Griff's Bayside Rest And Seafood | Winchester Bay | (541) 271-2512 |
| Sloan's Wharf | Winchester Bay | (541) 271-1331 |
| Sportsmen's Cannery & Smokehouse | Winchester Bay | (541) 271-3293 |
| Washington | | |
| Arrowac | Bellingham | (360) 676-1606 |
| Bcs (Fish House) | Bellingham | (360) 733-1640 |
| Bornstein Seafoods | Bellingham | (360) 734-7990 |
| Dakota Fisheries | Blaine | (360) 332-4131 |
| K-c Fish Co. | Blaine | (360) 332-5121 |
| Boundary Fish Co. | Blaine | (360) 332-6715 |
| Jessie's | Ilwaco | (360) 642-3362 |
| High Tide | La Push | (360) 374-9494 |
| High Tide | Neah Bay | (360) 645-2016 |
| High Tide | Port Angeles | (360) 452-8488 |
| Besecker, Inc. | Seattle | (206) 232-5040 |
| South Bend Packer | South Bend | (360) 875-6570 |
| D & M Live | Westport | (360) 268-3919 |
| Washington Crab | Westport | (360) 268-9234 |
| Merino Seafood | Westport | (360) 268-9286 |
| Washington Crab | Westport | (360) 268-9410 |

Appendix U: Loran Information

LORAN Conversion Program

Background

LORAN positions are determined through the triangulation of signals sent out by LORAN stations. Two LORAN numbers, each originating at a different station, must be recorded for each location. These numbers can be converted to Lat/Long positions.

In order to do the conversion, the specific stations from which the signals originated must be known. Different sets of stations are known as 'chains'. Specific chains can be determined from recorded LORAN numbers. Most vessels on the West Coast will be using 9940.

Instructions

1. Determine which chain needs to be used to convert the LORAN positions to Lat/Long. Typically this will be 9940, but may be 5990 for vessels in Northern Oregon and Washington. If you are fishing north of the California border and one of the TD numbers (one of the two numbers that you should have recorded) is between 14400 and 15000, you are using chain 5990.
2. To do the conversion, you need to download a program from the USCG web site: <http://www.navcen.uscg.gov/?pageName=loranConvert>. Download the POSAID program. You can save the program to any folder on your desktop. The download includes POSAID, POSAID2, a test file (README), and a set-up program (CHAIN). Do not delete any of them or the program may not run.
3. Open POSAID2. A notice to all users will appear. Press any key to start the program. The **Main Menu** will appear.
4. Select option C (Change Defaults) by pressing the C key on your keyboard. The **Change Defaults Menu** will appear. Verify that the latitude / longitude display mode (item 2) is degrees minutes (dd mm.mmmm), not degrees minutes seconds (dd mm ss.sss). If it is not, select item 2 by pressing the 2 key on your keyboard. On the menu that appears select dd mm.mmmm as a display mode by pressing the 3 key on your keyboard. This will return you to the **Change Defaults Menu** where dd mm.mmmm should now appear to the right of item 2.
5. Select option 6 (LORAN C chain used) on the **Change Defaults Menu** by pressing the 6 key on your keyboard. You will be asked to "Input GRI of new Loran C chain". The default chain is 9960 - Northeast US chain. This should be changed to 9940 - West Coast US chain, unless you have a TC between 14400 and 15000 and were fishing north of California. Then you would change it to 5990 - Canadian West Coast. This will bring you back to the **Change Defaults Menu** with the appropriate chain now listed to the right of item 6.
6. Select item 1 (Work area position) by pressing the 1 key on your keyboard. This will move the cursor to the field to the right of Latitude on the **Change Defaults Menu**. Here you must enter a 'seed position', a position near where the vessel was fishing (+ one degree). You may have to refer to a chart or call your coordinator to get this. These numbers **MUST** be entered in the following format with all spaces and punctuation present: Press the enter key after entering each number. Make sure you enter the W (west)

| | |
|-----------|----------------|
| Latitude | ## ##.####' |
| Longitude | ### ##.####' W |

for the longitude (program is not case sensitive) as the default for this program is east (e.g. 124 40.0000' W). You do not need to enter an N for the latitude as north is the default setting. If all locations to be converted are in the same general area this number will not need to be changed again. If you are converting positions from widely dispersed areas, the seed position may need to be changed.

7. Verify that other default settings are correct. Values for the items listed should be:
 - 3 - Coordinate system for Lat/ Lon = WGS84
 - 4 - Units for displaying distance = meters
 - 5 - Decimal places displayed = 4
 - 6 - Name of defaults file = Posaid.def.
8. Press the 8 key on your keyboard to save the current defaults. The text will turn blue. Press the R key on your keyboard to return to the **Main Menu**.
9. Select option 3 (Convert TD's to Lat/Long) by pressing the 3 key on your keyboard. The **TD to Lat/Lon Input Verification Menu** will appear.
10. Select option 4 (list LORAN-C TD's of unknown position) by pressing the 4 key on your keyboard. A screen with the names of two of the four stations will appear (X-ray, Whiskey, Yankee and Zulu). Disregard the station "names" and simply enter one of the two TD numbers and hit return. Do the same for the second number. The **TD to Lat/Lon Input Verification Menu** will reappear with the LORAN positions to the right of item 4.
11. To continue press C on your keyboard. This will bring up the **Changing TD's to Lat/Lon Display screen** with the converted Lat/Long position displayed at the bottom of the screen. Record this position.
12. To continue converting LORAN positions press I (Input TD's on your keyboard. This brings up a screen where LORAN positions for the same chain may be entered. There are no station names displayed here and it does not matter in what order the position numbers are entered, the correct stations will be automatically pulled up (hit the enter key after each number). After the second number is entered, the program will ask if this is the correct position. Verify that the numbers and stations are correct and then press Y. This will bring up the **Changing TD's to Lat/Lon Display screen** with the converted Lat/Long position displayed at the bottom of the screen. Record this position. Repeat these steps for each set of LORAN numbers.
13. Example. Enter 9940 for the chain. Use a seed position of 45 00.0000' N, 125 00.0000' W. Enter the TD coordinates of 13200.0906 and 27889.0745. You will be brought back to the TD to Lat/Long conversion menu once both TD numbers are entered. Enter C- Continue with current values and hit enter. This will give you the Lat/Long. It should be 44 00.0000' N, 124 00.0000' W. If you have any questions, contact your coordinator.

Appendix V: Latitudinal and depth distribution of groundfish adult species

Table 1: Latitudinal and depth distributions of groundfish species (adults) managed under the Pacific Coast Groundfish Fishery Management Plan^a

| Common Name | Scientific Name | Overall Latitudinal Distribution | Highest Density Latitudinal Distribution | Overall Depth Distribution (fm) | Highest Density Depth Distribution (fm) |
|---------------------------|-----------------------------------|----------------------------------|--|---------------------------------|---|
| Arrowtooth flounder | <i>Atheresthes stomias</i> | N. 34° N lat. | N. 40° N lat. | 10 - 400 | 27 - 270 |
| Butter sole | <i>Isopsetta isolepis</i> | N. 34° N lat. | N. 34° N. lat | 0 - 200 | 0 - 100 |
| Curlfin sole | <i>Pleuronichthys decurrens</i> | Coastwide | Coastwide | 4 - 291 | 4 - 50 |
| Dover sole | <i>Microstomus pacificus</i> | Coastwide | Coastwide | 10 - 500 | 110 - 270 |
| English sole | <i>Parophrys vetulus</i> | Coastwide | Coastwide | 0 - 300 | 40 - 200 |
| Flathead sole | <i>Hippoglossoides elassodon</i> | N. 38° N lat | N. 40° N lat | 3 - 300 | 100 - 200 |
| Pacific Sanddab | <i>Citharichthys sordidus</i> | Coastwide | Coastwide | 0 - 300 | 0 - 82 |
| Petrale sole | <i>Eopsetta jordani</i> | Coastwide | Coastwide | 10 - 250 | 160 - 250 |
| Rex sole | <i>Glyptocephalus zachirus</i> | Coastwide | Coastwide | 10 - 350 | 27 - 250 |
| Rock sole | <i>Lepidopsetta bilineata</i> | Coastwide | N. 32°30' N. lat | 0 - 200 | summer 10 - 44 winter 70 - 150 |
| Sand sole | <i>Psettichthys melanostictus</i> | Coastwide | N. 33°50' N. lat | 0 - 100 | 0 - 44 |
| Starry flounder | <i>Platichthys stellatus</i> | Coastwide | N. 34°20' N. lat | 0 - 150 | 0 - 82 |
| Aurora rockfish | <i>Sebastes aurora</i> | Coastwide | Coastwide | 100 - 420 | 82 - 270 |
| Bank rockfish | <i>Sebastes rufus</i> | S. 39°30' N lat | S. 39°30' N lat | 17 - 135 | 115 - 140 |
| Black rockfish | <i>Sebastes melanops</i> | N. 34° N lat | N. 34° N lat | 0 - 200 | 0 - 30 |
| Black-and-yellow rockfish | <i>Sebastes chrysomelas</i> | S. 40° N lat | S. 40° N lat | 0 - 20 | 0 - 10 |
| Blackgill rockfish | <i>Sebastes melanostomus</i> | Coastwide | S. 40° N lat | 48 - 420 | 125 - 300 |
| Blue rockfish | <i>Sebastes mystinus</i> | Coastwide | Coastwide | 0 - 300 | 13 - 21 |
| Bocaccio rockfish | <i>Sebastes paucispinis</i> | Coastwide | S. 40° N lat, N. 48° N lat | 15 - 180 | 54 - 82 |
| Bronzespotted rockfish | <i>Sebastes gilli</i> | S. 37° N lat | S. 37° N lat | 41 - 205 | 110 - 160 |

