

Malaysia National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2022

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INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

| | |
|---|---|
| <p>In accordance with IOTC Resolution 15/02, final scientific data for the previous year was provided to the IOTC Secretariat by 30 June of the current year, for all fleets other than longline [e.g. for a National Report submitted to the IOTC Secretariat in 2022, final data for the 2021 calendar year must be provided to the Secretariat by 30 June 2022)</p> | <p>YES 30/06/2022 Revised report sent on 01/11/2022</p> |
| <p>In accordance with IOTC Resolution 15/02, provisional longline data for the previous year was provided to the IOTC Secretariat by 30 June of the current year [e.g. for a National Report submitted to the IOTC Secretariat in 2022, preliminary data for the 2021 calendar year was provided to the IOTC Secretariat by 30 June 2022). REMINDER: Final longline data for the previous year is due to the IOTC Secretariat by 30 Dec of the current year [e.g. for a National Report submitted to the IOTC Secretariat in 2022, final data for the 2021 calendar year must be provided to the Secretariat by 30 December 2022).</p> | <p>YES 30/06/2022</p> |
| <p>If no, please indicate the reason(s) and intended actions:</p> | |



Executive Summary

Total catch of marine fish from Malaysian waters in 2021 were 1.328 million mt, a slight decreased 3.99% compared to 1.383 million in 2020. The total landing in 2021 were attributed to the catch from 48,493 registered vessels with trawlers, purse seines, drift nets contributed large percentage of the catches. In 2021, marine fish production from the west coast of Peninsular Malaysia (Malacca Straits) contributed 747,063 mt (56.25%) out of the total catch.

Neritic tuna contributes 51,014 mt (3.84%) of Malaysia's marine fish landings in 2021. Purse seiners are the main fishing gears in neritic tuna fisheries, especially the 40-69.9 GRT (Zon C) and >70 GRT (Zon C2) vessel size, with longtail tuna dominated the landings followed by kawakawa and frigate tuna. In 2021, neritic tuna landings in west coast Peninsular Malaysia amounted to 9,974 mt; decreasing by 21.09% compared to 12,633 mt in 2020. Meanwhile landings of neritic tuna in Malaysia ranged from 51,000 mt to 80,000 mt (2016-2021). The highest catch was recorded in 2019 with 87,400 mt. Landings of neritic tuna in Malaysia appear to have stabilized from 2016 to 2021.

The catch of oceanic tuna from the Indian Ocean decreased 19.7% from 2446.73 mt in 2020 to 1,965.9 mt in 2021. Albacore landings declined from 1,821.4 mt in 2020 to 1271.2 mt in 2021. Albacore tuna formed nearly 75% of the total catches in the form of whole frozen tuna meanwhile, Yellowfin contributed 15.3% and Bigeye 10.25% of total catches in frozen and gutted forms.

Malaysia have updated the national logbook to include all the species as requested in Resolution 19/04. Monitoring of tuna landing and inspection by Port Inspector is ongoing. DOFM monitored and tracked the deep-sea and tuna vessels using National VMS. DOFM have installed CCTV on tuna vessels as a tool for EMS.

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1. BACKGROUND/GENERAL FISHERY INFORMATION

Malaysia as a tropical country consist of multi-species and multi-gears fishery. There are over 100 commercial marine fish species in Malaysian waters and more than 10 type of fishing gears. Two most efficient fishing gears are trawlers and purse seines. The trawlers and purse seines contributed more than 75% of total marine catch and the rest of the catches are from traditional gears. In tuna fishery, the purse seines and trawlers catch 83% of neritic tuna and the rest by traditional gears such as trolling, hook and lines and gill nets. Tuna species represented nearly 5% of the total marine catch in Malaysian waters. The Malacca Straits and the South China Sea are the two main fishing areas which contribute most to catches and a small portion from the fishing areas in Sulu and Sulawesi Sea, east coast of Sabah (Borneo continent). There are oceanic tuna fishing activities by the traditional hook and lines gear in the Sulawesi Seas. There are oceanic tuna species found in Malaysian waters, the South China Sea and Sulawesi Sea. The main species are yellowfin tuna, bigeye, albacore and skipjack. The oceanic tuna is caught by handline with small traditional inboard boats, 4-5 days per trip.

From 2012-2020, Malaysia continue to develop their tuna fleets. A fleet of 6 tuna longline vessels and 1 carrier vessel from a fishing company started to operate by targeting albacore tuna. Their fishing areas were in the southwest of Indian Ocean and they unload the catches at the Port Louis, Mauritius. After Malaysia open two designated tuna port in February 2016 (Penang Port & Langkawi Port), tuna longline vessels from 2 fishing company were registered 14 tuna longline vessels phase by phase (2016-2021) as Malaysian flag vessels and operate in the East of Indian Ocean area and their catches were landed in Penang port. By the end of 2021, 20 longline tuna vessels and one (1) carrier vessel were authorized to operate in the IOTC area of competence. DOF Malaysia are committed on managing the fleet and complying with the conservation and management measures (CMM) and manage to get 87% on compliance level in 2021.

2. FLEET STRUCTURE

6 from 20 tuna longline vessels are operating in Southwest Indian Ocean (WIO) and another 14 tuna longline vessels operating in the East of Indian Ocean (EIO). For vessels operating in EIO, their target species are tropical tuna namely yellowfin and bigeye tuna and land their catches in Penang Port monthly. Meanwhile the vessels operating in WIO their target species is albacore. The vessels normally undertake a long fishing trips and all their catches were transported back to the designated port in Port Louis, Mauritius by carrier vessels.

One (1) carrier vessel was registered under Malaysia Flag and operated in area of West Indian Ocean served for the six (6) longline vessels fishing in the area. Under resolution 19/06, Malaysia longliners transshipment at sea monitor by the IOTC observer under ROP. Malaysia participated in the Regional Observer Program in 2021, but due to Covid-19 Pandemic, IOTC set on the temporary suspension of observer deployments under the IOTC Regional Observer Programme (IOTC REF: 2020-063).

The size of fishing vessels operating in the IOTC area of competence varies in LOA and gross tonnage (GT) from 25m-36m and 70GT – 204GT respectively.

Table 1: Number of authorised fishing vessels (AFV) operating in the IOTC area of competence, by gear type and size

| Year | <24 m | >24 m | Registered vessels | Gear Type |
|------|-------|-------|--------------------|---------------|
| 2012 | - | 5 | 5 | Longline (LL) |
| 2013 | - | 5 | 5 | Longline (LL) |
| 2014 | - | 10 | 10 | Longline (LL) |
| 2015 | - | 5 | 5 | Longline (LL) |
| 2016 | - | 10 | 10 | Longline (LL) |
| 2017 | - | 19 | 19 | Longline (LL) |
| 2018 | - | 19 | 19 | Longline (LL) |
| 2019 | - | 17 | 17 | Longline (LL) |
| 2020 | - | 19 | 19 | Longline (LL) |
| 2021 | - | 20 | 20 | Longline (LL) |

3. CATCH AND EFFORT (BY SPECIES AND GEAR)

Catch of tuna and tuna-like species by Malaysian fishing vessels were based on the fishing operations in the East Indian Ocean (EIO) and West Indian Ocean (WIO). The efforts represented by the number of berthing of the vessels at the fishing port and fishing hooks. In WIO, the vessels berthing at the port were carrier vessel where they pooled the catch from several fishing vessels (6 vessels) at the fishing grounds before they returned to the fishing port in Mauritius. For fishing operation in EIO, the fishing vessels berthing at Penang port every month for tuna landing with the average landing of 60 – 80 metric tonnes monthly. For fishing hooks, based on the logbook records, one vessel used 1800 – 3000 hooks for each fishing operations.

| Year | YFT | BET | MARL | SWO | SFA | SKJ | SHK | ALB | MISC |
|------|-------|-------|-------|-------|------|--------|-----|--------|-------|
| 2012 | 119.7 | 46.8 | 35.8 | 30 | 1.1 | 3.44 | 6 | 661.8 | 58.7 |
| 2013 | 107.5 | 32.3 | 31.5 | 22.3 | 0 | 0 | 0 | 107.5 | 100.9 |
| 2014 | 77.3 | 60.1 | 25.4 | 93.1 | 0 | 0 | 0 | 713.9 | 76.3 |
| 2015 | 161.7 | 60 | 24.6 | 116.7 | 0 | 0 | 0 | 1049.1 | 126.7 |
| 2016 | 155.9 | 124 | 33.5 | 41.6 | 0 | 0 | 4.7 | 1330.6 | 107.2 |
| 2017 | 383.6 | 172.5 | 0 | 82.3 | 1.7 | 16.202 | 0 | 1607.2 | 281.9 |
| 2018 | 446.3 | 228.6 | 0 | 112.2 | 20.7 | 13.526 | 0 | 1792.5 | 247.9 |
| 2019 | 419.6 | 235.3 | 72.1 | 169.7 | 16.1 | 14.769 | 6.1 | 1618 | 242.9 |
| 2020 | 374.4 | 250.9 | 106.2 | 148.7 | 9.3 | 7.412 | 0 | 1821.4 | 286.6 |
| 2021 | 390.8 | 302.5 | 75.4 | 240.7 | 9.1 | 0.8 | 0 | 1277.1 | 226.3 |

Table 2. Annual catch and effort by gear and primary species in the IOTC area of competence.

