SCIENTIFIC COMMITTEE
TWENTY-FIRST REGULAR SESSION

Nuku'alofa, Tonga
13 – 21 August 2025

A Compendium of Fisheries Indicators for Target Tuna Stocks in the WCPFC Convention Area

WCPFC-SC21-2025/SA-WP-03
1 August 2025

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Revision 1 (1 August 2025);

Changes: This version corrects four table entries.

The table entry for Figure 1 corrects the catch by 'other gears' to the value 196,692 t.

The table entry for Figure 25 corrects the total catch from the 2019-2023 average to "a 6% decrease". In the same table entry, the Pole and line catch was corrected from "remained similar to 2023" to "increased by 1% from 2023".

Tables 24 and 33 both have several changes.

In Table 24, the previous text "The projections indicate that median $F_{2021-2025}/F_{MSY} = 2.42$; median $SB_{2023-2026}/SB_{F=0} = 0.39$; median $SB_{2023-2026}/SB_{MSY} = 2.03$. The risk that $SB_{2023-2026}/SB_{F=0} < LRP = 2\%, SB_{2026} < SB_{MSY} = 2\%$ and $F_{2022-2025} > F_{MSY} = 97\%$."

is corrected to

"The projections indicate that median $F_{2022-2025}/F_{MSY} = 1.67$; median $SB_{2023-2026}/SB_{F=0} = 0.40$; median $SB_{2023-2026}/SB_{MSY} = 1.99$. The risk that $SB_{2023-2026}/SB_{F=0} < LRP = 2\%, SB_{2023-2026} < SB_{MSY} = 2\%$ and $F_{2022-2025} > F_{MSY} = 91\%$. The large increase in the F-based BRP and resulting high probability of overfishing results from the 2023 catch estimate of small bigeye in the 'other' gear fisheries within region 7 (primarily Fishery 23) of the assessment model being more than 50% higher than that of the baseline period. As that 2023 catch is currently carried forward into 2024 and then assumed to continue, the equilibrium calculation of MSY and its associated F are greatly impacted, resulting in the estimate of median $F_{2022-2025}/F_{MSY} = 1.67$. The most recent bigeye assessment (Day et al., 2023) estimated this value at 0.59 at the end of 2021. The 2024 catch estimates are provisional and may be subject to future revision."

In Table 33, the previous text "The projections indicate that median $F_{2021-2025}/F_{MSY} = 0.57$; median $SB_{2023-2026}/SB_{F=0} = 0.46$; median $SB_{2023-2026}/SB_{MSY} = 2.59$. The risk that $SB_{2023-2026}/SB_{F=0} <$ LRP = 0%, $SB_{2026} < SB_{MSY} = 0\%$ and $F_{2021-2025} > F_{MSY} = 4\%$."

is corrected to

"The projections indicate that median $F_{2022-2025}/F_{MSY} = 0.70$; median $SB_{2023-2026}/SB_{F=0} = 0.41$; median $SB_{2023-2026}/SB_{MSY} = 2.43$. The risk that $SB_{2023-2026}/SB_{F=0} <$ LRP = 0%, $SB_{2023-2026} < SB_{MSY} = 0\%$ and $F_{2022-2025} > F_{MSY} = 16\%$."

Contents

1 Executive Summary

The principal purpose of this paper is to provide empirical information on recent patterns in fisheries for the SC's consideration. For SC21, we present a compendium of fishery indicators for all 'key' target tuna species (skipjack, bigeye, yellowfin and South Pacific albacore tuna). In 2025, a full stock assessment was conducted for skipjack, but not for bigeye or yellowfin (last assessed in 2023), nor for South Pacific albacore (last assessed in 2024). Trends for South Pacific albacore tuna are also described in more detail in the regularly requested stand-alone paper: *Trends in the South Pacific albacore longline and troll fisheries* (McKechnie et al., 2025).

The indicators that are documented include: total catch by gear, nominal CPUE trends, spatial distribution of catch and CPUE and associated trends, size composition of the catch and trends in average size, the retention of which was requested by WCPFC21. These include data available from the WCPFC databases as of 26 July 2025. It is difficult to confidently interpret the stock status-related implications of trends in any indicators in isolation from other data sets and a population dynamics model. Therefore, short-term stochastic projections for WCPO bigeye, yellowfin and albacore are also presented to assess potential stock status at the end of 2026 in light of recent catch and effort trends.

2 Data and Methods

To track developments in key target tuna species not formally assessed in the current year, a formal request was made to develop stock indicators (Scientific Committee's Work Programme for 2008-2010, Project 24), and these were first reported to SC4 in 2008 (Hampton and Williams, 2008). More recent versions of this now-annual SC paper have addressed the request from SC9 for descriptive text to assist in interpreting the paper contents. The indicators that are tracked have remained the same for nearly the entire period this document has been produced. Acknowledging that these are nominal indicators, not corrected for e.g., effort creep, environmental conditions, etc., their purpose is to illustrate and highlight, not explain, how the indicators have varied over time.

Stock indicators for skipjack, bigeye, yellowfin and South Pacific albacore tuna are presented here. South Pacific albacore had a full assessment conducted in 2024 (Teears et al., 2024); bigeye and yellowfin tuna were assessed in 2023 (Day et al., 2023 and Magnusson et al., 2023, respectively). Skipjack was assessed this year, and will be presented at SC21 (Teears et al., 2025). Commentary provided in this paper compares the values of various indicators to previous years, in particular comparisons of 2024 values to 2023 and to the average from 2019-2023.

Stock projections were performed from the last year of each assessment: from 2021 for bigeye and yellowfin, and from 2022 for South Pacific albacore. Future recruitments were modelled as deviations around the stock recruitment relationship from the period over which the stock-recruitment relationship was estimated within the assessment model. For each stock, projections were performed over the grid of assessment runs defined by SC19 (bigeye and yellowfin) and SC20 (South Pacific albacore). Stocks were projected through to 2024 as necessary using actual catch and effort levels in the intervening years, and then through to 2026 assuming 2024 catch and effort levels remained constant. We note that the near-future stock status of most of these stocks will initially be influenced by recent recruitment levels estimated within the stock assessment model. When reporting results, depletion is presented as $SB_{recent}/SB_{F=0}$, where the median $SB/SB_{F=0}$ over the last four years of the projection was calculated. No projections are presented for skipjack as that assessment is new this year (Teears et al., 2025) and SC has yet to agree on a final grid.

Indicators are based on annual catch estimates for the WCPFC Convention Area, and aggregate catch and effort data for the gear specific analyses. In some instances, individual fleets have been used for particular indicators. Given the large number of indicators, descriptive text is tabulated below for each stock.

Please note that the figures here may include or exclude specific fleets that are included in summaries made for other purposes (e.g. CMM tables) and therefore these numbers may not be identical to those produced elsewhere. Furthermore, these numbers will change as more data become available. One notable change was made this year and concerns how the expanded numbers and weights at length were computed (Figures 6, 13, 22 and 31), primarily affecting the Other fisheries calculations. The recognized "Other" gears for which size data are collected are: Drift gillnet, Handline (large fish), Handline (small fish) and Ringnet. The new methodology improves on the previous methodology by expanding sample LFs of

individual minor gear types to their respective total catch and then sums those expanded numbers and weights.

3 Note on reduced observer coverage since 2020

Observer coverage levels were greatly reduced in 2020, 2021 and 2022 due to the impacts of COVID-19. As a broad indicator of the impact on observer coverage rates, the purse seine fleet coverage level declined from $\sim$ 90% in 2018-19 to $\sim$ 15% in 2021 and 2022. Coverage levels in 2023 and 2024 are provisionally estimated at 65% and 70%, respectively. The decline in longline coverage was from $\sim$ 6% to $\sim$ 3% (2023) to 5% (2024). Details of observer coverage of fishing effort in the WCPFC-CA are summarized in Panizza et al. (2025).

To estimate the potential errors associated with lower observer sampling rates, Peatman et al. (2022) reviewed potential impacts on purse seine species composition estimates. They determined that catch estimates of bigeye, and to a lesser extent yellowfin, were most sensitive to reduced observer coverage.

Regarding the figures presented and discussed in this paper, the indicators potentially most affected by the reduced observer coverage are the 2020/2021/2022 values for the total purse seine catch and CPUE estimates for bigeye, yellowfin and skipjack. Size distributions of catch may also be affected by the decreased sampling of on-board catch and/or the misreporting of FAD-associated catch as free school catch. Longline catch and CPUE are likely less affected.

Acknowledgments

The authors would like to thank Sam McKechnie and Paul Hamer for careful reviews of the final draft of this paper.

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Skipjack tuna

Figure	Indicator	Description
Figure 1	Total catch by gear	Total catch in 2024 was 2,107,666t, a 24% increase from 2023 and a 17% increase from the 2019-2023 average. Purse seine catch in 2024 (1,780,549t) was a 25% increase from 2023 and a 20% increase from the 2019-2023 average. Pole and line catch (121,910t) was a 40% increase from 2023 and a 13% decrease from the 2019-2023 average catch. Troll catch (2,287t) was a 10% decrease from 2023 and a 4% increase from the 2019-2023 average catch. Catch by other gears (see Vidal and Ruaia (2025) for descriptions) totaled 196,692t; a 8% increase from 2023 and 23% increase from the average catch in 2019-2023. While numbers for the most recent year of catch are provisional, the initial indication is that 2024 was a record year for skipjack catch in the WCPFC-CA. In 2024, the percentage of total catch by gear was: purse seine - 84%, other gear - 9%, pole-and-line - 6%, longline and troll - <1%.
Figure 2 - top	Tropical pole and line CPUE	Pole and line CPUE for the Japanese fleet in 2024 (8.17t per vessel day) increased by 5% from 2023 and increased by 33% from the 2019-2023 average. The Solomon Islands Pole-and-line fleet did not register any catch in 2024; CPUE had been relatively steady at roughly 2 mt/day over the previous decade, but effort has steadily decreased and, as of 2024, ceased to operate.
Figure 2 - bottom	Tropical purse seine CPUE	Free-school CPUE in 2024 (35.13t per vessel day) increased by 40% from 2023 and increased by 30% from the 2019-2023 average. Log-associated CPUE in 2024 (41.94t per vessel day) increased by 23% from 2023 and increased by 48% from the 2019-2023 average. Drifting FAD CPUE in 2024 (43.29t per vessel day) increased by 20% from 2023 and increased by 16% from the 2019-2023 average. Anchored FAD CPUE in 2024 (12.76t per vessel day) increased by 25% from 2023 and decreased by 1% from the 2019-2023 average. Remarkably, 2024 saw the highest CPUE on record for two of the school types (Free school and Log-associated) while the DFAD CPUE, at 42 mt/vessel day, was just slightly below the highs seen in 2015 and 2019. Note that 2024 data are provisional.
Figure 3	Maps of catch by gear	Compared to the longer time frame, the continued reduction in catch and spatial contraction of the pole and line fishery in recent years is notable, particularly in the equatorial zone. After a demonstrable eastward shift in catches coincident with the mid 2023-early 2024 El Niño event, there was a marked westward shift in 2024 purse seine catch to a catch distribution more similar to that seen during the run of La Niña events during 2020-2022. Catch, effort and CPUE data for the EPO purse seine fleet is considered complete for 2024, an improvement over previous year's reporting at the time this Indicators paper goes to SC.
Figure 4	Purse seine effort and CPUE maps	The relative distribution of purse seine effort and CPUE changed from 2023. There was a pronounced shift back to the west, akin to what was seen between 2020 and 2022, years of La Niña conditions. The high CPUE values that had been seen remain in the central region (centered around 170°W) and are likely the result of early year fishing during the peak of El Niño conditions, prior to a late year westward shift in activity. In 2024, average skipjack CPUE was as high as 70 mt/set in some regions, averaged over the entire year.

Figure	Indicator	Description
Figure 5	Spatial concentration of catch	90% of the purse seine catch in 2024 was taken in 600 1°x 1° squares. This was a 5% decrease from 2023 and no change from the 2019-2023 average. Over the longer term (25 years), the minimum number of 1°x 1° squares in which 90% of the purse seine catch has been taken has slowly, but steadily, increased from a range of 550-600 to a range of 600-650. 90% of the pole and line catch was taken in 255 1°x 1° degree squares. This was an 4% decrease from 2023 and an 0% decrease from the 2019-2023 average. After experiencing a sharp contraction between 1980 and 2000 (from 800+ to less than 400 cells), the pole-and-line fishery had been relatively steady over the past 20 years, in terms of how many 1°x 1° cells (between 250 and 350) from which 90% of the catch has been taken.
Figure 6	Catch at length by gear type in both numbers and weight	In most years, the catch at length in numbers of fish is broadly bimodal. One peak comprises small fish, generally smaller than 40 cm, taken in various small fish gears, such as handlines and ringnets, mostly (but not entirely) operating in Indonesia and the Philippines; the other peak is comprised of larger fish, generally between 45 and 70 cm, mostly caught in the purse seine fisheries. While numbers of skipjack caught are roughly equal between the two fisheries, catch by weight is dominated by the purse seine fisheries. In 2021 and 2022, the purse seine weight frequency distribution was strongly concentrated between fish of lengths between 40 and 60 cm, more so than previous years over the past decade. This truncated distribution may be due to COVID-related sampling reductions or mis-reporting of FAD-associated catch as Free-school catch. The 2024 catch lacked the high proportion of >75 cm fish seen in the Free-school catch in 2023.
Figure 7	Mean weight by gear type	The mean weight of individual fish taken across all gears in 2024 (2.38kg) increased by 2.9% from 2023 and increased by 7.2% from 2019-2023 average. The mean weight of Other gear fish (1.72kg) increased by 10.2% from 2023 and increased by 7% from the 2019-2023 average. The mean weight of pole and line caught fish (2.81kg) increased by 7.3% and from 2023 and increased by 3.3% from the average in 2019-2023. The mean weight of skipjack from FAD sets (1.87kg) decreased by 6.6% from 2023 and decreased by 10.1% from the 2019-2023 average. The mean weight of skipjack from free-school (unassociated) purse seine sets (3.2kg) decreased by 17.7% from 2023 and increased by 13.1% from the 2019-2023 average. The low average weight of Free-school caught fish for 2020-2022 may provide evidence that FAD-associated fish, which average around 2kg in weight, were mis-reported as Free-school fish, which generally are 1-1.5 kg heavier on average.
NA	Stochastic stock projections	NA - as a new assessment has been undertaken in 2025, and a final grid is still to be selected by SC, no projection is presented for skipjack here. Teears et al. (2025) will aim to present some preliminary projections based on the new assessment.

South Pacific albacore tuna

Figure	Indicator	Description
Figure 8	Total catch by gear	For the southern WCPFC-CA, total albacore catch was 74,018t, a 14% increase from 2023 and a 19% increase from the 2019-2023 average. Longline catch in 2024 (71,728t) increased by 14% from 2023 and increased by 23% from the 2019-2023 average. Catch by other gear (mostly troll catch) (1,485t) increased by 21% from 2023 and increased by 115% from the 2019-2023 average. In 2024, the percentage of catch by gear was: longline - 97%, troll - 2%, other gear - 1%, pole-and-line - <1%, purse seine - <1%. Note that numbers may differ slightly to those tabulated in the South Pacific albacore trends paper (McKechnie et al., 2025) due to their focus on annual catch estimates by EEZ.
Figure 9	Southern longline CPUE (south of 10°S)	Japanese longline CPUE in 2024 (1.62 fish per 100 hooks) increased by 49% from 2023 and increased by 28% from the 2019-2023 average. Korean longline CPUE (1.1 fish per 100 hooks) increased by 83% from 2023 and increased by 97% from the 2019-2023 average. Chinese longline CPUE (1.61 fish per 100 hooks) decreased by 14% from 2023 and increased by 23% from the 2019-2023 average. Finally, Chinese Taipei longline CPUE in 2024 (2.41 fish per 100 hooks) increased by 39% from 2023 and increased by 54% from the 2019-2023 average. The Combined CPUE time series is a weighted average of the other time series. The Combined mean of the individual fleets CPUE trend is the same as the Japanese CPUE for the years prior to 1963. The 2024 combined mean CPUE value of 1.63 fish per 100 hooks is an increase of 7% from 2023. The 2024 combined CPUE value was the highest seen in the fishery since 2009.
Figure 10	Maps of catch by gear	In recent years, catches have concentrated in the 10°S-20°S latitudinal band. While 2024 estimates remain provisional, the spatial distribution of the longline catch is similar to the distribution of catches seen over the preceding 5-year period, with the exception of a concentration between 0°S and 5°S, and between 165°W and 155°W. There was a notable absence of catches in the region between 160°W and 140°W, south of 30°S, relative to recent years. At publication, the IATTC had not yet assembled their final longline catch estimates hence the lack of data in the EPO for 2024.
Figure 11	Longline effort and CPUE maps	Over the entire time series, catch rates have been highest south of 10°S, and the overall pattern is for increasing CPUE as you move from north to south. In the more recent period, catch rates have been highest in the high seas areas between 20°S and 30°S. CPUE in the region around southern Melanesia (Vanuatu, New Caledonia, Fiji) rebounded strongly from values seen in 2023. In 2024, the highest catch rates were seen around 170°W, in the high seas area south of Tonga and Niue. As of publication time, the IATTC had not yet assembled their Longline catch hence the lack of data in the EPO for 2024.
Figure 12	Spatial concentration of catch	90% of the longline catch in 2024 was taken in 49 5°x 5° degree squares of the southern WCPO. This was a 21% decrease from 2023 and a 25% decrease from the 2019-2023 average. The trend over the past decade has been a steady increase in the minimum fished area to capture 90% of the catch, increasing from around 40 to around 65 5°x 5° degree squares.

