Summary of the 2024 British Columbia Sablefish (*Anoplopoma fimbria*) trap survey, September 27–November 16, 2024

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SUMMARY OF THE 2024 BRITISH COLUMBIA SABLEFISH (*ANOPLOPOMA FIMBRIA*) TRAP SURVEY, SEPTEMBER 27–NOVEMBER 16, 2024

by

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This report describes the methods and data from the 2024 British Columbia Sablefish trap survey. The coastwide survey included stratified random sampling survey (StRS) sets across five depth-stratified areas, along with experimental escape ring sets. Biological sampling focused on Sablefish, as well as incidentally caught Yelloweye, Shortraker, and Rougheye/Blackspotted Rockfish. Sablefish were selected at random from traps distributed along each gear string to provide even spatial coverage, with a target sample size of 30 fish per set. The 2024 survey included tag-and-release, which was annual from 1991–2022 and biannual thereafter. Fourteen sets tested escape ring configurations, with up to 50 Sablefish sampled from each of three treatments per set.

In 2024, a total of 63,917 Sablefish were captured on StRS sets. Out of these fish, 2,887 were selected for biological sampling, while 9,697 were tagged and released. Due to weather conditions, the survey was restricted to 86 of the 91 planned StRS blocks, and all five planned inlet sites were not surveyed. To evaluate long-term trends, survey catch per unit effort (CPUE) and biological data are analyzed in comparison to previous years. The Sablefish StRS biomass index in 2024 increased by 64% from 2023, marking a 40% rise from the previous peak in 2019.

RÉSUMÉ

Lacko, L.C., Hardy, S.M., and Holt, K.R. 2026. Summary of the 2024 British Columbia Sablefish (*Anoplopoma fimbria*) trap survey, September 27–November 16, 2024. Can. Tech. Rep. Fish. Aquat. Sci. 3751: vii + 61 p. https://doi.org/10.60825/rgr5-x663

Le présent rapport décrit les méthodes et les résultats du relevé au casier ciblant la morue charbonnière de la Colombie-Britannique en 2024. Le relevé à l'échelle de la côte comprenait des traits ayant fait l'objet d'un échantillonnage aléatoire stratifié qui ont été réalisés dans cinq zones stratifiées en fonction de la profondeur, ainsi que des traits expérimentaux effectués au moyen de casiers munis d'anneaux de sortie. L'échantillonnage biologique ciblait la morue charbonnière, ainsi que trois espèces capturées à titre de prises accessoires, soit le sébaste aux yeux jaunes, le sébaste boréal et le sébaste à œil épineux. Des morues charbonnières ont été sélectionnées de manière aléatoire dans les casiers répartis le long de chaque cordage afin que la couverture spatiale soit uniforme; la taille d'échantillon visée était de 30 spécimens par trait. Le relevé de 2024 comprenait une activité de marquage et de remise à l'eau, qui a été réalisée de façon annuelle de 1991 à 2022, puis de façon bisannuelle par la suite. Quatorze traits ont permis la mise à l'essai des casiers munis d'anneaux de sortie, et jusqu'à 50 morues charbonnières ont été échantillonnées lors de chacun des trois traitements par trait.

En 2024, 63 917 morues charbonnières ont été capturées dans l'ensemble des traits ayant fait l'objet d'un échantillonnage aléatoire stratifié. De ces individus, 2 887 ont été sélectionnés aux fins d'échantillonnage biologique, tandis que 9 697 ont été marqués et remis à l'eau. En raison des conditions météorologiques, seuls 86 des 91 blocs prévus du relevé par échantillonnage aléatoire stratifié ont pu être effectués, et ce ne sont pas tous les cinq sites de bras de mer prévus qui ont pu être échantillonnés. Pour évaluer les tendances à long terme, les captures par unité d'effort (CPUE) et les données biologiques ont été analysées en comparaison avec celles des années précédentes. L'indice de la biomasse du relevé par échantillonnage aléatoire stratifié ciblant la morue charbonnière a augmenté de 64 % en 2024 par rapport à 2023, ce qui représente une hausse de 40 % par rapport au sommet précédent, qui a été atteint en 2019.

1 Introduction

Fishery-independent Sablefish surveys, using longline trap gear, have been conducted along the B.C. continental shelf by Fisheries and Oceans Canada (DFO) in collaboration with the Canadian Sablefish Association (CSA) since 1988, providing a consistent framework for data collection. Survey practices have evolved over the years. The current approach, involving stratified random survey (StRS) sets within five spatial areas, has been in place since 2003, while standardized fishing at inlet locations began in 1994. Each year, the StRS survey spans ~890 km along the continental shelf, providing broad spatial coverage of key Sablefish habitats.

The stratified random survey (StRS) has supported multiple objectives, including collecting catch and effort data, gathering biological samples, capturing oceanographic measurements, and acquiring tag release and recapture data (1991–2022, 2024). In addition, video imagery (2013 – 2017, 2021 and 2022) was recorded to document gear contact with the seafloor. Together, these datasets serve as a non-fishery derived source for assessing the biological status of the Sablefish stock and evaluating the effectiveness of coastal management tools (Johnson et al. 2025). Additionally, the video data serves as the basis for quantifying the bottom contact area of longline trap and hook gear (Doherty et al. 2025).

In 2023 and 2024, an additional experimental trap selectivity study was added to the survey to evaluate the effect of escape ring configuration on Sablefish catch rates and size distribution of retained catch.

2 Methods

2.1 SURVEY DESIGN

Elements of the 2024 sampling design are outlined in Sections 2.1.1, 2.1.2, and 2.1.3, respectively.

2.1.1 Stratified Random Sampling Component (StRS)

Since 2003, the StRS survey area has been subdivided into five spatial (S1 to S5) and three depth strata (RD1 to RD3), each divided into two-by-two kilometer survey blocks. The three targeted depth ranges were 100-250 fathoms (RD1), 250-450 fathoms (RD2), and 450-750 fathoms (RD3). Survey sites are randomly selected from these blocks annually. The target for the 2024 survey was 91 blocks (Table 1).

The original StRS boundaries were based on area bathymetry, the commercial trap fishing footprint, and the proportional extent of each stratum (Wyeth et al. 2007). The total survey surface area coverage decreased slightly since the original, from 21,588 km^2 in 2003 to 21,480 km^2 in 2024, with a corresponding drop in the number of potential sampling units from 5,397 to 5,370 (Table 2). Blocks were excluded primarily due to the absence of an assigned depth

stratum in the original design, as well as evidence from on-ground inspection and existing prior knowledge.

2.1.2 Inlet Survey Component

Under the inlet survey design, five sets were assigned to specific polygons in four designated areas: Portland Inlet, Gil Island, Finlayson Channel, and Dean/Burke Channel (Figure 1). In 2024, Gil Island was scheduled for the survey but was not fished due to weather-related delays.

2.1.3 Experimental Component

Experimental sets were deployed offshore to assess escape ring effects on Sablefish catch rates and size distribution. The Fishing Master selected sites at least 1 nautical mile from the 2024 set of survey blocks. Each set had 25 traps on a string, with three escape ring configurations repeated on the string, as described below in 2.4.1.

2.2 GHNMCA RESERVE AND HAIDA HERITAGE SITE

The Sablefish survey received approval from the Archipelago Management Board (AMB) of the Gwaii Haanas National Marine Conservation Area (GHNMCA) to operate in its multi-use zones (Figure 1, inset) between 2024 and 2026. During the random allocation of 2024 survey blocks, four of the blocks fell within the multiuse zone (MUZ), while three were in the strict protection zone (SPZ) where sampling is not allowed. Those three SPZ blocks were replaced with blocks outside the protected zone.

The Gwaii Haanas Gina 'Waadluxan KilGuhlGa Land-Sea-People Management Plan and information is located at {https://parks.canada.ca/pn-np/bc/gwaiihaanas/info/plan}.

2.3 CHARTER VESSEL

The 2024 survey was chartered aboard the fishing vessel (F/V) *Pacific Viking* (Figure 2), skippered by Albert (Deacon) Melnychuk between September 29–November 16, 2024 (Appendix A). Additional details about the vessel are available at `http://marinetraffic.com`.

2.4 FISHING GEAR

The longline trap gear featured a groundline with 25 baited traps at 150-foot intervals, anchored at both ends with 90 lb weights. A flagpole was attached to at least one end as an essential surface marker to ensure gear retrieval. The steel-frame traps had a 54-inch base hoop and were covered with #84 black braided nylon (2.75-inch mesh). The tunnels consisted of green,

braided, knotless 1.25-inch mesh. The gear remained unchanged from previous years, with figures in the 2021 survey report (Lacko et al. 2023).

Each trap contained a 6×12-inch bait bag made of 1/8-inch web with a nylon drawstring and #7 stainless trolling snaps. At the start of each survey leg, the Chief Scientist ensured the squid was cut into 2 lb (0.91 kg) blocks and hake into 10 lb (4.54 kg) sections. The traps and bait bags were purchased by the CSA. Tunnel entrances were made of green braided, knotless material with a mesh size of 1.25 inches, and traps included a rot panel of #21 cotton, positioned above the middle ring.

2.4.1 Experimental Component

The longline trap gear for the experimental sets consisted of 25 baited traps, similar to those used in the StRS and Inlet sets. The escape rings were made from a 3/16-inch (4.8 mm) stainless steel round bar, bent into a 3 ¾-inch (95.3 mm) diameter circle and welded at the ends, matching the fleet's standard size. Three escape-ring treatments were evaluated, including a control configuration. Two treatments (E1 and E2) were carried forward from the previous year's experimental design, while a third treatment (E6) represented a newly introduced configuration for this study.

The control trap (E1) had no escape rings. The second trap (E2) followed licence conditions, with two escape rings attached below the horizontal bar in the corners behind the first vertical bar away from the tunnel. The third trap (E6) featured four escape rings, two in the same position as E2 and two attached below the horizontal bar in the corners behind the tunnel opening vertical bars (Appendix B).

The escape ring study protocol required deployment of three traps for each of the E1, E2, and E6 configurations in ordered fashion along the string of gear as outlined in Table 3. Untreated (regular) fishing traps were placed at the ends and between the treatment traps to serve as buffers.

2.5 FISHING OPERATIONS

Fishing gear was deployed on alternate days during routine survey operations. Before gear deployment, the Fishing Master inspected each block for fishability and depth. If a block was unfishable, a neighboring block (preferably east or west) was selected. If unsuitable, alternatives to the north or south were considered. If no block met the previous criteria, a random block within the same area and depth stratum was selected.

Gear deployment data were recorded by two science staff. One person in the wheelhouse completed the EDAS GFBioField Bridge Log form (Olsen 2010), which included nine sections covering essential survey information. For more information regarding the electronic input of the EDAS GFBioField forms mentioned in this document, please refer to the GFBio Field User Guide 2023, which can be obtained upon request. The other staff member completed a trap deployment set log on the aft deck. This log recorded deployment times, buoy identification, trap counts, and data recorder details (including trap placement and recorder IDs). An example is in

the 2021 survey report (Lacko et al. 2023). The staff member also ensured traps were properly baited and undamaged.

2.5.1 Stratified Random Sampling Component (StRS)

Sets in StRS blocks had a targeted soak time of 24 hours +/- 2 hours. Fishing sets were designated useable if hauled between 22 and 26 hours. Traps were baited with 4.5 kg of loose offshore Pacific Hake (*Merluccius productus*) and 0.9 kg of bagged squid.

2.5.2 Escape Ring Experimental Component

Experimental fishing sets had soak times 24 hours in duration. Sets shorter than 22 hours and longer than 26 hours were considered unsuccessful. Traps were baited with a 0.9 kg of bagged squid and a 4.5 kg block of Pacific Hake.

2.6 GEAR HAUL AND CATCH PROCESSING

Two science personnel were positioned at the haul card station on deck to record catch data and coordinate basket movement. The Skipper adjusted the haulback speed as necessary to enable science staff to accurately record the catch during trap retrieval.

At the start of the gear haul, the catch recorder entered set-specific details into the EDAS GFBioField Bridge Log, including the buoy number, string end and time the first buoy was picked up. The first and last trap retrieval times, as well as the trap number containing the data recorder, were automatically populated from the GFBioField Trap Catch Form. The haul start and end times were also auto-filled once the corresponding trap times were recorded.

As the groundline was hauled, each becket and trap was entered in the EDAS GFBioField Trap Catch form, accessed through the EDAS GFBioField Haul Card form. Crew members alerted the recorder about any damage or irregularity to a trap, which was then recorded in the EDAS GFBioField Trap Usability form.

For each trap, the crew sorted the catch by species, and counted it into baskets. Catch counts for each basket were recorded, and weighed to the nearest 0.2 kg using a motion compensating scale. Each basket was assigned a basket use code of D, A, T, SD and/or F. Code D indicated fish species as discards or commercial catch; code A allocated fish to the age sample station; code T allocated Sablefish to be place in the tagging tank to be tagged and released; code SD marked sublegal Sablefish to be returned to the sea; and code F represented any fish frames with amphipod or hagfish damage.

2.6.1 Sablefish Allocation Details

Traps were selected for biological sampling with the goal of selecting 30 Sablefish per set. Under the updated 2018 survey protocol, if CPUE was high, a minimum of two traps were required for sampling. If the pooled catch from these two traps exceeded 30 Sablefish, 30 specimens were randomly subsampled from the combined baskets. If the catch rates were low, a sufficient number of traps were kept for sampling, to ensure that the biosample for that particular set contained 30 pieces.

The traps left were allocated into the discard category and organized by size into either legal discards or sublegal discards. The sublegal discard category (55 cm or smaller) was introduced during the 2017 survey to account for the high abundance of juvenile Sablefish encountered and to streamline their prompt release back into the water. Sablefish that met the legal discard criteria were retained by the charter vessel crew and processed as part of the commercial catch. For fish damaged by amphipods, the frames were placed in a separate basket, and both weight and count were recorded.

For experimental (escape ring) sets, the sampling goal was to obtain 50 Sablefish from each treatment (E1, E2, E3, E4) for measurement of length,and sex.

2.7 BIOLOGICAL SAMPLING (LWSMO)

Biological samples were collected from Sablefish as well as incidentally captured rockfish species, including Shortraker Rockfish (*Sebastes borealis*), Yelloweye Rockfish (*Sebastes ruberrimus*), and Rougheye/Blackspotted Rockfish (*Sebastes aleutianus*/*S. melanostictus* complex). For the escape ring sets, only Sablefish were sampled. All data were recorded on the EDAS GFBioField Fish Recording form.

2.7.1 Stomach Sampling

Beginning in 2024, simple stomach content assessments were added, consisting of digestion state and taxonomic identification of prey items. Stomach contents were fully emptied and examined to identify the single dominant prey item (by volume), including material found in the mouth. The dominant prey item was recorded regardless of it's digestion state (partially digested or intact). No attempt was made to distinguish whether prey originated from trap-feeding or bait (ie. hake or squid); all observed stomach contents were recorded as consumed. Prey items were identified to the lowest taxonomic level confidently possible by the sampler. Empty and everted stomachs were recorded as well.

2.7.2 Sablefish Sampling

For each Sablefish, fork length (L), body weight (W), sex (S), maturity level (M) and stomach contents were electronically recorded. Sagittal otoliths (O) were also collected and stored

for potential ageing at the Sclerochronology Laboratory in Nanaimo, B.C., part of the Pacific Biological Station.

For experimental sets using escape rings, only fork length (L) and sex (S) were collected.

2.7.3 Rockfish Sampling

In 2024, when present in a survey set, Shortraker Rockfish, Yelloweye Rockfish, and Rougheye/Blackspotted Rockfish were sampled, with approximately 25 pieces per set, for LWSMO and stomach contents. Tissue samples (fin clips in vials containing 95% ethanol) for DNA extraction were collected from Rougheye/Blackspotted Rockfish. In 2024, no DNA samples and no stomach-content data were collected for Yelloweye Rockfish.

Since 2010, each specimen has been visually identified by the at-sea sampler as Rougheye, Blackspotted, or a hybrid using a standardized identification guide. These field identifications are later validated against DNA results to assess the accuracy of the visual determination. Morphological and genetic analyses confirmed Blackspotted and Rougheye Rockfish as distinct species within the Sebastes complex (Orr and Wildes 2008; Harris et al. 2019). However, visual identification remains challenging; as noted by Starr and Haigh (2020), and reliable distinction often requires genetic (DNA) analysis.

All rockfish and legal-sized Sablefish (fork length over 55 cm) that were sacrificed for biological samples were later dressed, frozen, and landed as commercial catch.

2.8 SABLEFISH TAGGING

Fish destined to be tagged were transferred from the sorting area to a tagging tank. A vessel crew member was positioned to retrieve Sablefish from the tank and provide assistance with fish handling. A science member stood at the sample station and tagged fish with a Mark II Long Tagging gun loaded with Floy FD-94 T-bar anchor tags. The tag was inserted on the left side of the fish, 1 cm below and 2-3 cm behind the anterior insertion of the first dorsal fin. Fork length measurements (mm to the nearest ½ cm) taken on the Scantrol measuring board were electronically transferred to the EDAS GFBioField Fish Recording form (Olsen 2010). Before release, any sampling errors, injuries or damage to the fish were documented on the Fish Recording form by a second science member who was stationed at the sample computer. Tag checks were performed systematically to ensure tag numbers on the data form matched those on the fish specimen.

Water temperature in the tagging tank was measured at one minute intervals by a standard oceanographic temperature-depth recorder (TDR), which was installed in the tank during the haul.

2.9 TAG RECOVERY

Previously tagged Sablefish were recovered and separated from the catch. On the StRS sets, Sablefish with Canadian tags were re-released after affixing a new tag, and any wounds from the old tag were documented. Sablefish with Canadian tags found in poor condition, or those bearing foreign agency tags, and all tagged fish on experimental sets were retained for biological sampling. Tags and otoliths were placed in a bar-coded vial and scanned into the EDAS GFBioField Tag Recovery Entry form (Olsen 2010) by DFO personnel. Foreign agency tags were later returned as part of the BC Sablefish tagging program https://canadiansablefish.com/the-science/.

2.10 GFSURVEYS NETWORK CONFIGURATION AND ELECTRONIC MONITORING (EM)

The GFSurveys network configuration and electronic monitoring system for the *F/V Pacific Viking* are described in the 2022 report (Hardy et al. 2024).

2.11 ANALYSIS OF 2024 EXPERIMENTAL ESCAPE RING STUDY

To examine differences between escape ring treatments (E1, E2, E6), several metrics were analyzed. Catch per unit effort (CPUE) was evaluated in terms of both the number of fish and the total catch weight per trap. Length distributions were also compared to assess the size composition of the catch across treatments. The proportion of sub-legal fish (55 cm or smaller) was examined, as the primary goal of the study was to reduce the number of undersized fish brought to the surface. Additionally, the proportion of fish 60 cm or smaller was considered, reflecting market preferences for fish exceeding this size threshold.

3 Results and Discussion

3.1 FISHING

The 2024 Sablefish trap survey, lasting 51 days, began in Nanaimo, B.C., on September 27, starting about a week earlier than typical survey start dates over the past decade (Figure 3). Crew changes occurred on October 14 in Port Hardy and November 1 in Skidegate Narrows. The survey concluded on November 16, with nine weather days (October 7, 15, 18, 26, November 4–7, 10 and one repair day (October 19) lost.

There were a total of 100 sets completed during the 2024 survey out of a planned 111 sets, including the inlet sets (Appendix C). In the stratified random sampling (StRS) areas, 86 of the original 91 StRS blocks were fished (Figures 4 and 5) within the following areas:

- Area S1: All 19 original blocks were fished.

- Area S2: All 18 original blocks were fished; however, three blocks were replaced with alternate blocks to ensure the timely completion of random and escape ring sets.
- Area S3: 18 of the 19 original blocks were fished, with four blocks replaced by alternates and one block left unfished due to weather.
- Area S4: 16 of the 17 original blocks were fished. Three blocks within the strict protection zone of the GHNMCA were replaced, three additional blocks were replaced with alternates, and one block was not fished.
- Area S5: 15 of the 18 original blocks were fished, with one block replaced by an alternate and three blocks not fished due to weather and survey time constraints.

There were 14 experimental escape ring study sets completed during the survey, seven in area S2, three in area S4, and four in area S5 (Figures 4 and 5).

3.2 StRS SPATIAL COVERAGE

From 2003–2024, survey blocks within the depth-stratified sampling frame were randomly selected annually. Coastwide, of the original cell count, most 2 × 2 km^2 cells (71.5%) have not yet been surveyed; 22.6% have been visited once, 4.9% twice, and 0.9% three times, with very few visited more than four times (Figure 6).

3.3 StRS SET CPUE AND MEAN WEIGHTS

Catch per unit effort (CPUE) statistics for 2024 are presented in relation to the available time series for the StRS (2003–2024) survey component used as an abundance index in Sablefish operating models (Johnson et al. 2025). The Sablefish StRS survey biomass index in 2024 increased by 64% increase from 2023, marking a 40% increase from previous peak in 2019 (DFO 2025).

Catch rates as indexed by kilograms of Sablefish per trap (Figure 7) and number of fish per trap (Figure 8) were generally higher in the middle depth strata (RD2) over the survey time series (2003–2024), although there have been some recent years in which CPUE in shallow depth strata (RD1) of the southern regions have been equal or higher than those in the corresponding mid-depth strata.

In 2024, the kg/trap in the middle depth strata (RD2) were higher than the peak reached in 2019 in area S1 (South West Coast Vancouver Island) and S5 (North West Coast Haida Gwaii), while the #fish/trap were higher than the 2019 peak in area S1 only.

The mean weight of captured Sablefish in 2024 was similar or lower compared to 2023 in the deep (RD3) and middle depth (RD2) waters of all areas (S1–S5). In the shallow (RD1) waters, the mean weight in 2024 was higher in areas S4 (South West Coast Haida Gwaii) and S5 (North West Coast Haida Gwaii) (Figure 9).

Catch rates were relatively stable 2003 through 2016 but have been more variable and higher since 2017, with several recent years among the highest in both the kg/trap and # fish/trap (Figure 10 a,b). The mean weight of individual Sablefish caught in each trap has remained within a narrow range over time, with a slight decrease since 2015 (Figure 10 c).

3.4 CATCH COMPOSITION

A total of forty species were represented in the 2024 catch from StRS sets (Table 4). These groups included ten roundfish species, nine rockfish species, five flatfish species and sixteen invertebrate species. The most common species by weight, following Sablefish, were North Pacific Spiny Dogfish (*Squalus acanthias*), Lingcod (*Ophiodon elongatus*), Pacific Halibut (*Hippoglossus stenolepis*) and Arrowtooth Flounder (*Atheresthes stomias*).

3.5 SABLEFISH BASKET USE BY TRAP

A detailed breakdown of the fate of the Sablefish basket use for each trap for the 2024 survey is provided in Appendix D. Across all StRS sets, 224 traps were sampled for Length, Sex, Maturity, Weight, Otoliths (LSMWO) and stomach contents; 1375 traps were not sampled; and 112 traps had no catch or were missing. Across all experimental escape ring sets, 132 traps were sampled for Length and Sex (LS); 215 traps were not sampled; and 2 traps had no catch or were missing.

3.6 SABLEFISH SAMPLING

On StRS sets, a total of 63,917 Sablefish were caught, of which 2,887 were retained for biological sampling. On the experimental escape ring sets, 10,394 Sablefish were captured, with 2,084 of those used for biological sampling (Appendix E).

Overall, the StRS sets had a higher proportion of females than males in the spatial strata S1, S2, S3 and S4 (Table 5). More females than males were caught in the shallow depth stratum (RD1) within all spatial strata (S1 - S5). In the mid depth stratum (RD2), there were more males than females in S1, S2 and S5. The deepest depth stratum (RD3) saw more females in spatial strata S1 and S2.

