

Appendix 3.F Fishery Dependent Data Collections of the Sablefish Stock in the Gulf of Alaska, Bering Sea and Aleutian Islands

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Introduction

This report summarizes fishery dependent data collections in the context of the sablefish stock in the Gulf of Alaska, Bering Sea and Aleutian Islands. The format and content of this report are still under development and the authors appreciate feedback regarding future iterations. See Rodgveller et al. (2023) for detailed tables that were included in the previous version of this report. This report is intended to inform the Assessment Considerations portion of the risk table with regards to the representativeness of fishery dependent data used in the stock assessment.

Data are from the Alaska Regional Office Catch Accounting System (CAS) and are based on landings, fishery observations, and other data sources. Fishery observations and biological samples are collected by the North Pacific Groundfish Observer Program and the Alaska Fisheries Science Center (AFSC) Fishery Monitoring and Analysis division (FMA). A description of the observation strata is in the “Additional Information” section at the end of this document. More details are available in the North Pacific Groundfish Observer Program Annual Deployment Plans and Annual Reports produced by the FMA. All CAS and observer data were queried through the AKFIN database.

This report details the volume and distribution of sablefish catch that was monitored (or not) by the North Pacific Observer Program, relative to total catch, and how many biological samples were collected by observers by Fishery Management Plan Subareas, gear types and observation strata since observer restructuring went into effect in 2013. The total catch of the stock by area and gear is reported in Figures 3.1 and 3.2 and Table 3.1 of the 2024 assessment document (Goethel and Cheng 2024), which the data for this report are based on.

Each fishing trip that contributes to groundfish landings must be logged in the FMA Observer Deployment and Declare System (ODDS) and be assigned to an observation strata (regardless of if that trip is selected to be monitored). Figure 3.F.1 summarizes how much catch was from trips assigned to each observation stratum in ODDS, including partial coverage, electronic monitoring (EM) partial coverage, full coverage, or no coverage. Figure 3.F.2 is the same data, but shown as relative proportions of the catch. This is a representation of how much catch was attributed to trips in each stratum in ODDS and not how much catch was actually monitored. Figures 3.F.3 and 3.F.4 show the catch and proportion of catch that was monitored either by observer or EM or had no coverage for all years by area and gear.

Lengths and otoliths are collected at-sea and in some ports and the rate of collection depends on the gear, predominant species catch, and area. Detailed total counts of fish sampled for lengths and otoliths by gear

and area are presented in Figures 3.F.5-3.F.8. The count of lengths and otoliths can be used with the catch to evaluate the realized sampling rate, by dividing the number of lengths or otoliths by the catch (e.g., lengths/mt) (Figures 3.F.9 and 3.F.10, respectively). This rate can be used to evaluate if the absolute number of biological samples has changed in line with the rate of sampling.

Vessels which register trips in the EM partial coverage category and are in the trawl EM program will have landings sampled at port of delivery; whereas vessels participating in the fixed-gear EM partial coverage program do not have port sampling. Thus, the portion of catch resulting from vessels participating in the fixed-gear EM program is not available for biological sampling. Figures 3.F.11 and 3.F.12 show the proportions of lengths that are sampled either at-sea or by port-samplers by gear or by area (similar figures were not included for otoliths because they are very similar to lengths in this case). At-sea sampling occurs at the haul level, whereas port sampling occurs for the whole offload, meaning that the temporal and spatial resolution of samples collected by port-samplers is less than at-sea sampling. In Figure 3.F.13 the proportion of catch assigned to the fixed gear partial coverage EM (EM mt/total catch mt) is plotted alongside the sampling rate of lengths (lengths/mt).

Acknowledgements

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References

Goethel, D.R. and Cheng, M.L.H. 2024. Assessment of the sablefish stock in Alaska. North Pacific Fishery Management Council, Anchorage, AK.

North Pacific Observer Program: <https://www.fisheries.noaa.gov/alaska/fisheries-observers/north-pacific-observer-program>

Rodgveller, C.R., C.A. Tribuzio, and M. Callahan. 2023. Appendix 3.F Observer coverage and sampling of the sablefish stock. North Pacific Fishery Management Council, Anchorage, AK. Available at: https://apps-afsc.fisheries.noaa.gov/Plan_Team/2023/sablefish_appF.pdf