Appendix V: Latitudinal and depth distribution of groundfish adult species

Table 1: Latitudinal and depth distributions of groundfish species (adults) managed under the Pacific Coast Groundfish Fishery Management Plan^a

| Common Name | Scientific Name | Overall Latitudinal Distribution | Highest Density Latitudinal Distribution | Overall Depth Distribution (fm) | Highest Density Depth Distribution (fm) |
|-------------------------|-------------------------------|----------------------------------|--|---------------------------------|---|
| Brown rockfish | <i>Sebastes auriculatus</i> | Coastwide | S. 40° N lat | 0 - 70 | 0 - 50 |
| Calico rockfish | <i>Sebastes dallii</i> | S. 38° N lat | S. 33° N lat | 10 - 140 | 33 - 50 |
| California scorpionfish | <i>Scorpaena gutatta</i> | S. 37° N lat | S. 34°27' N lat | 0 - 100 | 0 - 100 |
| Canary rockfish | <i>Sebastes pinniger</i> | Coastwide | Coastwide | 27 - 460 | 50 - 100 |
| Chameleon rockfish | <i>Sebastes phillipsi</i> | 37° - 33° N lat | 37° - 33° N lat | 95 - 150 | 95 - 150 |
| Chilipepper rockfish | <i>Sebastes goodei</i> | Coastwide | 34° - 40° N lat | 27 - 190 | 27 - 190 |
| China rockfish | <i>Sebastes nebulosus</i> | N. 34° N lat | N. 35° N lat | 0 - 70 | 2 - 50 |
| Copper rockfish | <i>Sebastes caurinus</i> | Coastwide | S. 40° N lat | 0 - 100 | 0 - 100 |
| Cowcod | <i>Sebastes levis</i> | S. 40° N lat | S. 34°27' N lat | 22 - 270 | 100 - 130 |
| Darkblotched rockfish | <i>Sebastes crameri</i> | N. 33° N lat | N. 38° N lat | 16 - 300 | 96 - 220 |
| Dusky rockfish | <i>Sebastes ciliatus</i> | N. 55° N lat | N. 55° N lat | 0 - 150 | 0 - 150 |
| Dwarf-red rockfish | <i>Sebastes rufinanus</i> | 33° N lat | 33° N lat | >100 | >100 |
| Flag rockfish | <i>Sebastes rubrivinctus</i> | S. 38° N lat | S. 37° N lat | 17 - 100 | shallow |
| Freckled rockfish | <i>Sebastes lengtingnosus</i> | S. 33° N lat | S. 33° N lat | 22 - 92 | 22 - 92 |
| Gopher rockfish | <i>Sebastes carnatus</i> | S. 40° N lat | S. 40° N lat | 0 - 30 | 0 - 16 |
| Grass rockfish | <i>Sebastes rastrelliger</i> | S. 44°40' N lat | S. 40° N lat | 0 - 25 | 0 - 8 |
| Greenblotched rockfish | <i>Sebastes rosenblatti</i> | S. 38° N lat | S. 38° N lat | 33 - 217 | 115 - 130 |
| Greenspotted rockfish | <i>Sebastes chlorostictus</i> | S. 47° N lat | S. 40° N lat | 27 - 110 | 50 - 100 |
| Greenstriped rockfish | <i>Sebastes elongatus</i> | Coastwide | Coastwide | 33 - 220 | 27 - 136 |
| Halfbanded rockfish | <i>Sebastes semicinctus</i> | S. 36°40' N lat | S. 36°40' N lat | 32 - 220 | 32 - 220 |
| Harlequin rockfish | <i>Sebastes variegatus</i> | N. 40° N lat | N. 51° N lat | 38 - 167 | 38 - 167 |
| Honeycomb rockfish | <i>Sebastes umbrosus</i> | S. 36°40' N lat | S. 34°27' N lat | 16 - 65 | 16 - 38 |
| Kelp rockfish | <i>Sebastes atrovirens</i> | S. 39° N lat | S. 37° N lat | 0 - 25 | 3 - 4 |
| Longspine thornyhead | <i>Sebastolobus altivelis</i> | Coastwide | Coastwide | 167 - >833 | 320 - 550 |
| Mexican rockfish | <i>Sebastes macdonaldi</i> | S. 36°20' N lat | S. 36°20' N lat | 50 - 140 | 50 - 140 |
| Olive rockfish | <i>Sebastes serranoides</i> | S. 41°20' N lat | S. 40° N lat | 0 - 80 | 0 - 16 |

Appendix V: Latitudinal and depth distribution of groundfish adult species

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Table 1: Latitudinal and depth distributions of groundfish species (adults) managed under the Pacific Coast Groundfish Fishery Management Plan^a

| Common Name | Scientific Name | Overall Latitudinal Distribution | Highest Density Latitudinal Distribution | Overall Depth Distribution (fm) | Highest Density Depth Distribution (fm) |
|-----------------------|--------------------------------|----------------------------------|--|---------------------------------|---|
| Pacific ocean perch | <i>Sebastes alutus</i> | Coastwide | N. 42° N lat | 30 - 350 | 110 - 220 |
| Pink rockfish | <i>Sebastes eos</i> | S. 37° N lat | S. 35° N lat | 40 - 200 | 40 - 200 |
| Pinkrose rockfish | <i>Sebastes simulator</i> | S. 34° N lat | S. 34° N lat | 54 - 160 | 108 |
| Puget Sound rockfish | <i>Sebastes emphaeus</i> | N. 40° N lat | N. 40° N lat | 6 - 200 | 6 - 200 |
| Pygmy rockfish | <i>Sebastes wilsoni</i> | N. 32°30' N lat | N. 32°30' N lat | 17 - 150 | 17 - 150 |
| Quillback rockfish | <i>Sebastes maliger</i> | N. 36°20' N lat | N. 40° N lat | 0 - 150 | 22 - 33 |
| Redbanded rockfish | <i>Sebastes babcocki</i> | Coastwide | N. 37° N lat | 50 - 260 | 82 - 245 |
| Redstripe rockfish | <i>Sebastes proriger</i> | N. 37° N lat | N. 37° N lat | 7 - 190 | 55 - 190 |
| Rosethorn rockfish | <i>Sebastes helvomaculatus</i> | Coastwide | N. 38° N lat | 65 - 300 | 55 - 190 |
| Rosy rockfish | <i>Sebastes rosaceus</i> | S. 42° N lat | S. 40° N lat | 8 - 70 | 30 - 58 |
| Rougheye rockfish | <i>Sebastes aleutianus</i> | Coastwide | N. 40° N lat | 27 - 400 | 27 - 250 |
| Semaphore rockfish | <i>Sebastes melanosema</i> | S. 34°27' N lat | S. 34°27' N lat | 75 - 100 | 75 - 100 |
| Sharpchin rockfish | <i>Sebastes zacentrus</i> | Coastwide | Coastwide | 50 - 175 | 50 - 175 |
| Shortbelly rockfish | <i>Sebastes jordani</i> | Coastwide | S. 36° N lat | 50 - 175 | 50 - 155 |
| Shorttraker rockfish | <i>Sebastes borealis</i> | N. 39°30' N lat | N. 44° N lat | 110 - 220 | 110 - 200 |
| Shortspine thornyhead | <i>Sebastolobus alascanus</i> | Coastwide | Coastwide | 14 - >833 | 55 - 550 |
| Silvergray rockfish | <i>Sebastes brevispinis</i> | Coastwide | N. 40° N lat | 17 - 200 | 55 - 160 |
| Speckled rockfish | <i>Sebastes ovalis</i> | S. 38° N lat | S. 37° N lat | 17 - 200 | 41 - 83 |
| Splitnose rockfish | <i>Sebastes diploproa</i> | Coastwide | Coastwide | 50 - 317 | 55 - 250 |
| Squarespot rockfish | <i>Sebastes hopkinsi</i> | S. 38° N lat | S. 36° N lat | 10 - 100 | 10 - 100 |
| Starry rockfish | <i>Sebastes constellatus</i> | S. 38° N lat | S. 37° N lat | 13 - 150 | 13 - 150 |
| Stripetail rockfish | <i>Sebastes saxicola</i> | Coastwide | Coastwide | 5 - 230 | 5 - 190 |
| Swordspine rockfish | <i>Sebastes ensifer</i> | S. 38° N lat | S. 38° N lat | 38 - 237 | 38 - 237 |
| Tiger rockfish | <i>Sebastes nigrocinctus</i> | N. 35° N lat | N. 35° N lat | 30 - 170 | 35 - 170 |
| Treefish | <i>Sebastes serripes</i> | S. 38° N lat | S. 34°27' N lat | 0 - 25 | 3 - 16 |
| Vermillion rockfish | <i>Sebastes miniatus</i> | Coastwide | Coastwide | 0 - 150 | 4 - 130 |