3.7 SABLEFISH FORK LENGTH

Variations in length distributions between male and female Sablefish are evident in the data collected from the StRS portion of the 2003–2024 surveys. Over these 22 years, the mean fork length ($\bar{x}$) was 64.7 cm for females and 58.0 cm for males (Figure 11 a). In 2024, the mean fork length for both males and female StRS samples were just below the long-term average (Figure 11 b).

On average, female Sablefish from StRS sets reach a greater size (Figure 12 a) than males (Figure 12 b).

3.8 SABLEFISH MATURITY

Maturity was assessed macroscopically and assigned a code based on gonadal appearance, including structural features, coloration, and developmental stage. For Sablefish, immature, ripening, ripe, running ripe, and post-spawning categories follow a 12-code macroscopic maturity scale (Appendix F). Over the past three years, the StRS survey has shown a subtle increase in skipped spawning, reflected by a greater proportion of fish classified in the 'resting' maturity stage, which represents individuals that have previously spawned but are not reproductively active in the year (Figure 13).

3.9 STOMACH CONTENTS

Of the 2,556 Sablefish stomachs examined, 920 (35.99%) were empty, suggesting limited recent feeding activity. The remaining prey items in stomachs with contents were Pacific Hake (*Merluccius productus*) (31.77%), unidentified remains (13.34%), unidentified fishes (8.14%), amphipods (Amphipoda) (1.72%), and a variety of less frequent taxa (Table 6). The presence of squid and Pacific Hake in stomach contents likely reflects residual bait from traps during soak periods, rather than active natural foraging.

3.10 SABLEFISH SUBLEGAL ENCOUNTERS

The proportion of sublegal (<55 cm fork length) Sablefish has fluctuated across survey strata in recent years and is generally highest at mid-depth (RD2; Figure 14). Instances where sublegal fish made up more than 50% of catches in the mid-depths included: S4 and S5 (northern strata) in 2017 and 2018; all strata (S1–S5) in 2019; S1, S4, and S5 in 2020; S1, S2, S3, and S5 in 2021; and S1 (southern strata) from 2022 to 2024.

3.11 RECOVERED TAGGED SABLEFISH

Of the 68 previously tagged fish that were recovered on the 2024 survey, two had no release location data, seven were USA tags and the remainder of recovered tags were from Canadian releases. Three quarters of these fish (45/59 or 76%) had travelled no more than 50 kilometers from the release site. Half of the recoveries (31/59 or 53%) were recaptured within five years at liberty (Table 7).

3.12 OTHER FISH SAMPLES

Length, sex, maturity, otoliths, stomach contents and DNA samples were collected from 163 of the total 257 Rougheye/Blackspotted Rockfish specimens captured in 2024. Science samplers visually identified 59 specimens as Rougheye, 104 as Blackspotted, and none as hybrids (Appendix G, Table 1). Of the 162 Rougheye/Blackspotted Rockfish stomachs examined, 91 (56.17%) were empty, and 58 (35.80%) were everted, suggesting limited recent feeding activity, and capture-related barotrauma. The remaining prey items in stomachs with contents were unidentified remains (5.56%), shrimp (Dendrobranchiata) (1.23%), cephalopods (Cephalopoda) (0.62%) and squids (Teuthida) (0.62%) (Appendix G, Table 2).

Length, sex, maturity, otoliths and stomach contents were collected for 25 Shortraker Rockfish (Appendix H, Table 1) . Of the 25 Shortraker Rockfish stomachs examined, 17 (68.00%) were empty, and 7 (28.00%) were everted, suggesting limited recent feeding activity, and capture-related barotrauma. The remaining prey items in stomachs with contents were shrimp (*Dendrobranchiata*) (4.00%) (Appendix H, Table 2).

Length, sex, maturity and otoliths were collected for 30 Yelloweye Rockfish (Appendix H, Table 1).

3.13 SABLEFISH AGES

Age composition data collected during the survey show the progression of strong recruitment events over time (Figure 15). From 2003 to 2010, the dominant female age groups in StRS sets were 3 through 10 years, respectively. Another strong cohort appeared from 2011 to 2015, with dominant ages 3 to 7, respectively. In 2016, 2017, and 2018, the highest proportion of females were 3, 4, and 5 years old. From 2019 to 2024, the dominant ages were ages 3 to 8 years, respectively (Figure 15 a).

For males, the dominant age groups in StRS sets from 2003 to 2011 were 3, 5, 5, 6, 8, 8, 8, 10, and 12 years, respectively. A new cohort began dominating the catch in 2012, first as 4-year-olds, followed by 5-year-olds in 2013, 7-year-olds in 2014–2015, and 8-year-olds in 2016. From 2019 to 2024, the dominant ages shifted to 3 to 8 year old males (Figure 15 b), mirroring the pattern observed in females.

3.14 OCEANOGRAPHIC TEMPERATURES AND DEPTHS

Since 2006, SBE 39 temperature and pressure recorders have been deployed on survey fishing sets. To capture temperatures while the trap was positioned on the seafloor bottom, temperature and depth data were extracted from approximately one hour after gear deployment and one hour before retrieval. In 2024, mean temperatures decreased with depth across 1-degree latitude intervals from southwest Vancouver Island to northwest Haida Gwaii (Figure 16).

Mean bottom temperatures per year, as recorded for each set, show a consistent depth-related pattern: the deepest survey waters (RD3) remained coolest at 3–4 ℃ with some variation; the

mid-depth survey waters, RD2 averaged 4–5 ℃ with some occasional warmer values; and the shallowest survey waters, RD1 was warmest at 5–7 ℃, reaching for example 7.7℃ in 2023 (Figure 17).

3.15 EXPERIMENTAL ESCAPE RING STUDY

Traps that were not fishing effectively during the 14 escape ring study sets were documented, as various issues had the potential to compromise fishing performance (Table 8). Excluding these traps ensured the study results were based only on traps that functioned correctly. A total of 29 traps across 14 sets were excluded from analysis. The most common issue was gilling in one escape ring (22 traps), followed by large holes (3 traps), gilling in the tunnel (3 traps), gilling in two escape rings (2 traps), and one instance of gilling in all three escape rings.

3.15.1 Effect of Gilled Trap Catch on Escape-Ring Trap CPUE

CPUE was summarized by escape ring treatment in two ways: by the number of fish per usable trap (Table 9, Appendix I) and by catch weight per usable trap (Table 10, Appendix J). Significant differences in catch rate were observed between the reference trap (E1) and each of the modified configurations E2, and E6 (Figure 18).

3.15.2 Length Distribution

A total of 10,394 Sablefish were caught in escape ring study sets, with 2,084 Sablefish kept for fork length and sex samples. Six of the sampled fish were tag recoveries, and 1 tagged fish was released (Appendix E). Over half of the Sablefish sampled (65%) from the escape-ring sets were female, although the sex ratio varied among sets, ranging from 50% to 79%. The mean fork length was 60 cm for males and 64 cm for females in the escape-ring sets (Table 11).

Not all Sablefish from the treatment traps were processed as samples due to high catch volumes. Subsampling was conducted. Based on the subsampled data (Table 12), an average of 23% of fish caught in E1 traps, 6% in E2, and 2% in E6 were smaller than 55 cm. Similarly, 60%, 23%, and 15% of fish caught in E1, E2 and E6 traps, respectively, were smaller than 60 cm. Traps with four escape rings (E6) had the lowest proportion of fish below both size thresholds, while traps with no escape rings (E1) had the highest (Figure 19).

3.16 ACKNOWLEDGEMENTS

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4 Tables

Table 1. Spatial and depth stratum allocations and completed set counts (shown in blue) for the StRS component of the 2024 B.C. Sablefish trap survey. Depth strata are defined as follows: RD_1 = 100–250 fathoms (183–457 m), RD_2 = 250–450 fathoms (458–823 m), and RD_3 = 450–750 fathoms (824–1,372 m).

Spatial Strata	Depth Strata							
	RD_1	RD_1 2024	RD_2	RD_2 2024	RD_3	RD_3 2024	Total	Total 2024
S_1 (Southwest Coast Vancouver Island-SWCVI)	6	6	8	8	5	5	19	19
S_2 (Northwest Coast Vancouver Island-NWCVI)	6	6	7	7	5	5	18	18
S_3 (Queen Charlotte Sound-QCS)	8	8	6	6	5	4	19	18
S_4 (Southwest Coast Haida Gwaii-SWCHG)	6	5	6	6	5	5	17	16
S_5 (Northwest Coast Haida Gwaii-NWCHG)	6	5	7	7	5	3	18	15
Total	**32**	**30**	**34**	**34**	**25**	**22**	**91**	**86**

Table 2. Summary of stratified random sampling (StRS) survey strata (S) from the original 2003 survey frame compared to 2024. The area (km²) of each spatial (S_1 to S_5) and depth (RD_1 to RD_3) stratum combination is shown, with the number of potential 2 km × 2 km sampling units per stratum indicated in parentheses.

	2003	2024	2003	2024	2003	2024	2003	2024
S	RD_1	RD_1	RD_2	RD_2	RD_3	RD_3	All Depths	All Depths
S_1	1,088 (272)	1,084 (271)	1,236 (309)	1,236 (309)	2,024 (506)	2,020 (505)	4,348 (1,087)	4,340 (1,085)
S_2	976 (244)	960 (240)	1,252 (313)	1,248 (312)	2,236 (559)	2,236 (559)	4,464 (1,116)	4,444 (1,111)
S_3	3,628 (907)	3,628 (907)	1,240 (310)	1,240 (310)	1,372 (343)	1,368 (342)	6,240 (1,560)	6,236 (1,559)
S_4	456 (114)	420 (105)	496 (124)	4,950 (120)	1,384 (346)	1,368 (342)	2,336 (584)	2,268 (567)
S_5	1,508 (377)	1,508 (377)	1,020 (255)	1,024 (256)	1,672 (418)	1,660 (415)	4,200 (1,050)	4,192 (1,048)
All	7,656 (1,914)	7,600 (1,900)	5,244 (1,311)	5,228 (1,307)	8,688 (2,172)	8,652 (2,163)	21,588 (5,397)	21,480 (5,370)

Table 3. Planned trap deployment order for the escape ring study, presented in block configurations for each of the E1, E2, and E6 treatments along a string of 25 traps. 'N' denotes a control trap with no treatment (i.e., a regular fishing trap) used as a buffer between escape ring study traps. Treatment Blocks of 6 was used when one escape ring set was completed in a day, Blocks of 5 for two sets, and Blocks of 4 for three sets.

Trap number	Treatment blocks of 6	Treatment blocks of 5	Treatment blocks of 4
1	N	N	N
2	E1	N	N
3	E2	E1	N
4	E6	E2	E1
5	N	E6	E2
6	E1	N	E6
7	E2	N	N
8	E6	E1	N
9	N	E2	E1
10	E1	E6	E2
11	E2	N	E6
12	E6	E1	N
13	N	E2	N
14	E1	E6	N
15	E2	N	E1
16	E6	E1	E2
17	N	E2	E6
18	E1	E6	N
19	E2	N	N
20	E6	N	E1
21	N	E1	E2
22	E1	E2	E6
23	E2	E6	N
24	E6	N	N
25	N	N	N

Table 4. Summary of species captured during the 2024 StRS survey sets conducted by the F/V *Pacific Viking*. Species listed without a count or weight were present in trace amounts only.

Category	Common Name	Scientific Name	Count	Weight(kg)
Roundfish	Sablefish	ANOPLOPOMA FIMBRIA		136,049
	North Pacific Spiny Dogfish	SQUALUS ACANTHIAS		1,642
	Lingcod	OPHIODON ELONGATUS		1,382
	Pacific Grenadier	CORYPHAENOIDES ACROLEPIS		204
	Pectoral Rattail	ALBATROSSIA PECTORALIS		92
	Pacific Cod	GADUS MACROCEPHALUS		3
	Pacific Flatnose	ANTIMORA MICROLEPIS		1
	Pink Snailfish	PARALIPARIS ROSACEUS		1
	Black Hagfish	EPTATRETUS DEANI	2	
	Black Eelpout	LYCODES DIAPTERUS	1	
Rockfish	Rougheye/Blackspotted Rockfish Complex	SEBASTES ALEUTIANUS		428
	Redbanded Rockfish	SEBASTES BABCOCKI		285
	Shortraker Rockfish	SEBASTES BOREALIS		123
	Yelloweye Rockfish	SEBASTES RUBERRIMUS		76
	Shortspine Thornyhead	SEBASTOLOBUS ALASCANUS		55
	Bocaccio	SEBASTES PAUCISPINIS		10
	Longspine Thornyhead	SEBASTOLOBUS ALTIVELIS		3
	Rosethorn Rockfish	SEBASTES HELVOMACULATUS		3
	Sharpchin Rockfish	SEBASTES ZACENTRUS		1
Flatfish	Pacific Halibut	HIPPOGLOSSUS STENOLEPIS		1,145
	Arrowtooth Flounder	ATHERESTHES STOMIAS		639
	Dover Sole	MICROSTOMUS PACIFICUS		6
	Petrale Sole	EOPSETTA JORDANI		2
	Deepsea Sole	EMBASSICHTHYS BATHYBIUS	2	
Invertebrates	Grooved Tanner Crab	CHIONOECETES TANNERI		86
	Fragile Urchin	ALLOCENTROTUS FRAGILIS		66
	Oregontriton	FUSITRITON OREGONENSIS		47
	Red Queen Crab	LITHODES COUESI		10
		NEPTUNEA		4
	Spiny King Crab	PARALOMIS MULTISPINA		2
	California Sun Star	RATHBUNASTER CALIFORNICUS		1
	Redclaw Crab	CHORILIA LONGIPES		1
		AMPHIOPHIURA PONDEROSA	8	
	Fish-Eating Star	STYLASTERIAS FORRERI	3	
		MEDIASTER	2	
	Anemone	ACTINIARIA	2	
	Prawn	PANDALUS PLATYCEROS	1	
		SOLASTERIDAE	1	
	Heart Urchins	ATELOSTOMATA		
	Sea Lilies And Feather Stars	CRINODEA		

Table 5. Summary of Sablefish sex ratios and mean fork lengths (mm) recorded during the 2024 StRS survey sets, by spatial and depth stratum.

Strata			Proportion		Mean Fork Length	
Spatial	**Depth**	**M:F**	**Males**	**Females**	**Males**	**Females**
S_1	RD_1		0.32	0.68	546	609
	RD_2		0.64	0.36	538	595
	RD_3		0.30	0.70	562	606
	All		0.42	0.58	549	603
S_2	RD_1		0.25	0.75	584	633
	RD_2		0.52	0.48	540	561
	RD_3		0.44	0.56	549	602
	All		0.40	0.60	558	599
S_3	RD_1		0.32	0.68	598	661
	RD_2		0.48	0.52	570	611
	RD_3		0.52	0.48	560	655
	All		0.44	0.56	576	642
S_4	RD_1		0.20	0.80	609	669
	RD_2		0.46	0.54	556	590
	RD_3		0.64	0.36	573	645
	All		0.43	0.57	579	635
S_5	RD_1		0.29	0.71	589	668
	RD_2		0.60	0.40	567	605
	RD_3		0.63	0.37	590	620
	All		0.51	0.49	582	631

Table 6. Summary of dominant prey items identified in Sablefish stomachs collected in 2024. Counts indicate the number of stomachs containing each prey type based on the simple contents protocol; percentages represent the proportion of all stomachs examined (n = 2,556), including empty stomachs. Note: squid and hake records may include bait.

Prey Code	Prey Description	Scientific.Name	nStomach	% of Total (n=2556)
M002	EMPTY		920	35.99%
225	PACIFIC HAKE	MERLUCCIUS PRODUCTUS	812	31.77%
M011	UNID. REMAINS		341	13.34%
M010	UNID. FISHES		208	8.14%
OAA	AMPHIPODA(ORDER)/AMPHIPOD	AMPHIPODA	44	1.72%
91A	CEPHALOPODA(FAMILY)	CEPHALOPODA	43	1.68%
92A	TEUTHOIDEA(ORDER)/SQUID	TEUTHIDA	36	1.41%
SAB	NANTANTIA(ORDER)/SHRIMP	DENDROBRANCHIATA	30	1.17%
ZAG	GROOVED TANNER CRAB	CHIONOECETES TANNERI	18	0.7%
SCA	PANDALID SHRIMP	PANDALUS	14	0.55%
3G0	SCYPHOZOA(CLASS)/JELLYFIS	SCYPHOZOA	9	0.35%
WAA	BRACYURA(SECTION)/TRUE CR	BRACHYURA	8	0.31%
0A0	INVERTEBRATES	INVERTEBRATES	7	0.27%
185	LANTERNFISHES	MYCTOPHIDAE	7	0.27%
RAB	EUPHAUSIACEA(ORDER)/EUPHA	EUPHAUSIACEA	7	0.27%
202	BLUE LANTERNFISH	TARLETONBEANIA CRENULARIS	5	0.2%
TAC	GLASS SHRIMP	PASIPHAEA PACIFICA	4	0.16%
M013	UNIDENTIFIED ALGAE		4	0.16%
91G	PACIFIC BOBTAIL SQUID	ROSSIA PACIFICA	4	0.16%
402	ROCKFISHES	SEBASTES	3	0.12%
10A	GASTROPODA(CLASS)/GASTROP	GASTROPODA	3	0.12%
ZKA	SALPS	THALIACEA	3	0.12%
M004	MISC. NON-MARINE		3	0.12%
97A	OCTOPODA(ORDER)/OCTOPUS	OCTOPODA	3	0.12%
451	SHORTSPINE THORNYHEAD	SEBASTOLOBUS ALASCANUS	2	0.08%
4GA	STARFISH	ASTEROIDEA	2	0.08%
60A	BIVALVE MOLLUSCS	BIVALVIA	2	0.08%
231	EELPOUTS	ZOARCIDAE	1	0.04%
3L0	ACTINIARIA(ORDER)/ANEMONE	ACTINIARIA	1	0.04%
M001	STONES OR PEBBLES		1	0.04%
M511	SKATES (RAJIDAE) EGG CASE - EMPTY		1	0.04%
044	SPINY DOGFISH	SQUALUS SUCKLEYI	1	0.04%
152	DEEPSEA SMELTS	BATHYLAGIDAE	1	0.04%
220	PACIFIC FLATNOSE	ANTIMORA MICROLEPIS	1	0.04%
28F	NEPTUNEA	NEPTUNEA	1	0.04%
0AB	POLYCHAETA(CLASS)/POLYCHA	POLYCHAETA	1	0.04%
597	FLATFISHES	PLEURONECTIFORMES	1	0.04%
170	VIPERFISHES	CHAULIODONTINAE	1	0.04%
3D2	BY-THE-WIND SAILOR	VELELLA VELELLA	1	0.04%
95E	SCHOOLMASTER GONATE SQUID	BERRYTEUTHIS MAGISTER	1	0.04%
DAA	COPEPODA(SUBCLASS)/COPEPO	COPEPODA	1	0.04%

Table 7. Canadian tag recovery counts by distance from release site and years at liberty. Two tagged Sablefish were sampled with no associated recovery data, and seven Sablefish with U.S. tags had no available release-location information.

	Distance (km) from Release Location								
Years at Liberty	**<10**	**11-50**	**51-100**	**101-250**	**251-500**	**501-1000**	**1000+**	**Recovery count**	**Other**
2-5	20	3	2	5	1	0	0	31	0
6-10	9	3	0	3	1	1	0	17	0
11+	7	3	0	0	1	0	0	11	0
Total Counts	**36**	**9**	**2**	**8**	**3**	**1**	**0**	**59**	**9**

Table 8. Overview of unusable traps and reason for not fishing correctly during the experimental escape ring study sets, indicated by 'x' marks.

Set	**Trap Number**	**Large Holes**	**Gilled in Tunnel**	**1 Escape Ring Gilled**	**2 Escape Rings Gilled**	**3 Escape Rings Gilled**
23	22			x		
24	2			x		
24	11			x		
24	20	x				
29	23	x				
42	18		x			
43	17			x		
66	10			x		
67	1		x			
67	9			x		
67	17			x		
76	6			x		
76	22			x		
83	5			x		
83	12	x				
83	14			x		
83	18			x		
83	22			x		
83	23				x	
84	17			x		
84	21			x		
95	5		x	x		
95	9			x		
95	10	x				
95	14			x		
95	17			x		
95	18				x	
95	22			x		
96	5					x
96	13			x		
96	22			x		
Total	30	4	3	22	2	1

Table 9. Summary of Sablefish catch rates (# fish per trap) by escape ring treatment. Only traps that were fishing correctly (referred to as “usable traps”) were included in the analysis.

	E1			E2			E6		
set	**count**	**traps**	**cpue**	**count**	**traps**	**cpue**	**count**	**traps**	**cpue**
23	368	5	73.6	100	4	25	52	5	10.4
24	403	5	80.6	117	5	23.4	54	2	27
29	109	5	21.8	45	5	9	30	4	7.5
30	94	5	18.8	41	5	8.2	21	5	4.2
36	234	6	39	60	6	10	67	6	11.2
42	92	4	23	38	5	7.6	30	5	6
43	193	5	38.6	17	4	4.2	46	5	9.2
66	314	5	62.8	80	5	16	63	4	15.8
67	170	5	34	42	3	14	67	5	13.4
76	217	6	36.2	109	6	18.2	68	4	17
83	121	4	30.2	56	4	14	13	1	13
84	184	5	36.8	65	4	16.2	62	4	15.5
95	202	4	50.5	68	2	34	67	2	33.5
96	164	5	32.8	63	3	21	52	4	13
Total	**2865**	**69**		**901**	**61**		**692**	**56**	
Mean			**41.3**			**15.8**			**14**

Table 10. Summary of Sablefish catch rates (kg per trap) by escape ring treatment. Only traps that were fishing correctly (referred to as “usable traps”) were included in the analysis.

	E1			E2			E6		
set	**weight**	**traps**	**cpue**	**weight**	**traps**	**cpue**	**weight**	**traps**	**cpue**
23	736.6	5	147.3	235.5	4	58.9	142.6	5	28.5
24	769	5	153.8	312.5	5	62.5	144.4	2	72.2
29	271.1	5	54.2	150.3	5	30.1	92.7	4	23.2
30	188	5	37.6	102.8	5	20.6	51.5	5	10.3
36	420	6	70	158.7	6	26.4	191.9	6	32
42	251.7	4	62.9	141.2	5	28.2	101	5	20.2
43	407.2	5	81.4	55.9	4	14	139.3	5	27.9
66	566	5	113.2	207	5	41.4	178.1	4	44.5
67	382.2	5	76.4	134.1	3	44.7	215.6	5	43.1
76	458.3	6	76.4	306.2	6	51	191.7	4	47.9
83	299.6	4	74.9	168.6	4	42.1	39.1	1	39.1
84	435.5	5	87.1	201.9	4	50.5	214	4	53.5
95	550.5	4	137.6	228.2	2	114.1	235.8	2	117.9
96	425.7	5	85.1	194.8	3	65	167.8	4	41.9
Total	**6161.5**	**69**		**2597.8**	**61**		**2105.5**	**56**	
Mean			**89.9**			**46.4**			**43**

Table 11. Summary of Sablefish sampled from all treatment traps in the escape-ring study during the 2024 survey.

		Mean Fork Length (mm)		
Set	**Specimen Count**	**Males**	**Females**	**Male Proportion**
23	160	576	618	0.35
24	156	588	636	0.28
29	130	622	640	0.30
30	121	575	610	0.50
36	164	569	624	0.34
42	117	640	668	0.21
43	132	624	627	0.34
66	166	588	629	0.31
67	149	601	665	0.32
76	167	576	615	0.38
83	151	579	645	0.38
84	140	594	639	0.22
95	157	627	677	0.41
96	167	604	666	0.50
Total	**2077**			
Mean		**597**	**640**	**0.35**

Table 12. Summary of Sablefish catch counts, biological specimen counts, and the proportion of specimens with fork lengths <55 cm, and <60 cm by fishing set and escape ring treatment type. Note that not all Sablefish from treatment traps were collected as specimens due to subsampling requirements. Data from all treatment traps were included.

