sablefish\_obs\_coverage\_draft

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2023-06-06

This report describes sablefish catch and observer data.

**Figure 1: Catch (3 columns, actuals only)**

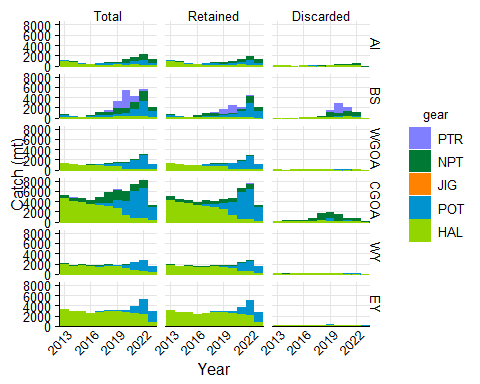


Figure 1. sablefish catch by gear type that was either retained, discarded, or the sum of retained and discarded catch by management area. Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), Pot (POT), or Hook and Line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

**Table** : Total sablefish catch (mt) by year, area, and gear

| year | mgmt\_area | NPT | POT | HAL | PTR | JIG |
| --- | --- | --- | --- | --- | --- | --- |
| 2013 | AI | 57.88 | 87.20 | 937.06 |  |  |
| 2013 | BS | 133.28 | 351.80 | 149.69 | 0.11 |  |
| 2013 | WGOA | 12.72 | 0.25 | 1,345.41 | 0.00 |  |
| 2013 | CGOA | 659.48 |  | 4,527.22 | 0.31 |  |
| 2013 | WY | 172.56 |  | 1,928.59 | 0.87 |  |
| 2013 | EY |  |  | 3,246.49 |  |  |
| 2014 | AI | 26.09 | 159.97 | 626.89 |  |  |
| 2014 | BS | 34.46 | 164.27 | 115.46 | 0.01 |  |
| 2014 | WGOA | 60.63 | 0.00 | 1,133.77 | 0.09 |  |
| 2014 | CGOA | 735.97 | 1.82 | 3,981.90 | 16.33 |  |
| 2014 | WY | 151.81 |  | 1,519.27 | 0.10 |  |
| 2014 | EY |  |  | 2,817.35 |  |  |
| 2015 | AI | 15.38 | 12.05 | 394.43 |  |  |
| 2015 | BS | 17.02 | 108.06 | 85.16 | 0.05 |  |
| 2015 | WGOA | 35.08 | 0.39 | 954.37 | 8.28 |  |
| 2015 | CGOA | 779.79 | 1.65 | 3,821.66 | 22.44 |  |
| 2015 | WY | 212.17 |  | 1,653.69 |  |  |
| 2015 | EY |  |  | 2,811.28 |  |  |
| 2016 | AI | 29.96 | 20.84 | 289.34 |  |  |
| 2016 | BS | 239.08 | 157.96 | 116.39 | 17.87 |  |
| 2016 | WGOA | 37.93 | 0.94 | 1,004.45 | 8.59 |  |
| 2016 | CGOA | 802.71 | 7.57 | 3,361.06 | 22.96 | 0.31 |
| 2016 | WY | 177.27 |  | 1,473.51 |  |  |
| 2016 | EY |  |  | 2,455.50 |  |  |
| 2017 | AI | 128.53 | 268.50 | 191.43 |  |  |
| 2017 | BS | 588.00 | 365.16 | 106.28 | 90.95 |  |
| 2017 | WGOA | 56.57 | 225.88 | 888.55 | 9.88 |  |
| 2017 | CGOA | 1,191.55 | 442.64 | 3,203.04 | 0.79 |  |
| 2017 | WY | 206.00 | 92.17 | 1,396.15 |  |  |
