

Summary of Statistical Methods Used by Observer Programs

Program	Coverage, sample size, or precision target	Mandatory	Sampling Frame	Vessel Selection Method
<p>Alaska Fisheries Science Center, North Pacific Groundfish and Halibut Observer Program (NPGHOP). 50 CFR 679 Subpart E</p> <p>Catch and bycatch in all North Pacific groundfish and halibut fisheries is monitored inseason to support quota management. The groundfish fleet is divided into four sectors by vessel size and processing mode (Catcher Processors (CPs) or Catcher Vessels (CVs) delivering to processing plants), each with different requirements for observer coverage.</p>				
<p><u>NPGHOP, Zero Selection sector</u></p> <p>Catcher Vessels <40 ft</p>	<p>0%</p>	<p>N</p>	<p>None</p> <p>Vessels < 40 ft not included in sampling frame for logistical reasons.</p>	<p>No vessel selection</p> <p>No list of vessels or permits but information about landings from tickets.</p>
<p><u>NPGHOP, Partial Coverage Sector</u></p> <p>Small vessel trip-selection: This pool is comprised of catcher vessels that are fishing hook-and-line or pot gear and are greater than or equal to 40 ft Length Overall (LOA), but less than 57.5 ft LOA</p>	<p>Anticipated selection probabilities = 12% 1 observer per trip</p>	<p>Y</p>	<p>Vessels greater than or equal to 40ft but less than 57.5ft LOA.</p>	<p>NMFS will use an internet based program called the Observer Declare and Deploy System (http://odds.afsc.noaa.gov) to randomly select vessels and assign observers to vessels.</p> <p>NMFS will grant conditional releases in the small vessel category under two scenarios: 1) vessels with insufficient life-raft capacity to accommodate an observer, or 2) vessels that are not released due to insufficient life-raft capacity shall be released from observer coverage on their third trip if it is consecutive to two previously observed trips (i.e., two trips in a row were</p>

<p><u>NPGHOP Partial Coverage Sector</u></p> <p>Large vessel trip-selection: This pool comprises three classes of vessels: 1) all catcher vessels fishing trawl gear, 2) catcher vessels fishing hook-and-line or pot gear that are also greater than or equal to 57.5 ft LOA, and 3) catcher-processor vessels exempted from full coverage requirements.</p> <p>Trawl vessels that fish for Pacific cod in the BSAI will be given the opportunity to opt-in to full observer coverage and carry an observer at all times when fishing in the BSAI</p> <p>Trawl vessels participating in the GOA Rockfish Fishery switch over to the 100% full coverage sector.</p>	<p>Anticipated selection probabilities = 24% 1 observer per trip</p>	<p>Y</p>	<p>Vessels greater than or equal to 57.5ft</p>	<p>NMFS will use an internet based program called the Observer Declare and Deploy System (http://odds.afsc.noaa.gov) to randomly select vessels and to assign observers to vessels</p> <p>NMFS will grant conditional releases in the small vessel category under two scenarios: 1) vessels with insufficient life-raft capacity to accommodate an observer, or 2) vessels that are not released due to insufficient life-raft capacity shall be released from observer coverage on their third trip if it is consecutive to two previously observed trips (i.e., two trips in a row were observed, resulting in the third trip being</p>
<p><u>NPGHOP, 100% Sector</u></p> <p>Fleet: Vessels LOA \geq 125 ft; 79 bottom trawl catcher vessels; 55 longline vessels; variable trip length</p>	<p>100% 1 observer per trip</p>	<p>Y</p>	<p>NPGHOP vessels in the sector listed</p>	<p>Census</p>
<p><u>NPGHOP, 200% Sector</u></p> <p>Fleet: Vessels LOA \geq 125 ft; 26-32 C/P bottom trawl and longline vessels; ~12 C/P vessels in the Atka mackerel fishery; 2 week + trip length</p>	<p>100%, 2 observers per trip</p>	<p>Y</p>	<p>NPGHOP vessels in the sector listed</p>	<p>Census</p>

Alaska Regional Office, Alaska Marine Mammal Observer Program (AMMOP) 50 CFR 229.7				
AMMOP	5%	Y	Permit holders by stratified area	Randomly generated list

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Northwest Fisheries Science Center, West Coast Groundfish Observer Program (WCGOP) 50 CFR 660, Subpart C				
<u>WCGOP Groundfish Catch Share – IFQ program</u> Fleet: 138 permits; 107 deemed active; groundfish bottom trawl; shoreside pelagic hake trawl, at-sea mothership catcher vessel pelagic hake trawl, and groundfish fixed gear vessels (longline and fish pots); 15 bottom trawl and fixed gear vessels in EM EFP, and 22 mid-water whiting vessels in EM EFP	100% observer coverage. For vessels participating under Electronic Monitoring (EM) Exempted Fishing Permits (EFP), target coverage is 25% for non-whiting vessels. No observer coverage on whiting vessels with EM.	Y	All vessels participating in the fishery.	Census
<u>WCGOP - Limited-Entry Sablefish-Endorsed Fixed Gear</u> Fleet: 164 active permits; vessels can have > 1 permit; longline and fish pots	40% of Federal permits with landings from each port group are selected for coverage. Selection cycle is defined as one calendar year. Fishery operates from April-October.	Y	All active permits based on Federal permit list and previous year's landings	Stratified random sampling without replacement; Port-groups form strata
<u>At-Sea Hake Observer Program (ASHOP)</u> Fleet: 9 catcher-processor and 7 mothership limited entry permits; Pelagic trawl for Pacific hake	100% observer coverage, 2 observers per vessel	Y	All active catcher-processors and motherships based on Federal permit list.	Census