Figures

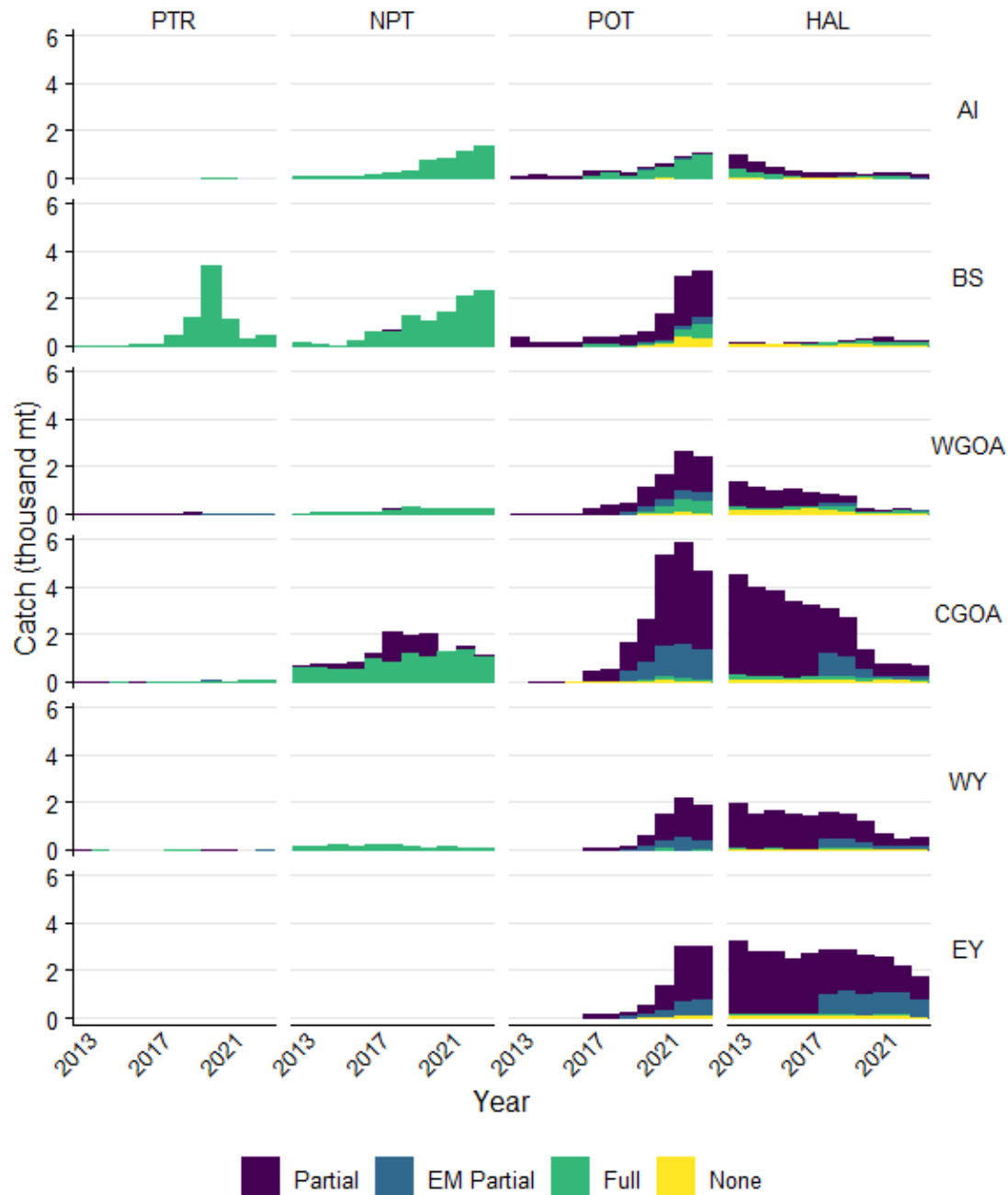


Figure 3.F.1. Sablefish catch (mt) in each observer strata in the Observer Deploy and Declare System (ODDS). This catch represents what a trip was assigned to and not necessarily if that trip was selected for observer coverage. Electronic monitoring (EM) is a strata where camera systems are used in lieu of at-sea observers. 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).

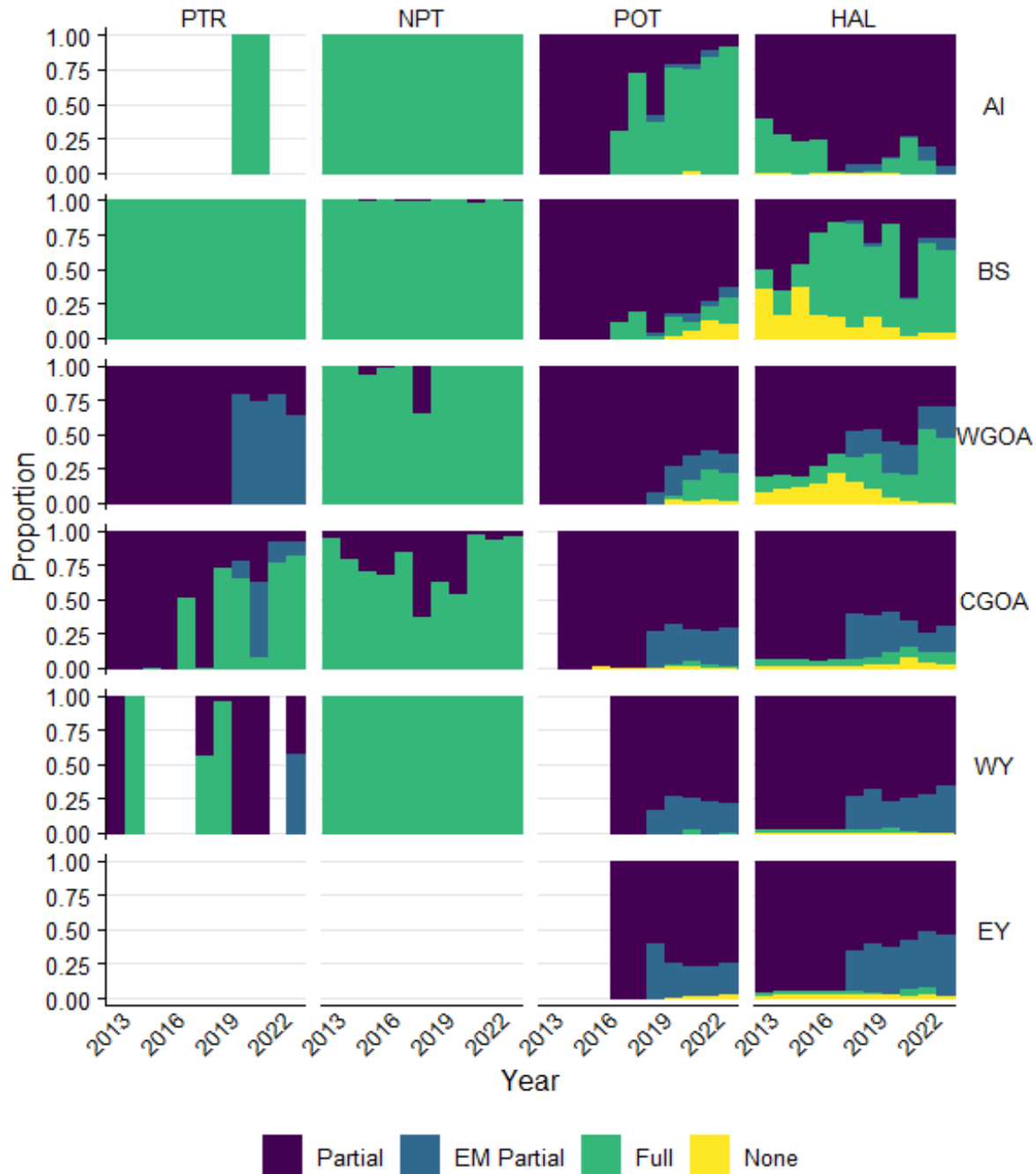


Figure 3.F.2. Utilizing sablefish catch data, the proportions of catch in each observer coverage category in the Observer Deploy and Declare System (ODDS) for each area, gear, and year. This catch represents what a trip was assigned to and not necessarily if that trip was selected for observer coverage. Electronic monitoring (EM) is a strata where camera systems are used in lieu of at-sea observers. 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).

