



**Western and  
Central Pacific  
Fisheries  
Commission**

**SCIENTIFIC COMMITTEE  
TWENTIETH REGULAR SESSION**

Manila, Philippines  
14 – 21 August 2024

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**ANNUAL REPORT TO THE COMMISSION  
PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISTICS**

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**WCPFC-SC20-AR/CCM-12**

**REPUBLIC OF KOREA**

# 2024 ANNUAL REPORT TO THE COMMISSON

## Part 1. INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

### Republic of Korea

National Institute of Fisheries Science

|   |            |
|---|------------|
| <b>Scientific data was provided to the Commission in accordance with the decision relating to the provision of scientific data to the Commission by 30 April 2024</b> | <b>YES</b> |
|---|------------|

### 1. SUMMARY

Korea has two types of fishing gears, purse seine and longline, that engage in fishing for tuna and tuna-like species in the WCPFC Convention Area. These fisheries are managed by the Distant Water Fisheries Development Act of Korea. Total catch in the WCPFC convention area by the Korean fisheries in 2023 was 279,553 t, which accounted for 2% less than those of the average for recent 5 years (2019-2023) and 9.2% higher than those of 2022. The catch of purse seine fishery with 22 active vessels was 240,930 t in 2023, which was 5.8% higher than those of 2022. The catch of longline fishery with 96 active vessels in 2023 was 38,623 t, which was 36.5% greater than of 2022. Purse seine fishing efforts ranged from 6,098 to 7,525 sets during 5 recent years (2019-2023), and the number of sets in 2023 was 6,338 set. Longline fishing efforts ranged from 55,462 to 68,757 thousand hooks during 5 recent years (2019-2023), and the number of hooks in 2023 was 68,757 thousand hooks. The logsheet coverages through electronic reporting system in 2023 were 100% for both purse seine and longline fisheries, and the observer coverage for longline fishery in 2023 was 10.5% based on days at sea.

## 2. Tabular Annual Fisheries Information

Table 1(a). Annual catch and effort estimate for the Korean purse seine fishery by primary species in the WCPFC Convention Area, 2019-2023

| Year | No. of sets | Catch (t) |         |       |        |     |
|------|-------------|-----------|---------|-------|--------|-----|
|      |             | Total     | SKJ     | BET   | YFT    | OTH |
| 2019 | 7,527       | 314,572   | 279,553 | 2,767 | 32,249 | 3   |
| 2020 | 6,767       | 252,314   | 203,635 | 4,247 | 44,429 | 3   |
| 2021 | 6,098       | 230,252   | 181,739 | 3,363 | 45,150 | 0   |
| 2022 | 6,473       | 227,818   | 190,307 | 1,754 | 35,756 | 0   |
| 2023 | 6,338       | 240,930   | 193,601 | 1,607 | 45,722 | 0   |

\* Data for 2023 are preliminary.

Table 1(b). Annual catch and effort estimates for the Korean longline fishery by primary species in the WCPFC Convention Area, 2019-2023

| Year | No. of hooks ( $\times 10^3$ ) | Catch (t) |       |        |        |     |     |     |       |     |       |     |
|------|--------------------------------|-----------|-------|--------|--------|-----|-----|-----|-------|-----|-------|-----|
|      |                                | Total     | ALB   | YFT    | BET    | BFT | SKJ | BLM | BUM   | MLS | SWO   | OTH |
| 2019 | 60,437                         | 32,937    | 1,902 | 13,847 | 13,711 | 0   | 390 | 68  | 2,007 | 58  | 602   | 351 |
| 2020 | 56,374                         | 27,374    | 744   | 10,948 | 13,011 | 0   | 251 | 39  | 1,389 | 78  | 554   | 360 |
| 2021 | 55,462                         | 27,312    | 611   | 10,340 | 13,686 | 0   | 332 | 14  | 1,168 | 123 | 563   | 475 |
| 2022 | 57,119                         | 28,294    | 1,278 | 11,516 | 12,986 | 0   | 424 | 6   | 908   | 80  | 714   | 336 |
| 2023 | 68,757                         | 38,623    | 1,047 | 10,110 | 23,474 | 0   | 374 | 14  | 1,406 | 215 | 1,462 | 520 |

\* Data for 2023 are preliminary.

Table 1(c). Average annual fishing effort for 2002-2004 and annual fishing effort for subsequent years for the Korean longline fishery directed at North Pacific albacore in the North Pacific Ocean

| Area            | Fishery  | 2002-04 Average |             | 2017          |             | 2018          |             | 2019          |             |
|-----------------|----------|-----------------|-------------|---------------|-------------|---------------|-------------|---------------|-------------|
|                 |          | No. of vessel   | Vessel days | No. of vessel | Vessel days | No. of vessel | Vessel days | No. of vessel | Vessel days |
| Convention area | Longline | *               | *           | *             | *           | *             | *           | *             | *           |
| Area            | Fishery  | 2020            |             | 2021          |             | 2022          |             | 2023          |             |
|                 |          | No. of vessel   | Vessel days | No. of vessel | Vessel days | No. of vessel | Vessel days | No. of vessel | Vessel days |
| Convention area | Longline | *               | *           | *             | *           | *             | *           | *             | *           |

\* Korea does not have any vessels targeting directly North Pacific albacore in the North Pacific Ocean.

Table 1(d). Annual catch and effort of southwest striped marlin by the Korean longline fishery in the south of 15°S, 2019-2023

| Year | Catch (t) | Effort (number of fishing vessels) |
|------|-----------|------------------------------------|
| 2019 | 0         | 0                                  |
| 2020 | 0         | 0                                  |
| 2021 | 0         | 0                                  |
| 2022 | 0         | 0                                  |
| 2023 | 0         | 0                                  |

\* Korea does not have any vessels fishing for southwest striped marlin, and any southwest striped marlin catch is bycatch.