Figure 1. Historical annual catch for the Malaysian tuna fleet, using longline and primary species, for the IOTC area of competence from 2012 – 2021

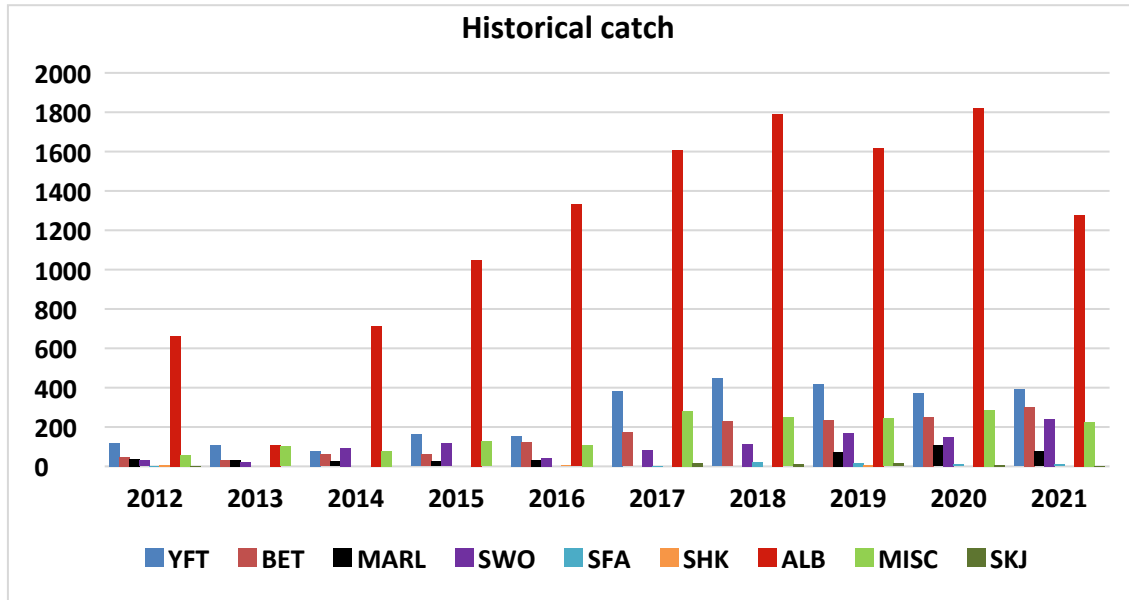


Figure 2a. Map of the distribution of fishing effort by Tuna Longline for the national fleet in the IOTC area of competence for the year 2021.

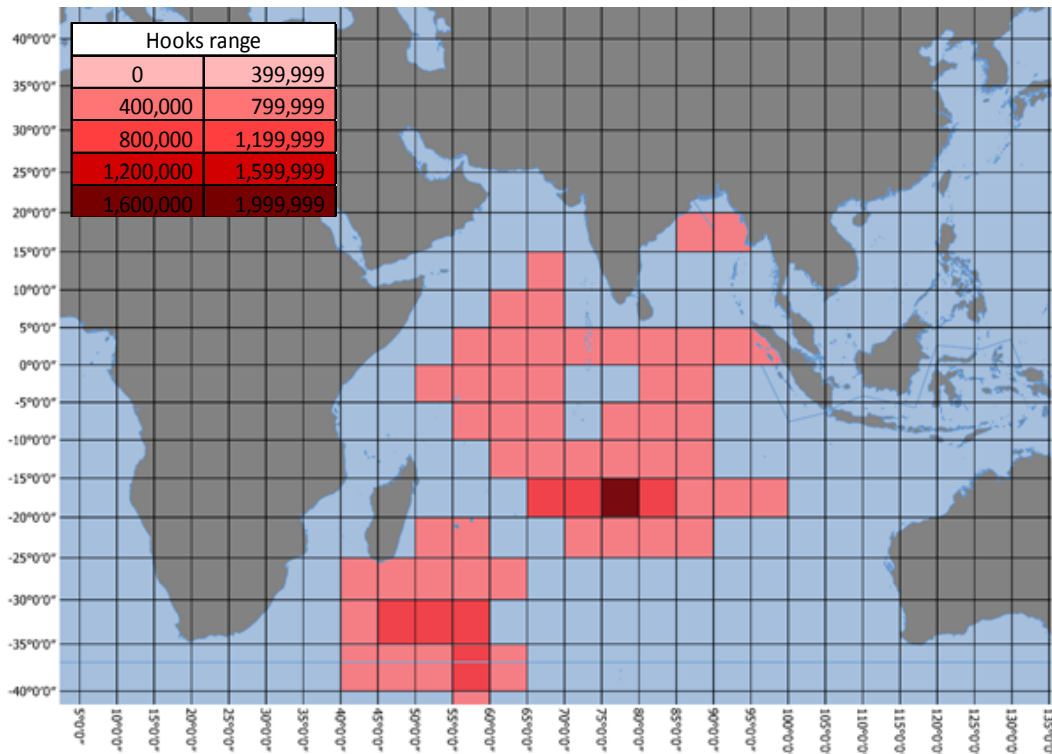


Figure 2b. Map of the distribution of fishing effort by tuna longline for the national fleet in the IOTC area of competence from year average of 5 previous years 2017–2021.