| 2017 | EY |  | 137.07 | 2,678.47 |  |  |
| 2018 | AI | 178.87 | 285.91 | 199.47 |  |  |
| 2018 | BS | 622.76 | 370.41 | 148.22 | 394.79 |  |
| 2018 | WGOA | 217.52 | 364.61 | 800.76 | 6.24 |  |
| 2018 | CGOA | 2,113.93 | 549.34 | 3,104.89 | 10.06 |  |
| 2018 | WY | 235.76 | 44.60 | 1,581.03 | 0.03 |  |
| 2018 | EY |  | 163.48 | 2,855.94 |  |  |
| 2019 | AI | 240.92 | 203.54 | 218.48 |  |  |
| 2019 | BS | 1,283.04 | 419.46 | 236.55 | 1,222.93 |  |
| 2019 | WGOA | 276.51 | 458.92 | 753.86 | 43.90 |  |
| 2019 | CGOA | 1,944.11 | 1,618.66 | 2,701.01 | 15.90 |  |
| 2019 | WY | 126.17 | 167.99 | 1,507.76 | 0.16 |  |
| 2019 | EY |  | 261.84 | 2,850.69 |  |  |
| 2020 | AI | 695.23 | 397.78 | 138.91 | 0.00 |  |
| 2020 | BS | 1,070.56 | 582.07 | 280.44 | 3,396.33 |  |
| 2020 | WGOA | 174.79 | 1,082.15 | 196.34 | 8.26 |  |
| 2020 | CGOA | 2,026.12 | 2,607.72 | 1,369.17 | 38.10 |  |
| 2020 | WY | 83.43 | 561.07 | 1,190.42 | 0.02 |  |
| 2020 | EY |  | 499.00 | 2,637.54 |  |  |
| 2021 | AI | 773.94 | 569.81 | 233.91 | 0.83 |  |
| 2021 | BS | 1,395.81 | 1,360.94 | 332.75 | 1,079.97 |  |
| 2021 | WGOA | 179.99 | 1,664.68 | 148.18 | 1.20 |  |
| 2021 | CGOA | 1,288.41 | 5,309.86 | 710.17 | 16.07 |  |
| 2021 | WY | 116.70 | 1,535.58 | 677.06 | 0.01 |  |
| 2021 | EY |  | 1,329.88 | 2,541.63 |  |  |
| 2022 | AI | 1,114.54 | 910.61 | 204.40 |  |  |
| 2022 | BS | 2,119.98 | 2,925.99 | 217.76 | 250.34 |  |
| 2022 | WGOA | 224.87 | 2,589.94 | 189.13 | 1.14 |  |
| 2022 | CGOA | 1,472.23 | 5,898.51 | 730.77 | 77.44 |  |
| 2022 | WY | 105.34 | 2,153.23 | 484.30 |  |  |
| 2022 | EY |  | 3,000.60 | 2,226.17 |  |  |
| 2023 | AI | 701.85 | 431.63 | 88.71 |  |  |
| 2023 | BS | 848.92 | 1,285.77 | 25.68 | 0.86 |  |
| 2023 | WGOA | 0.10 | 1,018.03 | 44.09 |  |  |
| 2023 | CGOA | 432.02 | 2,577.75 | 264.59 | 25.25 |  |
| 2023 | WY |  | 1,340.74 | 253.81 | 0.00 |  |
| 2023 | EY |  | 1,992.34 | 810.05 |  |  |

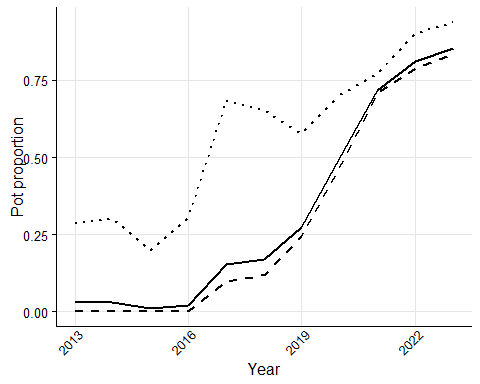


Figure 2. Proportion of fixed gear sablefish catch caught in pots in the GOA, the BSAI, and both combined

