

Paperwork Reduction Act Statement for the At-sea Hake Observer Program

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 20 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: At-sea Hake 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. OMB Control No. 0648-0593

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Reference in this document to trade names does not imply endorsement by NOAA Fisheries.

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OVERVIEW



This manual is a supplement to the North Pacific Groundfish Observer Manual, which is more detailed, particularly about safety. Please review Chapter 19 in the Alaska manual for an in-depth safety review.



Safety

Safety must be every observer's top priority. When you board your vessel, both observers need to physically locate each piece of equipment on the vessel safety checklist, fill out the checklist and sign the form. This is mandatory. Observers who fail to complete the vessel safety checklist will receive automatic zeros as evaluation scores, because they have failed to recognize safety as their number one priority. As an observer, you must take responsibility for your own safety and do everything in your power to be aware of and avoid known dangerous situations.

Safety concerns specific to factory vessels:

- Know location of hydraulic shut-off(s)
- Be aware of pinch points – diverter boards, moving belts
- Use hearing protection in factory
- At-sea transfers and skiff rides – do NOT skiff after dark. Make sure both hands are free for boarding and climbing. Attach a line to gear and belongings and transfer them separately. Evaluate weather and only transfer if YOU feel it is safe.
- If possible, leave an immersion suit near your factory emergency exit route

Observer Regulations and Coverage

Regulations requiring 100% observer coverage for C/Ps and motherships went into effect in 2004, though observers have been deployed in the hake fishery since the late 1970's. In 1997, the catcher-processor (C/P) sector entered into a cooperative agreement (co-op) which split the hake quota into individual fishing quotas by company. In 2011, the mothership sector entered into a co-op for the first time as West Coast trawl fisheries began operating under a trawl rationalization program, including all sectors of the hake fishery.

Under trawl rationalization, the allowable bycatch for certain species is now divided into individual quotas, increasing vessel accountability. Observer coverage and sampling in the at-sea portion of the fishery remains virtually unchanged for the A-SHOP.

All observer information must be kept confidential. Observers must not post observer information on the internet, including but not limited to social networking sites and other file sharing sites. Observer information is defined as "...any information collected, observed, retrieved, or created by an observer ... including fish harvest or processing observations, fish sampling or weighing data, vessel logbook data, vessel or processor specific information (including any safety, location, or operating condition observations), and video, audio, photographic, or written documents.

Hake Fishery Background and Information

While the vessels and sampling situations will be familiar to most North Pacific Groundfish Observers, the regulations, management, and species encountered in the hake fishery are different from those in Alaska.

The at-sea Pacific hake (*Merluccius productus*) fishery dates back to 1966 when foreign vessels participated. The fishery evolved into a joint venture with U.S. catcher vessels delivering to foreign processing vessels in the 1980s. By 1991, the hake fishery was completely domesticated, allowing only U.S. vessels to catch and process fish.

The at-sea hake fishery consists of three sectors:

1. Motherships
2. Catcher/Processors
3. Tribal

The hake tribal fishery is exclusive to the Makah, Quileute, Hoh, and Quinault tribes from the northern Washington coast. To date, only the Makah tribe has participated in the fishery, but the other tribes have expressed interest in entering the fishery recently.

The allocation for this sector is set aside as a fraction of the coast-wide optimum yield (OY). All hake fishing for the tribes takes place in each tribe's Usual and Accustomed Areas (UAA) located in northern Washington waters. Figure 1 shows the boundaries for the four tribe's UAAs. The Makah area extends north of the area illustrated here, but is shown within

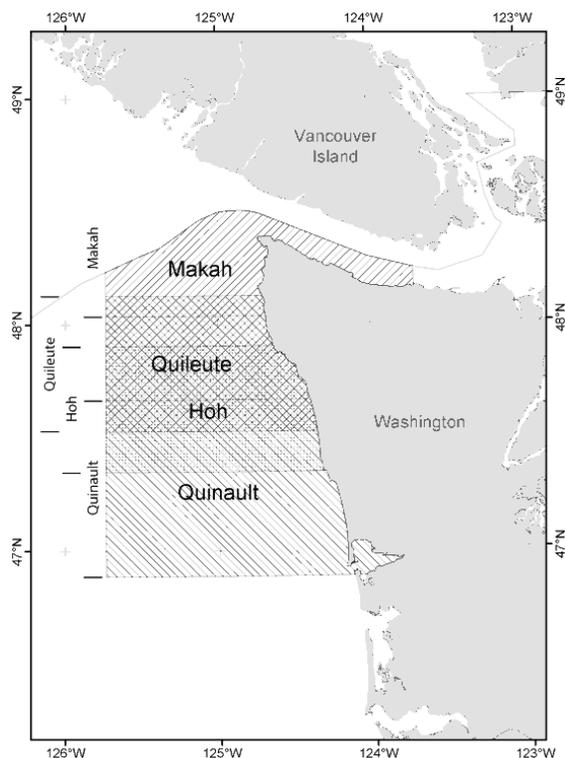


Figure 1 Tribal Usual & Accustomed Areas

the bounds of both the fishery management area and the U.S. exclusive economic zone.

Observers on vessels which are receiving fish from the tribal fishery sample as usual. The only difference is on the Observer Haul Form (OHF), a tribe-specific code is entered in the Community Development Quota (CDQ) column for each haul. Note this does not mean it's a CDQ fishery, but simply designates which tribe the delivery came from. Contact your in-season advisor for the appropriate code if your vessel is participating in the tribal fishery.

Bycatch Limits and Coordinating with Vessel Crew

Due to declines in populations of certain rockfish species along the West Coast, the hake fishery has been held to lower bycatch quotas. In 2004, the at-sea hake fishery came close to catching the entire canary rockfish allocation in one haul. Therefore, some rockfish species have specific bycatch limits (often referred to as "hard caps"). For 2012, these allocations have been split between the co-ops. As a result, the vessels have expressed interest in working with the observers to maximize sample size when a species of concern is present as bycatch.

On April 7, 2005 the observer program attended a meeting with industry representatives to discuss possible means of avoiding small samples. At this meeting, several strategies were agreed upon.

- All vessels have stated that they are willing to help the observers during hauls with high bycatch levels of species of concern. They may do this by designating **someone from the crew to assist the observer**. What this really means is there will be another pair of hands to help sort, lift and carry. Full supervision is required at all times. You cannot leave this person unattended at the belt to sort while you measure lengths or weigh bycatch. This assistant is only available during hauls with high bycatch of species of concern when you would otherwise be forced to collect multiple small samples. NOTE: in order to get this assistance from the vessel you must *ask for help*.
- Another method for maintaining a large sample size is to adjust the flow of fish. This might mean slowing the belts down so you are able to collect every piece of bycatch, or speeding them up to thin out the layer of fish for easier sighting of bycatch. Ideally, this would allow the observer to collect larger samples than would be possible without vessel assistance. As the observer, you need to keep in mind that collecting the largest sample possible is of high priority, but it can only be done if every single piece of bycatch can be accounted for. In the end, sample size will be dictated by the observer's ability to account for all bycatch in the sample. If you are unable to collect a large sample, you will need to explain to the captain and/or factory manager what it is that is preventing a larger sample from being collected and if possible, work with them to prevent it from happening again. Please contact the Observer Program if there are problems or confusion over this.
- Notification of species of concern: If you are watching the codend dump and notice large amounts of species of concern you should make sure the vessel is aware of the situation. This is a good time to indicate to the factory foreman, etc. that you might need help sampling.
- Pre-cruise meetings: When you board your vessel, it is a good idea to discuss sampling options and strategies with the captain and factory supervisor(s) before fishing begins. *Refer to the 'Pre-Cruise Vessel Bycatch Meeting Outline' in the appendix for topics to cover.*

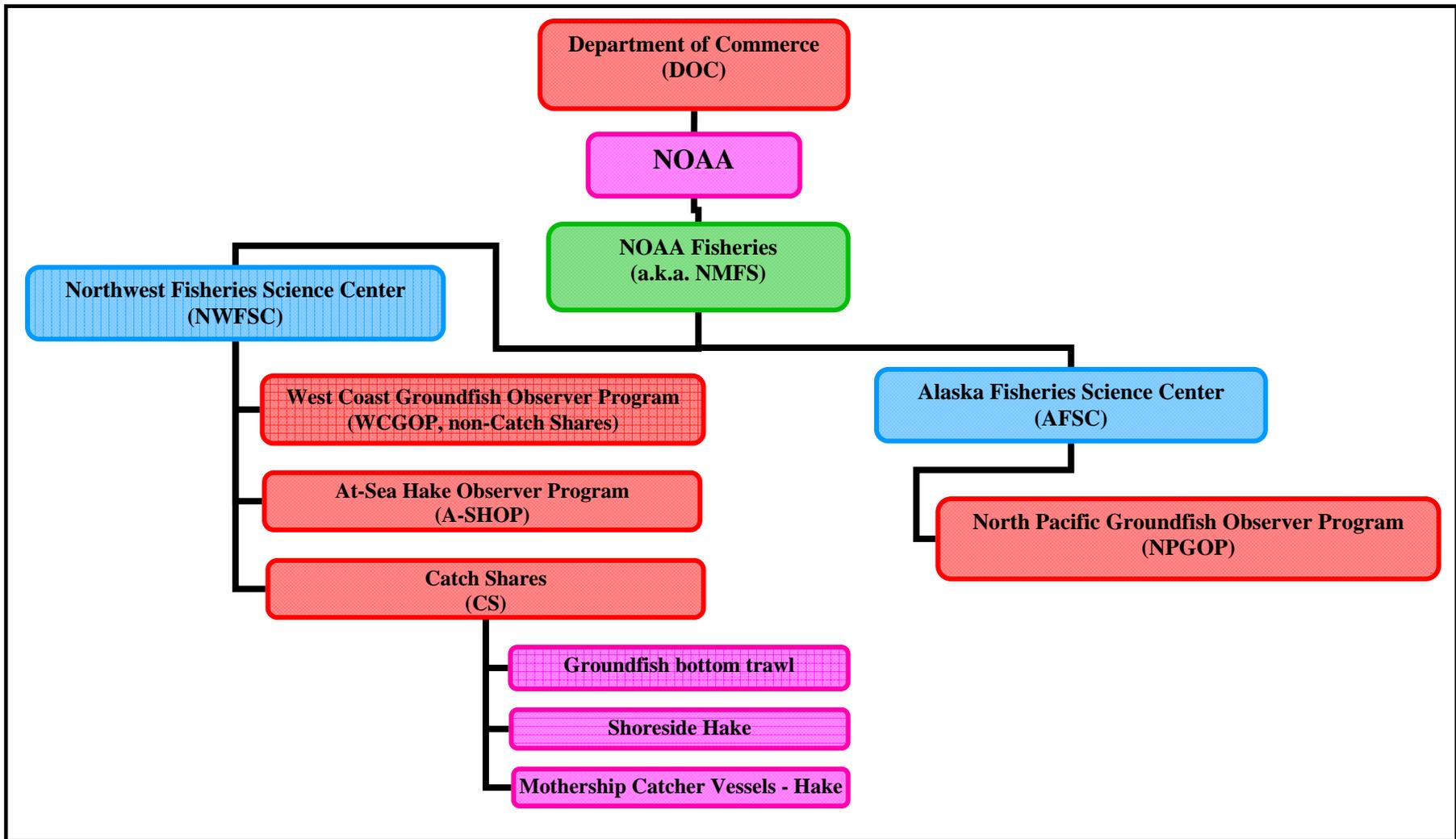


Figure 2 NOAA Organization chart

This chart shows the new components of the expanded observer programs on the West Coast. The Northwest Fisheries Science Center (NWFSC) is located at 2725 Montlake Blvd. E (at the south end of the Montlake bridge, near the southern part of the UW campus), and the Alaska Fisheries Science Center is located in Building 4 at the Sand Point NOAA facility.

Fishing Regulations

Vessel record-keeping and reporting on the West Coast are different than in Alaska. Official NMFS-issued logbooks are not currently distributed in the hake fishery. The captain will record haul information in a logbook or notebook, from which you will get the VHF data. Please make copies of the vessel's logbook pages to turn in along with your other data for debriefing. Remember to double check for transcription errors between the vessel logbook, the VHF and ATLAS.

Sample station regulations similar to Alaska went into effect in 2011. Verify sample station dimensions in your observer logbook.

