

## Appendix 1-D. A summary of the target tuna species in WCPO commercial tuna fisheries and recent production by gear types.

### Target species

Four species of tuna are the primary targets for WCPO fisheries. They are skipjack (*Katsuwonus pelamis*), yellowfin tuna (*Thunnus albacares*), bigeye (*T. obesus*) and South Pacific albacore (*T. alalunga*) (Figure 1.8. The four target tunas for WCPO industrial fisheries.).

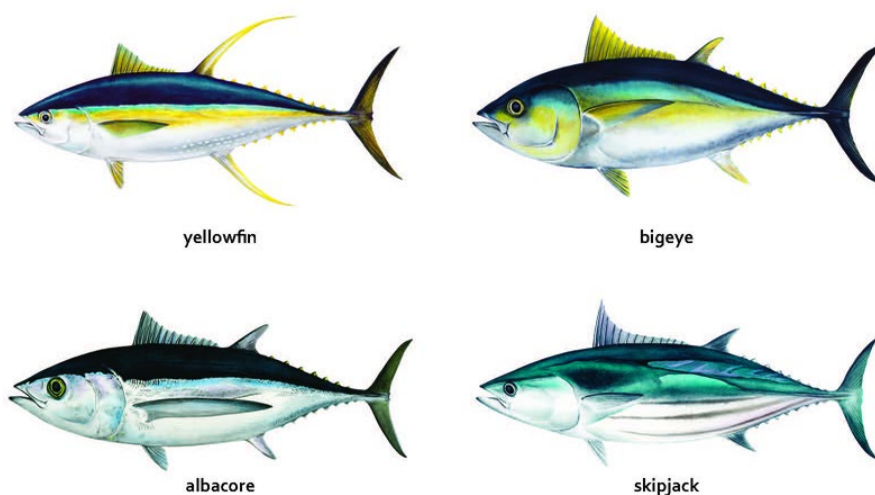


Figure 1.1. The four target tunas for WCPO industrial fisheries.<sup>1</sup>

### Skipjack tuna

Total skipjack tuna catches in the WCP–CA have increased steadily since 1960, more than doubling during the 1980s, and continued to increase in subsequent years. Annual catches have exceeded 1.5 million mt in the last decade (Figure 1.9).

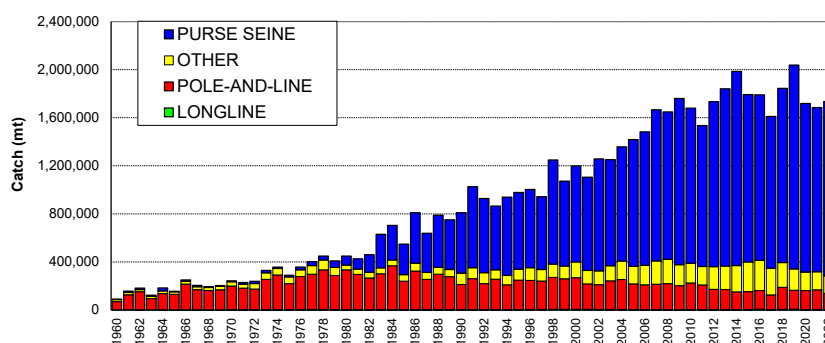


Figure 1.2. WCP–CA skipjack catch (mt) by gear by year (1960-2022).

Pole-and-line fleets, primarily Japanese, initially dominated the skipjack fishery, with the catch peaking at 380,000 mt in 1984. The relative importance of the pole-and-line fishery, however, has declined over the years primarily due to economic constraints.

The skipjack catch increased during the 1980s due to growth in the international purse-seine fleet, combined with increased catches by domestic fleets from Philippines and Indonesia (which have made up around 10% of the total annual skipjack catch in WCP–CA since).