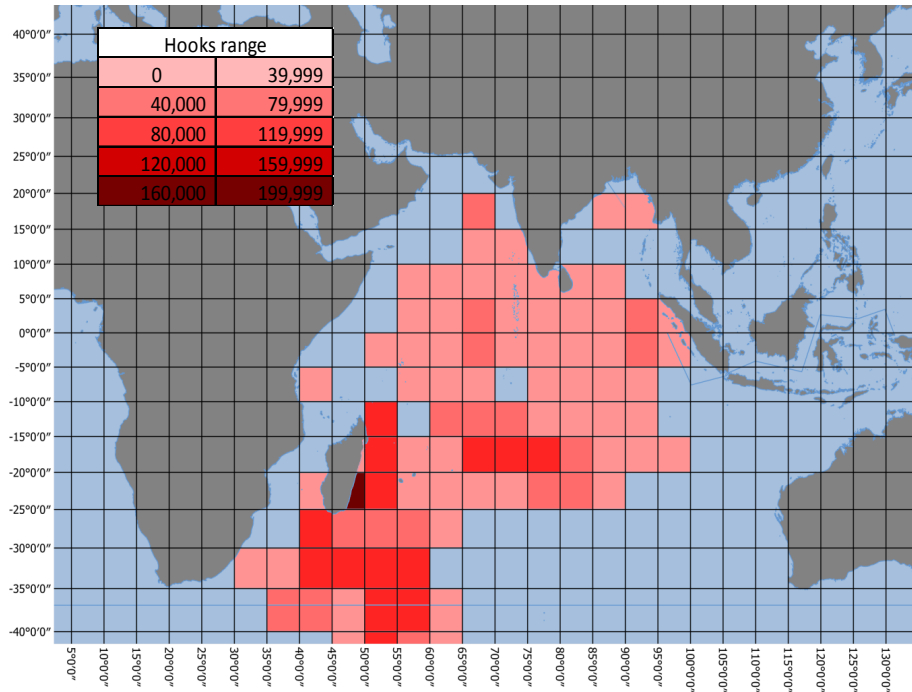
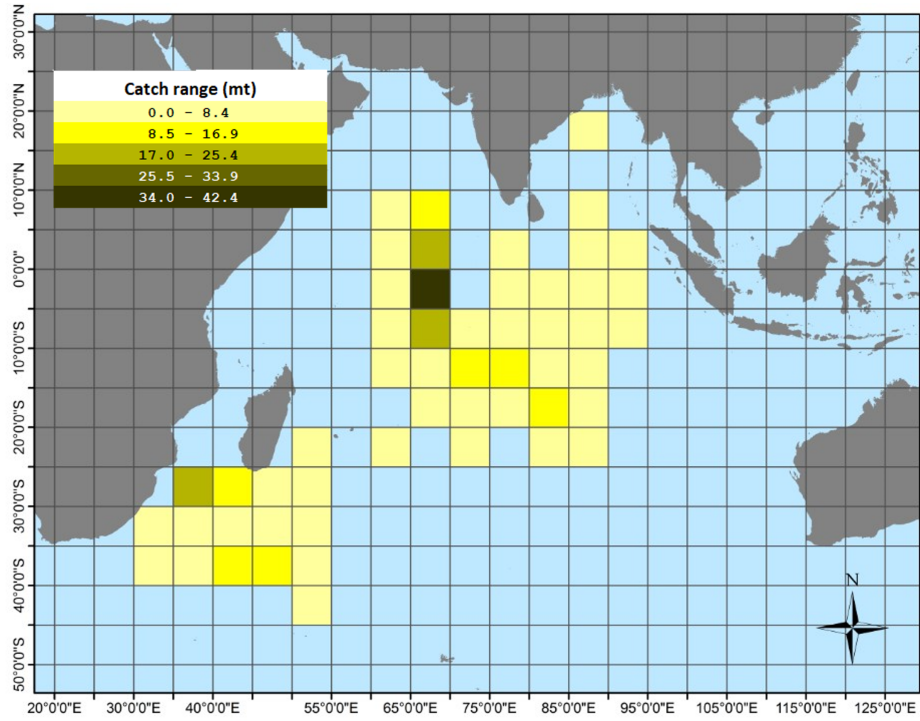
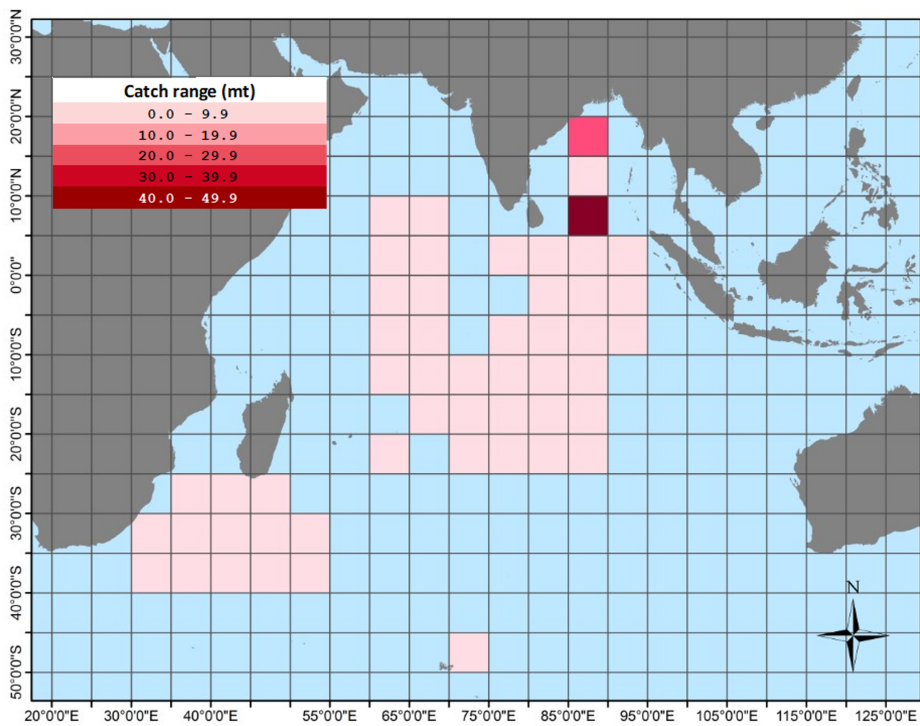


Figure 3a. Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence for the year 2021.