Figure	Indicator	Description
Figure 13	Catch at length by gear type in both numbers and weight	The catch in numbers of fish and weight (t) shows that the largest fish are caught in the longline fisheries and the troll catch is made up of small fish, typically less than 80cm in length. The troll catch, mostly comprised of juvenile fish, shows more irregular modes, sometimes with two modes possibly representing different year classes. In 2024, however, there was a single mode centered at 60 cm.
Figure 14	Mean weight by gear type	While the mean weight of individual fish taken across all gears is relatively stable over the long-term, 2024 (17.39kg) was a 2.9% increase from 2023 and a 11.1% increase from the 2019-2023 average. The mean weight of longline caught fish (18.56kg) in 2024 increased by 3.5% from 2023 and increased by 3.1% from the 2019-2023 average. Both the overall and longline mean weights were the highest they have been since the start of the time series in 2000. The mean weight of fish caught by troll gear (5.11kg) was a 22% increase from 2023 and increased by 5.5% from the 2019-2023 average.
Figure 15	Stochastic stock projections	Under recent fishery conditions, the South Pacific albacore stock in the WPFC-CA is projected to stabilise and recover slightly in the short term. The projections indicate that median WCPFC-CA $SB_{2023-2026}/SB_{F=0} = 0.62$, and the corresponding risk that median $SB_{2023-2026}/SB_{F=0} <$ LRP = 0%. With regards to MSY related metrics, median $SB_{2023-2026}/SB_{MSY} = 2.79$. $F_{2022-2025}/F_{MSY} = 0.12$. The risk that $SB_{2023-2026} < SB_{MSY} = 0\%$ and $F_{2022-2025} > F_{MSY} = 0\%$. Note the Limit Reference Point (LRP) is 20% $SB_{F=0}$.

Bigeye tuna

Figure	Indicator	Description
Figure 16	Total catch by gear	Total catch in 2024 was 119,021t, a 10% decrease from 2023 and a 15% decrease from the 2019-2023 average. Longline catch in 2024 (47,653t) decreased by 14% from 2023 and decreased by 18% from the 2019-2023 average. Purse seine catch in 2024 (33,787t) decreased by 20% from 2023 and decreased by 40% from the 2019-2023 average. Pole and line catch (2,862t) increased by 22% from 2023 and increased by 46% from the 2019-2023 average. Catch by other gears (see Vidal and Ruaia (2025) for descriptions) totaled 34,533t and was an 6% increase from 2023 and 51% increase from the 2019-2023 average. In 2024, the percentage catch by gear was: purse seine - 28%, longline - 40%, other gear - 29%, pole-and-line - 2%, troll - <1%. The 2024 catch of bigeye was the lowest in nearly 30 years and represents nearly a 33% drop over the past decade.
Figure 17 - top	Tropical pole and line CPUE	Japanese pole and line CPUE in 2024 (0.005t per vessel day) decreased by 70% from 2023 and decreased by 44% from the 2019-2023 average. After the brief rebound in 2023, 2024's CPUE was back to a near record low level.
Figure 17 - middle	Tropical purse seine CPUE	Free-school CPUE in 2024 (0.18t per vessel day) decreased by 29% from 2023 and decreased by 31% from the 2019-2023 average. Log-associated CPUE in 2024 (1.99t per day) decreased by 5% from 2023 and increased by 8% from the 2019-2023 average. Drifting FAD CPUE in 2024 (3.05t per day) increased by 18% from 2023 and decreased by 1% from the 2019-2023 average. Anchored FAD CPUE in 2024 (0.42t per day) increased by 31% from 2023 and increased by 105% from the 2019-2023 average. Aside from the long slow decline in AFAD CPUE, there is little pattern regarding trends in Bigeye CPUE across school types.
Figure 17 - bottom	Tropical longline CPUE (20°N to 10°S)	Japanese longline CPUE in 2024 (0.57 fish per 100 hooks) decreased by 15% from 2023 and increased by 14% from the 2019-2023 average. Korean longline CPUE (0.62 fish per 100 hooks) decreased by 1% from 2023 and increased by 3% from the 2019-2023 average. US (Hawaiian) longline CPUE (0.25 fish per 100 hooks) increased by 33% from 2023 and increased by 1% from the 2019-2023 average. The 2024 value was a modest rebound from the record low of 2023 but still represents a decline of over 50% from a decade ago.
Figure 18	Maps of catch by gear	Compared to the longer time frame, a higher proportion of the catch in recent years has been taken by purse seine, and longline catches have concentrated more into the 10°N-10°S equatorial band. In 2023, relative to the previous five years, equatorial zone catches increased around 170°W and decreased around 150°E.
Figure 19	Longline effort and CPUE maps	Longline CPUE in the recent period has generally been lower than that seen across the longer time frame. Higher catch rates are now generally limited to the equatorial eastern region of the WCPFC-CA, with highest rates in 2023 centered around 170°W.
Figure 20	Purse seine effort and CPUE maps	Areas of high bigeye catch rates have contracted in recent years; the higher catch areas are now confined to the region east of 170°E.
Figure 21	Spatial concentration of catch	90% of the longline catch in 2024 was taken in 103 5°x 5° degree squares of the WCPO. This was a 7% decrease from 2023 and a 7% decrease from the 2019-2023 average. There has been little or no trend in longline catch concentration over the past 40 years, with around 100 cells accounting for 90% of the catch. 90% of the purse seine catch in 2024 was taken in 625 1°x 1° degree squares of the southern WCPO. This was a 1% increase from 2023 and a 12% increase from the 2019-2023 average. The spatial concentration of bigeye purse seine catch has shown little trend since leveling off at around 600 cells in the late 2010s.

Figure	Indicator	Description
Figure 22	Catch at length by gear type in both numbers and weight	The catch in numbers of fish is predominantly made up of small fish (30-70cm) from the small-scale Other fisheries (largely Indonesia/Philippines). Larger fish (>100cm), as well as the majority of the total catch in weight, are generally caught in the longline fisheries. Intermediate sized fish (40cm-80cm) are taken in the purse seine fisheries. By weight, approximately equal amounts of catch are taken by purse seine and longline fisheries. In 2023 and 2024 longline catch exceeded removals of the combined purse seine catches. Among the Other gears, small fish handline catches were dominant in both 2023 and 2024.
Figure 23	Mean weight by gear type	The mean weight of individual fish taken across all gears in 2024 (6.91kg) decreased by 17.3% and decreased by 16.7% from the 2019-2023 average. The mean weight of longline caught fish (41.43kg) decreased by 11.2% from 2023 and decreased by 6% from the 2019-2023 average. The mean weight of Indonesia / Philippines domestic caught fish (4.39kg) decreased by 21.8% from 2023 and decreased by 25.5% from the 2019-2023 average. The mean weight of free-school caught purse seine fish (5.05kg) decreased by 34% from 2023 and decreased by 1.7% from the 2019-2023 average. The mean weight of FAD caught fish (4.88kg) decreased by 7.5% from 2023 and decreased by 6% from the 2019-2023 average.
Figure 24	Stochastic stock projections	Under recent fishery conditions and **long-term recruitment assumptions**, the bigeye stock is projected to increase slightly. The projections indicate that median $F_{2022-2025}/F_{MSY} = 1.67$; median $SB_{2023-2026}/SB_{F=0} = 0.40$; median $SB_{2023-2026}/SB_{MSY} = 1.99$. The risk that $SB_{2023-2026}/SB_{F=0} < LRP = 2\%, SB_{2023-2026} < SB_{MSY} = 2\%$ and $F_{2022-2025} > F_{MSY} = 91\%$. The large increase in the F-based BRP and resulting high probability of overfishing results from the 2023 catch estimate of small bigeye in the 'other' gear fisheries within region 7 (primarily Fishery 23) of the assessment model being more than 50% higher than that of the baseline period. As that 2023 catch is currently carried forward into 2024 and then assumed to continue, the equilibrium calculation of MSY and its associated F are greatly impacted, resulting in the estimate of median $F_{2022-2025}/F_{MSY} = 1.67$. The most recent bigeye assessment (Day et al., 2023) estimated this value at 0.59 at the end of 2021. The 2024 catch estimates are provisional and may be subject to future revision. Note the Limit Reference Point (LRP) is 20% $SB_{F=0}$.

Yellowfin tuna

Figure	Indicator	Description
Figure 25	Total catch by gear	Total catch in 2024 was 677,594t, a 6% decrease from 2023 and a 6% decrease from the 2019-2023 average. Purse seine catch in 2024 (331,367t) decreased by 16% from 2023 and decreased by 13% from the 2019-2023 average. Longline catch in 2024 (79,974t) decreased by 6% from 2023 and decreased by 6% from the 2019-2023 average. Pole and line catch (15,834t) increased by 1% from 2023 and decreased by 23% from the 2019-2023 average. Catch by other gears (see Vidal and Ruaia (2025) for descriptions) totaled 248,271t and was a 11% increase from 2023 and a 9% increase from the average catch in 2019-2023. This is mainly due to the large fluctuations in estimates for the other gears in Indonesia in recent years. In 2024, percentage catch by gear was: purse seine - 49%, longline - 12%, other gear - 37%, pole-and-line - 2%, troll - <1%.
Figure 26 - top	Tropical pole and line CPUE	Japanese pole and line CPUE in 2024 (0.046t per vessel day) increased by 49% from 2023 and decreased by 29% from the 2019-2023 average. The Solomon Islands had no pole-and-line fishery in 2024.
Figure 26 - middle	Tropical purse seine CPUE	Free-school CPUE in 2024 (8.31t per day) was a 36% decrease from 2023 and decreased by 10% from the 2019-2023 average. Log-associated CPUE in 2024 (10.69t per vessel day) increased by 22% from 2023 and increased by 18% from the 2019-2023 average. Drifting FAD CPUE in 2024 (6.4t per vessel day) increased by 33% from 2023 and showed no change from the 2019-2023 average. Anchored FAD CPUE in 2024 (10.89t per vessel day) increased by 133% from 2023 and increased by 35% from the 2019-2023 average.
Figure 26 - bottom	Tropical longline CPUE (20°N to 10°S)	Japanese longline CPUE in 2024 (1.09 fish per 100 hooks) increased by 49% from 2023 and increased by 13% from the 2019-2023 average. Korean longline CPUE (1.51 fish per 100 hooks) increased by 143% from 2023 and increased by 97% from the 2019-2023 average. The yellowfin longline CPUE for both fleets has continued to increase from the low levels seen during the 2000s and early 2010s, with CPUE values 50-100% higher in the 2020s.
Figure 27	Maps of catch by gear	Compared to the longer time frame, a slightly higher proportion of the catch in recent years has been taken by the purse seine fishery within the 10°N-10°S equatorial band, and were highest in the mid-tropical WCPO band, mirroring skipjack. Relative to the previous five-year averge, 2024 saw a region of reduced yellowfin catches, straddling the equator, east of 170°. Catch in the Indonesian/Philippines region by Other gears remains notably high.
Figure 28	Longline effort and CPUE maps	Longline CPUE in the recent period has generally been lower than that seen historically. Relatively high catch rates are now found only in the tropical western region of the WCPFC-CA. Over the last five years, there was a strong contraction in the high CPUE area compared to the long-term, however a relatively high CPUE area in the region between Papua New Guinea and the Solomon Islands was present in 2023 and 2024.
Figure 29	Purse seine effort and CPUE maps	Areas of high CPUE have fragmented over time, across the tropical WCPFC-CA, and were concentrated in the west of the tropical region in 2024, with some localised high CPUE achieved in other areas, around the high seas pocket region between Tuvalu and Kiribati.

Figure	Indicator	Description
Figure 30	Spatial concentration of catch	90% of the longline catch in 2024 was taken in 109 5°x 5° degree squares of the southern WCPO. This was a 12% increase from 2023 and a 5% increase from the 2019-2023 average. 90% of the purse seine catch in 2024 was taken in 424 1°x 1° degree squares of the southern WCPO. This was an 14% decrease from 2023 and a 9% decrease from the 2019-2023 average.
Figure 31	Catch at length by gear type in both numbers and weight	The catch in numbers of fish was predominantly made up of small fish (<50cm) from the Indonesia/Philippines Other fisheries. Large fish (>90cm) are mostly caught in the longline and unassociated purse seine fisheries and larger yellowfin dominate the catch by weight, in contrast to catch in number. Small yellowfin are also taken in sizable numbers in the free-school fishery. Conversely, large yellowfin are taken in some Other gears, especially in the handline fishery.
Figure 32	Mean weight by gear type	The mean weight of individual fish taken across all gears in 2024 (3.79kg) decreased by 27.2% from 2023 and decreased by 13.8% from the 2019-2023 average. The mean weight of longline caught fish (30.44kg) increased by 0.9% from 2023 and increased by 2.2% from the 2019-2023 average. The mean weight of Indonesia / Philippines domestic caught fish (2.76kg) increased by 3.4% from 2023 and increased by 1.4% from the 2019-2023 average. The mean weight of free-school caught purse seine fish (7.79kg) decreased by 65.8% from 2023 and decreased by 33.3% from the 2019-2023 average. Free-school caught yellowfin show a long-term decrease in mean weight, from 20kg to around 10 kg in recent years. The 2024 mean weight was a return to the low values of recent times, following 2023's large average weight. as noted for skipjack, the very low mean weights of 2021 and 2022 may reflect misreporting of FAD sets as free schoool sets. The mean weight of FAD caught fish (2.09kg) decreased by 47.4% from 2023 and decreased by 42.6% from the 2019-2023 average.
Figure 33	Stochastic stock projections	Under recent fishery conditions, the yellowfin stock is projected to decrease from recent assessed depletion levels. The projections indicate that median $F_{2022-2025}/F_{MSY} = 0.70$; median $SB_{2023-2026}/SB_{F=0} = 0.41$; median $SB_{2023-2026}/SB_{MSY} = 2.43$. The risk that $SB_{2023-2026}/SB_{F=0} <$ LRP $= 0\%$, $SB_{2023-2026} < SB_{MSY} = 0\%$ and $F_{2022-2025} > F_{MSY} = 16\%$. Note the Limit Reference Point (LRP) is 20% $SB_{F=0}$.

5 Figures

Skipjack

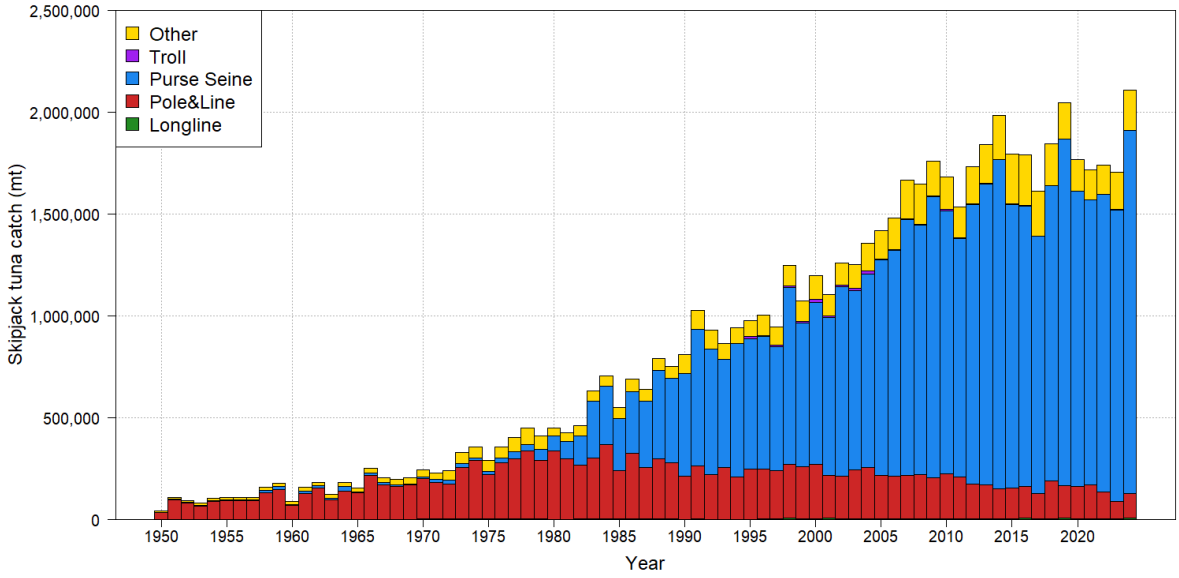

Figure 1: Skipjack tuna catch (mt) by gear type and year for the WCPFC-Convention Area. Note that the catch legend is common to all species total catch plots and does not imply actual catch by all gear types.