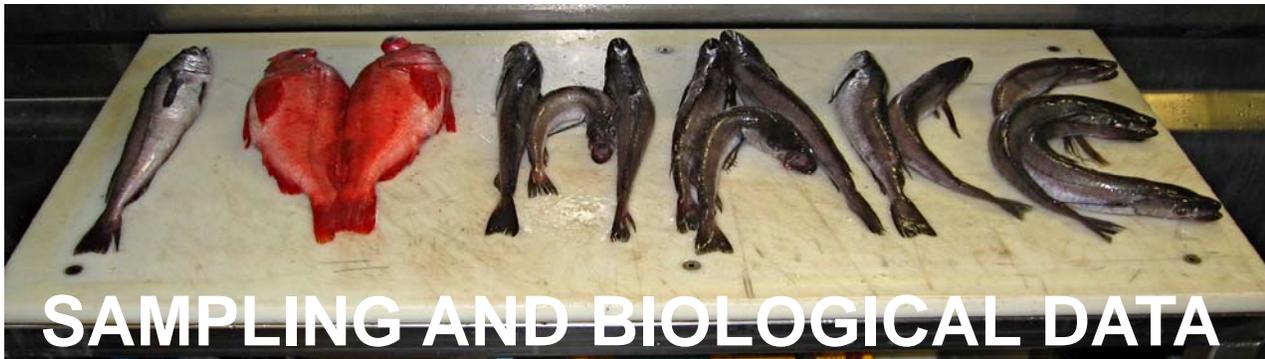
Interpreting regulations is not part of your observer duties. The fishing regulations for the West Coast are different than those regulating Alaska fisheries. Be aware of:

No processing zone: No at-sea processing zone south of 42.00'N (near the CA-OR border). Mothership catcher vessels may fish south of 42.00'N, but must return north to deliver the fish.

Retention: As an observer, it is **not** your responsibility to interpret *any* regulations. The vessel is completely responsible for knowing what they may or may not retain. If someone on the vessel asks you if they are allowed to retain something (i.e. a tasty-looking rockfish) do *not* try to interpret any rules; instead, direct them to the factory manager or captain.

Other sectors: Hake shoreside and mothership catcher vessels will be carrying West Coast Groundfish Observer Program (WCGOP) observers for every fishing day. These WCGOP observers primarily record retention and estimate any at-sea discards. *Mothership observers will be instructed by the A-SHOP, via in-season text message or during debriefing, when discard amounts from the catcher vessels need to be added to the mothership Observer Catch Estimates.*





Observer Priorities

1. Personal safety
2. Marine mammal *samples*
3. Haul information and catch estimates
4. Species composition samples
5. Salmon samples
6. Age structures
7. Sexed lengths
8. Monitor for marine mammals and seabirds
9. Fish collection and other tasks

Observer Catch Reporting

Your data must be sent via ATLAS every day, as total catch and bycatch numbers are evaluated daily.

Remember to enter and transmit non-fishing day positions on days in which no fish were retrieved or delivered. This includes every day from the first day you board the vessel until the day you disembark.

Inform your in-season advisor of significant events (e.g. hauls with large amounts of species of concern, non-fishing days due to the vessel needing repair, etc.) and of any questions you have while deployed.

Observer catch estimates and species composition data are used by both NMFS and the vessel to track how much is left of the hake and bycatch quotas on a daily basis. It is critical to ensure no data entry errors have been made by double checking your work and your partner's work. You should not transmit bogus catch estimates. Wait to send your data until you have the correct catch estimates for all the hauls up to that point.

While fishing for hake, record "**HAK**" in the "purpose code" field on the VHF to indicate the hake fishery.

Observers on motherships need to record the ADFG number of the catcher boats which are making deliveries. The catcher boat ADFG numbers are in Appendix D of this manual.

If ATLAS is not working, please contact **Glenn Campbell** as soon as possible at **206-526-4240**. For all other problems and questions please contact the A-SHOP (*see Appendix C*).

Marine Mammals and Seabirds

Sampling for marine mammals is your second highest priority. If a marine mammal is caught, collecting the appropriate samples and information takes precedence over other sampling duties. *Monitoring* for marine mammals is lower on the priority list and should be done primarily when you are not sampling. For example, if you are sampling 50% of the haul, then the other 50% of the processing time could be used for monitoring haul backs and codend dumping for marine mammals. In other words, monitoring for marine mammals should not negatively affect your sample size.

Clearly label all marine mammal specimens with the lead observer's cruise number, species name and haul information. Refer to Chapter 14 of your Alaska manual for more information on marine mammals, in particular on how to collect specimens. Note that snouts/skulls are collected from pinnipeds, while tissue samples are collected from cetaceans. Marine mammal data is only entered on the Marine Mammal Interaction and Specimen Form, not in species composition data.

Refer to Chapter 16 of your Alaska manual for detailed information on seabird sightings and interactions. Limited numbers of seabird specimens have been collected off the West Coast so there is an interest in data and specimens from all seabird species. Collect and freeze all seabird specimens, with albatross species being the highest priority. Enter species, count and weight in species composition data for birds that occur in your species composition sample and complete the Bird Interaction, Activity and Species Form in ATLAS for all birds that interact with the vessel and for specimens collected. Observers on catcher-processors will enter the appropriate "Haulback Bird Obs Code" and "Shortwired?" on the OHF. For mothership observers, the "Haulback Bird Obs Code" is always "0" for No Monitoring and "Shortwired?" is always "U" for Unknown. Short-tailed albatross are a species of interest. Every sighting of and interaction with short-tailed albatross needs to be recorded on the Bird Interaction, Activity



and Species Form in ATLAS as well as on paper forms. For more information, see page 16-9 of the Alaska manual.

Observer Catch Estimates

All at-sea hake vessels have flow scales and must test them daily. The regulations requiring this mirror the flow scale regulations in Alaska. See Chapter 4 of your Alaska manual, starting on page 4-5 for the details of flow scale use. Use the flow scale weight for catch estimates, record a ‘W’ on the OHF and enter the flow scale weight in kilograms.

The flow scale is used by the vessel to record total catch weight for each haul and to track the cumulative total catch weight for the vessel. Keep track of which haul is running across the scale. Record the display weight at the end of each haul’s processing when you can. This can be compared against the vessel’s printout of each haul weight to verify the catch estimates. Turn in copies of the vessel’s flow scale printouts with your OHF.

If part of a codend is dumped, or you see fish escaping through a blow-out panel in the net, visually estimate the weight and add it to the flow scale weight for your total observer catch estimate. If an entire codend is lost, you or the captain should visually estimate the weight and record it as your observer catch estimate. Record this information in your logbook on the “Flow Scale Catch Estimate Calculations” page.

Mothership Haul Recording

Record hauls in order of gear retrieval date and time on the VHF. Motherships number hauls in the order they are received from the catcher vessel, not by gear retrieval date and time (see figure 3.1). To keep track of which haul is running over the flow scale, use the mothership’s haul numbers. This means haul numbers may be recorded out of sequence on the VHF (see figure 3.2).

Tow No.	Boat	Date/Time	Set Time	Set Position	Bottom Depth	Net Depth	Stop Time	Haul Position
296	Ra	5-21-2011	1030	46 54 124 57	420	105	1036	46 53 124 58
297	Ai	1920	1300	46 51 124 57	370	115	1355	46 54 124 58
298	In	1850	1439	46 54.1 124 57.9	350	100	1520	46 51.7 124 58.1
MAY-25-2011								
299	Nb	0920	0755	46 55.0 124 57.0	350	100	0830	46 53.0 124 58.0
300	Bo	1015	0655	46 51.0 124 57.0	474	120	0800	46 56.0 124 58.0
301	Ow	1125	0838	46 54.9 124 58.5	375	100	0902	46 53.9 124 58.9
302	Wc	1910	1624	47 26.5 124 55.0	280	100	1813	47 30.3 124 51.4
303	Bf	2005	1640	47 29 125 00	280	95	1918	47 30 125 01

Figure 3.1 Mothership vessel logbook – hauls numbered in the order received

Cruise 1133B	Permit 76	Year 2011	Gear type 2	Pur. Code HAK	Vessel Haul Form	Page <u>4</u> of <u>20</u>
Observer Name <u>Muddy Waters</u>					Resubmission (Circle All Changes)	
Vessel Name <u>Salty Dog</u>						

Trip No.	Haul No.	IF or Y/N	CDQ No.	Vessel Type	Gear Performance	Location Code	Deployment Information										Retrieval Information												
							Month	Day	Time	Latitude (N)			E or W	Longitude			Average Bottom Depth	Average Gear Depth	M or F	Month	Day	Time	Latitude (N)			Longitude			
										Deg.	Min.	Sec.		Deg. (West)	Min.	Sec.							Deg.	Min.	Sec.				
1	296	N		2	1	R	05	24	1030	46	54		W	24	57		420	105	F	05	24	1036	46	53		W	24	58	
1	297	N		2	1	R	05	24	1300	46	51		W	24	57		370	115	F	05	24	1355	46	54		W	24	58	
1	298	N		2	1	R	05	24	1432	46	54	06	W	24	57	54	350	100	F	05	24	1520	46	51	42	W	24	58	06
1	300	N		2	1	R	05	25	0655	46	51	00	W	24	57	00	474	120	F	05	25	0800	46	56	00	W	24	58	00
1	299	N		2	1	R	05	25	0755	46	55	00	W	24	57	00	350	100	F	05	25	0830	46	53	00	W	24	58	00
1	301	N		2	1	R	05	25	0838	46	54	54	W	24	58	35	375	100	F	05	25	0902	46	53	54	W	24	58	54
1	302	N		2	1	R	05	25	1628	47	26	35	W	24	55	00	280	100	F	05	25	1813	47	30	18	W	25	01	24
1	304	N		2	1	R	05	25	1620	47	26		W	24	53		541	100	F	05	25	1910	47	31		W	25	02	
1	303	N		2	1	R	05	25	1640	47	29		W	25	00		280	95	F	05	25	1915	47	30		W	25	01	

Figure 3.2 Mothership observer VHF – hauls recorded in order of gear retrieval date and time

Scale Testing

The motion compensated platform (MCP) scale test is the observer’s responsibility. Test the MCP scale using certified weights at least once a day - at 10, 25, and 50 kg. Record the results in the “Daily Observer MCP Scale Test Log” in your logbook, even if it fails. A 0.5% variance is allowed to consider the MCP scale usable and accurate.

The scale must pass this test in order for you to use it for your species composition sample, and also so that the flow scale test can be conducted. If the MCP scale fails, try retesting it or try calibrating the scale and then retest.

Both the motion compensated platform (MCP) scale and the flow scale must be tested every 24 hours.

The flow scale must be tested daily to ensure data accuracy. Testing the flow scale is the vessel’s responsibility, but an observer must be present for the test to be valid. The vessel will complete a daily flow scale test record form. For an example of the “Record of Daily Scale Tests”, see Appendix E. There is a



place for the observer who witnessed the test to sign. This simply means you witnessed the test, not that the flow scale passed.

It is the vessel’s responsibility to conduct the test in a manner that makes it possible for you to be present. Work with the vessel so you can be present for the test at a time convenient to everyone. The crew will run 400+ kg of fish, or sand bags, over the flow scale and then verify the weight of the same 400+ kg using the MCP scale. A 3% variance is allowed.

If the flow scale fails the daily test, it may be re-tested as many times as the crew wishes. The scale may *not* be relied on as a source for total catch weight until it has passed the daily test. ***If total catch is weighed on a flow scale that did not pass the daily test, do not use that weight as the Observer Estimate. You must report only the vessel estimate, leave the observer estimate blank, and notify your in-season advisor.*** If the flow scale fails, the *captain* decides whether or not to continue fishing. If the vessel continues to fish, sample for composition using the MCP scale (assuming it has passed). Your sample sizes will be limited by the fact that you must weigh the entire sample on the MCP scale. Notify your in-season advisor, and document the situation in your logbook. ***Do not refuse to sample, or tell the vessel they cannot fish, if the flow scale isn't functioning.***

How can you ensure accurate weights? Everything in the catch must pass over the flow scale to be weighed. Document all situations where everything is not weighed, such as large objects removed on deck or anything removed in the factory prior to the flow scale. Add these weights, or estimated weights, to the flow scale weight in order to calculate the correct catch estimate. The flow scale display panel should be sealed. The scale's computer cannot be tampered with unless someone breaks the seal. If you suspect the seal is broken, or that someone is tampering with the flow scale, document this fully in your logbook.

Presorted Organisms

Although presorting is never legal, removing large animals on deck to prevent them from entering the factory or live tanks is sometimes unavoidable. When a large organism (e.g. salmon shark) is pre-sorted on deck the observer must be informed and allowed access to the organism for identification, and sampling if necessary. Observers should remind the deck crew that organisms such as ragfish or large skates should not be sorted on deck.

