

**Southern Southeast Inside (SSEI) Subdistrict  
(Clarence Strait) Sablefish Pot and Longline  
Comparison Study**

by

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and

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May 2023

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Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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Weights and measures (metric)		General		Mathematics, statistics	
centimeter	cm	Alaska Administrative Code		all standard mathematical signs, symbols and abbreviations	
deciliter	dL		AAC		
gram	g	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	alternate hypothesis	H <sub>A</sub>
hectare	ha			base of natural logarithm	<i>e</i>
kilogram	kg	all commonly accepted		catch per unit effort	CPUE
kilometer	km	professional titles	e.g., Dr., Ph.D., R.N., etc.	coefficient of variation	CV
liter	L			common test statistics	(F, t, $\chi^2$ , etc.)
meter	m	at	@	confidence interval	CI
milliliter	mL	compass directions:		correlation coefficient (multiple)	R
millimeter	mm	east	E	correlation coefficient (simple)	r
<b>Weights and measures (English)</b>		north	N	covariance	cov
cubic feet per second	ft <sup>3</sup> /s	south	S	degree (angular )	°
foot	ft	west	W	degrees of freedom	df
gallon	gal	copyright	©	expected value	<i>E</i>
inch	in	corporate suffixes:		greater than	>
mile	mi	Company	Co.	greater than or equal to	≥
nautical mile	nmi	Corporation	Corp.	harvest per unit effort	HPUE
ounce	oz	Incorporated	Inc.	less than	<
pound	lb	Limited	Ltd.	less than or equal to	≤
quart	qt	District of Columbia	D.C.	logarithm (natural)	ln
yard	yd	et alii (and others)	et al.	logarithm (base 10)	log
		et cetera (and so forth)	etc.	logarithm (specify base)	log <sub>2</sub> etc.
<b>Time and temperature</b>		exempli gratia		minute (angular)	'
day	d	(for example)	e.g.	not significant	NS
degrees Celsius	°C	Federal Information Code	FIC	null hypothesis	H <sub>0</sub>
degrees Fahrenheit	°F	id est (that is)	i.e.	percent	%
degrees kelvin	K	latitude or longitude	lat. or long.	probability	P
hour	h	monetary symbols		probability of a type I error (rejection of the null hypothesis when true)	$\alpha$
minute	min	(U.S.)	\$, ¢	probability of a type II error (acceptance of the null hypothesis when false)	$\beta$
second	s	months (tables and figures): first three letters	Jan.,...,Dec	second (angular)	"
<b>Physics and chemistry</b>		registered trademark	®	standard deviation	SD
all atomic symbols		trademark	™	standard error	SE
alternating current	AC	United States (adjective)	U.S.	variance	
ampere	A	United States of America (noun)	USA	population	Var
calorie	cal	U.S.C.	United States Code	sample	var
direct current	DC	U.S. state	use two-letter abbreviations (e.g., AK, WA)		
hertz	Hz				
horsepower	hp				
hydrogen ion activity (negative log of)	pH				
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

***REGIONAL OPERATIONAL PLAN CF.XX.XX-XX***

**SOUTHERN SOUTHEAST INSIDE (SSEI) SUBDISTRICT (CLARENCE STRAIT) SABLEFISH POT AND LONGLINE COMPARISON STUDY**

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May 2023

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## Signature Page

Project Title: Southern Southeast Inside (SSEI) Subdistrict (Clarence Strait) Sablefish Pot and Longline Comparison Study

Project leader(s): *Rhea Ehresmann*

Division, Region and Area *Commercial Fisheries, Region 1, Sitka*

Project Nomenclature: *TF-187 SE Groundfish*

Period Covered *2023*

Field Dates: *21 May–31 May*

Plan Type: Category II

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## PURPOSE

This regional operational plan details the methodology to compare catch per unit effort (CPUE), species composition, and length compositions between the Alaska Department of Fish and Game's Southern Southeast Inside (SSEI) Subdistrict standardized longline survey using hook-and-line gear and a new pot survey using longlined collapsible pots (slinky or codcoil pots). With increasing popularity of slinky pots in state and federal sablefish fisheries, the department seeks to gain a better understanding of sablefish catches by fishing hook-and-line longline gear alongside longlined slinky pots under standardized conditions. In addition, all healthy sablefish captured in slinky pots will be tagged with external T-bar tags to examine movement patterns over time.

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

## BACKGROUND

Sablefish (*Anoplopoma fimbria*; also known as black cod) are found in the northeastern Pacific Ocean, ranging from Baja, California to the Aleutian Islands and into the Bering Sea (Mecklenburg et al. 2002). Adult sablefish inhabit the 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 and have been aged to at least 94 years old in Alaska waters (Munk 2001); however, sablefish captured by the commercial fisheries in Southeast Alaska are often not older than 20 years (Mueter 2010).