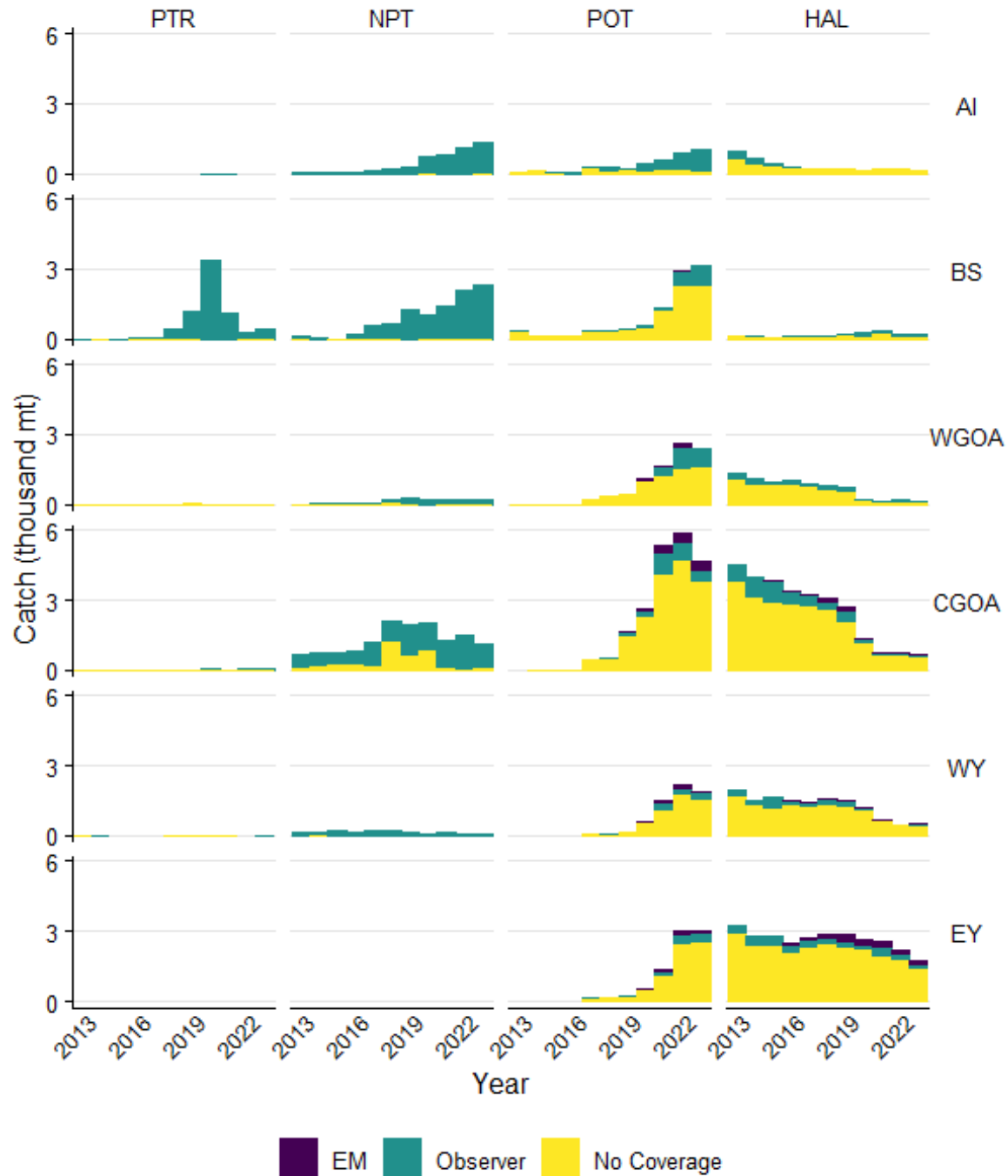


Figure 3.F.3. Sablefish catch by gear type and area either observed by electronic monitoring (EM), observers, or no coverage. Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), pot (POT), or hook and line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