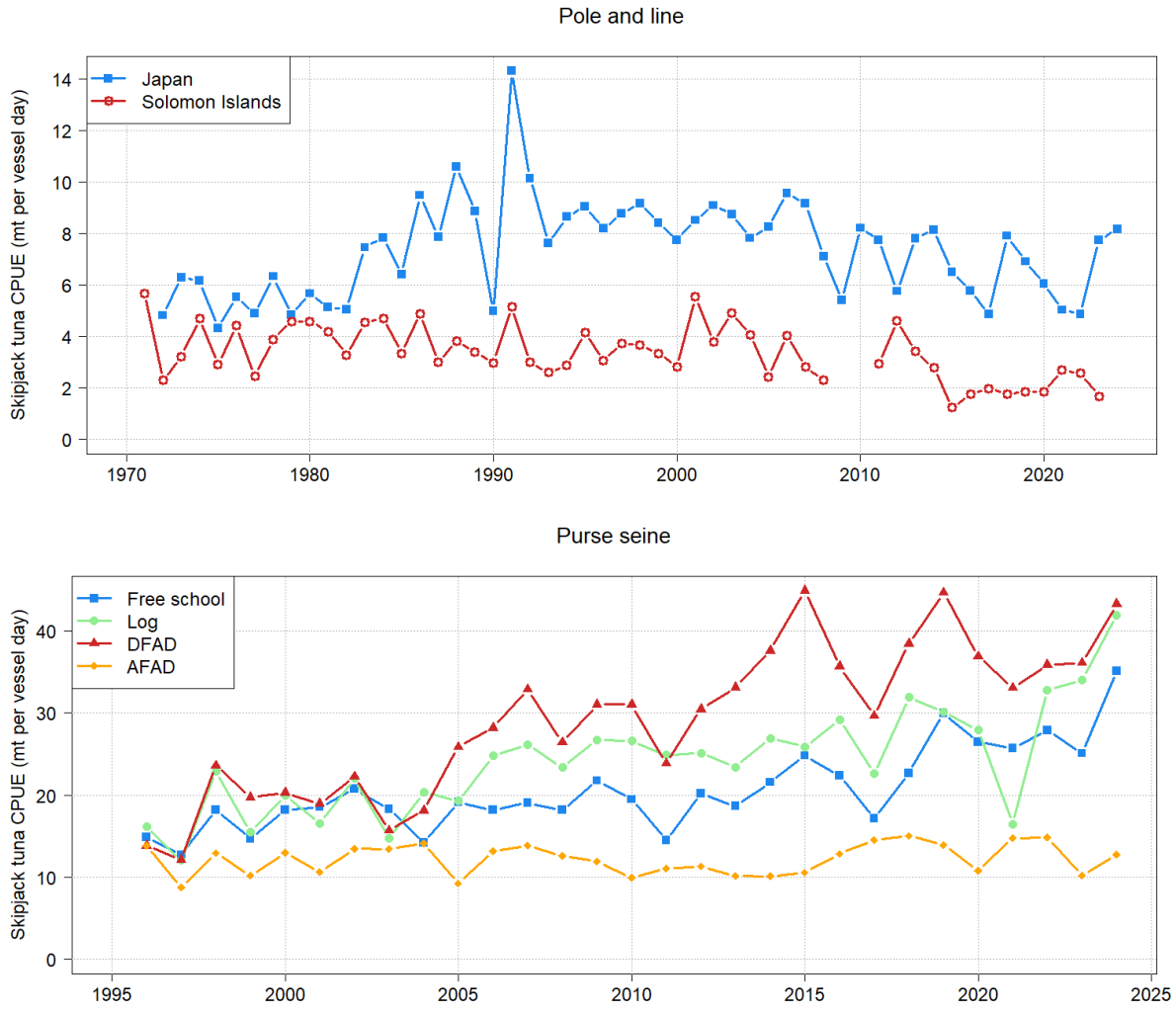

Figure 2: Skipjack tuna catch per unit effort in the tropical WCPO by year for major pole and line fishing fleets (top), and purse seine (all fleets combined) for the major set types (bottom). For CPUE calculations the catches from Indonesia, the Philippines and Vietnam, as well as the Japanese coastal fleet, are excluded. Note different time series lengths.

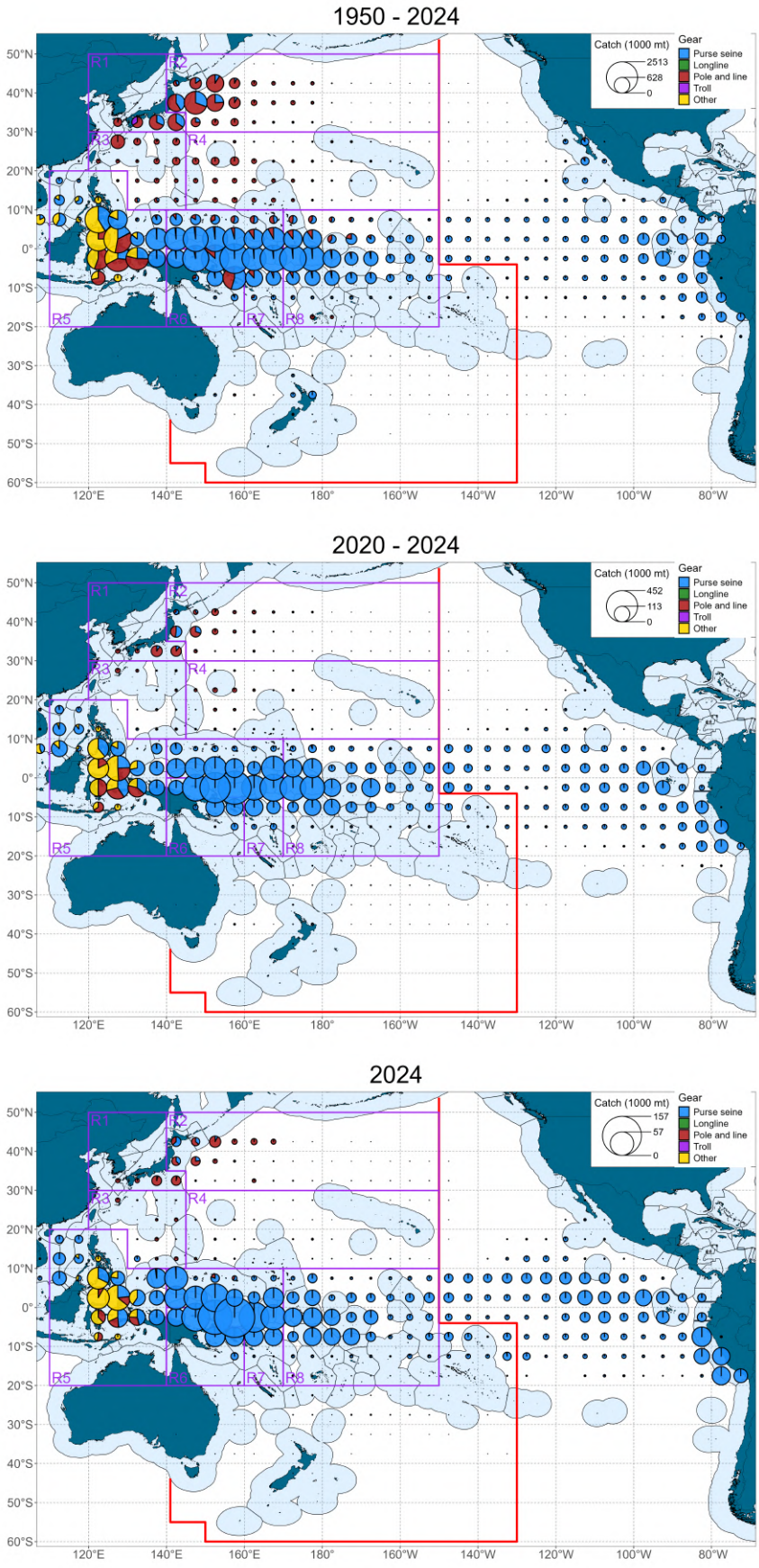

Figure 3: Skipjack tuna catch distribution by gear type and 5°x 5° region for the Pacific Ocean for the period 1950-2024 (top), 2020-2024 (middle) and 2024 (bottom). Note that the catch scale differs between panels and the figure legends provide the catch associated with each maximum circle size. The skipjack assessment regions are outlined in purple, the WCPFC-CA is outlined in red. Catch data for the EPO in 2024 are incomplete.

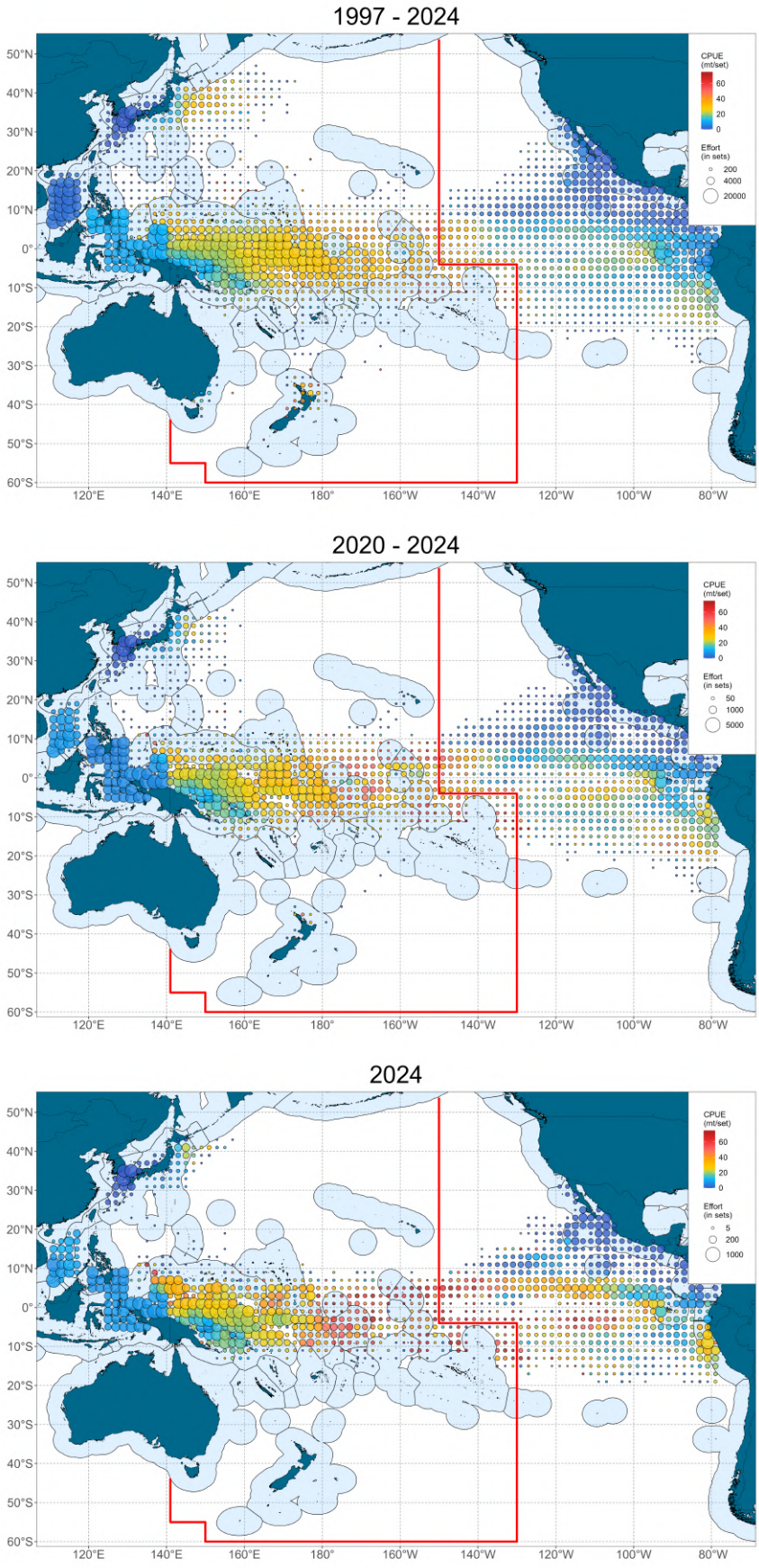

Figure 4: Distribution of 2°x 2° purse seine effort (represented by circle size) and skipjack tuna CPUE (represented by colour) for the period 1950-2024 (top), 2020-2024 (middle) and 2024 (bottom). Note the difference in effort scales between plots. The WCPFC-CA is outlined in red.

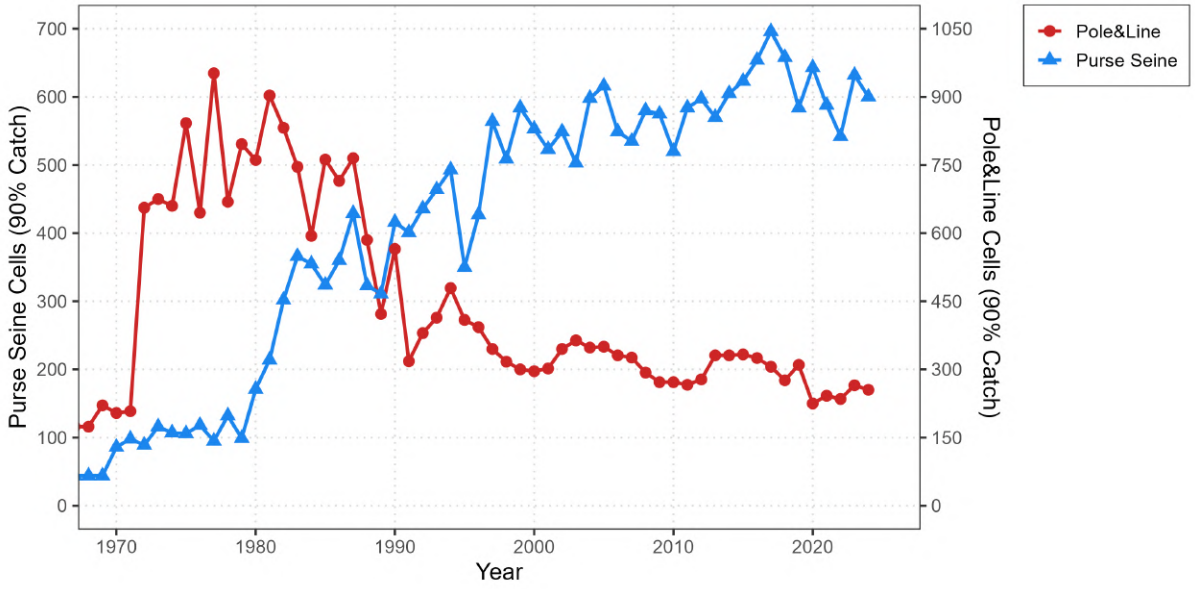

Figure 5: Spatial concentration of skipjack tuna catch for purse seine and pole and line fisheries by year for the WCPO.

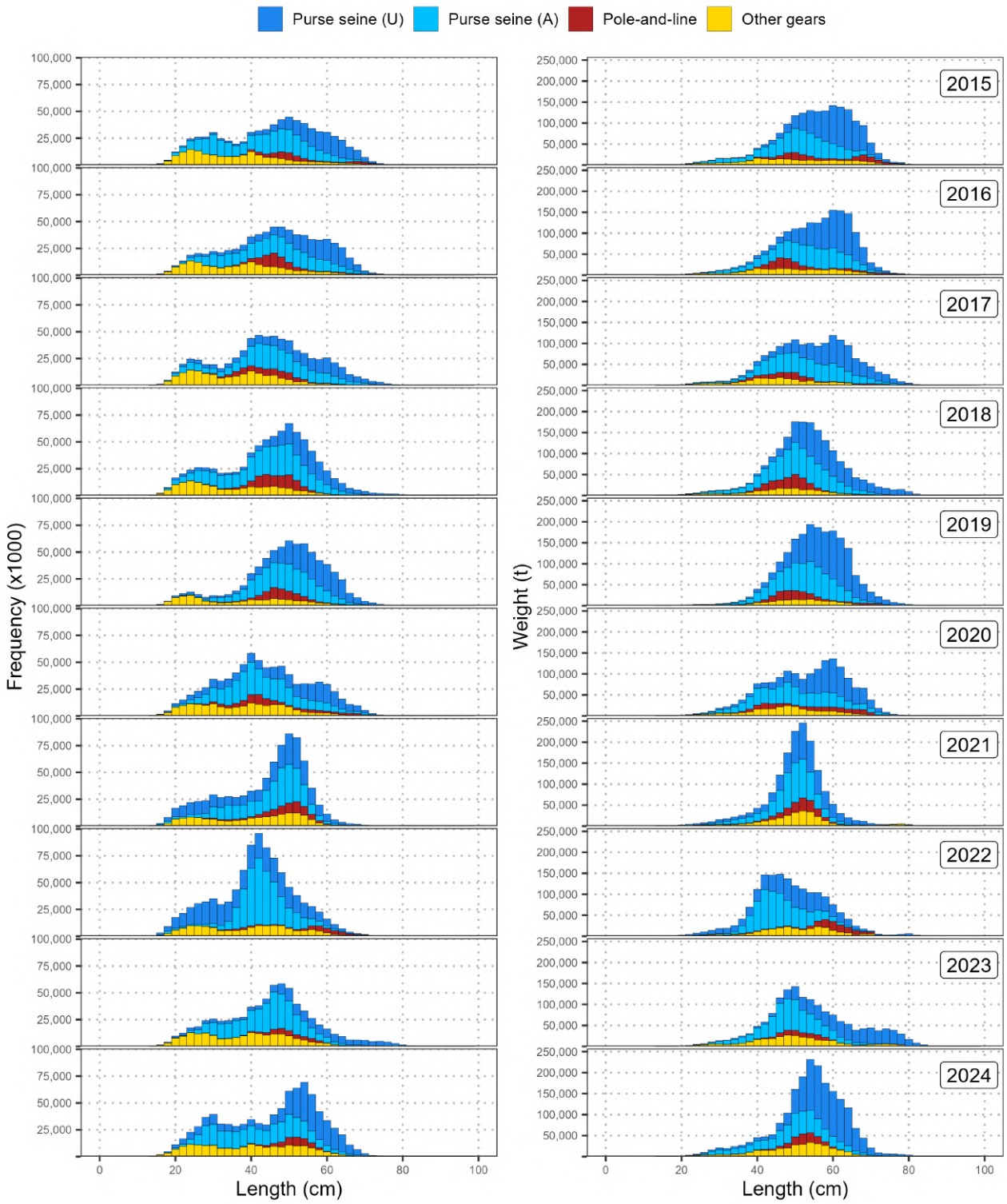

Figure 6: Catch-at-size of skipjack tuna by gear type and year for the WCPO. Catch is provided in thousands of fish (left) and metric tonnes (right). For purse seine catch, "U" indicates Unassociated (Free-school), "A" indicates Associated (FAD, Log, Animal).

