Regional Operational Plan No. ROP.CF.1J.2025.04

Northern Southeast Inside (NSEI) Subdistrict (Chatham Strait) Sablefish Longline-Pot Comparison Survey

by

Aaron Baldwin

and

Rhea Ehresmann

January 2025

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

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Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd
fathom	fm

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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NORTHERN SOUTHEAST INSIDE (NSEI) SUBDISTRICT (CHATHAM STRAIT) SABLEFISH LONGLINE-POT COMPARISON SURVEY

by

Aaron Baldwin
Alaska Department of Fish and Game, Division of Commercial Fisheries, Douglas
and
Rhea Ehresmann
Alaska Department of Fish and Game, Division of Commercial Fisheries, Sitka

Alaska Department of Fish and Game
Division of Commercial Fisheries
802 3rd Street, Douglas, AK 99824

January 2025

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Aaron Baldwin
Alaska Department of Fish and Game, Division of Commercial Fisheries,
802 3rd Street, Douglas, Alaska 99824, USA
and
Rhea Ehresmann
Alaska Department of Fish and Game, Division of Commercial Fisheries,
304 Lake Street, Room 103, Sitka, AK 99835

This document should be cited as follows:
Baldwin, A., and R. Ehresmann. 2025. 2024 Northern Southeast Inside (NSEI) Subdistrict (Chatham Strait) sablefish longline-pot comparison survey. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Operational Plan No. ROP.CF.1J.2025.04, Douglas.

Signature Page

Project Title:	*Northern Southeast Inside (NSEI) Subdistrict (Chatham Strait) Sablefish Longline-Pot Comparison Survey*
Project leader(s):	*Aaron Baldwin and Rhea Ehresmann*
Division, Region and Area:	*Commercial Fisheries, Region I, Sitka*
Project Nomenclature:	*TF-187 TF SE Groundfish*
Period Covered	*2023–2024*
Field Dates:	*23 July – 29 July 2023 and 8 August–14 August 2024*
Plan Type:	*Category I*

Approval

Title	Name	Signature	Date
Project Leader	Aaron Baldwin		
Research Coordinator	Jan Rumble		

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PURPOSE

This regional operational plan details the methodology for the annual Northern Southeast Inside (NSEI) Subdistrict sablefish *Anoplopoma fimbria* longline survey and a special longline-pot comparison study. This survey's primary purpose is to estimate relative abundance of sablefish through determination of catch per unit effort (CPUE) at fixed stations in the NSEI Subdistrict and to compare catches between longline hook-and-line gear with longline pot gear. Additionally, fishery-independent sablefish biological data (age, length, weight, sex, and maturity) are obtained for assessment of biological trends and stock health. These data are used in conjunction with fishery CPUE and biological data, population estimates, and regional sablefish population trends to determine the NSEI annual harvest objective (AHO).

Keywords: sablefish, groundfish, Chatham Strait, tagging, codcoil pots, slinky pots, longline, CPUE

BACKGROUND

Sablefish or black cod *Anoplopoma fimbria* are a commercially important species found in the northeast Pacific Ocean, ranging from Baja, California to the Aleutian Islands and into the Bering Sea (Mecklenburg et al. 2002). Adult sablefish inhabit deep waters of the continental shelf, slope, and coastal fjords. Most adults live at depths ranging from 366 m to 914 m (200 to 500 fathoms) but sablefish have been captured at depths over 1,829 m (1,000 fathoms; Allen and Smith 1988). Sablefish are a long-lived species, having been aged to 94 years old in Alaska waters (Munk 2001); however, sablefish captured by Southeast Alaska commercial fisheries are typically not older than 20 years (Mueter 2010).

The Northern Southeast Inside (NSEI) Subdistrict sablefish fishery (commonly referred to as the *Chatham fishery*; Figure 1) is one of the oldest and most lucrative groundfish fisheries managed by the State of Alaska. The harvest of sablefish in the internal waters of Southeast Alaska began in the early 1900s with the first directed sablefish landing recorded in 1913 (Kolloen 1944); however, until the 1940s, most landed sablefish were incidental catch from the halibut fishery (Bergmann 1975; Carlile et al. 2002). In 1945, the first seasonal limitation for the NSEI sablefish fishery was imposed to protect spawning fish and manage the fishery harvest within an established guideline harvest range (GHR; Bracken 1983). Sablefish fishing effort fluctuated until the 1970s, when a Japanese market developed, raising prices and driving increased harvests (Bracken 1983). Sablefish harvests continued to increase, exceeding one million round pounds annually by 1983 (Carroll and Green 2012). To keep harvest within GHRs, fishery managers began shortening fishing seasons; however, these shorter seasons proved ineffective at keeping harvest within GHRs and the GHR was exceeded for several years despite seasons being limited to 24 hours (Green et al. 2014). As a result in 1994, an equal quota share (EQS) system was implemented and remains in place (Carroll and Green 2013).

Since 1988, ADF&G has conducted an annual NSEI longline survey at fixed survey stations to collect fishery independent data including catch per unit effort (CPUE), sablefish age, length, weight, sex, and maturity. Longline survey data were integrated into a yield-per-recruit assessment from 1997–2019 and into a statistical catch-at-age assessment (SCAA) since 2020 (Sullivan et al. 2020). The SCAA model uses surveys' sablefish CPUE (in numbers of sablefish per hook), sablefish age and length compositions, and female maturity-at-age data to determine NSEI Subdistrict commercial sablefish fishery annual harvest objectives.

The longline survey was designed as a random stratified survey with fixed stations; however, survey methodology has varied over time (Table 1). For example, longline survey stations fluctuated from 1988–1996 but were standardized to 45 stations in 1997 in response to increased

fishing effort occurring in southern Chatham Strait (Carlile et al. 2002; Vaughn 2010). In 1997, soak times were standardized to a minimum of 3 hours and a maximum of 11 hours due to concerns that the prior 1-hour soaks were not providing representative CPUE data (Sigler 2000) and to match the soak times of the federal sablefish longline survey (Cartwright 2000). Also, survey bait was switched from herring to squid, as herring disintegrated with the longer soak times (Cartwright 2000; Carlile et al. 2002). In 2000, ADF&G standardized the survey longline gear to match federal sablefish survey specifications, facilitating comparison between federal and state sablefish stock assessments (Carlile et al. 2002). Since 2000, minimal changes to the survey methods have been made; only the number of survey stations was reduced to 44 in 2002 and to 42 in 2016 (Figure 2) (Richardson 2003).

Regulations adopted at the 2022 Southeast Board of Fisheries meeting allowed sablefish to be taken in the directed NSEI sablefish fishery by longline and pot gear under a Commercial Fisheries Entry Commission (CFEC) limited entry C61A permit. Recent advances in pot gear allow vessels to use pots that are lightweight and can be fished with minimal vessel modifications on boats with longline equipment. To gain a better understanding of pot gear selectivity and catchability, as well as to examine the feasibility of changing this longline hook and line survey to longlined pot gear, ADF&G is conducting side-by-side comparison surveys for sablefish in NSEI waters. These surveys have deployed collapsible pots known as *codcoil* or *slinky* pots (Figure 3) and hook and line gear at survey stations in 2023 and 2024 (Table 2).

OBJECTIVES

1. Collect CPUE data from all hook and line gear and biological data from 550 randomly sampled sablefish caught with hook and line gear at 42 longline survey stations in the NSEI Subdistrict. Biological data include fork length, weight, sex, gonad maturity stage, and otoliths (age structures).
2. Measure an additional 550 randomly sampled sablefish (fork length) during the longline survey.
3. Collect CPUE and biological data from 300 randomly sampled sablefish caught with slinky pot gear at 10 pot survey stations in the NSEI Subdistrict. Biological data include fork length, weight, sex, gonad maturity stage, and otoliths (age structures).
4. Measure an additional 1,200 randomly sampled sablefish (fork length) during the slinky pot survey.
5. Identify and enumerate, to the lowest possible taxonomic group, all other species captured on hooks or in pot gear during the survey.
6. Recover tagged sablefish, record tag and recovery information, and collect length data for tagged fish caught on hooks and in pots during the survey.

METHODS

SURVEY DESIGN

Longline Gear

The NSEI sablefish longline survey is designed as a stratified, fixed-station survey with 42 stations located in Chatham Strait between the latitudes of Point Howard on Kuiu Island and Point Hepburn on Admiralty Island (Figure 2). The survey area is divided into three sections: Southern, Central, and Northern (trips 1, 2, and 3, respectively). Each section consists of 14 stations (Table 3) located at depths between 386 to 814 meters (211 to 445 fathoms). Three commercial longline vessels are chartered to complete the survey. Annual timing of the survey is from mid-July to early August during the smallest difference between low and high tides, as large tides cause gear entanglements. Survey duration is approximately 1 week; however, in the event of weather or mechanical delays, the survey may be extended to a maximum of 14 days. If winds exceed 25 knots, fishing operations may be suspended to provide for the safety of crew and to prevent deterioration of data quality due to loss of fish in rough seas.

Each vessel is staffed with 2 scientific ADF&G crew members, 1 of whom is assigned as crew leader. ADF&G staff are responsible for data collection and entry, as well as the adherence to survey protocols outlined in this document. The vessel crew consists of a captain (skipper) and 3 experienced crewmen. The skipper is responsible for general navigation, crew supervision, and control of the vessel. The vessels set gear at 3 stations per day for 4 days and have 1 day in which only 2 stations are fished. The ADF&G crew leader on each vessel works with the skipper to adjust the daily schedule to accommodate changes in weather, whale depredation, problems with gear or the vessel, delays in tender offloading schedules, or other issues that arise. In some years, contracts allow 1 or more NSEI permit holder(s) to be on board the vessel during the survey in which the permit holder is allowed to fulfill their Personal Quota Share (PQS), and ADF&G sells the remainder of the harvested sablefish.

One longline set occurs at each station, and each set consists of 25 standardized 100 m (approximately 55 fathom) skates of medium lay 1 cm (3/8 in) American SSR 100 nylon line. Each skate consists of 45 Mustad® 39965D #13/0 circle hooks. These hooks are attached approximately 38 cm (15 in) from the groundline with a becket (#72 medium lay twine) and gangion (#60 medium lay round braid twine), and spaced 2 m (78 in) apart for a total of 1,125 hooks per set. There are 5 m (16 ft) of bare groundline at each skate end, including a spliced 46 cm (18 in) long loop at either end for connecting skates. Skates are weighted with a 3.2 kg (7 lb) cannonball connected by heavy gangion line to a longline snap, which is then attached to the loop at each skate end for a total of 26 weights per set. The end of each set is connected to 366 meters (200 fathoms) of running line, a 27 kg (60 lb) longline anchor, and buoy line with buoys and a *highflyer* flagpole. New hooks are attached to the gear at the start of each survey. Bent or broken hooks are replaced throughout the survey to allow for equal catchability on all hooks. The vessel crew is responsible for overhauling the gear after each set and ensuring the gear remains in good condition throughout the survey.

Each vessel receives 1,043 kg (2,300 lb) of squid *Illex* spp. for bait. ADF&G staff calculates the rate of bait used at the first 3 stations to ensure enough bait is available to fish all survey stations. The rate of use is approximately 5.7 kg (12.5 lb) per 100 hooks. Bait must be freshly cut squid, thawed no more than 24 hours prior to use. Squid bait is cut into 3.8 cm to 5 cm (1.5–2 in) pieces. The head and the tentacles of the squid are discarded, using only the mantle and viscera of the

squid as bait. Staff records details of the vessel, crew, and bait usage on the vessel information form (Appendix A).

Pre-printed Survey Set Forms (Appendix B) for each station are provided and completed with trip number, station number, statistical area, and start and end coordinates for each set. It is at the skipper's discretion which end is set first based on ocean and tide conditions. All attempts are made to set between the 2 locations; however, the current or weather may force a deviation from course to fish the gear appropriately. If it is necessary to set differently, the set should be made as close to the original location points as possible. The start and end positions for each set are the locations where the anchors are deployed overboard. Start and end of the workday, as well as any problems, unforeseen events, or skipper comments should be documented on the daily log form (Appendix C).

Sets soak between 3 to 11 hours, as measured from second anchor overboard to first anchor on board. The length of soak is at the skipper's discretion and depends on weather, killer whale *Orcinus orca* or sperm whale *Physeter microcephalus* depredation, presence of sand fleas *Lysianassoidea* spp., or boat traffic in the area; however, to reduce loss of fish to sand fleas, hauls should occur as soon as possible after the minimum three-hour soak. A typical pattern of setting gear is for crew to set the first set, wait slightly (to minimize soak time on second set), then set the second. Next, after the 3-hour minimum soak, crew haul the first set and set the third set. Then, they haul the second and third set in sequence. Seabird avoidance devices are required when setting gear in the southern survey section on stations 52, 55, 57, and 58 (Figure 2).

All sablefish, rockfishes *Sebastes* spp. and *Sebastolobus* spp., and Pacific cod *Gadus macrocephalus* are to be retained for sale. All other catch is carefully released with minimum damage. Fish returned to the water are not to be gaffed or allowed to go through the brushes or a crucifier. Vessels with unfilled Pacific halibut *Hippoglossus stenolepis* individual fishing quota (IFQ) on board may retain legal halibut up to their IFQ amount; however, vessels without halibut IFQ must immediately release all Pacific halibut. A reasonable effort should be made to untangle live Pacific sleeper sharks *Somniosus pacificus* prior to moving on to other methods of separating the shark from the gear.

Pot Gear

The NSEI sablefish pot survey consists of 10 slinky pot sets that will be made concurrently with and parallel to the Central and Northern vessel's longline survey sets, approximately 1.9 km apart and matching depth and benthic terrain as closely as possible (Figure 2). One commercial pot vessel is chartered to complete the survey. The pot vessel is staffed with 2 scientific ADF&G crew members, 1 of whom is assigned as crew leader. Vessel and ADF&G crew expectations are the same as listed above for the longline gear survey vessels.

The pot survey charter vessel will make two sets of longlined slinky pot gear per day alongside two out of the three sets made each day by 1 of the three longline survey charter vessels (Table 3). One pot set occurs at each station, and each pot set consists of 2,195 m of 1.27 cm leaded groundline, 183 m of running line and 23 kg anchors at each end, and approximately 640 m of buoy line with buoys and a high-flier pole at the surface also at each end. A total of 30 pots (15 small and 15 large) are set per string. The two different sizes of slinky pots used to investigate catch comparisons are large (77 by 152 cm, 708 L internal capacity) and small (69 by 127 cm, 475 L internal capacity). All escape rings on the pots are closed using three zip ties per ring, each pot has two 46 cm escape panels made of biodegradable twine, and pots are equipped with a 1.8 m

bridle tail for attaching to the groundline (Figure 3). The groundline is configured with 81 beckets spaced at 27 m intervals. Cannonball weights (3.2 kg) and slinky pots are attached to the groundline beckets using 1.27 cm c-links in an alternating order: first a cannonball, then a small slinky pot, another cannonball, then a large slinky pot, and so forth, ending with a cannonball. The arrangement is such that pots are spaced 55 m apart with a weight placed equidistantly in between two pots (Figure 4). The vessel crew is responsible for overhauling the gear after each set and ensuring the gear remains in good condition throughout the survey.

Each pot string is set in the morning concurrently with the corresponding hook-and-line longline set, typically in setting the same direction as the longline vessel. Pot sets are hauled in the afternoon, after a soak time of approximately 7–10 hours, while longline sets are hauled within a 3–11 hour soak. The pot vessel receives 1,043 kg (2,300 lb) of squid for bait. Each pot is baited with 1 bait bag with approximately 1.8 kg (4 lb) of chopped *Illex* squid, which is placed inside the pot. Start and end of the workday, as well as any problems, unforeseen events, or skipper comments should be documented on the daily log form (Appendix C).