If a large organism is excluded on deck or removed before your sample, it never had the chance to fall in your species composition sample. Record it as a presorted sample by recording the number of organisms and entering '0' for the weight, or using the appropriate length/weight table. Measure and record the length and sex, if possible. Add the estimated weight to the flow scale weight to obtain the catch estimate for that haul and enter the catch estimate as the sample size for the pre-sorted sample.



If an organism makes it into the factory, it has a chance to be in your sample. Individuals of certain species, such as ragfish, may be too large or bulky to go up the incline belt. Direct crewmembers to pull them off prior to the incline and place them on the belt that feeds to the flow scale so their weight is included in the total haul weight. If an organism is too large to go over the flow scale, cut into pieces and weigh it on the MCP scale, if possible. If you cannot weigh it on the MCP scale, record its length and estimated weight. Add the organism's weight to your total sample weight and to the haul's flow scale weight to get the catch estimate. If this occurs during a non-sample period, add the estimated weight to the flow scale weight to obtain your catch estimate, but do not include it in your species composition sample data.

Steps in Designing a Random Sample Frame.

1. Define the population: *every fish in the haul*
2. Define the sampling frame: *spatial or temporal*
3. Define your sampling units: *metric tons or minutes*
4. Number all of the sampling units in your sampling frame
5. Randomly select units to sample: *use RNT, dice, etc.*

Sampling 50% of the haul for species composition is the norm in the hake fishery and is possible on all hake vessels. For smaller or very clean hauls, you may be able to sample the entire haul.

Random Sample Table

You and your partner should set up opposite work shifts and sample every haul. In the event that one observer gets sick or injured and is unable to sample, contact your in-season advisor and a decision will be made as to whether the random sample table should be used. Generally, if the sickness is expected to last only a day or two, then the well observer will continue to sample during her/his normal shift. If the sickness might last longer than two days, then the random sample table needs to be used so that the samples aren't all coming from the same time period. Your contractor and the A-SHOP should always be notified of any injury or illness.

Species Composition Sampling

The A-SHOP does **not** require three distinct samples from each haul, which is different from Alaska requirements.

The hake fishery is managed entirely on observer data, therefore, it is vital that the data be both randomly collected and of the highest quality. Implementing a random sample frame is usually simple since these vessels all have flow scales. Either estimate the size of the haul yourself or ask the factory manager for

her/his estimate. Divide the weight into two equal parts and randomly select which half to sample for species composition. Make sure your sample frame allows all organisms in the haul an equal opportunity to be sampled. If you are on a vessel that pulls up codends with large catches (>75 MT), consider breaking the haul up into 4 units and randomly choosing two units to break up the sampling effort.

Keep in mind that your sample frame is based on an estimate and your goal for a typical haul is 50%. If you are sampling the first half, start at the beginning of the haul and stop at the estimated halfway point. If you are sampling the second half, start at the estimated halfway point and sample until the end of the haul (i.e. all fish run out of tanks). If you need to stop during your sample period (e.g. bathroom break), end the sample and start a new one when you return. To minimize incline belt bias and maintain discrete start and stop points for your sample, have a crewmember close the tank doors and run out all the fish on belts at the start (when sampling second half) or end (when sampling first half) of your sample.

If you cannot see and collect all species for which you are sampling, you must either reduce your sample size or work with the boat to run the fish in a thinner layer. If you find that you have to reduce your sample size for species composition due to large amounts of bycatch, then systematically sample throughout your chosen half using equally sized units. *Keep sampling options in mind when sampling.*

Example. Randomly selected 2nd half of 30 MT bag with lots of spiny dogfish, American shad and jack mackerel visible during dump. Coordinate with back line to run fish slowly while you are sampling. Start sample at 15 MT and sample for 1 MT, take 4 MT off to work up sample, continue one on-four off until end of haul (*see Figure 4*).

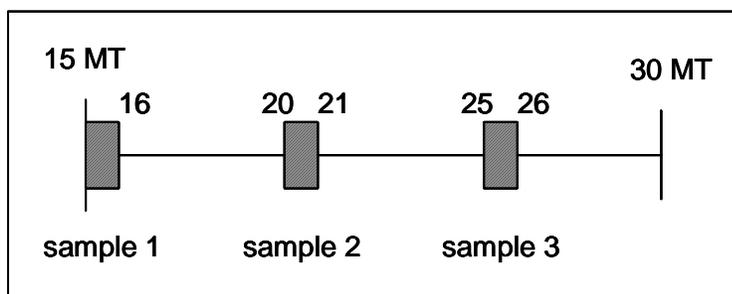


Figure 4

Keep the **priority list** in mind while sampling. For high bycatch hauls, it is acceptable to drop lengths and otoliths in order to maintain the 50% sample size.

Percent retained estimates should reflect what the vessel does or intends to do. When disposing of your sample, mimic what the vessel does. If necessary, ask for help getting your bycatch samples onto the

correct belt. Ask vessel crew which belts are going over-board (discard) and which are going to fish meal (retained) so that your discard and percent retained estimates are as accurate as possible.

Discard estimation options:

1. $\left[\frac{\text{discards from species composition sample}}{\text{species composition sample weight}} \right] \times \text{observer catch estimate}$
2. Multiply discards in species composition sample by 2 (*for hauls where ~50% was sampled*)
3. Visually estimate (for bag overflow)

Subset Sampling

The average weight of hake from every haul is necessary for resource managers. Randomly collect a subset sample of ~50 hake from every haul (about half a basket) and record the weight and number of fish.

The subset sample is a logical place to get your length and otolith fish.

Subset sampling is a good option to minimize your workload and maximize sample size. This is accomplished by minimizing the number of organisms you are counting. If you have more than a few baskets of a particular bycatch species, you may use subset sampling to count only a portion of that species. The weight of all bycatch is always recorded, but a count may be recorded for a random collection of ~50 individuals. For very large organisms (e.g. ragfish), its acceptable to only count ~15 and weigh the rest.

Samples from a trawl fishery are weighed samples. **Every organism must have a weight** – either from the flow scale for the predominant species or from the MCP scale for bycatch.

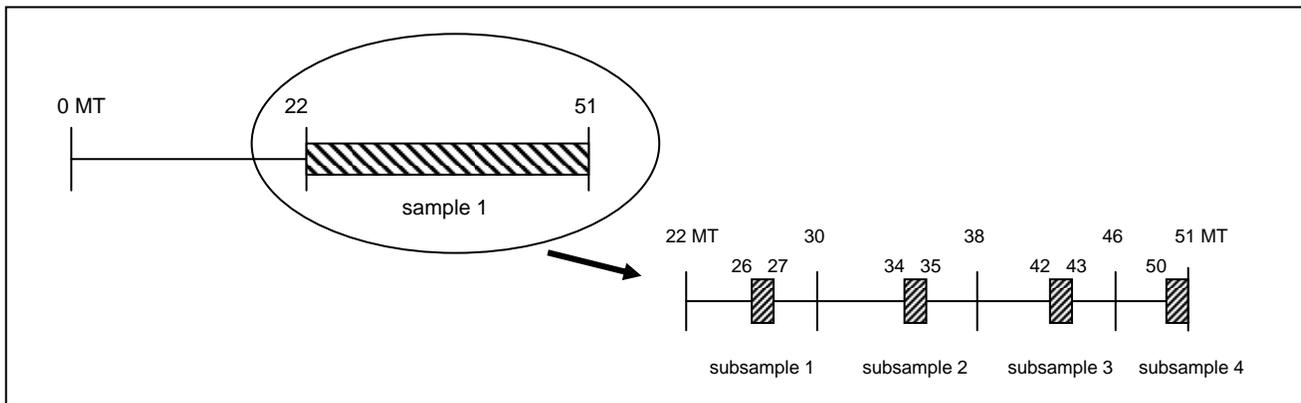
Subsampling For Two Predominant Species

When there are two predominant species (*not species groups – i.e. not shark unidentified*) in a haul, subsampling is a good option to maintain large sample sizes and minimize workload. The size of your subsamples will depend upon the predominance of the two species. **At a minimum, subsamples should be taken from at least two parts of the sample and weigh no less than 80 kilograms each.** Use random systematic subsampling to accurately capture the ratio of the two species in your sample.

Subsample Option #1: The flow scale is your friend/large (~1 MT) subsamples using flow scale

For hauls with unequal predominance/large organisms

Example. Richard estimates the bag is ~45 MT and randomly selects the second half. He sees a fair amount of ragfish during the dump. Breaking the sample into 3 units of 8 tons, he randomly selects ‘4’ to be the start of his first subsample. During his sample, he lets the ragfish and hake go by and collects all other bycatch. At 26 tons, he has the belts prior to the flow scale stopped and records the weight. He starts the belts and pulls everything but hake off the belt. After about a ton, he stops the belts again and records the weight to get his first subsample weight, then continues with his sample. The bag is actually 51 MT so he maintains his sample frame until the end of the haul, collecting his ~1 MT subsamples at 34, 42 and 50 MT (see Figure 5).



Subsample Option #2: Use baskets

For hauls with fairly equal predominance/similar size of two species

Example. Barbara estimates the bag is ~60 MT and randomly selects the first half. During the bag dump, she sees a lot of spiny dogfish mixed in with the hake and little other bycatch. She breaks her 30 ton sample into 3 units of 10 tons and randomly selects ‘7’ to be the start of her first subsample. During her sample, she lets the dogfish and hake go by and collects all other bycatch. She collects 3 baskets each at 7 tons, 17 tons and 27 tons for her 3 subsamples (see Figure 6).

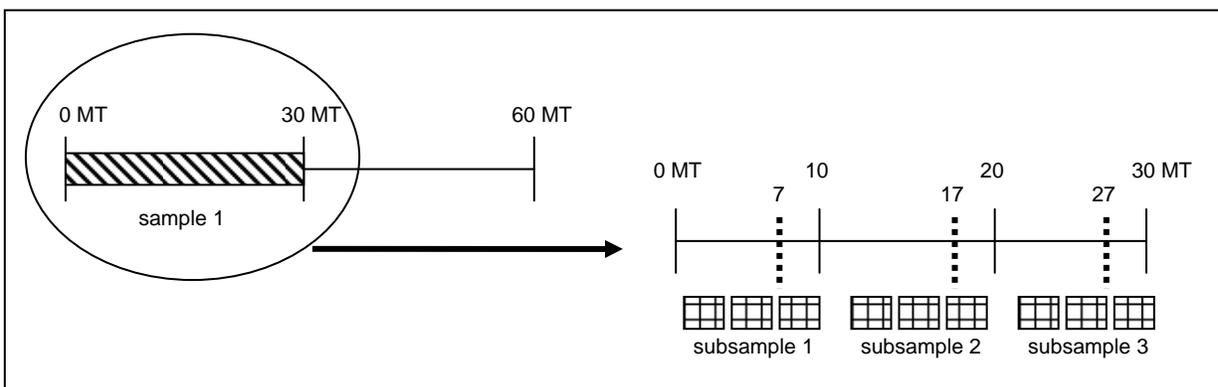
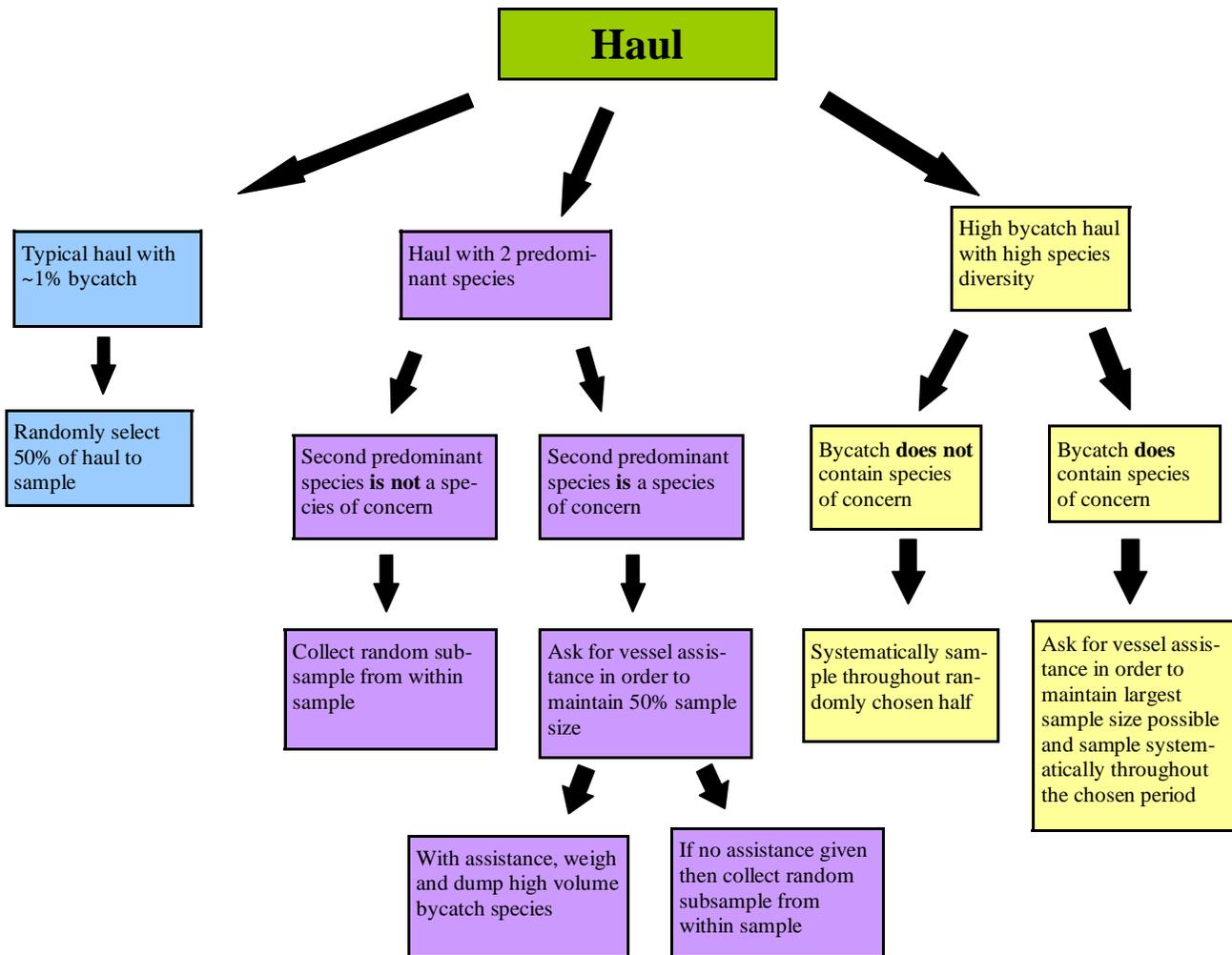