The sablefish fishery within the Southern Southeast Inside (SSEI) Subdistrict waters dates to the early 1900s, with the fishery becoming a regular feature in annual reports by 1935, and regulations governing the fishery passing in 1945 (Unpublished 1994 ADF&G memorandum to Commissioner Carl Rosier, Juneau). While the fishery remained small in comparison to the Northern Southeast Inside (NSEI) Subdistrict sablefish fishery, by 1973 it became a developed fishery that was prosecuted utilizing longline and pot gear (Holum and Coonradt 2005). The original SSEI Subdistrict consisted of Clarence Strait, Sumner Strait, Behm Canal, Ernest Sound, the outer coast of Prince of Wales Island, and a portion of southern Frederick Sound. The waters of Dixon Entrance were not formally recognized by the State of Alaska as part of the SSEI Subdistrict until 1983 (Holum and Coonradt 2005). As fleet effort and efficiency increased and the number of fishery days decreased over the next decade, the equal quota share (EQS) management system was implemented in 1997, with 30 longline permits and 5 pot permits authorized to fish SSEI (Holum and Coonradt 2005). Since 2019, the SSEI sablefish fishery has been managed using EQS with a limited entry maximum of 22 permits.

The SSEI sablefish stock assessment longline survey began in 1979 (Holum and Coonradt, 2005). By 2000 this survey was conducted using standardized gear mirroring the gear specifications used by the National Marine Fisheries Service (NMFS) for their sablefish longline survey (Carlile et al. 2002; O'Connell et al. 2002). The longline survey underwent redesign in 2013 to improve spatial coverage relative to the fishery as commercial harvest shifted from Clarence Strait to Dixon Entrance (Stahl and Baldwin 2013). With recent shifts in commercial sablefish gear from hook-and-line to slinky pots, this study will compare catch per unit effort (CPUE), species composition,



and length composition between the two gear types under standardized methodology to better understand ongoing changes in the commercial fishery.

## OBJECTIVES

1. Collect CPUE and length composition data of sablefish from slinky pots set at 14 stations parallel to and approximately 1.9 km (1 nm) from the longline survey stations.
2. Tag and release all healthy sablefish throughout the survey to determine movement patterns.
3. Identify and enumerate, to the lowest possible taxonomic group, all species captured in pots during the survey.

## METHODS

### SAMPLE DESIGN

The goals of this survey are to compare CPUE and length compositions between hook-and-line longline gear and longlined slinky pot gear, as well as between small and large slinky pots; to tag and release all healthy sablefish; and to identify and enumerate all bycatch captured in pots throughout SSEI Clarence Strait. To achieve these goals, 14 slinky pot sets will be made concurrently with and parallel to longline survey sets, approximately 1.9 km apart (Figure 1). 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 one of the two longline survey charter vessels (Table 1). All healthy sablefish will be tagged with T-bar tags and released, and bycatch species will be enumerated and released immediately. Pot sets will not be made at longline survey stations that historically have extensive predation by hagfishes (*Eptatretus* spp.). It is uncertain exactly what the optimal number of pots to deploy to be equivalent to the 25 skates of longline gear used during our annual SSEI survey so the decision was made to deploy 40 pots as this is midway between the ratios used in two studies conducted by NMFS Alaska Fisheries Science Center (AFSC) (P. Malecha and J. Sullivan, AFSC, Juneau, personal communication; Sullivan et al. 2022).

### POT GEAR DESIGN AND SABLEFISH CAPTURE

Longlined slinky pot gear is used to catch live sablefish during the survey. At each station a string of gear is set consisting 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 40 pots (20 small and 20 large) are set per string. The two different sizes of conical shaped 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 2). The groundline is configured with 81 beackets spaced at 27 m intervals. Cannonball weights (3.2 kg) and slinky pots are attached to the groundline beackets via 1.27 cm c-links in an alternating order, beginning with a cannonball, then a small slinky pot, another cannonball, then a large slinky pot, and so forth, ending with a cannonball such that pots are spaced 55 m apart with a weight placed equidistantly in between two pots (Figure 3).

Each pot string is set in the morning concurrently with the corresponding hook-and-line longline set. 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. Each pot is baited with one bait bag with 1.8 kg of chopped *Illex* squid, which is placed inside the pot. To compare the CPUE and the length composition of captured fish from large and small slinky pots, as well as between longline and pot gear, the gear types will be fished in close proximity, thus eliminating the need to consider other covariates (depth, contour, habitat, etc.) when comparing catch rates.

During hauling and tagging operations, pots will be kept underwater to prevent battering or injuring of fish in that pot. The gear is hauled so that the next pot on the string is completely submerged even as the vessel navigates to stay on the gear. Torn lips and injuries on the sablefish are an indication that the pot is too near the ocean surface and needs to be kept lower in the water column until brought on board. As a pot is brought on board, the pot size is recorded, and all fish are released into a holding tank. The holding tank is continuously plumbed with saltwater. Sablefish are removed individually from the holding tank with a small net, inspected for condition, and subsequently measured for fork length (cm), tagged, and released if healthy or are discarded if dead or damaged. Incidental catches of all other bycatch species are recorded and released with minimal holding time.

## **DATA COLLECTION**

All data collected during the marking survey is done on paper forms that are later entered into Zander applications at the office after the survey. These data are divided into “Set” and “Biological” data. Set data include all of the recorded information about the physical gear such as set coordinates, number of pots, pot depths, and total numbers of fish caught. Biological data are the information recorded from individual sablefish captured such as length, tag number if tagged, and release condition. Set data are entered into the Zander Pot Survey application while biological data are entered in the Zander Pot Survey Age-Sex-Length (ASL) application. The two programs are independent of each other but are capable of sharing some information (e.g., the sablefish totals by pot from the ASL application are tallied automatically into the set data).