All sablefish, rockfishes *Sebastes* spp. and *Sebastolobus* spp., and Pacific cod *Gadus macrocephalus* are to be retained for sale. All other catch is carefully released with minimum damage. Fish returned to the water are not to be gaffed. Vessels with unfilled Pacific halibut *Hippoglossus stenolepis* individual fishing quota (IFQ) on board may retain legal halibut up to their IFQ amount; however, vessels without halibut IFQ must immediately release all Pacific halibut. A reasonable effort should be made to untangle live Pacific sleeper sharks *Somniosus pacificus* prior to moving on to other methods of separating the shark from the gear.

DATA COLLECTION

Hook Accounting

One ADF&G staff member records detailed set information during deployment and retrieval or *haulback* of each set on the survey set form (Appendix B) and on the tablet using the At-Sea Electronic Sampling (ACES) application (Appendix D). These forms capture the weather condition while setting, time of deployment and retrieval for anchors and buoys, and depths of each anchor and skate (Appendices D and E). The staff member who completes these forms while setting and hauling gear is also responsible for the hook accounting component of that set. This staff member must maintain a position where they have an unrestricted view of the intersection of the longline gear and the ocean surface to begin tallying the hooks of the set using the ACES hook accounting application (Appendix F). The staff member keeps a set of paper Hook Accounting Forms (Appendix G) nearby in a clipboard in case the tablet fails, or if weather does not allow for using the tablet for hook accounting. It is the responsibility of the person conducting the hook accounting to identify and enumerate, to the lowest possible taxonomic group, all species captured on longline gear during the survey. The other ADF&G staff member, who is collecting biological samples on deck, should document any irregularities or issues that the other staff person encounters on all-weather paper. This procedure allows the hauling of gear to remain uninterrupted throughout the set.

The roller should be operated to allow for accurate tallies. Staff should request that the gear be slowed or stopped if additional time is needed to document the disposition of hooks. Hooks are assigned a code based on their status as the hook breaks the surface of the water (Appendix H). If a fish becomes separated from the hook below the water surface, the hook is tallied as either a *bare* or *baited* hook. A hook returning with 2 fish attached as the hook breaks the surface is considered

a *re-bite* and only the original fish is counted in the hook count tally, while the second fish is noted by species in the skate comment section as a re-bite.

As hooks are being tallied, every 20th sablefish is set aside for biological sampling. The sample rate calls for the collection of the first sablefish of the set and every 20th sablefish thereafter for the first 21 skates of each set. This systematic sampling design helps reduce bias regarding which fish are sampled. The sample rate can be adjusted depending on the harvest of the first 2 days of the survey to ensure that the goal of 550 samples is reached. Staff conducting hook accounting alerts the crew member at the roller which specimens should be set aside. If a 20th fish is missed as a sample, the next sablefish is set aside for sampling, and so on. The ACES application emits an audible tone that notifies staff when a sample should be collected based on the number of sablefish tallied. There is also a visual display that provides a countdown to the next sample (Appendix F). In determining the 20th fish to be sampled, only retained sablefish are counted; lost sablefish or those discarded due to fleas, sharks, or other types of damage are not considered, as the fish condition would most likely make the fish unsuitable for sampling**.** Additional sablefish are collected and measured only for length data. The next sablefish following each regular biological specimen (second sablefish of the set and every 21st sablefish thereafter) is collected and segregated in a separate tub as a length-only sample. The ACES application emits a different tone to indicate a sablefish is a length sample. This sablefish is also counted as the first fish in the tally toward the next biological sample.

Snarls may occur when setting the gear. When a multiple hook snarl is present during haulback, the gear is slowed or stopped. If the number of hooks involved in a snarl cannot be immediately counted, the snarl check box at the bottom of the ACES hook accounting form is marked (Appendix F). The vessel crewmember operating the roller counts the total hooks involved in the snarl as they haul the gear across the roller for staff to record. Staff do not need to differentiate between bare and baited hooks in a snarl; all snarled hooks without fish are considered invalid. All fish present in a snarl are identified to the species level and enumerated appropriately for that skate. The number of invalid hooks is then determined by subtracting the number of fish in the snarl from the total hooks counted in the snarl. Hooks are also assigned the condition *invalid* if they are broken, hooked in the line, hooked to another hook, or missing (a broken gangion). If a skate has 12 or more invalid hooks, that entire skate is considered invalid. A skate may also be considered invalid if whale depredation is evident on a given skate or skates. Staff adjusts the status of a skate as invalid when finalizing skates by selecting *not valid* under the condition code drop-down menu in ACES or by circling *N* under valid on the hook accounting form (Appendix G). The invalid skate is noted on the set's comments and any sablefish from an invalid skate are not included in the calculation of that station's CPUE.

If a skate breaks off or the gear is otherwise parted, the number of the skate that parted, as well as the time the end of the skate is retrieved on board, is recorded in the comments on the survey set form (Appendix B). After resuming the haul on the opposite end of the set, staff shall advance the set number in ACES using the forward button to the next sequential skate and start tallying. Staff should continue collecting sablefish biological samples until a total of 21 skates have been sampled and the remaining 4 skates of gear are tallied. Once skate 25 is completed, the ACES screen is paged back to the parted skate to tally any remaining hooks for that subset. Alternatively, the hooks remaining on the parted skate can be tallied as another skate (*skate 26*) and those hooks added to the original parted skate during the finalization process. The date and time of second anchor on board is recorded on the survey set form (Appendix B) as the time that the second end of the parted

gear (end of the final skate hauled) is brought on board. Following the completion of the haul, staff renumbers the skates to keep the hook tallies consistent with the sequence of the original set order. The first skate to the parted skate retain their original skate numbers; the remaining skates are renumbered in reverse order with skate 25 assigned to the skate after which the gear parted and the vessel began hauling the other end of the set.

If more than 25 skates are mistakenly set for a station, the extra skate(s) should be tallied separately as additional skate(s) and are not combined with the hook tally for skate 25. Additional skates in a set are noted in the set's comments and are included in the CPUE calculations on the vessel summary form (Appendix I) for that station.

Should the vessel experience whale depredation with whales actively feeding off the gear, the vessel should cease setting in the area on that day, as the whales are likely to stay with the vessel until it leaves the area. The presence of orca or sperm whales is documented by selecting the whale box at the bottom of the ACES hook accounting screen for each skate in which whales are present (Appendix F). Any sablefish that appear to be whale-damaged (e.g., sablefish lips or head appears on the hook but no body) are recorded as *disc. other* in ACES and then corrected to the appropriate discard status during set data finalization (see below). Gear that is already set will need to be hauled prior to the expiration of the 11-hour soaking period, but the vessel should attempt to discourage additional depredation by traveling away from the set, in hopes that the whale(s) will move on. If that set is depredated, the vessel needs to consider other options prior to proceeding with additional fishing and options to discourage additional interactions should be discussed by the ADF&G crew leader, skipper, and/or project leader. It is believed that sperm whales cue-in on bubbles caused by cavitation from engine cycling. Techniques that may confuse whales and decrease depredation include reducing engine cycling, setting decoy buoys at least a mile away from set locations, avoiding lingering in the station area after a set is made, and traveling near shore and in shallower water. If feasible, staff should collect photos of the fluke (sperm whale) and left side of dorsal fin (orca) for identification by cetacean researchers.

Once the set's gear is hauled, each set is finalized in the ACES program directly on the tablet used to do the hook accounting. This finalization involves verifying that hook counts are correct for each skate in the set, adding any missing data or comments, changing skate status to invalid when appropriate, correcting errors (misidentification of a species) that were made, editing *disc. other* and *unknown* species to the proper selection and addressing any additional set notes made by the other staff member. For example, sablefish marked as *disc. other* due to whale depredation must be changed to *not marketable due to orca or sperm whale depredation* and noted in the skate comments field. The skate status must also be marked as *invalid due to whale depredation*. Skate comments should include any information describing why the skate was not fishing properly: line parting, hang-ups, snarls, the presence of whales, and shark or whale depredation. After reviewing each skate, staff type *verified* along with their initials and the date in the comment section of each skate to confirm data verification. After all skates have been verified, staff must review and verify that ACES has the correct set information (e.g., date and times of setting and hauling, and location of the set), and then should also add their initials and date with *verified* in the set comments. Comments affecting CPUE should be listed first when reporting set information in the set comments, such as too many or too few skates per set and number of invalid skates within the set. Once all 25 skates of a set are verified and set data and comments are verified, the set can be marked as finalized in ACES.

Pot Accounting

Similar to hook accounting protocols, 1 ADF&G science staff member records detailed set information during deployment and retrieval of each set on the pot survey set form (Appendix J). The staff member who completes the pot survey set form while setting and hauling gear is also responsible for the pot accounting component of that set. During setting, they will record the latitude and longitude (decimal minutes) for each end of the pot string using the coordinates of the first and last anchors. They will also record pot size with depth (fathoms) at the location each pot is released overboard with the first and last pots recorded as the start and stop depths for the set. The average depth of the set is the mean depth for all pots set. The date and time (military) are recorded when the second anchor goes overboard during setting and when the first and second anchors come onboard while hauling a pot string. Staff will note whether the gear is hauled in the same direction as it was set, the number and size of pots set, the number and size of pots hauled, and the substrate of the ocean floor (e.g., mud, clay, rocks) as observed on each anchor. Any additional information unique to a set is recorded in the comments section, (e.g., number of lost pots, pots returned with open ends or holes in the webbing, time and location of breaks in the groundline, and tangled gear).

As pots are being hauled, it is the responsibility of the science staff member conducting the pot accounting to identify and enumerate, to the lowest possible taxonomic group, all species captured in each pot during the survey, noting pot number, haulback order, and pot size on the pot tally form (Appendix K). This person must also carefully and quickly visually inspect each pot for damages. If a pot is structurally damaged, missing zipties on the escape rings, has holes in the mesh, an open door, or rotted biotwine, such that the pot allows fish to escape, the staff member must note in the comments on the pot tally form that the pot was compromised. Each pot is then individually dumped on a sorting table by the vessel crew, and all sablefish from the pot are tallied by disposition on the form. Any bycatch species are also enumerated and either retained (Pacific cod and all rockfishes) or discarded alive (all other bycatch). Once all catch is accounted for, the other staff member begins collecting biological samples. From each pot, up to five sablefish are randomly placed into a large plastic tub for sampling. Of the five sablefish placed in the sampling tub, the first sablefish randomly picked up by the sampler is sampled for a full biological sample and the remaining four fish are measured for fork length only. The sample rate calls for the collection of up to five sablefish from each pot in every set with a maximum number of 30 full biological samples and 120 length-only samples.

Gear snarls may occur when setting the gear and parted lines or lost pots may occur during hauling. The vessel crew member operating the hydraulics should relay to science staff if they will be hauling pots out of order due to entangled pots or lines. Staff must document carefully which pot is being dumped and may need to skip ahead on the data form to accommodate pots that were skipped or lost during setting and hauling. If less than 30 pots were mistakenly set for a station, the missing pots should be noted on the set form if possible. The missing pots should also be noted on the pot tally form during hauling when an empty c-link is observed coming on board the vessel. Once the set's gear is hauled, each set is finalized by summing retained sablefish at the bottom of the pot tally form and multiplying it by the average weight from the biological samples to get the approximate total weight of sablefish on board for that set.

Biological Sampling

While 1 scientific staff member is hook or pot accounting, the other is collecting biological samples. Staff take Age-Sex-Length (ASL) samples from the sablefish, which consist of fork length (nearest whole centimeter), weight (nearest 0.1 kg), sex, and maturity. The ASL samples on longline surveys are recorded using the Groundfish At-Sea Survey Sampling application on the tablet (Appendix L); however, the biological sampler should also bring 2 Sablefish Biological Data Collection Forms on deck with them (Appendix M) for use if the tablet fails. On the pot survey, biological samples are recorded on a paper form (Appendix N) and added to database after returning to port. For both surveys, specimen numbers are assigned sequentially to each sablefish sample with the first sablefish sampled on each set assigned as "specimen 1."

After taking a fork length measurement, sablefish are weighed using a Marel® electronic motion compensation scale. The scale is calibrated at the start of each set and as sea conditions change. If the Marel® scale cannot be properly calibrated due to rough weather or other issues, a hanging scale may be used. When using the hanging scale, weight readings should be taken twice to reduce misreading due to wave and wind action. Weight collection is skipped if the ocean conditions are not conducive to accurate and repeatable readings with either scale. Some sablefish may ingest water as they are hauled to the surface as evidenced by their swollen appearance. Samplers must purge the water from the fish stomachs prior to recording weight.

Following the collection of length and weight data, the specimen's otoliths are removed. The otoliths are accessed by making a horizontal cut across the top of the head, about a centimeter deep. The 2 otoliths are housed in opposing grooves within the cartilage and forward of the brain. The otoliths are removed with forceps and are stored temporarily on deck in 32-unit pill boxes. The pill boxes are numbered from 1 through 32, 33 through 64, 65 through 96, and 97 through 100 and are reused for otoliths from 101 through 200 and so forth. Otolith numbers are assigned consecutively to sablefish with biological data beginning with the first sample collected (otolith 1) and ending with the last sample taken on the final set of the survey. Otolith numbers do not match specimen numbers, which restart numbering with 1 at the start of every set. To assign a specimen an otolith number in the Groundfish At-Sea Survey Sampling application (Appendix L), staff clicks on the *oto* button. Any notes for a sample's otolith condition are made by clicking *notes* in the Groundfish At-Sea Survey Sampling application and selecting the corresponding condition from the *notes/otolith comments* pop-up menu or by writing in the comments box (Appendix L). Length only sablefish samples are not included in the otolith number sequence. The sampler should continually verify that the otolith number on the sampling form or tablet application matches the cell's lid number on the pill box to avoid errors in sequencing.

Otoliths are cleaned daily to avoid compromising otolith storage capacity on deck and to reduce the chance of sample loss due to accidental spillage. Otoliths should be cleaned at the end of the day inside the vessel cabin by immersing individual pairs in a small bowl of water to remove any remaining blood or tissue and gently dabbing them using a paper towel. No more than one pair of otoliths should be cleaned or removed from their pill box cell at a time to avoid accidental mixing. Staff should ensure notes recorded for otoliths on paper and in the sampling application (e.g., no otoliths, 1 otolith lost, etc.) match the number and condition of otoliths they are cleaning before placing them in the long-term storage 48-cell trays, which are labeled with trip information and specimen numbers (Appendix O). If no otoliths were collected for a specimen, the corresponding cell is left empty and uncapped. Any otolith sequence issues or abnormalities with the otoliths while collecting, cleaning, or storing the otoliths must be fully documented on the sampling

application. Any questionable otoliths are noted and addressed in port with the Age Determination Unit (ADU).

After otoliths are extracted, sex and maturity data are collected by examining the specimen's gonads macroscopically. Sablefish are cut and dressed (eastern cut) to industry standards (Figure 5) to view the gonads and determine the fish's sex. Male specimens are recorded with sex code 01 and females with code 02. A code of 00 is assigned to those specimens where the sex is not observed, and code 99 to those that are indiscernible. Maturity is coded according to 1 of 2 stages, immature 01 or mature 07, and staff should use code 09 if maturity is not observed (Figures 6 and 7). Sablefish with undeveloped gonads that have not previously spawned are assigned as immature. Fish with gonads that are developed and have spawned or are prepared to spawn are recorded as mature. Questionable gonads should be saved to review with the other staff member after the set's haulback and hook accounting is complete. After sex and maturity data are recorded for a fish, the fish is cleaned with a scraper, rinsed with a deck hose, and then iced in a fish hold separate from round fish.