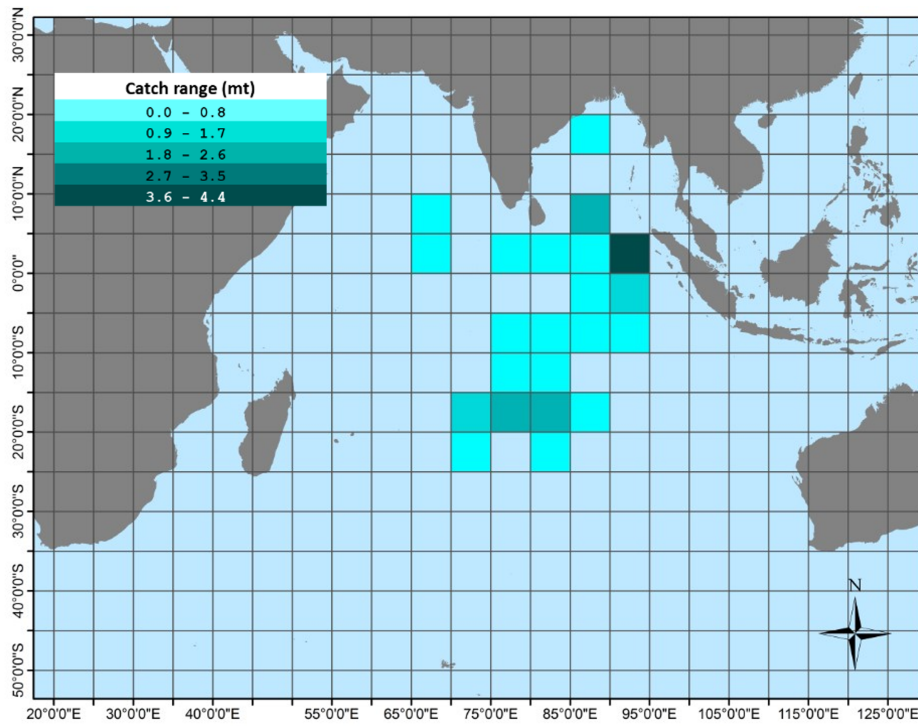
YELLOWFIN CATCH DISTRIBUTION 2021



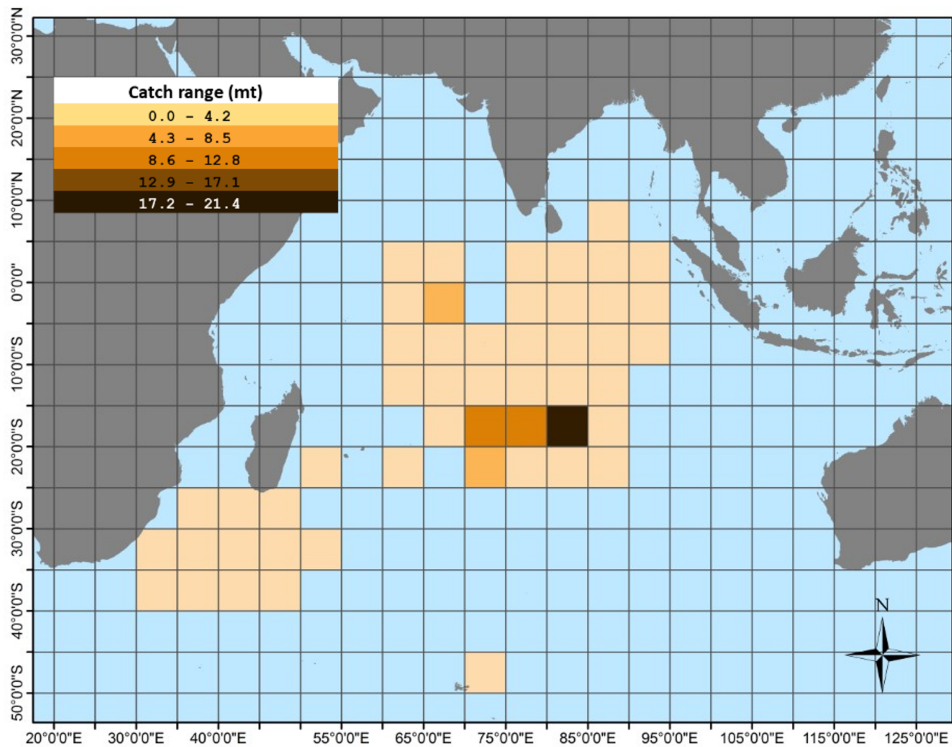
SWORDFISH CATCH DISTRIBUTION 2021



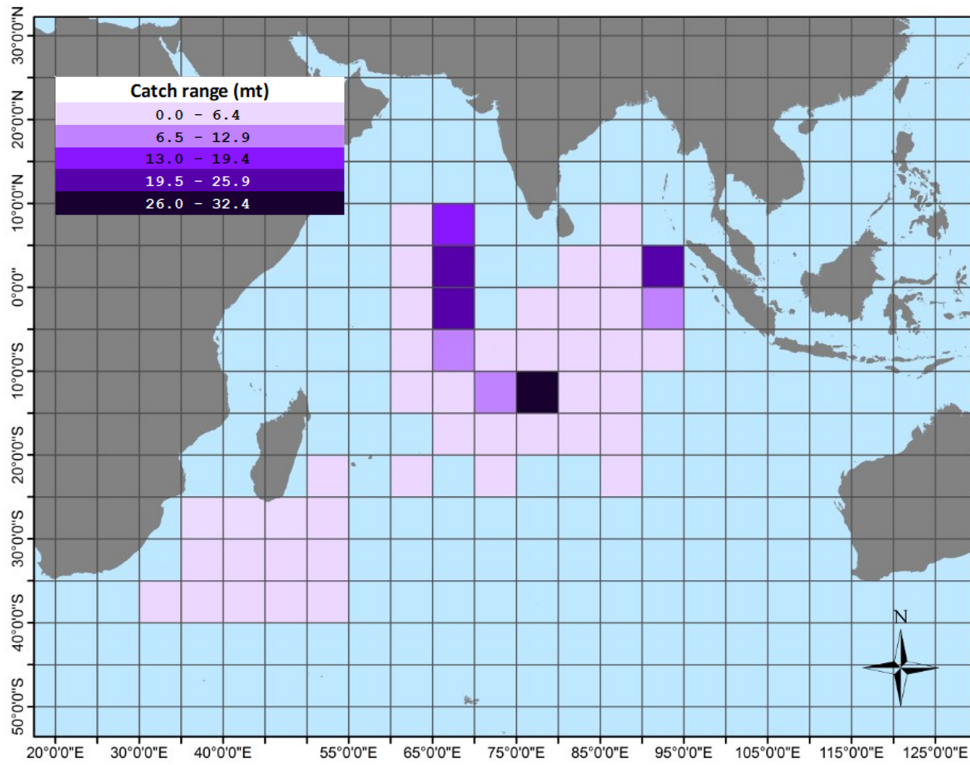
BLUE MARLIN CATCH DISTRIBUTION 2021



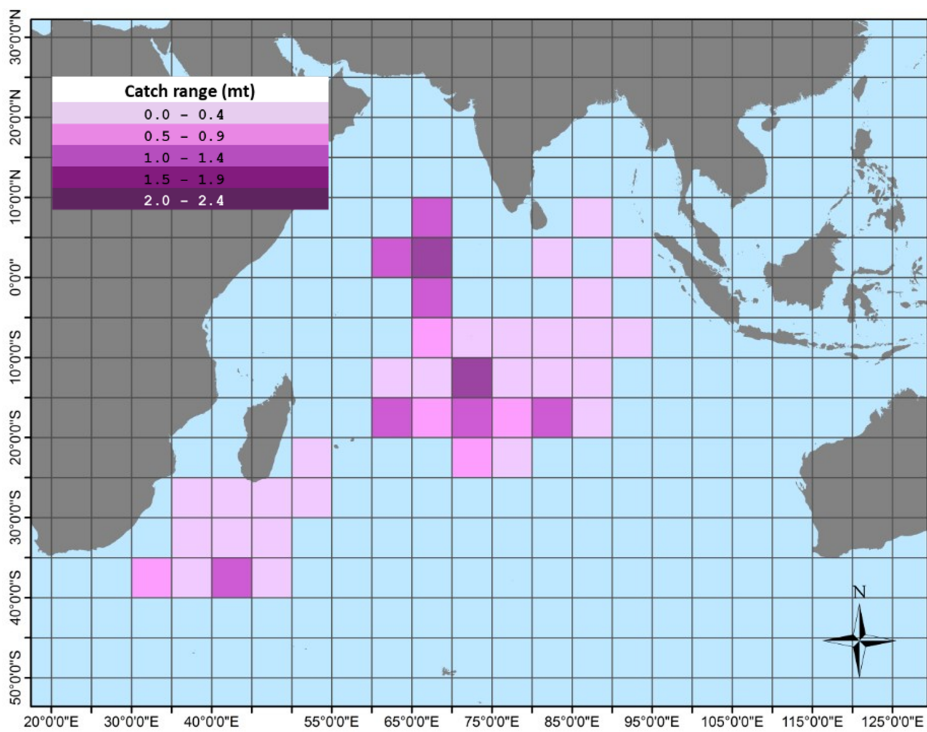
OTHER BONY FISH CATCH DISTRIBUTION 2021



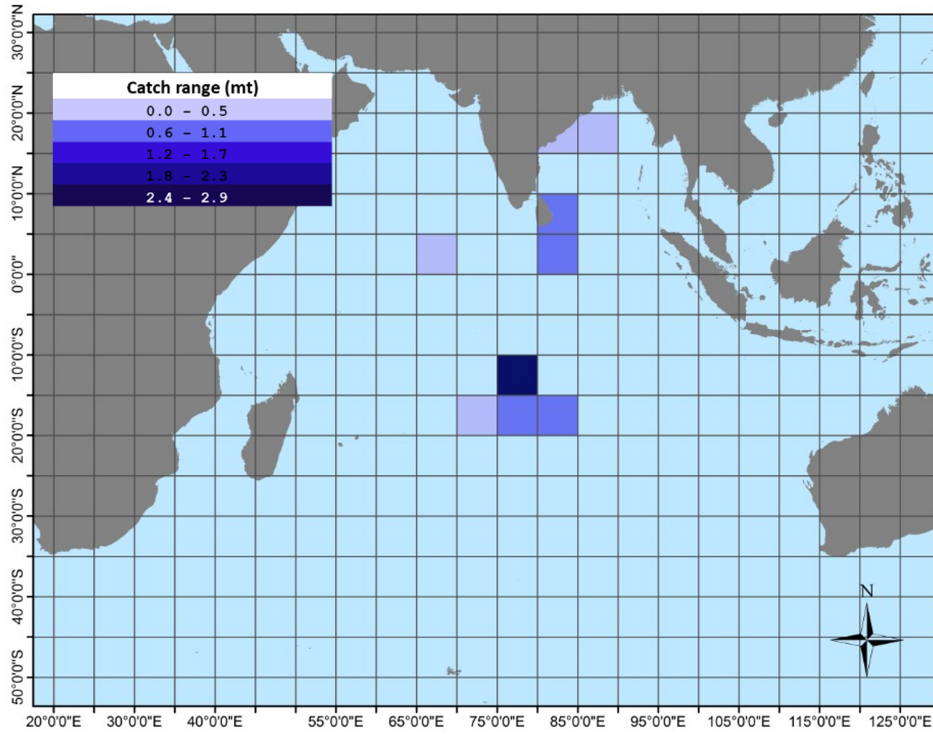
BIGEYE TUNA CATCH DISTRIBUTION 2021