Table 1(e). Annual catch of swordfish by the Korean longline fishery in the south of 20°S, 2019-2023

| Year | CMM-flagged vessels south of 20°S |                | Chartered vessels |                | Other vessels fishing within the CCM's waters south of 20°S |           |                |
|------|-----------------------------------|----------------|-------------------|----------------|---|-----------|----------------|
|      | Catch (t)                         | Vessel numbers | Catch (t)         | Vessel numbers | Flag  | Catch (t) | Vessel numbers |
| 2019 | 0                                 | 0              | 0                 | 0              | 0   | 0         | 0              |
| 2020 | 0                                 | 0              | 0                 | 0              | 0   | 0         | 0              |
| 2021 | 0                                 | 0              | 0                 | 0              | 0   | 0         | 0              |
| 2022 | 0                                 | 0              | 0                 | 0              | 0   | 0         | 0              |
| 2023 | 0                                 | 0              | 0                 | 0              | 0   | 0         | 0              |

\* Korea does not have any vessels fishing for swordfish in the Convention Area south of 20°S, and any swordfish catch is bycatch.

Table 1(f). Annual catch and effort of south Pacific albacore by the Korean longline fishery in the south of 20°S, 2019-2023

| Year | Catch (t) | Effort (number of fishing vessels) |
|------|-----------|------------------------------------|
| 2019 | 0         | 0                                  |
| 2020 | 0         | 0                                  |
| 2021 | 0         | 0                                  |
| 2022 | 0         | 0                                  |
| 2023 | 0         | 0                                  |

\* Korea does not have any vessels fishing for south Pacific albacore in the Convention Area south of 20°S, and any south Pacific albacore catch is bycatch.

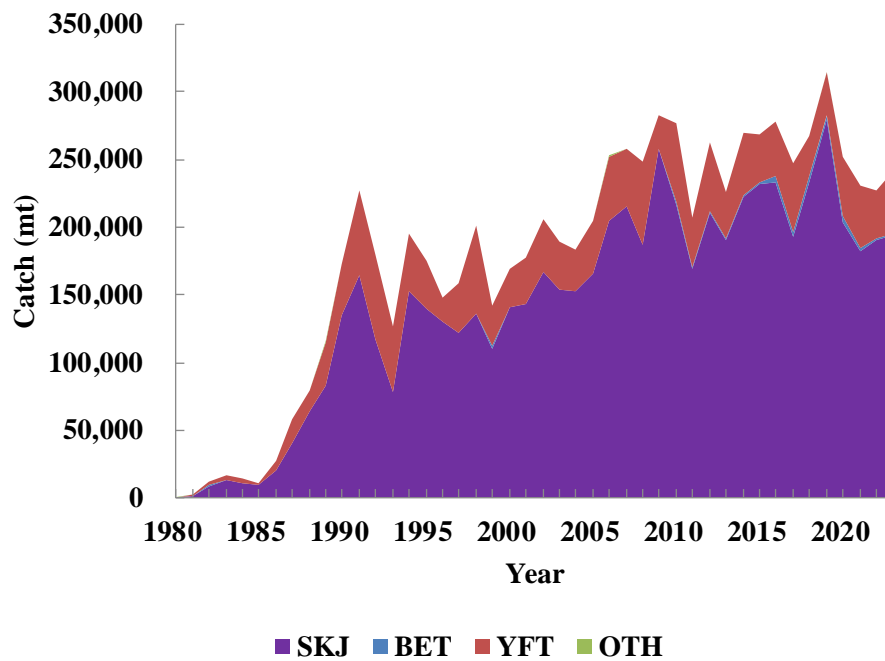


Fig. 1(a). Historical annual catch for the Korean purse seine fishery by primary species in the WCPFC Convention Area during 1980-2023.

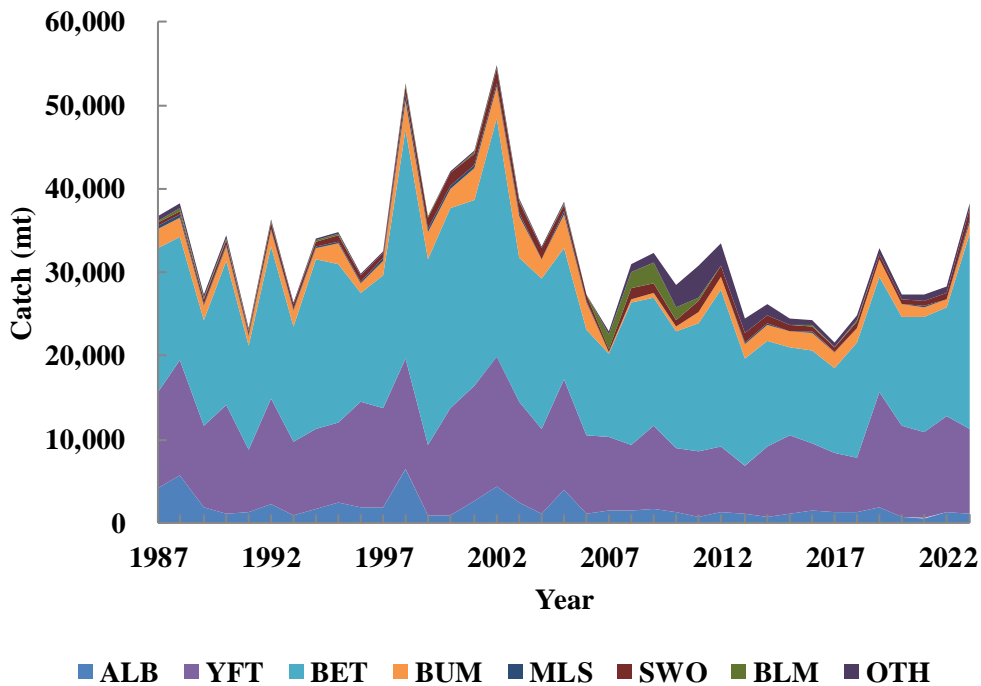


Fig. 1(b). Historical annual catch for the Korean longline fishery by primary species in the WCPFC Convention Area during 1987-2023.