All tagged sablefish encountered on the survey are retained and the tag number, fork length of the fish, and set number are recorded on the deck tag recovery form (Appendix P). If a tagged fish was designated as a biological sample, the individual is treated like a random biological sample, and the tag number is noted in the comments section of the sampling application or the paper sample form for that specimen. Tags are removed from the fish and secured in a safe place (e.g., small sealable plastic bag or in an unused cell of the otolith pill box) on deck until the set is completed. Tags and associated information are then transferred to the survey tag recovery form (Appendix Q) inside the vessel cabin in between sets or at the end of the day. If tags from other agencies are recovered (National Marine Fisheries Service (NMFS), ADF&G Homer, Department of Fisheries and Oceans Pacific Biological Station - Canada, or Japan), biological data (fork length, weight, sex, maturity, and otoliths) are collected from the tagged fish and mailed with the tag to the respective agency upon return to port (Appendix R). These otoliths are stored separately and not included in the survey's otolith number sequence, unless they were collected as part of the systematic sampling.

At the end of each day, the vessel summary form (Appendix I) is filled out for the longline stations fished that day. The form captures the CPUE and the average sablefish weight for each station. A cumulative estimate of the catch weight is calculated to give the processor an estimate of landing size on offload days. The CPUE and average weights can also be compared by station for the previous 3 surveys to estimate relative catches and facilitate adjusting biological sample rates if needed (Table 4).

VESSEL SAFETY

The safety of department staff is of utmost importance and ADF&G staff can terminate a survey at any time if they feel that the vessel is unsafe or the skipper is making poor decisions that jeopardize the safety of crew or the integrity of the survey. If there is a situation on the vessel in which survey crew are in danger, the Garmin inReach® or Zoleo satellite communication device is utilized to contact the appropriate safety contacts for the current year's survey. If the situation warrants immediate response, staff should contact the United States Coast Guard (USCG) directly. If staff are unsure whether a situation constitutes a safety concern, they should: 1) address the concern with the skipper, 2) contact the land-based safety contact and Groundfish Project Leader, and 3) document the circumstances as the situation allows, utilizing photos or videos if necessary.

Each survey binder has a vessel safety checklist form (Appendix S) and a vessel diagram form (Appendix T) that must be completed with the skipper prior to the vessel leaving the dock. The crew leader ensures that ADF&G staff have a safety orientation with the skipper that covers location and operation of the life raft, fire extinguishers, and other safety equipment. the vessel diagram form illustrates locations of the necessary safety equipment and allows staff to orient themselves with the working space on deck. Staff are told where to report in an emergency and the best location to store their survival suits. ADF&G staff must wear a personal flotation device (PFD) while on deck. A personal locator beacon (PLB) is assigned to each ADF&G staff on each vessel and are stored in an accessible location of their choice. Staff and PLB assignments are documented and sent to the appropriate shoreside safety contacts if a PLB is activated. The PLBs are manually activated and send a signal to the USCG once activated.

Each survey vessel's crew leader must notify a designated land contact between 8:00 AM and 3:00 PM of the vessel's status each day of the survey via an inReach® or Zoleo device. If a vessel has not contacted the land contact by 3:00 PM each day, the USCG will be notified of the situation at 907-463-2990. Additionally, every morning, crew leaders should check-in with the survey coordinator. Daily check-ins should include confirmation of staff members' safety and wellbeing. Daily check-ins also provide the opportunity to ask questions or relay additional information about survey conditions or complications. ADF&G staff may communicate daily check-ins by whatever means they choose; however, staff are not authorized to use vessels' radios or phones unless given direct permission by the skipper.

SCHEDULE AND DELIVERABLES

The NSEI longline survey coordinator will begin planning the annual longline survey in May, including ensuring three chartered vessels are contracted, opening a fish buy bid to local processors, organizing gear, and training ADF&G staff using the protocols outlined in this document. Chartered vessel skippers and ADF&G staff assigned to the longline survey are provided with survey gear and materials prior to the survey departure. The survey is then conducted in late July or early August.

RESPONSIBILITIES

Aaron Baldwin, Fishery Biologist II, Crew Leader. Responsible for collecting data during the survey as outlined in this document and assisting ADF&G crew as needed while conducting the survey.

Kalli Brettrager, Fishery Biologist I, Crew. Responsible for collecting data during the survey as outlined in this document.

Laura Coleman, Fishery Biologist II, Crew Leader. Responsible for collecting data during the survey as outlined in this document and assisting ADF&G crew as needed while conducting the survey.

Rhea Ehresmann, Fishery Biologist III, Groundfish Project Leader, Survey Coordinator, and Crew Leader. Oversight of all aspects of the project, including operational planning, equipment inventory, ADF&G survey staff training, participation in survey, and data review. Assists in using survey results for the stock assessment the following year.

Kaitlyn Johnson, Fish and Wildlife Technician III, Crew. Responsible for collecting data during the survey as outlined in this document.

Alyssa Luongo, Fish and Wildlife Technician IV, Crew. Responsible for collecting data during the survey as outlined in this document.

Alex Mccarrel, Fishery Biologist II, Crew Leader. Responsible for collecting data during the survey as outlined in this document and assisting ADF&G crew as needed while conducting the survey.

Ana Vinson, Fishery Biologist I, Crew. Responsible for collecting data during the survey as outlined in this document.

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TABLES

Table 1.–Northern Southeast Inside (NSEI) Subdistrict sablefish survey specifications, 1988–2023.

Year	Date	Vessel(s)	Bait	Soak (hrs)	Hook size	Hook space (m)	Tied gangion length (cm)	Skate length (m)	Hooks/ skate	Skates/ set	Hooks/ set	Sets made/ planned
1988	8/14–8/26	Betty	Herring	1	13 C	3	25	1,600	ND	ND	1,000	24 / 24
1989	8/07–8/25	Carrie	Herring	1	13 C	3	25	1,600	ND	ND	500	44 / 44
1990	8/26–9/10	Isis	Herring	1	13 C	3	25	1,600	ND	ND	500	40 / 40
1991	8/13–8/30	R/V Stellar	Herring	1	13 C	3	25	1,600	ND	ND	500	40 / 40
1992	8/17–8/31	Charles T	Herring	1	13 C	3	25	1,600	ND	ND	500	40 / 40
1993	8/23–9/08	R/V Medeia	Herring	1	13 C	3	25	1,600	ND	ND	500	38 / 38
1994	8/23–9/05	R/V Medeia	Herring	1	13 C	3	25	1,600	ND	ND	500	38 / 38
1995[a]	8/23–9/08	R/V Medeia	Herring	1	13 C	3	25	1,600	ND	ND	500	30 / 30
1995[a]	8/23–9/08	R/V Medeia	Squid	3	13 C	3	25	1,600	ND	ND	500	6 / 6
1995[a]	8/23–9/08	R/V Medeia	Squid	3	13 C	3	25	1,600	ND	ND	500	24 / 24
1996	8/17–8/31	R/V Medeia	Herring	1	13 C	3	25	1,600	ND	ND	500	38 / 38
1996	8/19–8/22	Ida June	Squid	3–7	13 C	1	20	550	122	6	750	16 / 16
1997	8/07–8/13	Ida June	Squid	3–11	13 C	2.0–2.1	18–30	–	76–125	8–14	923–1,217	45 / 45
1997	8/07–8/13	Charles T	Squid	3–11	13 C	2.0–2.1	18–30	–	76–125	8–14	923–1,217	45 / 45
1997	8/07–8/13	Kruzof	Squid	3–11	13 C	2.0–2.1	18–30	–	76–125	8–14	923–1,217	45 / 45
1998	8/13–8/19	Ida June	Squid	3–11	13 C	1.8–2.1	23–33	183–548	75–122	8–14	831–1,267	45 / 45
1998	8/13–8/19	Charles T	Squid	3–11	13 C	1.8–2.1	23–33	183–548	75–122	8–14	831–1,267	45 / 45
1998	8/13–8/19	Ocean Cape	Squid	3–11	13 C	1.8–2.1	23–33	183–548	75–122	8–14	831–1,267	45 / 45
1999	8/14–8/24	Ida June	Squid	3–11	13 C	1.8–2.1	23–25	–	–	8–11	1,002–1,129	45 / 45
1999	8/14–8/24	Charles T	Squid	3–11	13 C	1.8–2.1	23–25	–	–	8–11	1,002–1,129	45 / 45
2000	8/15–8/24	Ida June	Squid	3–11	13 C	2	38	91	45	25	1,125	45 / 45
2000	8/15–8/24	Charles T	Squid	3–11	13 C	2	38	91	45	25	1,125	45 / 45
2000	8/15–8/24	Spirit	Squid	3–11	13 C	2	38	91	45	25	1,125	45 / 45
2001	8/07–8/14	Ida June	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2001	8/07–8/14	Charles T	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2001	8/07–8/14	Sylvia	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44

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Table 1.–Page 2 of 4.

Year	Date	Vessel(s)	Bait	Soak (hrs)	Hook size	Hook space (m)	Tied gangion length (cm)	Skate length (m)	Hooks/ skate	Skates/ set	Hooks/ set	Sets made/planned
2002	8/12–8/19	Archangel	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2002	8/12–8/19	Charles T	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2002	8/12–8/19	Ida June	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2003	8/02–8/08	Archangel	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2003	8/02–8/08	Ida June	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2003	8/02–8/08	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2004	8/04–8/10	Archangel	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2004	8/04–8/10	Charles T	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2004	8/04–8/10	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2005	7/27–8/02	Charles T	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2005	7/27–8/02	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2005	7/27–8/02	Sea View	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2006	8/01–8/07	Charles T	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2006	8/01–8/07	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2006	8/01–8/07	Sea View	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2007	8/04–8/10	Charles T	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2007	8/04–8/10	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2007	8/04–8/10	Sea View	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2008	8/06–8/12	Charles T	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2008	8/06–8/12	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2008	8/06–8/12	Sea View	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2009	7/28–8/03	Ida June	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2009	7/28–8/03	Sea View	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2009	7/28–8/03	Sherrie Marie	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2010	7/31–8/6	Ida June	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2010	7/31–8/6	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2010	7/31–8/6	Sea View	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2011	7/24–7/30	Kaia	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2011	7/24–7/30	Pacific Dawn	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2011	7/24–7/30	Sea View	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44

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Table 1.–Page 3 of 4.

Year	Date	Vessel(s)	Bait	Soak (hrs)	Hook size	Hook space (m)	Tied gangion length (cm)	Skate length (m)	Hooks/ skate	Skates/ set	Hooks/ set	Sets made/planned
2012	7/24–7/30	Ida June	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2012	7/24–7/30	Kaia	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2012	7/24–7/30	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2013	7/28–8/5	Cobra	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2013	7/28–8/5	Kaia	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2013	7/28–8/5	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2014	7/31–8/6	Kaia	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2014	7/31–8/6	Magia	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2014	7/31–8/6	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2015	7/23–7/29	Kaia	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2015	7/23–7/29	Magia	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2015	7/23–7/29	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	44 / 44
2016	7/25–7/31	Kaia	Squid	3–11	13 C	2	38	91	45	25	1,125	42 / 42
2016	7/25–7/31	Marilyn J	Squid	3–11	13 C	2	38	91	45	25	1,125	42 / 42
2016	7/25–7/31	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	42 / 42
2017	7/30–8/5	Kaia	Squid	3–11	13 C	2	38	91	45	25	1,125	42 / 42
2017	7/30–8/5	Magia	Squid	3–11	13 C	2	38	91	45	25	1,125	42 / 42
2017	7/30–8/5	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	42 / 42
2018	8/4–8/10	Kaia	Squid	3–11	13 C	2	38	91	45	25	1,125	42 / 42
2018	8/4–8/10	Magia	Squid	3–11	13 C	2	38	91	45	25	1,125	42 / 42
2018	8/4–8/10	Masonic	Squid	3–11	13 C	2	38	91	45	25	1,125	42 / 42
2019	7/23–7/30	Kaia	Squid	3–11	13 C	2	38	91	45	25	1,125	40 / 42
2019	7/23–7/30	Magia	Squid	3–11	13 C	2	38	91	45	25	1,125	40 / 42
2019	7/23–7/30	Marilyn J	Squid	3–11	13 C	2	38	91	45	25	1,125	40 / 42
2020	8/9–8/15	Ilona B	Squid	3–11	13 C	2	38	91	45	25	1,125	42 / 42
2020	8/9–8/15	Kaia	Squid	3–11	13 C	2	38	91	45	25	1,125	42 / 42
2020	8/9–8/15	Kristina	Squid	3–11	13 C	2	38	91	45	25	1,125	42 / 42
2021	7/28–8/4	Ilona B	Squid	3–11	13 C	2	38	91	45	25	1,125	40 / 42
2021	7/28–8/4	Julia Breeze	Squid	3–11	13 C	2	38	91	45	25	1,125	40 / 42
2021	7/28–8/4	Kristina	Squid	3–11	13 C	2	38	91	45	25	1,125	40 / 42

-continued-

Table 1.–Page 4 of 4.

Year	Date	Vessel(s)	Bait	Soak (hrs)	Hook size	Hook space (m)	Tied gangion length (cm)	Skate length (m)	Hooks/ skate	Skates/ set	Hooks/ set	Sets made/planned
2022	8/3–8/9	Tammy Lin	Squid	3–11	13 C	2	38	91	45	25	1,125	40 / 42
2022	8/3–8/9	Illona B	Squid	3–11	13 C	2	38	91	45	25	1,125	40 / 42
2022	8/3–8/9	Ida June	Squid	3–11	13 C	2	38	91	45	25	1,125	40 / 42
2023	7/23–7/28	Tammy Lin	Squid	3–11	13 C	2	38	91	45	25	1,125	40 / 42
2023	7/23–7/28	Ida June	Squid	3–11	13 C	2	38	91	45	25	1,125	40 / 42
2023	7/23–7/28	Lea	Squid	3–11	13 C	2	38	91	45	25	1,125	40 / 42

Note: ND indicates no data available. En dash indicates a lack of standardization in gear types caused varied data

[a] In 1995, 30 sets were made side-by-side to compare 1 hour and 3 hours soaks; 6 of these were conventional gear but due to operational problems the rest of the comparison sets were snap-on gear.

Table 2.–Gear History of the Northern Southeast Inside (NSEI) Subdistrict pot survey from 2023 to 2024.

Year	ADF&G number	Vessel name	Gear type	Pot size (cm)	Pot spacing (m)	Bait	Pots per set	Soak time (hrs)
2023	37833	Ilona B	Slinky pots	69x127; 77x152	27	Cut Squid	30	7 to 10
2024	37833	Ilona B	Slinky pots	69x127; 77x152	27	Cut Squid	30	7 to 10

Table 3.–Northern Southeast Inside (NSEI) Subdistrict longline survey stations listed south to north. The total number of stations is 42.