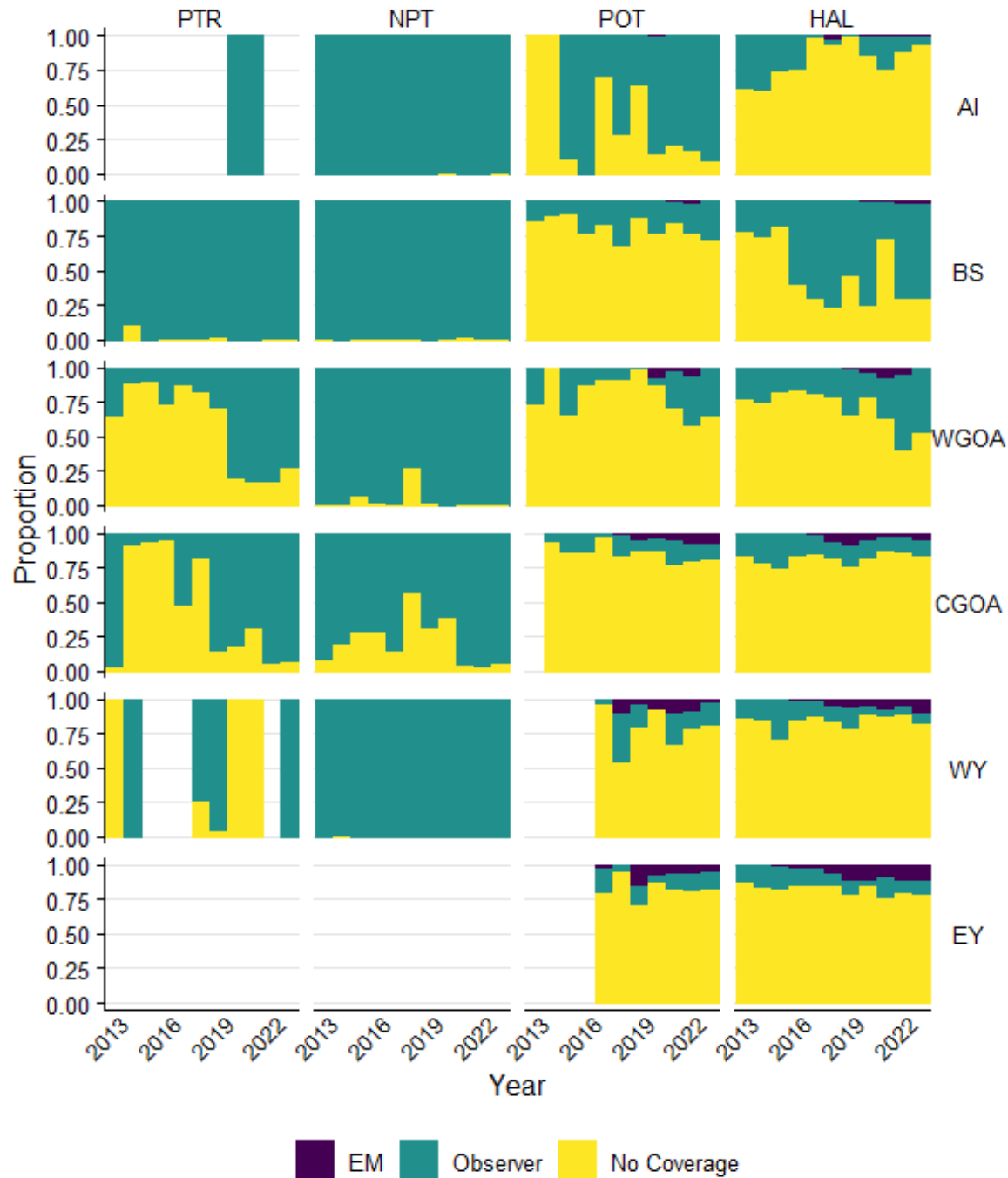


Figure 3.F.4. Proportion of sablefish catch by gear type and area either observed by electronic monitoring (EM), observers, or no coverage. Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), pot (POT), or hook and line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).



Figure 3.F.5. The number of total lengths measured by observers by year, 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).

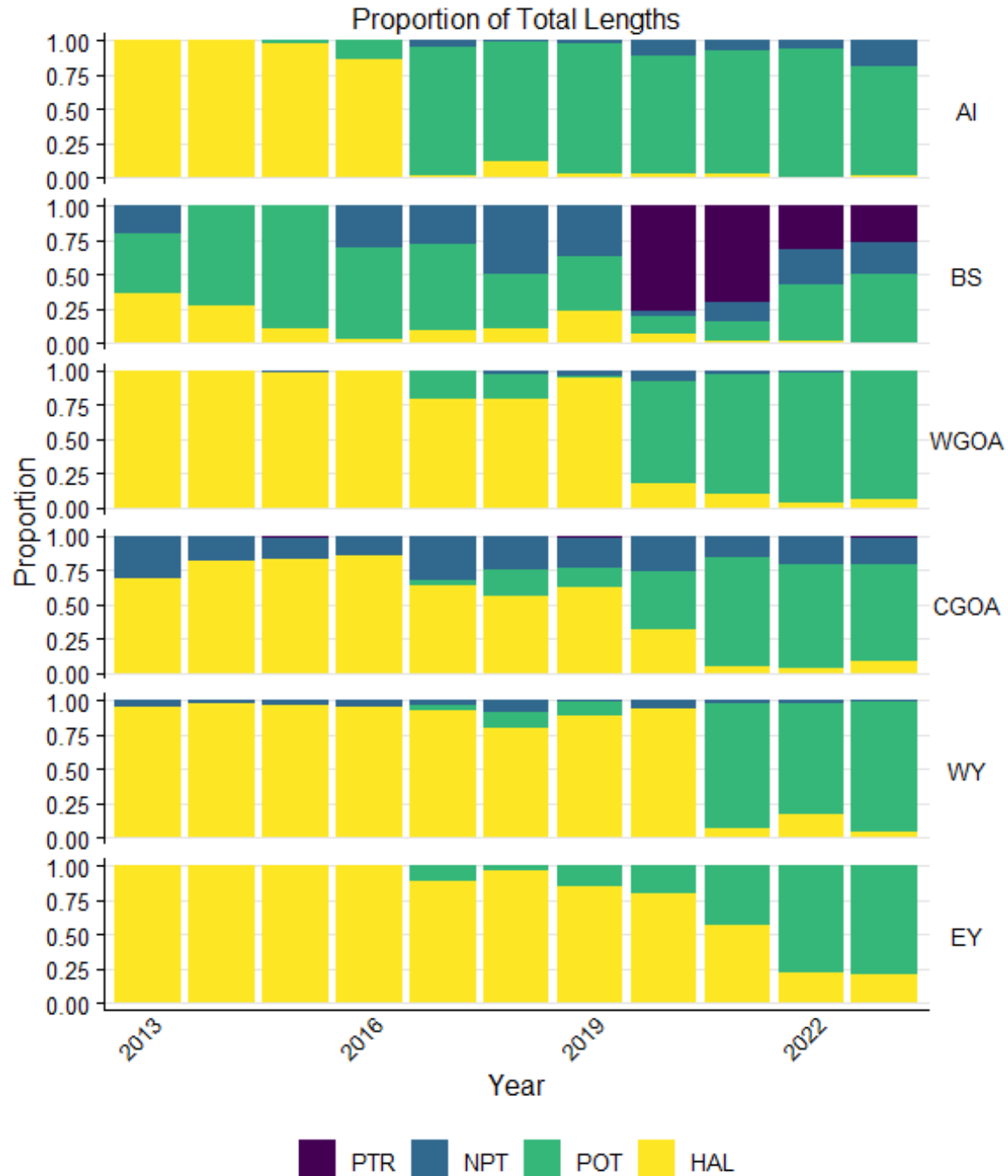


Figure 3.F.6. The proportion of lengths by gear, area, and year. Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), pot (POT), or hook and line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).



Figure 3.F.7. The number of otoliths 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).