Appendix V: Latitudinal and depth distribution of groundfish adult species

Table 1: Latitudinal and depth distributions of groundfish species (adults) managed under the Pacific Coast Groundfish Fishery Management Plan^a

| Common Name | Scientific Name | Overall Latitudinal Distribution | Highest Density Latitudinal Distribution | Overall Depth Distribution (fm) | Highest Density Depth Distribution (fm) |
|----------------------|-----------------------------------|----------------------------------|--|---------------------------------|---|
| Widow rockfish | <i>Sebastes entomelas</i> | Coastwide | N. 37° N lat | 13 - 200 | 55 - 160 |
| Yelloweye rockfish | <i>Sebastes ruberrimus</i> | Coastwide | N. 36° N lat | 25 - 300 | 27 - 220 |
| Yellowmouth rockfish | <i>Sebastes reedi</i> | N. 40° N lat | N. 40° N lat | 77 - 200 | 150 - 200 |
| Yellowtail rockfish | <i>Sebastes flavidus</i> | Coastwide | N. 37° N lat | 27 - 300 | 27 - 160 |
| Cabezon | <i>Scorpaenichthys marmoratus</i> | Coastwide | Coastwide | 0 - 42 | 0 - 27 |
| Kelp greenling | <i>Hexagrammos decagrammus</i> | Coastwide | N. 40° N lat | 0 - 25 | 0 - 10 |
| Lingcod | <i>Ophiodon elongatus</i> | Coastwide | Coastwide | 0 - 233 | 0 - 40 |
| Pacific cod | <i>Gadus macrocephalus</i> | N. 34° N lat | N. 40° N lat | 7 - 300 | 27 - 160 |
| Pacific whiting | <i>Merluccius productus</i> | Coastwide | Coastwide | 20 - 500 | 27 - 270 |
| Sablefish | <i>Anoplopoma fimbria</i> | Coastwide | Coastwide | 27 - >1,000 | 110 - 550 |
| Big Skate | <i>Raja binoculata</i> | Coastwide | S. 46° N lat | 2 - 110 | 27 - 110 |
| California skate | <i>Raja inornata</i> | Coastwide | S. 39° N lat | 0 - 367 | 0 - 10 |
| Leopard shark | <i>Triakis semifasciata</i> | S. 46° N lat | S. 46° N lat | 0 - 50 | 0 - 2 |
| Longnose skate | <i>Raja rhina</i> | Coastwide | N. 46° N lat | 30 - 410 | 30 - 340 |
| Soupfin shark | <i>Galeorhinus zyopterus</i> | Coastwide | Coastwide | 0 - 225 | 0 - 225 |
| Spiny dogfish shark | <i>Squalus acanthias</i> | Coastwide | Coastwide | 0 - >640 | 0 - 190 |
| Finescale codling | <i>Antimora microlepis</i> | Coastwide | N. 38° N lat | 190 - 1,588 | 190 - 470 |
| Pacific rattail | <i>Coryphaenoides acrolepis</i> | Coastwide | N. 38° N lat | 85 - 1,350 | 500 - 1,350 |
| Ratfish | <i>Hydrolagus coliei</i> | Coastwide | Coastwide | 0 - 499 | 55 - 82 |

^aData from (Casillas, et al. 1998), (Eschmeyer, et. al 1983), (Hart 1988), (Miller and Lea 1972), (Love, et. al 2002), and NMFS Survey data. Depth distributions refer to offshore distributions, not vertical distributions in the water column.

Appendix V: Latitudinal and depth distribution of groundfish adult species

Appendix W: Paperwork Reduction Act

The PRA requires federal agencies to obtain clearance in order to ask questions of members of the public. All questions asked by west coast groundfish observers have been approved under OMB Control No. 0648-0593 through 09/30/2012. Under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and implementing regulations, vessels are required to answer any question related to observer and vessel safety. However, vessels are not required to answer any other question asked by the observer. Vessel's willingness to answer all questions asked by observers is voluntary and this willingness is appreciated as it will ensure observer data collected on the vessel can be used in future analyzes.

The observer program can be contacted toll free at (866) 780-8064 or by the program's email address at NWFSC.observerprogram@noaa.gov if anyone has any questions.

A "Paperwork Reduction Act Information" sheet is mailed to all selected vessels for observer coverage and is included with their selection letter.

Paperwork Reduction Act Information

Information collected through the observer program is used to: (1) monitor catch and bycatch; (2) understand the population status and trends of fish stocks and protected species, as well as the interactions between them; (3) determine the quantity and distribution of net benefits derived from living marine resources; (4) predict the biological, ecological, and economic impacts of existing management actions and proposed management options; and (5) ensure that the observer programs can safely and efficiently collect the information required for the previous four uses. In particular, these biological and economic data collection programs contribute to legally mandated analyses required under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), the National Environmental Policy Act (NEPA), the Regulatory Flexibility Act (RFA), Executive Order 12866 (EO 12866), and other applicable law.

Most of the information collected by observers is obtained through "direct observation by an employee or agent of the sponsoring agency or through non-standardized oral communication in connection with such direct observations". Under the Paperwork Reduction Act (PRA) regulations at 5 C.F.R. 1320.3(h)(3), facts or opinions obtained through such observations and communications are not considered to be "information" subject to the PRA. The public reporting burden for responding to the questions that observers ask and that are subject to the PRA is estimated to average 34 minutes per trip, including the time for hearing and understanding the questions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: West Coast Groundfish Observer Program, 2725 Montlake Blvd. East, Seattle, WA 98112.

Providing information related to observer and vessel safety is mandatory under regulations at 50 C.F.R. 600.746. However, all other requested information is voluntary. Although you are under no legal obligation to answer non-safety related observer questions, we would appreciate your support as it ensures observer data can be used for its intended purpose.

The information collected will be kept confidential as required under Section 402(b) of the MSA (18 U.S.C. 1881a(b)) and regulations at 50 C.F.R. Part 600, Subpart E. Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number.

Appendix X: Bedbug Protocol

Prior to Trip

If you think bed bugs are present on a vessel notify your coordinator and contractor.

Try to verify visually. Look under mattresses, pads, bunks, etc for bed bugs.

Ask crew about any measures they have taken to exterminate the bed bugs. Document what was done and when in your logbook.

Before Departing on Trip

If the boat you have been assigned has bed bugs, make sure that you have flying insect repellent, caladryl lotion, plenty of garbage bags, and a mattress cover that can be zipped around the mattress. It is a good idea to take a thermarest mattress as well in case the cover doesn't work and you don't want to sleep on that mattress. Even if the vessel fumigated it doesn't mean the bedbugs are completely gone. Continue to watch for them and keep your mattress covered. Make sure to keep a clean set of clothes in a zip lock bag so you have bed bug free clothes to wear home.

Bed Bugs Spotted During Trip

Bed bugs are active at night so this is when they will be more likely to be spotted. They do not like extreme heat or extreme cold so there are some steps that you can take while you are out there to try to get rid of them. One observer noticed that when the air conditioner was cranked up they did not come out. Another possibility is to bag your mattress in garbage bags and put it in the freezer for at least 12 hours or put it in a dry area on deck where it can cook in the sun. Another option is to spray the mattress with the bug spray; make sure that you give it plenty of time to air out before sleeping on it and follow all warnings and precautions listed on the can of spray. In order to keep the bugs from getting in your clothes you should keep your clothes in garbage bags. Make sure that you call your coordinator and contractor to report that you witnessed bed bugs on the vessel.

After Trip

- **FREEZE GEAR** for at least 24 hours. Put gear in garbage bags.
IMPORTANT: Do not freeze electronic gear, except for EPIRB. Your EPIRB can go into the freezer with your survival suit.
- **BAG GEAR:** Everything that comes off the vessel should be in sealed garbage bags.. When you take infected gear back to you house make sure you treat it right away to avoid getting bed bugs in your house. Wash all clothes right away in hot water and dry them with high heat in the dryer. Personal bags and stuff that cannot be washed in a machine can be treated by freezing or leaving it in a plastic bag and letting it bake in the hot sun. If for some reason you cannot take care of gear immediately then place it somewhere far away from furniture and carpeting. A garage would be an ideal place but if not possible a tiled bathroom or in the tub would also work.