Station	Trip	Statistical area	Start lat.	Start long.	End lat.	End long.	Start depth (m)	End depth (m)	Area description
55	1	345603	56 05.30	134 30.50	56 06.72	134 30.55	516	532	Point Howard Middle
58	1	345603	56 06.50	134 34.90	56 08.10	134 34.80	519	554	Cape Ommaney
52	1	345603	56 14.00	134 27.30	56 15.50	134 27.30	517	713	Port Alexander Middle
57	1	345603	56 15.13	134 24.73	56 16.69	134 24.73	717	669	Port Malmesbury
54	1	345603	56 18.40	134 35.00	56 19.93	134 34.12	647	448	Port Alexander
56	1	345603	56 24.40	134 36.00	56 26.17	134 36.30	571	571	Port Herbert
53	1	345603	56 25.20	134 29.70	56 26.90	134 29.90	706	695	Port Herbert Middle
1	1	345631	56 31.28	134 34.60	56 32.90	134 34.60	519	507	Patterson Point
3	1	345631	56 33.50	134 31.10	56 35.20	134 31.30	651	647	N. Patterson Point
4	1	345631	56 40.10	134 34.80	56 41.60	134 34.80	507	534	Mt. Ada
5	1	345631	56 40.60	134 33.10	56 42.30	134 33.10	677	682	S. Gut Bay
6	1	345631	56 39.23	134 25.67	56 40.61	134 25.61	684	704	S. Washington Bay
7	1	345631	56 41.70	134 26.10	56 43.20	134 26.50	443	501	Washington Bay
8	1	345631	56 43.00	134 33.20	56 45.00	134 33.20	711	724	Gut Bay
9	2	345631	56 44.01	134 28.46	56 45.53	134 29.21	647	660	N. Washington Bay
10	2	345631	56 47.00	134 31.80	56 48.80	134 31.80	704	691	Hoggat Bay Middle
13	2	345631	56 48.91	134 37.45	56 50.49	134 37.71	726	699	Kingsmill Point
16	2	345631	56 52.78	134 33.75	56 54.39	134 33.75	669	658	Yasha Island
15	2	345631	56 52.67	134 38.44	56 54.46	134 38.37	666	640	N. Red Bluff Bay
18	2	345701	57 00.60	134 42.62	57 02.05	134 42.68	614	647	Cascade Bay
19	2	345701	57 01.35	134 43.95	57 02.90	134 43.92	622	662	N. Cascade Bay
21	2	345701	57 06.00	134 42.09	57 07.52	134 42.07	653	627	Warm Springs Bay
22	2	345701	57 10.07	134 47.40	57 11.40	134 48.39	304	585	White Cliff

-continued-

Table 3.–Page 2 of 2.

Station	Trip	Statistical area	Start lat.	Start long.	End lat.	End long.	Start depth (m)	End depth (m)	Area description
23	2	345701	57 11.27	134 41.46	57 12.90	134 40.87	622	814	N. Wilson Cove
24	2	345701	57 14.02	134 40.75	57 15.38	134 40.49	507	443	Point Caution
25	2	345701	57 16.60	134 39.92	57 17.96	134 39.94	497	514	Woody Point
28	2	345701	57 18.68	134 42.71	57 20.01	134 42.73	527	620	Point Lull Middle
27	2	345701	57 18.80	134 44.79	57 20.31	134 44.78	741	682	Point Lull
30	3	345701	57 19.80	134 39.37	57 21.27	134 39.27	604	677	Village Point
32	3	345701	57 22.58	134 46.04	57 23.97	134 46.01	668	695	S. Point Thatcher
33	3	345701	57 25.46	134 41.62	57 26.80	134 41.55	532	567	Distant Point Middle
35	3	345731	57 31.02	134 42.07	57 32.64	134 42.07	604	457	N. Danger Point
37	3	345731	57 32.31	134 45.21	57 33.83	134 45.14	583	633	White Rock Middle
39	3	345731	57 34.73	134 42.22	57 35.91	134 43.56	419	452	Parker Point
41	3	345731	57 41.43	134 50.34	57 41.65	134 52.54	549	576	Basket Bay
42	3	345731	57 42.66	134 52.91	57 43.91	134 53.10	578	538	S. Passage Point South
43	3	345731	57 44.43	134 45.78	57 45.74	134 45.97	475	472	S. Fishery Creek
44	3	345731	57 44.88	134 48.76	57 46.26	134 48.76	507	507	S. Passage Point Middle
45	3	345731	57 45.91	134 50.19	57 47.35	134 50.12	550	527	S. Passage Point
46	3	345731	57 48.31	134 48.64	57 49.78	134 48.87	486	446	Fishery Point
47	3	345731	57 50.78	134 45.96	57 52.10	134 46.22	485	446	N. Fishery Point
51	3	345731	57 55.15	134 47.80	57 56.49	134 48.12	554	430	Point Hepburn

Table 4.–Station catch per unit effort (CPUE; sablefish per hook) and average sablefish weight (kg) from the 2021 to 2023 Northern Southeast Inside (NSEI) Subdistrict longline surveys.

		2021		2022		2023		Average	
Trip	Station number	Sablefish per hook	Average weight (kg)	Sablefish per hook	Average weight (kg)	Sablefish per hook	Average weight (kg)	Sablefish per hook	Average weight (kg)
1	1	0.53	2.6	0.60	3.0	0.46	2.8	0.53	2.8
1	3	–	2.3	0.51	2.7	0.44	2.8	0.47	2.6
1	4	0.44	1.9	0.54	2.0	0.51	1.6	0.51	1.8
1	5	0.52	2.2	0.38	2.5	0.48	1.7	0.46	2.1
1	6	0.62	2.5	0.58	2.7	0.52	2.8	0.57	2.7
1	7	0.53	2.7	0.46	2.7	0.51	2.6	0.50	2.6
1	8	0.28	1.9	0.48	2.1	0.50	2.3	0.42	2.1
1	52	0.49	2.7	0.54	2.4	0.52	2.6	0.52	2.6
1	53	–	1.9	0.52	2.1	0.56	2.6	0.54	2.2
1	54	0.44	2.5	0.43	2.4	0.40	2.4	0.42	2.4
1	55	–	–	0.55	2.0	0.51	1.9	0.53	1.9
1	56	0.54	2.5	0.54	2.4	0.58	2.3	0.56	2.4
1	57	–	–	0.61	2.2	0.45	2.5	0.53	2.4
1	58	–	–	0.51	2.8	0.48	2.9	0.49	2.8
2	9	0.52	2.5	0.59	2.6	0.53	2.1	0.55	2.4
2	10	0.43	2.1	0.58	2.4	0.38	3.0	0.46	2.5
2	13	0.50	2.2	0.67	2.0	0.53	1.9	0.57	2.1
2	15	0.49	2.6	0.65	2.3	0.52	2.2	0.55	2.4
2	16	0.51	2.4	0.64	2.3	0.52	2.5	0.56	2.4
2	18	0.49	2.4	0.55	2.3	0.44	2.6	0.49	2.4
2	19	0.45	3.2	0.56	2.3	0.42	2.4	0.48	2.7
2	21	0.42	2.5	0.57	2.5	0.54	2.5	0.51	2.5
2	22	0.41	2.1	0.53	2.4	0.48	2.3	0.47	2.3
2	23	0.32	2.6	0.41	2.8	0.33	2.3	0.35	2.6
2	24	0.29	2.8	–	3.0	0.34	2.5	0.32	2.8
2	25	0.43	2.6	–	2.8	0.43	3.0	0.43	2.8
2	27	0.36	2.0	–	2.5	0.44	2.5	0.40	2.4
2	28	0.29	2.6	–	2.9	0.30	2.6	0.29	2.7
3	30	0.56	2.2	0.36	2.2	0.43	3.1	0.45	2.4
3	32	0.53	2.1	0.44	2.2	0.44	2.4	0.47	2.2
3	33	0.57	2.0	0.63	2.2	0.55	2.1	0.58	2.1

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Table 4.–Page 2 of 2.

Trip	Station number	2021 Sablefish per hook	2021 Average weight (kg)	2022 Sablefish per hook	2022 Average weight (kg)	2023 Sablefish per hook	2023 Average weight (kg)	Average Sablefish per hook	Average Average weight (kg)
3	35	0.58	2.0	0.49	2.2	0.56	2.0	0.54	2.1
3	37	0.57	1.9	0.46	2.0	0.60	1.7	0.54	1.9
3	39	0.49	2.4	0.43	2.4	0.35	2.9	0.43	2.5
3	41	0.54	2.7	0.43	2.6	0.47	2.4	0.48	2.6
3	42	0.52	2.1	0.31	2.3	0.35	2.0	0.39	2.1
3	43	0.46	3.0	0.49	2.4	0.48	2.5	0.48	2.6
3	44	0.47	2.2	0.49	2.3	0.38	2.1	0.44	2.2
3	45	0.55	2.1	0.38	2.0	0.45	2.3	0.46	2.2
3	46	0.61	2.1	0.61	2.6	0.44	2.6	0.55	2.4
3	47	0.57	2.3	0.54	2.5	0.35	2.7	0.48	2.5
3	51	0.45	2.5	0.60	2.6	0.50	2.6	0.52	2.6
Year averages		0.48	2.3	0.52	2.4	0.46	2.4	0.49	2.4

Note: En dashes indicate data invalidated due to whale depredation.

FIGURES

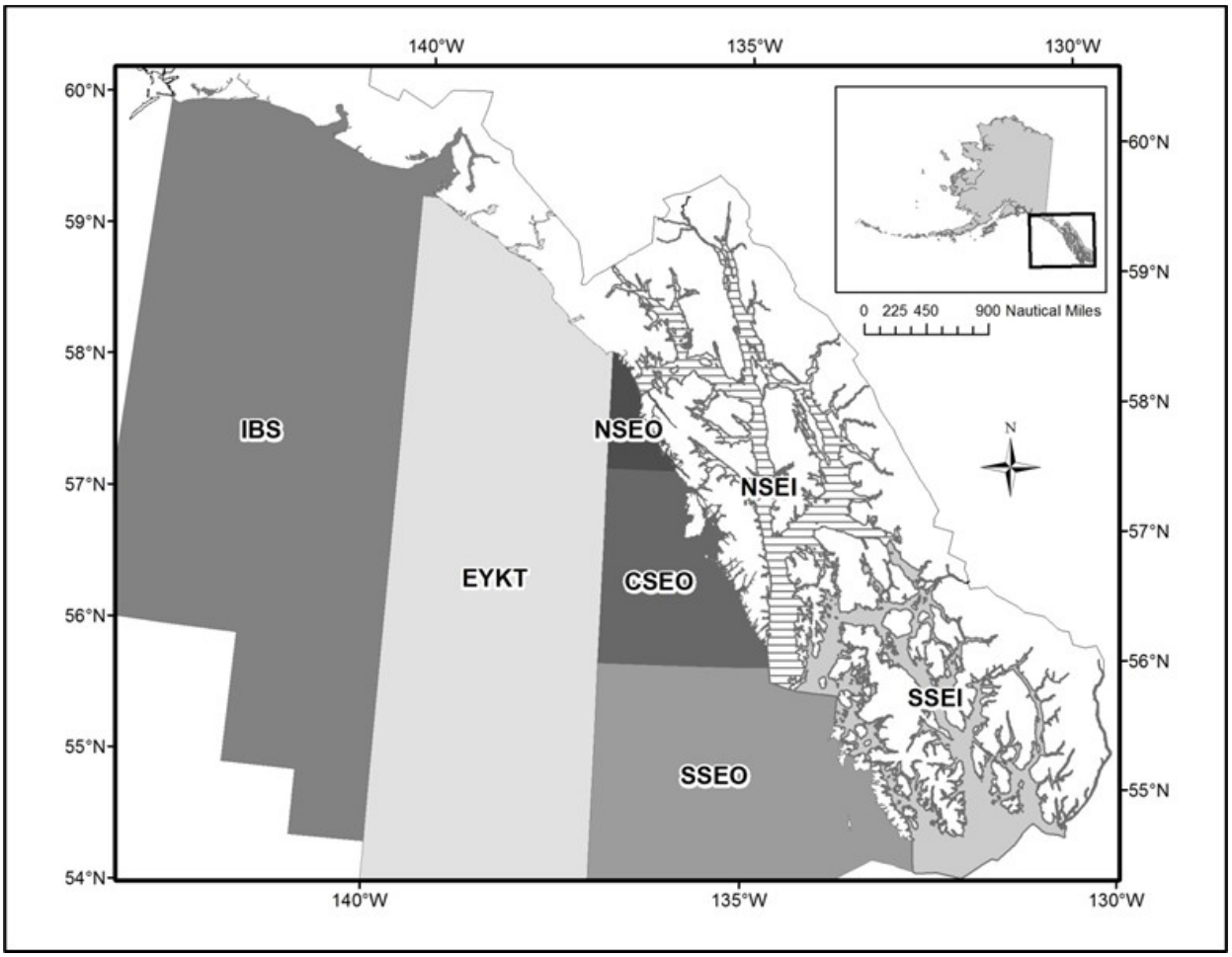


Figure 1.–Southeast District groundfish management area boundaries in Southeast Alaska waters excluding lingcod and black rockfish: Icy Bay Subdistrict (IBS), East Yakutat (EYKT) Section, Northern Southeast Outside (NSEO) Section, Central Southeast Outside (CSEO) Section, Southern Southeast Outside (SSEO) Section, Northern Southeast Inside (NSEI) Subdistrict and Southern Southeast Inside (SSEI) Subdistrict.

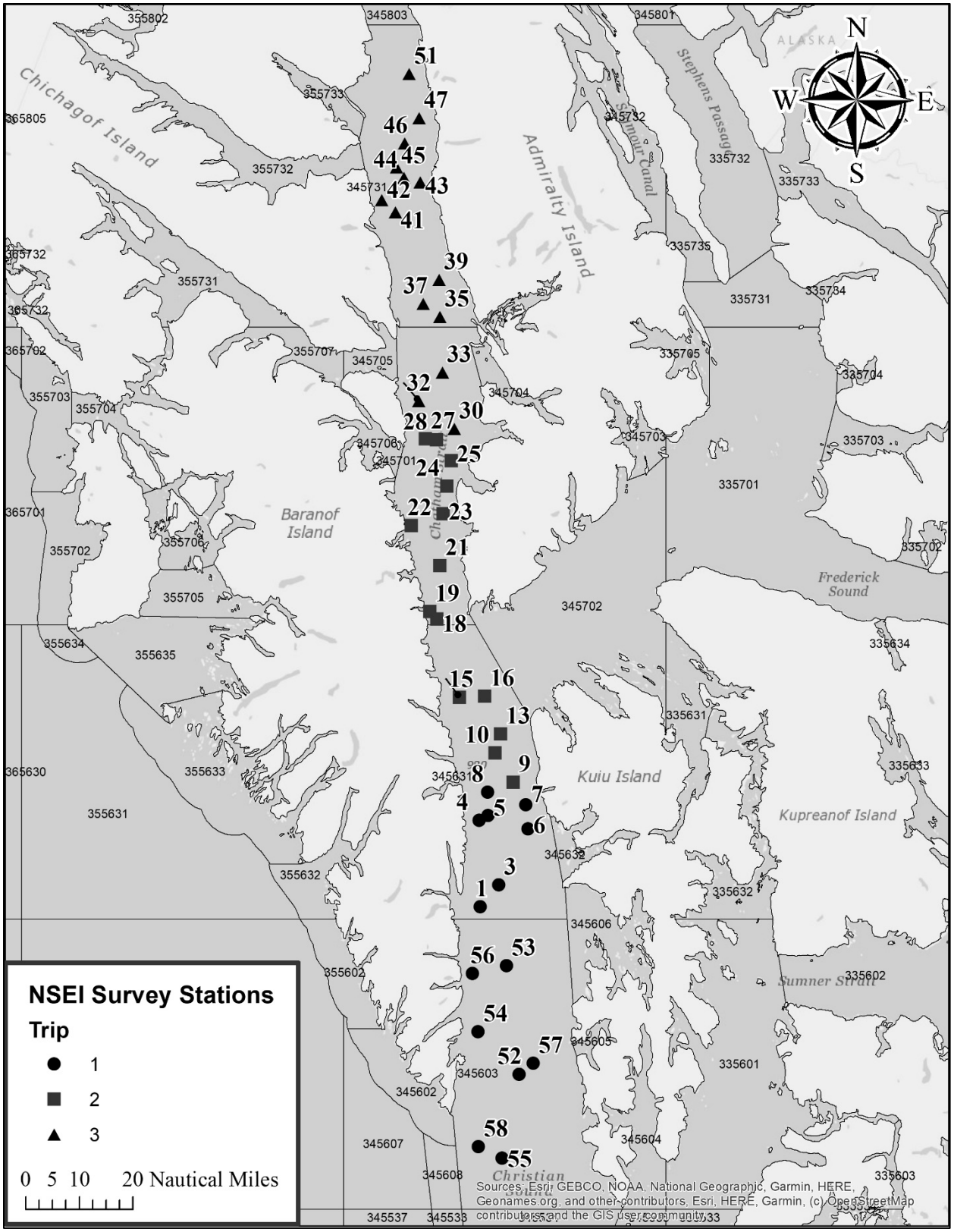


Figure 2.–Northern Southeast Inside (NSEI) Subdistrict survey stations by trip.