Figure 6

High Bycatch Sampling Options

In recent years, the vessels have been very concerned with bycatch of species of concern. The vessels are interested in working more closely with the observers to ensure that the largest and most accurate sample be taken. This requires a large amount of cooperation between the observer, the person controlling the belts and any sorters who might be standing at the belt. Please do all you can to avoid small samples for hauls with species of concern. Keep in mind that you must be able to account for every piece of bycatch.



Prohibited Species

SPECIES	PROHIBITED	LENGTHS
Salmonids (all species)	YES	YES
Pacific halibut	YES	YES + viability
Dungeness crab	YES	NO
Herring	NO	NO
Tanner crab	NO	NO
King Crab	NO	NO

All salmonids, Pacific halibut, and Dungeness crab are prohibited species in the hake fishery. Unlike in Alaska, herring, tanner crabs, and king crabs are *not* prohibited species.

Pacific Halibut is a prohibited species: Collect viabilities at the point of discard.

California halibut is *not* a prohibited species. They are similar to Pacific halibut, but are in the left-eyed Bothidae family. This means they can be either left or right-eyed (~50% left, ~50% right), and they have less than 77 dorsal soft-rays. Pacific halibut almost always have their eyes on the right side of the head, and will have greater than 80 dorsal soft-rays. It is very unlikely that you will see a California halibut.

Salmon

Salmon is of particular concern in the hake fishery due to the declines in certain populations along the West Coast. Salmon bycatch is managed by numbers of fish, not by weight. The vessel might want haul-by-haul salmon numbers from you, so they can identify and reduce incidental take. There is no Salmon Retention program in the hake fishery so do not enter any data in that section of ATLAS.

Every salmon in your sample must be weighed and counted. If you find you cannot do this, you must either ask for help to maintain your sample size or reduce your sample size. Because salmon bycatch is such a sensitive issue on the West Coast, the vessel should be willing to help you maintain your sample size, so ask for help!

Be careful with salmon identification. Salmon can be more challenging to identify off the West Coast than in Alaska, and the usual characteristics for identification may be faint or absent. If you are uncertain of the identification, freeze that salmon and bring it back with you. (Yes, the whole fish.)

In lieu of collecting salmon scale samples for verifying species **you will collect 5 whole specimens of each species you see, from *inside* your sample.** This is required for each individual observer, just as scale samples are required in Alaska. These specimens serve to verify observers' ability to correctly identify salmon

as well as providing the A-SHOP, NPGOP and WCGOP with salmon specimens for their fish training collections. It is unlikely that each observer will have more than 10 specimens apiece. These vessels have ample freezer space and most of them come into Seattle for offloads, so the logistics of transporting the samples should not be difficult. As with all whole fish specimens, include a specimen collection label with the whole salmon.

If you have observed in the hake fishery for 5 years or more and collected 25 correctly identified specimens of one species, you do not need to collect any more for that species. If you think you fall into this category, ask before you deploy.

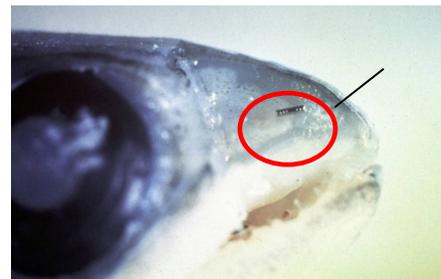
Salmon Sampling

1. Identify species
2. Determine sex
3. Weigh
4. Measure length
5. Check for CWT, remove snout and freeze if tagged (Chinook and Coho)
6. Take fin clip for genetics (Chinook only)
7. Record CWT and genetics data on A-SHOP Salmon Sampling Deck Form
8. Freeze five whole specimens for species verification (all species)



Sampling for coded-wire tags (CWTs) in Chinook and coho salmon:

Some salmon are tagged with coded wire tags (CWTs). These are tiny metal tags inserted into the snouts of juveniles. In the past when a CWT was inserted, the adipose fin was clipped to indicate the presence of a tag. However, West Coast hatcheries now clip the adipose fin on all fish they release; therefore, electronic means must be used to determine if a tag is present. Additionally, both Chinook and coho sometimes have double index tags (DITs) which means they may have CWTs, but the adipose fin has *not* been clipped as a visual indicator.



CWT data is collected and recorded on the A-SHOP Salmon Sampling Deck Form for every Chinook and coho salmon, whether they are tagged or not. Collecting this data will help determine the relative percentages of salmon that are tagged, the salmon's age, whether it is a hatchery or wild salmon, and

the salmon's origin. One water-resistant metal detecting wand will be issued to each observer pair to determine the presence of CWTs.

Coded-Wire Tag Sampling Details

This project applies to Chinook, coho, and steelhead only. Steelhead are rarely seen in this fishery; however, if you do encounter one, bring back the whole fish.

1. Scan **all** Chinook and coho **inside** the species composition sample for the presence of CWTs.
 - Pass the wand, in direct contact with the salmon's skin, along the exterior of the entire upper snout (*see Figure 8*).



2. Collect all tagged snouts.
 - Cut straight down directly behind the eye to collect the upper snout only.
 - Place an 'A-SHOP' tag with the snout inside a zip-top bag (*see Figure 9*) and freeze.
 - Record the tag number in the 'A-SHOP snout #' column on the A-SHOP Salmon Sampling Deck Form (*see Figure 10*).
 - Store the snouts in a clearly labeled bag in the freezer, to ensure that they all return to debriefing with you.
3. **Record data for all scanned salmon, even those *not tagged*,** on the A-SHOP Salmon Sampling Deck Form (*see Figure 10*).

Notes about salmon wands:

- Beware of nearby metal that can set the wand off. Your wrist watch, belly button ring, or nearby metal in the factory may cause false positives.
- **These wands are *very expensive*. Please take good care of them** by storing them clean, dry and in a safe location.
- If the wand is not functioning properly (i.e. weak or prolonged sounds), try changing the battery. There is a spare 9-volt battery in the wand case. Contact your in-season advisor if that does not solve the problem. *If the wand stops working, contact your in-season advisor immediately for directions on how to sample for CWTs without a wand.*
- Wands are assigned to observers, not to vessels. Bring it with you when you disembark a vessel, even if other observers are replacing you on that vessel.

Salmon Subsampling: If you are overwhelmed with salmon and cannot check them all for CWTs, then a random subsample should be checked with a goal of 25 samples per haul. Subsamples are taken by species, not by total number per haul. Coordinate CWT subsampling with genetic sample collection. Indicate that you subsampled on the A-SHOP Salmon Sampling deck form (circle “Yes” next to “Subsampled?”) and describe your subsampling method.

Example: 5 cohos and 4 baskets of Chinooks are in the sample. Scan all 5 cohos for CWTs and randomly select 3 of the 4 baskets of Chinook to scan for CWTs and for genetic sample collection.

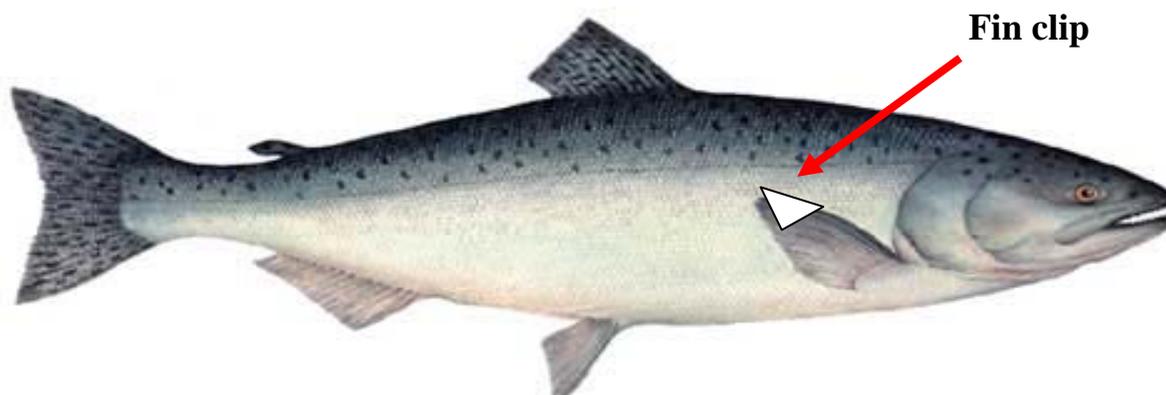
Note: Hauls with this level of Chinook bycatch are rare.

Chinook Genetic Sampling

Background: The goal of this study is to obtain an accurate estimate of the stock composition of Chinook salmon bycatch and to better understand the spatial and temporal distribution of that bycatch. This information is intended to help managers better evaluate the impacts on specific salmon stocks, including those listed as threatened or endangered under the US Endangered Species Act (ESA).

Sampling details: This project applies only to Chinook salmon

1. Collect genetic samples (fin clips) from all Chinook salmon inside your sample.
 - o Snip off a small piece of pectoral fin (no larger than this ) with scissors.



2. Place fin clip flat on paper, fold paper over to maintain a layer of paper between the tissue and envelope and seal the envelope.



3. Record cruise number, haul number and A-SHOP Snout # (if CWT tagged) on envelope.

Keep the envelopes clean. Slime or blood from other fish will contaminate samples. Rinse scissors and forceps in salt or fresh water between sample collections. Samples need to dry out as fast as possible. The longer they stay wet, the more the tissue breaks down.

Sample Storage at End of Day: Do not put samples in plastic containers as they will not dry. You will be given a large manila envelope, which is an excellent storage option.

Completing the Salmon Sampling Deck Form

Record species composition data for salmon and other species on the ATLAS deck form and enter into ATLAS. **All CWT and genetics data must be recorded on the A-SHOP Salmon Sampling deck form.**

As with other forms, the lead observer's name and cruise number are recorded in the form header. The A-SHOP Salmon Sampling deck form is set-up for data entry into ATLAS and into SnoutBase (*described in following section*).

Sex/length/weights (specimen type 3) are only entered in ATLAS for Chinook with fin clip (specimen type 4) data.

Chinook genetics data is entered into ATLAS as specimen data. Record the barcode on the Chinook genetics envelopes as the specimen number for both the sex/length/weight (specimen type 3) and fin clip (specimen type 4) entries.

Chinook and coho CWT data are entered into SnoutBase.