Appendix X: Bedbug Protocol

Bed bug bites



Appendix Y: Useful Websites

WCGOP Observer Related Sites

West Coast Groundfish Observer Program

<http://www.nwfsc.noaa.gov/research/divisions/fram/observer/index.cfm>

West Coast Groundfish Regulations

http://listserver.afsc.noaa.gov/read/all_forums/subscribe?name=wcgroundfish

This site will subscribe you to receive email updates on West Coast groundfish regulations as they occur.

NMFS (National Marine Fisheries Service)

<http://www.nmfs.noaa.gov/fishnews.htm>

This site subscribes you to updates on anything to do with fish nationally.

WCGOP Database Log-on

<http://nwcoa3.nwfsc.noaa.gov/obsprod/logon.display>

Pacific States Marine Fisheries Commission (PSMFC)

<http://www.psmfc.org/index.html>

Alaskan Observers, Inc. (AOI)

<http://www.alaskanobservers.com/>

Fisheries Management on the West Coast

Pacific Fishery Management Council (PFMC)

<http://www.pcouncil.org/>

NOAA Fisheries Northwest Regional Office (groundfish management)

<http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/index.cfm>

International Pacific Halibut Commission

<http://www.iphc.washington.edu/halcom/default.htm>

State Agencies

California Department of Fish and Game (DFG)

<http://www.dfg.ca.gov/>

Oregon Department of Fish and Wildlife (ODFW)

<http://www.dfw.state.or.us/>

Washington Department of Fish and Wildlife (WDFW)

<http://wdfw.wa.gov/>

Fisheries Research on the West Coast

NOAA Northwest Fisheries Science Center

<http://www.nwfsc.noaa.gov/research/divisions/fram/index.cfm>

Pacific Marine Conservation Council

<http://www.pmcc.org/news.html>

Appendix Y: Useful Websites

Fisheries News

Heads up: News connecting the West Coast Fishing Community

<http://www.heads-up.net/>

Fish Identification

Fish Base: Database of over 28,000 species with images.

<http://www.fishbase.org/search.cfm>

Fisheries Regulations

NOAA Groundfish Management Regs and Public Notices

<http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/index.cfm>

Marine Regulations

Washington: <http://wdfw.wa.gov/fishing/commercial.html>,

Oregon: http://www.dfw.state.or.us/MRP/regulations/commercial_fishing/index.asp

California: <http://www.dfg.ca.gov/marine/fishing.asp#Commercial>

Marine Safety

The Alaska Marine Safety Education Council

<http://www.amsea.org/>

EPIRB On-line registration and forms

<http://www.sarsat.noaa.gov/beacon.html>

Vessel Information

U.S. Coast Guard Vessel Search

<http://www.st.nmfs.noaa.gov/st1/CoastGuard/VesselByName.html>

NW Region List of LE permits

<http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Permits/index.cfm>

Marine Weather

NOAA: National Weather Service

<http://www.nws.noaa.gov/>

Independent Service (iwindsurf.com)

<http://www.iwindsurf.com/windandwhere.iws>

Observer Associations, Interest Groups

Association for Professional Observers

<http://www.apo-observers.org>

Observer net

<http://www.observernet.org/obsforum/index.php>

International Fisheries Observer Conference

<http://www.fisheriesobserverconference.com/>

Observer Programs worldwide

Domestic

North Pacific Groundfish Observer Program

<http://www.afsc.noaa.gov/FMA/default.htm>

Alaska Marine Mammal Observer Program

<http://www.fakr.noaa.gov/protectedresources/observers/mmop.htm>

California/ Oregon Drift Gillnet Observer Program

<http://swr.ucsd.edu/psd/codgftac.htm>

Northeast Fisheries Observer Program

www.nefsc.noaa.gov/sos/fishobs/fishobs.html

Florida Museum of Natural History- Shark Fishery Observer Program:

<http://www.flmnh.ufl.edu/fish/sharks/csop/csopjob.htm>

Southeast Pelagic Observer Program

<http://www.sefsc.noaa.gov/pop.jsp>

Gulf of Mexico Shrimp Fishery Observer Program

<http://galveston.ssp.nmfs.gov/research/fisherymanagement/index.html> - observer_program

Hawaii Longline Observer Program

http://www.fpir.noaa.gov/OBS/obs_index.html

National Observer Program

<http://www.st.nmfs.gov/st4/nop/index.html>

Foreign

Canadian at-sea fisheries observer program

<http://www.archipelago.ca/services.aspx#TOP>

Canadian observer provider

<http://www.archipelago.ca/fm-overview.aspx>

Marine Resources Assessment Group (MRAG) (multiple programs)

<http://p15166578.pureserver.info/MRAG/Home.htm>

Antarctica CCAMLR:

<http://www.ccamlr.org/pu/E/sc/fish-monit/fm-intro.htm>

Australia

<http://www.afma.gov.au/research/observer/default.htm>

Appendix Z: Vessel Monitoring System (VMS)

Why does the Pacific coast groundfish fishery need a vessel monitoring program?

A vessel monitoring program is an enforcement tool that can be used to monitor compliance with areas closed to fishing. Since the vessel monitoring pilot program was implemented on January 1, 2004, new closed areas have gone into effect and the Council has prioritized expanding the original requirements to the Open Access commercial groundfish fleet in order to monitor compliance with groundfish conservation areas. The groundfish conservation areas include Rockfish Conservation Areas (RCAs), Cowcod Conservation Areas (CCAs), Cordell Banks Closed Area, Farallon Islands Closed Areas, Essential Fish Habitat Conservation Areas (EFHCAs), and Yelloweye Rockfish Conservation Areas (YRCAs). A complete description of these closed areas, including detailed location information and to which sectors and gears they apply, is available on the NMFS Northwest Region website by clicking on "Groundfish & Halibut", "Groundfish Fishery Management", then "Groundfish Closed Areas". Over time, the groundfish conservation areas will likely change. The National Marine Fisheries Service (NMFS) will keep the fishing fleet informed as these changes are made.

Parts of the Vessel Monitoring Program

The Pacific Coast vessel monitoring program consists of a vessel monitoring system and declaration reports. The vessel monitoring system (VMS) consists of equipment that tracks a vessel's geographic position through a satellite communication system. A VMS transceiver unit is installed aboard the vessel that communicates via a satellite to a processing center. For the Pacific Coast program, a basic VMS system with 1-way communication will be used to track vessel activity in relation to closed areas within 200 nautical miles along the Pacific coast. The declaration reports are reports given by fishermen before a fishing trip to identify which gear type will be used for fishing, which fishery they are participating in, and if the vessel operator intends to fish within an RCA. Declaration reports are necessary for all fisheries required to have VMS and reports must be provided to NMFS Office of Law Enforcement (OLE) before a vessel leaves port.

Commonly Asked Questions

Q: *Who is required to have VMS?*

A: Any vessel registered to a limited entry groundfish permit must have VMS to fish in state or federal waters (0-200 nautical miles offshore). Non-groundfish trawl vessels, vessels that use trawl gear but are not registered to limited entry groundfish permits, must have VMS to fish in state or federal waters (0-200 nautical miles offshore). Any vessel using non-trawl gear, that is not registered to a limited entry groundfish permit, must have VMS on trips in which groundfish are taken and retained, possessed or landed in federal waters (3-200 nautical miles offshore).

Q: *Does a non-trawl vessel that is not registered to a limited entry groundfish permit need to have VMS if the vessel is used to fish in state waters and only transits through Federal waters with groundfish onboard?*

A: Yes, VMS is required.

Q: Does a non-trawl vessel that is not registered to a limited entry groundfish permit need to have VMS to fish in both state and federal waters on the same trip when only groundfish from state waters are retained?

A: Yes, VMS is required.

Q: What are the vessel owner's responsibilities?

A: The vessel owner must install and use (according to NMFS OLE installation and operation instructions) a type-approved VMS transceiver unit 24 hours per day; establish a service agreement with a type-approved communication service provider; send an activation report at least 72 hours prior to leaving port on the first trip that requires VMS and maintain a valid declaration report with NMFS OLE.

Q: Who pays for the costs associated with VMS?

A: The vessel owner or operator is responsible for purchasing the VMS equipment and paying all charges from the communication service provider to ensure continuous operation of the VMS transceiver units. Vessel owners may be reimbursed for the cost of some VMS units.