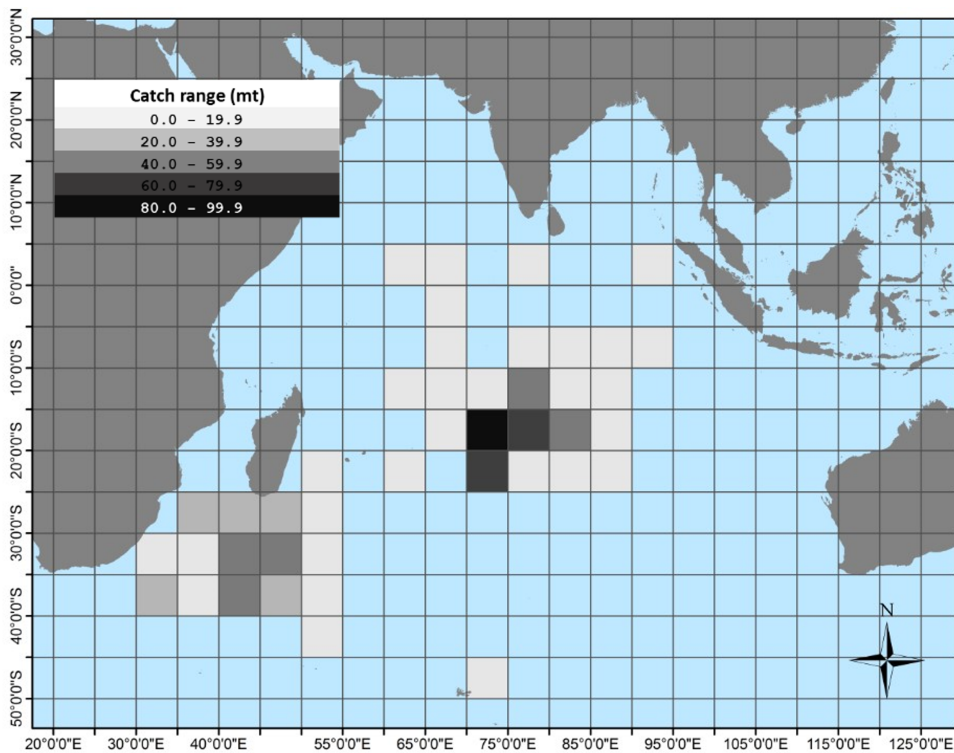
BLACK MARLIN CATCH DISTRIBUTION 2021



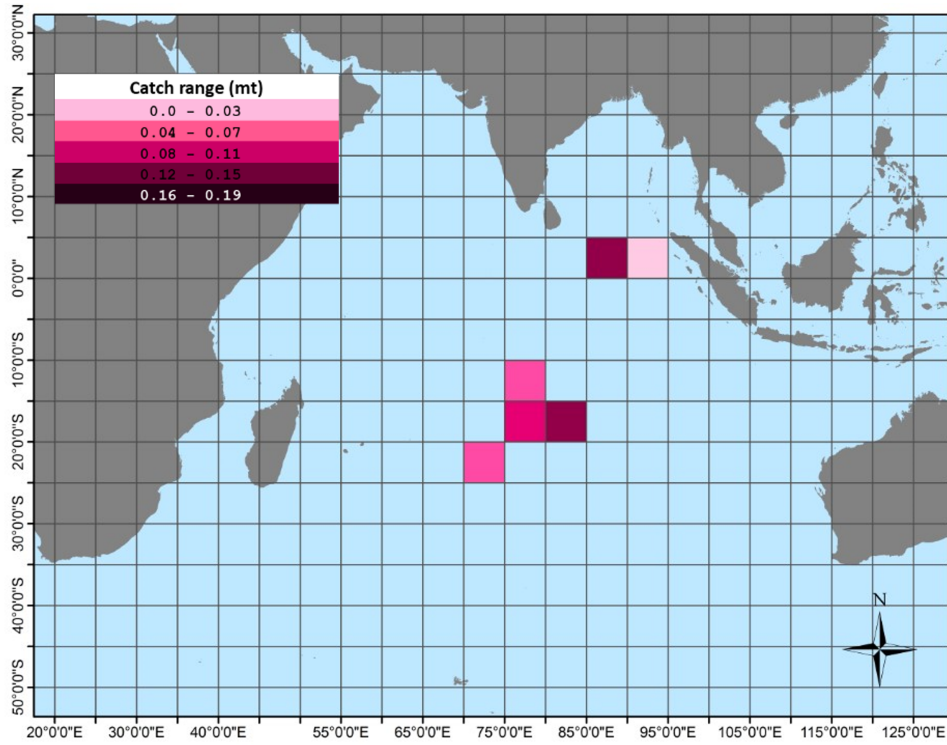
STRIPED MARLIN CATCH DISTRIBUTION 2021



ALBACORE CATCH DISTRIBUTION 2021



SKIPJACK CATCH DISTRIBUTION 2021



INDO-PACIFIC SAILFISH CATCH DISTRIBUTION 2021

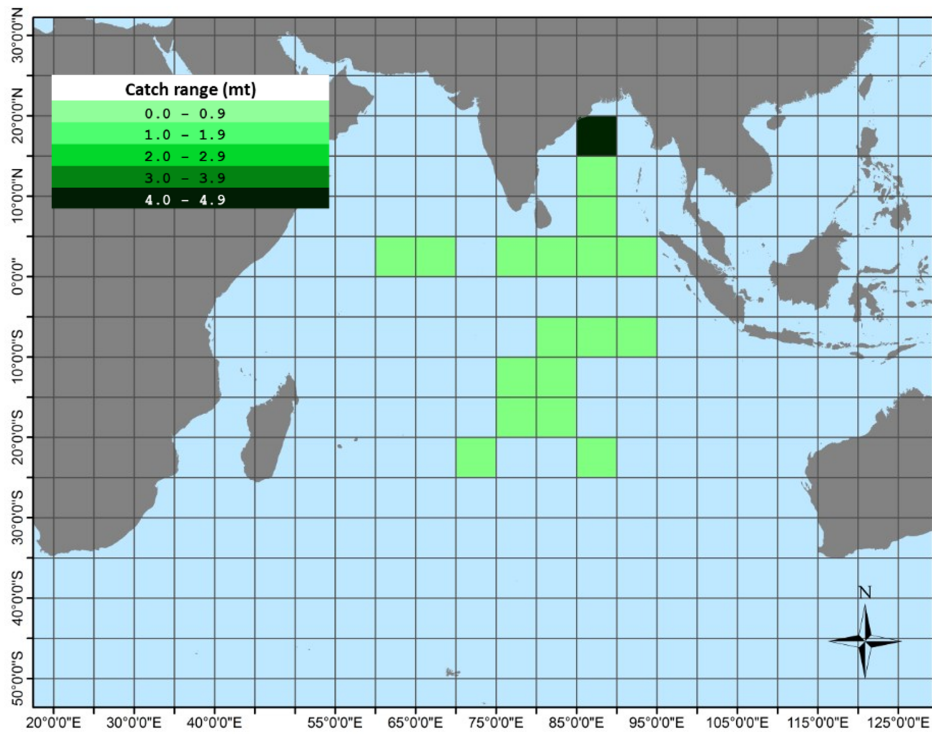
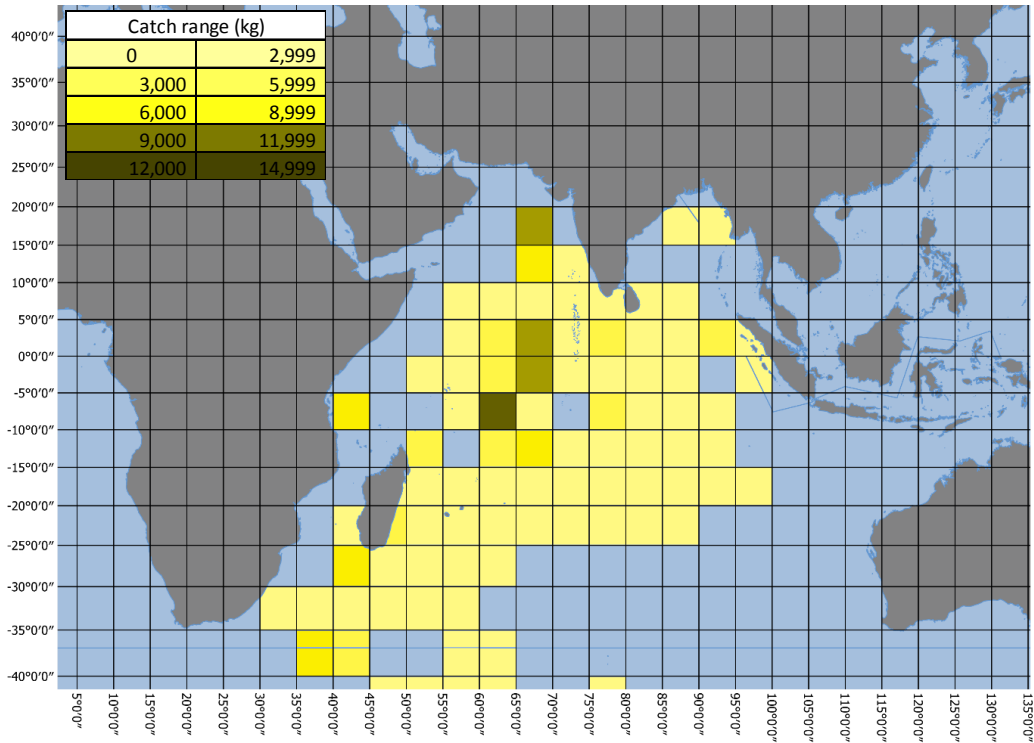
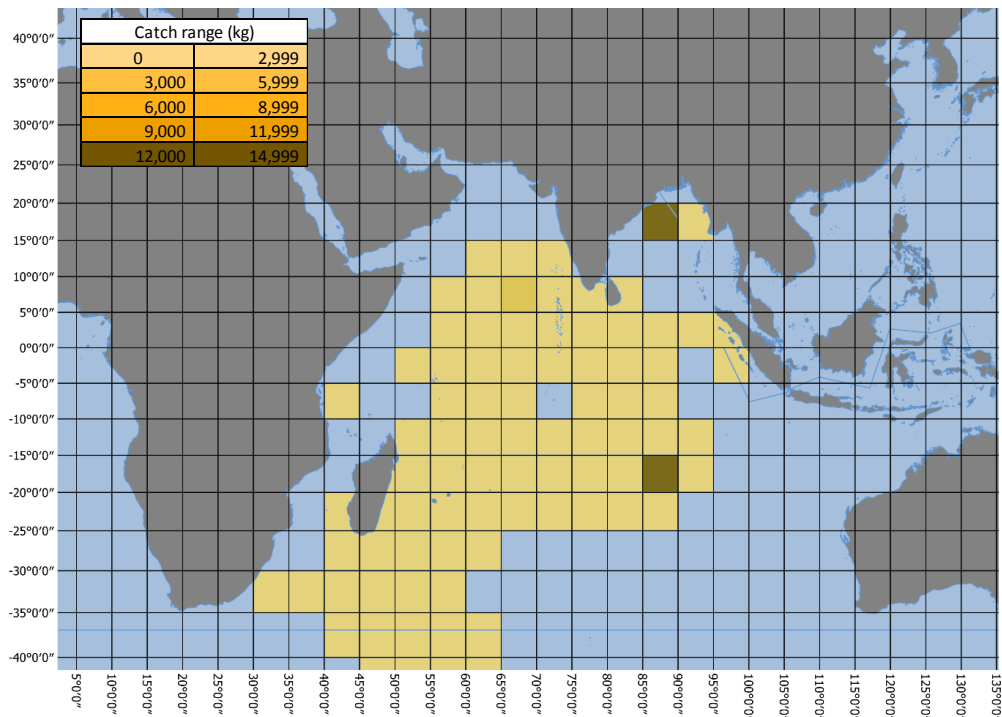