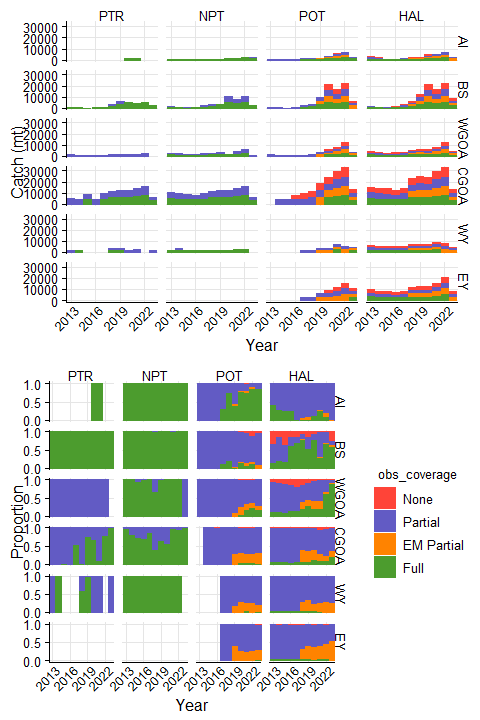


Figure 3. sablefish catch in each observer coverage category in ODDS, including fixed gear electronic monitoring (EM). This catch was not necessarily observed. Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), Pot (POT), or Hook and Line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

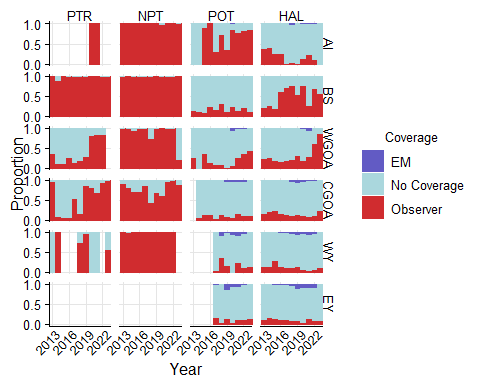


Figure 4. sablefish catch by gear type either observed by electronic monitoring (EM), observers, or no coverage. Biological samples were not taken whenever an observer was present. Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), Pot (POT), or Hook and Line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

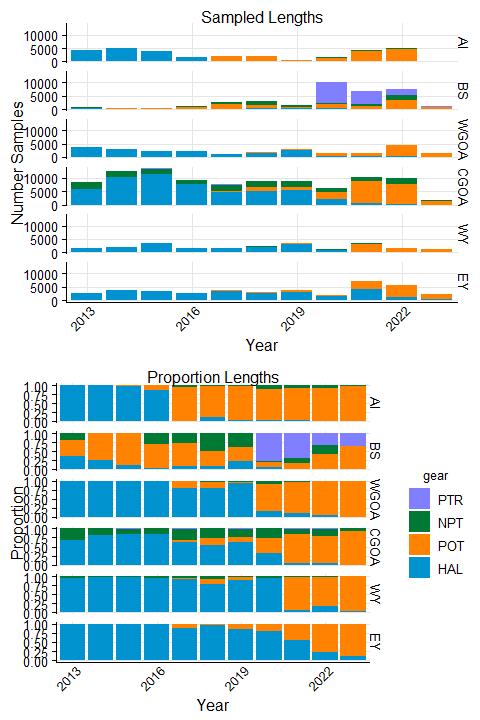


Figure 5. The total and proportion of sablefish lengths collected by observers by gear and area. Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), Pot (POT), or Hook and Line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