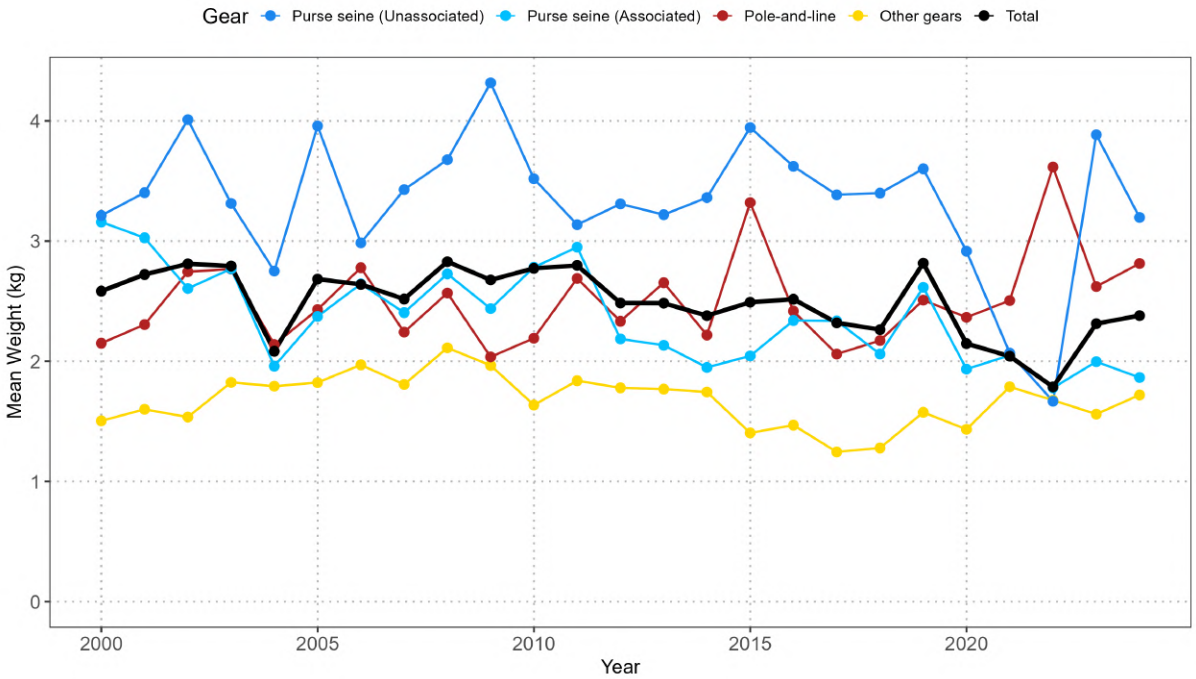

Figure 7: Mean weight of individual skipjack tuna taken by gear and year for the WCPO. The 'total' line represents the mean skipjack weight for the total catch.

South Pacific albacore

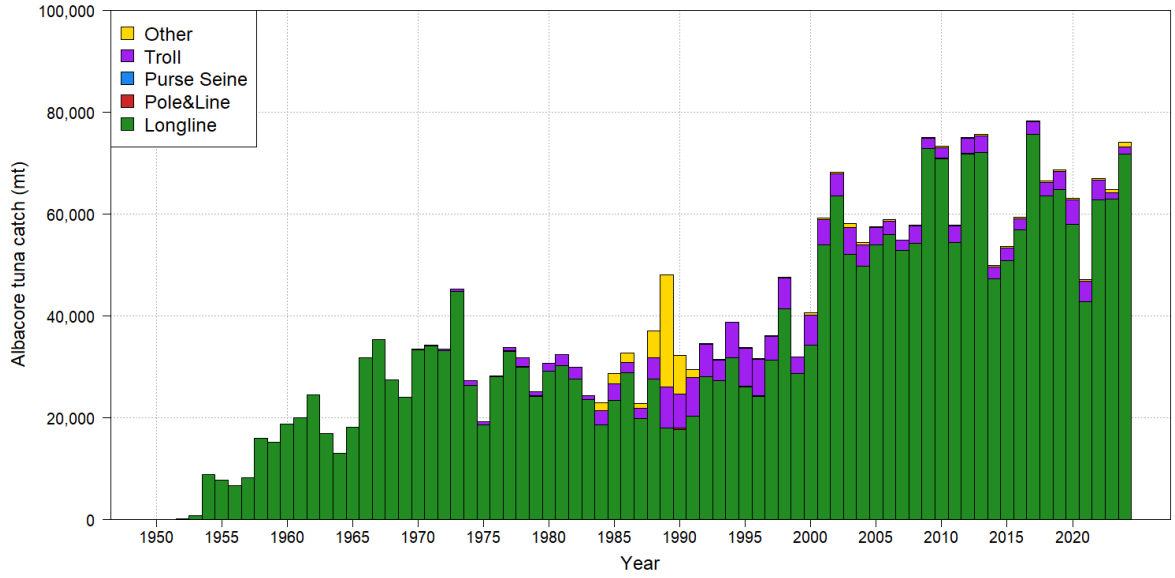

Figure 8: South Pacific albacore tuna catch (mt) by gear type and year for the WCPFC-Convention Area south of the equator. Note: 'Other' gear here includes artisanal catch as well as driftnet catches in the 1980s and early 1990s.

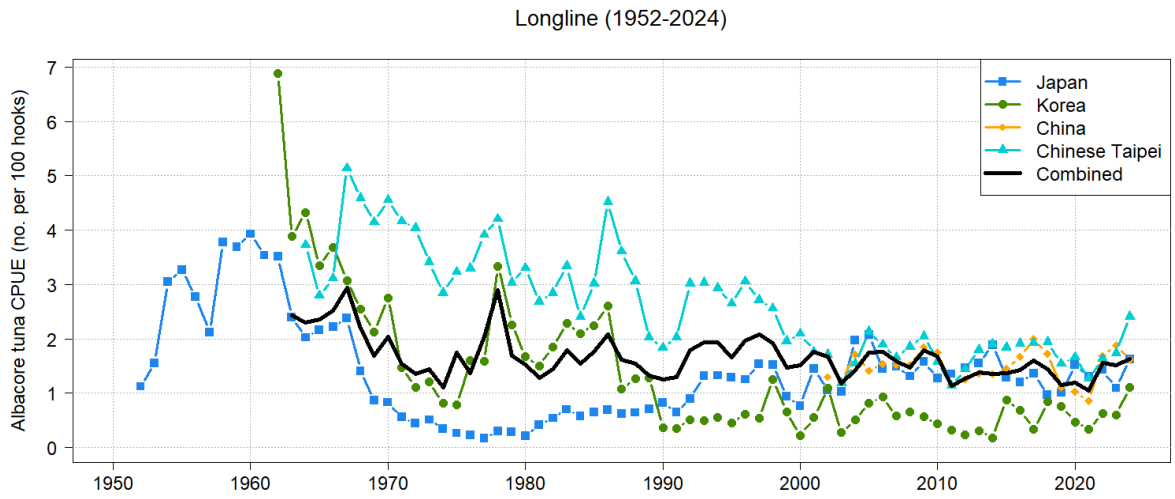

Figure 9: South Pacific albacore tuna catch per unit effort in the southern WCPFC-CA (south of 10°S) by year for major longline fleets.

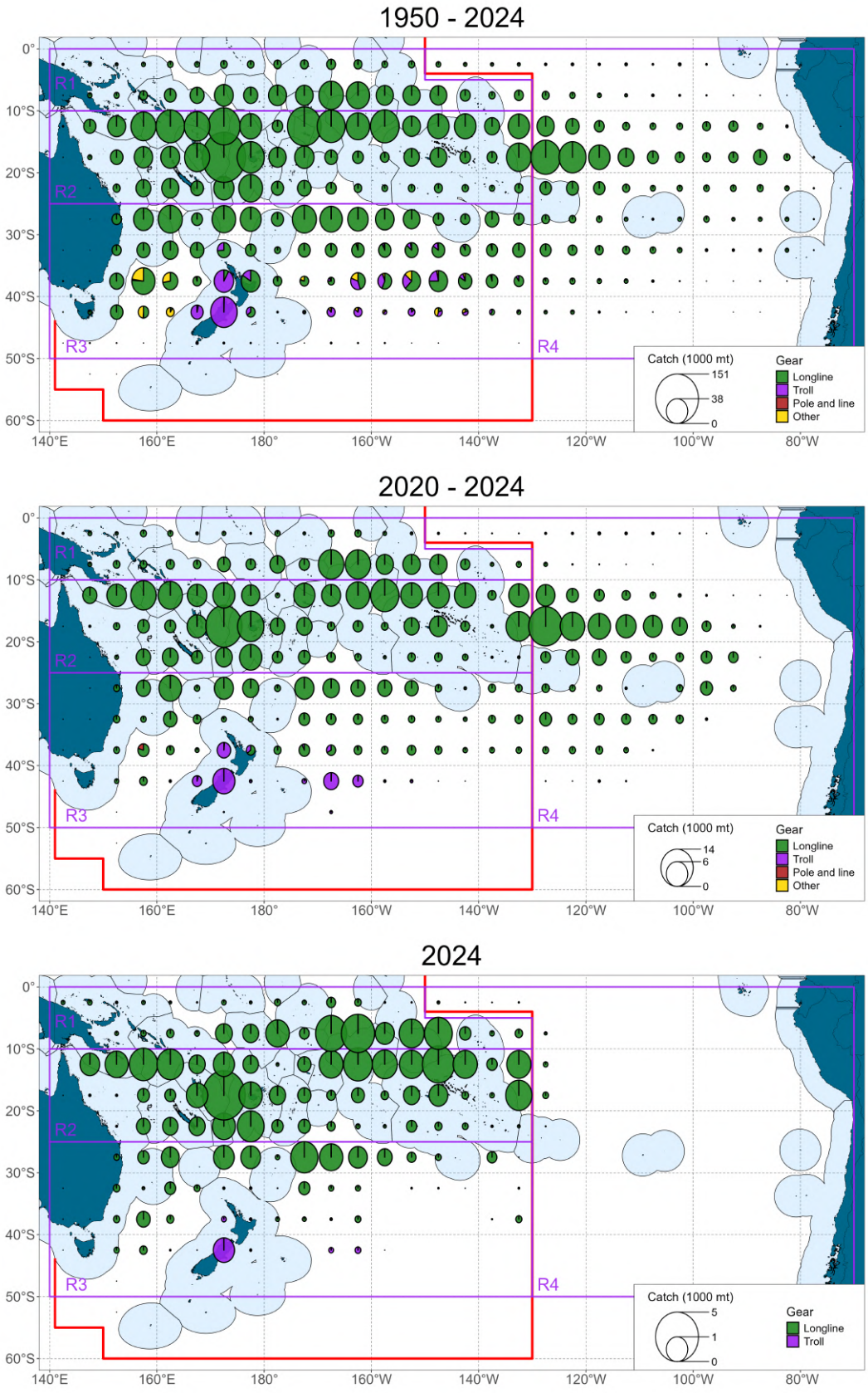

Figure 10: South Pacific albacore tuna catch distribution by gear type and 5°x 5° region for the Pacific Ocean for the period 1950-2024 (top), 2020-2024 (middle) and 2024 (bottom). Note that the catch scale differs between panels and the figure legends provide the catch associated with each maximum circle size. The 2021 South Pacific albacore assessment regions are outlined in purple, the WCPFC-CA is outlined in red; the 2024 assessment removed the subregions within the WCPFC-CA. Catch data for the EPO in 2024 are incomplete.

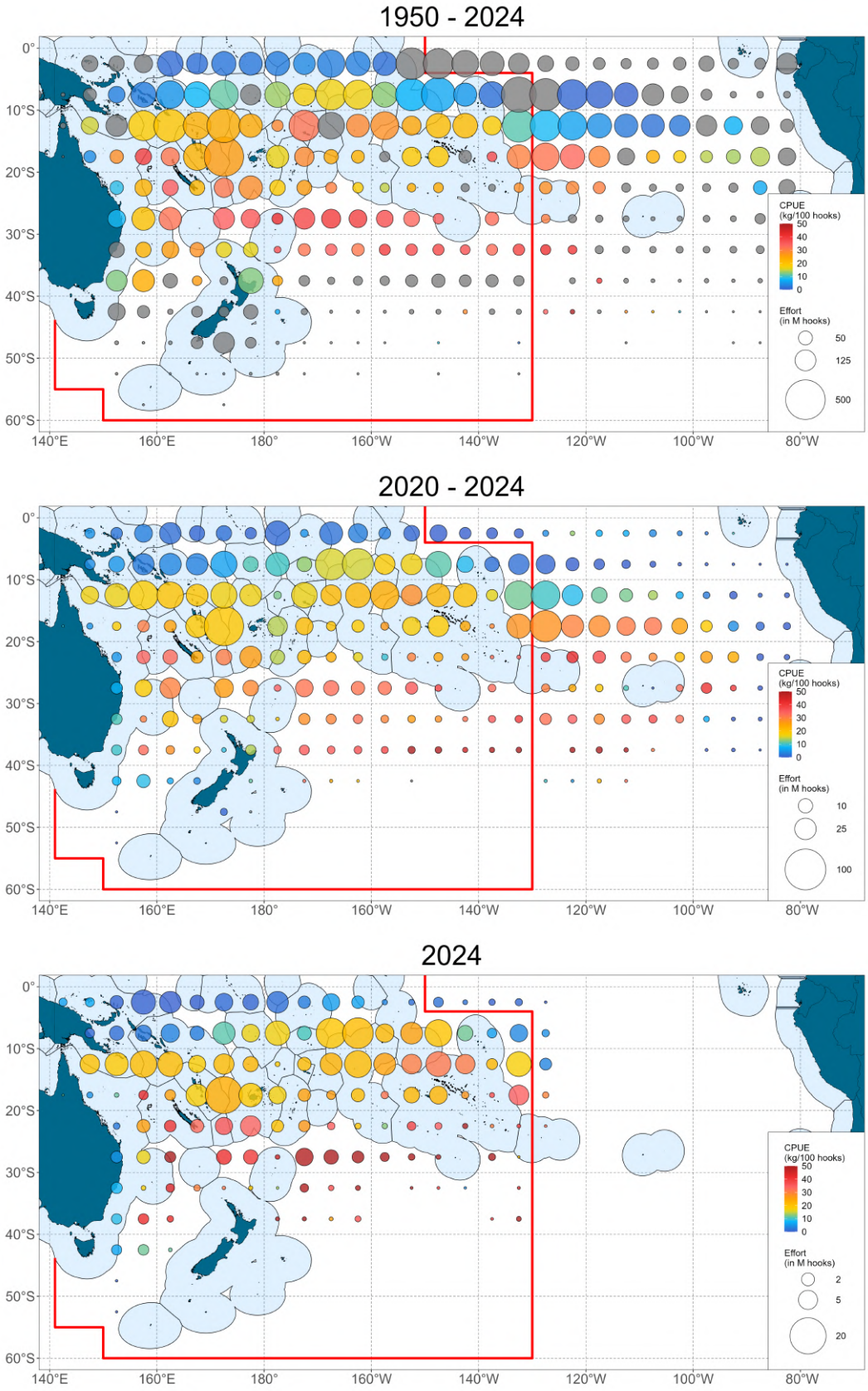

Figure 11: Distribution of 5°x 5° longline effort (represented by circle size) and South Pacific albacore tuna CPUE (represented by colour) for the period 1950-2024 (top), 2020-2024 (middle) and 2024 (bottom). Note the difference in effort scales between plots. The WCPFC-CA is outlined in red. Catch data for the EPO in 2024 are incomplete.

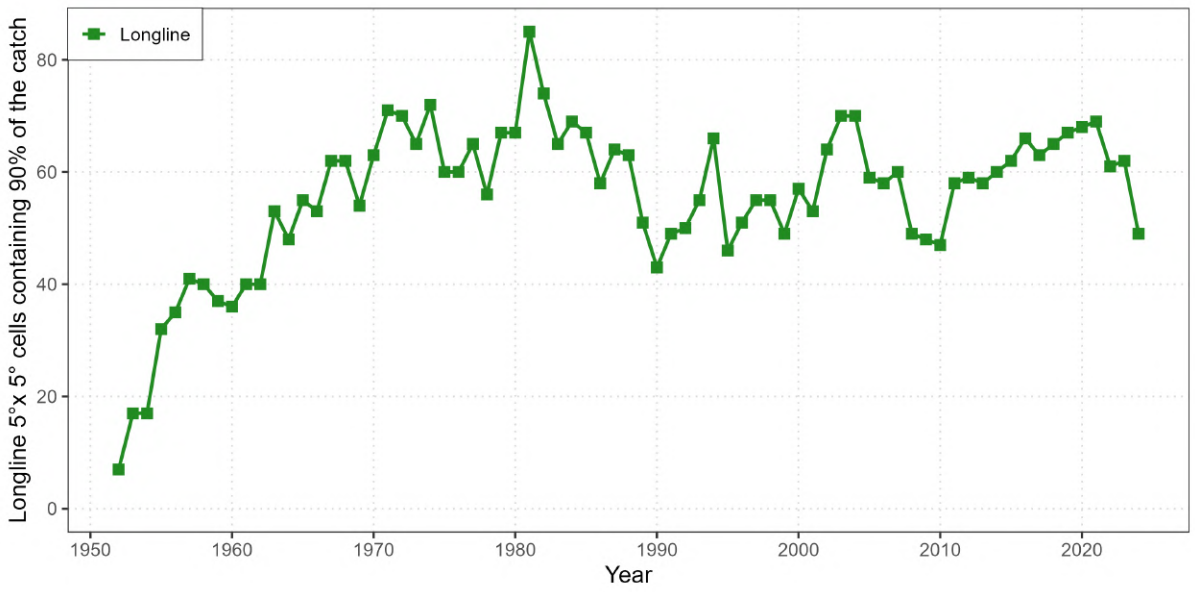

Figure 12: Spatial concentration of South Pacific albacore tuna catch for the longline fishery by year for the WCPO.