The 2022 WCP–CA skipjack catch of 1,734,637 mt was the highest in recent three years, but around 300,000 mt lower than the record in 2019 (2,037,920 mt). Catch in the purse seine fishery for 2022 (1,450,151 mt – 84%) was the fifth highest on record, noting that the trend in purse seine skipjack catch typically drives the trends in overall skipjack catch. The pole-and-line catch for 2022 (135,195 mt – 8%) was amongst lowest catches since 1963, with reductions in both the Japanese and the Indonesian catches (noting 2022 estimates for this fishery are provisional). The various “artisanal” gears in the domestic fisheries including Indonesia, Philippines and Japan took 143,626 mt in 2022 (8% of the total catch) was the lowest since 2005. The longline fishery accounted for less than 1% of the total catch.

The majority of the skipjack catch is taken in equatorial areas, and most of the remainder is taken in the seasonal domestic (home-water) fishery of Japan (Figure 1.10). The domestic fisheries in Indonesia (purse-seine, pole-and-line and unclassified gears) and the Philippines (e.g. ring-net and purse-seine) account for the majority of the skipjack catch in the western equatorial portion of the WCP–CA. Central tropical waters are dominated by purse-seine catches from several foreign and domestic fleets. The spatial distribution of skipjack catch by purse-seine vessels in the central and eastern equatorial areas is influenced by the prevailing ENSO conditions.

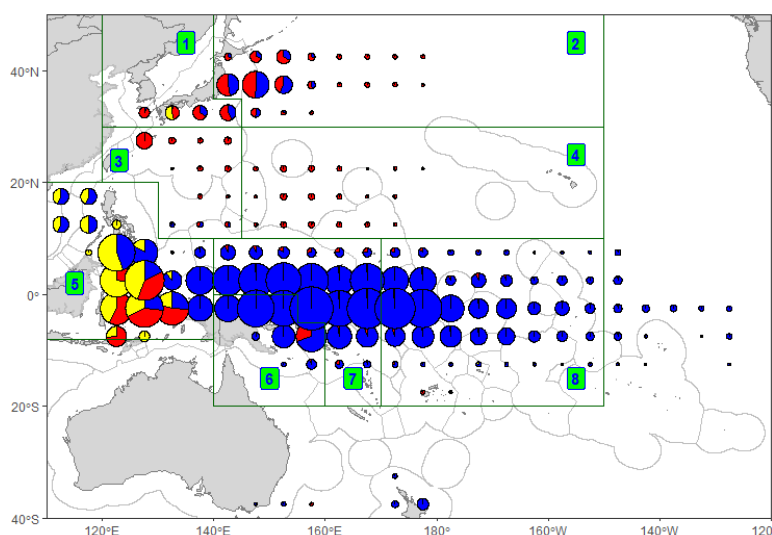


Figure 1.3. Distribution of skipjack tuna catch, 1990–2022. The green boxes represent the statistical areas used for modelling purposes.

### Yellowfin tuna

The total yellowfin tuna harvest in the WCP–CA has slowly increased over time but, since 1998, has achieved annual catches that regularly exceed 500,000 mt (Figure 1.11). Again, this is primarily due to increased catches in the purse-seine fishery.

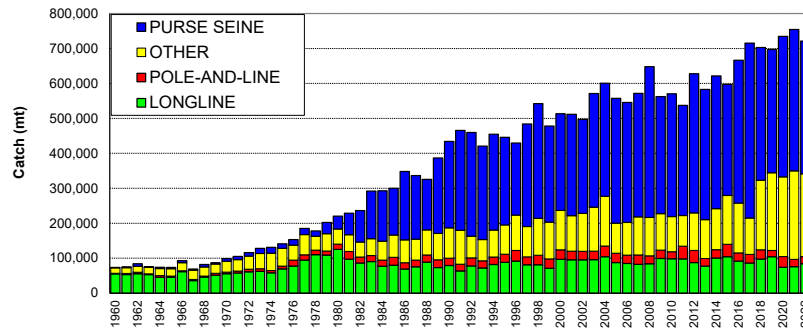


Figure 1.4. WCP-CA yellowfin catch (mt) by gear by year (1960-2022).