Figure 3b. Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence average of the 5 previous year 2017–2021.

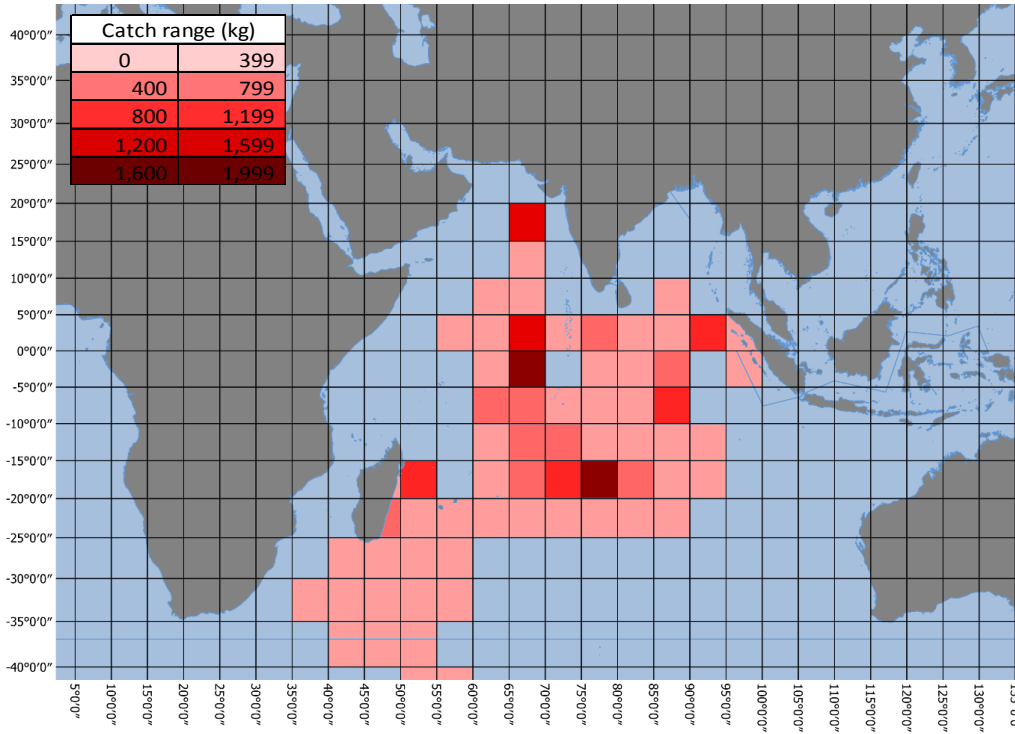
YELLOWFIN AVERAGE CATCH DISTRIBUTION 2017-2021



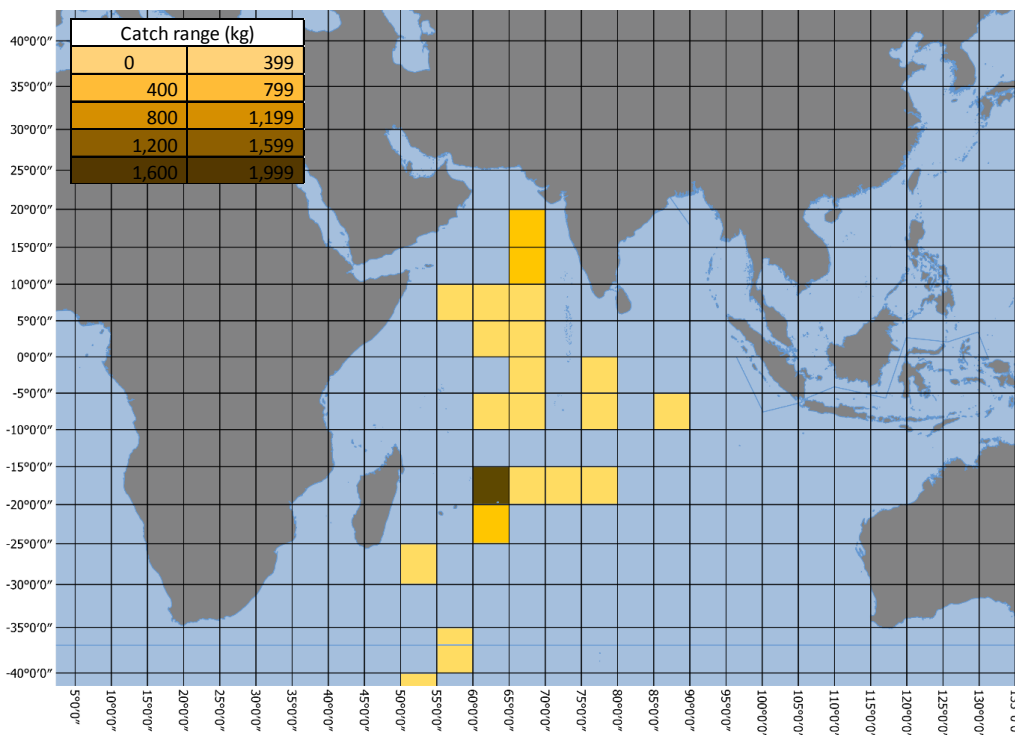
SWORDFISH AVERAGE CATCH DISTRIBUTION 2017-2021