### **Set Information**

For each pot string, the set and haul data are recorded on the “Set Form” (Appendix A). During setting, science crew will record the latitude and longitude (decimal minutes) for each end of the pot string using the coordinates of the first and last anchors. Crew will also record 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. Crew 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).

If the groundline of a pot string breaks during hauling, the vessel will run to the other end of the string and haul from the second anchor. The recorder will note the time each end of the broken

line is encountered, the second buoy is brought on board, and the second anchor is brought on board in the comments section. The time that the second break in the line is encountered is recorded in place of the second anchor onboard on this form.

After completion of the survey, data from the Set Form, including start and end position as well as individual pot depths, are entered into the Zander Pot Survey application in the office. Set data recorded on deck (i.e., haul start and end times, haul order, and bycatch) and any additional comments are also entered into the Zander application after survey is complete. In the event pots are lost during hauling, the actual number of pots retrieved is entered into the database.

### **Biological and Tagging Information**

Live sablefish are most effectively handled by gently holding the fish in a “U-shaped position” with one hand on the fish head and one on the fish body. All healthy sablefish brought on board are tagged and released. Sablefish are tagged with an external T-bar tag applied at a shallow angle posterior to the base of the first dorsal spine between the interneural spines on the left-side of the fish body (Figure 4).

For each set hauled, staff will rotate between the positions of tagger and recorder. The tagger will read out loud the fork length (cm) of the fish, tag the fish, note the condition of the fish, read out loud the tag number to the recorder, and quickly release the fish over the side of the vessel. The recorder will write the length in cm, tag number, and fish condition on the “Tagging Release Form” (Appendix B) and note the pot number and size of pot from which each tagged sablefish is caught in the margins of the form. In addition to recording data, the recorder is responsible for managing tags. This includes providing the tagger with a tagging gun pre-loaded with the next batch of 25 tags and confirming recorded tag numbers are in the correct order. It is important that the tags be consecutive throughout haul. Regular verification of the entire six-digit number (e.g., at the beginning of a new batch of tags) ensures correct sequential order. If tags are out of order or a tag number is voided, make a note in the margins of the release form and return to the proper sequential order at the end of the 25-tag batch.

Any sablefish determined to have a reduced survival probability (e.g., high number of sand flea bites, severe abrasions from pot gear, gilled in pot mesh, old injuries that haven't healed, or lacking vigor) are measured and released without tagging. Sablefish with substantial pot abrasions or sand flea damage may have a higher risk of infection leading to delayed mortality. All information for discarded sablefish is recorded on the “Marking Discard Form” (Appendix C) using the appropriate discard (Appendix D) and release condition (Appendix E) codes. After each haul is complete, the number of sablefish tagged and discarded from each pot is calculated, summed, and entered on the “Pot Tally Form” (Appendix F). Pot size (large or small slinky) is recorded as well.

After the survey is complete, the biological data for all sablefish are entered from the paper forms into the Zander Pot Survey ASL application. Sablefish data are entered into the biological data table with a sample type of “random sample” (01) and length type of “fork length” (01) or “no length taken” (00). The pot number from which the fish was captured is entered for each specimen, as are the discard and release condition codes. For each tagged sablefish, the tag batch (Batch 31) and tag number are also entered. For sablefish recaptured and previously tagged by ADF&G or by

other agencies, tag numbers are recorded in the comment section beginning with “T-” followed by the tag number.

### **Recapturing Previously Tagged Fish**

Previously tagged fish, like all sablefish discards, are recorded on the “Marking Discard Form”. All sablefish captured that were previously tagged by ADF&G and are in good health are re-released after recording tag number and measuring the fish. If a sablefish is in poor health, dead, or the tag is no longer readable or well attached, the fish is measured, the tag number is recorded, and the tag is collected.

Occasionally tags from other agencies are recovered during this survey. In all cases the agency information and tag number are recorded and the sablefish fork length is measured. Depending on the agency and/or specific project, fish may be re-released or retained in order to collect additional biological data. In some cases, tagged fish require special processing, (e.g., growth study fish or those with archival tags). Detailed instructions for processing other agency tagged fish may be found in Appendix G. All other agency tags, associated data, and otoliths will be mailed to the NMFS Auke Bay laboratory in Juneau.

For previously tagged ADF&G fish that are not released and tags are removed, and other agency tagged fish that are harvested or re-released, data should be recorded on the “Tag Recovery Form” (Appendix H).

### **Incidental Catch**

All incidental catch are marked as discards. All rockfishes are retained and may be biologically sampled as time allows. Bycatch species are tallied on the “Marking Discard Form” (Appendix C). No biological data are collected for non-rockfish bycatch; however, in special cases (e.g., other agency projects, an extremely large fish is caught, or a rare species is captured), biological data may be collected and the sample would be recorded as “select” (05) in the biological table. Total numbers by species of bycatch are entered into the Zander Pot Survey application at a set level (not by pot number).

## **SCHEDULE AND DELIVERABLES**

The survey will begin around May 22 and end on or before May 31. The timing of the survey is scheduled to end before the Clarence commercial sablefish fishery opening on June 1. Data entry, review, and quality control will be done in the office following the survey and will be finalized on or before June 30, 2023. Further analyses will be conducted later in 2023 as time and staffing allows.