	Number Caught			Number Sampled			Proportion <55 cm			Proportion <60 cm		
Set	**E1**	**E2**	**E6**	**E1**	**E2**	**E6**	**E1**	**E2**	**E6**	**E1**	**E2**	**E6**
23	368	122	52	57	53	50	0.3	0.09	0.02	0.79	0.3	0.1
24	403	117	102	55	53	48	0.24	0.04	0	0.73	0.23	0.13
29	109	45	33	54	45	31	0.04	0	0	0.52	0.04	0.1
30	94	41	21	60	40	21	0.33	0.1	0.05	0.8	0.3	0.38
36	234	60	67	61	48	55	0.46	0.08	0.04	0.85	0.35	0.22
42	101	38	30	50	36	31	0.06	0	0	0.28	0	0
43	193	26	46	69	17	46	0.07	0.06	0.02	0.41	0.12	0.15
66	314	80	79	51	52	63	0.39	0.13	0.05	0.69	0.29	0.16
67	170	69	67	51	42	56	0.24	0.05	0	0.53	0.14	0.11
76	217	109	102	58	56	53	0.45	0.18	0	0.67	0.39	0.19
83	121	71	69	55	46	50	0.16	0.04	0.02	0.62	0.28	0.12
84	184	82	69	55	40	45	0.36	0.03	0	0.69	0.13	0.27
95	202	172	196	51	54	52	0.02	0.04	0	0.35	0.11	0.02
96	164	88	87	52	63	52	0.12	0.02	0.04	0.35	0.3	0.25
Total count	**2874**	**1120**	**1020**	**779**	**645**	**653**	**182**	**41**	**11**	**464**	**147**	**99**

5 Figures

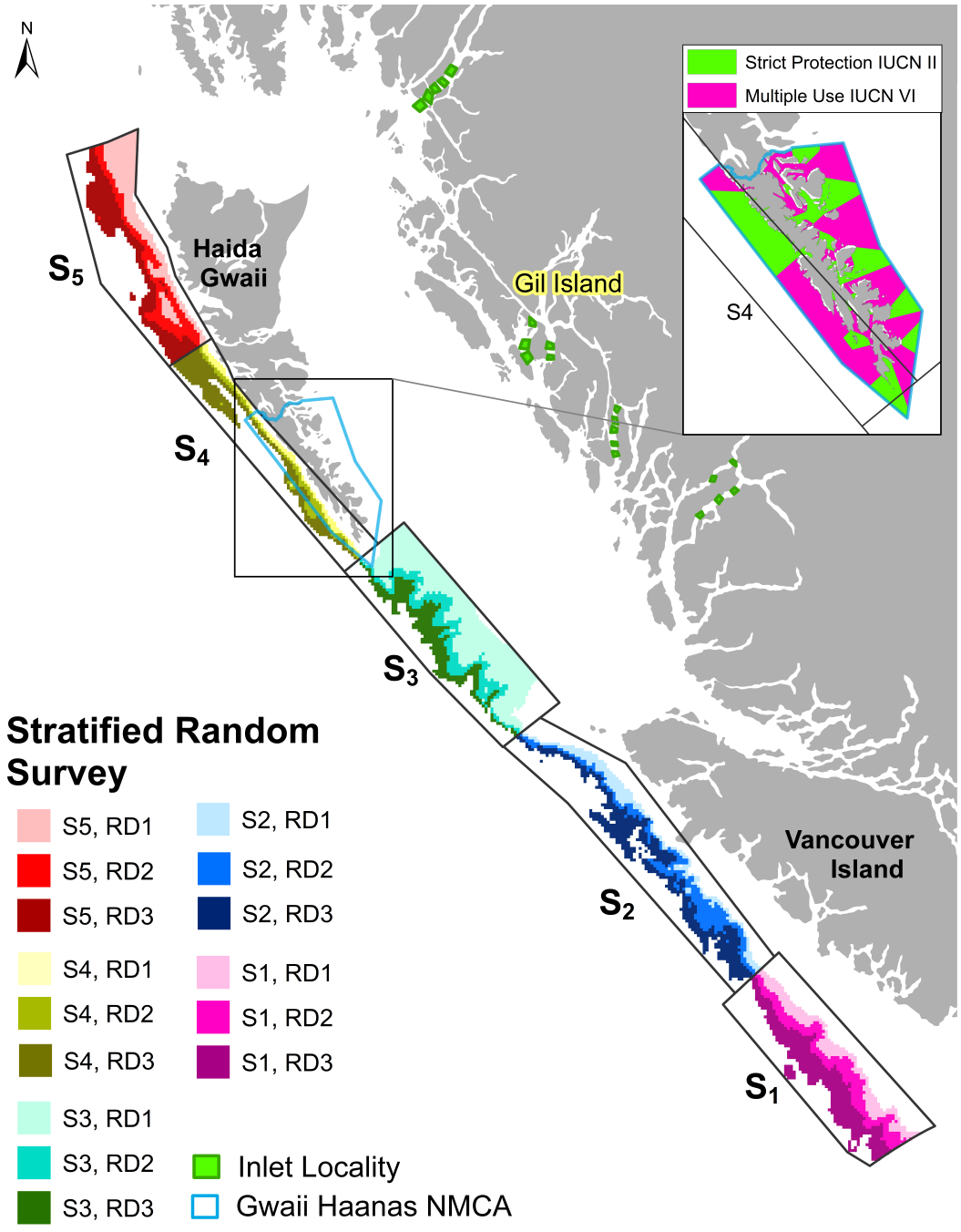

Figure 1. Design of the 2024 B.C. Sablefish trap survey, showing the planned randomized (StRS) and inlet components. Depth strata (RD1–RD3) are colour-coded and nested within five spatial strata (S1–S5). Inlets survey set locations are indicated by green polygons; none were surveyed in 2024.

Figure 2. Image of the F/V *Pacific Viking* used for the 2024 B.C. Sablefish trap survey. Photo credit: Schon Hardy.

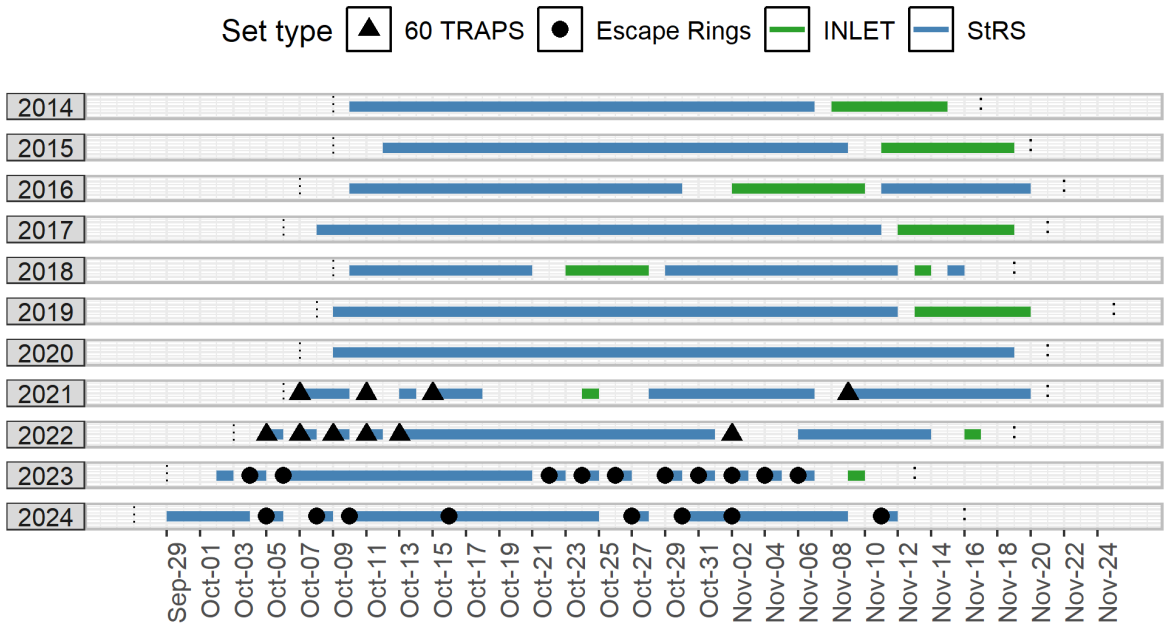

Figure 3. Timeline of survey dates by set type (Experimental, StRS, and Inlet) from 2014 to 2024. Dashed black lines indicate the start and end dates of each trip.

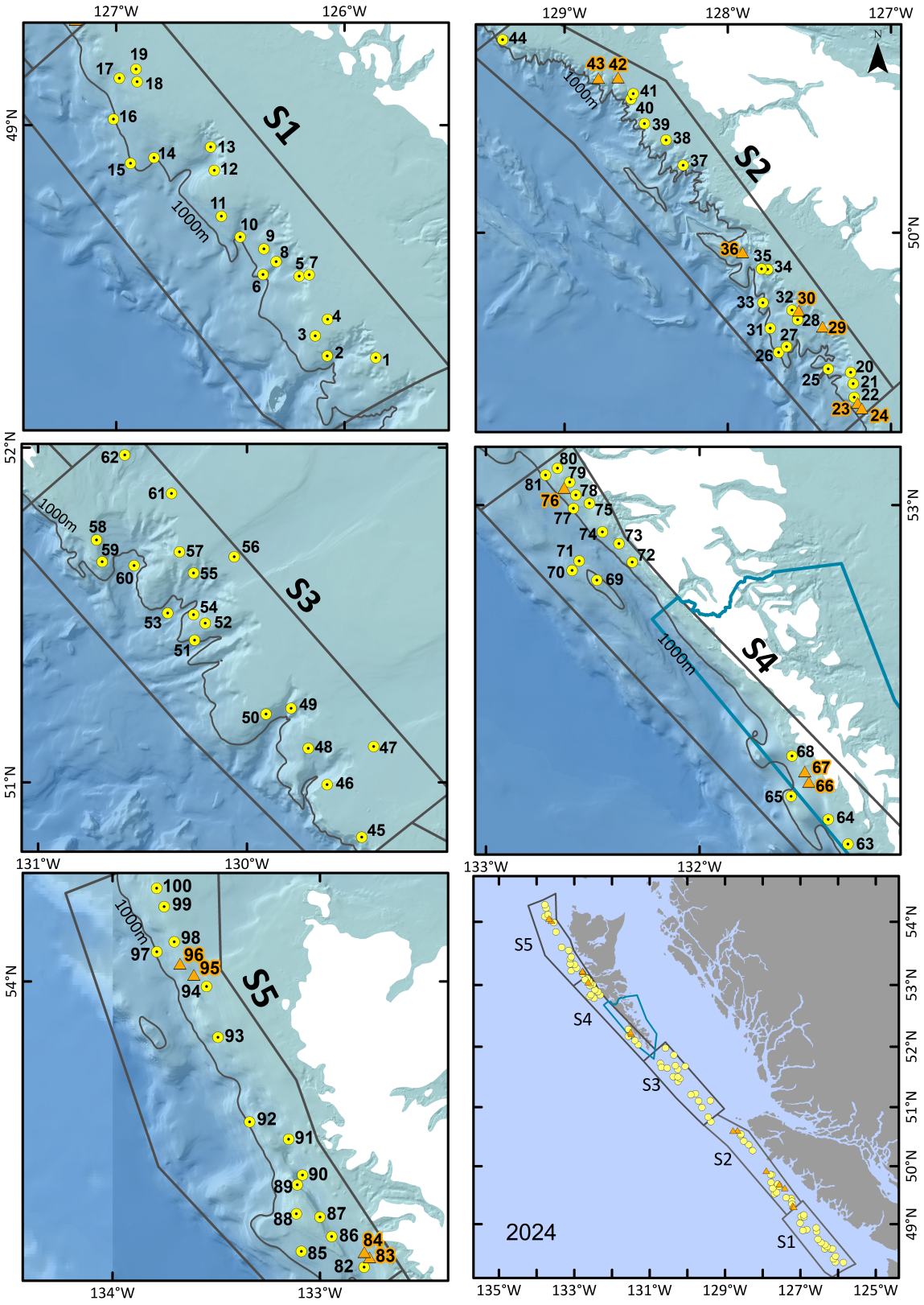

Figure 4. Start locations of 2024 survey sets (yellow markers) in StRS areas S1 through S5. Orange triangles indicate the 14 experimental (escape ring) sets.

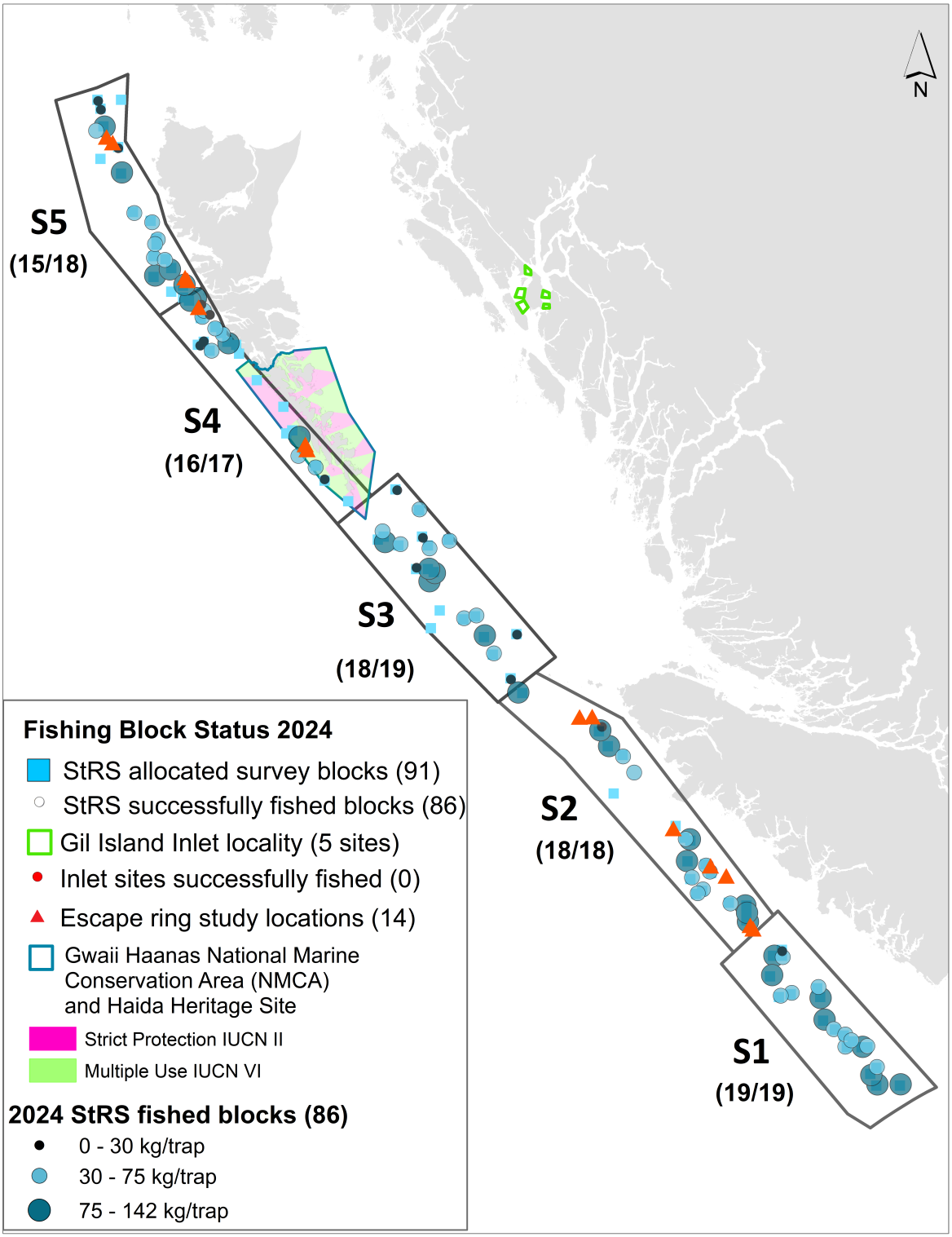

Figure 5. Map of allocated and completed survey blocks for the 2024 survey. No inlets were fished due to weather conditions. CPUE (kg/trap) is shown for each set location.

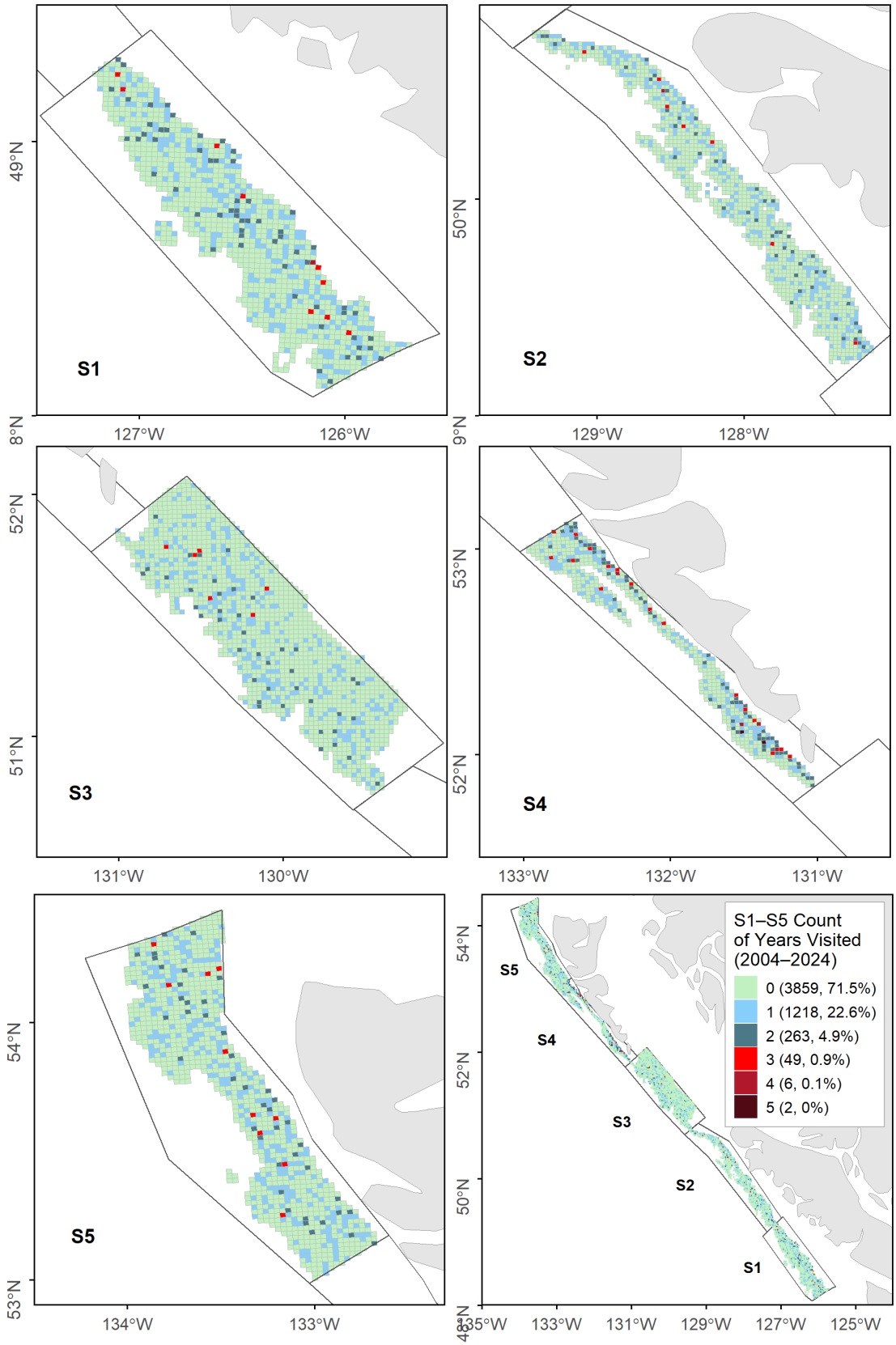

Figure 6. Count of survey grid cells visited from 2003 to 2024. Each panel shows an individual stratum (S1–S5); the bottom-right panel presents all strata combined.

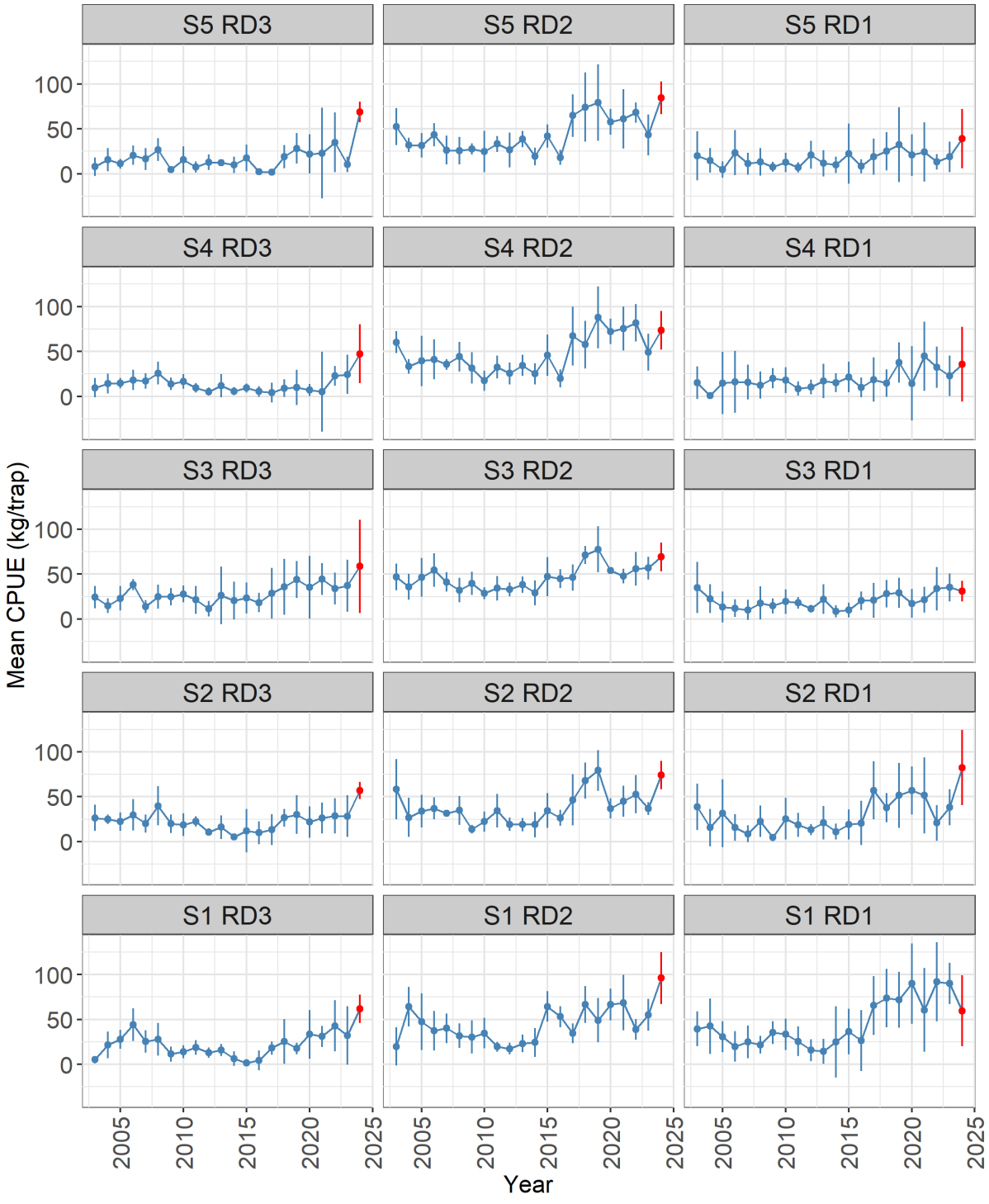

Figure 7. Average Sablefish catch per unit effort (CPUE; mean +/- 95% CIs) by survey strata since 2003. Panels run deep to shallow (left to right) and north to south (top to bottom).