For more information or go to: www.nmfs.noaa.gov/ole/nw_vms.html or call: **Northwest Division Office for Law Enforcement (206) 526.6133**

*From the Compliance Guide for the Pacific Coast Groundfish Fishery Vessel Monitoring Program, National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

Appendix AA: IFQ Species by Location Table

Appendix AA: IFQ Species by Location Table

IFQ = Individual Fishing Quota

IBQ = Individual By-catch Quota

| Species Name | North of 42°N latitude | 42°N to 40°10'N latitude | 40°10'N to 36° latitude | 36°N to 34°27'N latitude | South of 34°27'N latitude |
|------------------------|---------------------------------------|--------------------------|---|--------------------------|---------------------------|
| Arrowtooth flounder | Arrowtooth flounder | | | | |
| Aurora rockfish | Minor Slope North of 40°10'N | | Minor Slope South of 40°10'N | | |
| Bank rockfish | Minor Slope North of 40°10'N | | Minor Slope South of 40°10'N | | |
| Blackgill rockfish | Minor Slope North of 40°10'N | | Minor Slope South of 40°10'N | | |
| Bocaccio rockfish | Minor Shelf North of 40°10'N | | Bocaccio rockfish South of 40°10'N - OVERFISHED | | |
| Bronzespotted rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Butter sole | Other Flatfish | | | | |
| Canary rockfish | Canary rockfish - OVERFISHED | | | | |
| Chameleon rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Chilipepper rockfish | Minor Shelf North of 40°10'N | | Chilipepper rockfish South of 40°10'N | | |
| Cowcod rockfish | Minor Shelf North of 40°10'N | | Cowcod rockfish South of 40°10'N - OVERFISHED | | |
| Curlfin sole | Other Flatfish | | | | |
| Darkblotched rockfish | Darkblotched rockfish - OVERFISHED | | | | |
| Dover sole | Dover sole | | | | |
| English sole | English sole | | | | |
| Flag rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Flathead sole | Other Flatfish | | | | |
| Freckled rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Greenblotched rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Greenspotted rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Greenstriped rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Halfbanded rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Harlequin rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Honeycomb rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Lingcod | Lingcod North of 42°N | Lingcod South of 42°N | | | |
| Longspine Thornyhead | Longspine thornyhead North of 34°27'N | | | | No IFQ - Trip Limits |
| Mexican rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Pacific cod | Pacific cod | | | | |
| Pacific halibut | Pacific halibut IBQ | | No IBQ Needed | | |
| Pacific whiting | Pacific whiting | | | | |
| Pacific Ocean Perch | POP North of 40°10'N - OVERFISHED | | Minor Slope South of 40°10'N | | |
| Pacific sanddab | Other Flatfish | | | | |
| Petrale sole | Petrale sole - OVERFISHED | | | | |
| Pink rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Pinkrose rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |

Appendix AA: IFQ Species by Location Table

| Species Name | North of 42°N latitude | 42°N to 40°10'N latitude | 40°10'N to 36° latitude | 36°N to 34°27'N latitude | South of 34°27'N latitude |
|-----------------------|--|-----------------------------|-------------------------------------|-----------------------------|------------------------------|
| Pygmy rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Redbanded rockfish | Minor Slope North of 40°10'N | | Minor Slope South of 40°10'N | | |
| Redstripe rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Rex sole | Other Flatfish | | | | |
| Rock sole | Other Flatfish | | | | |
| Rosethorn rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Rosy rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Rougheyeye rockfish | Minor Slope North of 40°10'N | | Minor Slope South of 40°10'N | | |
| Sablefish | Sablefish North of 36°N | | | Sablefish South of 36°N | |
| Sand sole | Other Flatfish | | | | |
| Sharpchin rockfish | Minor Slope North of 40°10'N | | Minor Slope South of 40°10'N | | |
| Shortraker rockfish | Minor Slope North of 40°10'N | | Minor Slope South of 40°10'N | | |
| Shortspine thornyhead | Shortspine thornyhead North of 34°27'N | | | | SSPN South of 34°27'N |
| Silvergray rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Speckled rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Splitnose rockfish | Minor Slope North of 40°10'N | | Splitnose rockfish South of 40°10'N | | |
| Squarespot rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Starry flounder | Starry flounder | | | | |
| Starry rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Stripetail rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Swordspine rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Tiger rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Vermilion rockfish | Minor Shelf North of 40°10'N | | Minor Shelf South of 40°10'N | | |
| Widow rockfish | Widow rockfish - OVERFISHED | | | | |
| Yelloweye rockfish | Yelloweye rockfish - OVERFISHED | | | | |
| Yellowmouth rockfish | Minor Slope North of 40°10'N | | Minor Slope South of 40°10'N | | |
| Yellowtail rockfish | Yellowtail rockfish North of 40°10'N | | Minor Shelf South of 40°10'N | | |

Appendix AB: Estimateing Pacific Halibut Mortality on Shoreside Trawlers

Northwest Fisheries Science Center Observer Program
Trawl Catch Share Program

November 2010



NOAA Fisher Service

More information can be found on the NOAA Fisheries' Trawl Rationalization website:

www.nwr.noaa.gov/
Groundfish-Halibut/
Groundfish-Fishery-Man-
agement/Trawl-Program/
index.cfm

**NWFSC Observer
Program**
<http://www.nwfsc.noaa.gov/research/divisions/frame/observer/index.cfm>

For more information, contact:
(206) 302-1777



Estimate Pacific Halibut Mortality on Shoreside Trawlers

Under the proposed regulatory framework for the Trawl Catch Shares program, shoreside groundfish permits will be allocated an Individual Bycatch Quota (IBQ) for Pacific halibut caught North of 40° 10' latitude. IBQ will be accounted for on the vessel level as an incentive to individual fishers to reduce the mortality of Pacific halibut. Retention of Pacific halibut will continue to be prohibited in the Trawl Catch Shares program. The following is an overview of how trawl-caught Pacific halibut (PHLB) mortality will be estimated by the NWFSC observer program for shoreside trawlers.

Observer Requirements

The observer will:

- Count every Pacific halibut caught in the haul.
- (Measure and assess condition on all or a portion of the Pacific halibut caught in the haul. Condition assessment will follow protocols devised by the International Pacific Halibut Commission (IPHC). Individual Pacific halibut will be assessed as either: Excellent (E), Poor (P), or Dead (D). See **key on back**.

The proportion of Pacific halibut measured and assessed for condition will be based on the number of Pacific halibut caught in the haul as well as the amount of assistance provided by the vessel's crew.

Condition will be assessed at the point of release. On vessels using "resuscitation" boxes or other techniques to increase the likelihood of survival, viability sampling will be done just prior to the fish being returned to the sea.

Crew Requirements

The crew will:

- NOT discard any Pacific halibut without notifying the observer.
- Hand all requested Pacific halibut to the observer.
- Slow down sorting of Pacific halibut if requested by the observer.

If a vessel determines it wants all Pacific halibut measured and assessed for condition, the crew must assist the observer by delivering the Pacific halibut to the observer's sampling area and by slowing or stopping the sorting of other species until observer has completed sampling Pacific halibut.

Total Mortality

To determine the amount of Pacific halibut that will be subtracted from a vessel's IBQ quota pounds, the following process will be automated in the observer database:

- Length converted to weight: The sampled (measured and condition assessed) Pacific halibut is converted from centimeters to pounds using the IPHC length/weight conversion table and summed.
- Total weight of Pacific halibut in the haul is determined.

$$\frac{\text{Total PHLB sample weight} \times \text{Total \# PHLB in haul}}{\text{Total \# of PHLB sampled}} = \text{Total pounds of PHLB in the haul by condition (E, P, D)}$$

- The total weight of Pacific halibut in the haul by condition (E, P, D) is determined.

$$\frac{\text{Total Weight by condition}}{\sum (\text{PHLB weight condition E, P, D})}$$

- Multiply condition weight by mortality rate to determine weight to be subtracted from IBQ allocation.

IPHC mortality rates that will be applied are:

| Condition | Mortality Rate |
|-----------|----------------|
| Excellent | 0.20 |
| Poor | 0.55 |
| Dead | 0.90 |

Example to Illustrate Cod for Trawl Haul

20 Pacific halibut are caught in the haul. Observer measures and assesses condition of 10 of the 20 Pacific halibut.

| Length of PHLB | Condition | Weight from conversion table |
|----------------|-----------|------------------------------|
| 73 cm | Excellent | 10.05 lbs |
| 64 cm | Poor | 6.57 lbs |
| 53 cm | Poor | 3.57 lbs |
| 62 cm | Dead | 5.93 lbs |
| 51 cm | Dead | 3.15 lbs |
| 85 cm | Excellent | 16.45 lbs |
| 71 cm | Poor | 9.19 lbs |
| 83 cm | Excellent | 15.23 lbs |
| 91 cm | Excellent | 20.53 lbs |
| 61 cm | Poor | 5.62 lbs |
| Total | | 96.29 |

2. Total haul weight of Pacific halibut in the haul = $\frac{96.29 \text{ lbs}}{10 \text{ PHLB sampled}} \times 20 \text{ PHLB in haul} = 192.58 \text{ lbs}$.