## **RESPONSIBILITIES**

- Rhea Ehresmann, Fishery Biologist III (survey crew leader)
- CL Roberts, Biometrician I (survey crew)

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## **TABLES**

Table 1.–Planned sets by station number with statistical area, start and end latitude and longitude coordinates, area description, and start and end depths for longline and pot survey vessels. Stations shown in red are historic hagfish sets and should be avoided for the pot sets.

<b>SSEI Longline Survey Stations for Vessel #1 and Vessel #2</b> <b>(Red = Hagfish hotspots, avoid set)</b>									
Station Number	LL Vessel	Stat Area	Start Lat	Start Long	End Lat	End Long	Area Description	Start Depth (fathoms)	End Depth (fathoms)
101	1	325533	55 48.71	132 28.76	55 50.11	132 29.83	Little Ratz Harbor	291	276
102	1	325533	55 48.06	132 24.93	55 46.95	132 23.96	Narrow Point	326	330
103	1	325531	55 40.87	132 18.48	55 42.30	132 19.65	Tolstoi Point	320	326
44	1	325531	55 34.10	132 13.52	55 35.40	132 15.03	Ship Island	300	268
37	1	315502	55 28.42	131 58.99	55 29.19	132 01.50	Caamano Island	243	241
31	1	315502	55 18.43	131 58.61	55 19.87	132 00.08	Skin Island	236	233
107	1	315502	55 10.53	131 54.26	55 12.13	131 54.48	Wedge Island	232	235
20	1	315502	55 01.87	131 43.66	55 00.39	131 43.16	Dall Head	217	217
109	1	315502	55 05.22	131 45.91	55 06.42	131 47.66	Canoe Cove	277	260
118	1	315431	54 39.76	131 47.72	54 38.31	131 47.78	West Devil Rock	193	189
119	1	315431	54 36.82	131 57.01	54 35.23	131 57.03	Cape Chacon	195	184
120	1	315431	54 32.73	131 51.19	54 34.39	131 51.83	Celestial Reef	184	185
121	1	315431	54 32.85	131 44.06	54 31.47	131 44.07	Celestial Reef	193	192
122	1	315431	54 33.78	131 40.11	54 35.42	131 40.01	West Devil Rock	210	182
123	1	325401	54 26.81	132 0.86	54 26.83	132 03.57	Celestial Reef	163	186
110	2	315432	54 59.73	131 50.31	54 58.19	131 50.36	Percy Island	233	222
111	2	315432	54 57.15	131 55.09	54 58.64	131 55.00	Ingraham Bay	240	237
18	2	315432	54 54.37	131 48.20	54 55.52	131 48.17	Hidden Bay	226	225
113	2	315432	54 50.62	131 40.06	54 49.15	131 41.14	West Rock	227	195
12	2	315432	54 48.75	131 53.00	54 50.30	131 52.81	Island Point	216	223
115	2	315432	54 46.54	131 54.61	54 44.93	131 54.60	McLean Arm	227	228
116	2	315432	54 42.83	131 50.46	54 44.29	131 50.43	Cape Chacon	207	202
117	2	315432	54 41.04	131 41.73	54 42.55	131 41.64	West Devil Rock	239	229
124	2	325431	54 30.51	132 12.54	54 30.53	132 15.40	Point Nunez	195	185
125	2	325431	54 32.13	132 21.20	54 32.14	132 18.83	Point Marsh	188	196
126	2	325401	54 27.32	132 18.97	54 27.29	132 16.30	Surf Point	198	196
127	2	325401	54 27.42	132 26.45	54 27.40	132 23.73	Point Marsh	196	197
128	2	325431	54 30.66	132 35.40	54 30.69	132 38.19	Cape Muzon	205	206
129	2	325401	54 26.28	132 36.65	54 26.30	132 39.09	Cape Muzon	186	195