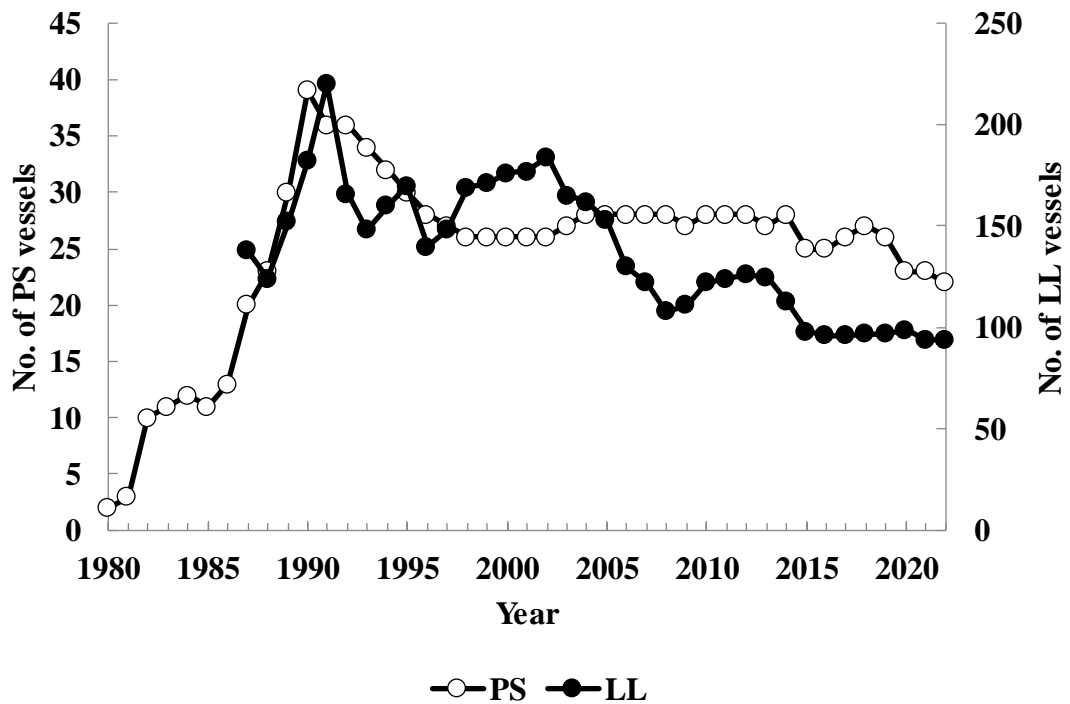


Fig. 2. Historical annual vessel numbers for the Korean tuna fisheries by gear in the WCPFC Convention Area during 1980-2023.

Table 2. Number of Korean vessels by gear and size, active in the WCPFC Convention Area, 2019-2023

| Year | GRT class by gear |      |        |         |      |             |       |           |             |        |
|------|-------------------|------|--------|---------|------|-------------|-------|-----------|-------------|--------|
|      | Longline          |      |        |         |      | Purse seine |       |           |             |        |
|      | Total             | 0-50 | 51-200 | 201-500 | 500+ | Total       | 0-500 | 501-1,000 | 1,001-1,500 | 1,500+ |
| 2019 | 97                | 0    | 1      | 96      | 0    | 26          | 0     | 5         | 15          | 6      |
| 2020 | 99                | 0    | 1      | 98      | 0    | 23          | 0     | 5         | 15          | 6      |
| 2021 | 94                | 0    | 0      | 94      | 0    | 23          | 0     | 2         | 15          | 6      |
| 2022 | 94                | 0    | 0      | 94      | 0    | 22          | 0     | 3         | 13          | 6      |
| 2023 | 96                | 0    | 1      | 95      | 0    | 22          | 0     | 2         | 8           | 12     |