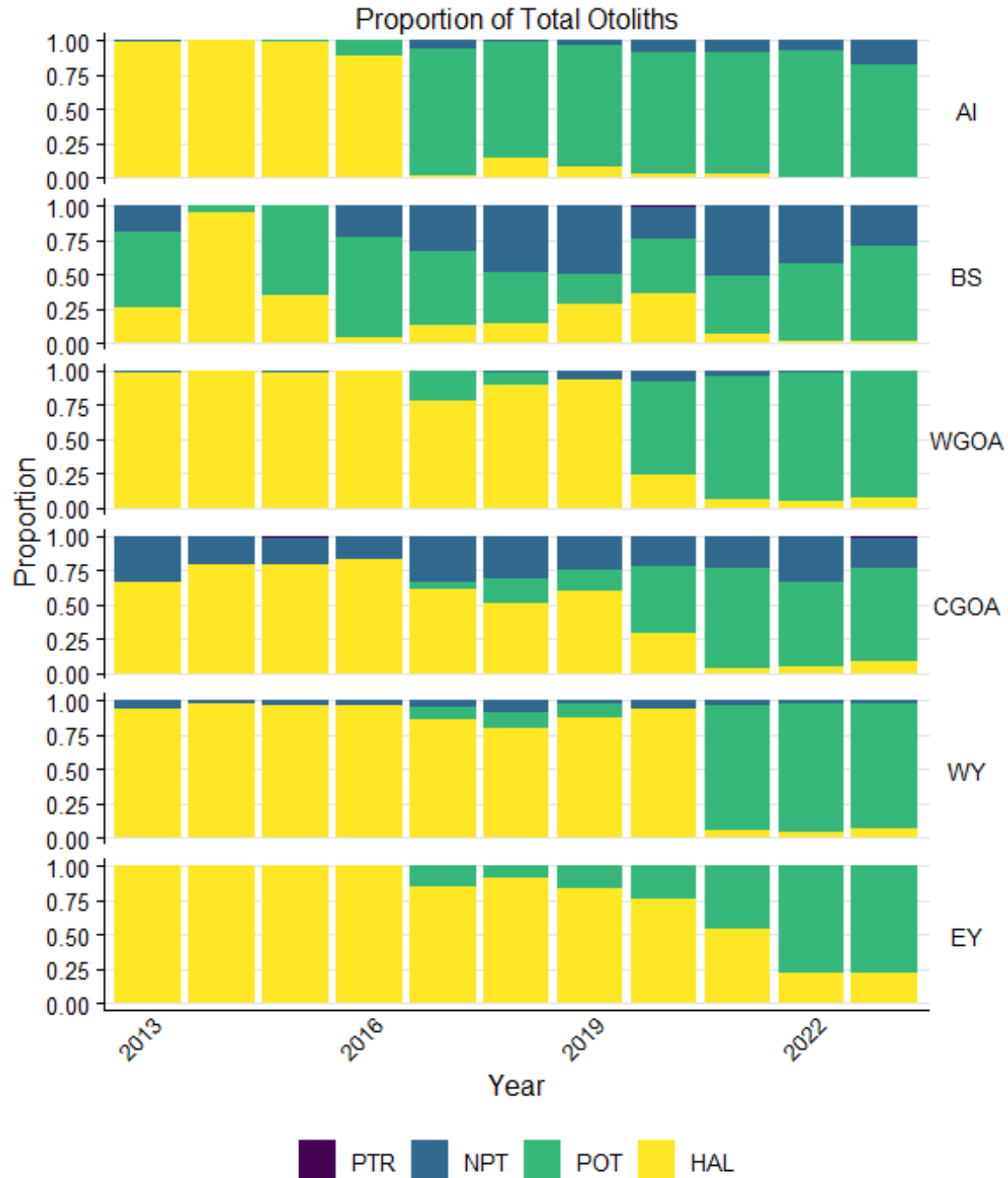


Figure 3.F.8. The proportion of otoliths collected by gear, area, and year. Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), pot (POT), or hook and line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

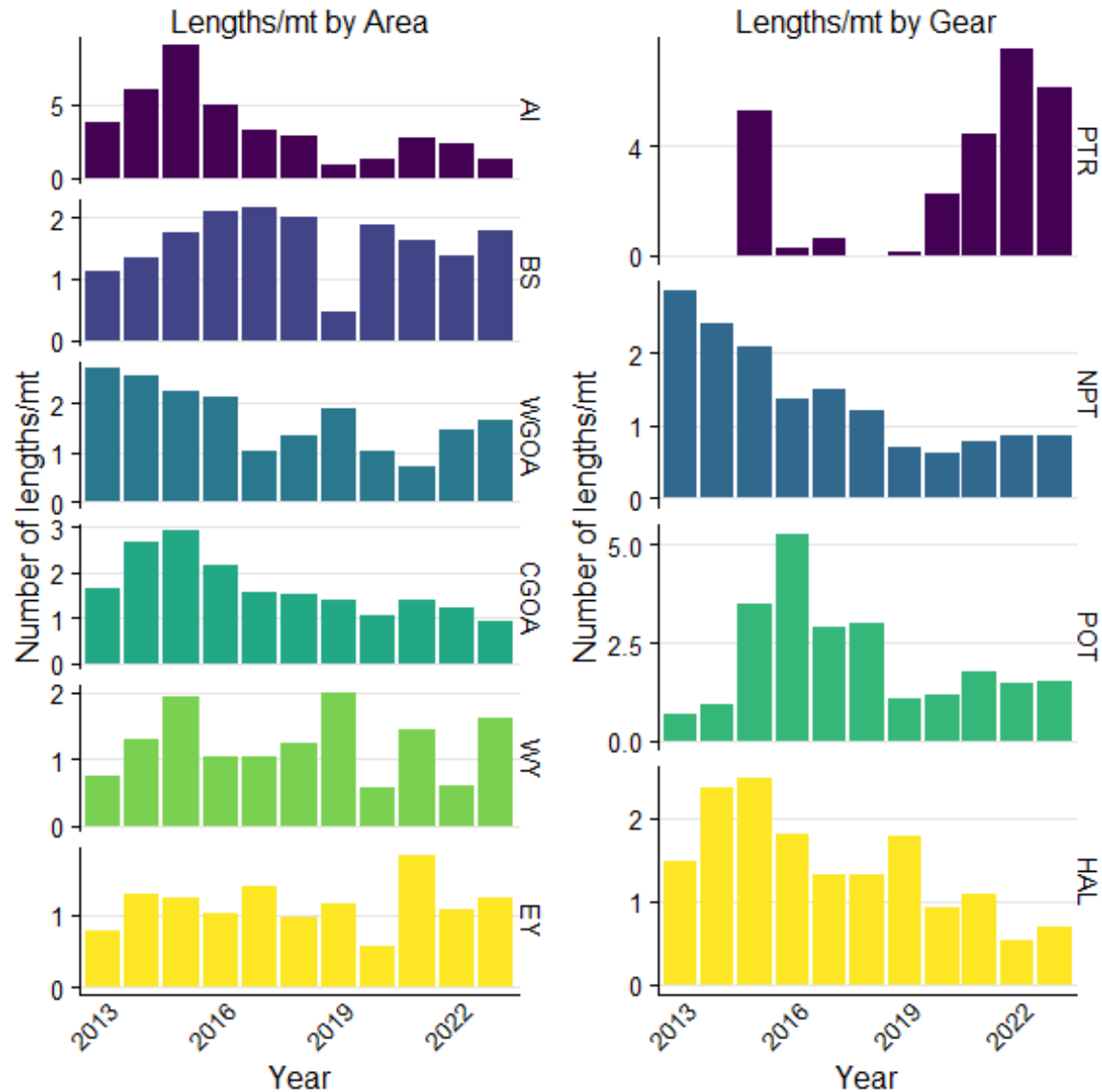


Figure 3.F.9. The number of sablefish lengths collected per ton of catch by management area (left) or by gear (right). Note differences in scales. Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), pot (POT), or hook and line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