## **FIGURES**



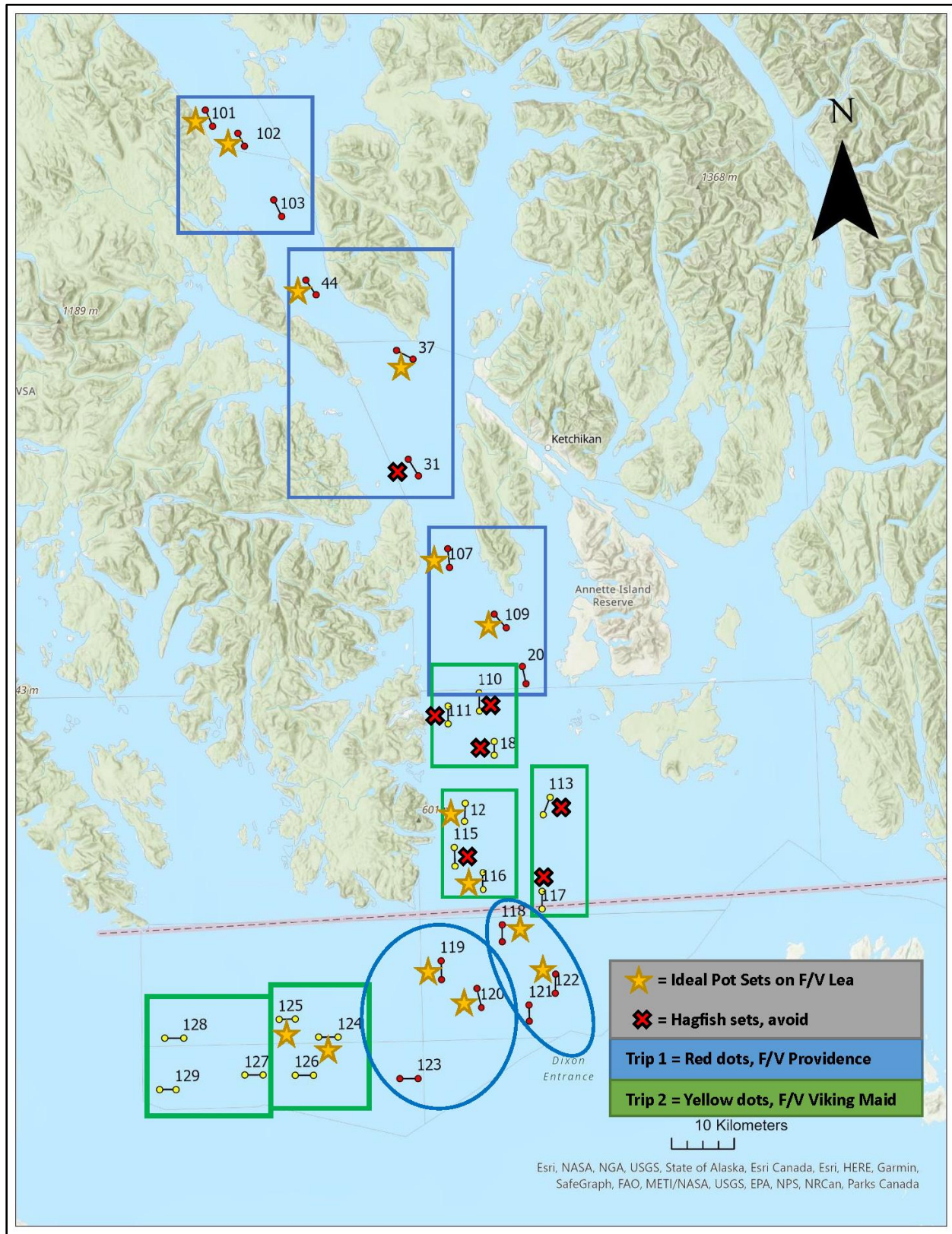


Figure 1.—Map of longline stations by trip as well as suggested locations for slinky pot sets noted by yellow stars. High hagfish sets to be avoided by pot gear are shown with a red x.