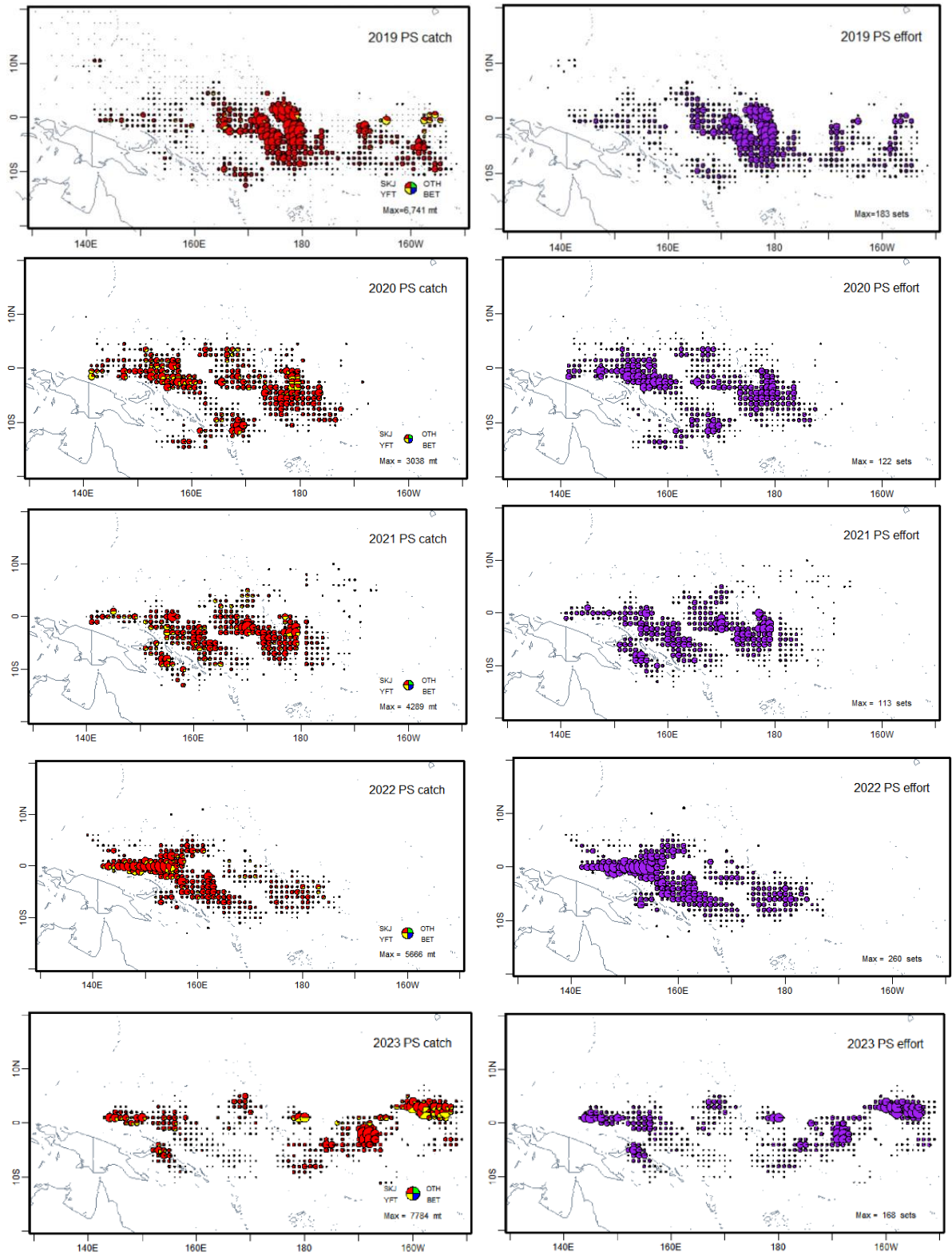


Fig. 3(a). Annual catch and effort distributions of target species by the Korean purse seine fishery in the WCPFC Convention Area, 2019-2023.

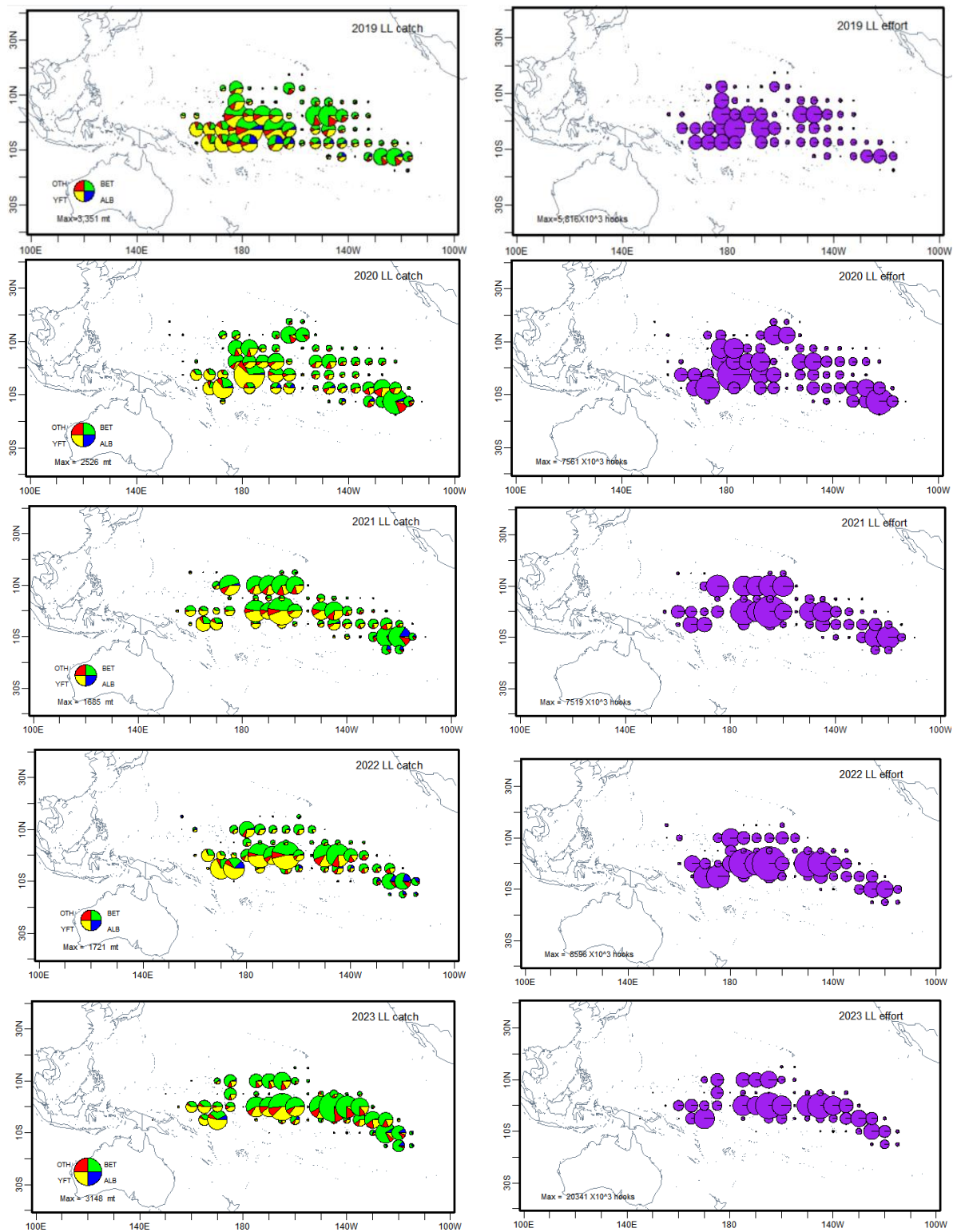


Fig. 3(b). Annual catch and effort distributions of target species by the Korean longline fishery in the Pacific Ocean, 2019-2023.