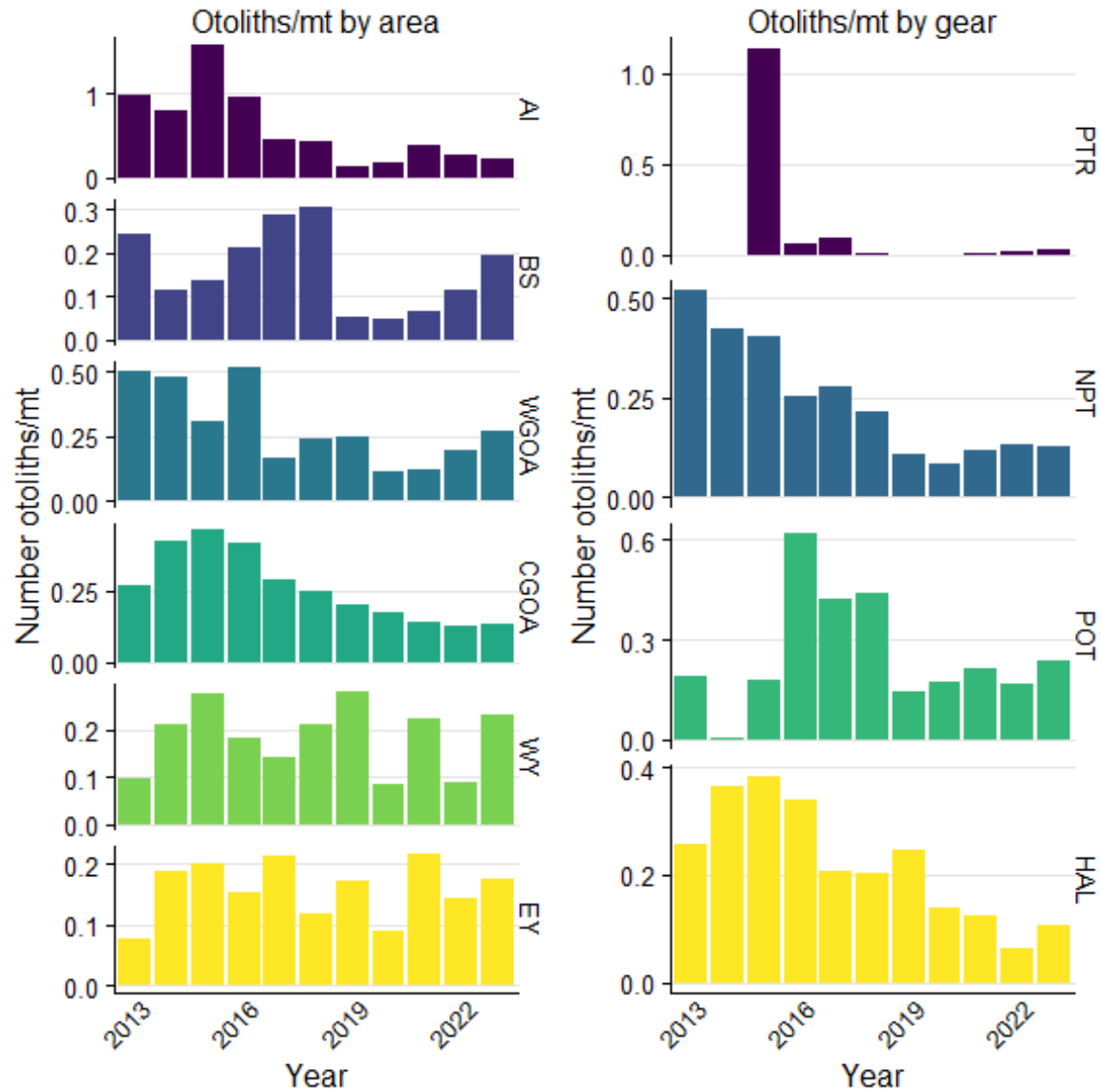


Figure 3.F.10. The number of sablefish otoliths collected per ton of catch by management area (left) or by gear (right). Note differences in scales. Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), pot (POT), or hook and line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