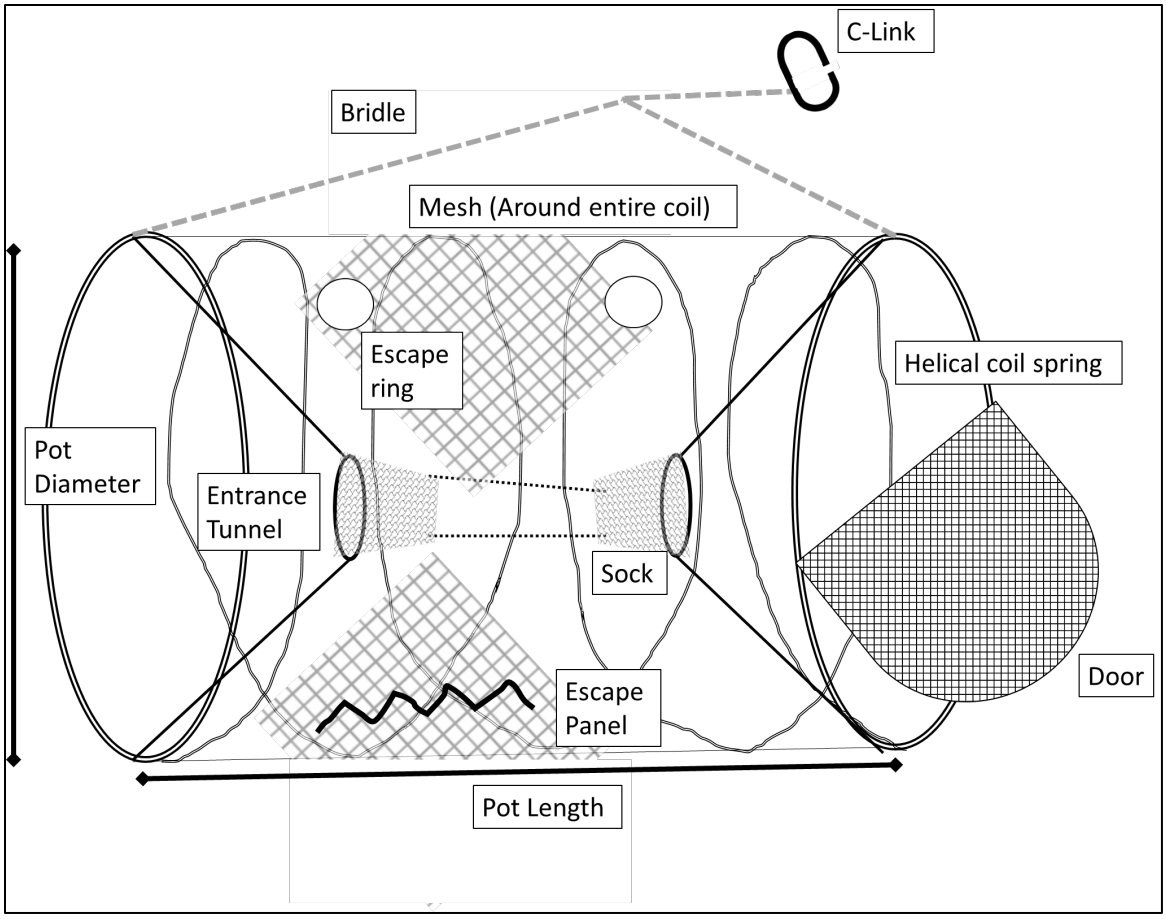


Figure 3.–Diagram of a slinky pot configuration. The escape rings on the study pots were closed with zip ties. Pot length represents the length when pot is fully expanded.

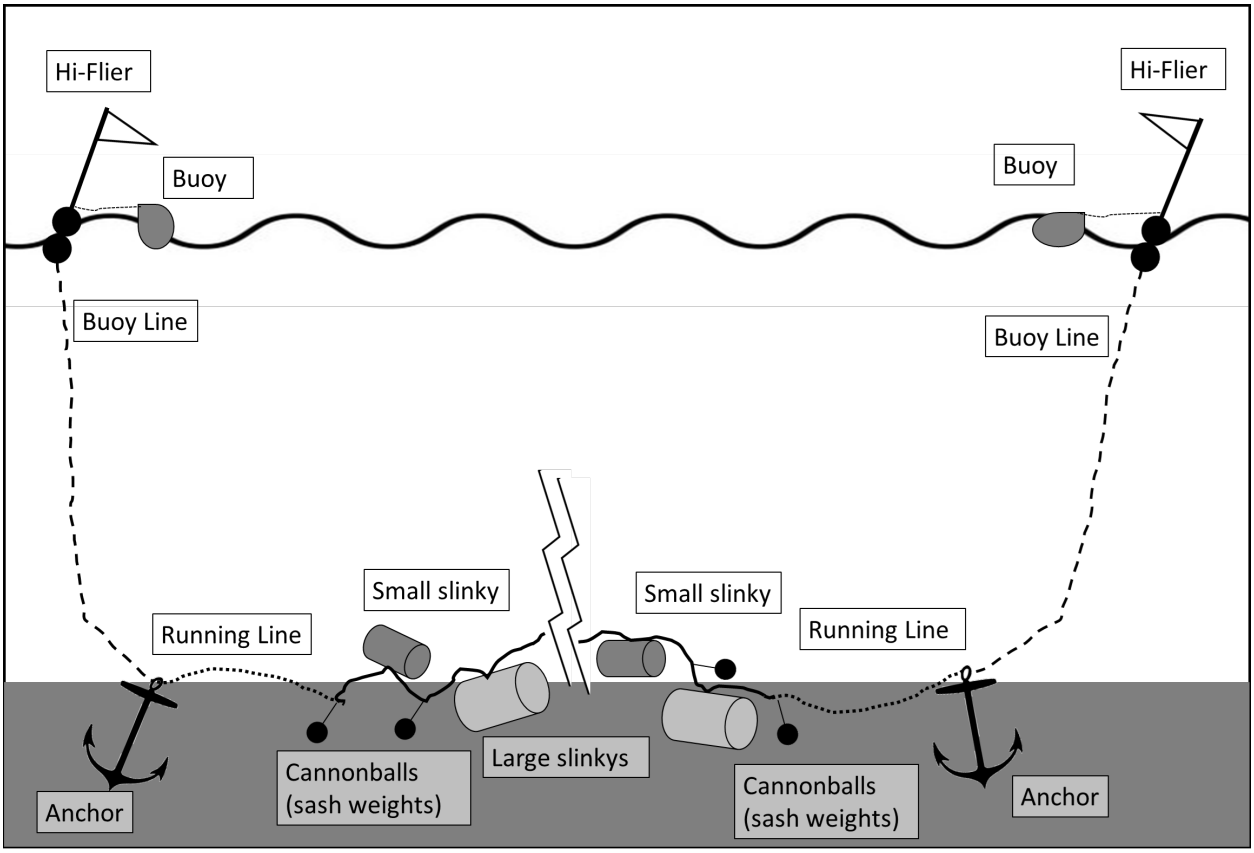


Figure 4.–Slinky pot set configuration. The buoy line is variable in length dependent upon water depth but is most often around 600 meters. There is 183 m of running line between the anchor and start of groundline with beckets at each end. The pots and weights are attached to fixed beckets on the groundline that are each spaced 27 meters apart.

Figure 5.–Eastern cut sablefish.

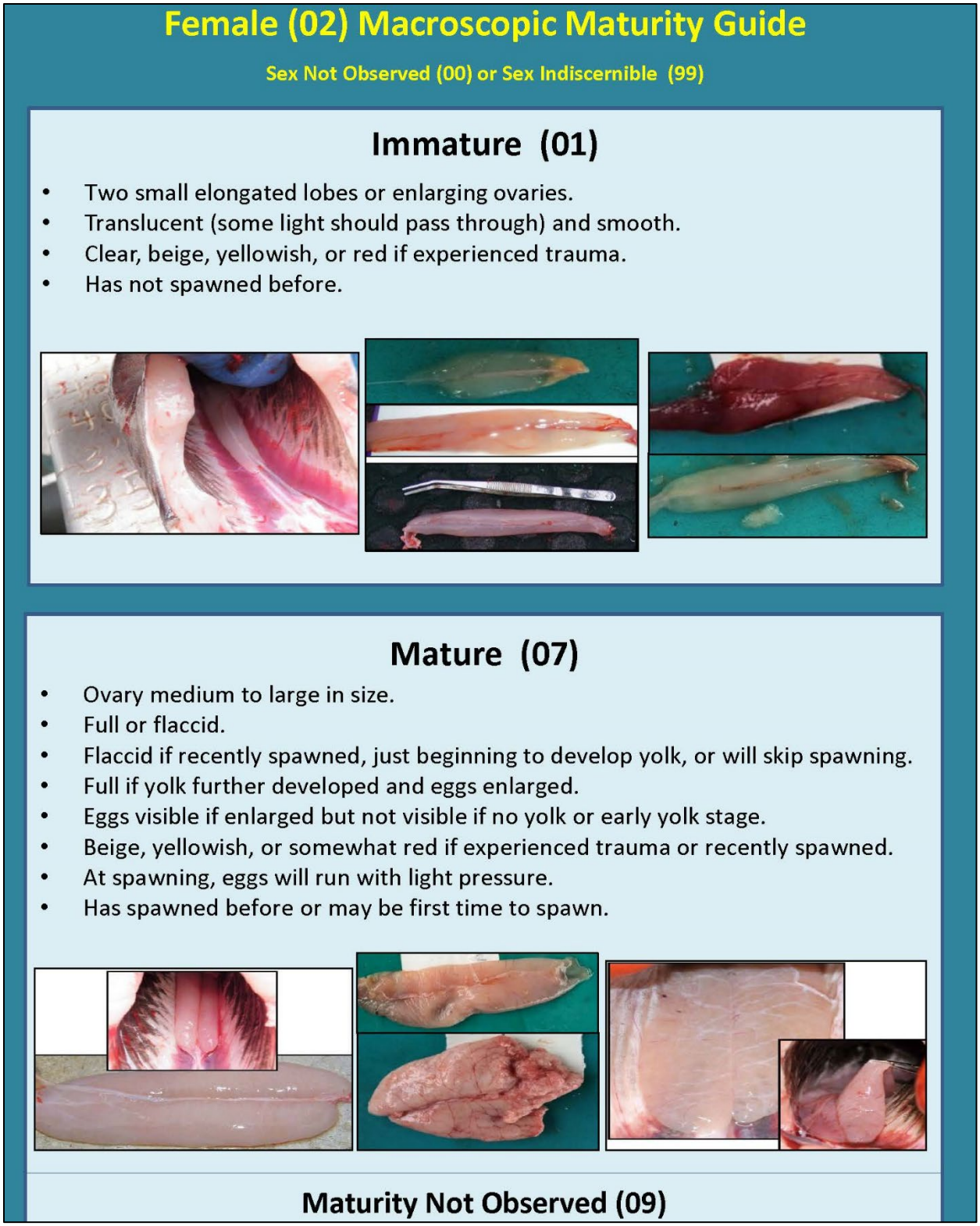


Figure 6.–Female sablefish macroscopic maturity guide.

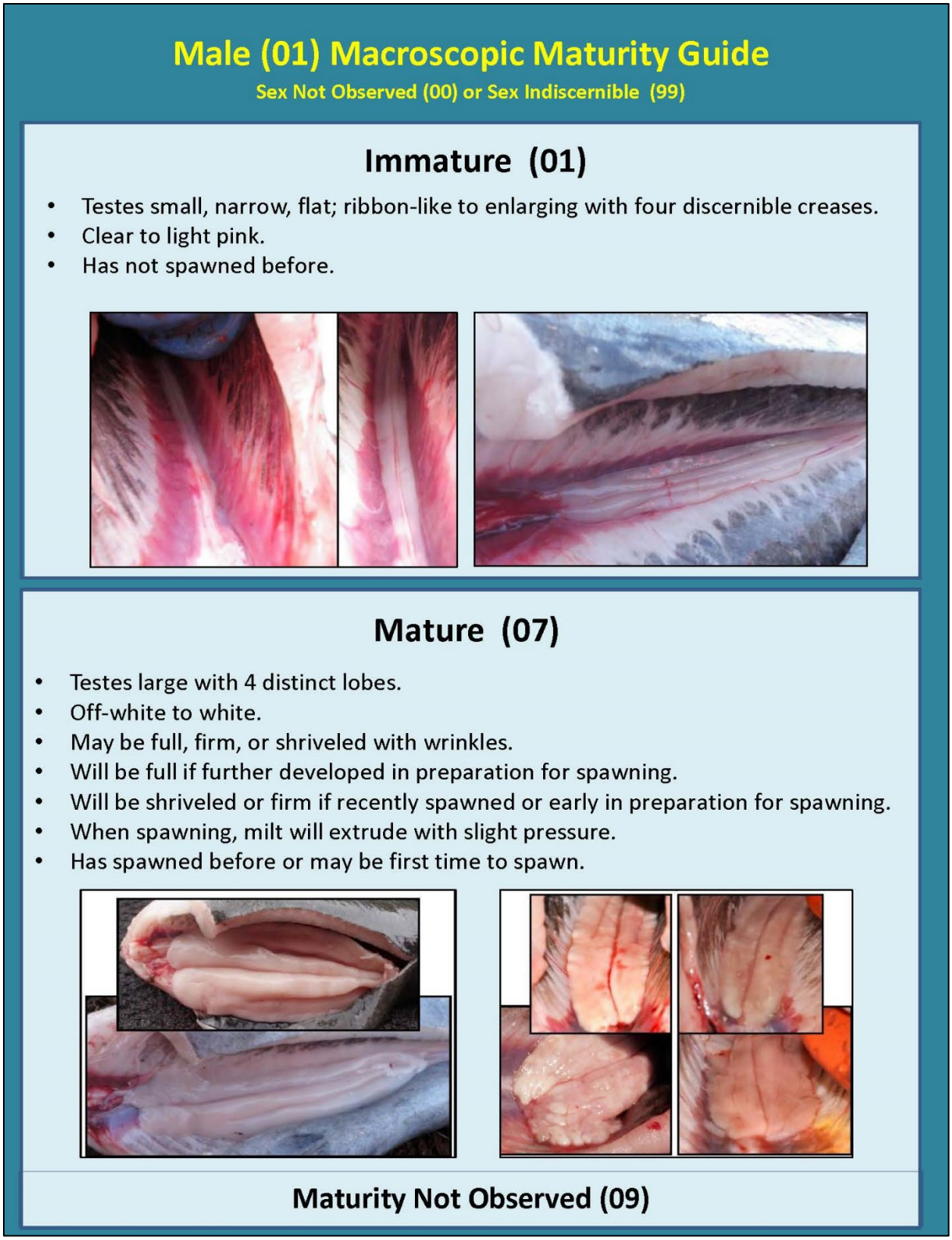


Figure 7.–Male sablefish macroscopic maturity guide.

