# Japanese annual catches of pelagic sharks in two subareas between 1964 and 1993

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**Abstract**

In response to a request from the 17th session of the IOTC WPEB (DP), Japanese annual catches of three pelagic sharks (blue shark, shortfin mako, and porbeagle) and other sharks caught in the IOTC area between 1964 and 1993 were updated by splitting the annual catch data into Eastern and Western Indian Ocean.

**Key words**

Japanese annual catch; pelagic sharks; the IOTC capture statistics

## Introduction

At the meeting of 17th working party on ecosystem and bycatch (IOTC, 2021), the author updated Japanese annual catches of three pelagic sharks (blue shark *Prionace glauca*; shortfin mako *Isurus oxyrinchus*; porbeagle *Lamna nasus*) and other sharks in the IOTC area between 1964 and 1993 (**Table 1**) using the FAO capture statistics and species composition of the main pelagic sharks calculated from Japanese observer data after 1993. However, the species-specific annual catch data provided was not separated into two Indian Ocean sub-area (Eastern and Western), as required by IOTC Resolution 15/02, to allow its incorporation in the IOTC database. Therefore, the WPEB 17(DP) requested to Japan to provide the species-specific annual catch data in the Eastern and Western Indian Ocean (80 °E based) (http://www.fao.org/figis/geoserver/factsheets/rfbs.html).

The objective of this working paper is to update the Japanese annual catches of the main pelagic sharks caught in the IOTC area between 1964 and 1993 through splitting the data into two sub-areas.

## Material and Method

To split Japanese annual catches of the main pelagic sharks between 1964 and 1993 into two sub-areas, the author used a proportion of Japanese annual catches for sharks (sharks, rays, skates, etc.) in the Eastern and Western Indian Ocean (**Table A1**) in the FAO capture statistic

(http://www.fao.org/fishery/geoinfo/en).

**Results and discussions**

The author updated the Japanese annual catch of the three pelagic sharks and other sharks caught in the IOTC area between 1964 and 1993 by splitting the data into Eastern and Western Indian Ocean based on the proportions of annual catch at each sub-area in the IOTC capture statistics between 1964 and 1993. Adding the area to the annual catch data as new information is useful for the future stock assessment for the main pelagic sharks. However, since Japan has no species-specific data for sharks prior to 1994, the species compositions of main pelagic sharks were calculated from Japanese observer data after 1993 (Kai, 2021), and then species-specific annual catches for main pelagic sharks were estimated. It is therefore necessary to be cautious about the uncertainty in the estimation for the use of this data in the stock assessment.

**Conclusions**

Japan would like to request that IOTC secretariat should replace the Japanese annual catches of three pelagic sharks (blue shark, shortfin mako, and porbeagle) between 1964 to 1993 with the catch data updated in this paper, as the official IOTC capture statistics.

**References**

IOTC, 2021. Report of the 17th Session of the IOTC working party on ecosystems and bycatch. Accessed by https://www.iotc.org/documents/WPEB/1701/RE

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**Table 1**. Species specific annual catches of main pelagic sharks from 1964 to 1993 estimated from the species composition of the main pelagic sharks after 1993 in the IOTC area (Table 2 in IOTC-2021-WPEB17DP-05).

| Year | Blue shark | Porbeagle | Shortfin mako | Other sharks | Total (t) |
|---|---|---|---|---|---|
| 1964 | 2,956 | 435 | 96 | 612 | 4,100 |
| 1965 | 1,808 | 266 | 61 | 364 | 2,500 |
| 1966 | 1,924 | 285 | 53 | 437 | 2,700 |
| 1967 | 3,101 | 456 | 101 | 641 | 4,300 |
| 1968 | 2,151 | 318 | 65 | 467 | 3,000 |
| 1969 | 2,435 | 360 | 72 | 533 | 3,400 |
| 1970 | 1,223 | 180 | 39 | 258 | 1,700 |
| 1971 | 1,298 | 191 | 43 | 268 | 1,800 |
| 1972 | 1,136 | 169 | 30 | 265 | 1,600 |
| 1973 | 504 | 74 | 16 | 105 | 700 |
| 1974 | 852 | 126 | 26 | 185 | 1,188 |
| 1975 | 751 | 110 | 26 | 147 | 1,035 |
| 1976 | 277 | 41 | 10 | 52 | 380 |
| 1977 | 236 | 34 | 10 | 41 | 321 |
| 1978 | 333 | 49 | 11 | 68 | 461 |
| 1979 | 503 | 73 | 22 | 80 | 678 |
| 1980 | 448 | 65 | 18 | 79 | 610 |
| 1981 | 692 | 100 | 31 | 110 | 933 |
| 1982 | 390 | 57 | 16 | 67 | 530 |
| 1983 | 547 | 80 | 21 | 99 | 747 |
| 1984 | 595 | 87 | 22 | 112 | 816 |
| 1985 | 924 | 134 | 39 | 156 | 1,253 |
| 1986 | 788 | 114 | 33 | 134 | 1,069 |
| 1987 | 591 | 87 | 18 | 129 | 825 |
| 1988 | 467 | 68 | 17 | 90 | 643 |
| 1989 | 484 | 70 | 20 | 85 | 658 |
| 1990 | 267 | 39 | 10 | 51 | 367 |
| 1991 | 508 | 74 | 23 | 81 | 685 |
| 1992 | 347 | 51 | 10 | 77 | 485 |
| 1993 | 320 | 47 | 12 | 61 | 440 |