Table 3(a). Annual estimated catch or encounter of species of special interest (seabird, turtle, marine mammals, etc.) by the Korean fisheries in the WCPFC Convention Area, 2019-2023

| Fishery | Year | Number by species |                     |                     |                    |              |                      |                    |                 |                    |               |               |
|---------|------|-------------------|---------------------|---------------------|--------------------|--------------|----------------------|--------------------|-----------------|--------------------|---------------|---------------|
|         |      | Whale shark       | Leather-back turtle | Olive ridley turtle | Logger-head turtle | Green turtle | Other marine turtles | False killer whale | Hump-back whale | Pygmy killer whale | Other whales  | Sea-birds     |
| PS      | 2019 | D: 0<br>A: 33     | -                   | D: 1<br>A: 0        | D: 2<br>A: 0       | D: 0<br>A: 1 | -                    | D: 0<br>A: 12      | -               | D: 0<br>A: 7       | D: 0<br>A: 24 | -             |
|         | 2020 | D: 0<br>A: 14     | -                   | -                   | D: 0<br>A: 6       | D: 0<br>A: 1 | D: 0<br>A: 1         | D: 0<br>A: 13      | -               | -                  | D: 0<br>A: 7  | -             |
|         | 2021 | -                 | -                   | -                   | D: 0<br>A: 2       | -            | -                    | -                  | -               | -                  | -             | -             |
|         | 2022 | D: 0<br>A: 1      | -                   | -                   | -                  | D: 0<br>A: 1 | -                    | -                  | -               | -                  | -             | -             |
|         | 2023 | D: 0<br>A: 14     | -                   | -                   | D: 0<br>A: 4       | D: 0<br>A: 2 | -                    | -                  | -               | -                  | D: 0<br>A: 21 | -             |
| LL      | 2019 | -                 | D: 1,<br>A: 2       | D: 1<br>A: 0        | -                  | -            | -                    | -                  | -               | -                  | -             | D: 1<br>A: 0  |
|         | 2020 | -                 | -                   | D: 2<br>A: 0        | -                  | -            | -                    | -                  | -               | -                  | -             | D: 1<br>A: 0  |
|         | 2021 | -                 | -                   | -                   | -                  | -            | -                    | -                  | -               | -                  | -             | D: 3<br>A: 0  |
|         | 2022 | -                 | -                   | -                   | -                  | -            | D: 0<br>A: 2         | -                  | -               | -                  | -             | D: 25<br>A: 0 |
|         | 2023 | -                 | -                   | -                   | -                  | -            | D: 0<br>A: 9         | -                  | -               | -                  | -             | D: 4<br>A: 0  |

\* D and A indicate “dead” and “alive”, respectively.

Table 3(b). Effort, observed and estimated seabird captures by fishing year for Korean longline fishery in the area of 23°N - 25°S, 2019-2023

| Year | Fishing effort    |                         |                        |                  | Observed seabird captures |       |
|------|-------------------|-------------------------|------------------------|------------------|---------------------------|-------|
|      | Number of vessels | Number of hooks(X1,000) | Observed hooks(X1,000) | % hooks observed | Number                    | Rate  |
| 2019 | 96                | 60,445                  | 2,246                  | 3.7              | 1                         | 0.002 |
| 2020 | 99                | 56,374                  | 1,417                  | 2.5              | 1                         | 0.002 |
| 2021 | 94                | 55,462                  | 1,149                  | 2.1              | 3                         | 0.005 |
| 2022 | 94                | 57,119                  | 1,370                  | 2.4              | 25                        | 0.044 |
| 2023 | 96                | 68,757                  | 3,366                  | 4.9              | 4                         | 0.006 |

\* Korea does not have any vessels operating in the Convention Area north of 23 °N and in the south of 30 °S.

Table 3(c). Proportion of mitigation types used by Korean longline fishery in 2023

|   | Combination of Mitigation Measures | Proportion of observed effort using mitigation measures |           |              |               |
|---|------------------------------------|---|-----------|--------------|---------------|
|   |                                    | South of 30°S   | 25°S-30°S | 25°S to 23°N | North of 23°N |
|   | No mitigation measure              |   |           | 100          |               |
| Options required south of 25°S                            | TL+NS                              |   |           |              |               |
|   | TL+WB                              |   |           |              |               |
|   | NS+WB                              |   |           |              |               |
|   | TL+WB+NS                           |   |           |              |               |
| Other options 25°S-30°S                                   | HS                                 |   |           |              |               |
|   | WB                                 |   |           |              |               |
| Other options north of 23°N                               | TL                                 |   |           |              |               |
|   | SS/BC/WB/DLSL                      |   |           |              |               |
| Provide any other combination of mitigation measures here | SS/BC/WB/(MOD or BDB)              |   |           |              |               |
|   | MOD                                |   |           |              |               |
|   | Totals                             |   |           | 100          |               |

TL= tori line, NS= night setting, WB= weighted branch lines, SS= side setting, BC= bird curtain, BDB= blue dyed bait, DLSL= deep setting line shooter, MOD= management of offal discharge, HS= hook-shielding device.

\* This data comes from scientific observer data.

Table 3(d). Number of observed seabirds captured in Korean longline fisheries, 2023, by species and area

| Species          | South of 30°S | 25°S-30°S | North of 23°N | 23°N-25°S | Total |
|------------------|---------------|-----------|---------------|-----------|-------|
| Masked booby     | -             | -         | -             | 3         | 3     |
| Brown booby      | -             | -         | -             | 1         | 1     |
| Red-footed booby | -             | -         | -             | 1         | 1     |
| Total            | -             | -         | -             | 5         | 5     |

\* This data comes from scientific observer data.