APPENDICES

Appendix A.–Vessel information form.

NSEI SURVEY VESSEL INFORMATION FORM

Year: _____ **Vessel:** _____ **Trip #:** _____

Departure Port, Date and Time: _____

Return to Port, Date and Time: _____

Vessel hold type: ICE SLUSH RSW

ADF&G crew: _____

Skipper and crew: _____ _____

_____ _____

_____ _____

Amount of bait taken: _____ bags @ _____ lbs/bag= _____lbs

Number of sets: _____

Amount of bait left over: _____ bags @ _____ lbs/bag= _____lbs

Processor/tender name: _____

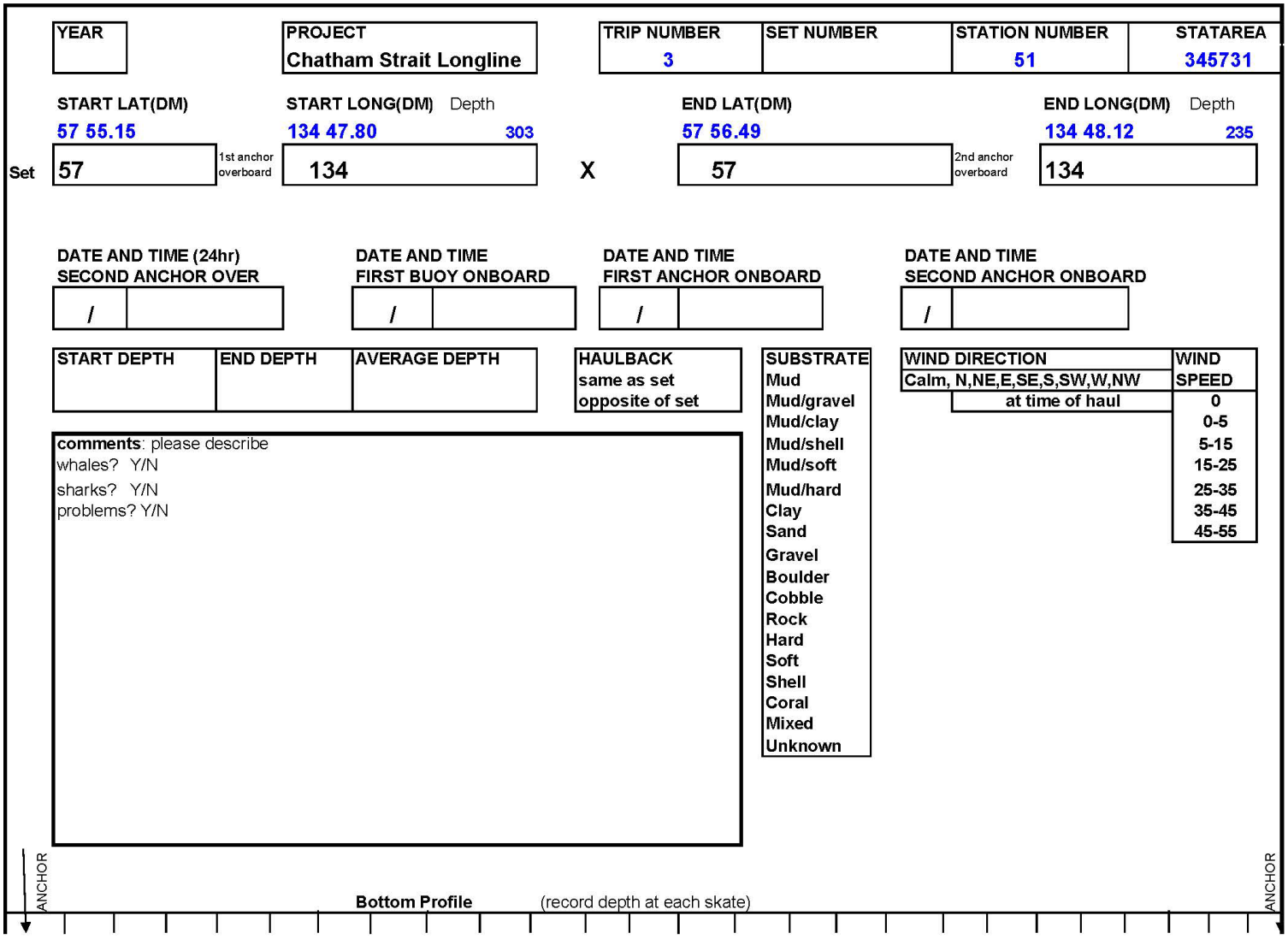
Location, date, and time of 1st delivery: _____

Est. time to unload: _____

Location, date, and time of 2nd delivery: _____

Est. time to unload: _____

Appendix B.–Survey set form for longline vessels.



YEAR	PROJECT	TRIP NUMBER	SET NUMBER	STATION NUMBER	STATAREA
	Chatham Strait Longline	3		51	345731

	START LAT(DM)	START LONG(DM) Depth		END LAT(DM)	END LONG(DM) Depth
	57 55.15	134 47.80 303		57 56.49	134 48.12 235
Set	57 (1st anchor overboard)	134	X	57 (2nd anchor overboard)	134

DATE AND TIME (24hr) SECOND ANCHOR OVER	DATE AND TIME FIRST BUOY ONBOARD	DATE AND TIME FIRST ANCHOR ONBOARD	DATE AND TIME SECOND ANCHOR ONBOARD
/	/	/	/

START DEPTH	END DEPTH	AVERAGE DEPTH

HAULBACK: same as set / opposite of set

comments: please describe
whales? Y/N
sharks? Y/N
problems? Y/N

SUBSTRATE
Mud
Mud/gravel
Mud/clay
Mud/shell
Mud/soft
Mud/hard
Clay
Sand
Gravel
Boulder
Cobble
Rock
Hard
Soft
Shell
Coral
Mixed
Unknown

WIND DIRECTION	WIND SPEED
Calm, N,NE,E,SE,S,SW,W,NW	
at time of haul	0
	0-5
	5-15
	15-25
	25-35
	35-45
	45-55

ANCHOR — **Bottom Profile** (record depth at each skate) — ANCHOR

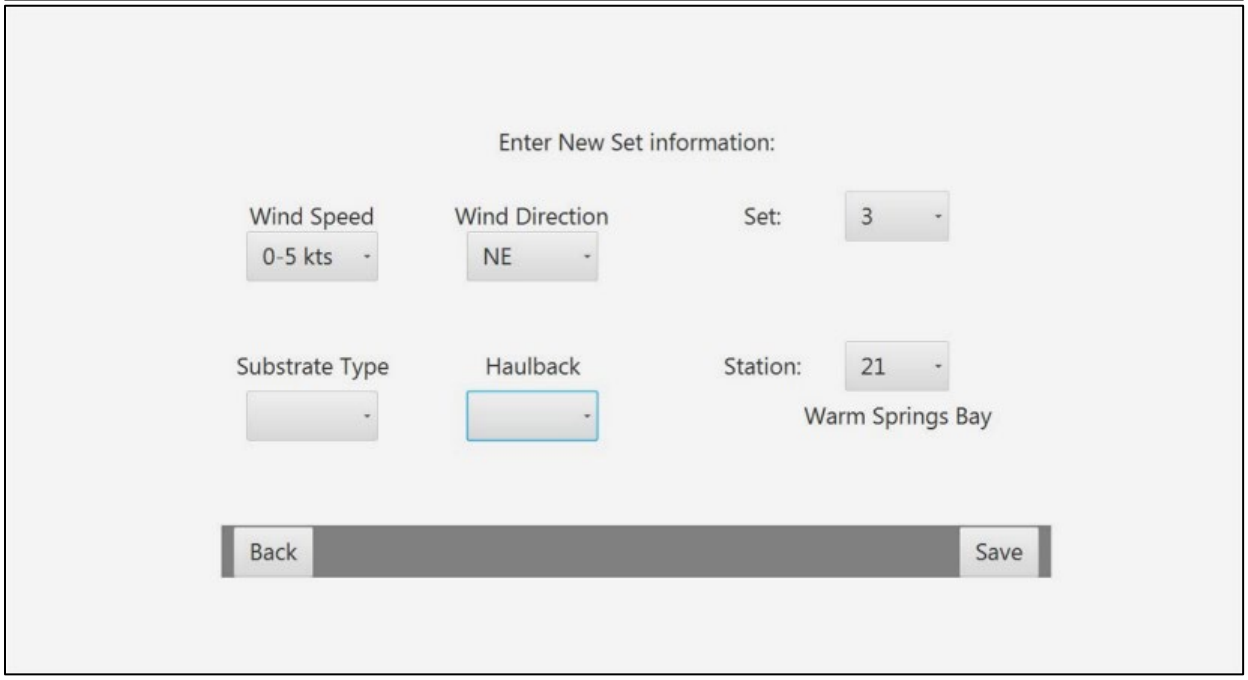
Appendix C.–Daily log form.

Vessel Information Form- Daily Log

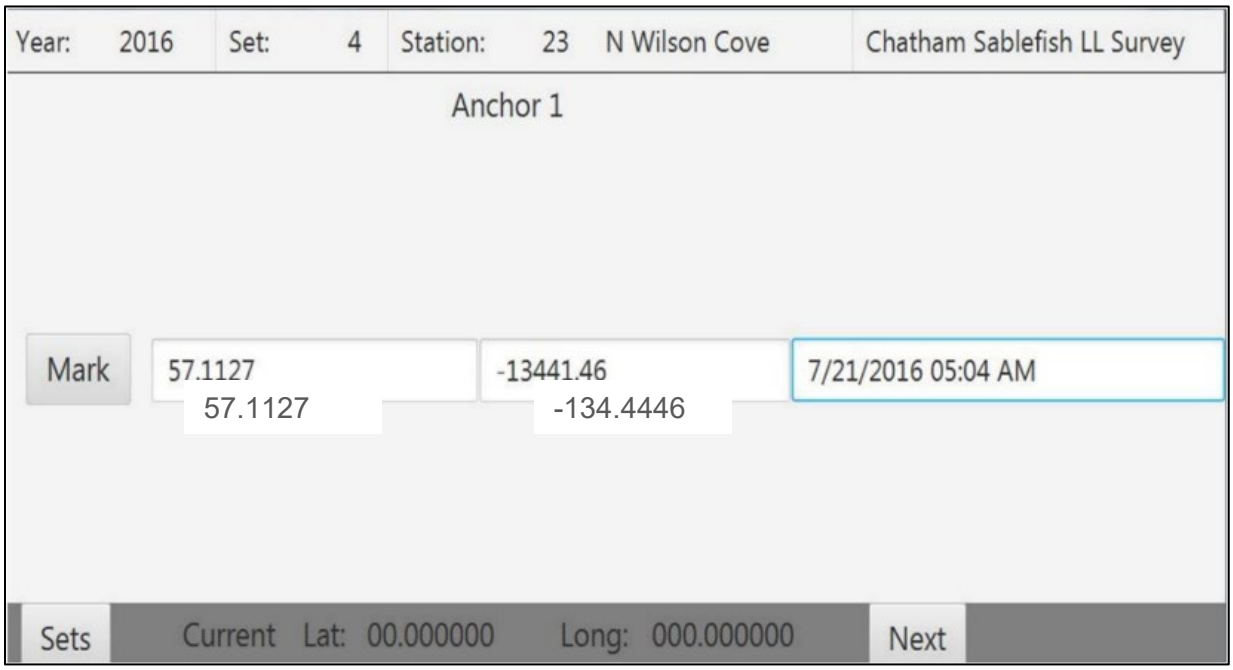
Document pertinent information including problems encountered, factors on CPUE, events, skipper comments, ideas for the future, etc

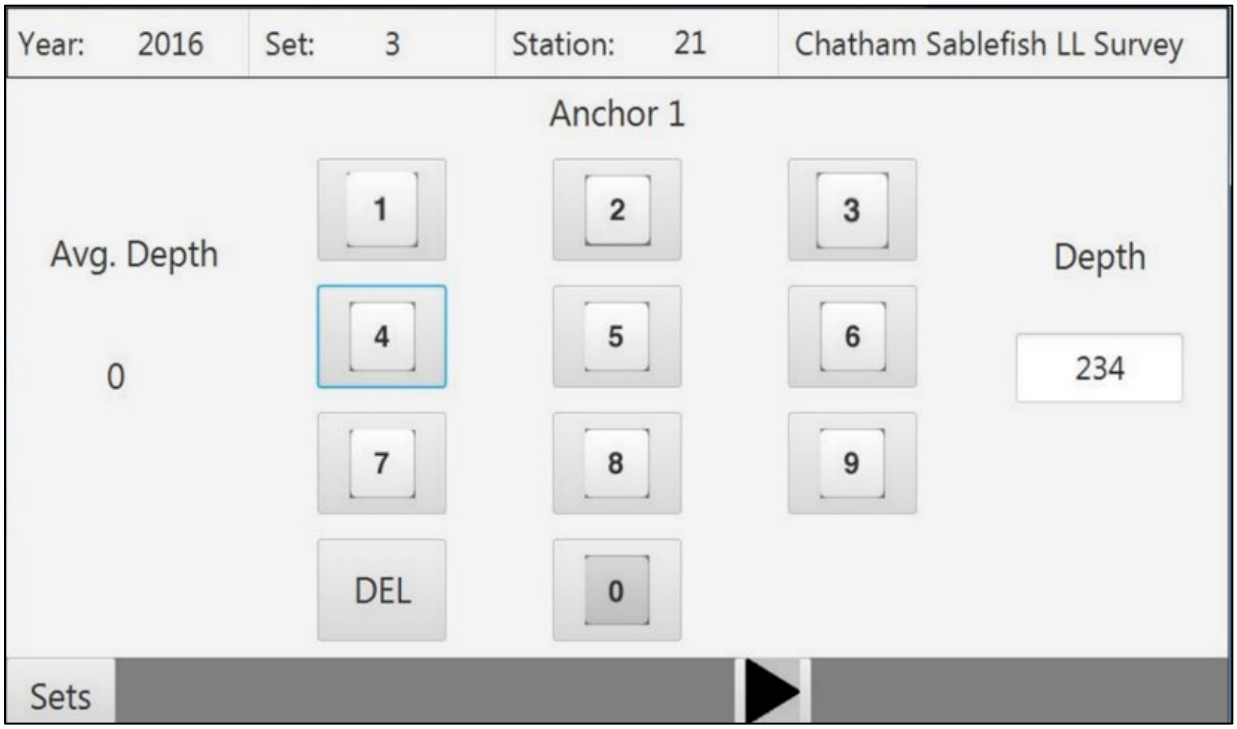
Year: _____ **Survey:** _____ **Trip #:** _____

Appendix D.–At-Sea Electronic Sampling (ACES) main application screen and set information screen.