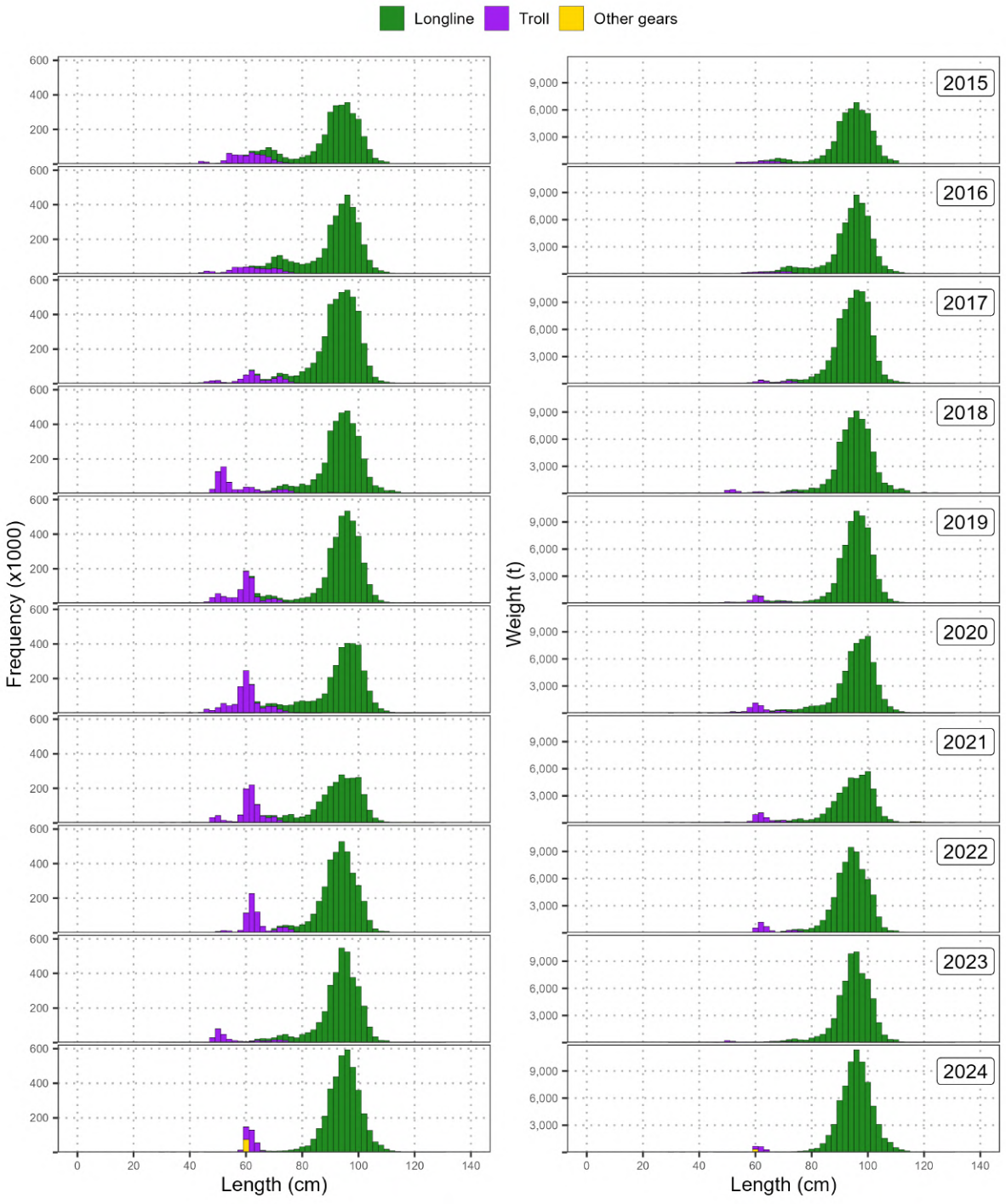

Figure 13: Catch-at-size of South Pacific albacore tuna by gear type and year for the WCPO. Catch is provided in thousands of fish (left) and metric tonnes (right).

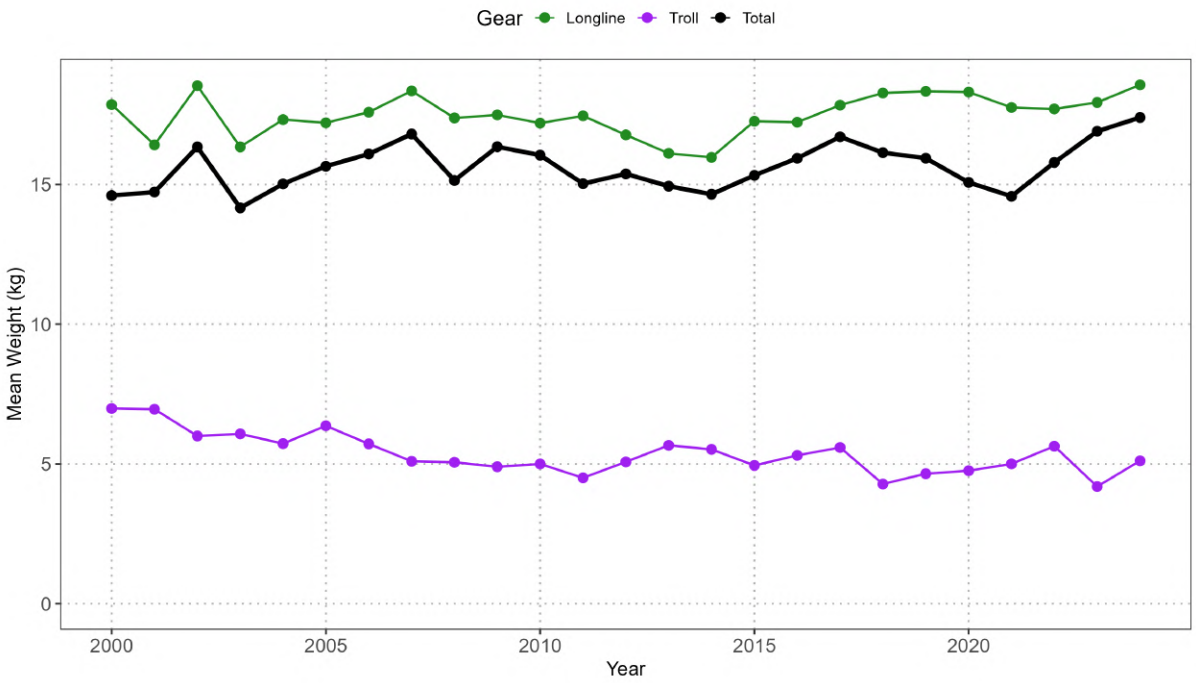

Figure 14: Mean weight of individual South Pacific albacore tuna taken by gear and year for the WCPO. The 'total' line represents the mean albacore weight for the total catch.

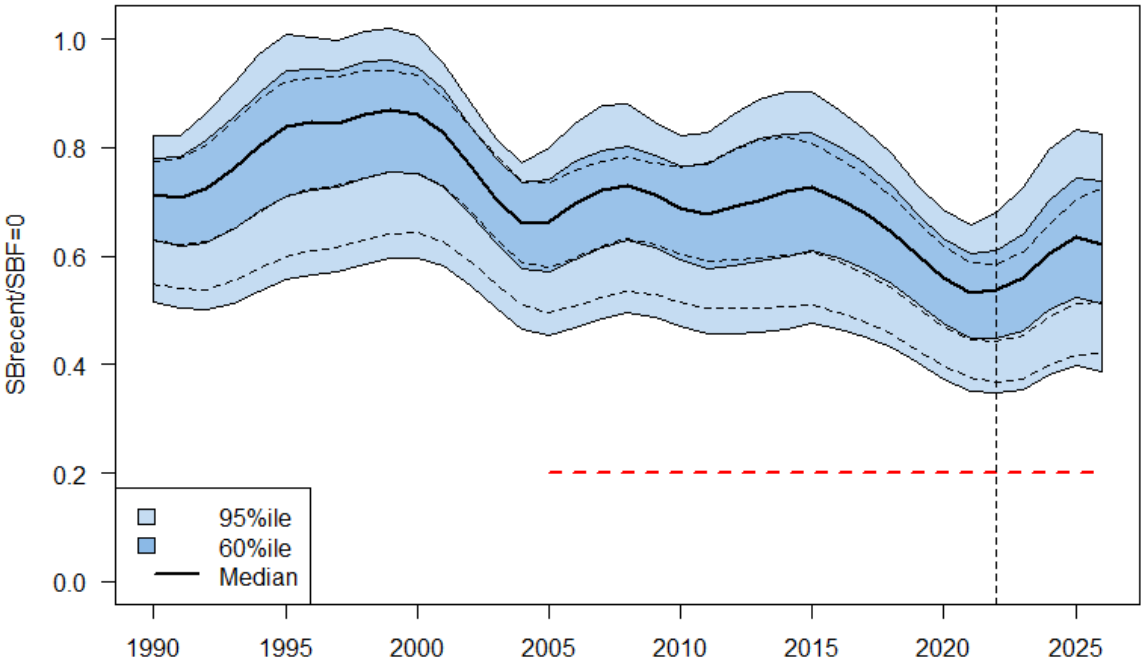

Figure 15: Stochastic projection results of South Pacific albacore tuna spawning biomass ($SB/SB_{F=0}$) from 2022 using actual catch and effort levels in 2023 and 2024 and then through to 2026 assuming 2024 levels continued. Prior to 2023 the data represent the 60th and 95th percentiles from the 100 ensemble model runs. Levels of recruitment variability estimated for the period used to estimate the stock-recruitment relationship (1960-2020) are assumed to continue in the future. Projections are from the model runs of Teears et al., 2024, and are projected on the basis of albacore catch. The dashed lines indicate three example trajectories (chosen randomly out of 10,000) from the projection grid. The red dashed line represents the WCPFC agreed limit reference point (0.20).

Bigeye

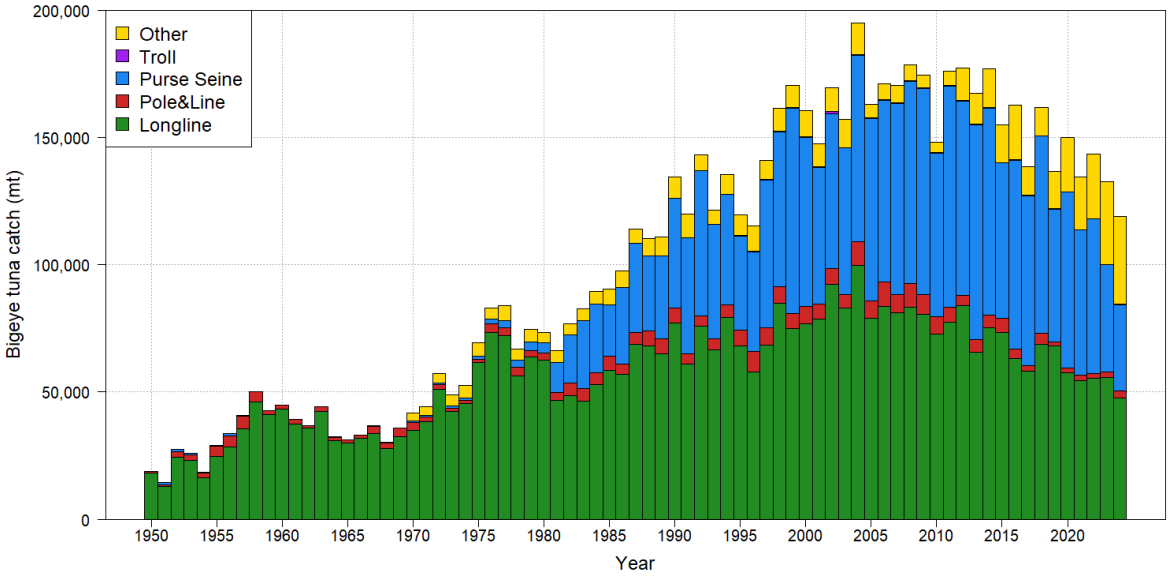

Figure 16: Bigeye tuna catch by gear type and year for the WCPFC-Convention Area.

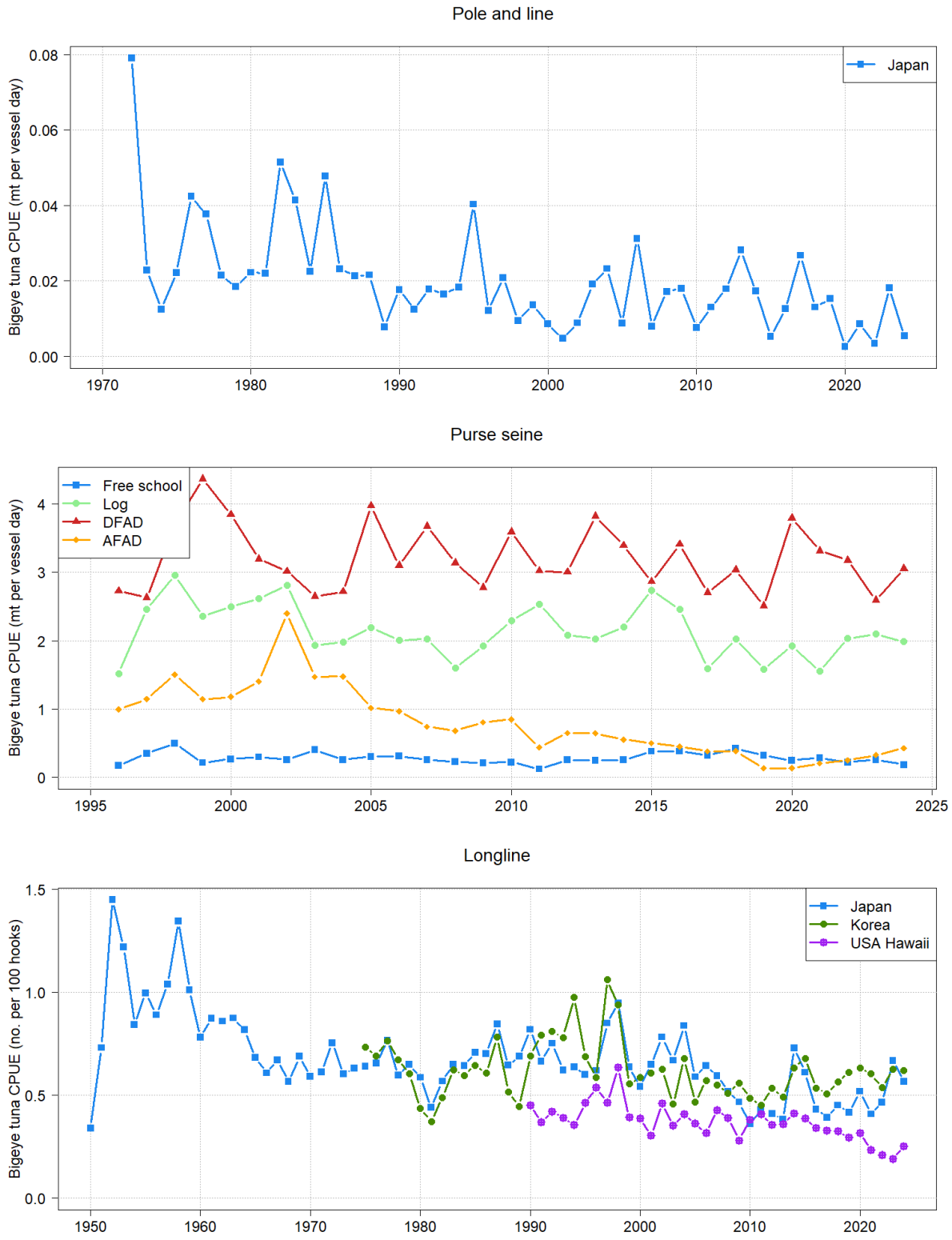

Figure 17: Bigeye tuna catch per unit effort in the tropical WCPO by year for major pole and line fishing fleets (top), purse seine for the major set types (middle), and tropical longline for three fleets (bottom; 20°N to 10°S, WCPFC-CA). Note different time series lengths.