3. Total weight of Pacific halibut equals the sample weight divided by the total sample weight multiplied by the total haul weight.

| Condition | Total Weight in Sample | Total Weight in haul | Total Haul Weight by condition |
|-----------|---|----------------------|--------------------------------|
| Excellent | $10.05 + 16.45 + 15.23 + 20.53 = 62.26$ | 192.58 | 124.5199998 |
| Poor | $6.57 + 3.57 + 9.19 + 5.62 = 24.95$ | | 49.89999983 |
| Good | $5.93 + 3.15 = 9.08$ | | 18.15999993 |

Example: $\frac{62.26}{96.29} \times 192.58 \text{ total haul} = 124.52 \text{ lbs}$

4. Weight by condition multiplied by mortality rate to determine "dead" weight. Sum of "dead" weight equals the amount of IBQ that will be subtracted from allocation.

| Total Haul Weight by condition | Mortality rate | Dead Weight |
|--------------------------------|----------------|---------------------------|
| Excellent | 0.20 | 24.90999996 lbs |
| Poor | 0.55 | 27.44499999 lbs |
| Dead | 0.90 | 16.34399993 lbs |
| Total | | 68.69799988 lbs |

In this example, 68.69 pounds of Pacific halibut would be subtracted from the vessel's IBQ quota pounds.

- 1a. Fish is alive.....Go to 2a
- 1b. Fish is dead when sorted from the catch.....Code DEAD
Fish is in rigor and lifeless, even if no apparent injuries. Gills appear washed out, e.g. dull red, pink, or white in color. Mouth may contain sediment.
- 2a. Body of fish appears uninjured, or has only minor injuries.....Go to 3a
- 2b. Injuries to fish are significant and obvious.....Code DEAD
Body cavity is ripped open, exposing internal organs. Body tissue may be torn or ripped in a rough, ragged manner. Red hemorrhaging observed on 25% or more of the white side of fish.
- 3a. Fish is able to close operculum when stimulated.....Go to 4a
Operculum is closed strongly or weakly, but pressure is evident. Operculum may not stay closed for long, though pressure may last up to 5 seconds or longer.
- 3b. Fish cannot close operculum, even when stimulated.....Code DEAD)
- 4a. Fish displays activity and has muscle tone.....Go to 5a
Fish displays a minimal amount of activity, especially when stimulated. May be able to clench jaw tightly.
- 4b. Fish exhibits no muscle tone.....Code DEAD)
- 5a. Fish is not bleeding, or only slightly bleeding, if at all.....Go to 6a
- 5b. Blood is flowing freely and continuously in large quantities (profusely).....Code DEAD
Bleeding is coming from a torn or severed gill arch, or a body injury.
- 6a. Body injuries are minimal, perhaps difficult to find.....Go to 7a
May consist of superficial nicks or cuts on body. Less than 10% of dorsal and anal fin area is frayed.
- 6b. Body injuries are readily apparent.....Code POOR
Skin is damaged with abrasions. Cuts and lacerations in body extend through the skin and just barely into the flesh (not deeply). Dorsal and anal fin area is frayed between 10-50%. Fin edges may be bleeding. Roughly 10-25% of the white side of fish shows red hemorrhaging.
- 7a. Operculum pressure is strong and sustained.....Go to 8a
- 7b. Operculum pressure is weak and not sustained.....Code POOR)
- 8a. Fish is strong and lively, displaying good muscle tone.....Go to 9a
Fish is flopping around the deck, hard to control. Jaw may be tightly clenched, difficult to open.
- 8b. Fish appears weak.....Code POOR
Movement is intermittent, perhaps occurring when provoked or stimulated. Body is limp.
- 9a. Fish is bleeding from gills.....Code POOR
Blood is flowing continuously, slow and steadily, but not profusely. Gills are deep to bright red in color.
- 9b. No bleeding observed.....Code EXCELLENT
Gills are deep red in color.

Appendix AC: Species List for Shoreside Trawl Catch Share Fishery

Northwest Fisheries Science Center Observer Program
Trawl Catch Share Program

November 2010



NOAA

Fisheries Service

More information can be found on the NOAA Fisheries' Trawl Rationalization website:

www.nwr.noaa.gov/

groundfish-Fishery-Management/Trawl-Program/index.cfm

NWFSC Observer Program

<http://www.nwfsc.noaa.gov/research/divisions/fram/observer/index.cfm>

For more information, contact: (206) 302-1777



Species List for Shoreside Trawl Catch Share Fishery

Over the

| Species Name | North of 40°10'N | South of 40°10'N |
|-----------------------|-------------------|-------------------|
| Bocaccio rockfish | Minor shelf | OVERFISHED |
| Canary rockfish | OVERFISHED | OVERFISHED |
| Cowcod rockfish | Minor shelf | OVERFISHED |
| Darkblotched rockfish | OVERFISHED | OVERFISHED |
| Pacific Ocean Perch | OVERFISHED | Minor slope |
| Petrale sole | OVERFISHED | OVERFISHED |
| Widow rockfish | OVERFISHED | OVERFISHED |
| Yelloweye rockfish | OVERFISHED | OVERFISHED |

Flounder

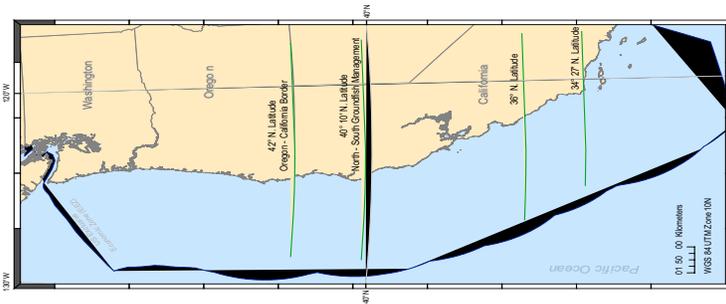
| Species Name | North of 40°10'N | South of 40°10'N |
|---------------------|---------------------|------------------|
| Arrowtooth flounder | Arrowtooth | Arrowtooth |
| Butter sole | Other flatfish | Other flatfish |
| Curlfin sole | Other flatfish | Other flatfish |
| Dover sole | Dover sole | Dover sole |
| English sole | English sole | English sole |
| Flathead sole | Other flatfish | Other flatfish |
| Pacific halibut | Pacific halibut IBQ | No IBQ needed |
| Pacific sanddab | Other flatfish | Other flatfish |
| Rex sole | Other flatfish | Other flatfish |
| Rock sole | Other flatfish | Other flatfish |
| Sand sole | Other flatfish | Other flatfish |
| Starry flounder | Starry flounder | Starry flounder |

Round

| Species Name | North of 42° | 42° to 36° | South of 36° |
|-----------------|------------------------|----------------------|------------------------|
| Lingcod | Lingcod North of 42° | Lingcod South of 42° | |
| Pacific cod | | Pacific cod | |
| Pacific whiting | | Pacific whiting | |
| Sablefish | Sablefish North of 36° | | Sablefish South of 36° |

Appendix AC: Species List for Shoreside Trawl Catch Share Fishery

Roch



Latitudinal breaks associated with the shoreside trawl catch share

| Species Name | North of 40°10'N | South of 40°10'N |
|------------------------|------------------|----------------------|
| Aurora rockfish | Minor slope | Minor slope |
| Bank rockfish | Minor slope | Minor slope |
| Blackgill rockfish | Minor slope | Minor slope |
| Bronzespotted rockfish | Minor shelf | Minor shelf |
| Chameleon rockfish | Minor shelf | Minor shelf |
| Chilipepper rockfish | Minor shelf | Chilipepper rockfish |
| Flag rockfish | Minor shelf | Minor shelf |
| Freckled rockfish | Minor shelf | Minor shelf |
| Greenblotched rockfish | Minor shelf | Minor shelf |
| Greenspotted rockfish | Minor shelf | Minor shelf |
| Greenstriped rockfish | Minor shelf | Minor shelf |
| Halibanded rockfish | Minor shelf | Minor shelf |
| Harlequin rockfish | Minor shelf | Minor shelf |
| Honeycomb rockfish | Minor shelf | Minor shelf |
| Mexican rockfish | Minor shelf | Minor shelf |
| Pink rockfish | Minor shelf | Minor shelf |
| Pinkrose rockfish | Minor shelf | Minor shelf |
| Pygmy rockfish | Minor shelf | Minor shelf |
| Redbanded rockfish | Minor slope | Minor slope |
| Redstripe rockfish | Minor shelf | Minor shelf |

| Species Name | North of 40°10'N | South of 40°10'N |
|----------------------|---------------------|--------------------|
| Rosehorn rockfish | Minor shelf | Minor shelf |
| Rosy rockfish | Minor shelf | Minor shelf |
| Rougheye rockfish | Minor slope | Minor slope |
| Sharpchin rockfish | Minor slope | Minor slope |
| Shortraker rockfish | Minor slope | Minor slope |
| Silvergray rockfish | Minor shelf | Minor shelf |
| Speckled rockfish | Minor shelf | Minor shelf |
| Splitnose rockfish | Minor slope | Splitnose rockfish |
| Squarespot rockfish | Minor shelf | Minor shelf |
| Starry rockfish | Minor shelf | Minor shelf |
| Stripetail rockfish | Minor shelf | Minor shelf |
| Swordspine rockfish | Minor shelf | Minor shelf |
| Tiger rockfish | Minor shelf | Minor shelf |
| Vermilion rockfish | Minor shelf | Minor shelf |
| Yellowmouth rockfish | Minor slope | Minor slope |
| Yellowtail rockfish | Yellowtail rockfish | Minor shelf |

hor he

| Species Name | North of 34°27'N | South of 34°27'N |
|------------------------|------------------------|------------------------|
| Longspine thornyheads | Longspine thornyheads | NO IFQ |
| Shortspine thornyheads | Shortspine thornyheads | Shortspine thornyheads |

For more details about proposed vessel observer requirements or other trawl catch shares information, please visit: www.fishbase.org

Appendix AD: Glossary

A - B

ABC: "Acceptable Biological Catch" - the annual harvest level for each species based only on biological considerations

Aft: Towards the stern or back end of a vessel

Amidships: Midway between the bow and stern of a ship, or on the centerline

Anchor/Buoy lines: Sections of line that join the groundline and anchors on the bottom of the ocean to the buoys or "bags" on the surface.