**Table** : sablefish lengths measured by year, area, and gear

| year | mgmt\_area | NPT | HAL | POT | PTR |
| --- | --- | --- | --- | --- | --- |
| 2013 | AI | 5 | 4,152 |  |  |
| 2013 | BS | 142 | 257 | 305 |  |
| 2013 | WGOA | 26 | 3,653 |  |  |
| 2013 | CGOA | 2,696 | 5,787 |  |  |
| 2013 | WY | 82 | 1,513 |  |  |
| 2013 | EY |  | 2,561 |  |  |
| 2014 | AI |  | 4,879 |  |  |
| 2014 | BS |  | 111 | 308 |  |
| 2014 | WGOA |  | 3,066 |  |  |
| 2014 | CGOA | 2,376 | 10,318 |  |  |
| 2014 | WY | 55 | 2,095 |  |  |
| 2014 | EY |  | 3,630 |  |  |
| 2015 | AI |  | 3,728 | 94 |  |
| 2015 | BS |  | 39 | 332 |  |
| 2015 | WGOA | 20 | 2,210 |  |  |
| 2015 | CGOA | 2,079 | 11,281 |  | 163 |
| 2015 | WY | 104 | 3,494 |  |  |
| 2015 | EY |  | 3,507 |  |  |
| 2016 | AI |  | 1,470 | 234 |  |
| 2016 | BS | 339 | 24 | 750 |  |
| 2016 | WGOA |  | 2,251 |  | 4 |
| 2016 | CGOA | 1,338 | 7,786 |  | 9 |
| 2016 | WY | 81 | 1,648 |  |  |
| 2016 | EY |  | 2,546 |  |  |
| 2017 | AI | 85 | 46 | 1,825 |  |
| 2017 | BS | 705 | 235 | 1,562 |  |
| 2017 | WGOA |  | 972 | 247 |  |
| 2017 | CGOA | 2,406 | 4,810 | 289 | 60 |
| 2017 | WY | 71 | 1,636 | 64 |  |
| 2017 | EY |  | 3,485 | 426 |  |
| 2018 | AI | 17 | 214 | 1,647 |  |
| 2018 | BS | 1,526 | 305 | 1,267 |  |
| 2018 | WGOA | 49 | 1,491 | 336 |  |
| 2018 | CGOA | 2,245 | 4,923 | 1,692 | 2 |
| 2018 | WY | 205 | 1,842 | 269 |  |
| 2018 | EY |  | 2,773 | 121 |  |
| 2019 | AI | 10 | 21 | 579 |  |
| 2019 | BS | 523 | 319 | 560 | 6 |
| 2019 | WGOA | 135 | 2,728 | 38 |  |
| 2019 | CGOA | 1,980 | 5,486 | 1,264 | 121 |
| 2019 | WY | 49 | 3,199 | 359 |  |
| 2019 | EY |  | 3,084 | 558 |  |
| 2020 | AI | 172 | 40 | 1,341 |  |
| 2020 | BS | 488 | 593 | 1,280 | 7,626 |
| 2020 | WGOA | 123 | 267 | 1,130 |  |
| 2020 | CGOA | 1,673 | 1,987 | 2,638 |  |
| 2020 | WY | 67 | 988 |  |  |
| 2020 | EY |  | 1,444 | 367 |  |
| 2021 | AI | 321 | 139 | 3,866 |  |
| 2021 | BS | 949 | 90 | 992 | 4,752 |
| 2021 | WGOA | 48 | 146 | 1,239 |  |
| 2021 | CGOA | 1,540 | 437 | 8,344 | 75 |
| 2021 | WY | 78 | 221 | 3,040 |  |
| 2021 | EY |  | 3,978 | 3,136 |  |
| 2022 | AI | 317 | 30 | 4,742 |  |
| 2022 | BS | 1,872 | 73 | 3,188 | 2,463 |
| 2022 | WGOA | 70 | 187 | 4,222 |  |
| 2022 | CGOA | 2,095 | 347 | 7,505 | 23 |
| 2022 | WY | 44 | 287 | 1,332 |  |
| 2022 | EY |  | 1,194 | 4,417 |  |
| 2023 | AI | 1 |  | 63 |  |
| 2023 | BS | 21 |  | 670 | 370 |
| 2023 | WGOA |  |  | 1,449 |  |
| 2023 | CGOA | 110 |  | 1,510 |  |
| 2023 | WY |  | 34 | 1,196 |  |
| 2023 | EY |  | 293 | 2,100 |  |