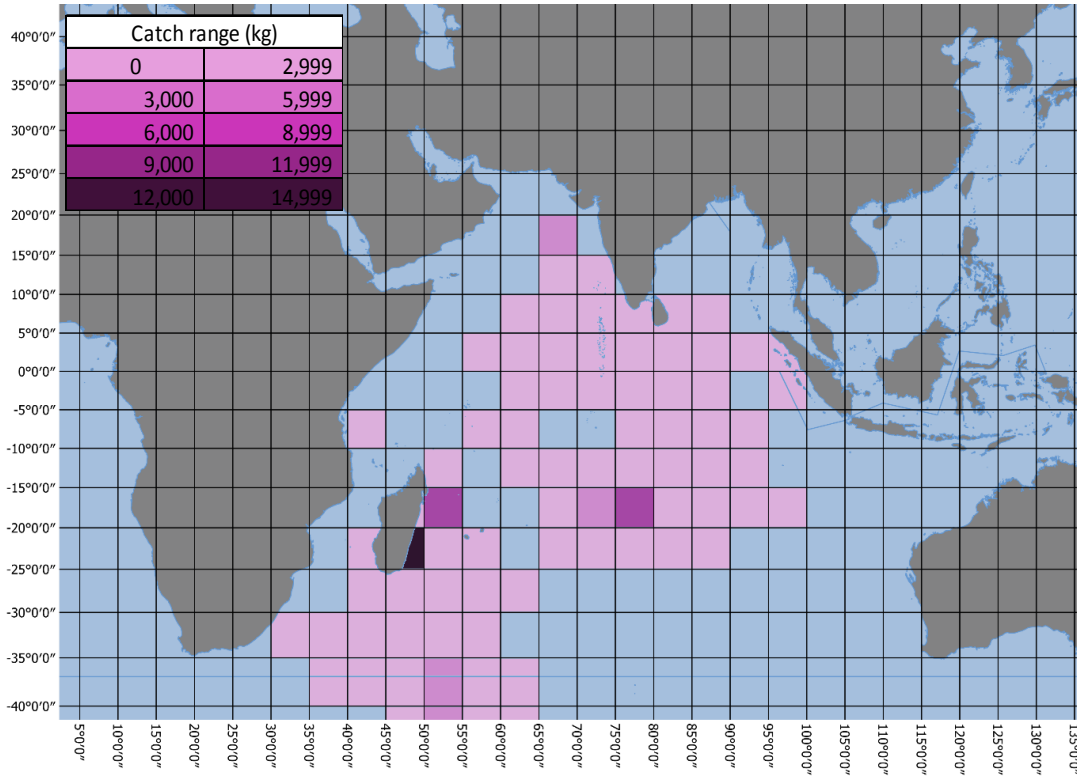
BLUE MARLIN AVERAGE CATCH DISTRIBUTION 2017-2021



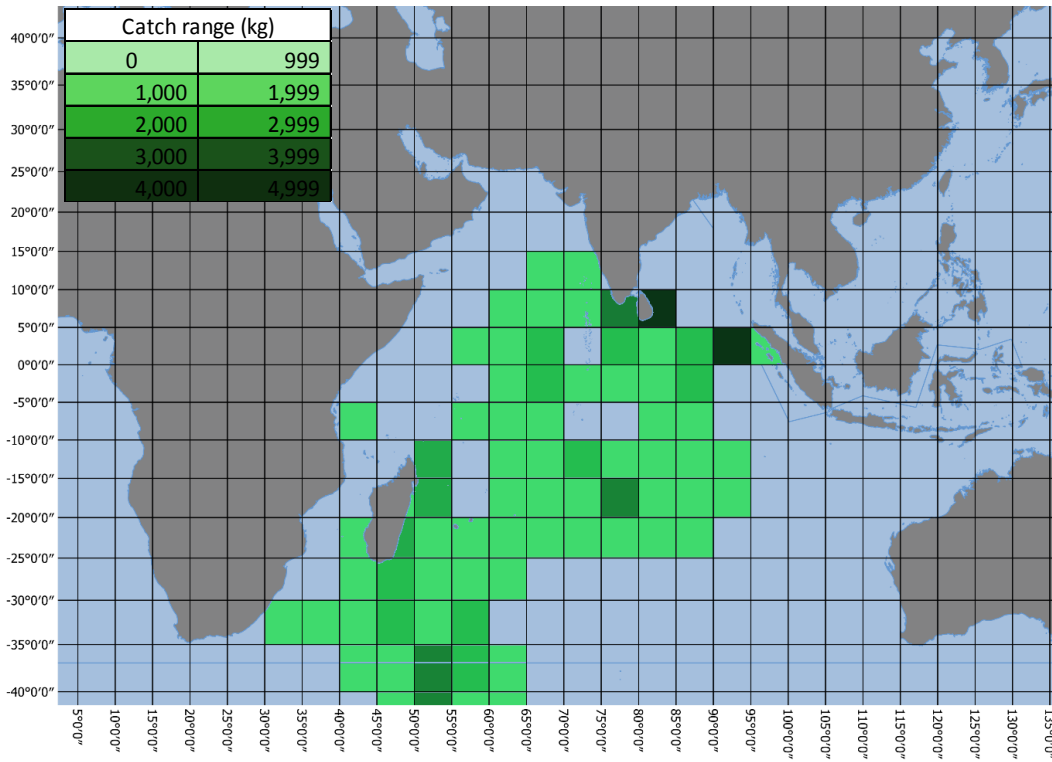
SHORTBILL SPEARFISH AVERAGE CATCH DISTRIBUTION 2017-2021



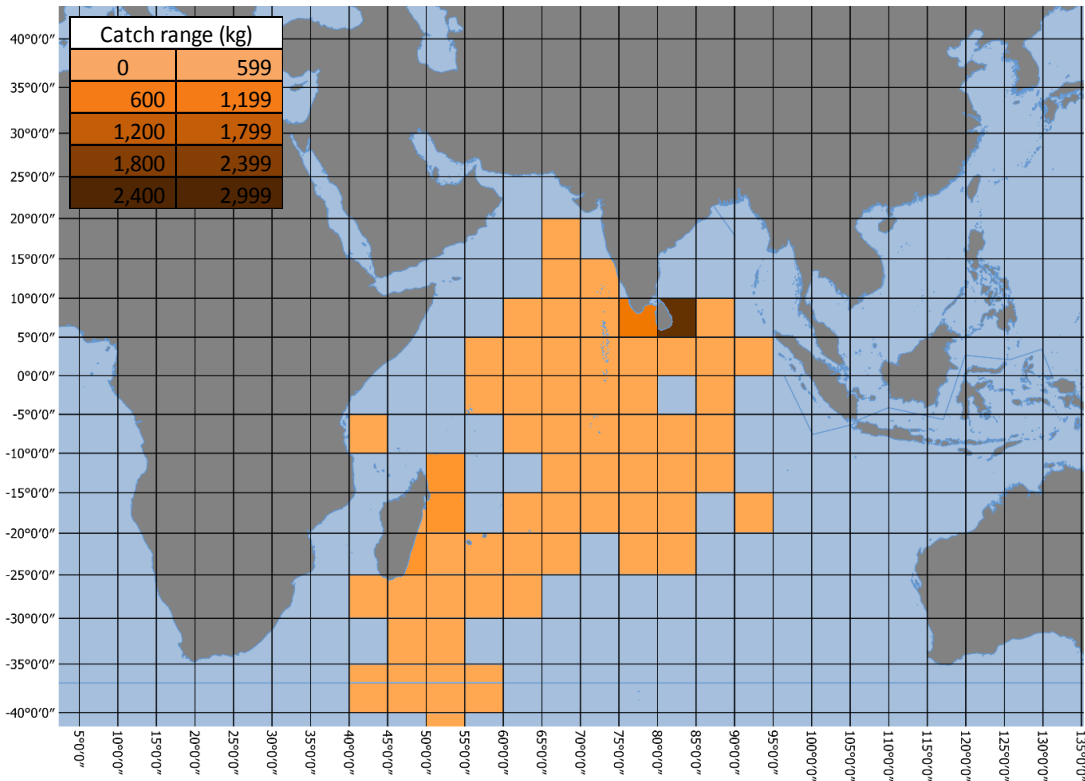
OTHER BONY FISH (MZZ) AVERAGE CATCH DISTRIBUTION 2017-2021