Athwart ships: Side-to-side across a ship, perpendicular to the centerline

Bag: The codend or another name for a buoy.

Bait bags/jars: Containers filled with ground bait that are hung inside pots to attract fish.

Beam: Width of a ship

Benthic: Living in direct relation with the bottom

Bias: Tending to yield one outcome more frequently than others. Factors affecting the randomness of a sample, including possible mechanical sorting of catch by an incline belt, or purposeful presorting by a crew member, will introduce bias.

Bight: Aloop or turn in a line

Bleeder/Sorter: Crewman assigned to sort bycatch out of the catch, and to cut the "throat" of the cod.

Block/Hydro/Hauler: Hydraulically driven wheel into which the groundline is placed during gear retrieval. As the wheel spins the groundline is drawn on board.

Boat Share: The percentage of the gross which goes to the vessel owner

Bobbin: A round, rubber or steel roller used in the footrope of a bottom net to protect the net from damage

Bosun: Person in charge of a ship's rigging, anchors, cables and deck crew

Bottom: (1) ocean floor, (2) fishing depth, or (3) a ship hull. Which meaning to apply must be taken from context.

Bow: The front section of a boat or ship

Bowline: A type of knot used to form an eye in the end of a rope.

Brailer: A type of netting that is attached to a crane and used to transport fish and other materials from one vessel to the dock or to another vessel

Breech: A behavioral characteristic of some marine mammals such as humpback whales, where they rise vertically out of the water, and then with most of their body above the surface, they fall to their back or side

Bridge: The control center of a ship

Bridle: Wire attached to the headrope, footrope or side panel of a net, by which the net is towed

Bulkhead: A wall separating compartments of a ship

Bulwarks: The upper section of the side plating of a ship, which extends above and around the upper deck

C

Capstan (gypsy): An upright, spool-shaped, power rotational cylinder around which cables or hawsers are wound

Catch Category: Categories comprised of one or more species for management purposes.

Catcher boat: Vessel that is used for catching fish and that does not process (freeze) fish on board

Chaffing gear: Protective carpeting (or strands of nylon forming a carpet pile) on the outer, underside of the trawl net to keep it from catching and ripping on obstacles on the bottom

Chief: The engineer; responsible for care of engines and deck machinery

Choker, choke strap: Aloop of wire or rope used to cinch off the net or codend

Chopper: Machine used to grind frozen herring or squid for bait or the person assigned this duty.

Cleat: A heavy piece of wood or metal having two horns around which ropes may be made fast or belayed, usually secured to a fixed object such as the dock or deck

Coded wire tag: Small tag (3mm) etched with binary code that are inserted into the snout of fishes for later identification

Codend: The end "bag" of a trawl net where the majority of the fish are collected and held

Coiler: Person or machine that is designated to coil line as it is retrieved by the block.

Combing: A low partition that separates the trawl deck from the side pockets

Companionway: Entrance/stairway from deck to fo'c'sle and engine room

Compliance: Being in accordance with the fishing regulations

Composition: In the groundfish Observer Program, this refers to the makeup of harvested species in a catch, and the sample you collect.

Cookie (disc): A flat, round piece of rubber with a hole in the center strung on a wire rope or chain to protect it from abrasion and to stir up a mud cloud. Used on non-pelagic trawl gear.

Crucifier A pair of rollers or steel pegs which stand vertically with only enough room for the groundline to pass between. During gear retrieval the groundline passes between the rollers and the hooks are pulled out of the fish.

D - E

Demersal: Dwelling at or near the bottom

Discard: Everything that is not retained.

Disembark: To get off a vessel

Diver/Trailer buoys: A small buoy attached to the main buoy with a length of line. The diver buoy "trails" behind the main buoy and allows a larger target for grappling.

Dogs: Metal hooks that are hydraulically controlled to secure a pot to a launcher.

Appendix AD: Glossary

Door: A large steel or alloy structure attached to each main wire (in front of the net) to spread the net horizontally by means of hydrodynamic and friction forces

Draft: Vertical distance from keel to waterline of a ship

Drop-off: Those organisms that fall or are knocked off of a hook prior to their being landed.

Drum: A metal spool or cylinder around which cable, etc. is wound

Drumhead: The top of a capstan, into which bars are inserted for leverage in turning it

Ebb tide: Outgoing tide

EEZ: "Exclusive Economic Zone" - the term for the 200 mile jurisdiction zone, in which a nation has exclusive fishing rights, formerly called the FCZ

Embarkation: To board a vessel

EPIRB: "Emergency Position Indicator Radio Beacon"

Expansion straps (container lines): A series of lines running around the circumference of a codend to provide strength and help maintain the shape of the bag

F

Fathom: A measure of length or depth equal to six feet

Fingers/Triggers: Small plastic strips located in the tunnel of a pot which allow fish to enter a pot but not exit.

Fishfinder: An electronic device for locating schools of fish under a vessel

Fishing line: A length of chain or wire in the bottom, front end of a net between the footrope and the bolsh line

Fishing mortality: Removal (deaths) of fish from a population due to fishing activity.

Flatfish: Fish which are laterally compressed and orient themselves in the water with their lateral surfaces or sides towards the surface and bottom.

Flatlink: A piece of cut or cast hardware, generally oblong in shape, with leg diameter smaller in certain areas to allow attachment of a G-hook; used where wires must be connected and disconnected frequently

Flood tide: Incoming tide

Fo'c'sle (from: forecastle): The forward part of a ship where sailor's quarters are located

Footrope: On a non-pelagic net, a series of bobbins, tires or discs strung on chain or wire rope attached to the bottom front of a bottom net to protect the net from damage. On a midwater net, the rope or wire running along the front, bottom edge of the net.

Forward: Towards the bow of a vessel

Fresh weight: The weight of the whole fish (or animal) as it was when alive. Also called round weight, whole weight.

G

Galley: Ship's kitchen and/or mess hall

Gallows: Structure from which trawl blocks are hung; separate units port and starboard

Gangion: The length of line that connects the hook to the groundline. It is often only two to three feet long.

Gantry: A frame structure, usually at the aft of a vessel, which supports pulleys (blocks) used in setting and retrieving trawl nets

Gas bladder: A sac filled with air or similar gases in the body cavity of a fish. May or may not be attached to the throat by a duct.

G-hook: A piece of cut or cast iron hardware in the shape of a "G", used with a flatlink where wires must be connected and disconnected frequently

Gill rakers: Bony tooth like structures on the anterior edges of the gill arches. For protection or straining out food.

Gilson: A single hookline (as distinguished from a multiple block) used to assist in setting, hauling and moving gear on deck

Groundline/Mainline: The length of line to which all of the hooks are attached. This line is the "backbone" of the gear

Gunnel or Gunwale: The upper edge of the side of a boat

Gurdy: Special winch for hauling of longlines or trolling lines

Gypsyhead: A metal drum with a smooth concave surface, usually mounted on a winch. Several wraps of line around the gypsy provide enough friction while it is turning to raise heavy loads smoothly because the line slips and is easily controlled, like the friction on a clutch plate.

H - K

Halibut excluder: A divider located in the tunnel of a pot that restricts the size of the opening.

Hatch: An opening in a deck or bulkhead of a ship.

Haul: A catch of fish from one tow of a net or longline

Haulback: When the vessel lifts the net out of the fishing depth

Hawser: Any large rope (generally five inches or more in circumference) used primarily for towing, mooring or hauling

High grading: When a vessel puts up product but later discards it overboard in favor of a more valuable product

Hook: Usually a three pronged grappling hook used to snag the trailer buoy line.

Hook Counts: The average number of hooks per segment of gear.

Horn Off: To knock organisms off of a hook using the butt of a gaff.

I-beam: A steel beam shaped like an "I" in cross section

Intermediate: A gradually tapered section, generally of small mesh, between the back body of a trawl and the codend.

Appendix AD: Glossary

Joint Venture: A cooperative fishing/processing effort between vessels of different nationalities

Knot: A measure of time multiplied by distance, equaling speed. One knot equals one nautical mile (6080 feet) in one hour.

L - O

Launcher: Hydraulic lift, usually located on the port side of a vessel, used to "launch" pots over the side of the vessel and to adjust the angle of the pot when it is being emptied.