A-SHOP SALMON Sampling Deck Form Page 4 of

Cruise	Permit	Observer: <u>Hake S. Coke</u>			
<u>97531</u>	<u>10987</u>	Vessel: <u>Merluza</u>			

Haul #	Sample #	Subsampled? <input checked="" type="radio"/> NO <input type="radio"/> Yes			
<u>17</u>	<u>1</u>	if Yes, method: <u> </u>			

	ATLAS	ATLAS	ATLAS	ATLAS			
	Species	Sex	L (cm)	Chinook genetics #	Wt. (kg)	Snout taken?	A-SHOP snout #
	SnoutBase	SnoutBase	SnoutBase		SnoutBase	SnoutBase	SnoutBase
1	<u>Chinook</u>	<u>F</u>	<u>47</u>	<u>504 740</u>	<u>1.73</u>	<u>N</u>	<u>-</u>
2	<u>Chinook</u>	<u>M</u>	<u>53</u>	<u>504 741</u>	<u>1.98</u>	<u>N</u>	<u>-</u>
3	<u>Chinook</u>	<u>F</u>	<u>52</u>	<u>504 742</u>	<u>1.87</u>	<u>Y</u>	<u>1411</u>
4	<u>Chinook</u>	<u>F</u>	<u>61</u>	<u>504 743</u>	<u>2.83</u>	<u>N</u>	<u>-</u>
5							
6	<u>Coho</u>	<u>M</u>	<u>63</u>	<u>-</u>	<u>3.01</u>	<u>N</u>	<u>-</u>
7							

Figure 10 Example of A-SHOP Salmon Sampling Deck Form

- ATLAS length form**
- Species
 - Sex
 - Length
- ATLAS specimen form**
- Specimen type 3
 - Chinook genetics #
 - Weight
 - Specimen type 4
 - Chinook genetics #
 - 0 for weight

- SnoutBase**
- Species
 - Sex
 - Length
 - Weight
 - Snout taken? Y/N
 - A-SHOP snout #
 - *If snout taken*
 - Adipose present? Y/N

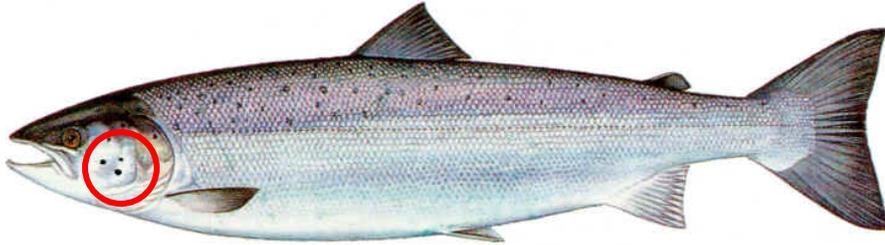
Entering Data into SnoutBase

Data for all Chinook and coho salmon, whether they are tagged or not, are entered into SnoutBase.

SnoutBase is part of the West Coast observer program's database, just as ATLAS is the Alaska observer program's database. ATLAS is not currently set up with all necessary CWT data fields so A-SHOP CWT data must be entered into SnoutBase. Detailed directions for how to access and use the database for entering CWT data are located in Appendix F. "SnoutBase Data Entry Instructions". Please follow the directions and enter your data while at-sea.

Atlantic Salmon

No Atlantic salmon have been caught in the hake fishery to date, but they have been caught in both B.C. and Alaska. The key distinguishing feature of an Atlantic salmon is black spots on the gill cover.



If you encounter an Atlantic salmon - *keep the whole fish*, even if it was not in your sample. If you do get one in your sample, record it in your data like normal and enter it as salmon unidentified.

Species ID Forms

Correct species identification is the cornerstone of the observer program. Species ID forms are documents that verify to the program and to the fishery participants that each observer is able to correctly identify species. A list of the species each observer has completed verified species ID forms for will be provided during training. **Complete a species ID form for every new species** encountered during hake. Complete the form with sufficient detail to clearly convey that the species was identified correctly. Digital pictures and frozen specimens are a helpful *supplement* to these forms, but neither replaces any part of an accurately detailed form (i.e. you must complete a drawing for each form). **Observers who return without forms for all rockfish and salmon species will be at risk for receiving a zero as an evaluation score for that deployment.**

In order for your photographs to be used as a supplement to your ID form, the photos must be labeled and of sufficient quality (full body and not blurry) to easily determine it is the correct species.

Suggested photo file labeling format: Label a folder with your name, cruise number, vessel and year. Label the individual pictures *inside* the folder with species name and haul number. Alternatively, label each picture with species, haul number, cruise number and initials (*e.g. Canary_H18_97731_BK*).

Length and Age Structure Sampling

All lengths and age structures should be collected randomly from inside the species composition sample. For hake, the randomly selected subset baskets are a logical place to get your length and otolith sample. *If hake is not the predominant species in a haul, you should still collect hake lengths and otoliths.* For a review of sample design and methods refer to the Alaska manual, Chapter 13. If you are having difficulty coming up with a random method for collecting fish to measure, contact your in-season advisor for help. If you are not sure if your

method is truly random, describe it to your advisor and ask for feedback.

Remember! Refer to the “Wet Manual” for the specific protocols for all sampling priorities and biological data collections.

On the rare occasion that your subset basket of hake is collected opportunistically (and remember you must collect a subset from every haul), do not collect hake lengths or otoliths from that haul. All lengths must be randomly collected.

Hake Protocols

1. Collect ~15 sexed lengths / haul
2. Collect 3 pairs of otoliths from the length sample, every 3rd haul

Rockfish Sex/Lengths and Otoliths Sampling (in order of priority):

Specific protocols listed in “Wet Manual”

1. Canary
2. Bocaccio
3. POP
4. Darkblotched
5. Rougheyeye (Blackspotted)
6. Widow
7. Yellowtail

The data collected from rockfish in the hake fishery is invaluable to stock assessors. For certain low abundance species, the data collected by hake observers accounts for the bulk of the data collected for those species. The goal is to collect otoliths and sex/lengths from the *two highest priority rockfish species* in your sample. Because you can't predict when one of these rockfish species will show up in the haul, rockfish lengths and otoliths should be collected whenever they are seen in the species composition sample (i.e. every haul if they are present, as time allows). If there are only a few individuals for several species of otolith rockfish, it is fine to collect otoliths from all of them.

Example 1: You have a haul with many POP, darkblotched and widow. POP and darkblotched are higher priority than widow, so you would collect otoliths and sex/lengths from POP and darkblotched.

Example 2: In your sample there are: 3 canary, 1 bocaccio, and 1 POP. Collect otoliths and sex/lengths from all of them (time permitting).

Rockfish lengths should be collected randomly. To ensure a random sample, these length fish must come from your species composition sample. Predicting when and how many of a species you will see is impossible. Ideally, you should collect all in your sample and then randomly choose your length sample. However, this may be difficult or impossible if you have more than a few baskets worth of fish. In those cases, you will need to devise other means of randomization. One method would be to break the haul into even units (*fourths, thirds, tons*) and randomly choose a point within the sample to start the collection, collecting the next 20 individuals of that species as your length sample. These rockfish lengths must be sexed as they are of no use for stock assessment without sex data. If you are unable to determine the sex of a specific individual, record it as “unknown”.

Rockfish can be more difficult to sex than other round fish. The gonads are found up near the backbone, much like salmon. Female gonads will appear as white, pink, yellow or orange elongated tubes. As they mature they become oval-shaped and will have a granular appearance. Female gonads are oval in cross-section. Males will be cream to pink in color. When mature they are triangular shaped in cross-section; immature testes are still somewhat triangular and will have defined edges at the bottom (*see Figure 11*).

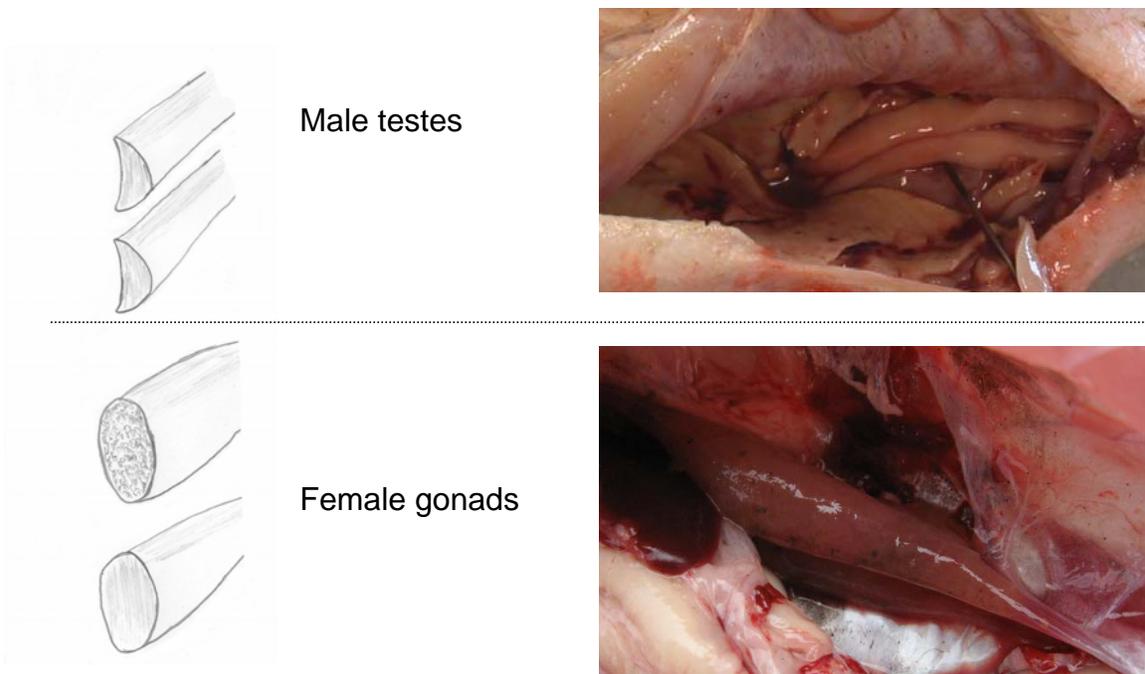


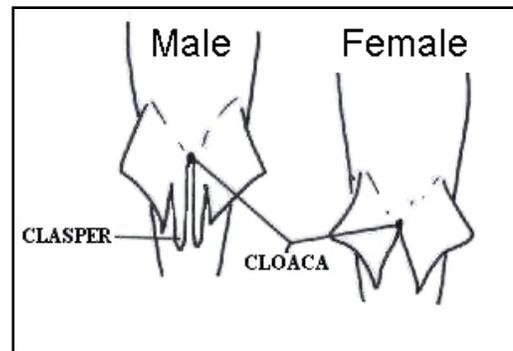
Figure 11 Rockfish gonad appearance

Keep otoliths organized during your deployment. You will be issued a permanent marker and rubber bands with your hake gear. Labeling the vials with species and haul number (e.g. “RE H13” for a Rougheye from Haul #13) will make for a smoother (and quicker!) debriefing. Also, vials will *not* need to be hydrated during debriefing as they are shipped dry to age readers so it is very important otoliths are cleaned and dried at-sea.



Spiny Dogfish Sex/Lengths and Spine Collection

Spiny dogfish are a common bycatch species in the hake fishery. Recent age data indicates that one dogfish spine collected from the hake fishery, from a 100 cm female, was 88 years old! The second dorsal spines on dogfish are used to determine the age. **The dogfish protocol is to randomly collect ~10 sex/lengths and one second dorsal spine per haul.**



The data users want these data spread out both temporally and geographically so only collect sex/lengths and spines when there are **10 or more spiny dogfish in your sample**. You will be issued 50 barcoded spine bags with your hake gear. Once the 50 spines have been collected, continue to collect sex/lengths only.

To determine the sex of a shark, look for the presence of claspers around the cloaca. Male sharks have claspers, females do not (*see Figure 12*). For spiny dogfish, measure the fork length (FL) from tip of the snout to the fork in the tail (*see Figure 13*).