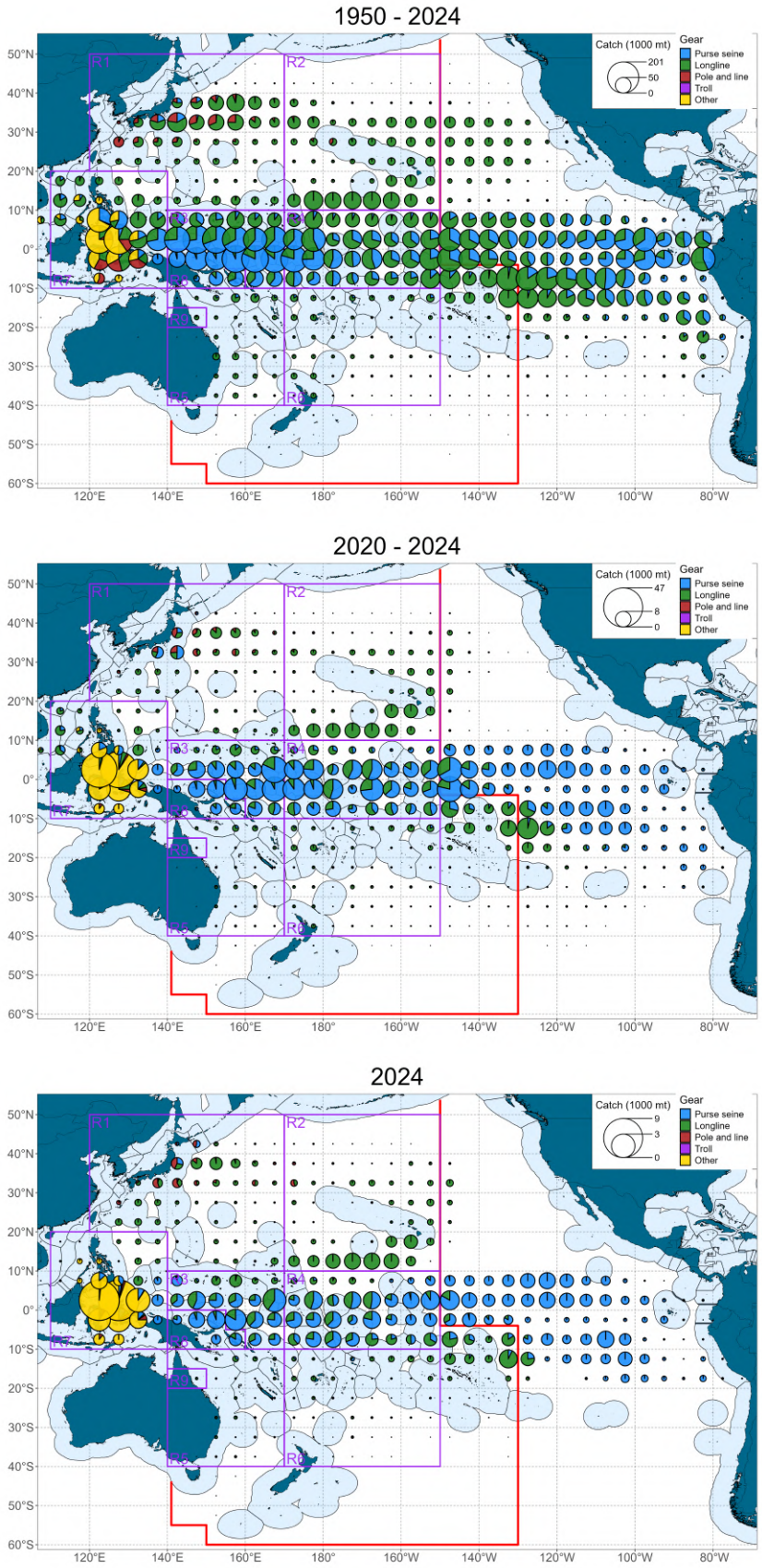

Figure 18: Bigeye tuna catch distribution by gear type and 5°x 5° region for the Pacific Ocean for the period 1950-2024 (top), 2020-2024 (middle) and 2024 (bottom). Note that the effort scale differs between panels and the figure legends provide the catch associated with each maximum circle size. The bigeye assessment regions are outlined in purple, the WCPFC-CA is outlined in red. Catch data for the EPO in 2024 are incomplete.

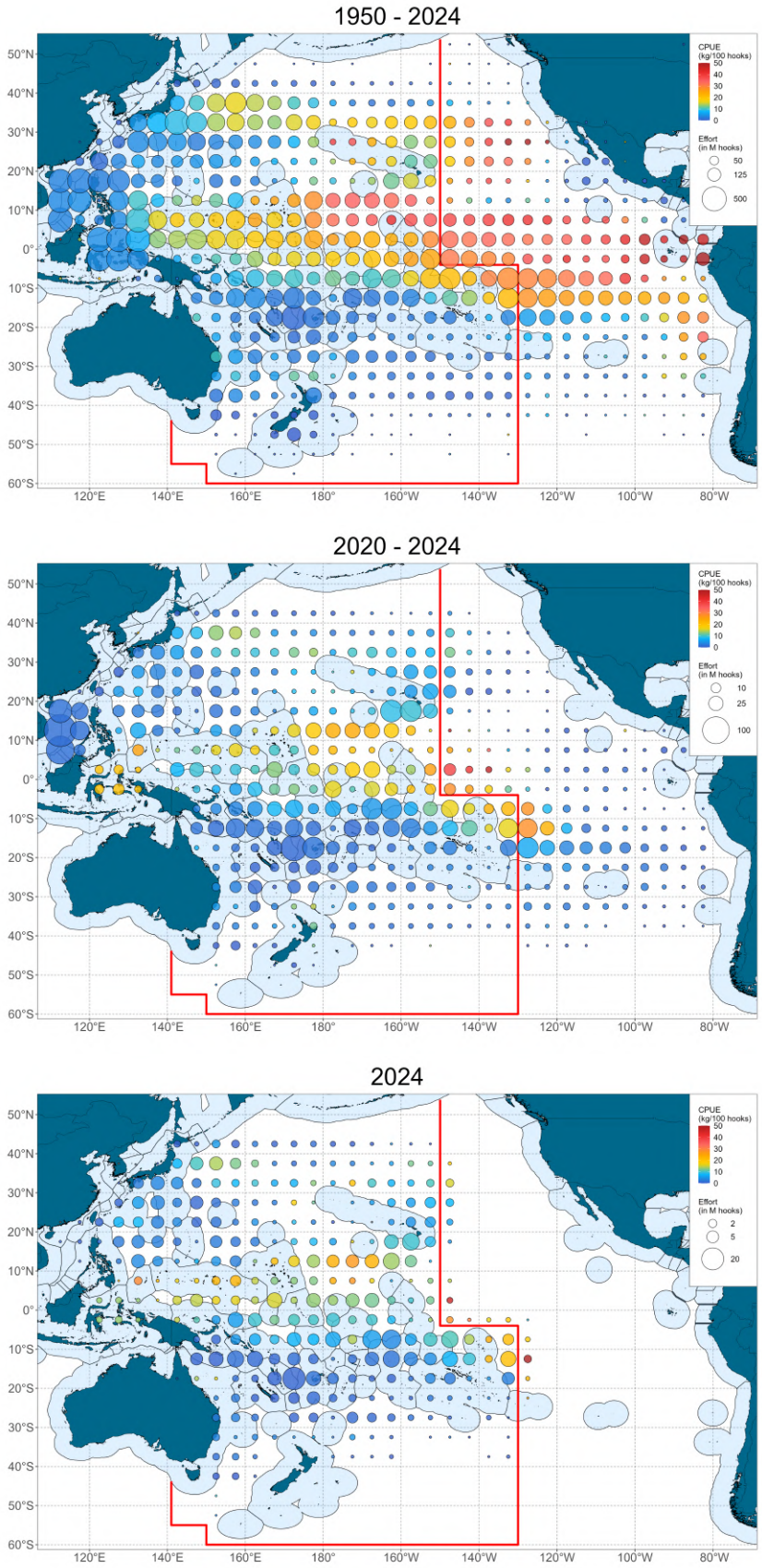

Figure 19: Distribution of 5°x 5° longline effort (represented by circle size) and bigeye tuna CPUE (represented by colour) for the period 1950-2024 (top), 2020-2024 (middle) and 2024 (bottom). Note the difference in effort scales between plots. The WCPFC-CA is outlined in red. Catch data for the EPO in 2024 are incomplete.

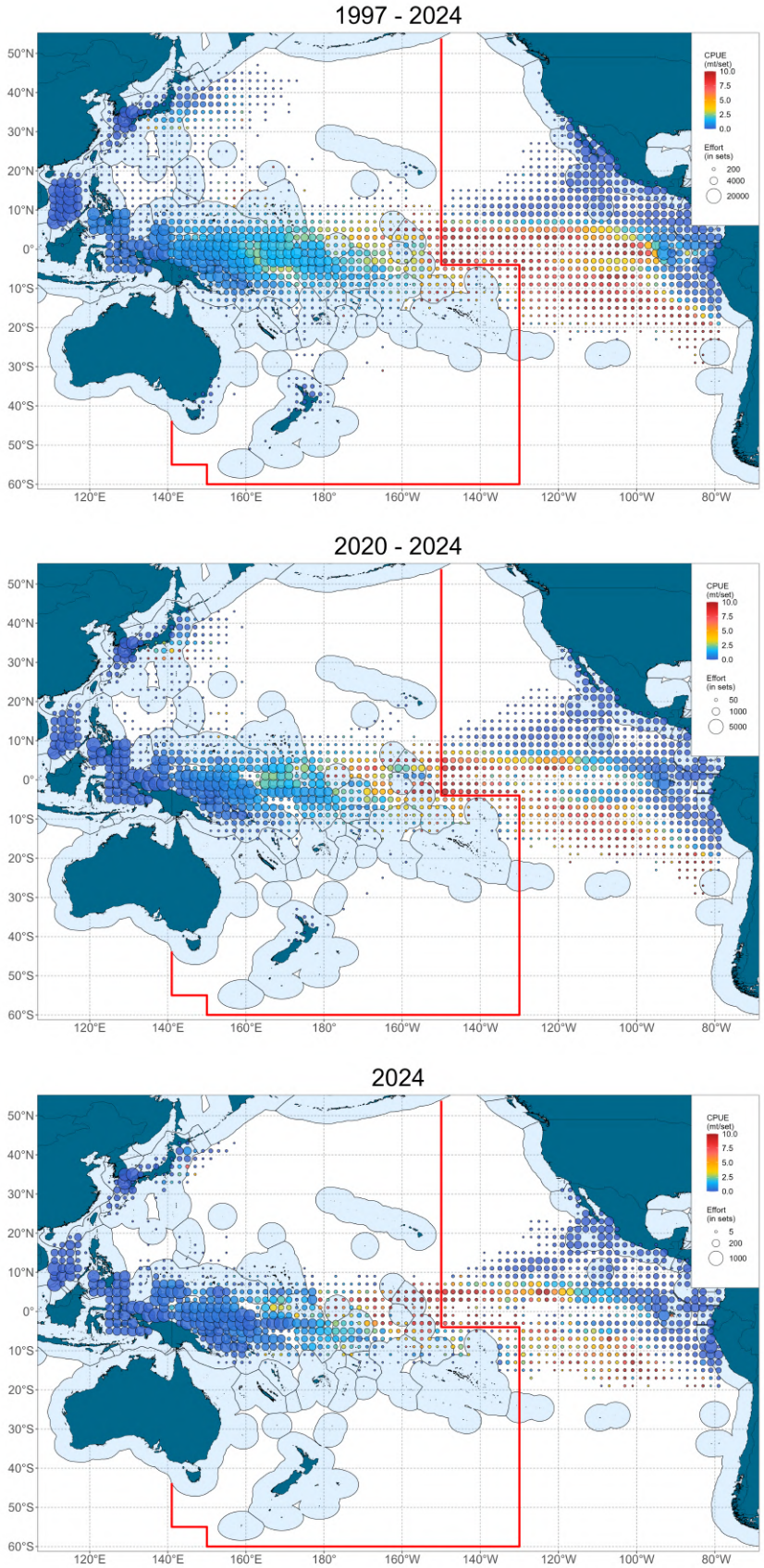

Figure 20: Distribution of 2°x 2° purse seine effort (represented by circle size) and bigeye tuna CPUE (represented by colour) for the period 1997-2024 (top), 2020-2024 (middle) and 2024 (bottom). Note the difference in effort scale between plots. The WCPFC-CA is outlined in red.

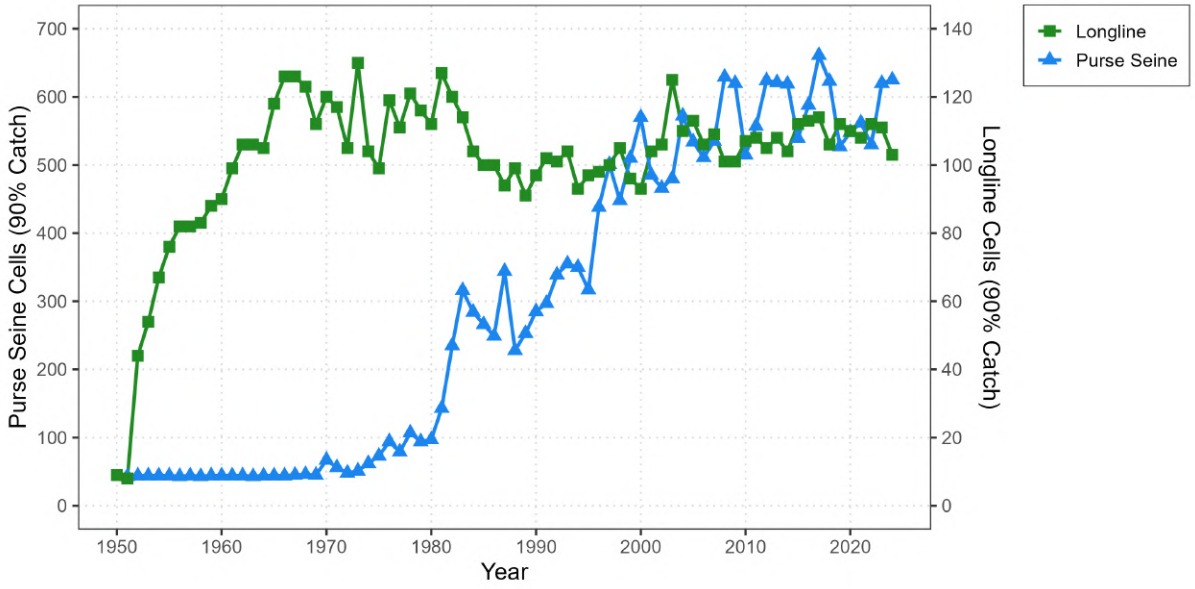

Figure 21: Spatial concentration of bigeye tuna catch for purse seine and longline by year for the WCPO.

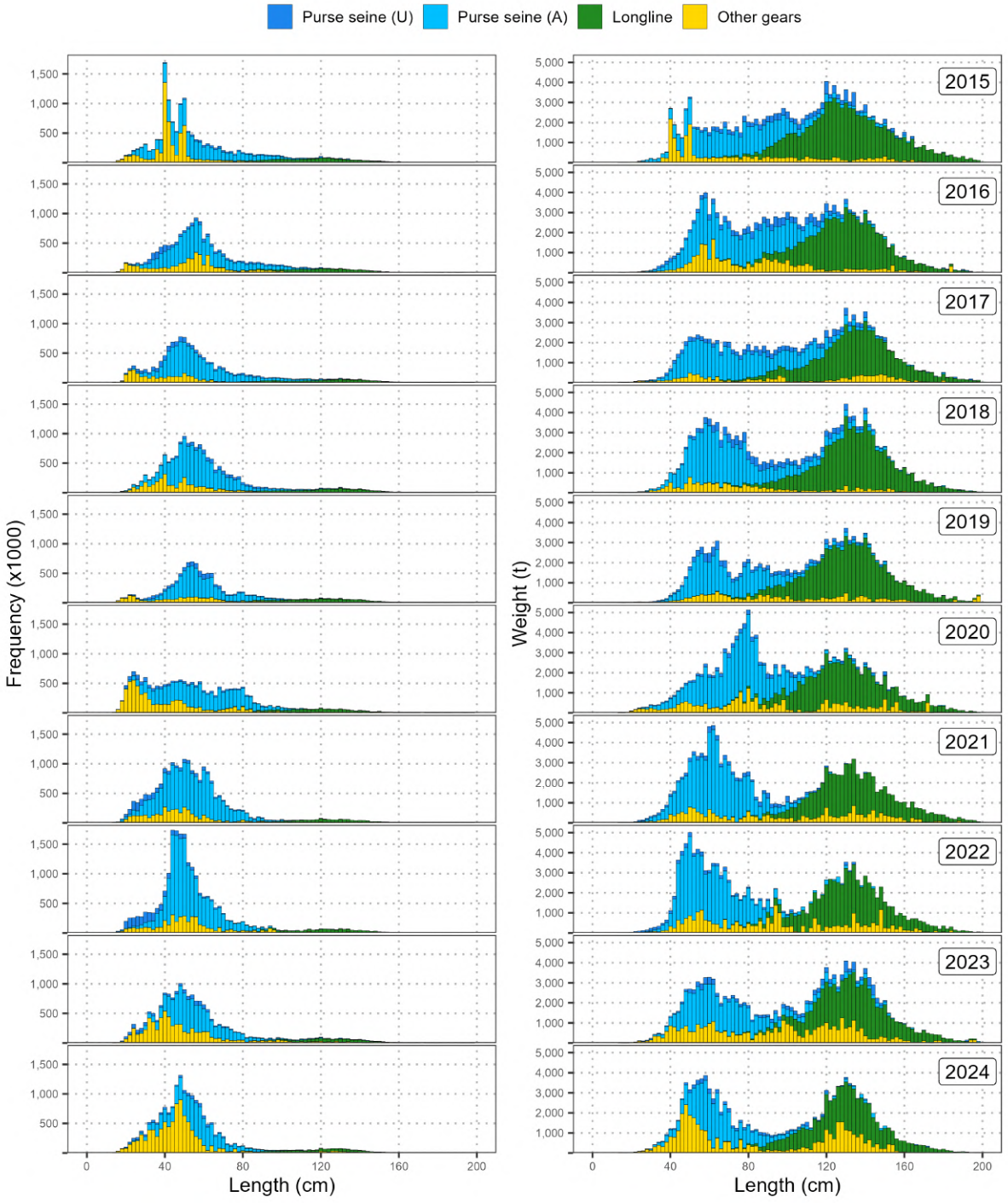

Figure 22: Catch-at-size of bigeye tuna by gear type and year for the WCPO. Catch is provided in thousands of fish (left) and metric tonnes (right). For purse seine catch, "U" indicates Unassociated (Free-school), "A" indicates Associated (FAD, Log, Animal).