Table 4(a). Annual estimates of retained and discarded catch of key sharks by the Korean longline fishery in the WPCFC Convention Area, 2019-2023

| Year | Retained catch (mt) by key shark species |                 |                   |             |             |                        |        |
|------|--|-----------------|-------------------|-------------|-------------|------------------------|--------|
|      | Blue shark                               | Thresher sharks | Hammerhead Sharks | Mako sharks | Silky shark | Oceanic whitetip shark | Others |
| 2019 | 5  | <1              | <1                | <1          | 0           | 0                      | 11     |
| 2020 | 0  | <1              | <1                | <1          | 0           | 0                      | 14     |
| 2021 | 5  | 0               | 0                 | 0           | 0           | 0                      | <1     |
| 2022 | 0  | 0               | 0                 | 0           | 0           | 0                      | 0      |
| 2023 | 0  | 0               | 0                 | 0           | 0           | 0                      | 0      |

\* No shark species has been retained by the Korean purse seine fishery.

| Fishery     | Year | Discard catch (number) by key shark species |                 |                   |             |        |
|-------------|------|---|-----------------|-------------------|-------------|--------|
|             |      | Blue shark                                  | Thresher sharks | Hammerhead sharks | Mako sharks | Others |
| Purse seine | 2019 | 0   | 1               | 1                 | 0           | 50     |
|             | 2020 | 0   | 1               | 1                 | 0           | 102    |
|             | 2021 | 0   | 0               | 0                 | 0           | 40     |
|             | 2022 | 0   | 0               | 0                 | 0           | 791    |
|             | 2023 | 1   | 5               | 0                 | 0           | 7      |
| Longline    | 2019 | 2,640                                       | 1,063           | 6                 | 183         | 2,479  |
|             | 2020 | 1,688                                       | 728             | 3                 | 41          | 1,651  |
|             | 2021 | 2,925                                       | 284             | 0                 | 22          | 3,369  |
|             | 2022 | 1,026                                       | 64              | 0                 | 8           | 887    |
|             | 2023 | 3,484                                       | 514             | 1                 | 130         | 615    |

\* These data include all of status of “dead” and “alive”.

\*\* See Table 4(b) for oceanic whitetip shark and silky shark.

Table 4(b). Annual number of releases of oceanic whitetip shark and silky shark by the Korean fisheries in the WPCFC Convention Area, 2019-2023

| Fishery     | Year | Number of releases     |                  |
|-------------|------|------------------------|------------------|
|             |      | Oceanic whitetip shark | Silky shark      |
| Purse seine | 2019 | D: 5, A: 1             | D: 1,675, A: 767 |
|             | 2020 | D: 21, A: 0            | D: 1,845, A: 304 |
|             | 2021 | D: 0, A: 0             | D: 170, A: 76    |
|             | 2022 | D: 3, A: 0             | D: 466, A: 322   |
|             | 2023 | D: 2, A: 3             | D: 569, A: 381   |
| Longline    | 2019 | D: 32, A: 45           | D: 733, A: 370   |
|             | 2020 | D: 13, A: 9            | D: 106, A: 194   |
|             | 2021 | D: 2, A: 18            | D: 28, A: 113    |
|             | 2022 | D: 47, A: 102          | D: 227, A: 240   |
|             | 2023 | D: 20, A: 31           | D: 1, A: 46      |

\* D and A indicate “dead” and “alive”, respectively.

Table 5. Estimated annual coverage of operational catch/effort and observer data for the Korean fisheries by gear, active in the WCPFC Convention Area, 2019-2023

| Year | Gear        | Logsheet coverage (%) | Observer coverage (%) |
|------|-------------|-----------------------|-----------------------|
| 2019 | Purse seine | 100                   | 100                   |
|      | Longline    | 100                   | 7.1                   |
| 2020 | Purse seine | 100                   | *                     |
|      | Longline    | 100                   | 3.8                   |
| 2021 | Purse seine | 100                   | *                     |
|      | Longline    | 100                   | 2.0                   |
| 2022 | Purse seine | 100                   | 100                   |
|      | Longline    | 100                   | 4.9                   |
| 2023 | Purse seine | 100                   | 100                   |
|      | Longline    | 100                   | 10.5                  |

\* WCPFC Commission agreed to suspend the requirements for observer coverage on purse seine vessels and at-sea transshipment due to COVID-19 pandemic.

\* 2023 observer coverage for Korean longline fishery

| Fishery  | No. of Hooks    |          |   | Days Fished     |          |   | Days at Sea     |          |      | No. of Trips    |          |   |
|----------|-----------------|----------|---|-----------------|----------|---|-----------------|----------|------|-----------------|----------|---|
|          | Total Estimated | Observed | % | Total Estimated | Observed | % | Total Estimated | Observed | %    | Total Estimated | Observed | % |
| Longline |                 |          |   |                 |          |   | 23,044          | 2,431    | 10.5 |                 |          |   |

Table 6. Information on the transshipment of Korean fleets in 2023

(1) Amount (kg) of transshipped fish

| a);                    | b) transshipped in port, transshipped at sea in areas of national jurisdiction, and transshipped beyond areas of national jurisdiction |   |  | c) transshipped inside the Convention Area and transshipped outside the Convention Area |  | d) caught inside the Convention Area and caught outside the Convention Area |                                    |     |     |           |         |
|------------------------|--|---|--|---|--|---|------------------------------------|-----|-----|-----------|---------|
| offloaded and received | Transshipped in port   | Transshipped at sea in areas of national jurisdiction | Transshipped beyond areas of national jurisdiction | Transshipped inside the Convention Area   | Transshipped outside the Convention Area | Caught inside the Convention Area   | Caught outside the Convention Area |     |     |           |         |
| Offloaded              | -  | -   | 17,275,153   | 17,115,140  | 160,013                                  | 13,584,503  | 3,690,650                          |     |     |           |         |
|                        | 233,333,810  | -   | -  | 233,333,810   | -  | 233,333,810   | -                                  |     |     |           |         |
| Received               | 292,095,209  | 5,972,000   | 22,341,366   | 319,322,281   | 1,086,294                                | 315,515,580   | 4,892,995                          |     |     |           |         |
| e) Species             |  |   |  |   |  |   |                                    |     |     |           |         |
| BET                    | YFT  | SKJ   | ALB  | BUM   | SWO                                      | MLS   | WHM                                | WHH | OSH | Shark fin | OTH     |
| 10,601,411             | 4,330,025  | 205,102   | 567,103  | 516,585   | 649,625                                  | 77,389  | -                                  | -   | -   | -         | 327,913 |
| 1,735,140              | 46,169,090   | 185,429,260   | 200  | -   | -  | -   | -                                  | -   | -   | -         | 120     |
| 15,128,509             | 81,318,455   | 68,400  | 1,355,565  | 604,241   | 605,902                                  | 220,251,301   | 364,471                            | -   | -   | -         | 711,731 |
| f) Product Form        |  |   |  | g) Fishing gear   |  |   |                                    |     |     |           |         |
| GG(GG+GGT)             | Dress(HGT+DWT)   | Round   | Others   |   |  |   |                                    |     |     |           |         |
| 15,010,088             | 1,516,095  | 691,821   | 57,149   | Longline  |  |   |                                    |     |     |           |         |
| 767,000                | 2,659,000  | 229,874,810   | 33,000   | Purse seine   |  |   |                                    |     |     |           |         |
| 17,363,551             | 2,405,323  | 300,181,551   | 458,150  | Carrier Vessel  |  |   |                                    |     |     |           |         |