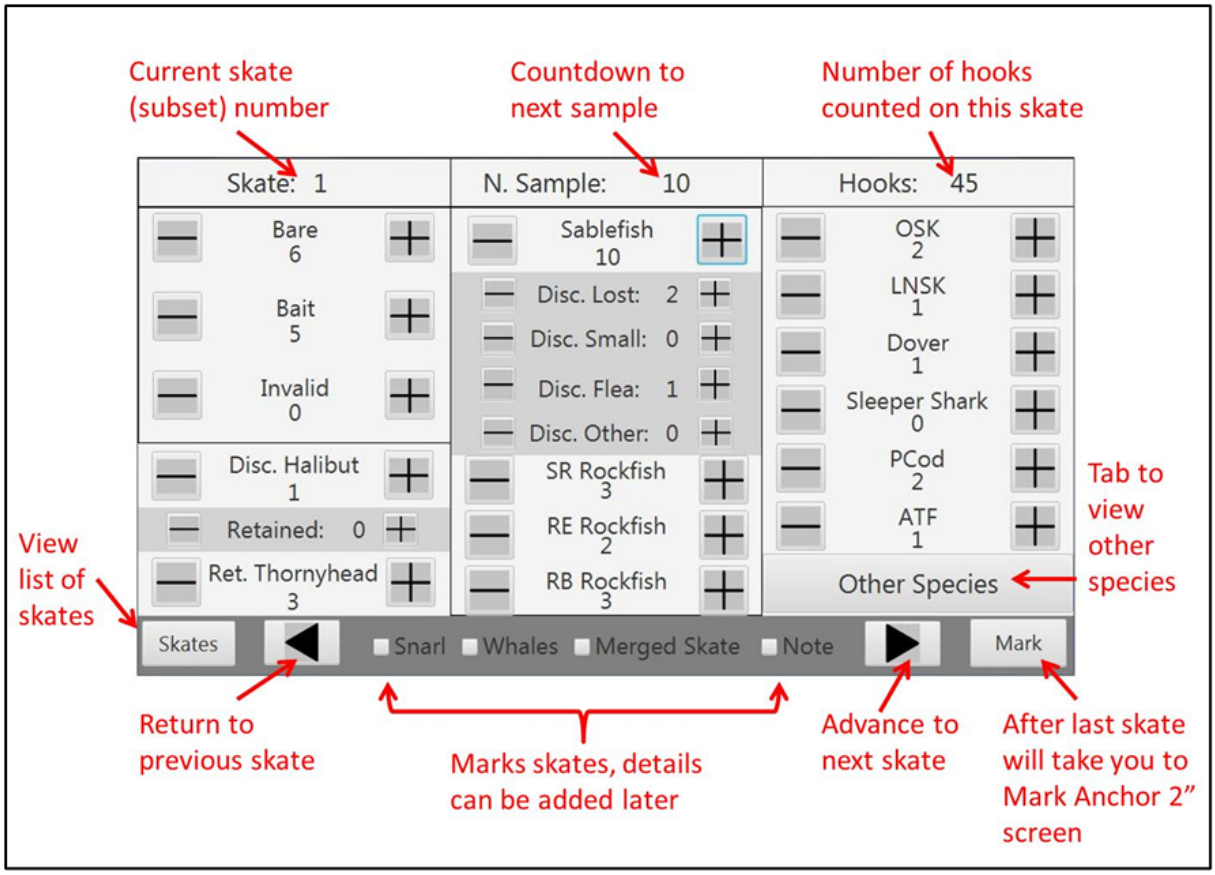


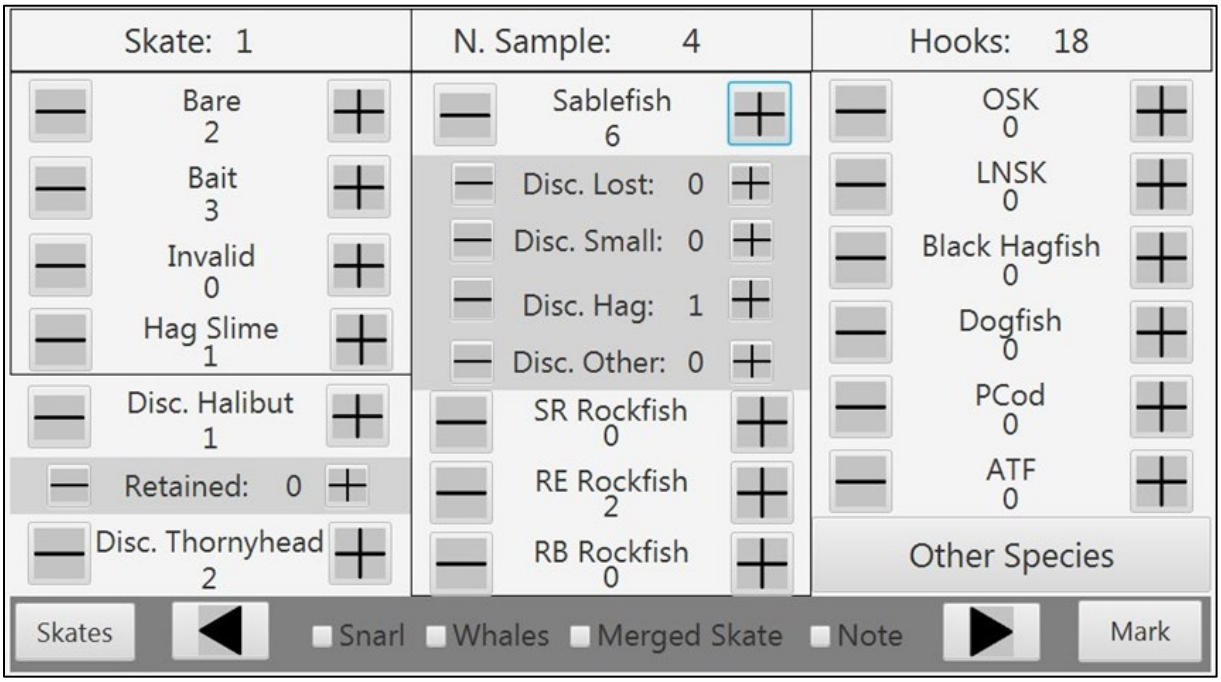
Appendix E.–At-Sea Electronic Sampling (ACES) coordinate and time screen and first anchor depth screen.





Appendix F.–Annotated At-Sea Electronic Sampling (ACES) hook accounting and species screen.





Appendix G.–Hook accounting paper form.

HOOK ACCOUNTING Date: ________ 20___ Observer___

Year: 20_____ Project: CHATHAM STRAIT LL Sablefish Survey Trip:______Set______Station_____

1st Buoy:time:________ 1st Anchor:time:__________substrate________ 2nd Anchor:time_________substrate_______

SUBSET		Bare(1): Invalids(3):
#		Bait(2):
		(710) Sable(1): Discard whale (23) or (24):
		Lost(4): Small(3): Disc. Flea(10): Disc. Shark(11): Disc. Gen(2):
		(143) Thornyhead: Retained (1): Disc. Gen(2): (121) ATF: (124) Dover:
		(200) Halibut: Discard Healthy(7): Retained(1): (899) Coral:
		Rockfish (151) RE: (152) SR: (153) RB: (213) Grenadier:
VALID		(700) OSK: (701) LNSK: (692) Pacific Sleeper: (110) Pcod:
Y or N		TOTAL _______ sperm / orca whales present
		______ hook snarl w/: ______ hook snarl w/:
		Rebites on other fish (species and number):
SUBSET		Bare(1): Invalids(3):
#		Bait(2):
		(710) Sable(1): Discard whale (23) or (24):
		Lost(4): Small(3): Disc. Flea(10): Disc. Shark(11): Disc. Gen(2):
		(143) Thornyhead: Retained (1): Disc. Gen(2): (121) ATF: (124) Dover:
		(200) Halibut: Discard Healthy(7): Retained(1): (899) Coral:
		Rockfish (151) RE: (152) SR: (153) RB: (213) Grenadier:
VALID		(700) OSK: (701) LNSK: (692) Pacific Sleeper: (110) Pcod:
Y or N		TOTAL _______ sperm / orca whales present
		______ hook snarl w/: ______ hook snarl w/:
		Rebites on other fish (species and number):
SUBSET		Bare(1): Invalids(3):
#		Bait(2):
		(710) Sable(1): Discard whale (23) or (24):
		Lost(4): Small(3): Disc. Flea(10): Disc. Shark(11): Disc. Gen(2):
		(143) Thornyhead: Retained (1): Disc. Gen(2): (121) ATF: (124) Dover:
		(200) Halibut: Discard Healthy(7): Retained(1): (899) Coral:
		Rockfish (151) RE: (152) SR: (153) RB: (213) Grenadier:
VALID		(700) OSK: (701) LNSK: (692) Pacific Sleeper: (110) Pcod:
Y or N		TOTAL _______ sperm / orca whales present
		______ hook snarl w/: ______ hook snarl w/:
		Rebites on other fish (species and number):
SUBSET		Bare(1): Invalids(3):
#		Bait(2):
		(710) Sable(1): Discard whale (23) or (24):
		Lost(4): Small(3): Disc. Flea(10): Disc. Shark(11): Disc. Gen(2):
		(143) Thornyhead: Retained (1): Disc. Gen(2): (121) ATF: (124) Dover:
		(200) Halibut: Discard Healthy(7): Retained(1): (899) Coral:
		Rockfish (151) RE: (152) SR: (153) RB: (213) Grenadier:
VALID		(700) OSK: (701) LNSK: (692) Pacific Sleeper: (110) Pcod:
Y or N		TOTAL _______ sperm / orca whales present
		______ hook snarl w/: ______ hook snarl w/:
		Rebites on other fish (species and number):
SUBSET		Bare(1): Invalids(3):
#		Bait(2):
		(710) Sable(1): Discard whale (23) or (24):
		Lost(4): Small(3): Disc. Flea(10): Disc. Shark(11): Disc. Gen(2):
		(143) Thornyhead: Retained (1): Disc. Gen(2): (121) ATF: (124) Dover:
		(200) Halibut: Discard Healthy(7): Retained(1): (899) Coral:
		Rockfish (151) RE: (152) SR: (153) RB: (213) Grenadier:
VALID		(700) OSK: (701) LNSK: (692) Pacific Sleeper: (110) Pcod:
Y or N		TOTAL _______ sperm / orca whales present
		______ hook snarl w/: ______ hook snarl w/:
		Rebites on other fish (species and number):

Appendix H.–Hook conditions and dispositions assigned as the hook breaks the water surface.

HOOK CONDITION	DESCRIPTION
Bare	a clean bare hook that appears to be in good condition
Bait	bait is attached to a hook
Invalid	hook that is bent or hooked to another hook, or within a snarl of other hooks, or is missing as the gangion breaks the surface; hook with kelp, rock, stick, shell, old longline gear, or other debris
Hag slime	hook with any sign of hagfish slime
Halibut	hook with a halibut attached
Discard	hook with a halibut discarded
Retained	hook with a halibut retained
Discard thornyhead	hook with a thornyhead discarded
Sablefish	hook with a sablefish attached and fish is landed on deck and retained
Discard lost	hook with a sablefish and fish escapes before being landed on deck
Discard small	hook with a sablefish attached less than 45 cm (18 in); gently discarded at sea
Discard hagfish	hook with a sablefish attached but too damaged to be marketable; discarded at sea
Discard other	hook with a sablefish attached but not marketable (e.g., fish wrapped or cut in half by groundline, damaged by fleas, whales, or another scenario that made the fish unmarketable); discarded at sea Note: during data verification, edit to the appropriate discard status
Shortraker (SR)	hook with a shortraker rockfish
Rougheye (RE)	hook with a rougheye rockfish
Redbanded (RB)	hook with a redbanded rockfish
Longnose skate (LNSK)	hook with a longnose skate
Other skate (OSK)	hook with a different skate species (not longnose)
Black hagfish	hook with a black hagfish
Dogfish	hook with a dogfish
Pacific cod (Pcod)	hook with a Pacific cod
Arrowtooth flounder (ATF)	hook with an arrowtooth flounder
Other species	hook with a species on the Other Species tab in ACES
Ratfish	hook with a ratfish
Dover	hook with a dover
Coral	a hook returning with a coral attached Note: during data finalization, edit to appropriate coral: red tree or general coral
Sleeper shark	hook with a Pacific sleeper shark

-continued-

HOOK CONDITION	DESCRIPTION
Pollock	hook with a pollock
Lingcod	hook with a lingcod
Golden king crab	hook with a golden king crab
Grenadier	hook with a grenadier
Octopus	hook with an octopus
Yellowtail	hook with a yellowtail
Pacific hake	hook with a pacific hake
Other fish/crab	hook with any other species of fish or crab

Appendix I.–Vessel summary form.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Date	Sta #	Set	Lost & discards & (Discard only)	Invalid sablefish (from **invalid** skates only)	Total sablefish for cpue (includes retained, lost and discards from **valid** skates only)	Total hooks for cpue: use 45 hooks X number of **valid skates** (1125 hks if all subsets valid)	CPUE fish/hook (F/G)	CPUE fish/hook **last year**	Number of sablefish on board (includes invalids but not lost or discards) (F-D)+E	Avg kg	Avg rnd lbs (K*2.2)	Avg rnd lbs **last year**	Total rnd lbs for set (J*L)	Cumulative rnd lbs on board	Rnd lbs discarded (discard only *L)	Stat area
			( )													
			( )													
			( )													
			( )													
			( )													
			( )													
			( )													
			( )													
			( )													
	Date of Landing				Landed weight				Statarea %							

SABLEFISH POT SURVEY **SET FORM** DATE_____

YEAR	PROJECT	TRIP NUMBER	SET #	STATION #	STATAREA
2024	CHATHAM POT SURVEY	1			

POT TYPE	START LAT(decimal minutes)	START LONG(decimal minutes)		END LAT(decimal minutes)	END LONG(decimal minutes)
Mixed Slinky			X		

DATE AND (military)TIME SECOND ANCHOR OVERBOARD	DATE AND TIME FIRST ANCHOR ONBOARD	DATE AND TIME SECOND ANCHOR ONBOARD	# OF POTS SET	# OF POT RETRIEVED

START DEPTH*	END DEPTH*	AVERAGE DEPTH*	BAIT
			Squid

* Does not include anchor depths

Comments:

total # of sablefish
retained
discarded

SUBSTRATE
Mud
Mud/gravel
Mud/clay
Mud/shell
Mud/soft
Mud/hard
Clay
Sand
Gravel
Boulder
Cobble
Rock
Hard
Soft
Shell
Coral
Mixed
Unknown

HAULBACK
same as set
opposite of set

WIND DIRECTION
Calm
N
NE
E
SE
S
SW
W
NW

WIND SPEED
0
0-5
5-15
15-25
25-35
35-45
45-55

SEAS

Note weather both set and hauled

ANCHOR 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 ANCHOR

(Bottom Profile--record depth for each pot set)

Appendix K.–Pot tally form.