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West Coast Regional Office 50 CFR 660 Subpart K (660.712 and 713)				
<u>California/Oregon Drift Gillnet Fishery</u> Fleet: 20 active vessels; 7-10 day trips	~30% of sets	Y	Fleet listed; based on State permits	Vessels are selected at time of trip notification, dependent on their recent coverage and observer availability.
<u>West Coast Longline</u> Fleet: up to 6 vessels; 20-40 day trips	20-100%	Y	All Active Vessels	20-100% depending on number of active vessels.
Pacific Islands Regional Office 50 CFR 665 Subparts B and C				
<u>American Samoa Longline</u> 26 Longline vessels; average trip length 40 days	20% (tuna)	Y	Fleet listed; Based on Federal permits	15% vessel selection, combined with separate 5% daily vessel selection to obtain 20% coverage level
<u>Hawaii Longline</u> Fleet: 123 tuna, 32 swordfish; 28 tuna and swordfish; pelagic line; 15-25 day trips (tuna); 25-35 day trips (swordfish)	100% (swordfish)	Y	Fleet listed; based on Federal permits	Census
	~20% (tuna)	Y	Fleet listed; based on Federal permits	15% vessel selection, combined with separate 5% daily vessel selection to obtain 20% coverage level

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Northeast Fisheries Science Center 50 CFR Part 648.11				
<u>Northeast Multispecies Groundfish</u> Fleet: >2,274 vessels; multiple gears: gillnets (anchored, drift, float, sink), trawl (mid-water, bottom, purse seine), longline; 1-7 day trips typically; Federal and state permits	Target 30% coefficient variation (CV) for bycatch estimates of protected species; Special Access Areas Standardized Bycatch Reporting Methodology (SBRM) Omnibus Amendment allocation	Y	Fleet lists based on Federal permits (vessels with multi-species permits)	Quarterly stratified random sample; SBRM fleet sectors form strata
<u>Northeast Sector Managed Groundfish</u> Fleet: >2,274 vessels; multiple gears: gillnets (anchored, drift, float, sink), trawl (mid-water, bottom, purse seine), longline; 1-7 day trips typically; Federal and state permits	Target 30% CV for bycatch estimates of protected species; Coverage 24% of trips	Y	Fleet lists based on Federal permits	Quarterly stratified random sample; SBRM fleet sectors form strata
<u>Mid Atlantic Fisheries</u> Fleet: >1,112 vessels; multiple gears: gillnets (anchored, drift, float, sink), trawl (mid-water, bottom, purse seine); 1-4 day trips typically; Federal and state permits	Coverage typically < 5% SBRM Omnibus Amendment allocation	Y	Fleet lists based on Federal permits (New York – North Carolina)	Quarterly stratified random sample for a portion of the fleet; SBRM fleet sectors form strata
<u>Atlantic Sea Scallop Dredge Fishery</u> Fleet: >745 vessels with GC and LA permits; multiple gears: primarily scallop dredge, some trawl; 1-12 day trips typically; VMS requirement; Federal permit	*Mid Atlantic Access Area at 14% for Limited Access (LA) and 9% for Limited Access General Category (LAGC) *Open areas are 11% for both LA and LAGC	Y	Pre-trip notification required	Stratified random sample

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Southeast Fisheries Science Center: Shrimp, reef fish, coastal gillnet: 50 CFR 622, 27, .52, .178, .204, .300. Shark bottomfish longline and pelagic longline: 50 CFR 635.7				
<u>Shrimp Trawl</u> Fleet: ~1,984 Federally permitted vessels; LOA ~ 75 ft; ~ 18 day trips Gulf of Mexico target 80% of total sea days; year-around; ~6 day trips on the east coast target 20% of total sea days.	~2% coverage, Target sample of 1,500 sea-days variable depending on funding.	Y	Federally-Permitted Vessels	Stratified random sample by effort, area, season, depth strata based on Gulf Shrimp System (trip tickets)
<u>Reef Fish</u> Fleet: ~877 Federally permitted vessels; gear types include bottom longline, electric reel (bandit) and handlines	~5% coverage, sea days variable depending on funding	Y	Federally-Permitted Vessels	Stratified random sample by region gear, and season based on previous year's effort from coastal logbooks
<u>Southeast Coastal Gillnet</u> Fleet:50-60 vessels; multiple gill net types	100% coverage (Nov 15 - Apr 1) for drift and strike boats targeting shark; Otherwise target of 30% Relative Standard Error (RSE) for turtle or mammal interaction estimates.	Y	Fleet	Census; stratified random sample
<u>Atlantic and Gulf of Mexico Shark Bottom Longline Fishery</u> Fleet:207 permitted vessels; LOA < 50 ft; 500-1,500 hooks per line	100 % in shark research fishery 4-6% for non-shark research fishery	Y	Fleet listed as determined by Federal permits from the previous year.	Stratified random sample by area and season based on previous year's vessel activity
<u>Pelagic Longline</u> Fleet: 80-100 active vessel w/ swordfish, tuna, and shark permits; 3-14 day trips 150-200 mi off-shore typical; some 20-40 day trips 200-1,000 mi from port	8% of sets target, ~6% mean actual coverage	Y	Fleet listed as determined by Federal permits from the previous year.	Stratified random sample by statistical area and quarter based on previous years activity