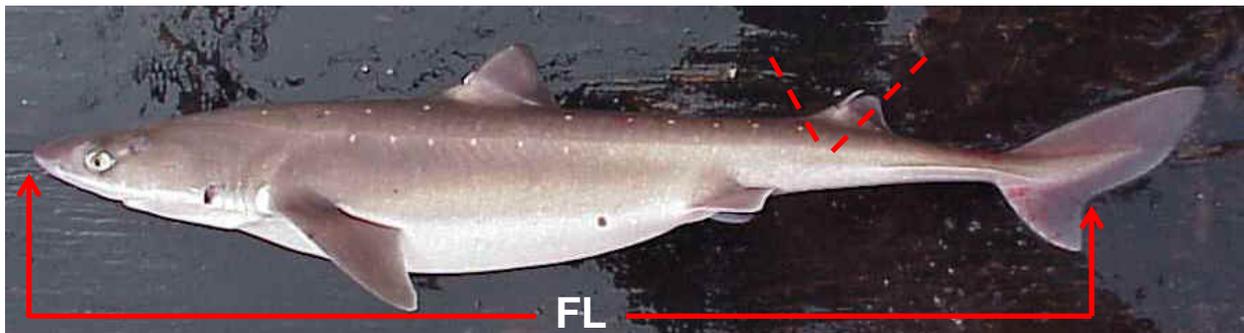


Figure 13 Spiny dogfish fork length and second dorsal spine collection

For spiny dogfish spine collection, cut the entire **second** dorsal spine off, making sure to get all the way to the base of the spine. The easiest way to do this is to cut down at an angle just in front and behind the spine making a wedge (*see Figure 13*). Leave the flesh attached, place the spine in a barcode-labeled bag, and freeze. Record the barcode number, sex, fork length and weight on your deck sheet and enter the data into ATLAS as specimen code ‘6’ (spines). Store the spines in a clearly labeled bag in the freezer, to ensure that they all return to debriefing with you.

Keep in mind that while using the basket dump method works for many species; it does not work for spiny dogfish which have sandpaper-like skin and tend to clump and stick together. Other methods to randomly select your length and spine collection fish must be used.

Example: Haul #27 has a fair amount of spiny dogfish so Douglas decides to collect the first 10 dogfish after his hake subset to use for sex/lengths and second dorsal spine collection.

Humboldt Squid Length Collection

The geographic range of Humboldt squids has expanded recently and the population also seems to have increased. Researchers are very interested in gathering more data on Humboldt squid and the A-SHOP has been asked to collect unsexed length data.

Randomly collect ~10 mantle lengths (ML) per haul.

Measure the Humboldt squid by placing it dorsal side up. The dorsal side of the squid is defined by the fin insertion and the ventral side by the presence of the funnel. Measure the mantle length from the anterior tip of the squid to the posterior edge of the mantle (*see Figure 14*). Only collect Humboldt squid lengths when you have **10 or more in your sample**.

Several species of squid that may be confused with Humboldt squid are encountered in the at-sea hake fishery. The two rows of suckers on Humboldt squids’ tentacle clubs are a unique characteristic to the species. Refer to the “Wet Manual” for additional characteristics.

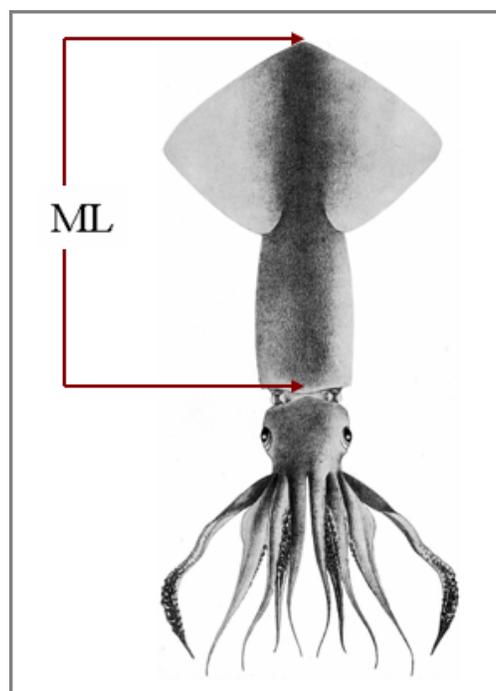


Figure 14 Humboldt squid mantle length

Green Sturgeon

If you encounter a green sturgeon, please follow the sampling protocol found in your species ID guide, at the end of the Bony Fishes section. The directions show how to collect biological information and a genetic specimen from each fish. Green sturgeons are quite rare in this fishery; on average less than one is seen per year.

Fish Collection

The observer program can always use frozen fish specimens of just about anything of reasonable size. Please **wrap fish individually and label clearly**. If you see a rare or uncommon fish, or a fish that is out of its listed geographic range, you should always bring it back. There have been two *dusky rockfish* and one *yellowfin sole* found off Oregon in places where they have not historically ranged. Please bring them back if you see one. If you see an Atlantic salmon or a steelhead trout, bring the entire fish back. High quality pictures of fish or invertebrates are always appreciated, especially of rare species.



It's a good idea to keep a freezer inventory so all of your frozen specimens return to debriefing with you.

Data Quality Control

Although all data is recorded under the lead observer's cruise number, both observers are responsible for accurate data collection and entry. Check each other's deck sheet calculations and entry into ATLAS on a daily basis. Develop a data-entry/data-check system to ensure all data is entered and checked for accuracy (e.g. checkmarks, date/time). A colored pencil will be issued with your hake gear to help you track which data has been double-checked and entered into ATLAS. Each pair of observers is a team, and should work together to collect the best data possible.

Mid-Season Data Checks

Every observer in the at-sea hake fishery will have a mid-season data check. This will be similar to a mid-cruise, but will likely be conducted via text messages in ATLAS, over e-mail or by phone. After your first few days on board, you will be sent a list of questions asking about sampling methods to ensure that the protocols are clear and easy to follow. You are expected to answer them completely and promptly. If you or the observer program feels the interview should be done verbally, a time will be arranged so that it can be conducted over the phone.

All hake vessels will have an in-season advisor. In addition to the manual, the advisor is a good source for answering sampling questions and responding to any problems that may arise. S/he will also let you know about any data errors found which can be fixed at sea, thereby speeding up your debriefing process.

Debriefing and Specimen Turn-in

You will need to debrief from your hake cruise as soon as you return, and before deploying again to Alaska.

Turn in prior to debriefing:

1. Vessel & Observer Haul Forms
2. ATLAS deck forms
3. logbook
4. salmon sampling deck forms
5. species ID forms
6. vessel survey
7. memory stick with ATLAS archival data
8. specimens collected

Deliver salmon snouts, dogfish spines, and clearly labeled specimens to the hake section of the Building 4 wet lab freezer. Inform your in-season advisor ahead of time if you need to drop off frozen specimens (e.g. whole salmon that won't fit in observer apartment freezer) over the weekend or federal holiday and arrangements can be made.

Contractors need to notify the A-SHOP when their observers return from their deployment so a computer and debriefing time and date can be scheduled. If an observer is *unable to arrive on time* for their scheduled appointment, the A-SHOP needs to be notified beforehand.

Gear Check-Out and Care

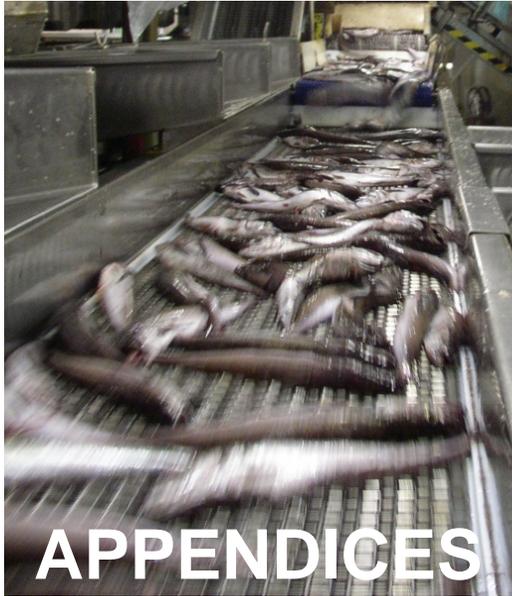
Every observer will check out a set of standard Alaska sampling gear and *each observer pair* will be issued hake-specific sampling gear. The “A-SHOP Gear Sheet” in the front of your logbook lists recommended amounts of Alaska gear (e.g. otolith vials, species ID forms) as well as your hake-specific gear. Store any extra gear (otolith vials, deck forms, Chinook genetics envelopes, etc.) in your stateroom. The CWT-detecting salmon wand is very expensive. Please take care of it. Most factory boats have a dry area near the observer sampling stations where you can store the wand and extra gear.

Gear Check-in Protocol

When you return from your hake cruise, make an appointment with Dan Decker (526-4198) or Karen Teig (526-4191) to return your gear. Turn in your PLB to Dan Decker, follow the protocols posted in the wet lab and be sure your gear is clean. Return gear issued by the A-SHOP (listed on the A-SHOP Gear Sheet) to your debriefer.

Photo Credits

Thanks to observers Lauren Ackein, John Bieraugel, Cassandra Donovan, Ben Riedesel, Ellen Sikes, Merri Strayer and Mark Wormington for the photographs.



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Appendix A. At-Sea Hake Observer Program (A-SHOP) Guidelines & Policies

Observer Eligibility, Exam and Training Completion Elements

Each observer must:

1. Have completed the 3 week training with the North Pacific Groundfish Observer Program (NPGOP) and have at least one successful deployment to Alaska prior to observing for the A-SHOP.
2. Have a satisfactory rating for every vessel/plant from their most recent deployment, either from Alaska or the A-SHOP. (Ratings: 1 = satisfactory and 0 = unsatisfactory)
3. Have completed either the 3 week NPGOP training or a 4-day NPGOP briefing within the calendar year in order to be eligible to enroll in an A-SHOP training.
4. Complete the safety training and meet any requirements for participating in drills and donning equipment, including donning an immersion suit in less than 60 seconds.
5. Pass the fish exam with an 80% or better.
6. Pass the written quiz with an 80% or better. This quiz is closed book.
7. Arrive on time, at the beginning of each day and returning from breaks. Tardiness may result in being dropped from the class.
8. Attend the full 3-day A-SHOP training.
9. Not use any electronic devices during fish lab or exam.

Observers who do not pass both the fish exam and the written quiz must take the full A-SHOP training again. In the spring, when back-to-back trainings are offered, observers in the first training may not repeat the training immediately afterwards in the second training. Spring trainings are generally full classes and this would cause the class size to be too large.

Training class size is limited to 25 observers, unless the Program allows more, as deemed necessary.

Appendix B. Pre-Cruise Vessel Bycatch Meeting Outline

NOAA Fisheries At-Sea Hake Observer Program

1. **Introductions:** Order of communication (i.e. foreperson → factory manager → captain)
2. **Review** of bycatch limits / threshold for species of concern in 2012
3. **Goals:** Collect 50% samples whenever possible. See flow chart below for sampling options for tows with species of concern:
 - A. Vessel providing help
 - B. Adjusting belt speed
 - C. Awareness of dirty hauls (notifying observer of bycatch if they are unable to watch codend dump in person)
 - D. Collecting multiple small samples (with cooperation from bleeder and sorters)

****Stress cooperation and communication****

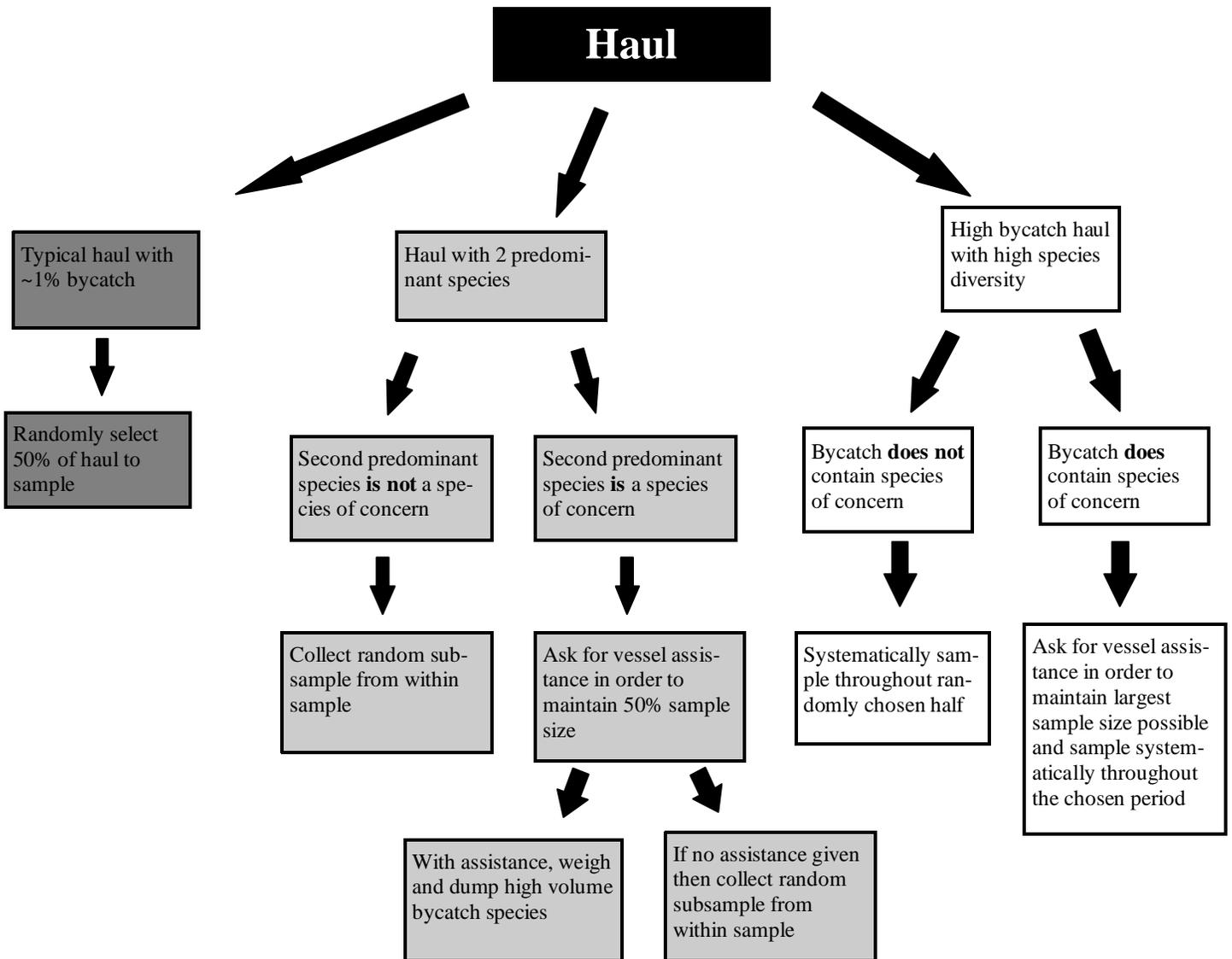
Suggested thresholds of action needed:

Hauls with **>5 mt** of widow (~4,500 fish)
Hauls with **>200 kg** of canary (~100 fish)
Hauls with **>2 mt** of darkblotched (~2500 fish)
Hauls with **>1 Mt** of POP (~1,000 Fish)
Hauls with **>50** Chinook (individual fish)

Actions for increasing sample size and preventing small samples:

1. Assistance with sorting, lifting, dumping
2. Adjusting belt speed

A-SHOP Sampling Protocol Review



Species of concern include any prohibited species and widow, canary and darkblotched rockfish.

Appendix D. Catcher Vessel ADFG numbers

Vessel Name	ADFG #
Alyeska	45
Blue Fox	62892
Caitlin Ann	59779
California Horizon	33697
Collier Brothers	54648
Crysan	575942
Leslie Lee	56119
Lisa-Melinda	41520
Marathon	49617
Mar-Gun	12110
Mark I	6440
Messiah	66196
Miss Berdie	59123
Miss Sarah	64109
Miss Sue	580055
Misty Dawn	68858
Muir Milach	41021
Neahkahnie	32858
New Life	21845
Nordic Fury	200
Nordic Star	961
Pacific Challenger	6931
Pacific Fury	33
Pacific Prince	61450
Pacific Ram	61792
Papado II	55512
Pegasus	57149
Perseverance	12668
Predator	33744
Raven	56395
Sea Clipper	62
Sea Dawn	77
Sea Storm	40969
Seeker	59476
Starward	39197
Traveler	58821
Western Dawn	22294
Winona J	43383

Appendix E. Record of Daily Flow Scale Tests

Revised 05/07/10

RECORD OF DAILY FLOW SCALE TESTS

OMB Control No. 0548-0330
Expiration Date: 09/31/2010



Vessel Name: _____

Date: _____

Time test started: _____

I. WEIGH FISH ON OBSERVER PLATFORM SCALE

BASKET #	WT FISH + BASKET (kg)	BASKET #	WT FISH + BASKET (kg)	BASKET #	WT FISH + BASKET (kg)	BASKET #	WT FISH + BASKET (kg)
1		8		15		21	
2		9		16		22	
3		10		17		23	
4		11		18		24	
5		12		19		25	
6		13		20		26	
7		14		Total weight all fish+baskets		0.00	

II. CALCULATE PERCENT ERROR OF FLOW SCALE

Scale Indicator

Begin Test: _____ kg

End Test: _____ kg

TOTAL WEIGHT FISH AND BASKETS (kg)	-	WEIGHT OF BASKET	=	PLATFORM SCALE WEIGHT OF FISH (kg)	WEIGHT OF FISH ON FLOW SCALE (kg)	ERROR (B) - (A)	% ERROR = (C) ÷ (A) X 100
				(A)	(B)	(C)	

III. SEA CONDITIONS (BEAUFORT SCALE) AT TIME OF SCALE TEST (CHECK ONE):

0 1 2 3 4 5 6 7 8 9 10 11 12

SIGNATURE OF VESSEL OPERATOR _____

I observed this test and to the best of my knowledge it was conducted in accordance with 50 CFR 679.28 (b)(3)

Signature of observer _____

INSTRUCTIONS

1. Collect approximately 400 kg of fish in baskets and weigh the baskets of fish on the platform scale. Record the weight of each basket of fish (basket plus fish) in Section I.
2. Record the total weight of all baskets plus fish in the first box in Section II.
3. Record the weight of the baskets in the second box. Subtract the weight of the baskets from the total weight of fish plus baskets to determine the weight of the fish only, record this weight in the third box in Section II. This is the platform scale weight of the fish (A).
4. Record the weight displayed on the flow scale before and after the test fish are weighed.
5. Weigh the fish from the baskets on the flow scale. Record the weight in the fourth box of Section II (B).
6. Calculate error of flow scale by subtracting the platform scale weight (A) from the flow scale weight (B). Record the error (C) in the fifth box of Section II.
7. Calculate percent error by dividing the error (C) by the known weight of the fish (A) and multiplying by 100. Record this information in the last box of Section II. The scale is weighing within 3 percent error if the result is between -3.0% and +3.0%.
8. Record the Beaufort Scale sea conditions at time of test.
9. Have form signed by vessel operator and observer.

Daily Flow Scale Test

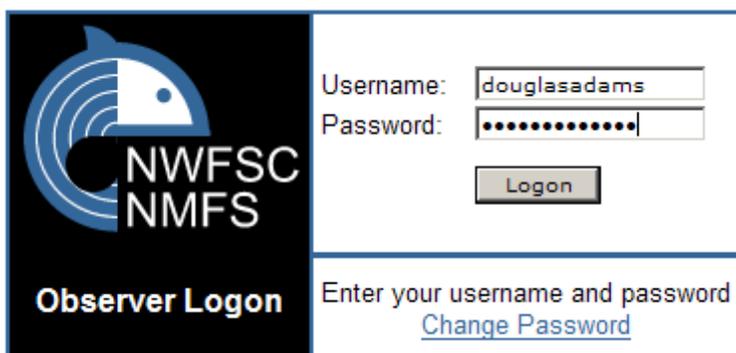
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Appendix F. SnoutBase Data Entry Instruction

Must use  Internet Explorer to go to NWFSC Observer Logon website:
<http://nwcoa3.nwfsc.noaa.gov/obsprod/logon.display>

1) **Log on** using username and password

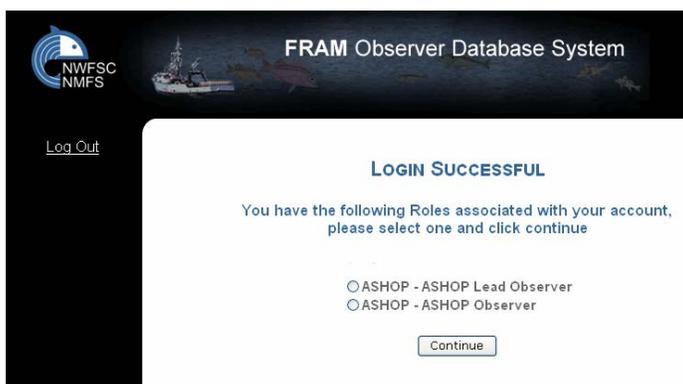
- Username: first and last name (e.g. Douglas Adams username: douglasadams)
- Password: temporary password given during training, you will be prompted to change your password the first time you log in
 - SnoutBase temporary password: _____



Observer Logon

Enter your username and password
[Change Password](#)

2) **‘Choose Role’**: Lead observers select ‘ASHOP Lead Observer’. Second observers select ‘ASHOP Observer’. Then click ‘Continue’. *Data can be entered by either observer.*



FRAM Observer Database System

Log Out

LOGIN SUCCESSFUL

You have the following Roles associated with your account, please select one and click continue

ASHOP - ASHOP Lead Observer
 ASHOP - ASHOP Observer

Continue

3) **‘Welcome Page’**: **Click on ‘ASHOP’** on the navigation bar on the left of the screen



FRAM Observer Database System

ASHOP
ASHOP Lead Observer
Privacy Policy
Log Out
Change Role

WELCOME TO THE FRAM OBSERVER DATABASE SYSTEM

>>You may use the navigation on the left to enter or review Observer data.
>>If you have any questions please contact your coordinator or the NWFSC office.

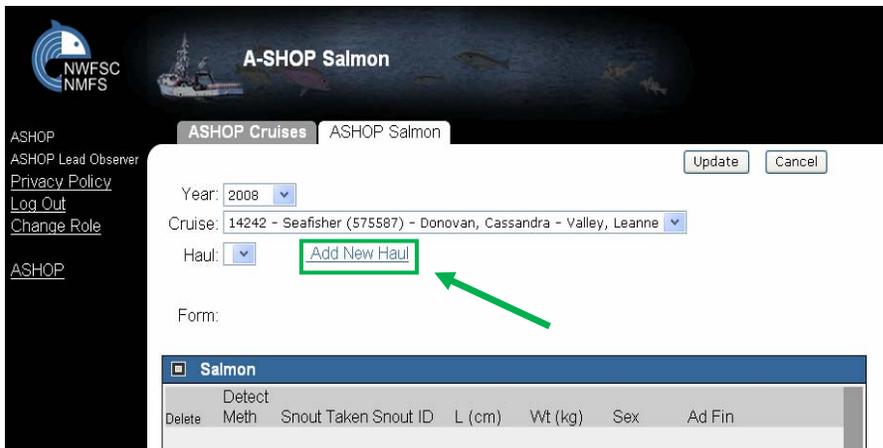
4) In the ASHOP Cruises tab, you can select the year from the dropdown to view your active deployments – *this is for informational purposes, you don't need to enter anything*

5) To enter data:

- Go to **ASHOP Salmon tab**, select the year from the dropdown and select the cruise for which you are entering data



6) Click on the 'Add New Haul' button, which will take you to the Haul page



- 7) Enter haul information:
 - a. Enter the haul number
 - b. Subsampled for that haul/species? N or Y
 - c. Species:

Haul #	Sub Sampled	Species
17	N	

(a)

(b)

Haul #	Sub Sampled	Species
17	N	<ul style="list-style-type: none"> 0 - Salmon, Unid. 1 - Salmon, Chinook (king) 2 - Salmon, coho (silver) 3 - Trout, Steelhead 999 - UNKNOWN

(c)

Year: 2008 Cruise: 14242 - Seafisher (575587)

Back to Salmon **Update** Cancel

Haul #	Sub Sampled	Species
17	N	1 - Salmon, Chinook (king)

Click on the 'Update' button to save this information, which will take you back to the ASHOP Salmon screen

IMPORTANT! Update = SAVE, if you don't click 'Update' your data will NOT be saved when you switch screens

- 8) Once the haul/subsampled/species info has been entered, **it will show up in the 'Haul' dropdown** on the ASHOP Salmon screen
- 9) Click on the **'Add New Form'** to enter data for the selected haul/species

Year: 2008

Cruise: 14242 - Seafisher (575587) - Donovan, Cassandra - Valley, Leanne

Haul: 7- N - King (Chinook) Salmon [Add New Haul](#)

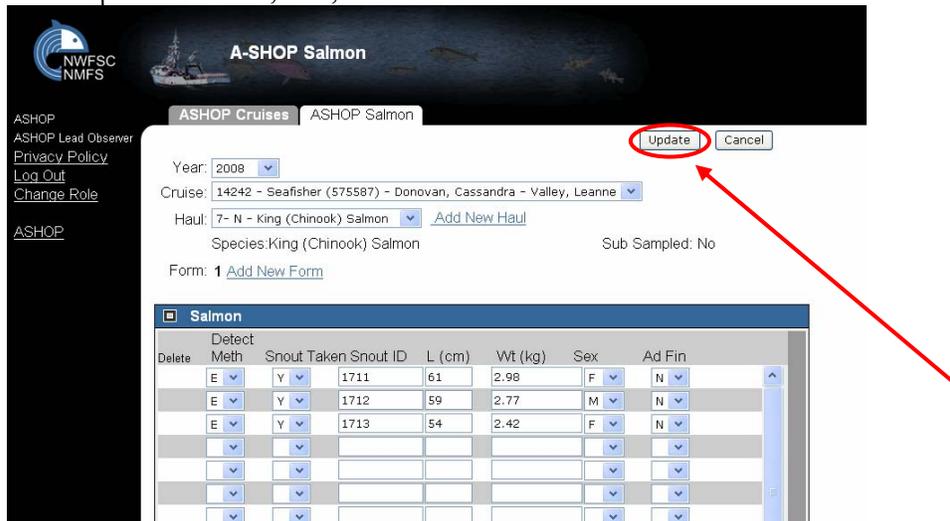
Species: King (Chinook) Salmon Sub Sampled: No

Form: **Add New Form**

Salmon						
	Detect					
Delete	Meth	Snout Taken	Snout ID	L (cm)	Wt (kg)	Sex

10) **Enter data** for selected haul/species:

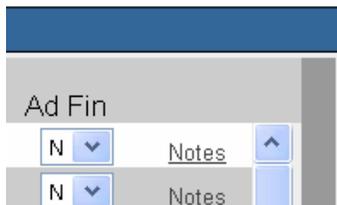
- Detection Method: E = wand
- Snout Taken?: N or Y
- SnoutID (from A-SHOP tag) *leave blank for non-tagged salmon*
- Length (cm)
- Weight (kg)
- Sex: Female, Male, Unknown
- Adipose Fin: No, Yes, Unknown



Click on the 'Update' button to save information for selected haul/species

IMPORTANT! Update = SAVE, if you don't click 'Update' your data will NOT be saved when you switch screens.