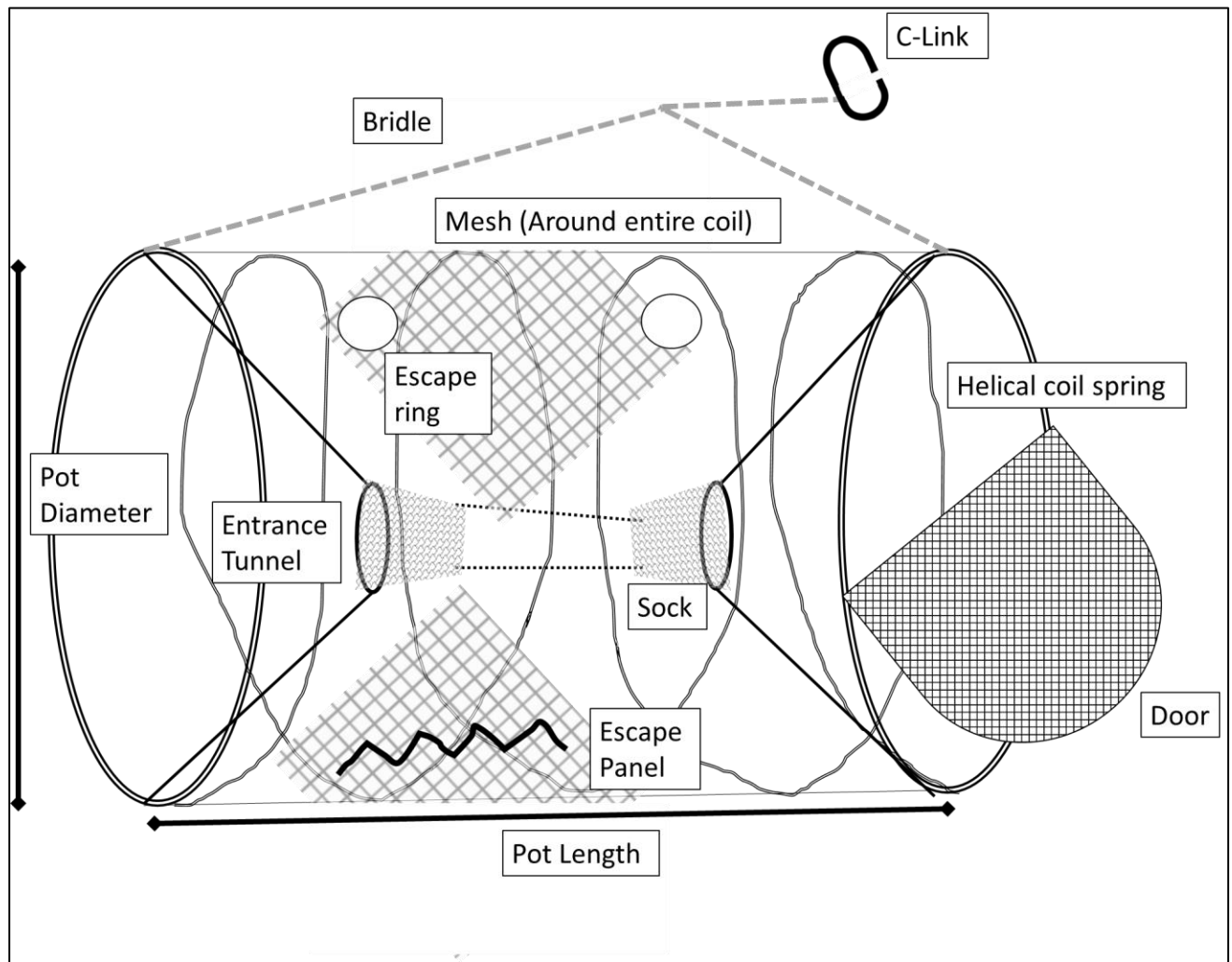


Figure 2.—Diagram of a slinky pot configuration. The escape rings on the study pots were closed with zip ties. Pot length represents the length when pot is fully expanded.

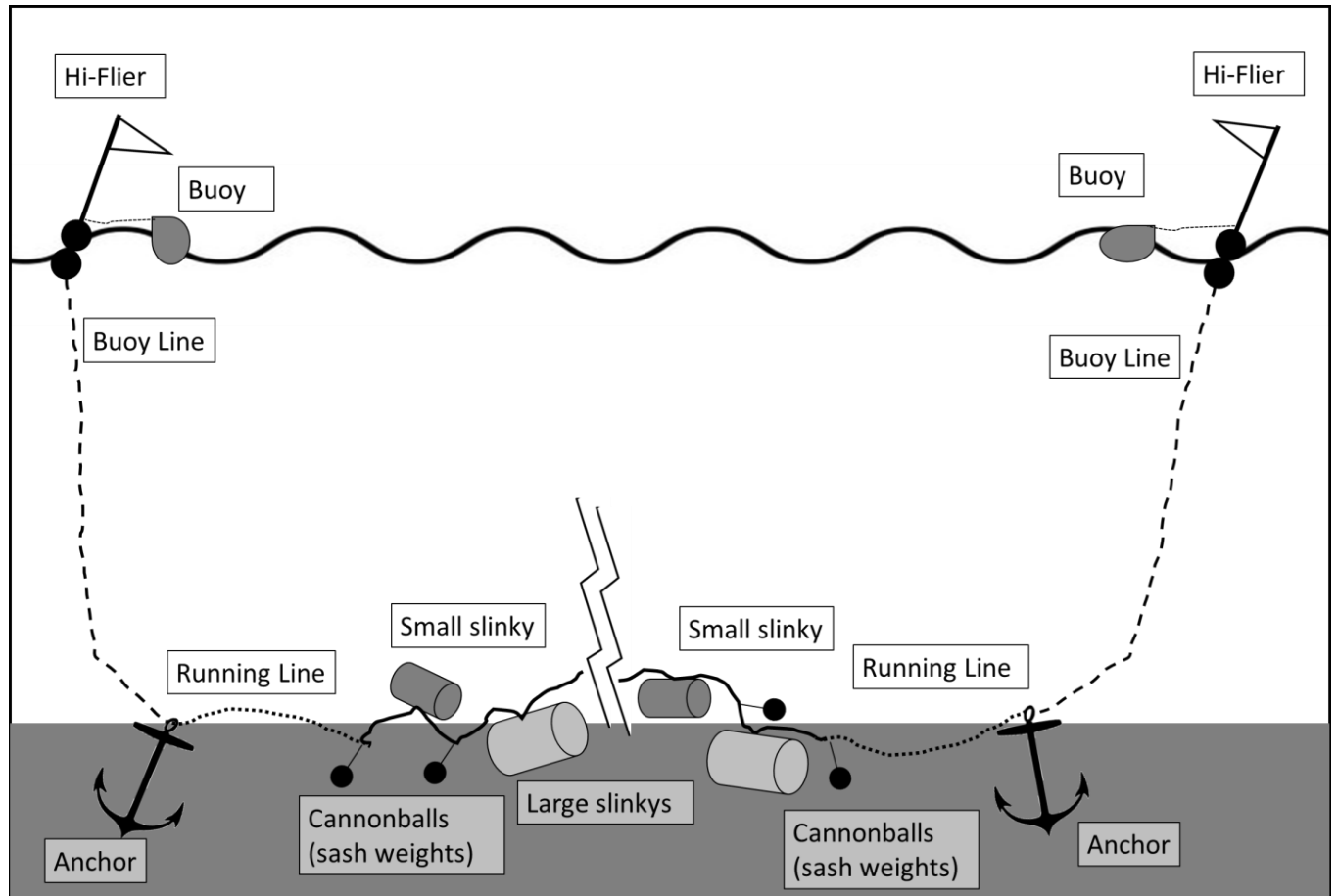


Figure 3.—Slinky pot set configuration. The buoy line is variable in length dependent upon water depth but is most often around 600 meters. There is 183 m of running line between the anchor and start of groundline with beckets at each end. The pots and weights are attached to fixed beckets on the groundline that are each spaced 27 meters apart.