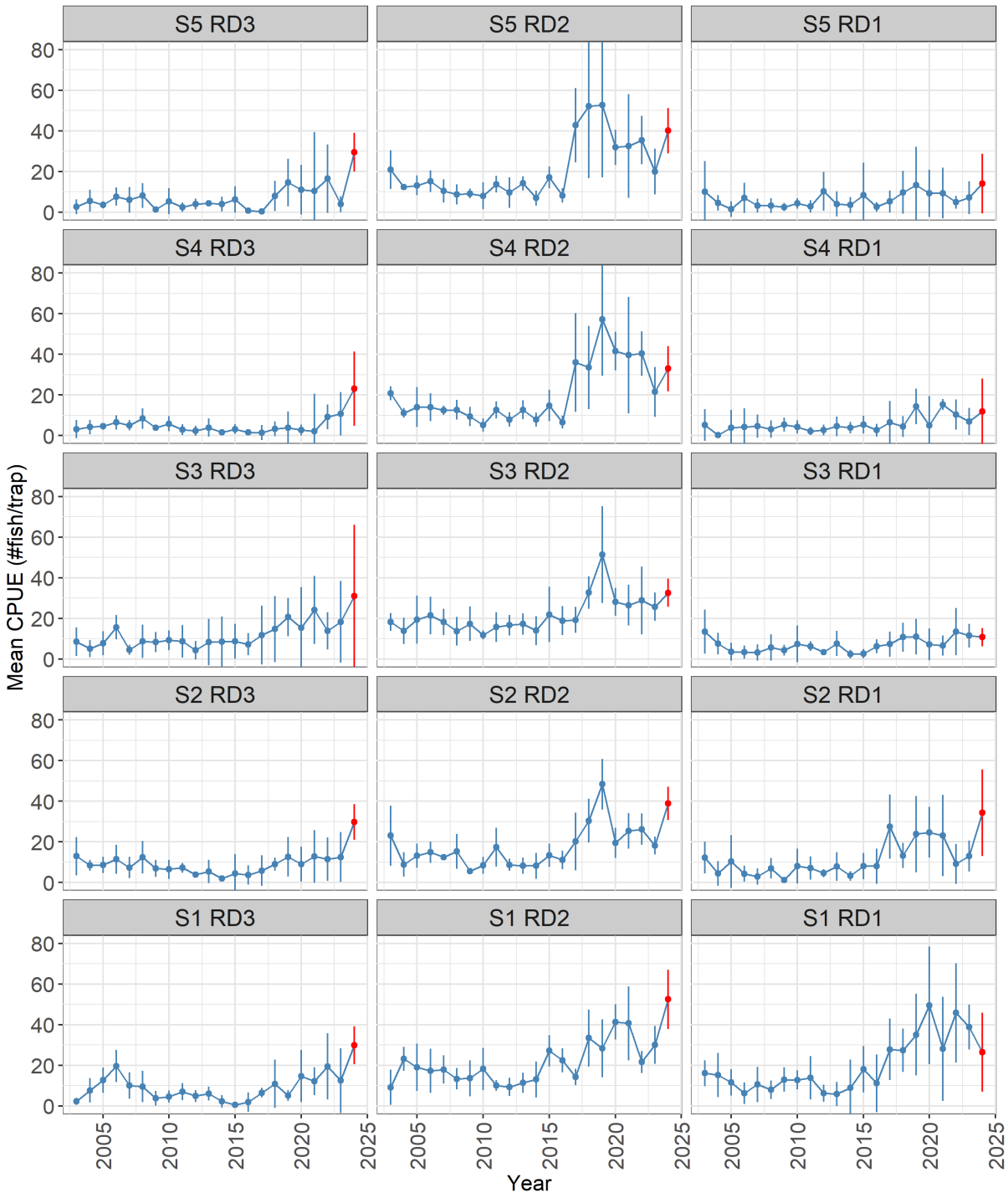

Figure 8. Average number of Sablefish per trap (mean +/- 95% CIs) by StRS survey strata over time. Panels run deep to shallow (left to right) and north to south (top to bottom).

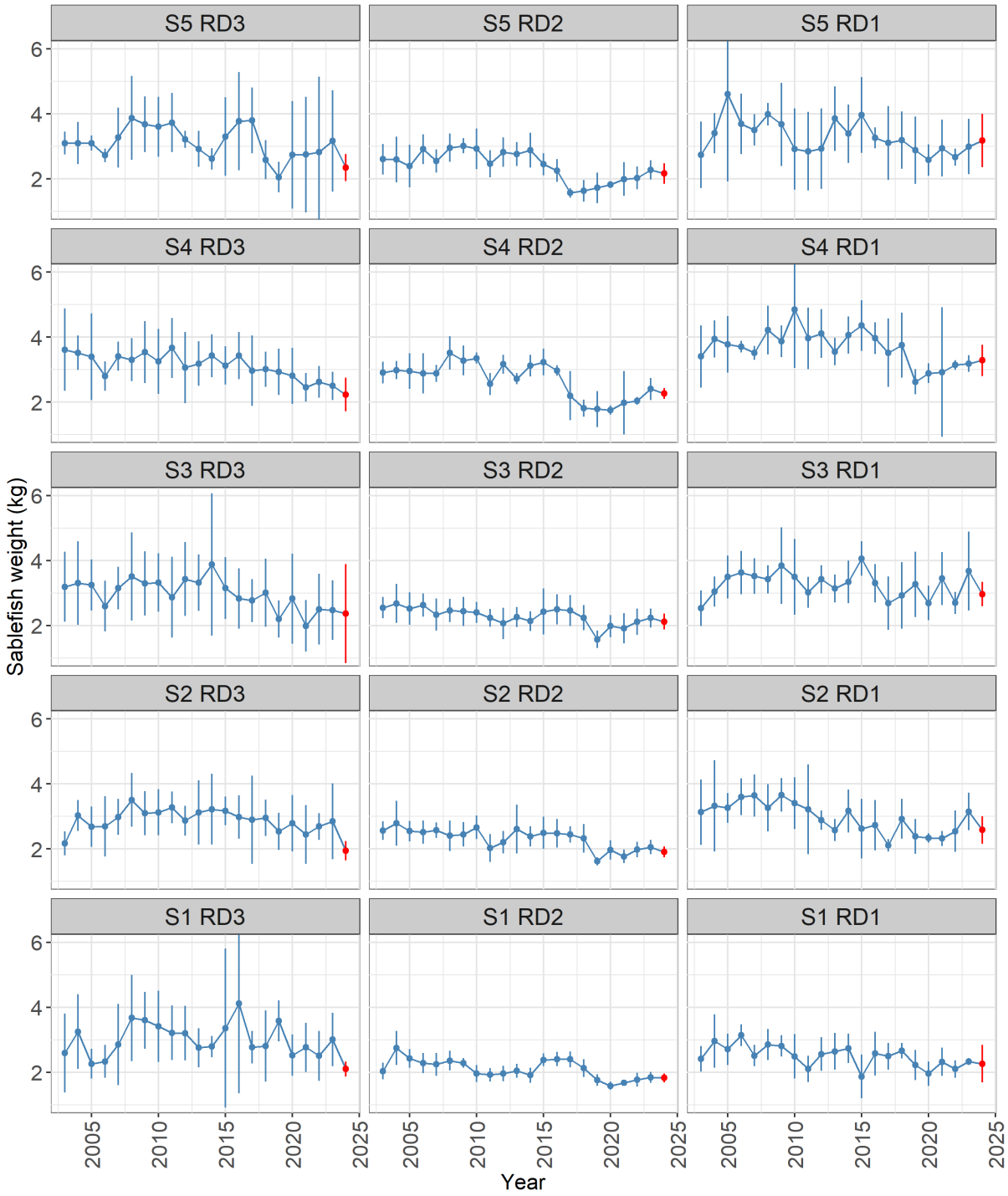

Figure 9. Average Sablefish weight (mean ± 95% confidence intervals) by survey stratum across years. Panels are arranged from deep to shallow strata (left to right) and from north to south (top to bottom).

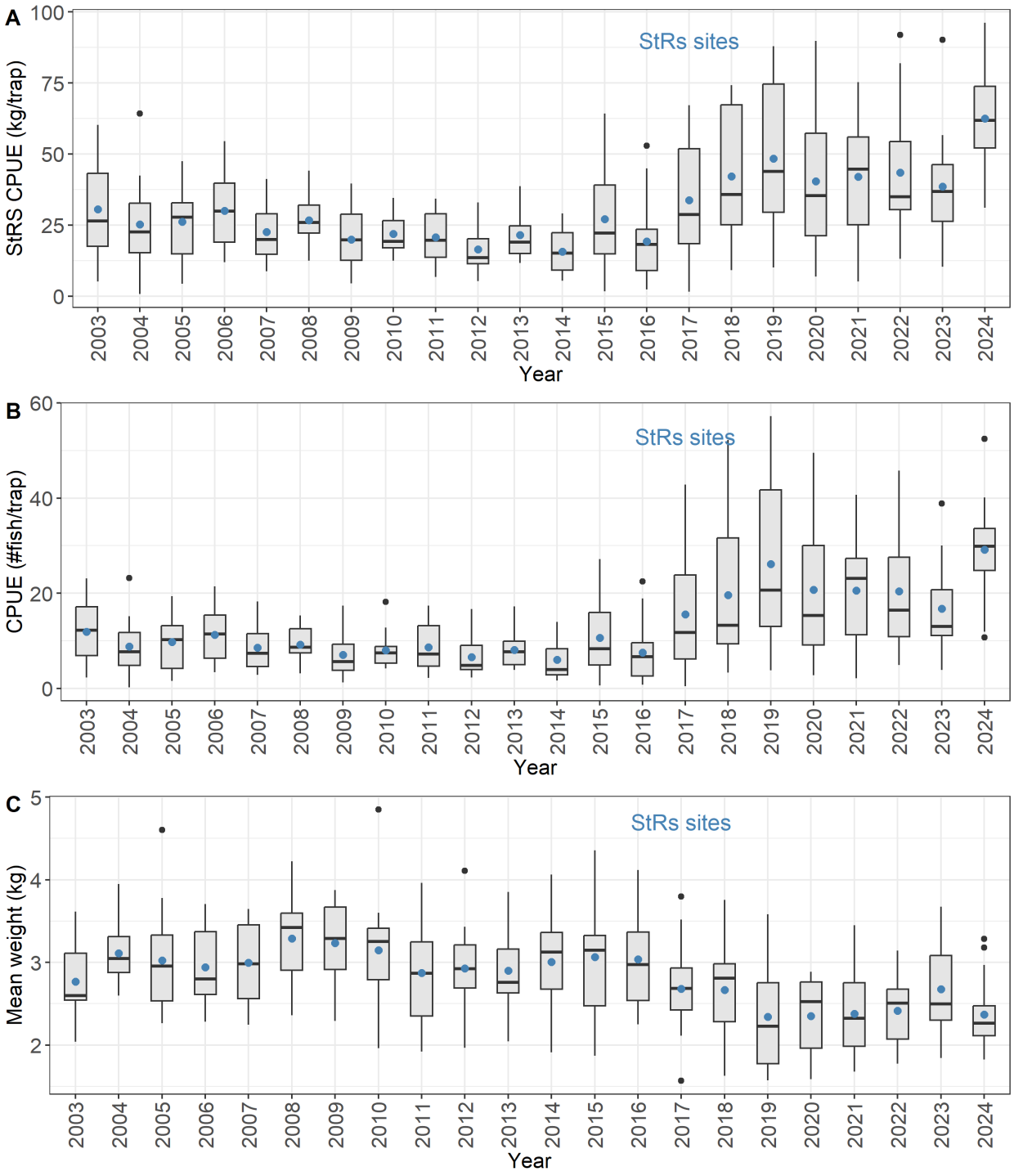

Figure 10. (A) Annual mean weight of Sablefish per trap (kg/trap); (B) annual mean number of Sablefish per trap (#fish/trap); (C) annual mean weight of Sablefish (kg) by StRS survey over time. Horizontal line is median and blue dots are arithmetic mean.

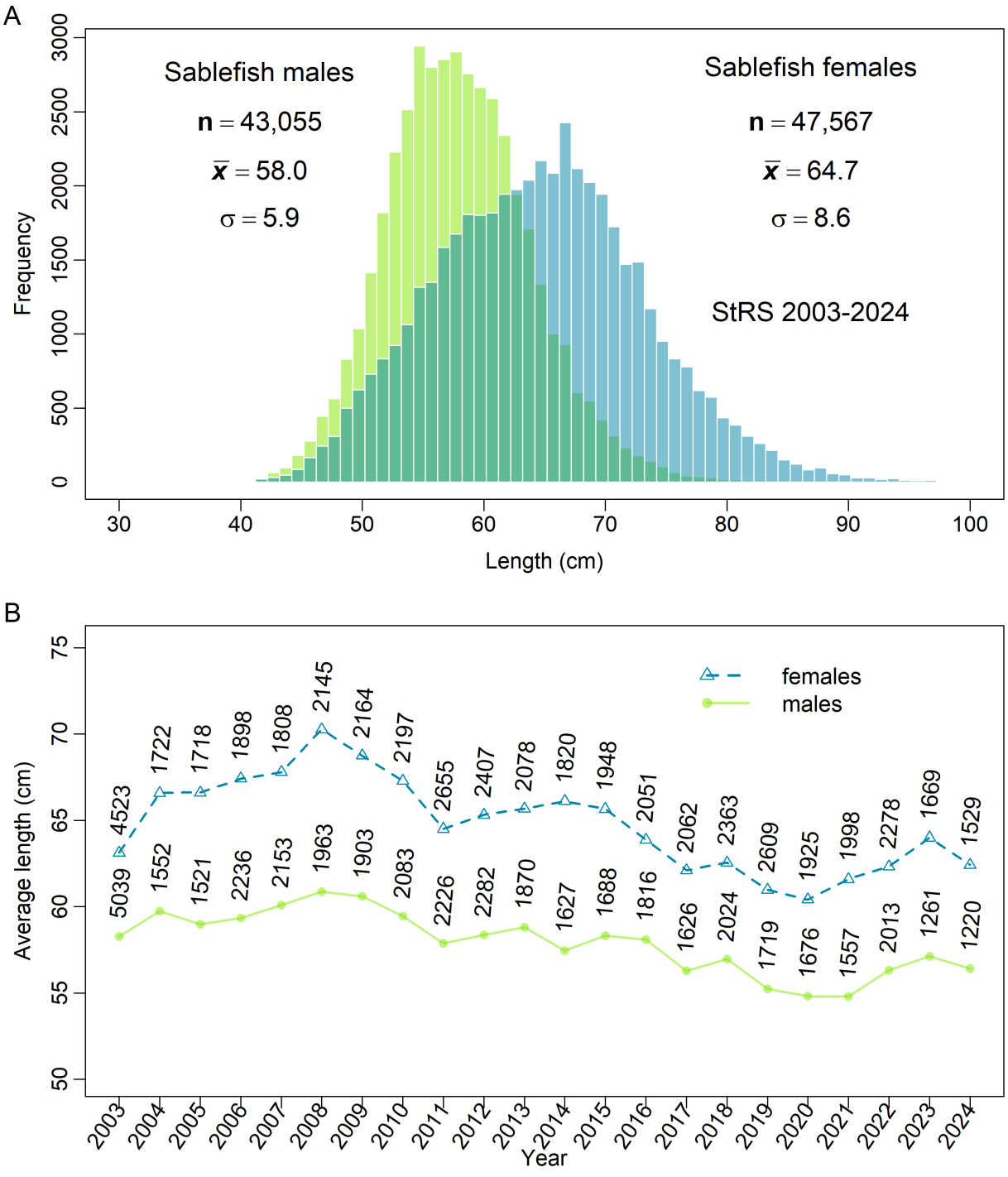

Figure 11. (A) Length-frequency distributions of female (blue) and male (green) Sablefish from all StRS sets through 2024. Specimen count (n), mean ($\overline{x}$)), and standard deviation (σ) are displayed. (B) Average length of male and female Sablefish by year, with counts by sex labeled.

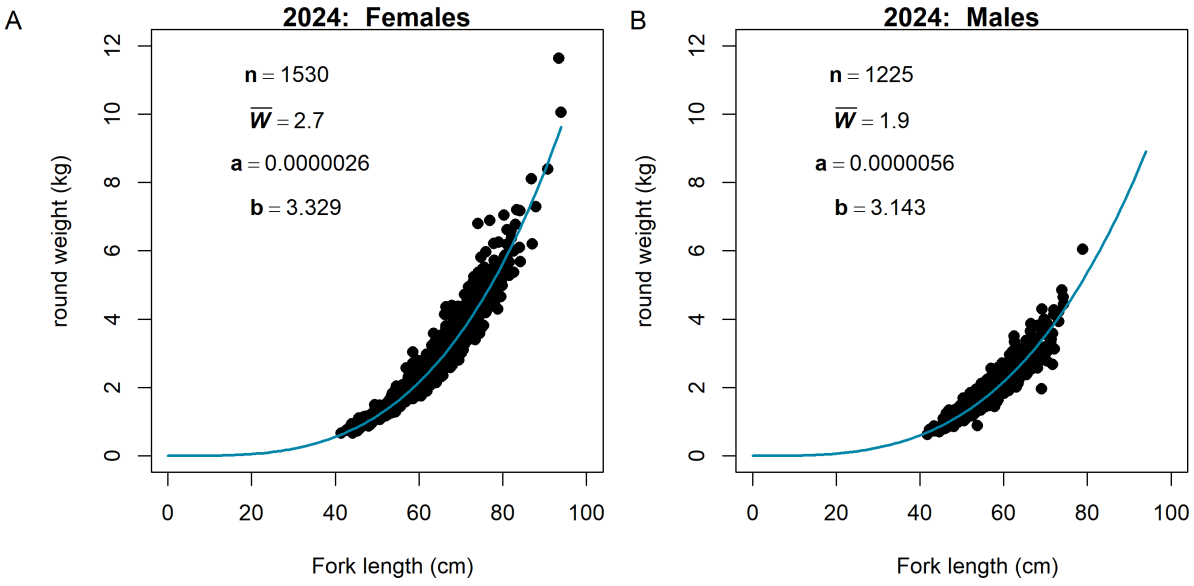

Figure 12. Fork length (cm) vs. weight (kg) of Sablefish sampled during the 2024 survey, shown for females (A) and males (B). n is the number of specimens; $\bar{W}$ is the mean weight; a and b are parameters of the length–weight relationship W = a × L^b.

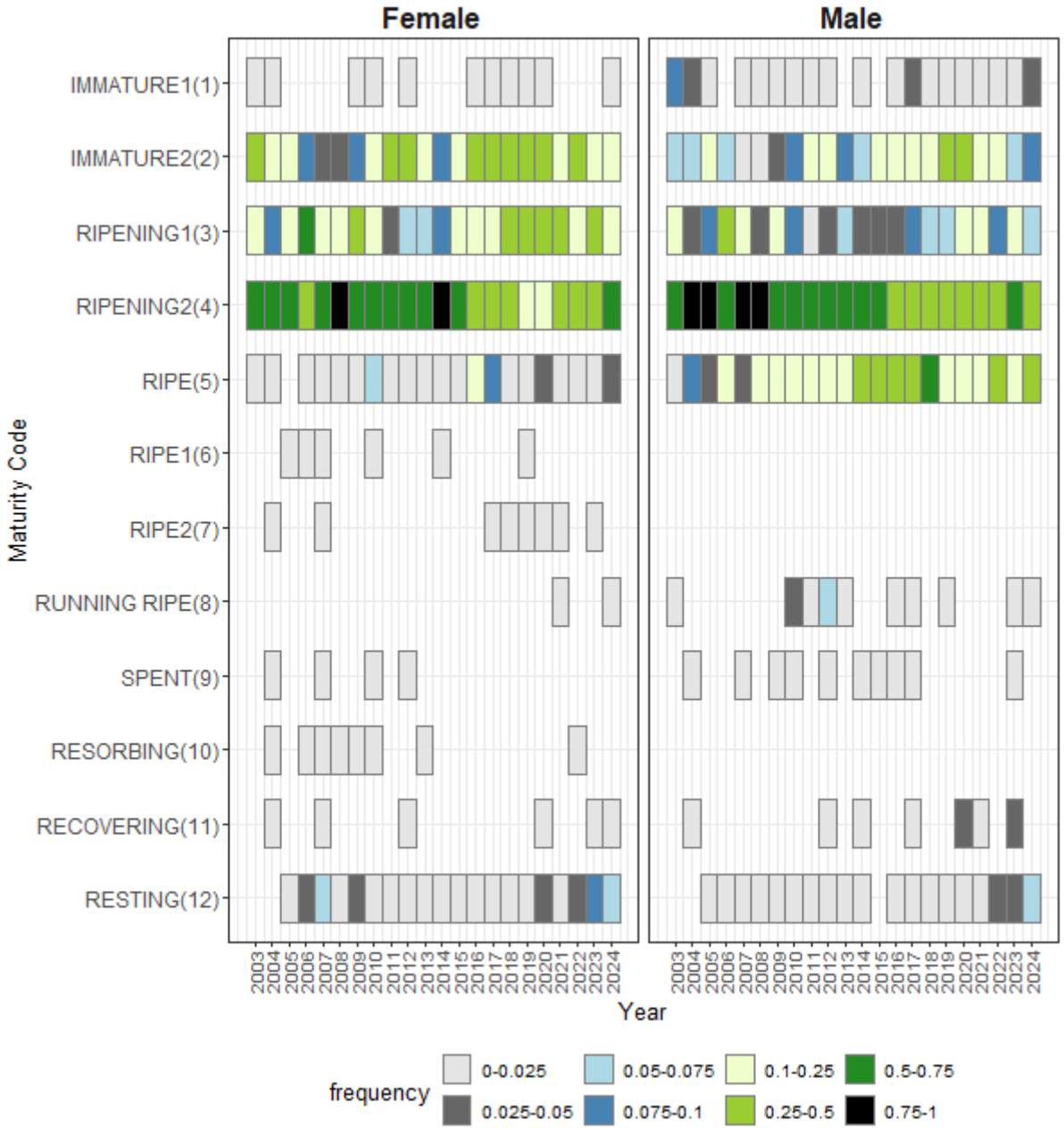

Figure 13. Relative frequency of maturity stages by survey year for female and male Sablefish caught on StRS sets. Maturity codes at stage 3 through to stage 12 are considered a mature fish.