Pot Tally Form

Year: _____ Trip: _____ Haul Direction (circle one):

Set #: _____ Date: _____ Same Opposite

Haul Information		Time	Weather, seas, substrate (from anchors), comments
Start	1st Buoy		
	1st Anchor		
End	2nd Anchor		
	2nd Buoy		

		SABLEFISH					ROCKFISH					OTHER				
Pot #	Size	Sablefish Retained	Discarded (Small)	Discarded (Hagfish)	Discarded (Other)	Lost	TH (143)	RE (151)	SR (152)	RB (153)	Other rockfish	Halibut (Alive)	Halibut (Dead)	ATF (121)	Dover (124)	Other bycatch
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
Totals:																

Pot Tally Form

Year: _____ Trip: _____ Haul Direction (circle one):

Set #: _____ Date: _____ Same Opposite

Haul Information		Time	Weather, seas, substrate (from anchors), comments
Start	1st Buoy		
	1st Anchor		
End	2nd Anchor		
	2nd Buoy		

		SABLEFISH					ROCKFISH					OTHER				
Pot #	Size	Sablefish Retained	Discarded (Small)	Discarded (Hagfish)	Discarded (Other)	Lost	TH (143)	RE (151)	SR (152)	RB (153)	Other rockfish	Halibut (Alive)	Halibut (Dead)	ATF (121)	Dover (124)	Other bycatch
16																
17																
18																
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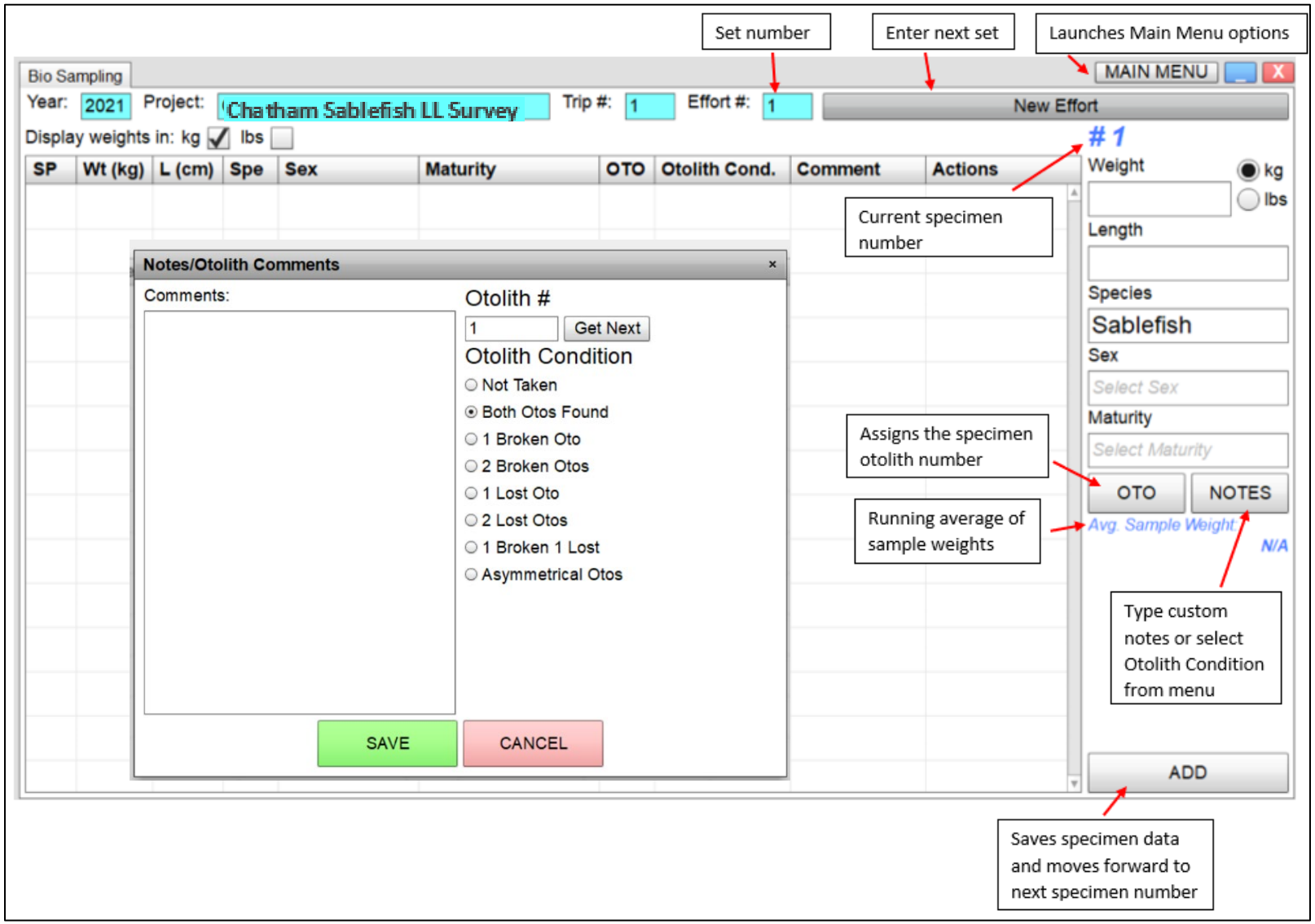
30																
Totals:																

Appendix L.–Annotated main screen for Groundfish at-sea survey sampling application showing notes/otolith comments pop-up window.



Appendix M.–Biological Data Collection Form.

BIOLOGICAL DATA COLLECTION FORM

Date: ____________ 2021 Set_____

SABLEFISH SAMPLING Station______

YEAR: 2021 PROJECT: <u>Chatham Strait Sablefish Survey</u> TRIP NO.:_____

Note: Sablefish Oto # begins with 1 and continues sequentially for the entire trip.
Each set starts with Alex (specimen) # 1 and is numbered consecutively including all species for that set.

Alex #	Species	LENGTH-MM (nearest 10 mm)	WT-KGS (tenths)	SEX	MAT	Oto #	AGE	RI	COMMENTS	Alex #	sable lengths
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Sampler Recorder

Appendix N.–Pot survey biological sampling form.

BIOLOGICAL DATA COLLECTION FORM

YEAR: 2024 PROJECT: Chatham Strait Sablefish Pot Survey TRIP #: 1

SABLEFISH SAMPLING Date: ____________ Set: _____ Station: ______

Sablefish Oto # begins with 1 and continues sequentially for the entire trip.
Each set starts with specimen # 1 and is numbered consecutively including all species for that set.
Collect 1 full biological sample and 4 additional length-only samples per pot

Pot #	Pot Size	Species	Specimen #	Length cm (nearest cm)	Weight kg (round to tenth)	Sex	Maturity	Oto #	Comments
		710			.				
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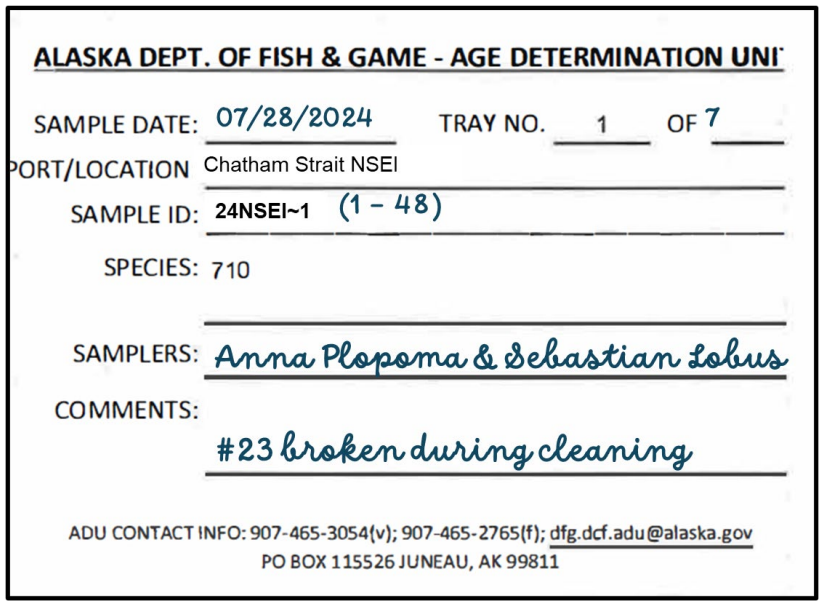
Sampler_______________ Recorder______________

Appendix O.–Example of 48-cell sablefish otolith tray label (front and back) and information written on front of completed 48-cell sablefish otolith tray.


ALASKA DEPT. OF FISH & GAME - AGE DETERMINATION UNI

SAMPLE DATE: 07/28/2024 TRAY NO. 1 OF 7

PORT/LOCATION Chatham Strait NSEI

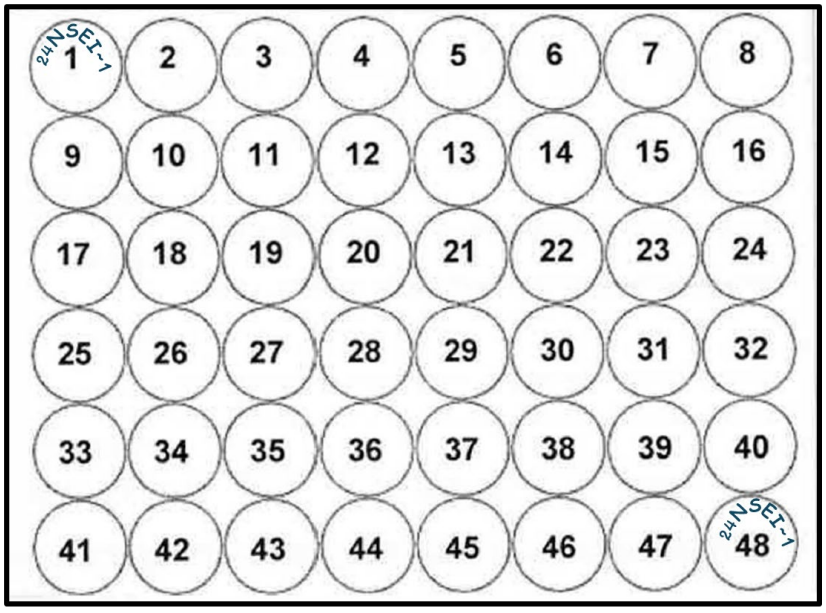
SAMPLE ID: 24NSEI~1 (1 – 48)

SPECIES: 710

SAMPLERS: Anna Plopoma & Sebastian Lobus

COMMENTS: #23 broken during cleaning

ADU CONTACT INFO: 907-465-3054(v); 907-465-2765(f); dfg.dcf.adu@alaska.gov
PO BOX 115526 JUNEAU, AK 99811



Appendix P.–Deck tag recovery form.

Deck Tag Recovery Form - NSEI Longline Survey

YEAR:_____ **TRIP:_____**

Tag #	Set #	Length-cm	Weight-kg	Sex	Maturity	Agency

Appendix Q.–Survey tag recovery form.

ADFG Survey Tag Recovery Form

for use only for tags with logbook trip number and set number

F/V :_____ **Trip #_____** **Date of Landing: _____yr____**

Species_____ **Set Number _____** **Port of landing_____**

Attach tags here
(so tag numbers are visible)

			Size / Color
Tag Number_____	**Size_____cm**	**rnd**	_____
Tag Number_____	**Size_____cm**	**rnd**	_____
Tag Number_____	**Size_____cm**	**rnd**	_____
Tag Number_____	**Size_____cm**	**rnd**	_____
Tag Number_____	**Size_____cm**	**rnd**	_____

measured by staff_____

Permit holder reward recipient: _____

Data entered (date)_____ **Recovery Info: survey** **Tag turned in by: survey**

Sampler_____
Please put your name in here if you are the one filling in this form

Return to: ADFG; 304 Lake St., Room 103; Sitka AK 99835

revised 10/30/19

Appendix R.–Tag recovery form (other agencies).

Species: Sablefish

Tag Number: _____

Attach tag here

(so tag number is visible)

Reward: Shirt/ Declined
Date Issued: _____ By: _____

Eligible lottery: Y or N
If Y: must provide tag, location, date caught, name, and address
Processors are not eligible
Trip #: _____

Specimen #: _____

Date entered: _____

Date received: _____

Sampler: _____

F/V or Tender: _____ **ADFG #: _____**
Specify

Date of Landing: _____yr____ **Port of landing: _____**
mm/dd

Date Captured: _____yr____ **Stat area: _____**
mm/dd

Lat: _____ **Long: _____**
Degrees and decimal minutes Degrees and decimal minutes

Mgt area: _____ **Location: _____**
specify (if no lat and long)

Depth: _____fm **Size: _____cm fork length**

measured by staff___ **other_____**
specify

Recovery gear: LL or Other: _____
specify

Information source: survey
Tag returned by: vessel / processor

Reward To: _____

Mailing Address: _____

_____

revised 3/22/19

Appendix S.–Vessel safety checklist.

Vessel Safety Checklist

(Must be completed and signed **prior** to departure. Statements in RED are no-go items. If these cannot be answered with a "Yes" or fixed prior to start of survey the vessel may not depart!)

Prior to the departure of the _____ (YYYY, Circle One) SSEI/NSEI longline survey the ADF&G science crew (_____ and _____) met with _____ (vessel captain) to discuss vessel safety procedures and equipment. This meeting took place onboard the FV _____ at _____, _____ (Time and Date). During this meeting we saw and discussed:

1) The USCG Commercial Fishing Safety Decal (typically located on window of wheelhouse). We verified that this sticker is valid through the end of this survey **(Yes) (No)**

2) The life raft is located in a float-free location. The life raft has sufficient capacity for everyone who will be on board during this survey **(Yes) (No)**

3) The Hydrostatic Release on the life raft is correctly set up (see diagram on back) and the hydrostatic release expiration date is valid through survey **(Yes) (No)**

4) The EPIRB on this vessel was located and is:
   Located in a float-free location **(Yes) (No)**

   Hydrostatic release expiration date is valid through survey **(Yes) (No)**

   Battery and NOAA Registration sticker are valid through survey **(Yes) (No)**

5) There are sufficient immersion suits onboard for all crew. Both members of the science crew have their own and know where these will be stowed **(Yes) (No)**

6) During this safety check we have:

- ❑ Seen the location of radios and discussed emergency call procedures (these are posted)
- ❑ Discussed emergency alarms and procedures (duties, muster station, etc.)
- ❑ Seen the location of fire extinguishers, especially those near high-risk areas
- ❑ Know the location of primary and secondary first aid kits
- ❑ Seen station bill and have discussed our duties, if any, during the listed emergencies
- ❑ Seen location of vessel flares and have discussed which types are available

7) We have also discussed:

- ❑ The expected workflow and safe areas for us to be on deck
- ❑ Our mandatory daily check-in procedures with home port
- ❑ Verified, if needed, any allergies, potential medical conditions or dietary requirements of science crew
- ❑ Where our sampling gear, including raingear, should be stowed to be both accessible to us but not infringing upon crew space
- ❑ Where we can safely plug in and charge our electronics, both during the day and overnight

As the science crew onboard this vessel for the _____ (YYYY, Circle One) SSEI/NSEI longline survey we certify that we participated in the above safety check in person and that the above checked statements are true to the best of our knowledge (sign and date).

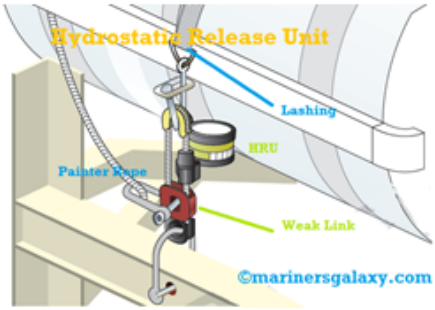
_____ (Lead) _____ (Crew)

-continued-

Commercial Fishing Vessel Safety Examination – Sticker typically located on window of wheelhouse. Verify that expiration date is after survey dates.

EPIRB – Needs to be located in a float-free location. Check registration, expiration dates on hydrostatic release, and battery. Verify that expiration dates are after survey dates.

Examples of life rafts – need to be in float-free locations. Check capacity (large enough for all personnel onboard). Check expiration dates – verify that these are after survey dates.



Setup of hydrostatic release for life raft. Verify that this is correctly assembled. Verify that expiration dates are after survey dates.

Fire extinguishers – there need to be fire extinguishers in all hazard areas on board. This includes the galley, entry to engine room, outside crew quarters, and wheelhouse.

Example of Station Bill – This should include crew duties during major emergencies; Abandon ship, Fire, Man Overboard

Appendix T.–Vessel diagram form.

Vessel Diagram

At beginning of survey please make a sketch of working area of boat. Try to include locations for setting and hauling, area where hook accounting and biological sampling staff will typically stand, identify crew work areas, roller, block, direction of line, checker bins, and identify hazard areas.

Vessel Name: _____

Scientific Staff:_____ (Lead)

Scientific Staff:_____ (Crew)