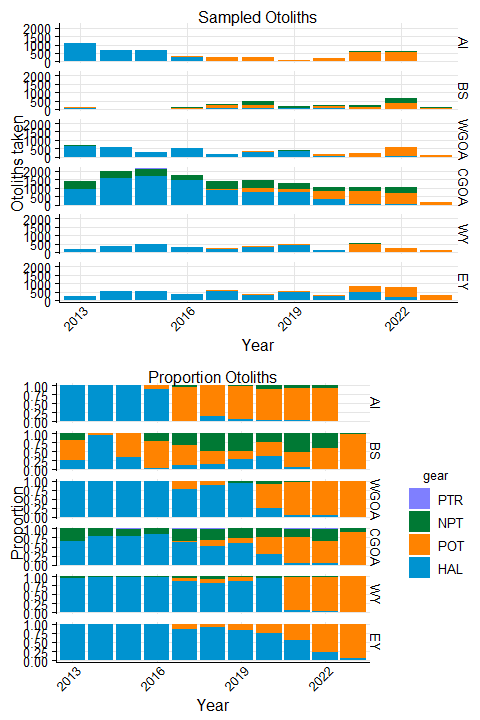


Figure 6. The total and proportion of sablefish ages collected by observers by gear and area. Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), Pot (POT), or Hook and Line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

**Table** : sablefish number of otoliths obtained by year, area, and gear

| year | mgmt\_area | NPT | HAL | POT | PTR |
| --- | --- | --- | --- | --- | --- |
| 2013 | AI | 3 | 1,061 |  |  |
| 2013 | BS | 30 | 41 | 85 |  |
| 2013 | WGOA | 8 | 669 |  |  |
| 2013 | CGOA | 485 | 922 |  |  |
| 2013 | WY | 12 | 190 |  |  |
| 2013 | EY |  | 256 |  |  |
| 2014 | AI |  | 651 |  |  |
| 2014 | BS |  | 34 | 2 |  |
| 2014 | WGOA |  | 571 |  |  |
| 2014 | CGOA | 420 | 1,582 |  |  |
| 2014 | WY | 6 | 344 |  |  |
| 2014 | EY |  | 530 |  |  |
| 2015 | AI |  | 665 | 3 |  |
| 2015 | BS |  | 10 | 19 |  |
| 2015 | WGOA | 3 | 306 |  |  |
| 2015 | CGOA | 406 | 1,696 |  | 35 |
| 2015 | WY | 18 | 495 |  |  |
| 2015 | EY |  | 564 |  |  |
| 2016 | AI |  | 289 | 35 |  |
| 2016 | BS | 26 | 5 | 81 |  |
| 2016 | WGOA |  | 537 |  | 3 |
| 2016 | CGOA | 292 | 1,454 |  |  |
| 2016 | WY | 11 | 293 |  |  |
| 2016 | EY |  | 379 |  |  |
| 2017 | AI | 16 | 5 | 252 |  |
| 2017 | BS | 111 | 42 | 179 |  |
| 2017 | WGOA |  | 152 | 44 |  |
| 2017 | CGOA | 465 | 847 | 60 | 9 |
| 2017 | WY | 12 | 206 | 20 |  |
| 2017 | EY |  | 509 | 91 |  |
| 2018 | AI | 1 | 40 | 240 |  |
| 2018 | BS | 232 | 67 | 174 |  |
| 2018 | WGOA | 6 | 297 | 29 |  |
| 2018 | CGOA | 444 | 731 | 267 | 2 |
| 2018 | WY | 35 | 317 | 43 |  |
| 2018 | EY |  | 323 | 32 |  |
| 2019 | AI | 3 | 7 | 80 |  |
| 2019 | BS | 79 | 46 | 34 |  |
| 2019 | WGOA | 23 | 357 | 2 |  |
| 2019 | CGOA | 315 | 744 | 191 | 1 |
| 2019 | WY | 9 | 442 | 56 |  |
| 2019 | EY |  | 452 | 90 |  |
| 2020 | AI | 20 | 6 | 196 |  |
| 2020 | BS | 60 | 91 | 101 | 2 |
| 2020 | WGOA | 14 | 41 | 114 |  |
| 2020 | CGOA | 240 | 306 | 519 |  |
| 2020 | WY | 9 | 148 |  |  |
| 2020 | EY |  | 215 | 70 |  |
| 2021 | AI | 50 | 17 | 542 |  |
| 2021 | BS | 137 | 16 | 114 |  |
| 2021 | WGOA | 9 | 15 | 220 |  |
| 2021 | CGOA | 232 | 39 | 765 | 9 |
| 2021 | WY | 15 | 32 | 476 |  |
| 2021 | EY |  | 458 | 388 |  |
| 2022 | AI | 43 | 6 | 551 |  |
| 2022 | BS | 266 | 6 | 362 |  |
| 2022 | WGOA | 12 | 25 | 550 |  |
| 2022 | CGOA | 341 | 52 | 629 | 6 |
| 2022 | WY | 6 | 9 | 226 |  |
| 2022 | EY |  | 162 | 589 |  |
| 2023 | BS | 3 |  | 97 |  |
| 2023 | WGOA |  |  | 126 |  |
| 2023 | CGOA | 15 |  | 145 |  |
| 2023 | WY |  | 2 | 145 |  |
| 2023 | EY |  | 21 | 285 |  |