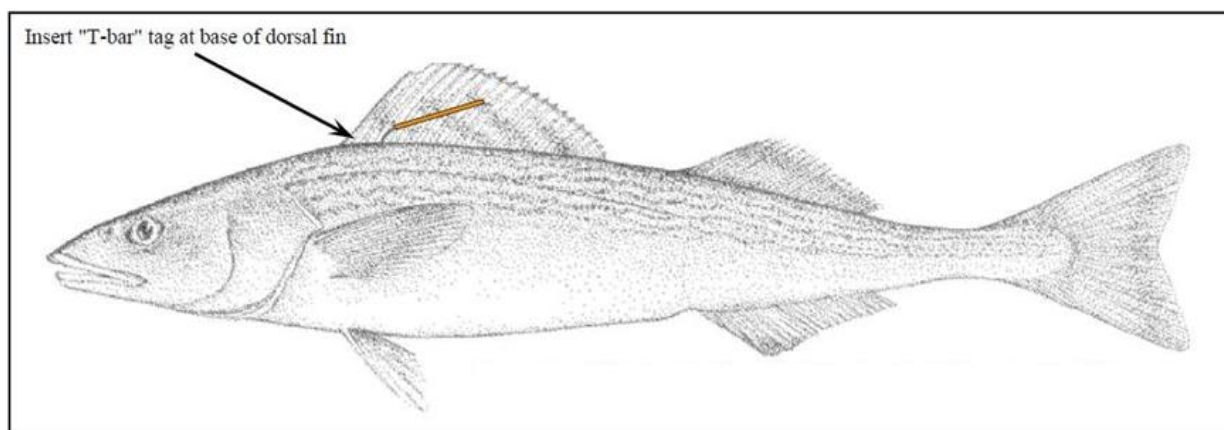


Figure 4.—Sablefish tagging guidelines showing proper T-bar tag placement.

## **APPENDICES**

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## DATE \_\_\_\_\_

YEAR <b>2023</b>	PROJECT CLARENCE POT SURVEY	TRIP NUMBER 1	SET # 	STATION # 	STATAREA 
POT TYPE <b>Mixed Slinky</b>	START LAT(decimal minutes) 	START LONG(decimal minutes) X	END LAT(decimal minutes) 	END LONG(decimal minutes) 	
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: <div style="border: 1px solid black; height: 150px; margin-top: 5px;"></div>			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 <div style="border: 1px solid black; height: 30px; margin-top: 5px;"></div>		
			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   31   32   33   34   35   36   37   38   39   40     ANCHOR

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

Appendix B.—Tagging Release Form used to record status and tag number of tagged fish.

<b>Project: SSEI Sablefish Tagging Release Form</b>				<b>Set</b> _____		
<b>Year:</b> _____		<b>Trip:</b> _____		<b>Date:</b> ____/____/____		<b>Pg no.</b> _____

	TAG NUMBER	LENGTH	COMMENTS		TAG NUMBER	LENGTH	COMMENTS
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

<b>Tagger</b> _____	<b>Recorder</b> _____
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Appendix C.—Discard Form used to record bycatch and status (i.e., health) of sablefish that are released without tagging as well as other bycatch.

SSEI Sablefish Pot Survey Discard Form															
Year: _____		Trip: _____		Set: _____		Date: _____		Page: _____							
Abrasion				Old Injury		Fleas Alive		Fleas Dead		Hagfish Predation		Previously Tagged			Bycatch
Spec. No.	02-08 Length	Spec. No.	02-08 Length	Spec. No.	02-04 Length	Spec. No.	10-08 Length	Spec. No.	10-05 Length	Spec. No.	22-05 Length	Spec. No.	09-01 Length	09-01 Tag No.	
															HALIBUT (200)
															Alive (20) Dead (21)
															BLK HAGFISH (212)
															ATF (121)
															DOVER (124)
															GKC (923)
															THORNYHEAD (143)
															OTHER
															OTHER
															OTHER
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Appendix D.—Discard codes for sablefish and bycatch captured on the tagging survey.

Discard Status	Details
00 = Unknown	Discard status unknown or not recorded.
01 = Retained	Fish is not released.
02 = Discarded, not marketable	Fish has new or old injury and is released without marking to prevent bias in recapture event. This is the standard discard code for released bycatch with the exception of halibut.
03 = Discarded, too small	Fish <320 mm fork length, released without marking.
04 = Lost	Fish lost before clipping or tagging.
05 = Tagged and released	Fish clipped, tagged, and released unharmed.
06 = Mortality retained	Fish dead or likely to die so retained.
07 = Discarded healthy	Fish measured but released without tagging or clipping.
08 = Retained bio sample	Fish sacrificed to collect biological data.
09 = Already tagged by AGF&G	Fish previously tagged by Region I ADF&G.
10 = Discarded due to fleas	Fish measured but not tagged or clipped due to flea bites (dead or alive).
11 = Discarded due to sharks	Fish measured but not tagged or clipped due to damage from sharks.
12 = Clipped only and released	Fish measured and clipped but lost before tagging.
13 = Retained, other agency tag	Fish tagged by another agency that has requested biological sampling.
15 = Released, other agency tag	Fish tagged by another agency that has requested fish be re-released.
16 = Retained, tagged by ADF&G	Fish previously tagged by ADF&G but retained due to injury or tag damage.
17 = Discarded, numbers estimated	Fish released directly from pot and number of fish estimated.
20 = Released alive	Halibut that is released alive.
21 = Mortality discarded	Halibut that is released dead.
22 = Discarded due to hagfish	Fish damaged by hagfish predation

Appendix E.—Release condition codes for sablefish captured during the tagging survey.