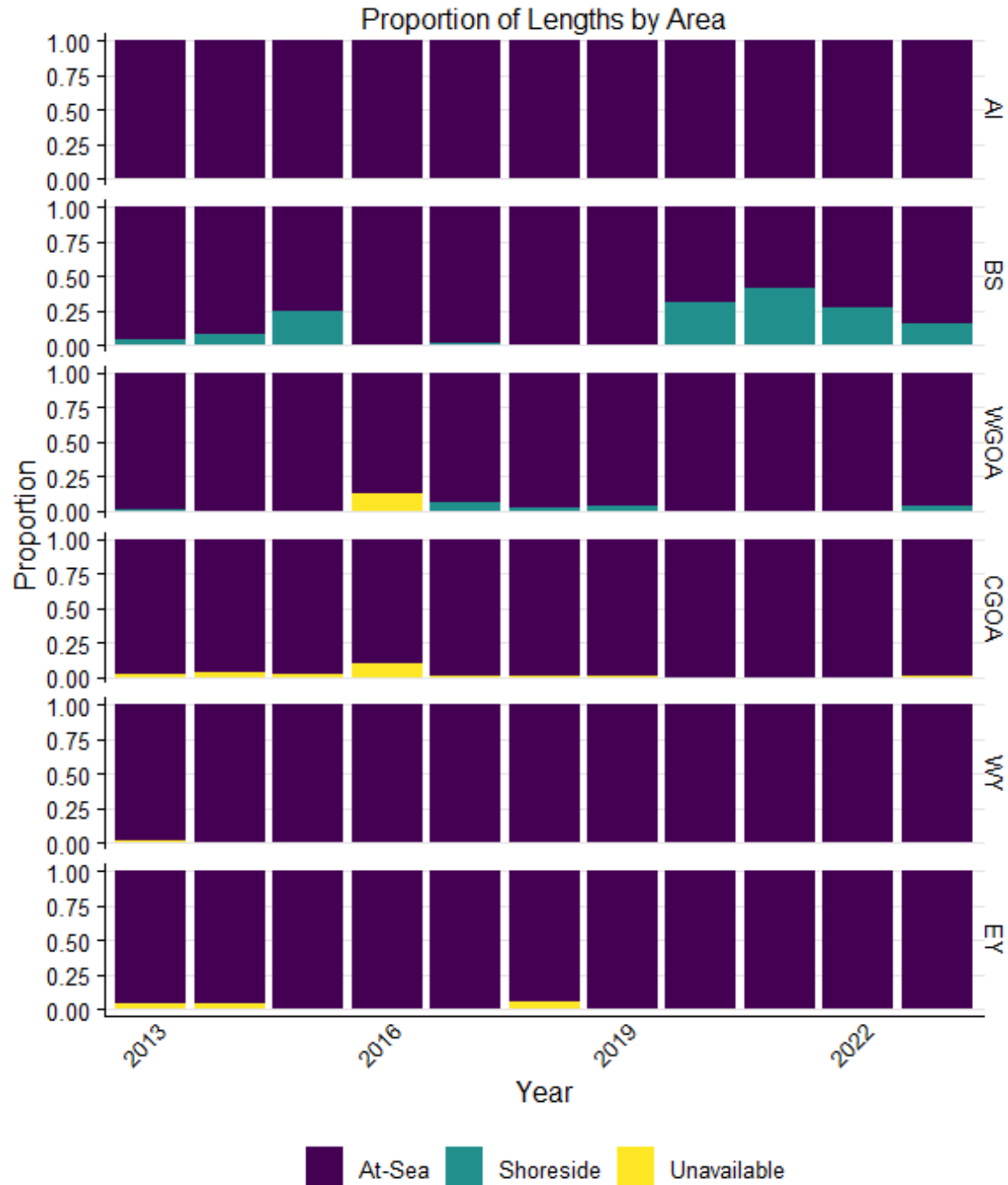


Figure 3.F.11. The proportion of sablefish lengths that were measured by observers at-sea versus in ports (shoreside) by area. At-sea sampling provides haul level information, while shoreside sampling provides lower resolution trip-level information. Gear types include pelagic trawl (PTR), non-pelagic 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).

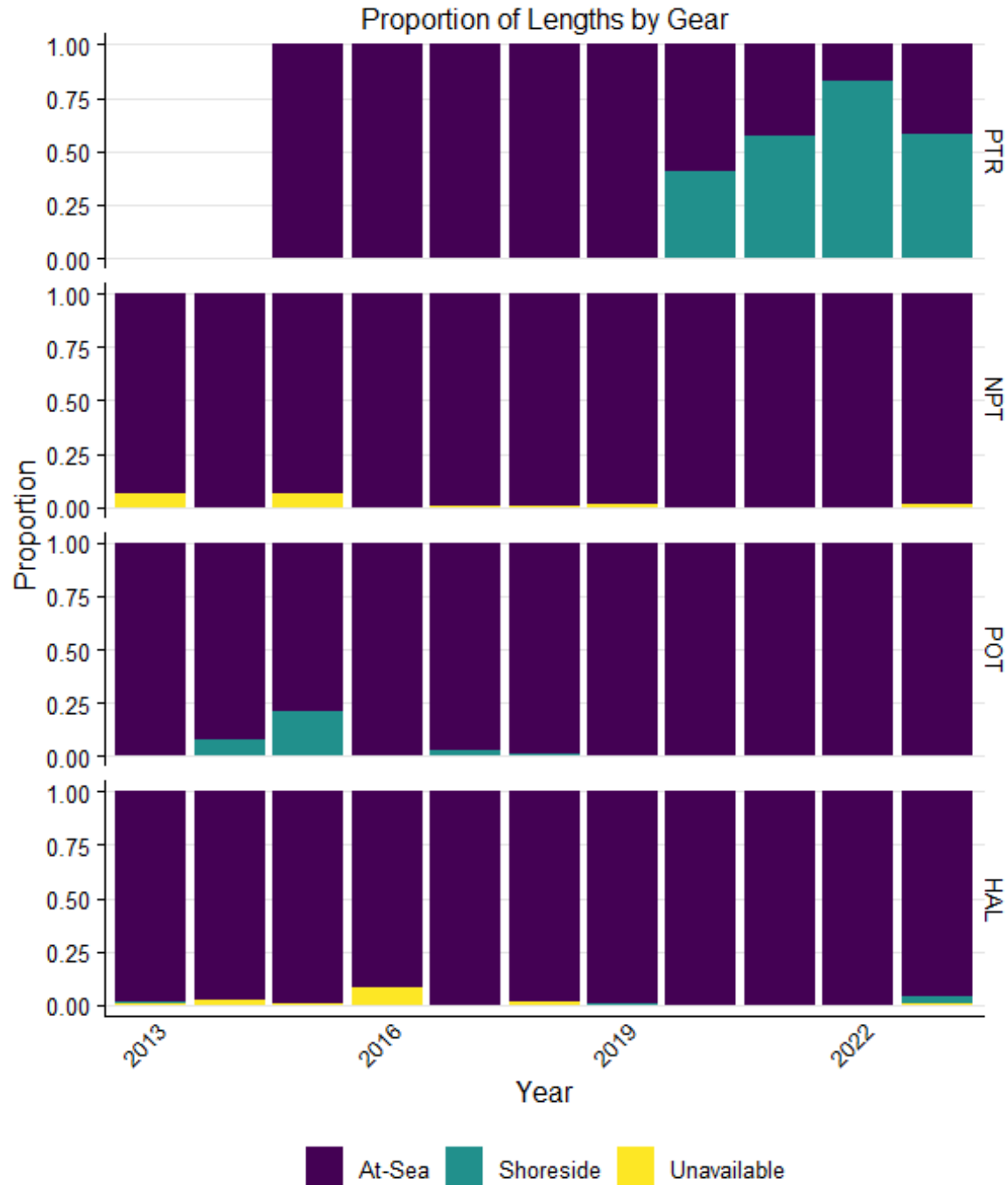


Figure 3.F.12. The proportion of sablefish lengths that were measured by observers at-sea versus in ports (shoreside) by gear type. At-sea sampling provides haul level information, while shoreside sampling provides lower resolution trip-level information. Gear types include pelagic trawl (PTR), non-pelagic 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).