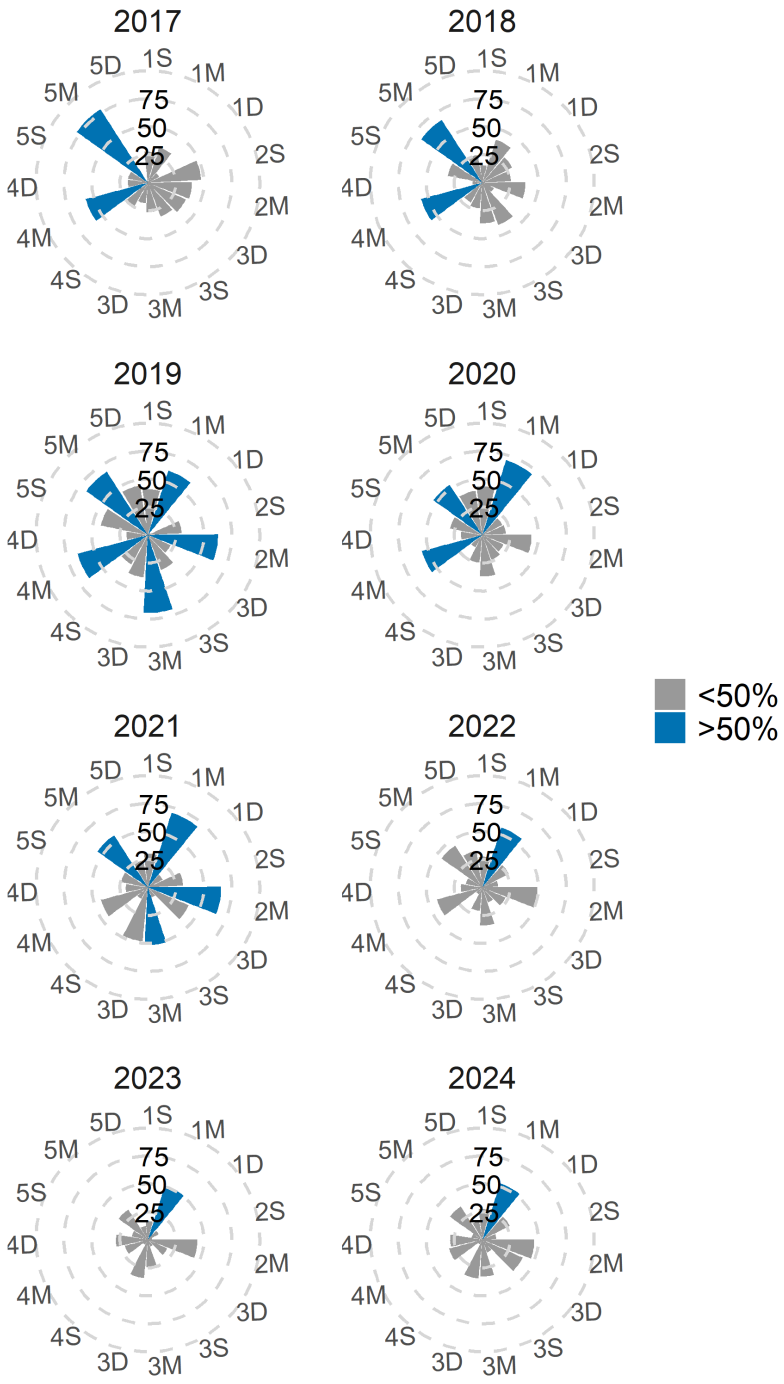

Figure 14. Sublegal Sablefish (<55 cm fork length) by spatial area and depth stratum in StRS sets, 2017–2024. Each polar panel is a year; each spoke is an survey spatial area–depth combination (S1–S5 × S/M/D, where S = shallow (RD1), M = mid-depth (RD2), D = deep (RD3). Bar length shows the percentage of sublegal fish; dashed rings mark 25%, 50%, and 75%. Grey bars indicate <50%; blue bars indicate >50%.

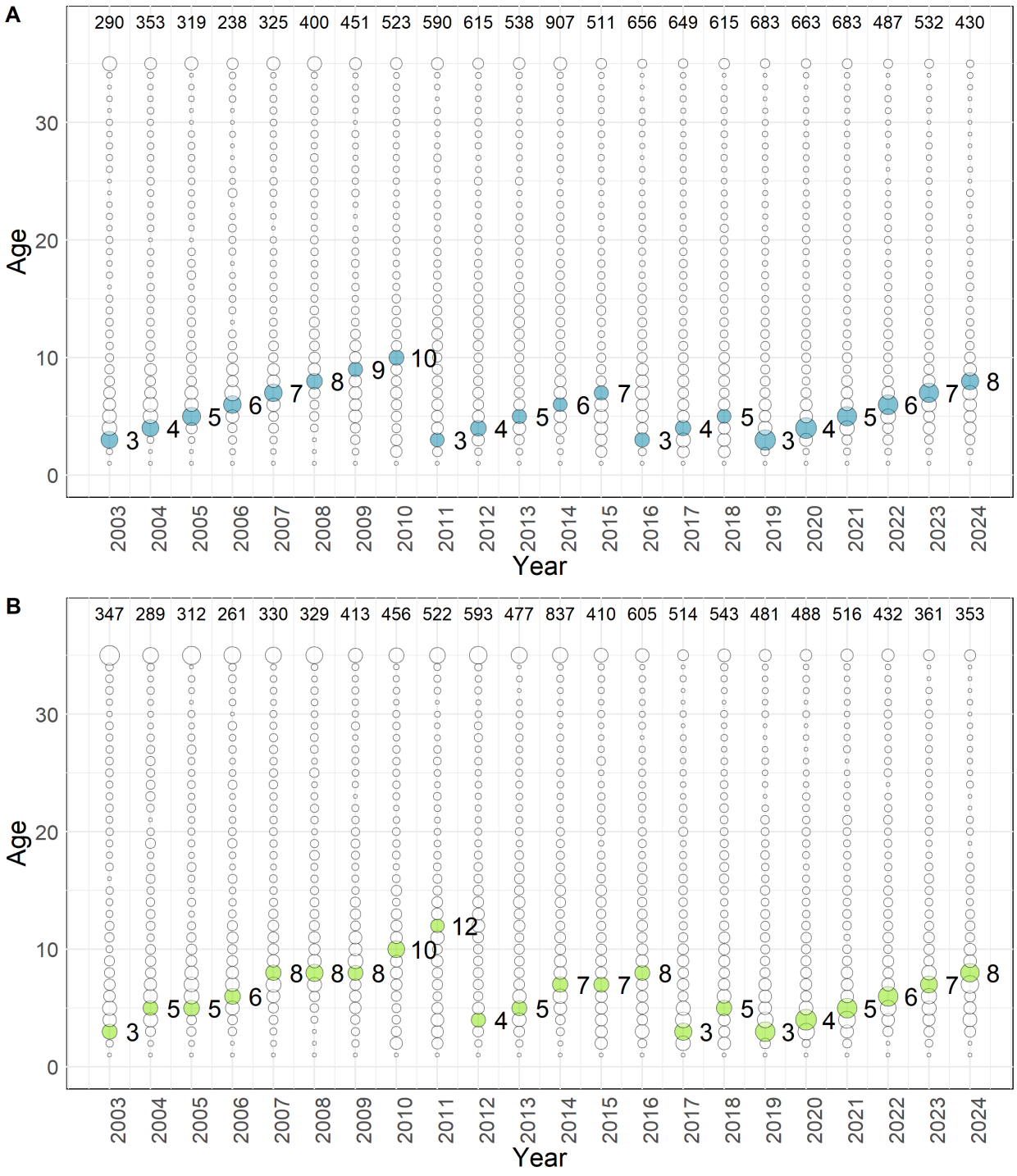

Figure 15. Bubble plot for female (A) and male (B) Sablefish ages by survey year from StRS sets that have been aged. The area of the circles are proportional to the number of fish with given ages. Fish age 35 and older are included in one bubble. The total number of fish aged are listed across the top of each panel. The ages with the highest numbers are posted to the right of the corresponding bubble.

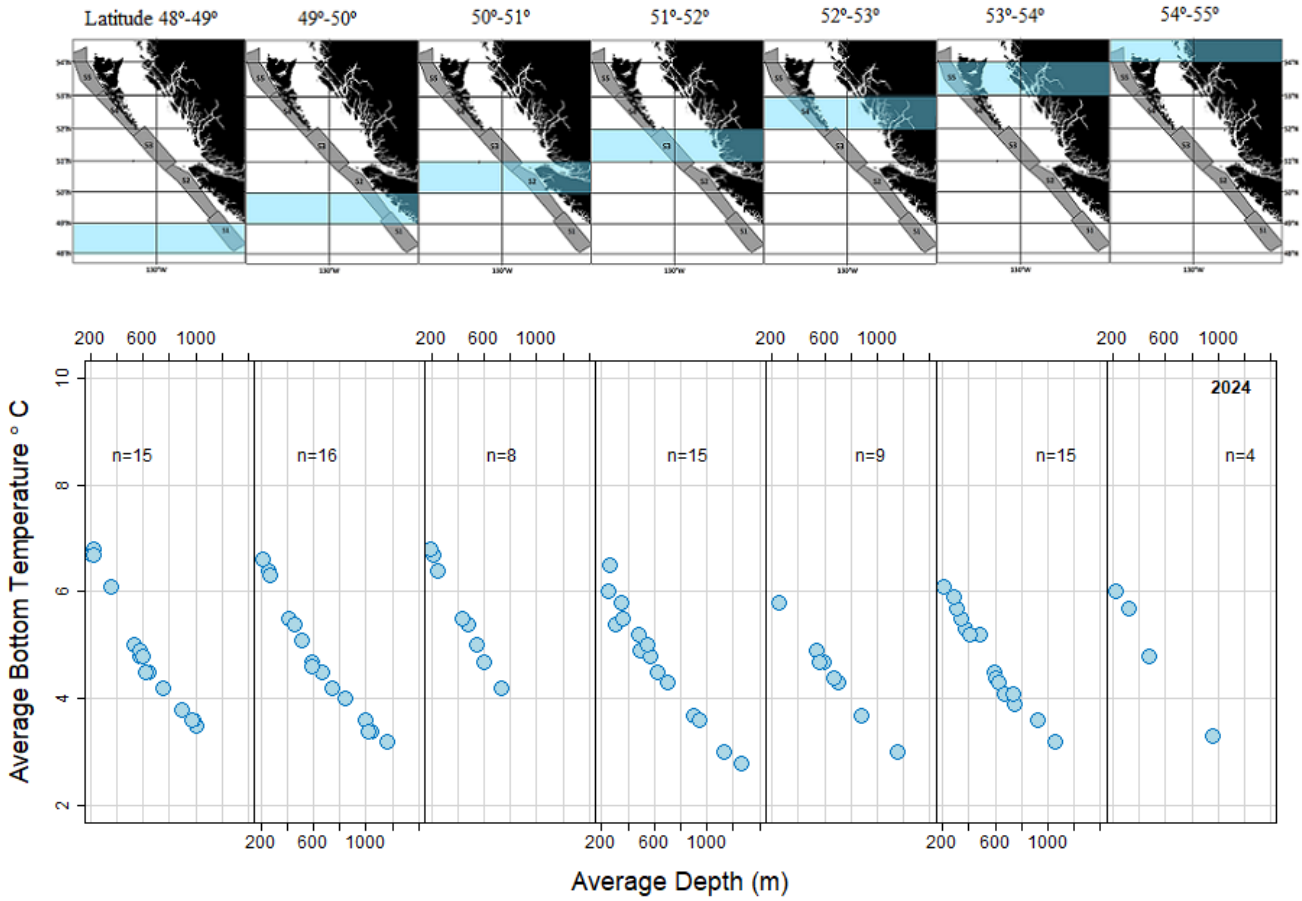

Figure 16. Coplot of average depth (m) versus average temperature (°C) for a given 1-degree latitude range (blue bands) for 2024 while the gear on/near bottom. The number of fishing sets deployed with a TDR logger are represented by n.

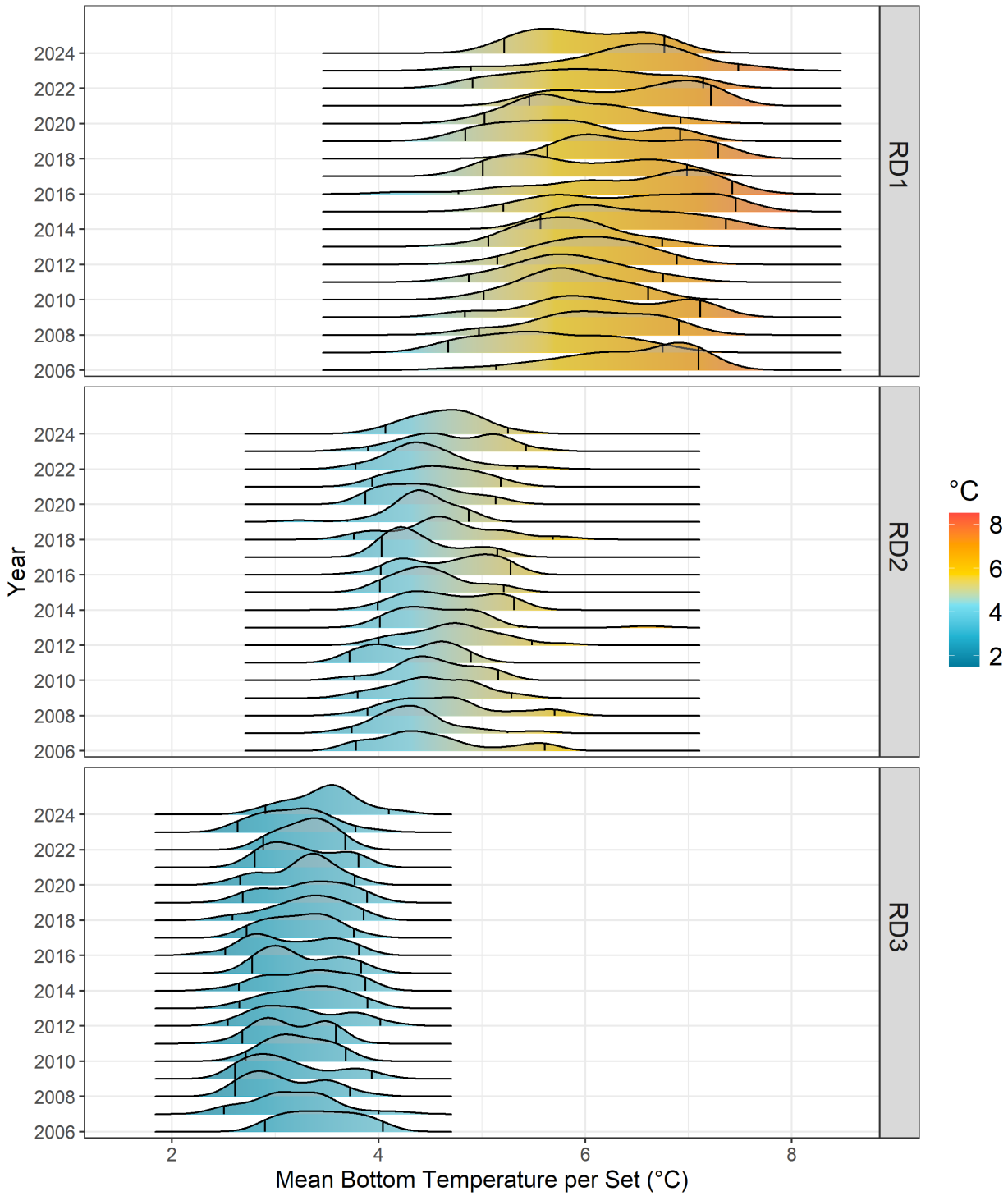

Figure 17. Vertical density ridgeplots of mean bottom temperatures per year as reported by set from the TDR loggers on traps at three depth intervals, RD1 = shallow (100-250 fa), RD2 = mid (250-450 fa), RD3 = deep (450-750 fa). Lines indicate the 2.5% and 97.5% tails.

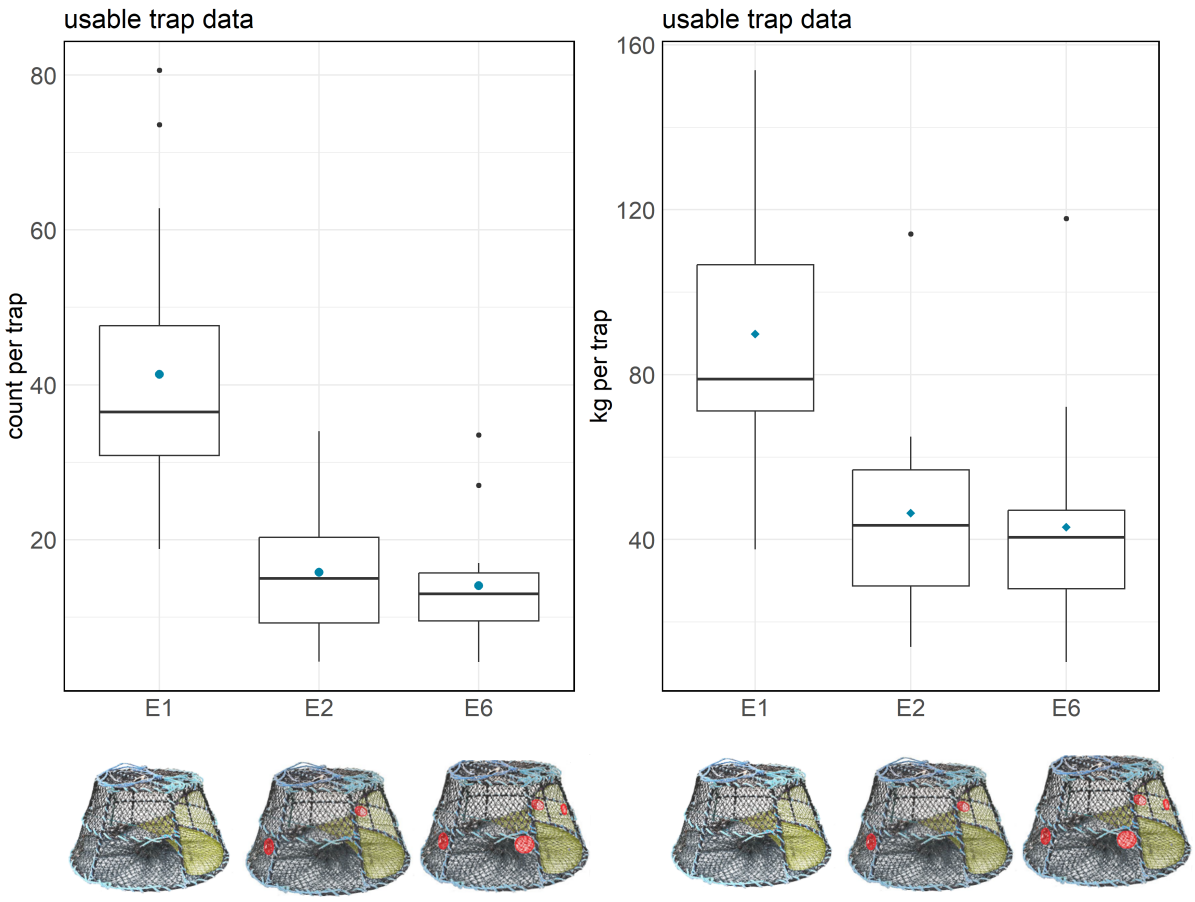

Figure 18. Distribution of Sablefish escape ring trap catch rates by treatment for usable traps.

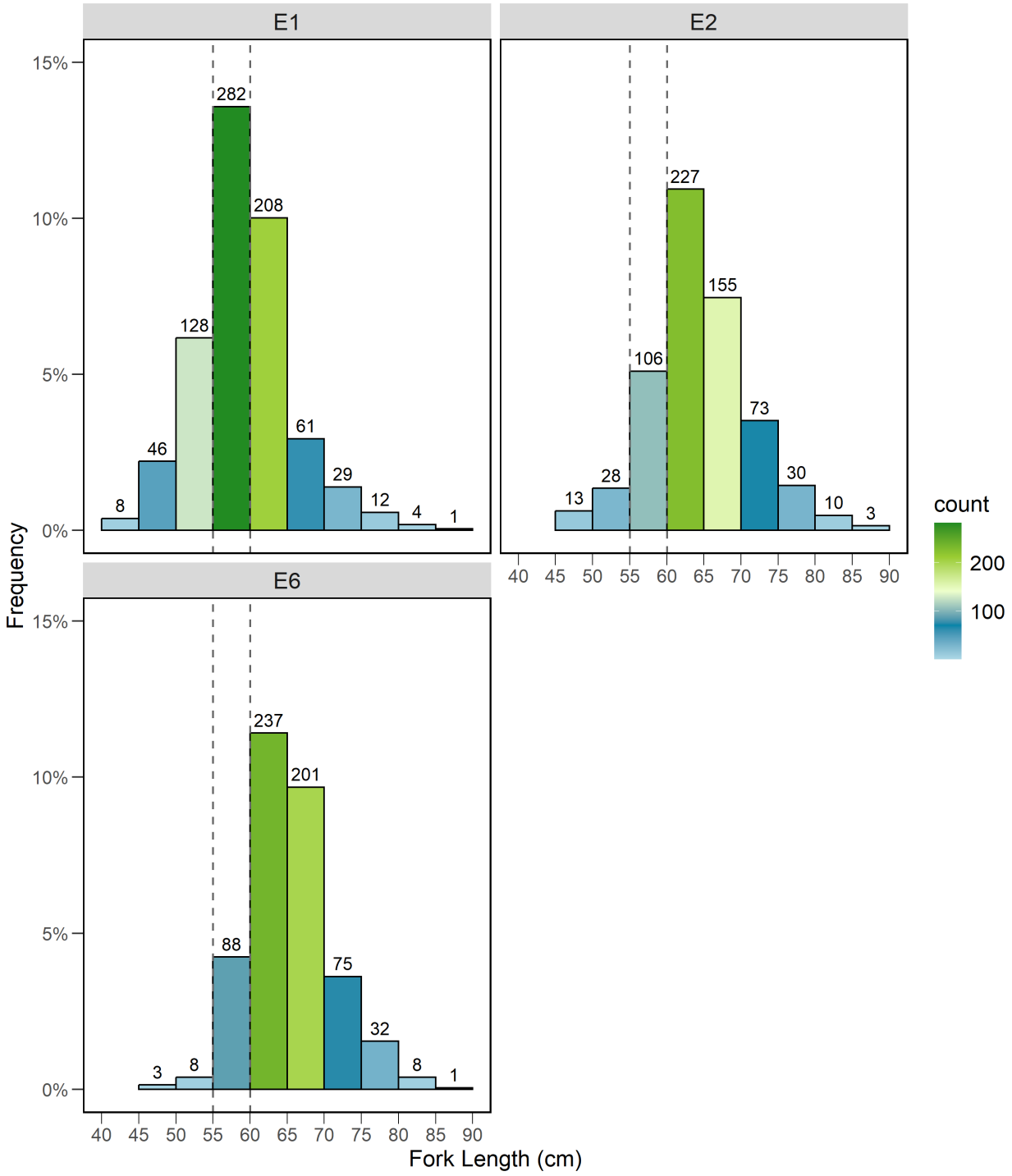

Figure 19. Distribution of the 2,289 fork lengths (FL) across different trap treatments, with vertical dashed lines marking key lengths at 55 cm, and 60 cm. The y-axis represents the frequency as a percentage, with a scale ranging from 0% to 15% across all facets. The color gradient indicates the count of specimens, while the labels above each bar show the fish counts. Bins at 5 cm are left-inclusive/right-exclusive ([L,U)) i.e. 45 < = FL < 50; edge values go to the next bin. Dashed lines at 55 and 60 cm.

APPENDIX A LIST OF SABLEFISH RESEARCH AND ASSESSMENT SURVEYS.