**Table 2**. Species specific annual catches of main pelagic sharks from 1964 to 1993 in the Eastern and Western IOTC areas.

| | Eastern | | | | Western | | | |
|---|---|---|---|---|---|---|---|---|
| Year | Blue shark | Porbeagle | Shortfin mako | Other sharks | Blue shark | Porbeagle | Shortfin mako | Other sharks |
| 1964 | 1,298 | 191 | 42 | 269 | 1,658 | 244 | 54 | 343 |
| 1965 | 868 | 128 | 29 | 175 | 940 | 138 | 32 | 190 |
| 1966 | 570 | 85 | 16 | 129 | 1,354 | 201 | 38 | 307 |
| 1967 | 1,370 | 202 | 45 | 283 | 1,731 | 255 | 57 | 358 |
| 1968 | 789 | 117 | 24 | 171 | 1,362 | 201 | 41 | 296 |
| 1969 | 859 | 127 | 26 | 188 | 1,575 | 233 | 47 | 345 |
| 1970 | 504 | 74 | 16 | 106 | 719 | 106 | 23 | 152 |
| 1971 | 577 | 85 | 19 | 119 | 721 | 106 | 24 | 149 |
| 1972 | 284 | 42 | 7 | 66 | 852 | 127 | 22 | 199 |
| 1973 | 216 | 32 | 7 | 45 | 288 | 42 | 9 | 60 |
| 1974 | 311 | 46 | 9 | 68 | 540 | 80 | 16 | 117 |
| 1975 | 390 | 57 | 14 | 77 | 361 | 53 | 13 | 71 |
| 1976 | 166 | 24 | 6 | 31 | 112 | 16 | 4 | 21 |
| 1977 | 160 | 23 | 6 | 28 | 76 | 11 | 3 | 13 |
| 1978 | 152 | 22 | 5 | 31 | 181 | 27 | 6 | 37 |
| 1979 | 405 | 59 | 18 | 64 | 98 | 14 | 4 | 16 |
| 1980 | 301 | 44 | 12 | 53 | 147 | 21 | 6 | 26 |
| 1981 | 557 | 80 | 25 | 88 | 136 | 20 | 6 | 22 |
| 1982 | 272 | 39 | 11 | 47 | 118 | 17 | 5 | 20 |
| 1983 | 349 | 51 | 14 | 63 | 198 | 29 | 8 | 36 |
| 1984 | 344 | 50 | 13 | 65 | 251 | 37 | 9 | 47 |
| 1985 | 666 | 97 | 28 | 113 | 258 | 37 | 11 | 44 |
| 1986 | 567 | 82 | 24 | 96 | 221 | 32 | 9 | 37 |
| 1987 | 213 | 31 | 6 | 46 | 378 | 56 | 11 | 82 |
| 1988 | 252 | 37 | 9 | 49 | 215 | 32 | 8 | 42 |
| 1989 | 328 | 48 | 13 | 57 | 156 | 23 | 6 | 27 |
| 1990 | 146 | 21 | 5 | 28 | 121 | 18 | 4 | 23 |
| 1991 | 408 | 59 | 18 | 65 | 100 | 14 | 4 | 16 |
| 1992 | 117 | 17 | 3 | 26 | 230 | 34 | 7 | 51 |
| 1993 | 178 | 26 | 6 | 34 | 143 | 21 | 5 | 27 |

**Table A1.** Proportion of Japanese annual catches for sharks (sharks, rays, skates, etc.) in the Eastern and Western IOTC areas from 1964 to 1993 in the FAO capture statistic.

| Year | Eastern | Western |
|---|---|---|
| 1964 | 0.439 | 0.561 |
| 1965 | 0.480 | 0.520 |
| 1966 | 0.296 | 0.704 |
| 1967 | 0.442 | 0.558 |
| 1968 | 0.367 | 0.633 |
| 1969 | 0.353 | 0.647 |
| 1970 | 0.412 | 0.588 |
| 1971 | 0.444 | 0.556 |
| 1972 | 0.250 | 0.750 |
| 1973 | 0.429 | 0.571 |
| 1974 | 0.365 | 0.635 |
| 1975 | 0.520 | 0.480 |
| 1976 | 0.597 | 0.403 |
| 1977 | 0.679 | 0.321 |
| 1978 | 0.456 | 0.544 |
| 1979 | 0.805 | 0.195 |
| 1980 | 0.672 | 0.328 |
| 1981 | 0.804 | 0.196 |
| 1982 | 0.696 | 0.304 |
| 1983 | 0.639 | 0.361 |
| 1984 | 0.578 | 0.422 |
| 1985 | 0.721 | 0.279 |
| 1986 | 0.719 | 0.281 |
| 1987 | 0.360 | 0.640 |
| 1988 | 0.540 | 0.460 |
| 1989 | 0.678 | 0.322 |
| 1990 | 0.548 | 0.452 |
| 1991 | 0.803 | 0.197 |
| 1992 | 0.338 | 0.662 |
| 1993 | 0.555 | 0.445 |