(2) Number of transshipments

| a) offloaded and received; | b) transshipped in port, transshipped at sea in areas of national jurisdiction, and transshipped beyond areas of national jurisdiction |   |  | c) transshipped inside the Convention Area and transshipped outside the Convention Area |  | d) caught inside the Convention Area and caught outside the Convention Area |                                    | e) Fishing gear |
|----------------------------|--|---|--|---|--|---|------------------------------------|-----------------|
|                            | Transshipped in port   | Transshipped at sea in areas of national jurisdiction | Transshipped beyond areas of national jurisdiction | Transshipped inside the Convention Area   | Transshipped outside the Convention Area | Caught inside the Convention Area   | Caught outside the Convention Area |                 |
| Offloaded                  | -  | -   | 124  | 123   | 1  | 96  | 108                                | Longline        |
|                            | 236  | -   | -  | 236   | -  | 236   | -                                  | Purse seine     |
| Received                   | 457  | 7   | 200  | 655   | 9  | 646   | 18                                 | Carrier Vessel  |

### **3. Background**

The Korean distant water tuna longline fishery (herein “Korean tuna longline fishery”) that stepped up the first fishing in the Indian Ocean in 1957, has explored the Pacific Ocean since 1958 and the Atlantic Ocean since 1967. The high seas and the waters within coastal states in the South Pacific Ocean have been the main fishing grounds for Korean longline fishery. There was a change in the longline fishing operation types. Longline vessels used foreign ports for fishing base near the fishing grounds from the beginning but they have gradually equipped with deep freezing facilities and used home ports for fishing base since 1972. All longline vessels have based domestic ports since 1999.

The Korean distant water tuna purse seine fishery (herein “Korean tuna purse seine fishery”) was initiated by accessing into the Eastern Pacific fishing ground with 3 vessels in 1980. Helicopter-aided mass operations were introduced in 1980 or the first time, and the number of active vessels was the highest of 39 in 1990, but has decreased to 23-27 in recent years. Most of the catches are supplied to the packers for domestic consumption and are exported to foreign canneries.

These fisheries are managed by the Distant Water Fisheries Development Act put into effect on the 4 February, 2008, and the Act has been amended several times according to RFMOs’ CMM amendments. The electronic reporting (ER) system has been implemented since 1 September, 2015.

### **4. Flag State Reporting**

#### **4.1. Annual catch and effort**

Annual catch and effort for Korean tuna fisheries by gear and primary species are shown in Table 1 and Fig. 1. The average of total catch in the western and central Pacific Ocean (WCPO) by Korean tuna fisheries was 284,085 t in recent 5 years (2019-2023). Total catch in 2023 was 279,553 t, which accounted for 2% less than those of the average for 5 recent years.

The average catch of purse seine fishery was 253,177 t during 5 recent years (2019-2023). The purse seine catches in 2023 was 240,930 t with 22 active vessels, which was 9.2% higher than those of the average for 5 recent years (2019-2023). Purse seine fishing efforts ranged from 6,098 to 7,525 sets during 5 recent years (2019-2023), and the number of sets in 2023 was 6,338 set.

The average catch of longline fishery was 30,908 t during recent 5 years (2019-2023). The catch of longline fishery with 96 active vessels in 2023 was 38,623 t, which was 36.5% greater than of 2022. Catches of bigeye and yellowfin caught by longline in 2023, which are target species by the Korean tuna longline fishery, were 23,474 t and 10,110 t, respectively. Longline fishing efforts ranged from 55,462 to 68,757 thousand hooks during 5 recent years (2019-2023), and the number of hooks in 2023 was 68,757 thousand hooks.

Catches and efforts of north Pacific albacore, southwest striped marlin, south swordfish and south Pacific albacore in 2023 are shown in Table 1(c, d, e, f).

#### **4.2. Fleet structure**

The number of active vessels by gear and size is represented in Fig. 2 and Table 2. The number of purse seine vessels, once peaked at 39 in 1990, reduced to 28 in 1996, and after that decreased to 23 up to now. In 2023, the number of fishing vessels was 22, of which 2 vessels were of 501-1,000 class, 8 vessels of 1,001-1,500 class and 12 vessels of over 1,500 class. The number of longline vessels reduced from 220 in 1991 to 108 in 2008, and slightly increased and ranged from 111 to 126 thereafter. Since 2015 it has decreased to less than 100. In 2023, the number of active vessels was 1 vessels of 51-200 class and 95 of 201-500 GRT class.

#### **4.3. Fishing patterns**

The distributions of catch and effort of target species by gear are shown in Fig. 3. Korean tuna purse seine fishery has generally been operating throughout the year in the tropical area of the WCPO between 140°E-170°W and from time to time extended to the east subject to oceanographic conditions. Purse seine fishing efforts in 2018 mainly operated in the western and central areas. In 2019, the efforts extended further eastward to 150°W. The fishing efforts of purse seine fleets from 2020 to 2022 were relatively concentrated in the western Pacific side such as, east of 165°E, but the fishing effort from 2023 extended towards the EPO.

Longline fishery efforts were normally higher in the central and eastern Pacific Ocean. The fishing efforts in 2019 and 2020 they were more concentrated on the central tropical area 170°E-160°W of 15°N-15°S compared to the previous years. In recent years, their fishing efforts were more concentrated on the central tropical area, which was the same as previous years, and the eastern part of 115 °E-130 °E in the southern tropical area. In 2023, the fishing effort extended towards the EPO.