The 2022 yellowfin catch (721,169 mt) was a drop of around 33,000 mt on the record catch in 2021 (754,442 mt). The recent high yellowfin tuna catches are related to some extent to recent high catch levels from the “other” category (primarily small-scale fisheries in Indonesia – provisional 2022 estimate for “Other” is 233,562 mt –32% of the total catch). The WCP-CA longline catch for 2022 (84,232 mt–12%) was an increase compared to catch in recent years, but still amongst the lowest catches since 1999 and less than 20,000 mt compared to the 2019 catch in this fishery; a decrease in effort in the broad area where yellowfin are mainly targeted (due to COVID-19) no doubt contributed to the decline in recent years. Since the late 1990s, the purse seine catch of yellowfin tuna (379,715 mt in 2022–53%) has accounted for about 3-5 times the longline yellowfin tuna catch.

The pole-and-line fisheries took only 20,506 mt during 2022 (~3% of the total yellowfin catch), which was similar to the 2022 catch level, but amongst the lowest since the 1970s. Catches in the ‘other’ category are largely composed of yellowfin taken by various assorted gears (e.g. troll, ring-net, bagnet, gillnet, large-fish handline, small-fish hook-and-line and seine net) in the domestic fisheries of the Philippines and eastern Indonesia. Figure 1.11 shows the distribution of yellowfin catch by gear type for the period 1990–2022. As with skipjack, the great majority of the catch is taken in equatorial areas by large purse seine vessels, and a variety of gear types in the Indonesian and Philippine fisheries.

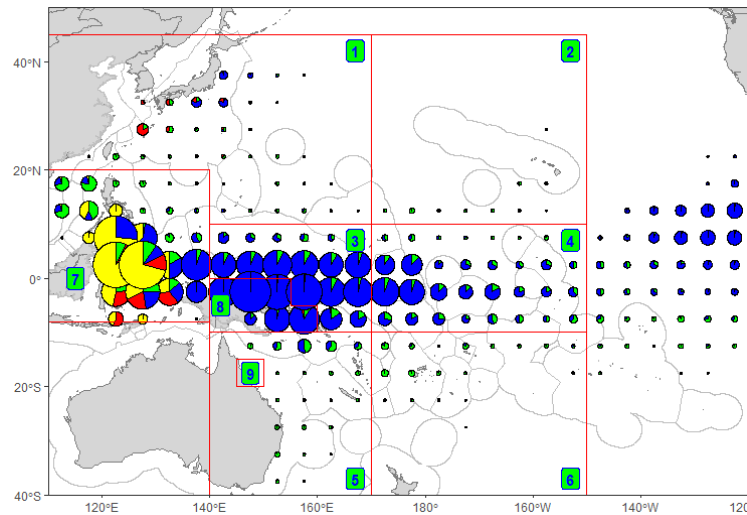


Figure 1.5. Distribution of yellowfin tuna catch in the WCP-CA, 1990–2022.

## Bigeye tuna

The provisional WCP-CA bigeye catch (140,667 mt) for 2022 (Figure 1.13) was similar to the 2021 level and around 55,000 mt lower than the record in 2004 (195,052mt). The provisional WCP-CA longline bigeye catch (54,803 mt) was similar to the 2021 catch and clearly lower than the recent ten-year average and understood to be partly due to the impacts of the COVID-19 pandemic.<sup>2</sup> The provisional WCP-CA purse seine bigeye catch for 2022 was estimated to be 62,811 mt which was at a similar level to the 2021 catch, but lower than the recent ten-year average (Figure 1.13). The WCP-CA purse seine bigeye catch has exceeded the longline catch for most of the past ten years. The purse seine and longline fisheries have accounted for an average of 89% of the total WCP-CA bigeye catch over the past ten years (Figure 1.13).