Year	Dates	Vessel	Captain	Set Count	GFBIO Trip id
1988	Oct 28 - Nov 24	VICIOUS FISHER	VANCE FLETCHER	16	43990
1989	Oct 19 - Nov 18	LA PORSCHE	SIGURD BRYNJOLFSON	29	43910
1990	Nov 8 - Nov 18	VIKING STAR	DOUG FARRINGTON	24	43750
1991	Oct 9 - Oct 29	W. E. RICKER	ALAN FARRINGTON	32	43673
1992	Oct 13 - Nov 4	W. E. RICKER	RON ROBERTS	38	43670
1993	Oct 19 - Nov 11	W. E. RICKER	ALAN FARRINGTON	42	43650
1994	Oct 13 - Oct 31	LA PORSCHE	RICHARD BEAUVAIS	39	43630
1994	Oct 18 - Nov 13	WESTERN VIKING	RICK JONES	27	43390
1995	Oct 8 - Oct 20	OCEAN PEARL	ROBERT FRAUMENI	29	43270
1995	Oct 11 - Oct 28	VICTOR F	MICHAEL DERRY	34	43330
1995	Oct 1 - Oct 31	VIKING SUNRISE	JASON OLSEN	40	43350
1996	Sep 26 - Oct 10	OCEAN PEARL	MICHAEL DERRY	32	43039
1996	Sep 30 - Oct 22	VIKING STAR	OTTO ELVAN	49	43210
1996	May 10 - May 30	VIKING SUNRISE	ALBERT (DEACON) MELNYCHUK	42	43024
1997	Sep 26 - Oct 21	OCEAN PEARL	MICHAEL DERRY	74	42699
1997	May 20 - Jun 10	VIKING SUNRISE	ALBERT (DEACON) MELNYCHUK	42	42760
1998	Sep 22 - Oct 17	OCEAN PEARL	MICHAEL DERRY	89	41122
1999	Sep 29 - Oct 30	OCEAN PEARL	MICHAEL DERRY	109	40589
2000	Oct 8 - Nov 14	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	131	40517
2001	Oct 6 - Nov 6	OCEAN PEARL	MICHAEL DERRY	134	43233
2002	Oct 4 - Nov 7	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	125	48120
2002	Oct 5 - Nov 13	VIKING SUNRISE	JASON OLSEN	90	48110
2003	Oct 15 - Nov 13	OCEAN PEARL	MICHAEL DERRY	94	52100
2003	Oct 7 - Nov 10	VIKING STAR	JIM FARRINGTON	84	52120
2004	Oct 5 - Nov 15	MILBANKE SOUND	DON QUAST	95	58145
2004	Oct 5 - Nov 3	OCEAN MARAUDER	ALBERT (DEACON) MELNYCHUK	84	57360
2005	Oct 4 - Nov 2	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	84	60529
2005	Oct 7 - Nov 17	VIKING SUNRISE	RORY JOHNSON	88	60503
2006	Oct 1 - Nov 1	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	98	62966
2006	Oct 2 - Nov 15	SENA II	TIM JOYS	98	62666
2007	Oct 7 - Nov 12	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	99	65106
2007	Oct 8 - Nov 12	VIKING TIDE	JASON OLSEN	91	65107
2008	Sep 29 - Nov 16	OCEAN PEARL	ROBERT FRAUMENI	157	67007
2009	Oct 8 - Nov 25	OCEAN PEARL	ROBERT FRAUMENI	155	69067
2010	Oct 9 - Nov 30	OCEAN PEARL	ROBERT FRAUMENI	153	70787
2011	Oct 9 - Nov 21	OCEAN PEARL	DARCY NICHOLS	132	72067
2012	Oct 9 - Nov 17	OCEAN PEARL	DARCY NICHOLS	135	73190
2013	Oct 11 - Nov 17	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	111	74872
2014	Oct 9 - Nov 17	OCEAN PEARL	DARCY NICHOLS	111	76150
2015	Oct 9 - Nov 20	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	111	77830
2016	Oct 7 - Nov 22	OCEAN PEARL	DARCY NICHOLS	111	80471
2017	Oct 6 - Nov 21	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	109	82790
2018	Oct 9 - Nov 19	OCEAN PEARL	DARCY NICHOLS	111	84250
2019	Oct 8 - Nov 25	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	109	85230
2020	Oct 7 - Nov 21	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	87	85690
2021	Oct 6 - Nov 21	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	81	86130
2022	Oct 3 - Nov 19	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	97	86530
2023	Sep 29 - Nov 13	OCEAN PEARL	JAMES SIMPSON	112	86950
2024	Sep 27 - Nov 16	PACIFIC VIKING	ALBERT (DEACON) MELNYCHUK	100	87510

APPENDIX B TRAP MODIFICATION CODES USED FOR THE ESCAPE RING STUDY.

Table of images, database code and descriptions of the escape ring treatments. The yellow area indicates the tunnel, while red circles highlight the various ring positions.

Image	Code	Treatment Description
	E1	Control: Standard survey traps with no escape rings or escape rings sewn shut
	E2	Conditions of Licence - two 3 and 3/4 inch opening 3/16 inch stainless escape rings attached below the horizontal bar in the corners behind the first vertical bar away from the tunnel.
	E6	Conditions of Licence plus Tunnel Rings treatment - four 3 and 3/4 inch opening 3/16 inch stainless escape rings; two attached below the horizontal bar in the corners behind the first vertical bar away from the tunnel and two attached below the horizontal bar in the corners behind the tunnel opening vertical bars.

APPENDIX C SURVEY SET DETAILS 2024.

Details of sets completed during the 2024 survey program aboard the F/V *Pacific Viking*. Sets are listed by stratum/inlet name, set type, depth stratum, start date, end time of gear deployment, and duration in minutes. The depth strata for type 3 tagging sets include RD_1 (100-250 fathoms), RD_2 (250-450 fathoms), and RD_3 (450-750 fathoms). The position data includes the major area and start and end latitude and longitude in degrees decimal minutes. The bottom depths (in meters) of the fishing set are shown with the mean bottom depth calculated from recordings at one minute intervals between the start and end of the set. The number of traps fished for each set includes holed or fouled traps. Sets that successfully deployed a TDR are indicated with an 'x'.

Set	Spatial Stratum	Type	Depth Stratum	Date	Time	Duration (minutes)	Area	Start Latitude	Start Longitude	End Latitude	End Longitude	Start Depth (m)	End Depth (m)	Mean Depth (m)	Traps Fished	TDR
1	S1	StRS	RD1	Sep 29	08:05	1327	3C	48°9.5'N	125 51.8'W	48 9.6'N	125 52.6'W	207	261	227	25	x
2	S1	StRS	RD2	Sep 29	10:01	1400	3C	48°9.8'N	126 4.5'W	48 9.9'N	126 5.4'W	572	605	584	25	x
3	S1	StRS	RD1	Sep 29	11:37	1485	3C	48°3.3'N	126 7.7'W	48 3.4'N	126 8.5'W	347	370	358	25	x
4	S1	StRS	RD1	Sep 29	13:29	1575	3C	48°6.2'N	126 4.4'W	48 6.2'N	126 5.4'W	203	220	212	25	x
5	S1	StRS	RD2	Sep 29	15:45	1592	3C	48°3.8'N	126 11.9'W	48 3.5'N	126 12.7'W	502	640	578	25	x
6	S1	StRS	RD3	Sep 29	17:20	1701	3C	48°4.1'N	126 21.4'W	48 3.9'N	126 20.4'W	851	1060	920	25	x
7	S1	StRS	RD1	Oct 1	07:59	1335	3C	48°4'N	126 9.3'W	48 3.6'N	126 10'W	199	219	216	25	x
8	S1	StRS	RD2	Oct 1	10:08	1359	3C	48°6.3'N	126 18'W	48 5.6'N	126 18.1'W	632	904	776	25	x
9	S1	StRS	RD2	Oct 1	13:00	1325	3C	48°8.5'N	126 21.2'W	48 8.5'N	126 22.2'W	646	709	669	25	x
10	S1	StRS	RD3	Oct 1	15:16	1331	3C	48°0.6'N	126 27.4'W	48 0.3'N	126 26.5'W	821	1006	968	25	x
11	S1	StRS	RD2	Oct 1	17:25	1343	3C	48°4.2'N	126 32.3'W	48 3.9'N	126 33.3'W	538	620	576	25	x
12	S1	StRS	RD2	Oct 1	19:47	1383	3C	48°2.2'N	126 34.2'W	48 2.1'N	126 35.2'W	499	624	532	25	x
13	S1	StRS	RD2	Oct 3	08:03	1326	3C	48°6.2'N	126 35.2'W	48 6.1'N	126 36.1'W	590	695	628	25	x
14	S1	StRS	RD3	Oct 3	11:06	1330	3C	48°4.3'N	126 50'W	48 4.4'N	126 51.1'W	996	985	988	25	x
15	S1	StRS	RD3	Oct 3	12:35	1375	3C	48°3.4'N	126 56.2'W	48 3.4'N	126 57.2'W	1017	1061	1029	25	x
16	S1	StRS	RD3	Oct 3	14:48	1399	3D	49°0'N	127 0.7'W	49 0.1'N	127 1.7'W	1083	1236	1169	25	x
17	S1	StRS	RD2	Oct 3	16:35	1437	3D	49°0.1'N	126 59.2'W	49 0.1'N	127 0.2'W	474	548	508	25	x
18	S1	StRS	RD1	Oct 3	18:16	1499	3D	49°0.5'N	126 54.5'W	49 0.5'N	126 55.5'W	241	278	258	25	x
19	S1	StRS	RD1	Oct 3	19:27	1530	3D	49°0.7'N	126 54.8'W	49 0.7'N	126 55.8'W	200	217	208	25	x
20	S2	StRS	RD1	Oct 5	05:58	1282	3D	49°6.8'N	127 14.7'W	49 6.2'N	127 14.9'W	282	257	272	25	x
21	S2	StRS	RD1	Oct 5	08:01	1308	3D	49°4'N	127 13.8'W	49 4.2'N	127 14.8'W	208	248	220	25	x
22	S2	StRS	RD1	Oct 5	09:58	1324	3D	49°0.8'N	127 13.5'W	49 1'N	127 14.5'W	357	471	414	25	x
23		Esc Ring		Oct 5	11:40	1387	3D	49°9.4'N	127 12.2'W	49 9.5'N	127 13.3'W	368	541	449	25	x
24		Esc Ring		Oct 5	13:49	1392	3D	49°8.1'N	127 10.7'W	49 8.2'N	127 11.7'W	389	526	455	24	x
25	S2	StRS	RD3	Oct 8	07:58	1334	3D	49°7.6'N	127 23'W	49 7.6'N	127 24.1'W	889	1053	963	25	x
26	S2	StRS	RD3	Oct 8	10:31	1370	3D	49°1.5'N	127 41.3'W	49 1.6'N	127 42.6'W	976	1129	1049	25	x
27	S2	StRS	RD3	Oct 8	12:07	1394	3D	49°2.9'N	127 38.3'W	49 2.8'N	127 39.3'W	829	873	850	25	x
28	S2	StRS	RD2	Oct 8	13:59	1434	3D	49°9.4'N	127 34.3'W	49 8.8'N	127 33.8'W	590	647	611	24	x
29		Esc Ring		Oct 8	15:30	1469	3D	49°7.7'N	127 25.1'W	49 7.3'N	127 25.9'W	388	482	417	25	x
30		Esc Ring		Oct 8	17:19	1484	3D	49°1.5'N	127 33.9'W	49 0.9'N	127 34.2'W	493	556	531	25	x
31	S2	StRS	RD3	Oct 10	05:57	1322	3D	49°7.3'N	127 44.3'W	49 7.3'N	127 45.5'W	917	1191	1032	25	x
32	S2	StRS	RD2	Oct 10	08:06	1337	3D	49°1.6'N	127 36.3'W	49 1.7'N	127 37.4'W	557	615	589	25	x
33	S2	StRS	RD2	Oct 10	09:47	1363	3D	49°3.4'N	127 47.1'W	49 2.8'N	127 47.2'W	668	710	693	25	x
34	S2	StRS	RD1	Oct 10	12:03	1377	3D	49°1.3'N	127 45.2'W	49 0.8'N	127 45.8'W	321	473	416	25	x
35	S2	StRS	RD2	Oct 10	13:31	1445	3D	49°1.5'N	127 47.5'W	49 1.5'N	127 48.7'W	545	758	641	25	x
36		Esc Ring		Oct 10	14:45	1488	3D	49°5.4'N	127 54.5'W	49 4.8'N	127 54.8'W	465	658	584	25	x
37	S2	StRS	RD3	Oct 15	07:07	1336	3D	50°6'N	128 16.3'W	50 5.7'N	128 16.9'W	842	911	843	25	x
38	S2	StRS	RD1	Oct 15	08:41	1380	3D	50°1.9'N	128 22.6'W	50 2'N	128 23.7'W	224	222	222	25	x
39	S2	StRS	RD2	Oct 16	09:43	1323	3D	50°5.8'N	128 30.6'W	50 5.7'N	128 31.5'W	459	618	530	25	x
40	S2	StRS	RD2	Oct 16	11:30	1375	5A	50°1.5'N	128 35.5'W	50 1.4'N	128 36.6'W	484	634	589	25	x
41	S2	StRS	RD1	Oct 16	13:25	1373	5A	50°2.8'N	128 34.7'W	50 2.8'N	128 35.8'W	199	239	205	25	x
42		Esc Ring		Oct 16	14:55	1394	5A	50°6.6'N	128 40.3'W	50 5.9'N	128 40.5'W	308	414	414	25	x

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continued.

Set	Spatial Stratum	Type	Depth Stratum	Date	Time	Duration (minutes)	Area	Start Latitude	Start Longitude	End Latitude	End Longitude	Start Depth (m)	End Depth (m)	Mean Depth (m)	Traps Fished	TDR
43		Esc Ring		Oct 16	16:09	1444	5A	50°6.4'N	128 47.5'W	50 6.4'N	128 48.7'W	597	384	572	25	x
44	S2	StRS	RD2	Oct 20	07:01	1328	5A	50°5.4'N	129 22.7'W	50 4.8'N	129 22.1'W	516	624	600	25	x
45	S3	StRS	RD1	Oct 20	08:52	1349	5A	50°0.1'N	129 27'W	50 0.1'N	129 28.2'W	239	241	244	25	x
46	S3	StRS	RD1	Oct 20	11:14	1363	5A	50°9.6'N	129 37'W	50 9.6'N	129 38'W	288	389	353	25	x
47	S3	StRS	RD1	Oct 20	13:46	1351	5A	51°0.5'N	129 23.6'W	51 0.5'N	129 24.7'W	254	271	261	25	x
48	S3	StRS	RD2	Oct 20	15:54	1367	5A	51°0.2'N	129 42.4'W	51 0.5'N	129 42.8'W	469	561	534	25	x
49	S3	StRS	RD2	Oct 20	18:06	1389	5A	51°3.4'N	129 47.3'W	51 2.7'N	129 47.4'W	548	617	623	25	x
50	S3	StRS	RD2	Oct 20	19:17	1424	5A	51°2.4'N	129 54.5'W	51 1.9'N	129 55.4'W	488	499	481	25	x
51	S3	StRS	RD3	Oct 22	07:01	1309	5B	51°5.7'N	130 15'W	51 5.6'N	130 16.2'W	892	921	903	25	x
52	S3	StRS	RD2	Oct 22	08:53	1330	5B	51°8.7'N	130 12'W	51 8.6'N	130 13.1'W	546	602	568	25	x
53	S3	StRS	RD3	Oct 22	10:57	1348	5B	51°0.5'N	130 22.8'W	51 0.5'N	130 24'W	1226	1191	1197	25	x
54	S3	StRS	RD3	Oct 22	13:09	1327	5B	51°0.2'N	130 15.3'W	51 0.2'N	130 16.4'W	812	912	897	25	x
55	S3	StRS	RD2	Oct 22	15:08	1341	5B	51°7.7'N	130 15.3'W	51 7.3'N	130 16.1'W	496	613	597	25	x
56	S3	StRS	RD1	Oct 22	16:59	1349	5B	51°0.6'N	130 3.7'W	51 0.6'N	130 4.7'W	355	354	355	25	x
57	S3	StRS	RD1	Oct 22	18:41	1425	5B	51°1.5'N	130 19.4'W	51 1.4'N	130 20.6'W	245	249	247	25	x
58	S3	StRS	RD1	Oct 24	00:28	1250	5B	51°3.6'N	130 43.2'W	51 3'N	130 43.7'W	475	317	381	25	x
59	S3	StRS	RD2	Oct 24	02:00	1263	5B	51°9.7'N	130 41.6'W	51 9.1'N	130 42.5'W	535	485	495	25	x
60	S3	StRS	RD3	Oct 24	04:08	1276	5B	51°9'N	130 32.4'W	51 9'N	130 33.4'W	1161	1177	1165	25	x
61	S3	StRS	RD1	Oct 24	06:57	1295	5B	51°1.8'N	130 21.7'W	51 1.8'N	130 22.6'W	229	229	229	25	x
62	S3	StRS	RD1	Oct 24	08:55	1342	5B	51°8.7'N	130 35.1'W	51 8.6'N	130 36.1'W	316	299	307	25	x
63	S4	StRS	RD1	Oct 27	08:40	1316	5E	52°0.9'N	131 18.3'W	52 0.4'N	131 18.9'W	235	360	269	25	x
64	S4	StRS	RD2	Oct 27	10:21	1347	5E	52°0.2'N	131 23.8'W	52 0.4'N	131 24.9'W	562	688	653	25	x
65	S4	StRS	RD2	Oct 27	12:22	1387	5E	52°0.2'N	131 34.2'W	52 0.4'N	131 35.9'W	473	868	579	25	x
66		Esc Ring		Oct 27	14:02	1438	5E	52°2.7'N	131 29.3'W	52 2.7'N	131 30.4'W	577	767	703	25	x
67		Esc Ring		Oct 27	15:24	1470	5E	52°4.5'N	131 30.4'W	52 4.5'N	131 31.6'W	600	738	691	25	x
68	S4	StRS	RD2	Oct 27	17:35	1457	5E	52°7.1'N	131 34'W	52 7.1'N	131 35.2'W	647	666	697	25	x
69	S4	StRS	RD3	Oct 30	07:57	1326	5E	52°7.3'N	132 28.8'W	52 7.4'N	132 30'W	824	905	870	25	x
70	S4	StRS	RD3	Oct 30	09:52	1338	5E	52°8.9'N	132 35.8'W	52 9'N	132 37'W	1053	1194	1128	25	x
71	S4	StRS	RD3	Oct 30	11:39	1337	5E	52°0.5'N	132 33.8'W	52 0.6'N	132 34.9'W	1157	1156	1156	25	x
72	S4	StRS	RD2	Oct 30	14:14	1323	5E	52°0.3'N	132 18.9'W	52 1'N	132 19.7'W	720	611	642	25	x
73	S4	StRS	RD2	Oct 30	15:24	1385	5E	52°3.5'N	132 22.6'W	52 3.5'N	132 23.8'W	478	654	592	25	x
74	S4	StRS	RD2	Oct 30	16:41	1424	5E	52°5.4'N	132 27.3'W	52 5.4'N	132 28.5'W	456	642	571	25	x
75	S4	StRS	RD1	Oct 30	18:05	1442	5E	53°0.3'N	132 30.9'W	52 9.9'N	132 31.8'W	337	404	368	25	x
76		Esc Ring		Oct 30	19:11	1490	5E	53°0.9'N	132 38'W	53 0'N	132 39.4'W	482	679	586	25	x
77	S4	StRS	RD3	Nov 1	08:05	1331	5E	52°9.4'N	132 35.4'W	52 9.4'N	132 36.5'W	856	1034	958	25	x
78	S4	StRS	RD1	Nov 1	09:20	1397	5E	53°0.7'N	132 34.7'W	53 0.7'N	132 35.9'W	219	430	297	25	x
79	S4	StRS	RD1	Nov 2	10:31	1310	5E	53°0.9'N	132 36.4'W	53 0'N	132 37.5'W	208	215	210	25	x
80	S4	StRS	RD1	Nov 2	11:51	1354	5E	53°0.2'N	132 39.9'W	53 0'N	132 40.8'W	444	427	419	25	x
81	S4	StRS	RD3	Nov 2	12:51	1452	5E	53°0.1'N	132 43.2'W	53 0.2'N	132 44.4'W	846	1007	937	25	x
82	S5	StRS	RD2	Nov 2	14:39	1484	5E	53°0.9'N	132 47.2'W	53 0.9'N	132 48.3'W	722	739	744	25	x
83		Esc Ring		Nov 2	15:44	1551	5E	53°2.5'N	132 45.6'W	53 2.5'N	132 46.7'W	471	543	531	25	x
84		Esc Ring		Nov 2	16:45	1594	5E	53°3.5'N	132 47.1'W	53 3.5'N	132 48.3'W	497	654	580	25	x

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continued.

Set	Spatial Stratum	Type	Depth Stratum	Date	Time	Duration (minutes)	Area	Start Latitude	Start Longitude	End Latitude	End Longitude	Start Depth (m)	End Depth (m)	Mean Depth (m)	Traps Fished	TDR
85	S5	StRS	RD2	Nov 8	07:09	1308	5E	53°3.6'N	133 5.3'W	53 3.6'N	133 6.5'W	771	776	771	25	x
86	S5	StRS	RD2	Nov 8	08:58	1349	5E	53°6.2'N	132 56.6'W	53 6.2'N	132 55.5'W	603	724	681	25	x
87	S5	StRS	RD2	Nov 8	10:32	1373	5E	53°9.5'N	132 60'W	53 9.4'N	132 58.9'W	469	668	585	25	x
88	S5	StRS	RD1	Nov 8	12:12	1395	5E	53°0.1'N	133 6.8'W	53 0.1'N	133 7.9'W	287	455	381	25	x
89	S5	StRS	RD2	Nov 8	13:37	1445	5E	53°5.1'N	133 6.5'W	53 5'N	133 5.5'W	500	772	609	25	x
90	S5	StRS	RD3	Nov 8	14:34	1492	5E	53°6.8'N	133 5'W	53 7'N	133 6.2'W	864	982	937	25	x
91	S5	StRS	RD1	Nov 8	16:20	1516	5E	53°3'N	133 9.1'W	53 3'N	133 10.3'W	395	501	428	25	x
92	S5	StRS	RD3	Nov 8	17:52	1565	5E	53°5.9'N	133 20.3'W	53 6.1'N	133 21.6'W	803	1168	1015	25	x
93	S5	StRS	RD2	Nov 11	07:01	1323	5E	53°0.5'N	133 29.5'W	53 0.5'N	133 30.6'W	467	589	572	25	x
94	S5	StRS	RD1	Nov 11	08:57	1373	5E	53°9.1'N	133 32.8'W	53 9.1'N	133 34'W	282	389	337	25	x
95		Esc Ring		Nov 11	10:14	1375	5E	54°0.1'N	133 36.5'W	54 0.2'N	133 37.7'W	483	541	518	25	x
96		Esc Ring		Nov 11	11:41	1418	5E	54°0'N	133 40.5'W	54 0.1'N	133 41.8'W	452	593	516	25	x
97	S5	StRS	RD3	Nov 11	13:11	1455	5E	54°0'N	133 47.2'W	54 0'N	133 48.5'W	911	990	955	25	x
98	S5	StRS	RD2	Nov 11	14:51	1462	5E	54°0.7'N	133 42.1'W	54 0.8'N	133 43.4'W	473	533	491	25	x
99	S5	StRS	RD1	Nov 11	16:14	1497	5E	54°2.7'N	133 45.1'W	54 2.7'N	133 46.2'W	227	235	228	24	x
100	S5	StRS	RD1	Nov 11	17:28	1502	5E	54°5.8'N	133 47.2'W	54 5.8'N	133 48.3'W	249	370	315	24	x

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APPENDIX D SUMMARY OF BASKET USE BY TRAP 2024.

Summary of the basket use by trap number for sets during the 2024 Sablefish trap survey. The fate of the Sablefish catch for each set and trap is indicated using the following abbreviations: D = Discarded after weighing (processed as commercial catch), A = Sampled for Sampled for Length, Sex, Maturity, Weight and Otoliths (LSMWO), T = Tagged and released, L = Sampled for length frequency, SD = Sublegal discarded, F= Frames, NULL = No Sablefish catch/trap missing. Those set numbers highlighted with blue were part of the escape ring study. Inlet sets are highlighted with green and StRS sets have no background colour.