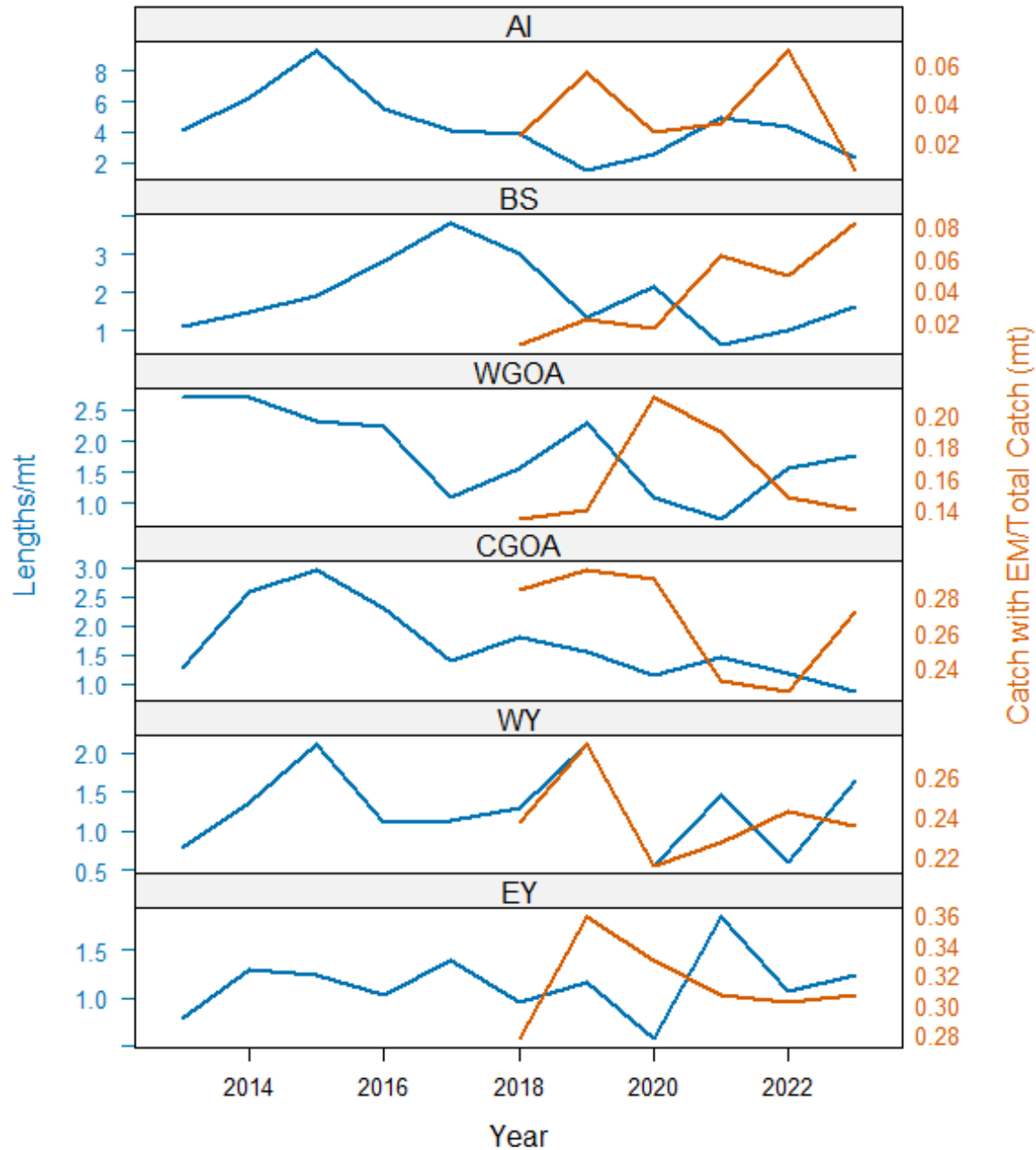


Figure 3.F.13. The proportion of fixed gear (pot and hook and line gear) sablefish catch from vessels using electronic monitoring (EM coverage catch in mt/total fixed gear catch in mt) and the rate of length sampling (lengths per mt). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY)

Additional Information

Biological Collections

- Lengths (mm), weight (tenth of a kg), and sagittal otoliths are collected by observers at-sea and at processing plants when North Pacific Groundfish Observer Program protocols call for collections. Otoliths are not collected from all fish that have lengths and weights recorded. Weights are collected when otoliths are collected.

Observer strata in the North Pacific Groundfish Observer Program

- Full Coverage - Catcher/processors (with limited exceptions), motherships, catcher vessels that are participating in programs that have transferable prohibited species catch, catcher vessels using trawl gear that have requested full coverage for all fishing activity within the Bering Sea/Aleutian Islands FMP, and inshore processors receiving or processing Bering Sea pollock. Full coverage trips are all assumed to be 100% covered.
- Partial Coverage - Catcher vessels fishing in federally managed groundfish or parallel fisheries, excepting when in full coverage, catcher vessels participating in the Pacific halibut or sablefish IFQ fisheries, catcher vessels participating in the CDQ fisheries or those < 46ft LOA using hook-and-line gear for groundfish, catcher/processor that qualify for partial coverage, and shoreside or stationary floating processors that are not in the full coverage category are in the partial coverage category.
- EM - trawl gear: Trips in this strata have EM recordings and all are reviewed. The review is for compliance monitoring only and catch is not enumerated. Vessels operating in the trawl EM program are required to retain all catch (with limited exceptions) for shoreside sampling by observers at the plant. Shoreside observer sampling targets a 100% coverage rate of all EM - trawl deliveries in the BSAI and 30% in the GOA. This strata went into effect in 2020 as an Exempted Fishing Permit program, only on non-pelagic trawl vessels targeting Pollock, and is becoming regulated for the 2024 fishery.
- EM - fixed-gear: Includes both pot and hook-and-line vessels. Trips logged into ODDS have a partial coverage selection rate and, if selected, the vessel must record all hauls during that trip duration. After the videos are submitted, 30% of recorded hauls are reviewed and catch is fully censused along with discard status of each fish. There are no biological samples collected from fixed-gear EM trips.
- EM note - EM fixed gear is a completely different program from EM non-pelagic trawl, with different origins, directives and methodologies.
- No Coverage or Zero Selection - Vessels < 40ft LOA, jig and exempted vessels.

Caveats

- Data prior to the 2013 North Pacific Observer Program restructure are not included in the analyses presented here due to structural changes.
- Not all observer strata were covered each year. For example, hook and line (HAL) tender was only covered in 2017, in which a total of four trips were made and thus deemed not a useful strata to include.
- 2020 - Observer sampling was significantly impacted March-June due to the pandemic, resulting in minimal coverage during those months and reducing the annual realized coverage rates.