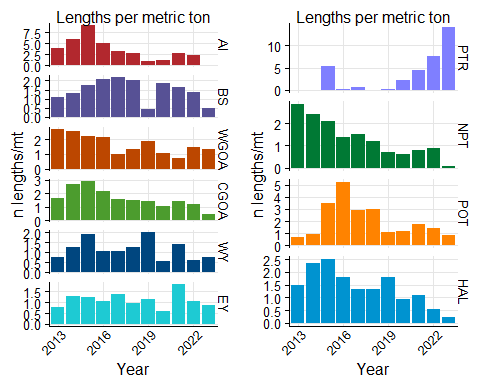


Figure 7. The number of sablefish lengths collected per ton of catch by management area (panel a) or by gear (panel b). Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), Pot (POT), or Hook and Line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

**Table** : Number of sablefish lengths measured per metric ton sablefish catch by year, area, and gear

| year | mgmt\_area | NPT | HAL | POT | PTR |
| --- | --- | --- | --- | --- | --- |
| 2013 | AI | 0.086386506 | 4.4308865 |  |  |
| 2013 | BS | 1.065386331 | 1.7168933 | 0.86696466 |  |
| 2013 | WGOA | 2.044524041 | 2.7151554 |  |  |
| 2013 | CGOA | 4.088072823 | 1.2782686 |  |  |
| 2013 | WY | 0.475183953 | 0.7845130 |  |  |
| 2013 | EY |  | 0.7888515 |  |  |
| 2014 | AI |  | 7.7828437 |  |  |
| 2014 | BS |  | 0.9613563 | 1.87493179 |  |
| 2014 | WGOA |  | 2.7042636 |  |  |
| 2014 | CGOA | 3.228394514 | 2.5912232 |  |  |
| 2014 | WY | 0.362295999 | 1.3789474 |  |  |
| 2014 | EY |  | 1.2884462 |  |  |
| 2015 | AI |  | 9.4515049 | 7.80295395 |  |
| 2015 | BS |  | 0.4579554 | 3.07238255 |  |
| 2015 | WGOA | 0.570143803 | 2.3156654 |  |  |
| 2015 | CGOA | 2.666113139 | 2.9518558 |  | 7.262926286 |
| 2015 | WY | 0.490176535 | 2.1128555 |  |  |
| 2015 | EY |  | 1.2474725 |  |  |
| 2016 | AI |  | 5.0805379 | 11.22963728 |  |
| 2016 | BS | 1.417960103 | 0.2062057 | 4.74803338 |  |
| 2016 | WGOA |  | 2.2410342 |  | 0.465744212 |
| 2016 | CGOA | 1.666847353 | 2.3165333 |  | 0.391930049 |
| 2016 | WY | 0.456930639 | 1.1184198 |  |  |
| 2016 | EY |  | 1.0368578 |  |  |
| 2017 | AI | 0.661329472 | 0.2402980 | 6.79690906 |  |
| 2017 | BS | 1.198979765 | 2.2112091 | 4.27755400 |  |
| 2017 | WGOA |  | 1.0939168 | 1.09352110 |  |
| 2017 | CGOA | 2.019215750 | 1.5016991 | 0.65289946 | 75.923120120 |
| 2017 | WY | 0.344663591 | 1.1717919 | 0.69439231 |  |
| 2017 | EY |  | 1.3011180 | 3.10793702 |  |
| 2018 | AI | 0.095039645 | 1.0728477 | 5.76052538 |  |