	Trap																									Total			
Set	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	A	D	L	-
1	T	D	A	T	D	A	T	D	D	T	D	D	D	D	A	T	D	D	D	D	D	D	D	D	D	3	17	0	0
2	D,F	D	T	D	A	T	D	D	D	D	D	D	D	D	T	D	A	D	D	D	D	D	D	D	D	2	20	0	0
3	D	T	D	A	D	D	D	D	D	D	D	D	D	T	D	A	D	D	D	T	D	D	D	D	D	2	20	0	0
4	T	D	A	T	D	A	T	D	D	T	D,F	D	T	D	A	D	D	D	D	D	T	D	D	D	D	3	16	0	0
5	D,F	A,F	T,F	D,F	D,F	T,F	D,F	D,F	D	D,F	D,F	D,F	D,F	D,F	D,F	D,F	A,F	T,F	D,F	D	D	D	D,F	D,F	D,F	2	20	0	0
6	A,F	T,F	D	D,F	D,F	D,F	A	T,F	D,F	D	T,F	D	D,F	D,F	D,F	T	D,F	D,F	T	D,F	D	D,F	D	D,F	D,F	2	18	0	0
7	T	D	A	T	A	A	T	D	D	T	D		T	D	T	T	D	A	T	D	D	T	D	D		4	10	0	2
8	D,F	A,F	T,F	D,F	D,F	T,F	D,F	D,F	T,F	T,F	A,F	D,F	D	D	T,F	D,F	D,F	D,F	D,F	T	T,F	D	D,F	D,F	D,F	2	16	0	0
9	A,F	T,F	D,F	D,F	T	D	D,F	T,F	D,F	D,F	T	D	D,F	D,F	D,F	D,F	T	D	D,F	D,F	D,F	A	D,F	D,F	D	2	18	0	0
10	T,F	D	A,F	T	D	D,F	T,F	D	D	T,F	D	A	D	D	D	D	D,F	D	D,F	D	D	D	D,F	D,F	D	2	19	0	0
11	D	A,F	T	D,F	D	D	D	D	T	D	D	D	D	D,F	D	T,F	T	D	D,F	D	D	D	D,F	D	A	2	19	0	0
12	A,F	D	T,F	D,F	T	D	D	T,F	D	D	A	D	D	D	D	D,F	D,F	D	D	D	D,F	D	D	D	D	2	20	0	0
13	T	D	A	T	D	D	T	D	D	T	D	D	T	D	A	T	D	D	D	D	D	D	D	D	D	2	17	0	0
14	D,F	A,F	T,F	T,F	D	T	T,F	A	T	D	D	T	D	D	T	D	D	D	D	D	D	D	D	D	T	2	15	0	0
15	A	T	D	D	T	D	D	T	D	A	T	D	D	T	D	D	T	D	D	T	D	D	T	D	D	2	15	0	0
16	T	D	A	T	D	D	T	D	D	T	A	D	T	D	D	D	D	D	D	D	D	D	D	D	D	2	18	0	0
17	D,F	A,F	T	D,F	D,F	T	D,F	D,F	D,F	D,F	D	D	D	D	D	D	D	A	D	D	D	D	D	D	D,F	2	21	0	0
18	A	T	D	D	T	D	A	D	T	D	T	D	D	D	D	D	D	D	D	D				D		2	15	0	4
19	T,F	D	A	T	D	A		T		T	A	A			A,F					A				A,F		7	2	0	12
20	D,F	A,F	T,F	D	D,F	T,F	D,F	A	T,F	D	D,F	D	T	D	D	D	D,F	D,F	D,F	D,F	D,F	D	D	D,F	D,F	2	19	0	0
21			A,F	D,F	T,F	D	D,F	T	D	D	T	D,F	D	T	D,F	D,F		D,F	A	D,F	D	D,F	D	D		2	15	0	4
22	T,F	D	A	D	T	D	D	D	D,F	A	D,F	D	D,F	D	D,F	D	D	D,F	D	D	D	D	D	D	D	2	21	0	0
23	D,F	D	L	L	L	D	D	L	L	D	D,F	L	L	D	D	L	L	D,F	D,F	D	L	D,F	D,F	D,F	D	0	15	10	0
24	T,F	D,F	L	L	D,F	D,F	L	L	D,F	D	D	L	D,F	D	L	D	D	D	D	D	D	D	D,F	D,F		0	17	6	1
25	T	D	A	T	D	D	T	D	D	T	D	D	T	D	A	T	D	D	T	D	D	D	D	D	D	2	16	0	0
26	D	A	T	D	D	T	D	A	T	D	D	D	T	D	D	T	D	D	D	D,F	D	D	D	D	D	2	18	0	0
27	A,F	T	D,F	D	T	D,F	A	T,F	D	D	D,F	D,F	D	D	D,F	D	D,F	D,F	D	D,F	D,F	D,F	D,F	D	D	2	20	0	0
28	T,F	D	A,F	T	D	D	T	D	D	D	D	A	D	D	D	D	D	D	D	D	D	D	D	D		2	19	0	1
29	D,F	D	L	L	L	D	D	L	L	L	D	D	L	L	D	D	L	L	D	D	D	L	D	D	D	0	14	11	0
30	D,F	D,F	L	L	L	D	D	L	L	L	D	L	L	L	D,F	D	L	L	D	D	D	L	L	D	D	0	12	13	0
31	T	D	A	T	D	D	T	D	D	T	D	D	T	D	D	D	D	A	D	D	D	D	D	D	D	2	18	0	0
32	D	A	T	D	D	T	D	A	T	D	D	T	D	D	T	D	D	D	D	D	D	D	D	D	D	2	18	0	0
33	A	T	D	D	T	D	D	T	D	T	D,F	D	A,F	D	D	D	D	D	D	D	D	D	D	D	D,F	2	19	0	0
34	T	D,F	A	T,F	D,F	D	D	D	D	T,F	A	D	D	D	D	D	D	D	D	D	D	D,F	D	D	D	2	20	0	0
35	D	A	T	D	T,F	T	D	D	T,F	D	D	T,F	D	A	D	D,F	D	D	D	D	D	D	D,F	D,F	D,F	2	18	0	0
36	D	L	L	L	D	L	L	L	D	D	L	L	D	D	L	L	D	D,F	L	L	D	D	D	D	D	0	13	12	0
37	D	D	A	T	D	A	T	D	D	T	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	2	20	0	0
38	D	A	T	D	A	T	D,F	D	T,F	D,F	D	T	D	D	T	D	D	T	D	D	T	D			D	2	14	0	2
39	A	T	D,F	A	T	D	D	D	T	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	2	20	0	0
40	T	D	A	T,F	D,F	D	T	D	A	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	2	20	0	0
41	D	A	T,F	D	A	T	D	A	T	D	A	T	D	A	T,F		A	T	D		T	D		T	D	6	8	0	3
42	D	D	L	L	L	D	D	L	L	L,F	D	L	L	D	D	L,F	L	D	D	D	L	L	D	D	D	0	13	12	0
43	D	D	L	L	L	D	D	L	L	L	D	L	L	D	D	L	D	D	D,F	D	L	L	D,F	D,F	D,F	0	14	11	0
44	D	A,F	T,F	D,F	T	D,F	D,F	D	D	A	D	D,F	D	D	D	D	D	D	D	D	D	D	D	D	D	2	21	0	0
45	A	T	D		T,F	D	A	T,F	T	A	T	T	D	T,F	D	T	T	D	T,F	T	D	D	T	D		3	8	0	2
46	T	D		T	D	A	T	D	A	T	D	D	T	D	D	T	D	D	T	D		T	D		T	2	11	0	3

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continued.

	Trap																									Total			
Set	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	A	D	L	-
47		A	T	D	A	T	D	A	T	D	A	T	D	A	T,F		A	T	D	D	T	D	D		D	6	9	0	3
48	A	T	D	T	D	D	T	D	D	A	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	2	20	0	0
49	T	D	A	T	D	A	T	D	T	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	2	19	0	0
50	T	A	T	T	T	T	D	D	T	D	A	T	D	T	D	D	D	D	D	D	D	D	D	D	T	2	14	0	0
51	A	T	D	D	D	D	D	T	D	D	T	D	D	D	D	A	D	D	D	D		D	D	D	T	2	18	0	1
52	T	D	A	T	D	A	T	D,F	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	2	20	0	0
53	T	A		D	A		D	A		D	A	T		D	A		D	D	T			T		D	T	5	7	0	8
54	A	T	D	A	T	D	D	T	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	2	20	0	0
55	T	D	A	T	D	A	T	D	D	D	D	D	D	D	D	T	D	D	D	D	D	D	T	D	D	2	18	0	0
56	D	A	T	D	A	T	D	D	T	D	D	T	D	D	T	D	D	D	D	D	T	D	D	D	D	2	17	0	0
57	A	T	D	A	T	D	A	T	D	A	T		A	T	D		T	D	D			D	T,F	D		5	8	0	5
58	T	D	D,F	A	T	D	A	T	D	D	T	D	D	T	D	D	T	D	D	T	D	D	T	D	D	2	15	0	0
59	D	A	T	D	A	T	D	D	T	D	D	T	D	D	D	D	D	D	D	D	D	D	D	D	D	2	19	0	0
60	A	T	D	A	T	D	A	T	D	D	T	D	D	T	D	D	D	D	D	D	D	T	D	D	D	3	16	0	0
61		D	D	T	D	A	T	D	A	T	D	D,F	D	D	T	T,F	D	D	T		D	T	D	D	T	2	13	0	2
62	D	A	T	D	A	T	D		T		D	T	D	D	T	D	D	T	D	D			D	T	D	2	12	0	4
63	A	T	D	A	T		A	T		D	T	D	D	T	D		T	D	A	T						4	6	0	8
64	T	D	A	D	D	D	D	D	D		D	A	T	D	D	T	D	D	D	D	D	D	D	D	D	2	19	0	1
65	D	A	T	D	A	T	D	D	T	D	D	T	D	D	T	D	D	D	D	D	D	D	D	D	D	2	18	0	0
66	D	D	L	L	L	D	D	D	L	D	D,F	D,F	L	L	D	D	L	L	D	D	D	D	L	D	D	0	16	9	0
67	D	D	L	L	L	D	D	L	D	L	D	D	L	L	D	D	D	D	D	D	D	L	D	D	D	0	17	8	0
68	D	A	T	D	A	T	D	D	T	D,F	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	2	20	0	0
69	A	T	D	A	T	D	A	T	D		T	T	D	D	T	D	D	D	D	D	D	D	T	D		3	13	0	2
70		D	A	T	D	A	T	D	A	T	D	A	T	D	A	T	D	D	T	D	D	T	D	D		5	11	0	2
71				D	A	T			T	D	A	T	D	A			A	T	D	D	T	D	D			4	7	0	9
72	A	T	D	D	T	D	D	D	D	D	T	D	D	D	D	D	D	D	D	D	D	A	D	D	D	2	20	0	0
73	T	D	A	T	D	A	T	D	D	T	D	D	D	D	D	T	D	D	D	D	D	D	D	D	D	2	18	0	0
74	D	A	T	D	D	T	D	A	T	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	2	20	0	0
75	A	T	D	A	T	D	D	T	D	A	T	D	D	T	D						T	D		T		3	8	0	7
76	D	L	L	L	D	D	L	L	D	L	L	D	D	L	D	D	D	D	D	D	D	D	D	D	D	0	17	8	0
77	D	A	T	D	D	T	D	D	T	D	A	T	D	D	T	D	D	D	D	D	D	D	D	D	D	2	18	0	0
78	D	T	D	A	T	D	D	T	D	T	D	D	D	T	D	A	T					A	T	D	D	3	11	0	4
79	T	A	A	T	A	A	T		A			A	T	A	D		D	D		D	D	T	D	D	T	7	7	0	5
80	D	A	T	D	D	T	D	D	T	D	A	D	D	D	T	D	D	D	D	D	D	D	D	D	T	2	18	0	0
81	D	T	D	A	T	D	D	D	D	D	T	D	D	D	D	D	D	T	A	D	D	D	D	D	D	2	19	0	0
82	T	D	D	T	D	A	D	D	D	T	D	D	D	D	A	D	D	T	D	D	D	D	D	D	D	2	19	0	0
83	D	D	L	L	L	D	D	L	L	L	D		L	L	D	D	L	L	D	D	D	D	D	D	D	0	14	10	1
84	D	D	L	L	L	D	D	L	L	D	D	L	L	D	D	D	D	D	D	D	D	D	D	D	D	0	18	7	0
85	T	D	D	T	D	T	D	T	T	T	T	D	D	D	D	D	D	A	T	D	D	T	D	D	D	1	15	0	0
86	D	D	T	D	A	D	D	D	T	D	D	T	D	D	T	T	A	D	D	D	D	D	D	D	D	2	18	0	0
87	D	T	D	A	T	D	D	D	D	D	D	D	D	T	D	T	D	D	D	D	D	D	D	D	D	1	20	0	0
88	T	D	A	T	D	D	D	D	D	T	D	D	D	D	A	D	D	D	D	D	D	D		D	D	2	19	0	1
89	D	D	T	D	A	D	D	D	T	D	D	T	D	D	T	D	A	T	D	D	T	D	T	D	D	2	16	0	0
90	D	T	D	A	D	D	D	T	D	D	D	D	D	T	D	A	D	D	D	D	D	D	D	D	D	2	20	0	0
91	T	D	D	D	D	A	T	D	D	T	D	D	D	D	A	T	D	D	D	D		D	D	D	D	2	18	0	1

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continued.

	Trap																								Total			
Set	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	A	D	L	-
92	T	D	T	D	A	T	D	D	T	D	D	D	T	D	T	D	A	D	D	D	D	D	D	D	D	2	17	0	0
93	D	T	D	A	D	D	D	T	D	D	D	D	D	D	D	A	D	D	D	D	D	D	D	D	D	2	21	0	0
94	T	D	D	T		A	T			T		A		A		T	A		T	A	A	T	A		T	7	2	0	8
95	D	D	L	L	D	D	D	L	D	D	D	L	L	D	D	D	D	D	D	D	D	D	L	D	D	0	19	6	0
96	D	D	L	L	D	D	D	L	L	L	D	D	D	L	D	D	L	L	D	D	D	D	L	D	D	0	16	9	0
97	T	D	A	T	D	D	D	D	D	T	D	D	T	D	A	T	D	D	D	D	D	D	D	T	D	2	17	0	0
98	D	D	T	D	A	T	D	D	T	D	D	D	D	D	T	D	A	D	D	D	D	D	D	D	D	2	19	0	0
99	A	T	A	A	T	D			A	A		D	A	T		A		D	D	T	D	D		D		7	7	0	7
100	T	D	A	T	D	A	T	A	A	T	D	D	T	D	A	T	D	A	T	D	D	T	D	D		6	10	0	1

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APPENDIX E SUMMARY OF SABLEFISH BIOLOGICAL DATA 2024.

Summary of the biological data collected for Sablefish, detailing information on the set, catch weight (in kilograms), and fish count. Sablefish counts by trap are visually represented with sparklines. Sets retrieved from the end location are highlighted by green sparklines, while those picked up from the start location are marked by blue sparklines. Tagged fish counts are recorded on the number of fish recovered and re-released, those sacraficed for samples and those tagged and released. The recovered tags that were sampled are included in the total specimen count only. Specimen counts are categorized by sample type, with mean fork lengths tabulated. Those set numbers highlighted with blue were part of the escape ring study and StRS sets have no background colour.

Set	Total Catch			Tagged Fish Counts			Tagged Fork Length		Specimen Count						Mean Fork Length (mm)		
	kg	Count	Count by Trap	Recover-Rerelease	Tag Sampled	Re-leased	Count	Mean	Fork Length	Sex	Maturity	Otoliths	Weight	Count	Proportion Males	Males	Females
1	2050	797		0	0	142	142	609	33	33	33	33	33	33	0.21	551	618
2	3061	1660		0	0	143	141	547	32	32	32	32	32	32	0.88	551	583
3	2810	1455		0	0	163	163	561	33	33	33	32	33	33	0.76	549	590
4	1857	669		0	0	134	134	613	37	35	35	35	35	38	0.2	586	636
5	2971	1676		0	0	151	151	562	64	36	35	36	36	64	0.61	537	584
6	1489	791		0	0	129	129	575	31	31	31	31	31	31	0.19	560	602
7	930	318		0	0	157	157	625	32	32	32	32	32	32	0.06	590	617
8	1450	835		3	0	134	137	558	51	32	32	32	32	51	0.47	549	587
9	1450	862		0	1	156	156	552	36	36	36	35	36	36	0.72	533	619
10	1667	814		0	0	139	139	581	34	34	34	34	34	34	0.32	564	607
11	2644	1651		2	0	179	180	522	33	30	30	30	30	33	0.73	507	584
12	3554	1677		0	0	193	193	567	36	31	31	31	31	36	0.32	559	604
13	1303	676		0	0	143	143	556	36	36	36	36	36	37	0.81	548	579
14	1603	715		3	0	131	133	595	35	34	33	34	34	35	0.32	562	613
15	1012	432		1	0	113	113	603	27	26	26	26	26	27	0.31	567	596
16	1894	946		0	0	153	153	571	33	32	32	32	32	33	0.34	559	611
17	2832	1465		0	0	121	121	564	54	31	31	31	31	54	0.48	535	607
18	1022	584		0	0	128	128	537	34	31	31	30	31	34	0.39	526	584
19	190	115		0	0	57	57	545	31	24	24	24	24	31	0.33	518	576
20	2407	970		0	0	129	129	607	36	33	33	33	33	36	0.21	604	615
21	2183	908		0	0	141	141	614	34	34	34	34	34	34	0.29	551	598
22	3483	1645		0	0	134	134	587	31	30	30	30	30	31	0.33	572	607
23	2343	1147		0	0	0	0	0	160	159	0	0	0	161	0.35	576	618

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continued.

Set	Total Catch			Tagged Fish Counts			Tagged Fork Length		Specimen Count						Mean Fork Length (mm)		
	kg	Count	Count by Trap	Recover-Rerelease	Tag Sampled	Re-leased	Count	Mean	Fork Length	Sex	Maturity	Otoliths	Weight	Count	Proportion Males	Males	Females
24	2712	1288		1	1	1	1	601	157	157	1	0	1	157	0.28	589	636
25	1072	503		1	0	133	133	592	30	30	30	27	30	30	0.37	560	601
26	1414	654		1	0	122	123	589	35	35	35	35	35	35	0.23	546	596
27	1588	956		0	0	137	137	540	36	31	31	31	31	36	0.68	514	608
28	1357	728		0	0	150	149	558	33	32	32	32	32	33	0.59	531	575
29	1186	460		0	0	0	0	0	130	130	0	0	0	130	0.3	622	640
30	1059	505		0	0	0	0	0	121	122	0	0	0	122	0.5	575	610
31	1510	746		0	1	123	123	581	37	36	36	35	36	37	0.22	560	617
32	1301	707		0	0	150	150	560	33	33	33	33	33	33	0.67	551	557
33	2085	1189		1	0	171	172	544	33	31	31	31	31	33	0.52	508	536
34	2501	1049		0	0	124	123	607	45	31	30	31	31	45	0.29	592	632
35	1466	799		1	0	125	126	571	37	34	34	34	34	37	0.68	533	596
36	1489	751		0	0	0	0	0	164	164	0	0	0	164	0.34	569	624
37	1506	874		0	0	125	125	558	31	31	31	31	31	31	0.77	572	563
38	1165	365		0	0	85	85	648	29	29	29	29	29	29	0.21	640	698
39	2323	1021		1	0	144	145	593	31	31	31	31	31	31	0.35	585	593
40	1925	971		0	0	122	122	565	32	30	30	30	30	32	0.43	563	542
41	703	240		0	0	87	87	647	32	31	32	24	32	32	0.13	569	646
42	1071	363		0	0	0	0	0	117	117	0	0	0	117	0.21	640	668
43	1570	759		0	1	0	0	670	133	133	1	0	1	133	0.34	624	628
44	2330	1304		0	0	99	99	554	30	28	28	28	28	30	0.36	529	540
45	726	209		0	0	104	104	663	31	31	31	31	31	31	0.35	649	697

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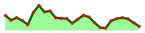
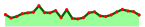
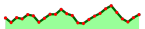
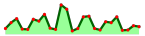
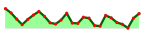
continued.

Set	Total Catch			Tagged Fish Counts			Tagged Fork Length		Specimen Count						Mean Fork Length (mm)		
	kg	Count	Count by Trap	Recover-Rerelease	Tag Sampled	Re-leased	Count	Mean	Fork Length	Sex	Maturity	Otoliths	Weight	Count	Proportion Males	Males	Females
46	781	291		0	0	99	97	622	31	31	31	31	31	31	0.23	566	627
47	437	145		0	0	32	32	626	32	32	32	32	32	32	0.5	613	654
48	1891	929		0	0	148	148	571	30	30	30	30	30	30	0.7	568	608
49	1027	512		0	0	114	113	572	29	29	29	29	29	29	0.55	563	617
50	1771	803		6	0	118	123	606	33	33	33	33	33	33	0.52	618	625
51	2212	1355		2	0	105	107	555	36	36	36	36	36	36	0.86	546	531
52	1982	1026		0	0	150	150	553	27	27	27	27	27	27	0.41	539	546
53	359	96		1	0	17	18	682	38	38	38	34	38	38	0.11	624	712
54	1911	1051		1	0	106	107	566	32	32	32	32	32	32	0.75	559	573
55	1499	752		1	0	137	138	573	29	29	29	29	29	29	0.41	523	591
56	1178	531		0	0	116	116	585	32	32	32	32	32	32	0.56	558	627
57	464	153		0	0	59	58	660	31	30	30	30	30	31	0.23	612	684
58	1384	379		0	0	95	95	689	30	30	30	30	30	30	0.07	610	720
59	2136	832		0	1	106	106	619	32	32	32	31	32	32	0.28	599	661
60	1437	632		1	0	105	106	618	30	30	30	30	30	30	0.4	577	622
61	655	226		1	0	82	81	638	35	35	35	27	35	35	0.26	581	647
62	482	176		0	0	64	63	607	30	30	30	0	30	30	0.37	620	608
63	222	69		0	0	28	27	654	31	31	31	31	31	31	0.19	638	635
64	1785	803		0	0	123	123	569	30	30	30	30	30	30	0.4	563	590
65	1025	446		0	0	101	101	591	31	31	31	31	31	31	0.65	537	583
66	1811	907		0	0	0	0	0	166	166	0	0	0	166	0.31	588	629
67	1774	738		0	1	0	0	515	150	150	1	0	1	150	0.32	599	665

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continued.

Set	Total Catch			Tagged Fish Counts			Tagged Fork Length		Specimen Count						Mean Fork Length (mm)		
	kg	Count	Count by Trap	Recover-Rerelease	Tag Sampled	Re-leased	Count	Mean	Fork Length	Sex	Maturity	Otoliths	Weight	Count	Proportion Males	Males	Females
68	2233	1107		0	0	107	107	576	34	34	34	34	34	34	0.35	575	582
69	1230	709		3	1	99	102	551	32	32	32	32	32	32	0.81	536	603
70	671	245		1	0	56	57	643	35	35	35	35	35	35	0.34	616	655
71	406	158		0	0	41	41	635	31	31	31	31	31	31	0.61	605	660
72	2508	1146		0	0	102	100	589	33	33	33	32	33	33	0.52	559	620
73	1921	786		1	0	103	104	598	31	31	31	31	31	31	0.48	582	596
74	1629	675		0	1	121	121	578	33	33	33	32	33	33	0.36	528	578
75	515	139		0	0	25	25	674	30	30	30	30	30	30	0.07	583	671
76	1638	716		0	1	0	0	535	168	168	1	0	1	168	0.38	575	615
77	1558	712		0	0	115	115	597	33	33	33	33	33	33	0.7	575	643
78	781	231		1	0	78	79	660	28	28	28	28	28	28	0.21	615	683
79	347	106		1	0	34	35	637	32	32	32	32	32	32	0.22	623	714
80	2296	846		1	0	147	147	631	31	31	31	31	31	31	0.29	582	641
81	1961	1014		2	0	115	115	568	34	34	34	34	34	34	0.74	567	636
82	1880	976		1	0	120	121	567	31	31	31	31	31	31	0.71	552	577
83	1483	552		0	0	0	0	580	150	150	0	0	0	150	0.38	579	646
84	1671	662		0	0	0	0	0	140	140	0	0	0	140	0.22	594	639
85	2443	1469		9	0	113	122	537	32	32	32	32	32	32	0.88	555	606
86	1933	888		1	0	119	120	587	35	35	35	35	35	35	0.54	593	612
87	1750	834		1	0	139	136	574	34	34	34	34	34	34	0.62	565	618
88	1874	783		0	0	116	116	602	39	39	39	39	39	39	0.56	589	616
89	1416	631		1	0	115	115	591	33	33	33	33	33	33	0.42	563	570

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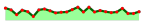
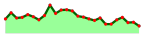
continued.