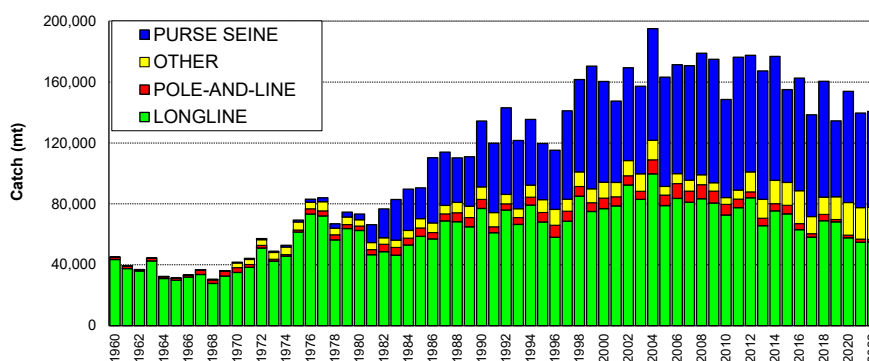


Figure 1.6. WCP-CA bigeye tuna catch (mt) by gear by year (1960-2022).

The WCP-CA pole-and-line fishery has generally accounted for between 1,000–10,000 mt (1- 6%) of bigeye catch annually over the past decade. The "other" category, representing various gears (including troll) in the Philippine, Indonesia, Vietnam and Japanese domestic fisheries, has fluctuated between an estimated 4,000–21,000 mt (3–14% of the total WCP-CA bigeye catch) over the past two decades

The majority of the WCP-CA catch is taken in equatorial areas (Figure 1.14), both by purse-seine and longline, but with some longline catch in sub-tropical areas (e.g. east of Japan and off the east coast of Australia). In the equatorial areas, much of the longline catch is taken in the central Pacific, continuous with the important traditional bigeye longline area in the eastern Pacific Ocean (EPO).

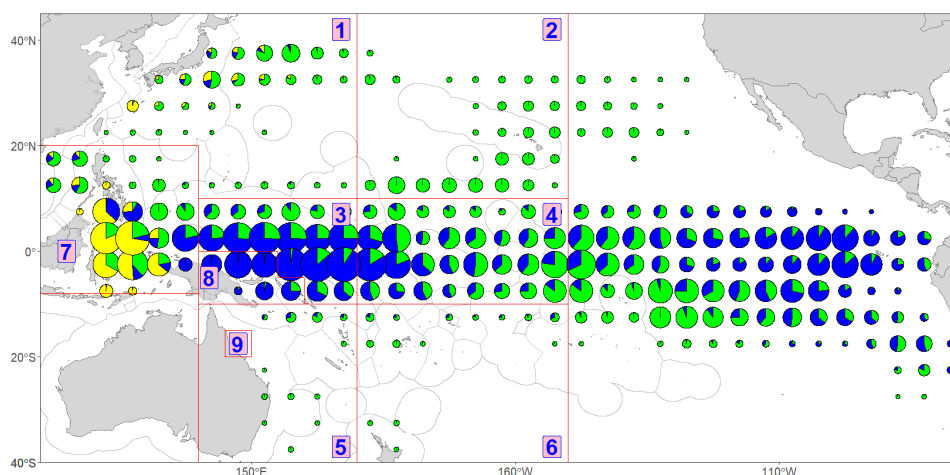


Figure 1.7. Distribution of bigeye tuna catch, 1990–2022. The nine-region spatial stratification used in stock assessment for the WCP-CA is shown.

## South Pacific albacore

Prior to 2001, SPA catches were generally in the range 25,000–50,000 mt, with a significant peak in 1989 (49,076 mt) prior to the prohibition on fishing with long driftnets in the South Pacific. Since 2001, catches have greatly exceeded this range, primarily because of the growth in several PIC domestic longline fisheries.

The provisional WCP–CA albacore catch for 2022 (104,766 mt) was an increase on the very low catch in 2021 (89,282 mt – the lowest catch since 1993) but still around 44,000 mt lower than the record (148,051 mt in 2002).

The WCP–CA albacore catch (which includes catches from fisheries in the North Pacific Ocean west of 150°W) typically contributes around 80%–90% of the Pacific catch of albacore (provisional Pacific Ocean albacore tuna catch for 2022 is 127,266 mt).<sup>3</sup>

The provisional south Pacific albacore catch in 2022 (77,912 mt), was higher than the past two years and around 16,000 mt less than the record catch taken in 2017 (94,504 mt) (Figure 1.15).