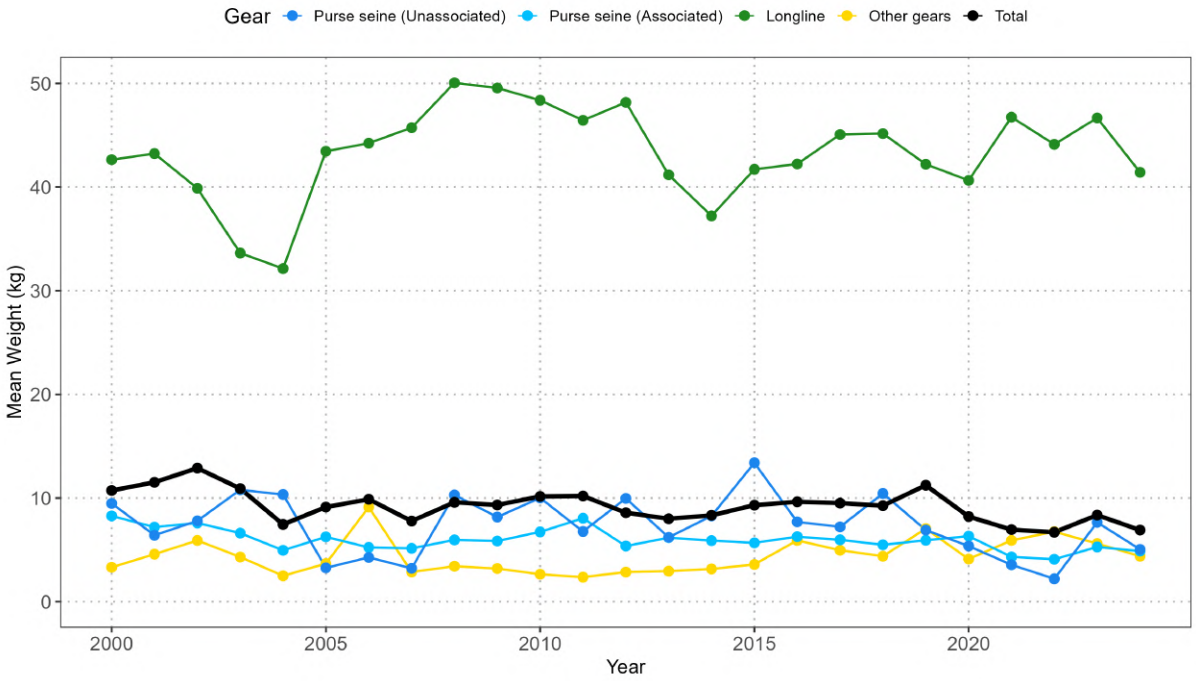

Figure 23: Mean weight of individual bigeye tuna taken by gear and year for the WCPO. The 'total' line represents the mean bigeye weight for the total catch.

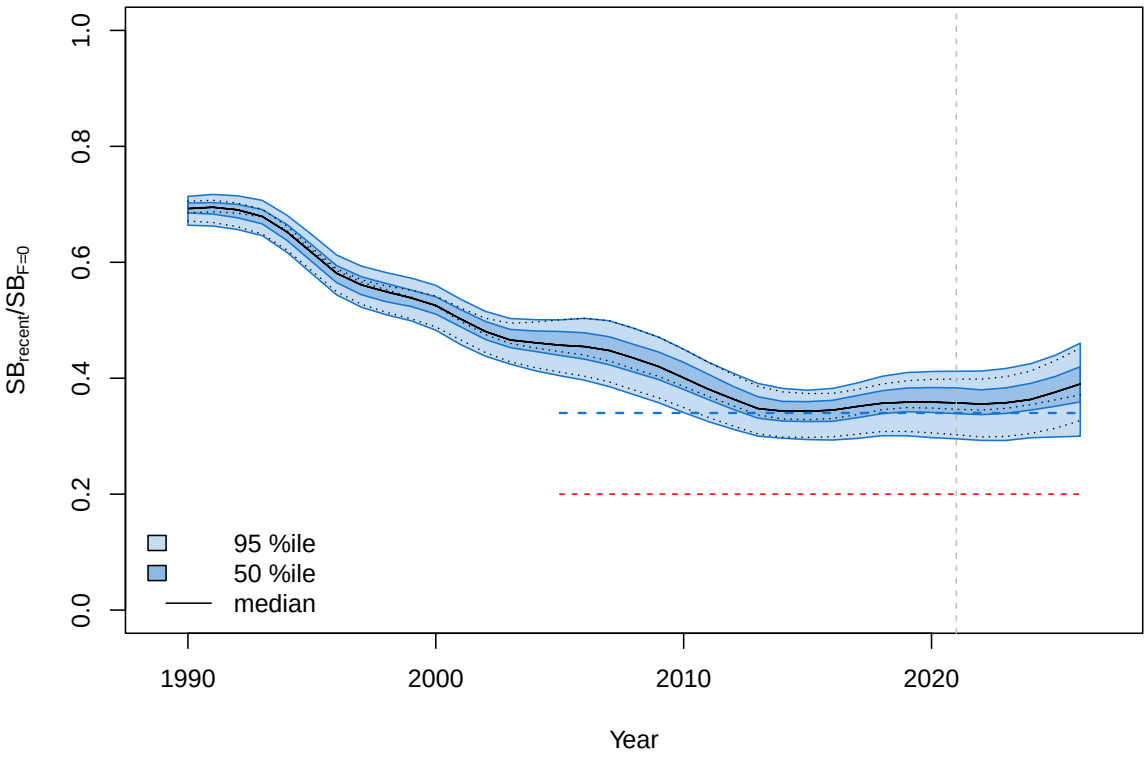

Figure 24: Bigeye spawning biomass depletion ($SB_{recent}/SB_{F=0}$) from the uncertainty grid of assessment model runs for the period 1990 to 2021 (the vertical line at the end of 2021 represents the last year of the assessment), and stochastic projection results for the period 2022 to 2026 assuming actual catch and effort levels in 2021, 2022 and 2023, and that 2023 fishing levels continued until 2026. During the projection period (2021-2026) levels of recruitment variability are assumed to match those over the time period used to estimate the "long-term" stock-recruitment relationship (1962-2021). The center blue line shows the median annual depletion values (for grid model estimates prior to 2021 and for grid model projections for 2021-2026). The dashed lines indicate three example trajectories (chosen randomly out of 1080) from the model grid; the dark and light blue areas contain 60 and 95%, respectively, of depletion estimates for each year. The red dashed line represents the agreed limit reference point of 20%$SB_{F=0}$, and the dashed blue line represents average depletion (value of 0.34) over the period 2012-2015.

Yellowfin

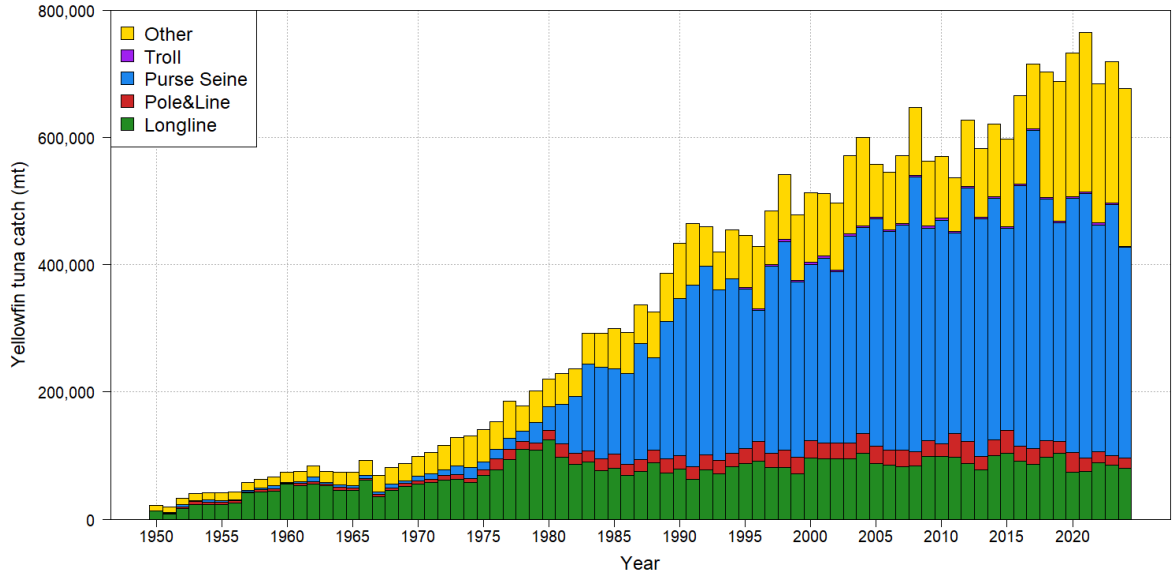

Figure 25: Yellowfin tuna catch (mt) by gear type and year for the WCPFC-Convention Area.

Figure 26: Yellowfin tuna catch per unit effort in the tropical WCPO by year for major pole and line fishing fleets (top), purse seine for the major set types (middle), and tropical longline for two fleets (bottom; 20°N to 10°S, WCPFC-CA). Note different time series lengths.

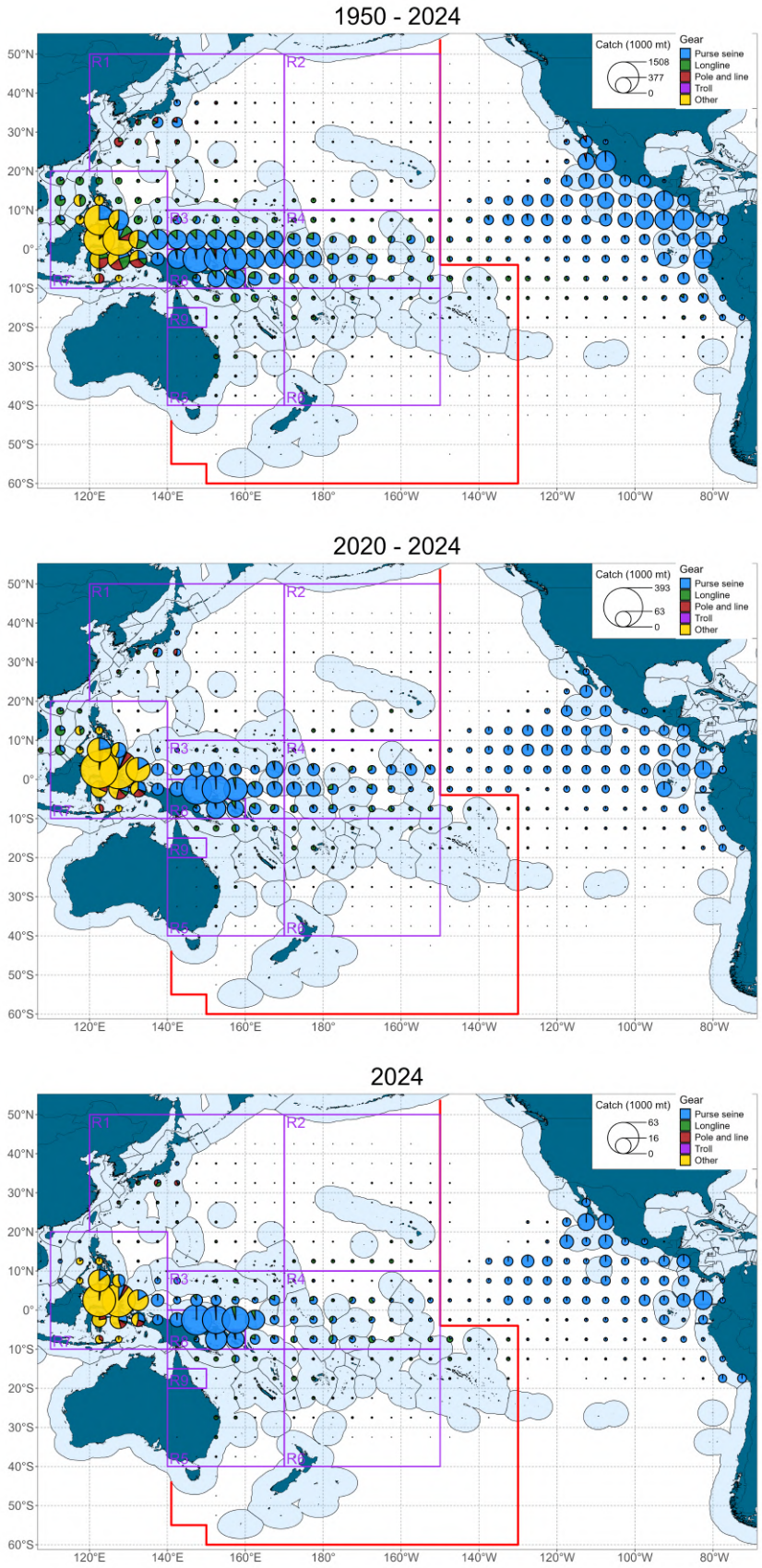

Figure 27: Yellowfin tuna catch distribution by gear type and 5°x 5° region for the Pacific Ocean for the period 1950-2024 (top), 2020-2024 (middle) and 2024 (bottom). Note that the catch scale differs between panels and the figure legends provide the catch associated with each maximum circle size. The yellowfin assessment regions are outlined in purple, the WCPFC-CA is outlined in red. Catch data for the EPO in 2024 are incomplete.

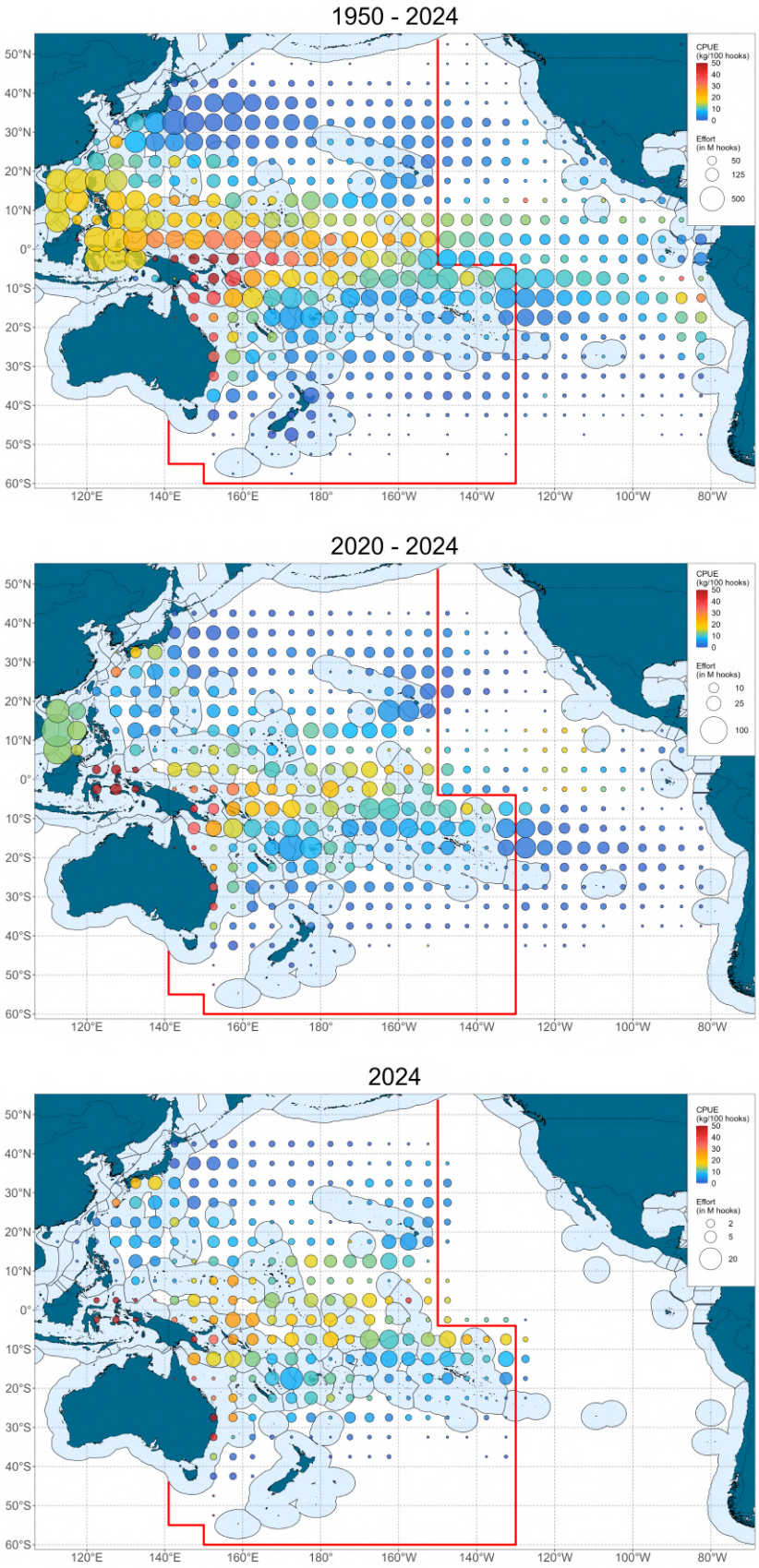

Figure 28: Distribution of 5°x5° longline effort (represented by circle size) and yellowfin tuna CPUE (represented by colour) for the period 1950-2024 (top), 2020-2024 (middle) and 2024 (bottom). Note the effort scale difference between plots. The WCPFC-CA is outlined in red. Catch data for the EPO in 2024 are incomplete.