#### **4.4. Annual estimated catches of species of special interest**

The species of special interest (seabirds, turtles, marine mammals, etc.) encountered or bycaught incidentally by Korean purse seine and longline fisheries are presented in Table 3. The data were compiled from logsheet recorded by captain on board and collected by scientific observer programs. In 2023, 4 loggerhead turtles and 2 green turtles were encircled by purse seine nets, and 4 seabirds and 9 turtles were bycaught by longline fishery, respectively. All these species were encountered with purse seine nets or bycaught incidentally by longline, and they were released promptly under the guideline for safety release of each species. All Korean fishing vessels operated in the areas between 20°N and 20°S (Fig. 3), and the observed seabird capture rate were 0.005, 0.044 and 0.006 in 2021, 2022 and 2023, respectively (Table 3(b)). There was no mitigation measure used by Korean longline fishery in 2023 (Table 3(c)). 5 seabirds were encountered by longline fishery, i.e., 3 masked booby, 1 brown booby, and 1 red-footed booby (Table 3(d)).

#### **4.5. Annual estimated catches of non-target, associated and dependent**

The shark species caught by longline fishery are presented in Table 4(a). These data were compiled from logsheet recorded by captain onboard. As key shark species, the catches in 2023 were 0 t. In accordance with CMM 2011-04 and 2013-08, the number of releases of oceanic

whitetip shark and silky shark are presented in Table 4(b). All these species bycaught were released promptly in a manner that results in as little harm to individual as possible.

#### **4.6. Estimated annual coverage of catch and effort and observer data**

Estimated annual coverages of logsheet (catch and effort data) and observer data are shown in Table 5. The coverage of logsheet data has been 100% for both purse seine and longline fisheries since 2013. The observer coverage for longline fishery in 2023 was 10.5% based on days at sea.

### **5. Coastal State Reporting**

N/A

### **6. Onshore developments**

Korea consistently promotes investment plans on land facility in the coastal states where its distant waters fleets are operating.

### **7. Future Prospects of the fishery**

The fleet power of purse seine and longline is expected to keep the current level, and production seems to be affected by fisheries resources trend in the oceans, conservation and management measures of RFMOs and permission policy of the coastal states. Meanwhile recognizing that demand at international and domestic market is increasing on production caught from responsible and sustainable fishing activity, Korea strives to strengthen on MCS, scientific survey and education relating to bycatch for fishermen.

### **8. Status of tuna fishery data collection systems**

#### **8.1. Logsheet data collection and verification**

Catch statistics of Korean distant water fisheries are obtained from two sources of data reporting. The Korea Overseas Fisheries Association (KOFA) collects monthly catch by gear and species from the Korean tuna industries, and the National Institute of Fisheries Science (NIFS) collects operational effort and catch data through the Electronic Reporting (ER) system. In accordance with data reporting and submission requirement by the RFMOs, necessary improvements have been continuously made in data coverage, accuracy and verification through cross-checking between NIFS and KOFA. Since 1<sup>st</sup> September 2015, the Act on Fisheries Information and Data Reporting has obliged fishers of distant-water fisheries to report fishing information to the NIFS in real time through the Electronic Reporting (ER) system.



This system continuously be reviewed and updated to include data reporting and collection requirements recently adopted by tuna RFMOs regarding ecologically important species, discard/release and bycatch mitigation, etc. The coverage of data reporting by the ER is 100%.

### **8.2. Observer programme**

The scientific observer program of distant-water fisheries of Korea was started in 2002. The National Institute of Fisheries Science (NIFS) and Korean Fisheries Resources Agency (FIRA) are responsible for implementing and developing the program. The basic requirement for observers is college graduated with the major field of nature science or fisheries high school graduated with at least 1-year experience on board and certificate of qualification to deck officer. Candidates for observer who have passed the paper review (including medical check) and oral interview have to take training programs for 3 weeks. Observer training programs include basic safety training for seafaring, operations of navigation devices, biological information training for target and non-target species and data collecting/reporting method for fishing activities. During the training program they have two kinds of test. First is the test for a technical term of fisheries and biology, and the other is the test for species identification. The person who scored 70% overall in the two tests and attended 100% of the course timetable can be qualified for a scientific observer and deployed on board. Korea has a total of 61 scientific observers at present.

### **8.3. Port sampling programme**

In Korea, there are 4 domestic landing ports for tunas caught in WCPO, which are Busan, Masan, Tongyeong and Mokpo, all located along the southern coast of Korea, nearby the landing port, there are 5 canneries owned by 4 companies in which about 100,000 tons of tunas from WCPO are landing.

The National Institute of Fisheries Science (NIFS) used to conduct biological sampling in the domestic cannery from 1997 to 2006. A preliminary study for species identification from the catch of purse seine was conducted in a cannery of Korea in 2011 and the result was provided to the WCPFC SC7 (ST-IP-09).

### **8.4. Unloading/Transshipment**

In accordance with Article 13 of the Distant Water Fisheries Development Act, all distant water fishermen shall comply with procedures and regulations established by Regional Fisheries Management Organizations. Therefore, all transshipments by Korean vessels fishing all high migratory fish stocks covered by the WCPFC Convention take place in accordance with WCPFC CMM 2009-06. Also, vessel operators are encouraged to assist the WCPFC ROP observers in having full access to both the unloading and the receiving vessels to verify that the transhipped quantities of fish are consistent with other information available to observers. After the completion of transshipment, the transshipment declaration is subject to verification against fishing vessel's monthly catch report, logsheets and observer reports (if available). The information on the transshipment of Korean fleets in 2023 is summarized in Table 6.

## **9. Research activities covering target and non-target species**

Korea carried out a sea trial to mitigate bycatch of seabird in the Korean tuna longline fisheries with BirdLife International, 2013-2016, and conducted a project in the Indian Ocean for developing FAD to the extent possible minimize the capture of small bigeye and yellowfin and to reduce the entanglement of bycatch, 2016-2018.