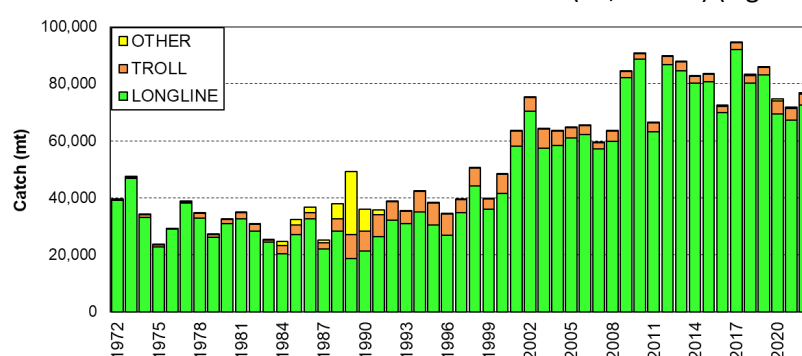


Figure 1.8. South Pacific albacore catch (mt) by gear (1972-2022). "Other" is primarily catch by the driftnet fishery.

The longline catch of albacore is distributed over a large area of the south Pacific (Figure 1.16) but concentrated in the west. The Chinese-Taipei distant-water longline fleet catch is taken in all regions, while the PIC domestic longline fleet catch is restricted to the latitudes 10°–25°S.

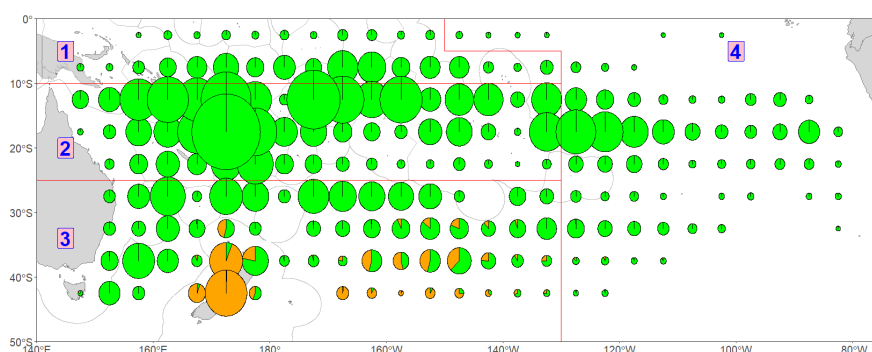


Figure 1.9. Distribution of South Pacific albacore tuna catch, 1988–2022. The four-region spatial stratification used in stock assessment is shown.

Troll catches are distributed in New Zealand's coastal waters, mainly off the South Island, and along the Sub-tropical Convergent Zone (SCTZ). Less than 20% of the overall SPA catch is usually taken east of 150°W.

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<sup>1</sup> Illustrations by Les Hata in Allain et al. Allain, V., Pilling, G.M., Williams, P.G., Harley, S., Nicol, S. and Hampton, J. 2016. Overview of tuna fisheries, stock status and management framework in the Western and Central Pacific Ocean. pp. 19-48. In: Pauwels, S. and Fache, E. (Eds). *Fisheries in the Pacific: The Challenges of Governance and Sustainability*. In *Resources, boundaries and governance: What future for fisheries in the Pacific?* Pacific-credo Publications. May 2016. 290 pages.

<sup>2</sup> As was the case for fisheries in other oceans, the impacts of the pandemic were experienced in different ways across WCPO tuna fisheries. The deployment of at-sea observers was paused for almost two years, the use of ports in Pacific Island countries was constrained in an effort to minimise transmission of the virus, crew recruitment and rotation was constrained, and supply chains and markets were impacted through disruption to transport services). See, for example, Aqorau, T. 2020. COVID-19 and its likely impact on the tuna industry in the Pacific Islands. <https://devpolicy.org/covid-19-and-its-likely-impact-on-the-tuna-industry-in-the-pacific-islands-20200427-1/>

<sup>3</sup> Includes catches of north and south Pacific albacore in the WCP–CA, which comprised 89% of the total Pacific Ocean albacore catch of 191,405 mt in 2021. The balance is harvested from the EPO.