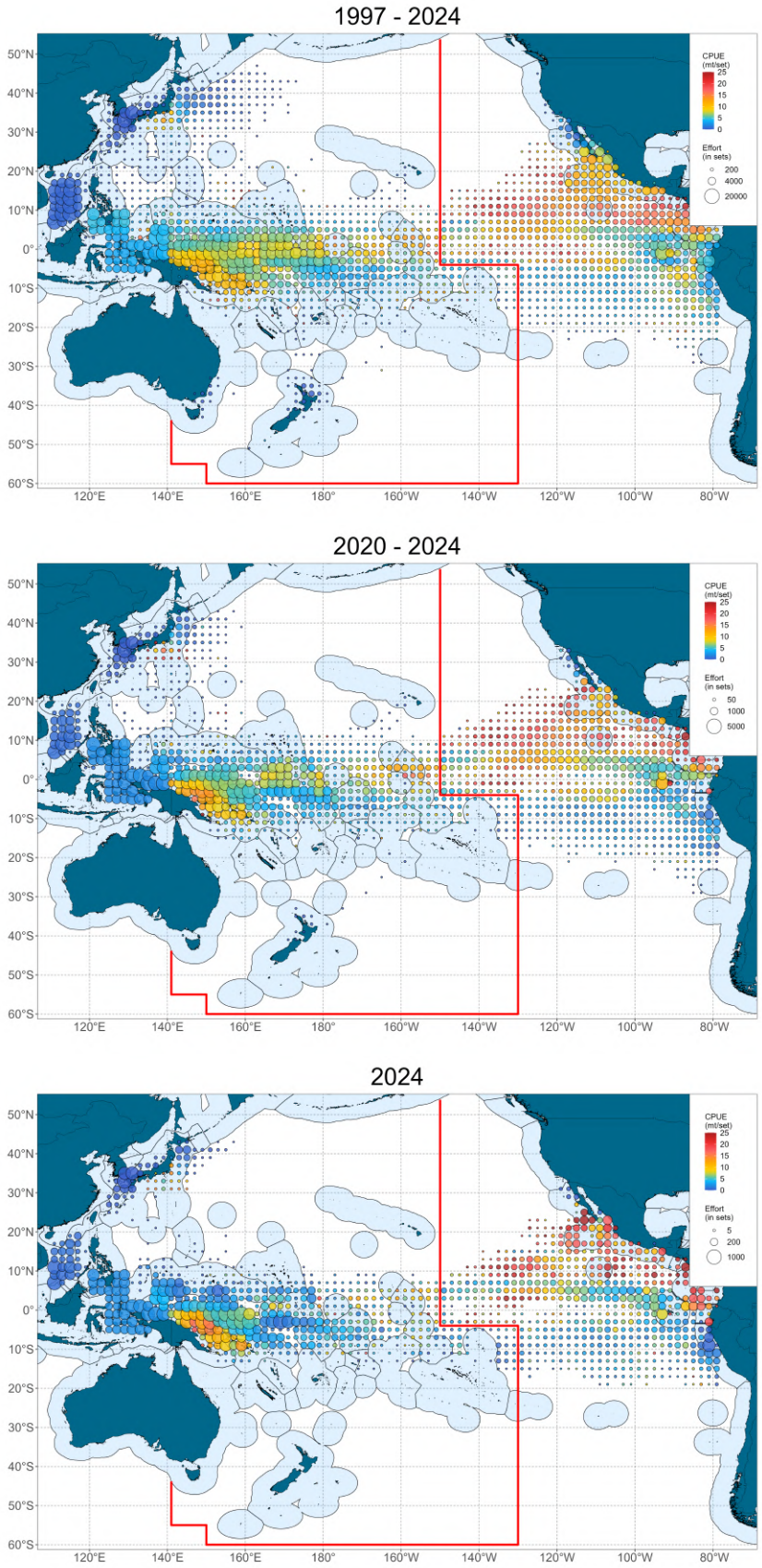

Figure 29: Distribution of 2°x 2° purse seine effort (represented by circle size) and yellowfin tuna CPUE (represented by colour) for the period 1997-2024 (top), 2020-2024 (middle) and 2024 (bottom). Note the differences in circle size scale between plots. The WCPFC-CA is outlined in red.

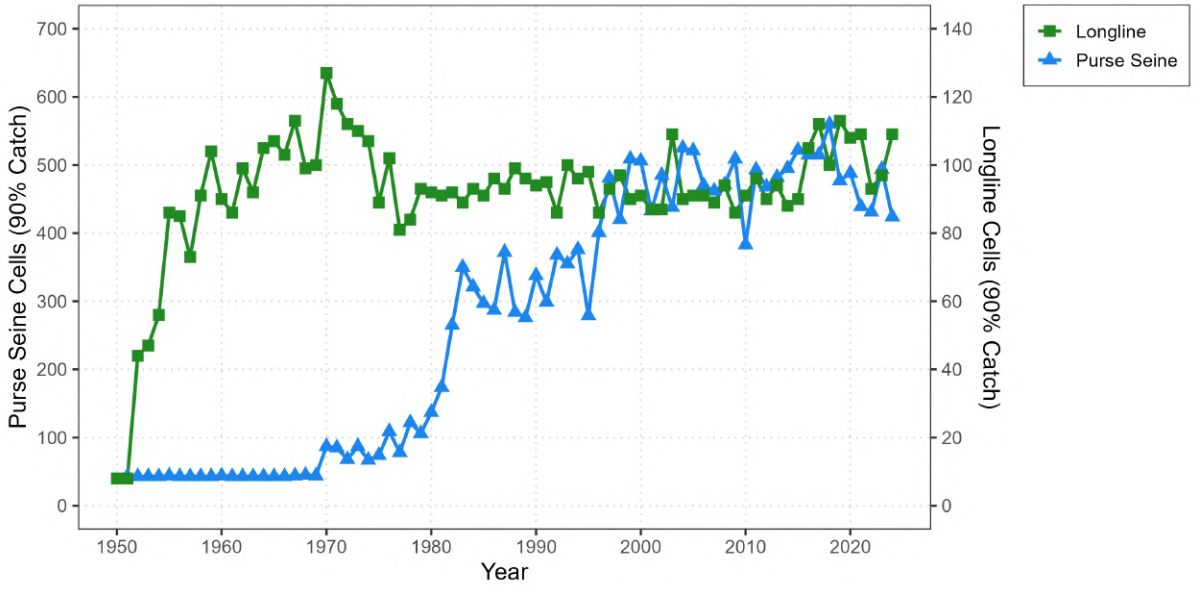

Figure 30: Spatial concentration of yellowfin tuna catch for purse seine and longline by year for the WCPO.

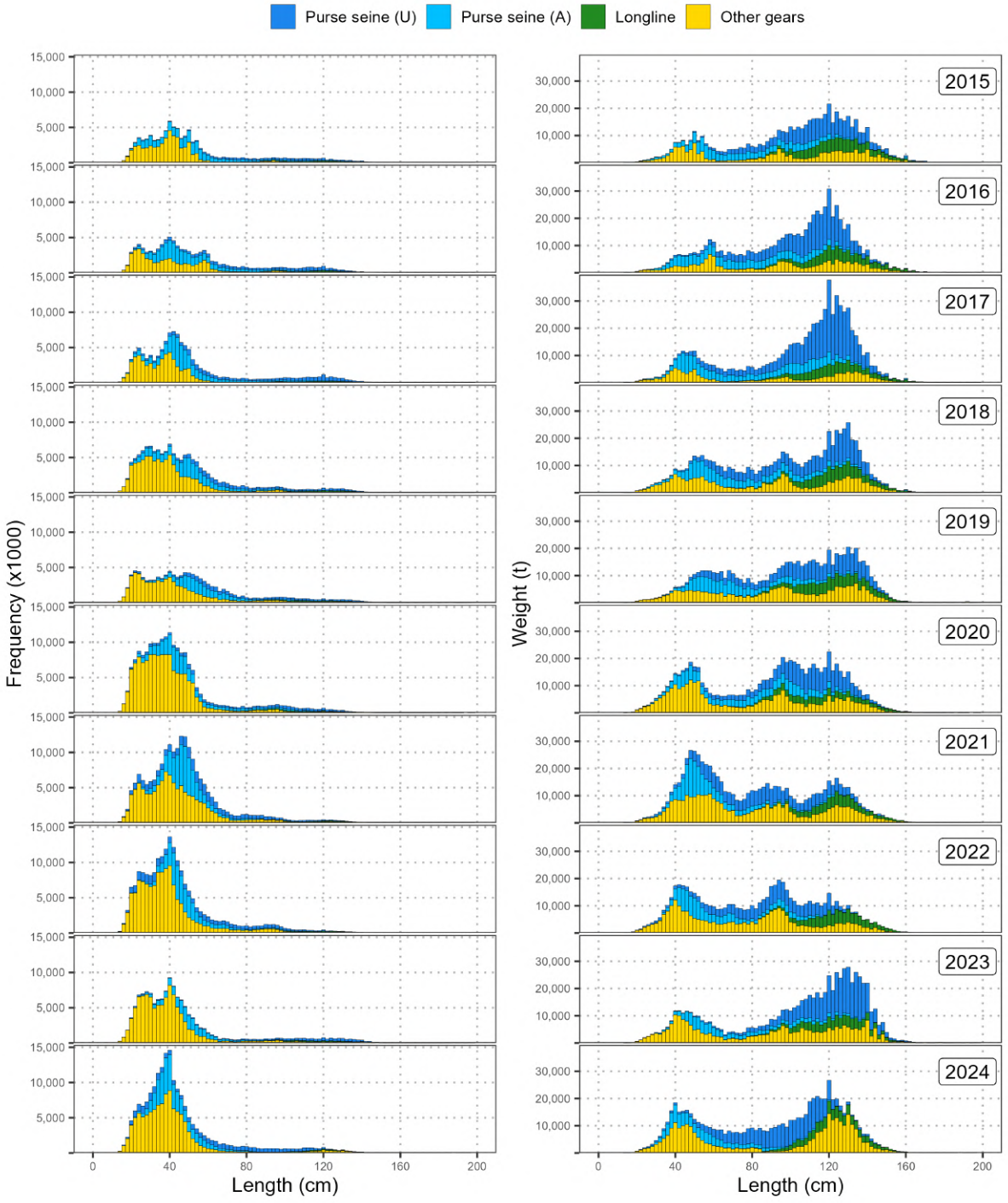

Figure 31: Catch-at-size of yellowfin tuna by gear type and year for the WCPO. Catch is provided in thousands of fish (left) and metric tonnes (right). For purse seine catch, "U" indicates Unassociated (Free-school), "A" indicates Associated (FAD, Log, Animal).

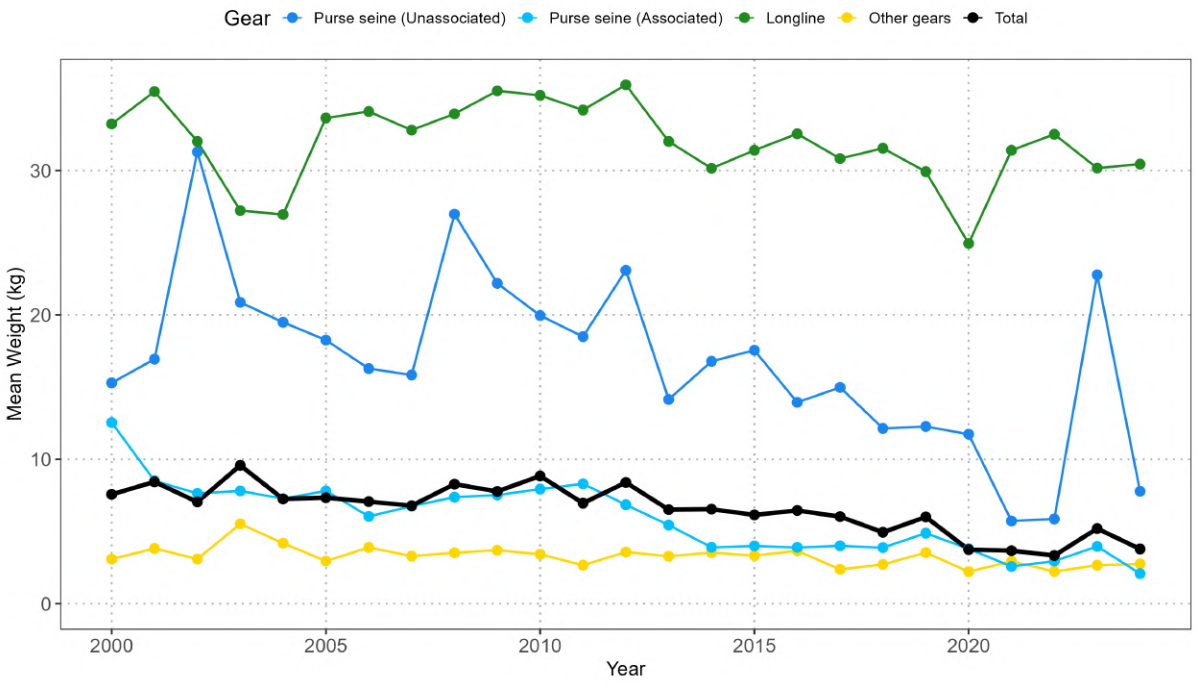

Figure 32: Mean weight of individual yellowfin tuna taken by gear and year for the WCPO. The 'total' line represents the mean yellowfin weight for the total catch.

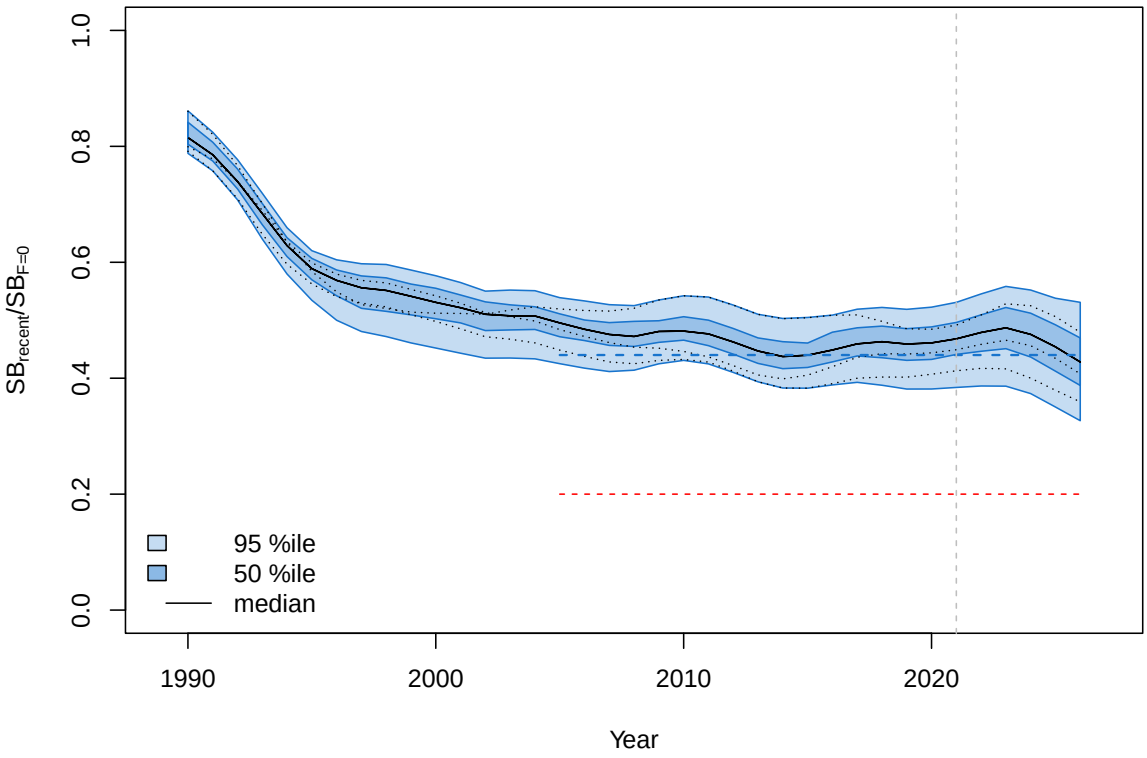

Figure 33: Yellowfin spawning biomass depletion ($SB_{recent}/SB_{F=0}$) from the uncertainty grid of assessment model runs for the period 1990 to 2021 (the vertical line at the end of 2021 represents the last year of the assessment), and stochastic projection results for the period 2022 to 2026 assuming actual catch and effort levels in 2021, 2022 and 2023, and that 2023 fishing levels continued until 2026. During the projection period (2021-2026) levels of recruitment variability are assumed to match those over the time period used to estimate the "long-term" stock-recruitment relationship (1962-2021). The center blue line shows the median annual depletion values (for grid model estimates prior to 2021 and for grid model projections for 2021-2026). The dashed lines indicate three example trajectories (chosen randomly out of 1080) from the model grid; the dark and light blue areas contain 60 and 95%, respectively, of depletion estimates for each year. The red dashed line represents the agreed limit reference point of 20%$SB_{F=0}$, and the dashed blue line represents average depletion (value of 0.44) over the period 2012-2015.