Set	Total Catch			Tagged Fish Counts			Tagged Fork Length		Specimen Count						Mean Fork Length (mm)		
	kg	Count	Count by Trap	Recover-Rerelease	Tag Sampled	Re-leased	Count	Mean	Fork Length	Sex	Maturity	Otoliths	Weight	Count	Proportion Males	Males	Females
90	1784	767		0	0	117	117	614	34	34	34	34	34	34	0.56	576	610
91	1478	528		0	0	114	114	611	34	33	33	33	33	34	0.33	587	653
92	1777	813		4	0	110	113	603	31	31	31	31	31	31	0.55	556	608
93	2938	1315		0	1	125	125	570	36	36	36	35	36	37	0.44	559	618
94	351	98		0	0	48	48	685	30	29	29	29	29	30	0.03	545	677
95	2772	917		0	1	0	0	645	158	158	1	0	1	158	0.41	627	677
96	1664	629		0	1	0	0	465	168	168	1	0	1	168	0.51	604	666
97	1557	618		1	0	127	127	623	36	36	36	36	36	36	0.78	620	661
98	2227	801		0	0	111	111	613	31	31	31	31	31	31	0.65	591	643
99	350	86		0	0	13	13	680	30	30	30	30	30	30	0.07	573	708
100	766	253		0	0	65	65	634	34	34	34	34	34	34	0.35	600	662
EscapeRing		10,394		1	6	1	1		2,082	2,082	6	0	6	2,084			
StRS		63,917		55	6	9,671	9,697		2,884	2,753	2,751	2,693	2,754	2,887			
Total		**74,311**		**56**	**12**	**9,672**	**9,698**		**4,966**	**4,835**	**2,757**	**2,693**	**2,760**	**4,971**			

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APPENDIX F TABLE OF SABLEFISH MATURITY CONVENTION CODES.

Maturity convention codes and gonad descriptions for male and female Sablefish.

Maturity code	Sex	Maturity Name	Maturity Description
1	Female	IMMATURE 1	Thin string-like =1.5mm thick mid-section, translucent-white colour
2		IMMATURE 2	Thicked >5mm, does not extend length of body cavity, some folds sausage-like, translucent-white colour
3		RIPENING 1	Eggs present, white opaque colour, encased in translucent sock, <25cavity
4		RIPENING 2	Eggs larger =1mm diameter, white in colour, blood vessels present on surface, >25body cavity
5		RIPE	Eggs at least 1mm diameter, white in colour, gonad full size, >50cavity
6		RIPE1	Gonad full size, >50cavity but at least 25have become translucent
7		RIPE2	Gonad full size, >50cavity but at least 50have become translucent
8		RUNNING RIPE	Stream of translucent eggs released when slight-moderate pressure is applied to external posterior region of body cavity
9		SPENT	Gonad is red-purple in colour, residual eggs may be present, outer wall of gonad flaccid
10		RESORBING	Eggs present but did not function normally (not normal)
11		RECOVERING	Still some red purple colour, not flaccid, whitish sheen to exterior surface
12		RESTING	Smooth elongated and round in shape, brown purple pulp interior, exterior surface has whitish sheen
1	Male	IMMATURE 1	Very thin string-like >1mm thick, translucent white colour
2		IMMATURE 2	Thin string-like 3mm thick, extends length of body cavity, white-translucent colour
3		RIPENING 1	Thick >10mmm, visible folds, white smooth texture, =20body cavity
4		RIPENING 2	Thick >10mmm, visible folds, white smooth texture with blood vessels present on surface, >30body cavity
5		RIPE	Thick >10mmm, visible folds, white smooth texture wiith blood vessels present on surface, folds delicate, some sperm may flow, >40cavity
8		RUNNING RIPE	Lobes fully developed, sperm is released when slight pressure is applied to external posterior region of body cavity
9		SPENT	Lobes or folds are bloodshot, some sperm may be present when moderate pressure is applied to external posterior region of body cavity
11		RECOVERING	Lobes flat, brown in colour, bloodshot appearance on edges and ends of lobes
12		RESTING	Firm, light brown colour, wrinkles on surface

APPENDIX G SUMMARY OF BIOLOGICAL DATA FOR THE ROUGHEYE/BLACKSPOTTED ROCKFISH COMPLEX.

Table 1. Biological data collected for Rougheye/Blackspotted Rockfish complex. Each set is listed with counts of specimens sampled, proportion of males, calculations of mean fork lengths (mm) and the number of species visually identified as either a RE = Rougheye Rockfish, BS = Blackspotted Rockfish or a HY = hybrid species.

	Specimen Count									Mean Fork Length		Sampler Visual id		
Set	Fork Length	Weight	Sex	Maturity	Otolith	DNA	Stomach contents	Total Count	Proportion Males	Males	Females	RE	BS	Hybrid
3	1	1	1	1	1	1	1	1	0	0	560	1	0	0
22	1	1	1	1	1	1		1	0	0	500	1	0	0
39	1	1	1	1	1	1	1	1	0	0	450	0	1	0
46	7	7	7	7	7	7	7	7	0.71	475	420	1	6	0
50	9	9	9	9	9	7	9	9	0.67	481	478	0	9	0
55	1	1	1	1	1	1	1	1	1	460	0	1	0	0
58	8	8	8	8	8	8	8	8	0.63	399	525	0	8	0
59	6	6	6	6	6	6	6	6	0.67	470	475	2	4	0
63	1	1	1	1	1	1	1	1	0	0	440	0	1	0
65	7	7	7	7	7	7	7	7	0.57	514	465	0	7	0
75	9	9	9	9	9	9	9	9	0.22	495	474	0	9	0
78	4	4	4	4	4	4	4	4	0.75	435	455	1	3	0
80	25	25	25	25	25	25	25	35	0.48	464	455	4	21	0
87	1	1	1	1	1	1	1	1	0	0	505	1	0	0
88	28	28	28	28	28	28	28	53	0.32	506	488	15	13	0
89	1	1	1	1	1	1	1	1	0	0	480	1	0	0
91	32	32	32	32	32	32	32	91	0.41	461	476	17	15	0
94	12	12	12	12	12	12	12	12	0.25	460	464	9	3	0
98	6	6	6	6	6	6	6	6	0.33	485	439	2	4	0
100	3	3	3	3	3	3	3	3	0.33	515	493	3	0	0
	163	**163**	**163**	**163**	**163**	**161**	**162**	**257**				**59**	**104**	**0**

Table 2. Summary of dominant prey items identified in Rougheye/Blackspotted Rockfish Complex stomachs collected in 2024. Counts indicate the number of stomachs containing each prey type based on the simple contents protocol; percentages represent the proportion of all stomachs examined (n = 162), including empty/everted stomachs.

Prey Code	Prey Description	Scientific.Name	nStomach	% of Total (n=162)
M002	EMPTY		91	56.17%
M003	EVERTED		58	35.8%
M011	UNID. REMAINS		9	5.56%
SAB	NANTANTIA(ORDER)/SHRIMP	DENDROBRANCHIATA	2	1.23%
91A	CEPHALOPODA(FAMILY)	CEPHALOPODA	1	0.62%
92A	TEUTHOIDEA(ORDER)/SQUID	TEUTHIDA	1	0.62%

APPENDIX H SUMMARY OF DATA COLLECTED FOR SHORTRAKER ROCKFISH AND YELLOWEYE ROCKFISH.

Table 1. Morphometrics (fork length, weight) and biological (sex, maturity, otoliths and/or stomach contents) data collected for Shortraker Rockfish and Yelloweye Rockfish species. Each set is listed with the proportion of males, counts of specimens sampled and calculations of mean fork lengths.

		Specimen Count								Mean Fork Length(mm)		
Species Name	Set	Fork Length	Weight	Sex	Maturity	Otoliths	Stomach contents	Total	Prop Males	Males	Females	No sex
SHORTRAKER ROCKFISH	46	1	1	0	0	1	1	1	0.00	0	0	685
	48	1	1	1	1	1	1	1	1.00	710	0	0
	49	1	1	1	1	1	1	1	0.00	0	670	0
	50	1	1	1	1	1	1	1	0.00	0	680	0
	59	1	1	1	1	1	1	1	1.00	740	0	0
	64	1	1	1	1	1	1	1	1.00	685	0	0
	65	12	12	12	12	12	12	12	0.33	646	574	0
	73	2	2	2	2	2	2	2	0.50	590	545	0
	74	1	1	1	1	1	1	1	1.00	800	0	0
	79	1	1	1	1	1	1	1	0.00	0	890	0
	87	1	1	1	1	1	1	1	0.00	0	700	0
	88	1	1	1	1	1	1	1	0.00	0	940	0
	89	1	1	1	1	1	1	1	0.00	0	505	0
YELLOWEYE ROCKFISH	4	1	1	1	0	0		1	0.00	0	395	0
	7	3	3	3	0	0		3	0.00	0	428	0
	41	4	4	4	0	0		4	0.75	557	555	0
	45	3	3	3	0	0		3	0.50	545	495	400
	61	7	7	7	0	0		7	0.43	475	490	0
	63	3	3	3	0	0		3	0.67	450	575	0
	75	2	2	2	0	0		2	0.50	470	545	0
	78	1	1	1	0	0		1	1.00	475	0	0
	79	6	6	6	0	0		6	0.17	490	564	0

Table 2. Summary of dominant prey items identified in Shortraker Rockfish stomachs collected in 2024. Counts indicate the number of stomachs containing each prey type based on the simple contents protocol; percentages represent the proportion of all stomachs examined (n = 25), including empty/everted stomachs.

Prey Code	Prey Description	Scientific.Name	nStomach	% of Total (n=25)
M002	EMPTY		17	68%
M003	EVERTED		7	28%
SAB	NANTANTIA(ORDER)/SHRIMP	DENDROBRANCHIATA	1	4%

APPENDIX I ESCAPE RING STUDY CATCH COUNTS PER TRAP.

Table 1: Sablefish catch counts per trap for all traps in the escape ring study set. Each trap treatments is color-coded as listed in the legend below.

	Trap																								
Set	**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**	**Total**
23	66	59	9	13	57	49	53	9	11	63	72	20	20	59	71	10	56	86	57	60	4	22	103	96	22	1147
24	93	12	29	98	88	64	20	15	73	84	16	28	92	76	34	29	63	75	61	20	16	77	77	48	0	1288
29	42	40	29	3	4	39	10	24	8	3	30	30	12	11	38	13	9	12	23	12	13	13	3	25	14	460
30	63	48	25	7	5	17	30	15	12	4	19	20	6	2	28	21	9	9	52	30	13	7	1	24	38	505
36	41	32	8	12	54	30	3	6	31	21	10	8	69	38	12	20	80	68	17	9	36	45	10	12	79	751
42	27	28	7	13	30	16	16	5	3	22	3	5	4	16	11	10	7	9	15	35	3	11	24	20	23	363
43	3	22	2	5	38	19	20	6	4	30	41	8	5	25	68	25	9	47	75	42	5	3	53	104	100	759
66	19	38	51	17	16	49	43	65	20	16	96	82	11	19	57	59	19	14	41	38	57	13	14	28	25	907
67	64	50	30	12	29	43	55	39	18	14	27	49	17	16	36	33	9	7	42	34	19	13	1	33	48	738
76	30	18	10	2	33	14	12	56	46	14	34	55	72	20	18	28	46	16	23	55	31	20	12	21	30	716
83	34	26	35	17	11	23	57	32	15	13	20	0	7	13	33	32	17	16	32	19	22	15	16	18	29	552
84	53	76	68	8	10	33	29	10	16	44	50	26	20	29	21	16	17	17	25	14	7	21	26	20	6	662
95	19	31	28	35	37	55	44	33	25	19	28	39	33	33	36	63	45	22	34	40	72	34	34	52	26	917
96	45	27	34	12	35	5	29	18	32	13	20	36	13	17	26	25	19	15	27	38	51	12	7	35	38	629
																									Total	**10,394**

Legend No treatment E1 E2 E6

Table 2. Sablefish catch counts per trap. Traps that were not fishing correctly have been greyed out and coded as listed in the legend below.

	Trap																								
Set	**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**	**Total**
23	66	59	9	13	57	49	53	9	11	63	72	20	20	59	71	10	56	86	57	60	4	1E	103	96	22	1125
24	93	1E	29	98	88	64	20	15	73	84	1E	28	92	76	34	29	63	75	61	LH	16	77	77	48	0	1240
29	42	40	29	3	4	39	10	24	8	3	30	30	12	11	38	13	9	12	23	12	13	13	LH	25	14	457
30	63	48	25	7	5	17	30	15	12	4	19	20	6	2	28	21	9	9	52	30	13	7	1	24	38	505
36	41	32	8	12	54	30	3	6	31	21	10	8	69	38	12	20	80	68	17	9	36	45	10	12	79	751
42	27	28	7	13	30	16	16	5	3	22	3	5	4	16	11	10	7	Gt	15	35	3	11	24	20	23	354
43	3	22	2	5	38	19	20	6	4	30	41	8	5	25	68	25	1E	47	75	42	5	3	53	104	100	750
66	19	38	51	17	16	49	43	65	20	1E	96	82	11	19	57	59	19	14	41	38	57	13	14	28	25	891
67	Gt	50	30	12	29	43	55	39	1E	14	27	49	17	16	36	33	1E	7	42	34	19	13	1	33	48	647
76	30	18	10	2	33	1E	12	56	46	14	34	55	72	20	18	28	46	16	23	55	31	1E	12	21	30	682
83	34	26	35	17	1E	23	57	32	15	13	LH	0	7	1E	33	32	17	1E	32	19	22	1E	2E	18	29	461
84	53	76	68	8	10	33	29	10	16	44	50	26	20	29	21	16	1E	17	25	14	1E	21	26	20	6	638
95	19	31	28	35	Gt1E	55	44	33	1E	LH	28	39	33	1E	36	63	1E	2E	34	40	72	1E	34	52	26	702
96	45	27	34	12	3E	5	29	18	32	13	20	36	1E	17	26	25	19	15	27	38	51	1E	7	35	38	569
																									Total	**9,772**

LH Large Holes Gt Gilled in Tunnel 1E 1 Escape Ring Gilled 2E 2 Escape Rings Gilled 3E 3 Escape Rings Gilled

APPENDIX J ESCAPE RING STUDY CATCH WEIGHTS PER TRAP.

Table 1: Sablefish catch weights per trap for all traps in the escape ring study set. Each trap treatments is color-coded as listed in the legend below.

	Trap																								
Set	**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**	**Total**
23	118.0	97.0	20.8	33.4	104.5	93.0	95.0	22.6	33.0	134.5	147.0	57.6	43.0	130.1	168.2	30.8	126.2	176.7	114.7	126.3	10.9	63.1	190.8	160.1	45.9	2,343.1
24	178.2	29.1	71.0	163.9	161.3	132.9	60.5	37.3	135.3	169.0	47.5	77.5	181.5	149.6	83.9	80.9	133.5	164.9	144.0	56.2	45.7	154.8	148.4	104.7	0.0	2,711.7
29	87.4	92.5	63.2	11.0	11.5	92.1	24.3	66.3	24.3	12.2	68.3	66.9	46.0	30.4	97.1	33.7	25.8	38.6	56.7	37.9	41.0	43.3	11.7	68.2	35.5	1,185.9
30	120.6	101.8	48.0	19.0	13.7	36.9	58.5	33.0	27.7	10.0	38.3	37.0	15.9	5.6	57.4	45.1	23.3	21.0	103.8	58.9	24.9	16.9	1.2	53.3	87.3	1,059.0
36	70.6	53.8	19.7	31.7	97.5	52.0	8.6	17.8	67.8	36.7	24.5	28.6	123.7	68.6	33.4	54.2	133.8	116.2	46.5	26.9	80.0	92.7	26.1	32.7	144.9	1,488.8
42	73.2	74.9	21.9	42.5	77.0	43.2	48.2	15.1	11.1	64.6	8.3	14.9	12.8	43.2	32.3	37.9	27.6	32.0	38.8	93.1	11.2	47.2	66.8	63.0	69.9	1,070.8
43	7.4	53.7	6.6	14.9	88.9	51.3	44.7	18.2	13.6	73.1	111.9	25.5	17.1	60.8	129.7	69.8	25.3	87.6	127.3	78.1	19.1	10.3	96.8	181.5	156.4	1,569.6
66	40.9	71.0	105.6	38.4	48.0	89.0	72.9	109.9	67.7	41.8	164.6	137.6	25.9	52.0	104.6	100.9	43.2	40.5	80.5	81.8	112.0	31.9	37.6	61.7	51.5	1,811.2
67	128.6	108.9	72.9	40.8	83.4	102.7	124.2	87.2	59.3	46.8	60.2	98.5	52.9	58.5	80.7	74.6	27.9	22.5	92.1	70.2	49.2	40.4	4.4	75.6	112.2	1,774.5
76	49.2	48.1	30.9	2.1	66.9	42.2	27.9	103.2	73.2	37.6	89.2	113.8	141.0	64.8	54.2	64.2	109.5	41.2	70.5	125.9	69.7	64.0	33.6	49.2	65.6	1,637.5
83	97.5	68.9	87.6	51.2	38.2	64.5	131.0	75.0	44.9	39.1	98.1	0.0	22.8	84.0	91.9	84.1	49.7	95.0	77.2	49.8	52.9	91.6	97.2	47.3	76.7	1,716.1
84	96.5	145.4	149.3	30.7	41.1	83.1	67.8	36.7	45.7	98.7	119.4	84.1	63.7	77.8	47.5	52.1	56.2	45.0	75.1	39.8	22.9	61.8	64.7	49.6	16.8	1,671.4
95	58.3	109.3	92.2	117.0	235.5	161.1	145.5	121.6	78.5	65.5	85.7	108.0	111.2	116.3	90.4	168.1	128.8	71.7	90.6	103.5	182.2	117.1	114.1	143.7	73.4	2,889.5
96	139.1	72.1	95.5	37.1	101.4	15.6	69.9	54.4	104.9	41.2	59.0	93.5	43.2	55.1	60.6	80.7	52.9	44.2	62.4	82.2	101.5	34.1	27.3	65.4	70.4	1,663.7
																										24,592.7

Legend No treatment E1 E2 E6

Table 2. Sablefish catch weights per trap. Traps that were not fishing correctly have been greyed out and coded as listed in the legend below.

	Trap																								
Set	**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**	**Total**
23	118.0	97.0	20.8	33.4	104.5	93.0	95.0	22.6	33.0	134.5	147.0	57.6	43.0	130.1	168.2	30.8	126.2	176.7	114.7	126.3	10.9	1E	190.8	160.1	45.9	2,280.0
24	178.2	1E	71.0	163.9	161.3	132.9	60.5	37.3	135.3	169.0	1E	77.5	181.5	149.6	83.9	80.9	133.5	164.9	144.0	LH	45.7	154.8	148.4	104.7	0.0	2,578.9
29	87.4	92.5	63.2	11.0	11.5	92.1	24.3	66.3	24.3	12.2	68.3	66.9	46.0	30.4	97.1	33.7	25.8	38.6	56.7	37.9	41.0	43.3	LH	68.2	35.5	1,174.2
30	120.6	101.8	48.0	19.0	13.7	36.9	58.5	33.0	27.7	10.0	38.3	37.0	15.9	5.6	57.4	45.1	23.3	21.0	103.8	58.9	24.9	16.9	1.2	53.3	87.3	1,059.0
36	70.6	53.8	19.7	31.7	97.5	52.0	8.6	17.8	67.8	36.7	24.5	28.6	123.7	68.6	33.4	54.2	133.8	116.2	46.5	26.9	80.0	92.7	26.1	32.7	144.9	1,488.8
42	73.2	74.9	21.9	42.5	77.0	43.2	48.2	15.1	11.1	64.6	8.3	14.9	12.8	43.2	32.3	37.9	27.6	Gt	38.8	93.1	11.2	47.2	66.8	63.0	69.9	1,038.8
43	7.4	53.7	6.6	14.9	88.9	51.3	44.7	18.2	13.6	73.1	111.9	25.5	17.1	60.8	129.7	69.8	1E	87.6	127.3	78.1	19.1	10.3	96.8	181.5	156.4	1,544.3
66	40.9	71.0	105.6	38.4	48.0	89.0	72.9	109.9	67.7	1E	164.6	137.6	25.9	52.0	104.6	100.9	43.2	40.5	80.5	81.8	112.0	31.9	37.6	61.7	51.5	1,769.4
67	Gt	108.9	72.9	40.8	83.4	102.7	124.2	87.2	1E	46.8	60.2	98.5	52.9	58.5	80.7	74.6	1E	22.5	92.1	70.2	49.2	1E	4.4	75.6	112.2	1,518.3
76	49.2	48.1	30.9	2.1	66.9	1E	27.9	103.2	73.2	37.6	89.2	113.8	141.0	1E	54.2	64.2	109.5	41.2	70.5	125.9	69.7	1E	2E	49.2	65.6	1,433.0
83	97.5	68.9	87.6	51.2	1E	64.5	131.0	75.0	44.9	39.1	LH	0.0	22.8	84.0	91.9	84.1	49.7	1E	77.2	49.8	52.9	91.6	97.2	47.3	76.7	1,484.9
84	96.5	145.4	149.3	30.7	41.1	83.1	67.8	36.7	45.7	98.7	119.4	84.1	63.7	77.8	47.5	52.1	1E	45.0	75.1	39.8	1E	61.8	64.7	49.6	16.8	1,592.4
95	58.3	109.3	92.2	117.0	Gt1E	161.1	145.5	121.6	1E	LH	85.7	108.0	111.2	1E	90.4	168.1	1E	2E	90.6	103.5	182.2	1E	114.1	143.7	73.4	2,076.1
96	139.1	72.1	95.5	37.1	3E	15.6	69.9	54.4	104.9	41.2	59.0	93.5	1E	55.1	60.6	80.7	52.9	44.2	62.4	82.2	101.5	1E	27.3	65.4	70.4	1,485.1
																										22,523.1

LH Large Holes Gt Gilled in Tunnel 1E 1 Escape Ring Gilled 2E 2 Escape Rings Gilled 3E 3 Escape Rings Gilled

6 References

DFO. 2025. Application of the British Columbia Sablefish (*Anoplopoma fimbria*) Management Procedure for the 2025-26 Fishing Year. DFO Canadian Science Advisory Secretariat.

Doherty, B., Lacko, L., Kronlund, A.R., and Cox, S.P. 2025. Quantitative estimates of contact with seafloor habitats by longline trap and hook fishing gear. ICES Journal of Marine Science 82(3). Oxford University Press.

Hardy, S.M., Lacko, L.C., and Holt, K.R. 2024. Summary of the 2022 British Columbia Sablefish (*Anoplopoma **fi**mbria*) trap survey, October 3–November 19, 2022. Canadian Technical Report of Fisheries; Aquatic Sciences.

Johnson, S.D.N., Cox, S.P., Holt, K.R., Lacko, L.C., Kronlund, A.R., and Rooper, C.N. 2025. Stock status and Management Procedure Performance for the BC Sablefish (*Anoplopoma fimbria*) Fishery for 2022/23. DFO Can. Sci. Advis. Sec. Res. Doc. 2024/072.

Lacko, L.C., Acheson, S.M., and Holt, K.R. 2023. Summary of the annual 2021 Sablefish (*Anoplopoma fimbria*) trap survey, October 6 - November 21, 2021. Can. Data Rep. Fish. Aquat. Sci. 2023/3530: vii + 48 p.

Olsen, N. 2010. CA user's guide to GFBioField: The Pacific Region's at-sea data acquisition system for Groundfish trawl surveys. Can. Tech. Rep. Fish.Aquat. Sci. 2010/2887: x + 76 p.

Wyeth, M.R., Kronlund, A.R., and Elfert, M. 2007. Summary of the 2005 British Columbia Sablefish (*Anoplopoma fimbria*) Research and Assessment Survey. Can. Data Rep. Fish. Aquat. Sci. 2007/2694: xi + 105 p.