<b>Release Condition</b>	<b>Details</b>
00 = Unknown	Fish condition unknown, i.e., for lost fish.
01 = Presumed healthy	Fish appear to have no recent or old injuries and no flea bites.
03 = Flea bitten	Flea bites visible on skin and/or fins.
04 = Old injury	Fish have infection or injuries that existed prior to capture with pot gear, i.e., mouth damaged from capture with longline.
05 = Presumed dead	Fish dead or death is imminent. (Use for all hagfish damage)
06 = No clip	Fish measured and tagged but lost before clipping.
08 = Pot damage	Fish have injuries from pot gear, i.e., abrasions, torn mouth, or gilled.

Appendix F.–Pot Tally Form used to record the total number of sablefish captured in each pot.

<b>Pot Tally Form</b>													
<b>Year:</b> _____	<b>Trip:</b> _____	<b>Haul Direction (circle one):</b>											
<b>Set #:</b> _____	<b>Date:</b> _____	<b>Same</b>				<b>Opposite</b>							
		<b>Time</b>			<b>Weather, sea conditions, substrate (from anchors)</b>								
<b>Start Haul (1st Anchor)</b>													
<b>End Haul (2nd Anchor)</b>													
<b>Pot #</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	
<b>Pot Type</b>													
<b># Fish Tagged:</b>													
<b># Discarded:</b>													
<b>Total #:</b>													
<b>Pot #</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	
<b>Pot Type</b>													
<b># Fish Tagged:</b>													
<b># Discarded:</b>													
<b>Total #:</b>													
<b>Pot #</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>35</b>	<b>36</b>	
<b>Pot Type</b>													
<b># Fish Tagged:</b>													
<b># Discarded:</b>													
<b>Total #:</b>													
<b>Pot #</b>	<b>37</b>	<b>38</b>	<b>39</b>	<b>40</b>									
<b>Pot Type</b>													
<b># Fish Tagged:</b>													
<b># Discarded:</b>													
<b>Total #:</b>													

Record pot type (S or L). Enter the number of sablefish tagged in each pot, tallied from bio form. Enter the number of sablefish discarded from discard form. If pot is empty, indicate with null (""). Add the tagged sablefish with the discarded sablefish to get total number of sablefish for each pot.

Appendix G.—List of tag-types recovered on the marking survey with instructions on processing.

Tag type	Instructions
ADF&G Sitka (orange, red, or green)	Healthy fish with tag well attached - measure, record tag number, and release. Unhealthy fish and/or tag not well attached - collect length, sex, and maturity data; record tag number; retain tag.
ADF&G Homer (red)	All fish - collect fork length, sex, otoliths, and maturity data; record tag number; retain tag.
ADF&G/NMFS COOP (orange)	Healthy fish with tag well attached - measure, record tag number, and release. Unhealthy fish and/or tag not well attached - collect length, sex, and maturity data; record tag number; retain tag.
NMFS (yellow)	Healthy fish with tag well attached - measure, record tag number, and release. Unhealthy fish and/or tag not well attached - collect length, sex, and maturity data; record tag number; retain tag.
Japanese (orange)	Healthy fish with tag well attached - measure, record tag number, and release. Unhealthy fish and/or tag not well attached - collect length, sex, and maturity data; record tag number; retain tag.
NMFS Auke Bay growth study (pink)	All fish - collect length, sex, otoliths, and maturity data; record tag number; retain tag. <b>Special instructions to store otoliths in vial masked to keep out light.</b>
NMFS archival marker (green/pink)	All fish - collect length, sex, otoliths, and maturity data; record tag number; retain tag. <b>Special instructions to collect archival tag from body cavity and retain with tag.</b>
Canadian Pacific Bio Station (yellow)	All fish - collect length, sex, otoliths, and maturity data; record tag number; retain tag.

Appendix H.—Tag Recovery Form used to record recovery information for sablefish that are previously tagged and harvested.

Tag Recovery Form		
Species_____	F/V or Tender:_____	ADFG #_____
Release Agency_____	(specify) Date of Landing: _____yr____	Port of landing_____
Tag Number_____	Date captured:_____yr____ mm/dd	Statarea_____
<div>Attach tag here</div> <div>(so tag number is visible)</div>	Lat_____	Long_____
	Subdistrict/Mgtarea_____	Location_____
below data to be filled in by ADFG	Depth_____fm	Size_____cm_____in_____rnd/east/unkn (specify if no lat and long)
Hat issued_Y_N_date_____by_____	Recovery gear: LL other_____	accuracy:_____specify: 1(most accurate)-5(least)
Eligible lottery_____	Tag turned in by vessel/processor/other_____	measured by staff_____other_____ (specify)
Letter issued_____	Reward To: (Capt/crew/processor/other)_____	
Data entered (date)_____	Permanent Address:_____	
Recovery info <u>vessel/processor/</u> log/fish ticket		
logbook( trip) #_____		
Date received_____		
Sampler_____		