11) Once you hit Update, the Notes column will appear. Click on the Notes field to add comments and a text box will open.



12) To **add data** for another haul or a different species from the same haul, go back to **'Add New Haul'**

13) **Once you click Update, your data is saved and you can exit the program.** You can review, edit or add to your data by logging back in.

Appendix G. Frequently Asked Questions

I can't log into ATLAS or I can't transmit, what do I do?

Contact Glen Campbell. His contact information is in Appendix C of your hake manual.

Which estimate do I use as the vessel estimate on the OHF? What they tell me when the bag is hauled up or the one they write down in the logbook?

Always use the vessel estimate recorded in the logbook.

For "Estimated Discard Weight" on the OHF, do I use the actual weighed discards from my sample or should I extrapolate it out to the whole haul?

Discards should be extrapolated to the whole haul. See "discard estimation options" on page 15 of your hake manual.

How do I calculate percent retained?

Percent retained is an estimate. Visually estimate how much of your sample is being retained by the vessel. Ask vessel crew which belts are going over-board (discard) and which are going to fish meal (retained) so that your percent retained estimates are as accurate as possible. For further info, see p.5-33 in your Alaska manual.

What changes if the vessel starts fishing for Tribal?

You will enter a tribal code in the CDQ column for each haul. Each tribe has its own code. Contact the A-SHOP for the appropriate code. The vessel you are on will receive catch from tribal catcher vessels, so "Vessel Type" is code 2 (mothership) and the ADF&G numbers for the catcher vessels need to be recorded on the OHF. All other sampling and data protocols remain the same.

What are the haulback notification guidelines for hake?

The vessel is required to notify you 15 minutes prior to haulback. Regardless of this requirement, it is your responsibility to know what is going on during your shift. Never assume the crew is going to inform you - it is not their job to search the boat for you. It's reasonable to say that you'll either be in the factory, the galley or the wheelhouse. If reasonable notification efforts are not made, discuss the situation with the captain, document it in your logbook and inform your in-season advisor.

I can't login to SnoutBase, what do I do?

Make sure you are using Internet Explorer. Data can be entered under either observer's log-in. Did you try the other observers log-in? SnoutBase data is not used real-time so you can enter all your salmon when access is granted or when you come in to debrief. Send your inseason advisor a text message. We will check into your status on our end and as soon as we receive confirmation that you have access, we will send you an inseason message so you can enter data.

Whose name/cruise number goes on the Salmon Sampling form and Chinook genetic envelopes?

The lead observer's information goes on both, regardless of who collected the data.

I got a Chinook salmon in my sample that was CWT-tagged so I collected the snout but I forgot to get the genetics specimen. What do I enter in ATLAS and in Snoutbase?

Leave the genetics number field blank on the salmon sheet. Enter the Chinook into ATLAS species composition. The A-SHOP doesn't use sexed-length-weight specimens so there is no ATLAS specimen data recorded for this Chinook. Enter the Chinook in Snoutbase just as you do all others.

Can I delete a misnumbered haul in Snoutbase?

No, you cannot delete hauls once entered so just delete the individual records and re-enter them under the correctly numbered haul. Send a message to your in-season advisor so they can have the SnoutBase database manager delete the haul.

We are almost out of Chinook genetics envelopes. What do we do?

Contact the A-SHOP. We will send you a series of barcode numbers. Ask the vessel for copier paper, scissors and tape. MacGyver time! If you will be doing another trip, make sure to arrange to pick up more during your offload.

We are down to about 25 spiny dogfish spine bags. Do we need to pick up more?

No! Only 50 spines are collected per cruise. If you are continuing on to another hake vessel prior to debriefing, contact the A-SHOP for updated sampling protocols.

I have 10 spiny dogfish sharks and 1 spiny dogfish shark part in my species comp sample. I took sex/lengths from all 10 whole fish - do I use sample design code 10 (census) or another code?

Include the weight of the shark part in with the weight of the 10 whole sharks and record the lengths as census code 10.

For sex/lengths, when do I use sample design code 10?

Sample design codes are used at both the haul level for species comp samples and sex/length sample level - they are independent of each other. For example, if you sampled half of a haul, by randomly choosing the first or second half, your sample design code would be 6 - simple random. If you took sex/lengths from all the rougheye rockfish in your species comp sample, your length sample design would be 10 - census.

What do we do if it is time to change shift and the observer whose shift is ending is in the middle of a sample?

The usual protocol for shift-crossing samples is for the observer coming on shift to come to the factory, check-in with the observer currently sampling about haul specifics (size, diversity, subset coming up, etc.) or check the decksheet where all this is written and then say something along the lines of 'OK, I got it from here, have a good off shift, don't eat too much ice cream,' and then take over sampling the haul.

What if I need to drop off frozen specimens on a Saturday, Sunday, or federal holiday?

Inform the A-SHOP as soon as possible if this is the only time you can drop off specimens. At Sandpoint, call 206.526.4100 and tell the guard that answers the phone you are an observer and you need to be let into the Building 4 wet lab so you can drop off frozen fish. They will be doing rounds so it could take 5-10 minutes for them to make it to the main gate. They will escort you to Building 4 and let you into the wet lab. Make sure you have your OBSERVER BADGE. Put salmon snouts and dogfish spines in the small blue "A-SHOP" tote and neatly pile your clearly labeled bags/boxes of fish in the hake section of the freezer. Feel free to use the empty baskets in the hake section of the freezer.

Appendix H. Contractor Information

Alaskan Observers, Inc. (AOI)

130 Nickerson, Suite 206
Seattle, WA 98109
Phone: (206) 283-7310
Fax: (206) 283-6519
E-mail: aoistaff@alaskanobservers.com
www.alaskanobservers.com

Saltwater, Inc. (SWI)

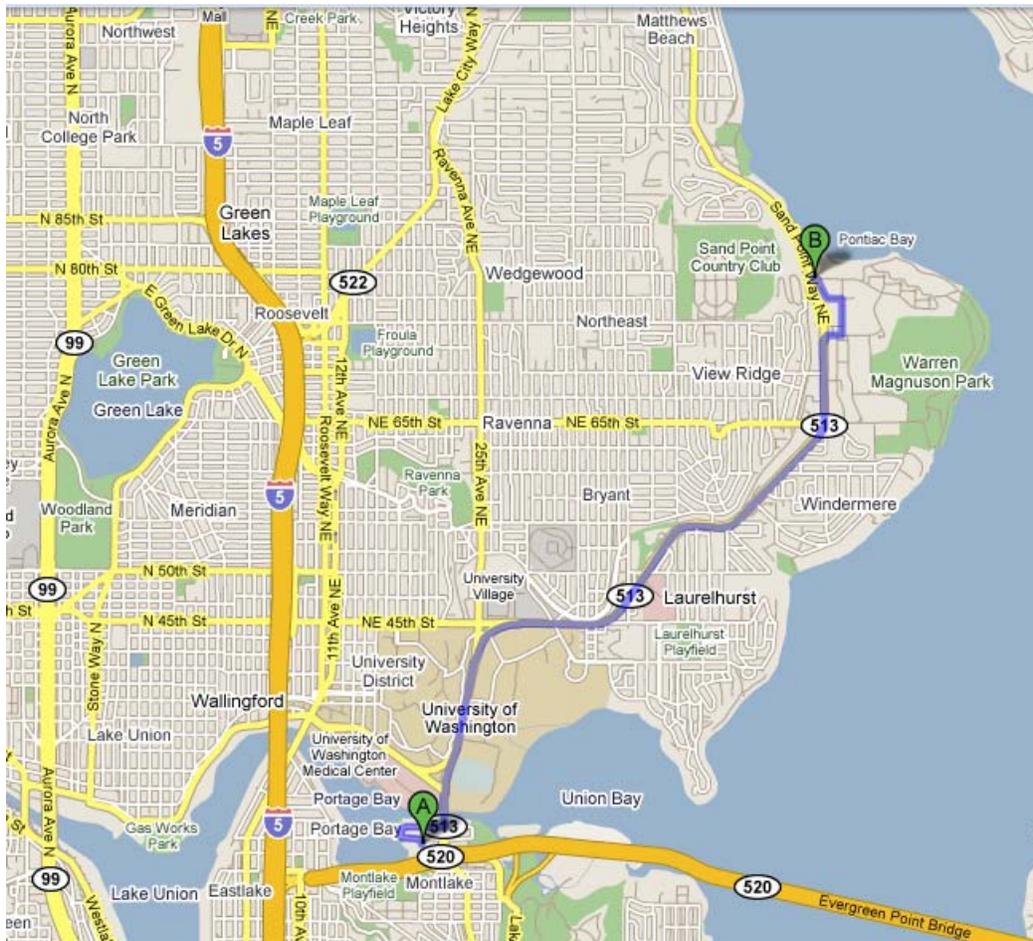
733 N. Street
Anchorage, AK 99501
Phone: (907) 276-3241
Fax: (907) 258-5999
E-mail: darren@saltwaterinc.com
E-mail: stacey.hansen@saltwaterinc.com
www.saltwaterinc.com

TechSea International Inc.

2360 W. Commodore Way
Seattle, WA 98199
Phone: (206) 285-1408
Fax: (206) 285-1535
E-mail: troy@techsea.com
www.TechSea.com

Appendix I. Seattle Maps Showing NWFSC and AFSC

Map of: **A)** Northwest Fisheries Science Center (NWFSC), 2725 Montlake Blvd. E, Seattle, WA 98112 and **B)** Alaska Fisheries Science Center (AFSC) 7600 Sand Point Way NE, Seattle, WA 98115



Appendix J. Common fisheries abbreviations

ABC	acceptable biological catch
AFSC	Alaska Fisheries Science Center
A-SHOP	At-Sea Hake Observer Program
CDF&G	California Department of Fish & Game
CPUE	catch per unit effort
EEZ	exclusive economic zone
EFH	essential fish habitat
EIS	environmental impact statement
EPIRB	Emergency Position Indicating Radio Beacon
ESU	evolutionary significant units
FMP	fisheries management plan
LOA	length overall
MARPOL	Marine Pollution
MPA	marine protected areas
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
NPGOP	North Pacific Groundfish Observer Program
MSY	maximum sustainable yield
NWFSC	Northwest Fisheries Science Center
ODF&W	Oregon Department of Fish & Wildlife
OY	optimum yield
PFMC	Pacific fishery management council
SFA	Sustainable Fisheries Act
TAC	total allowable catch
WCGOP	West Coast Groundfish Observer Program
WDFW	Washington Department of Fish & Wildlife
WOC	Washington – Oregon – California coasts

Appendix K. Useful Websites

Northwest Fisheries Science Center

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

Fishery Resource Analysis & Monitoring Division

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

At-Sea Hake Observer Program

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

Insert new web url

Northwest Regional Office

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

Groundfish Management

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

Whiting Fishery Management

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

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