| 2018 | BS | 2.450380121 | 2.0578143 | 3.42057566 |  |
| 2018 | WGOA | 0.225262360 | 1.8619746 | 0.92152170 |  |
| 2018 | CGOA | 1.062003120 | 1.5855657 | 3.08007910 | 0.198802866 |
| 2018 | WY | 0.869512032 | 1.1650602 | 6.03117193 |  |
| 2018 | EY |  | 0.9709601 | 0.74013252 |  |
| 2019 | AI | 0.041506760 | 0.0961204 | 2.84462024 |  |
| 2019 | BS | 0.407624615 | 1.3485278 | 1.33504625 | 0.004906263 |
| 2019 | WGOA | 0.488234107 | 3.6187214 | 0.08280227 |  |
| 2019 | CGOA | 1.018462712 | 2.0310914 | 0.78089450 | 7.609704523 |
| 2019 | WY | 0.388352356 | 2.1216855 | 2.13699596 |  |
| 2019 | EY |  | 1.0818419 | 2.13104895 |  |
| 2020 | AI | 0.247400028 | 0.2879472 | 3.37120717 |  |
| 2020 | BS | 0.455836267 | 2.1145451 | 2.19903627 | 2.245366866 |
| 2020 | WGOA | 0.703700843 | 1.3598717 | 1.04421276 |  |
| 2020 | CGOA | 0.825716115 | 1.4512429 | 1.01161071 |  |
| 2020 | WY | 0.803045725 | 0.8299615 |  |  |
| 2020 | EY |  | 0.5474800 | 0.73547691 |  |
| 2021 | AI | 0.414761290 | 0.5942571 | 6.78471565 |  |
| 2021 | BS | 0.679890491 | 0.2704707 | 0.72890952 | 4.400133907 |
| 2021 | WGOA | 0.266678955 | 0.9852910 | 0.74428663 |  |
| 2021 | CGOA | 1.195273275 | 0.6153426 | 1.57141654 | 4.667032484 |
| 2021 | WY | 0.668400947 | 0.3264095 | 1.97970422 |  |
| 2021 | EY |  | 1.5651352 | 2.35811412 |  |
| 2022 | AI | 0.284423472 | 0.1467687 | 5.20750097 |  |
| 2022 | BS | 0.883028203 | 0.3352380 | 1.08954473 | 9.838815198 |
| 2022 | WGOA | 0.311296108 | 0.9887229 | 1.63015538 |  |
| 2022 | CGOA | 1.423008601 | 0.4748399 | 1.27235610 | 0.297018485 |
| 2022 | WY | 0.417712530 | 0.5926023 | 0.61860669 |  |
| 2022 | EY |  | 0.5363463 | 1.47203727 |  |
| 2023 | AI | 0.001424803 |  | 0.14595874 |  |
| 2023 | BS | 0.024737442 |  | 0.52108947 | 431.051226819 |
| 2023 | WGOA |  |  | 1.42334126 |  |
| 2023 | CGOA | 0.254618266 |  | 0.58578286 |  |
| 2023 | WY |  | 0.1339599 | 0.89204782 |  |
| 2023 | EY |  | 0.3617055 | 1.05403725 |  |