Lay: The direction in which the strands of a rope are twisted (right or left) or the degree of tightness with which they are twisted (soft, medium, hard, etc.)

Lazaret: A storage place between the decks of a ship

Lee, Leeward: The side protected from the wind, opposite the "windward" side

Live Tanks: Tanks or bins on factory trawler vessels where the catch is dumped prior to sorting or processing

Lobby: Another name for a fish bin on a catcher/processor

Main Wires: The two large cables used to connect the trawl net to the vessel while fishing

Master: Fishing master and/or captain

Mustang suit: Insulated and waterproof coveralls worn in the cold months while sampling on deck.

Net reel: A hydraulic drum on the deck on which the net and most of the rigging are wound

Otter trawl: The type of net gear used on stern trawlers

Otterboard: Another name for a trawl door

Optimum Yield (OY): A range within which summed Total Allowable Catches must fall

P

Panel: Mesh netting attached to a square metal frame. Two large panels and four smaller panels are attached to a heavy steel frame box to form the six sides of a pot.

Pelagic: Midwater

Peritoneum: The lining of the gut cavity

Pew, Pew stick: A sharp-ended pole, which is used to skewer fish and toss them to another location

Pick/"Running the hook": Hook connected to the end of the boom which is attached to the bridle and is used to lift a pot onto the launcher as the pot is being retrieved.

Plotter: Electronic mapping device that displays the local area and the vessel's position on it. The plotter allows skippers to record the area of a string and also the number of pots in a string on a digital map display.

Pod: A school of marine mammals; such as seals, whales or dolphins

Population: The total of individuals occupying an area or making up a whole. When sampling aboard a trawler, a population is defined as the catch from a single haul.

Porthole: A window in the hull or the outside bulkhead of a ship

Pot Tie: A short piece of line used to tie pots together when they are stacked on deck.

Predominant species: Species that are the most abundant in the catch - not necessarily the target species

Presorting: The segregation and/or removal of any item(s) or organism(s) from the catch prior to the point where an Observer is collecting a sample.

Prohibited species or prohibited species groups: Species whose allowable retention is zero. Salmon, Pacific Halibut, and Dungeness crab are prohibited species.

Prohibited species sampling: The weight of groundfish catch sorted by the Observer to determine only the numbers and weights of salmon, herring, halibut, king crab, and tanner crab present

Prohibited Species Catch (PSC): A harvest limit usually placed on halibut, salmon, crabs or other species which must be discarded in the groundfish fisheries

R

R.D.F.: Radio direction finder

Radio Call Sign: Four letters and/or numbers, which are an international identifier of a vessel. The International Radio Call Sign (IRCS) is painted in large letters on the side of each vessel and on the deck of the flying bridge.

Random: Relating to a set, each of whose elements have an equal probability of occurring in a sample. These elements are chosen as sample units in a manner, which eliminates subjectivity.

Random sample frame: The population divided into independent countable units.

Regenerated scale: A fish scale that has grown in to replace one that was lost. Regenerated scales are useless for aging a salmon, but can be used to identify it to species.

Reserve: A portion of quota set aside at the beginning of the fishing year to allow for uncertainties in preseason estimates of DAP catch

Riblines: Heavy lines or chains that run down the length of the trawl net to strengthen it

Roller: A device made up of one or more metal pins that spin allowing the groundline to be pulled up and over the rail of a vessel during retrieval such that tension and friction on the line is reduced.

Roller station/pit: Term used to describe the area where fishermen stand while retrieving the line and gaffing fish coming in over the roller.

Rollerman: A crewman who stands in the roller station and monitors the retrieval of the gear. The rollerman lands any commercially valuable fish and excludes any non-commercially valuable fish from being landed.

Rostrum: A pointed, calcareous, median extension on the anterior end of crab carapaces

Round weight: The weight of the whole fish (or animal) as it was when alive, synonymous with fresh weight and whole weight

Roundfish: Fish that orient themselves in the water with the dorsal side towards the surface and ventral side towards the bottom

Appendix AD: Glossary

"Run pots": A phrase used interchangeably with "retrieve pots". It is the phrase used in the vessel logbook to indicate the number of pots that have been retrieved from a string.

S

Sample size: The portion of the population that is sampled.

Sample type: The method used to select part of a population. This includes basket, whole haul, partial haul, and the pre-sorted "X" sample types.

Sample weight: The actual weight in kilograms of a composition sample.

Sampling: The process of selecting part of a population for the purpose of determining the parameters, or characteristics, of the whole population. Composition sampling refers to taking samples of a haul in order to determine the fishing mortality of species occurring in the sample.

Scupper: A hole in the bulwarks which allows water to drain from the deck

Segment of Gear: In this manual a segment of gear refers to the standard unit the vessel uses for measuring gear. This could refer to a mag, skate, tub, or coil of gear.

Set: The entire length of groundline from the first hook to the last hook, also referred to as a "string" of gear.

Sheave: A wheel with a grooved rim, such as is mounted in a pulley block to guide the rope or cable

Shot: A pre-measured length of buoy line, usually 10 to 20 fathoms long. Normally there are two set lengths, a "Long" shot and a "Short" shot. When setting a string, the skipper will tell the crew how many shots to tie to a pot for various bottom depths.

Skate: A length of longline gear, usually 100 fathoms or 600 feet long

Skate bottom: A fabric square with lines on the corners to tie it into a bundle once a longline "skate" has been coiled onto it.

Skate or Mag markers: Markers in the groundline that separate the sections of gear. These may be fluorescent tape woven onto the line, knots, line splices, carabineers, or magazine (mag) clips.

Skates/Tubs/Coils: Terms used to describe the smaller segments of gear within a set or a magazine.

Spatial: Referring to a unit of space used in random sampling. For example: a third of a bin, or a section of trawl alley, are spatial units.

Species composition sample: To sort a defined weight of catch such that each organism sampled for is grouped by family or by species and to determine the number and weight of the organisms in each group

Spring line: A mooring line attached amidships

SSB: "Single Side Band" radio used for long distance contact

Stack: This term is used on pot vessels to refer to pots stacked on the back deck.

Starboard: The right side of a ship (when one is looking forward)

Stern: The aft or back end of a vessel

Stern ramp (slip): A sloping ramp in the stern of a trawler between the deck and the water line, through which the net is set and hauled.

Stern trawler: Any of various sized fishing vessels which trawl a conical shaped mesh net through the water, haul it up a ramp through the stern of the ship, empty, and process the catch to make a wholesale fish product. These vessels may fish for a month or more at sea without support.

String: Pots deployed individually and are not attached to one another in any way. This term refers to pots set at a similar time in a similar area and depth. What a skipper calls a string varies considerably between vessels. Strings are analogous to sets.

Sub-sample: The weight of catch designated by the Observer which weighs less than the sample weight and is processed for a supplemental task to determining the composition of a haul, such as sampling for average weight.

T - Z

Table: Some vessels have a sorting table on the back deck that pivots on one axis. The contents of a pot are dumped onto the table, and the table is swung out of the way to re-launch the pot.

Total Allowable Catch(TAC): Annual harvest levels based on biological, economic and social factors

Taper: To cut webbing according to a given formula for fitting into a trawl

Tare: A deduction from gross weight to obtain net weight. Usually made to allow for the weight of a container.

Temporal: Referring to a unit of time used in random sampling. For example: one hour of processing time, or systematic intervals of ten minutes, are examples of temporal units.

Trawl: A cone shaped net, towed through the water to catch fish

Trawl Alley: The central passage on a trawl vessel where the codend is placed after haulback

Trawl Doors: Often referred to as "doors," these are two metal plates, each attached to a main wire, designed to keep the mouth of the net open while fishing

Trip: The time period from when the vessel leaves harbor until it returns to harbor to offload product or catch

Trip Limit: The amount of a catch category that a vessel is allowed to retain by trip.

Tuning/Overhauling gear: Term used to describe the work involved in straightening hooks, replacing gangions, or splicing the damaged groundlines.

Tunnel: Short mesh-lined openings on two or three sides of a pot. These are the entrances to the trap. Fish and crab are able to swim in but are unable to make their way back out due to the fingers/triggers.

Under way: Vessel in forward motion, running. According to Coast Guard regulation, a vessel is under way if it is not at anchor or at dock, so a vessel adrift is technically under way.

Warp (main wire): The cables on a trawler which run from the main winches to the trawl doors on the net

Weighed sample: A "basket" sample. The catch sampled by the Observer is weighed on a scale.

Winch: A hydraulic machine with one or more drums on which to coil rope, chain, or cable for hauling or hoisting

Wing: The sides off a trawl net near the opening, usually with larger mesh than the rest off the net

Appendix AD: Glossary

Wrister: A coated cloth tube worn on the arm, extending from the elbow and covering the wrists. Keeps arms warm and dry. Fish blood and slime are more easily washed out from these than from shirtsleeves.

Appendix AE: Acknowledgements

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Appendix AE: Acknowledgements