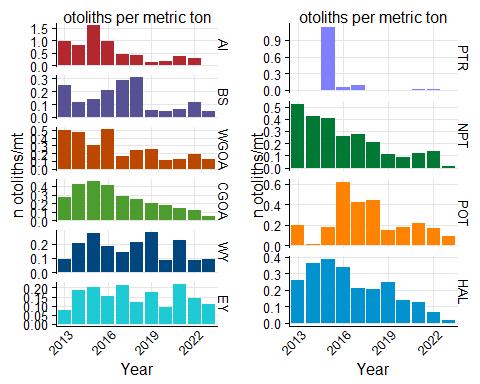


Figure 8. The number of sablefish ages collected per ton of catch by management area (panel a) or by gear (panel b). Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), Pot (POT), or Hook and Line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

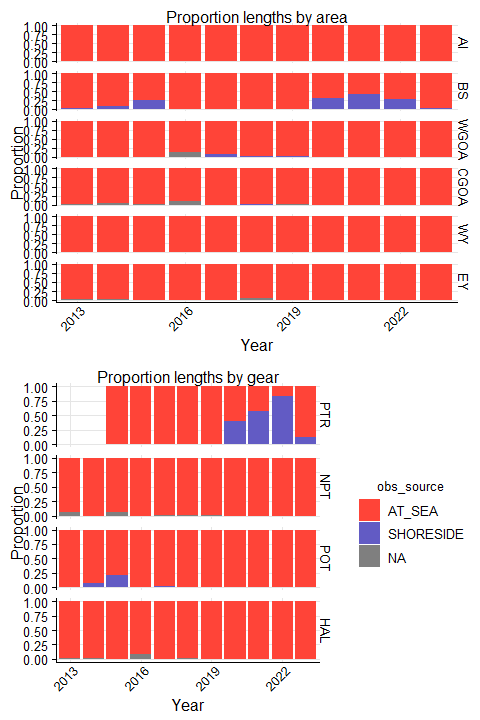


Figure 9. The proportion of sablefish lengths that were measured at-sea versus in ports by observers by management area (left) or by gear (right). Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), Pot (POT), or Hook and Line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

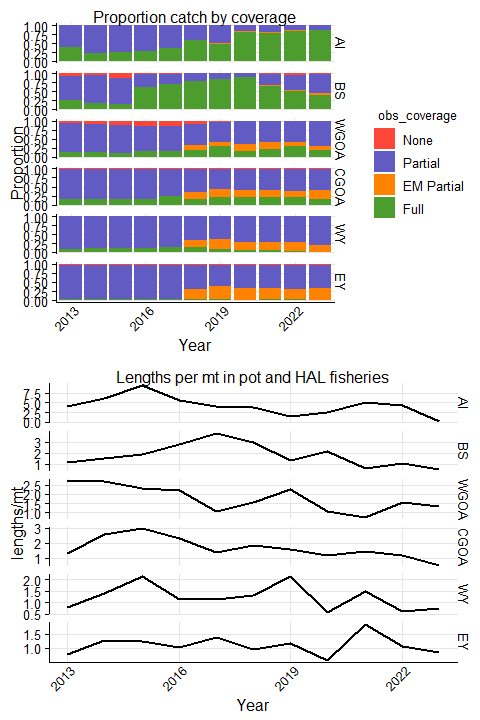


Figure 10. The proportion of sablefish catch by observer coverage (left) and number of lengths collected per metric ton of catch (right). Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), Pot (POT), or Hook and Line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).