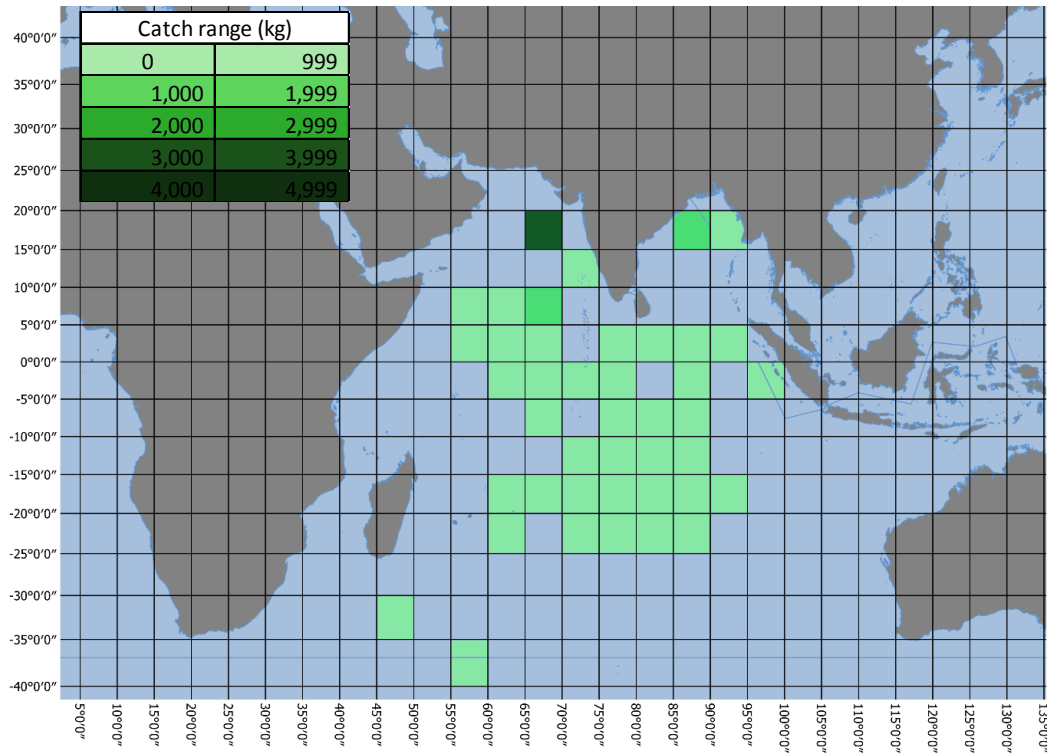
BIGEYE TUNA (BET) AVERAGE CATCH DISTRIBUTION 2017-2021



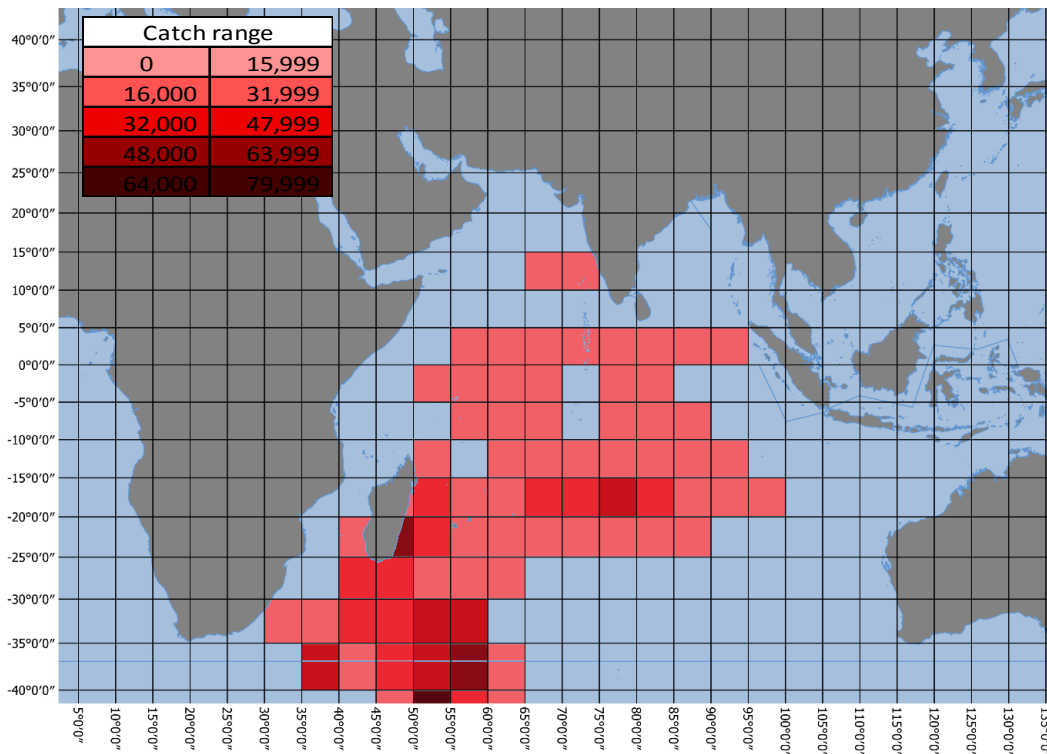
BLACK MARLIN (BLM) AVERAGE CATCH DISTRIBUTION 2017-2021



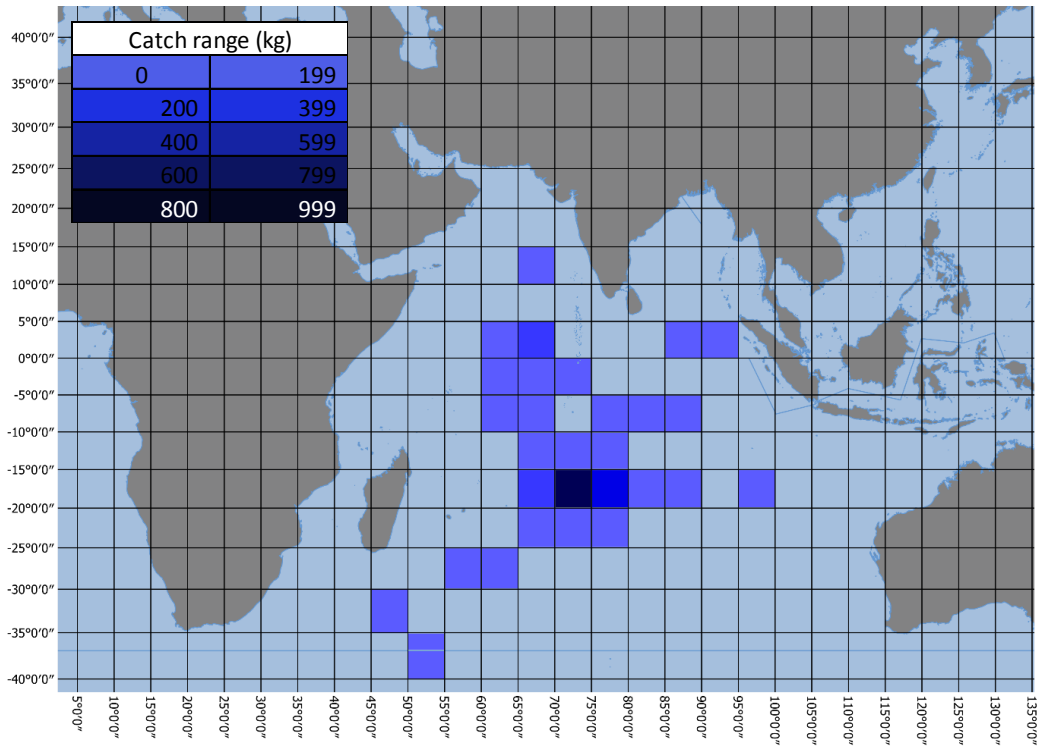
STRIPED MARLIN (MLS) AVERAGE CATCH DISTRIBUTION 2017-2021



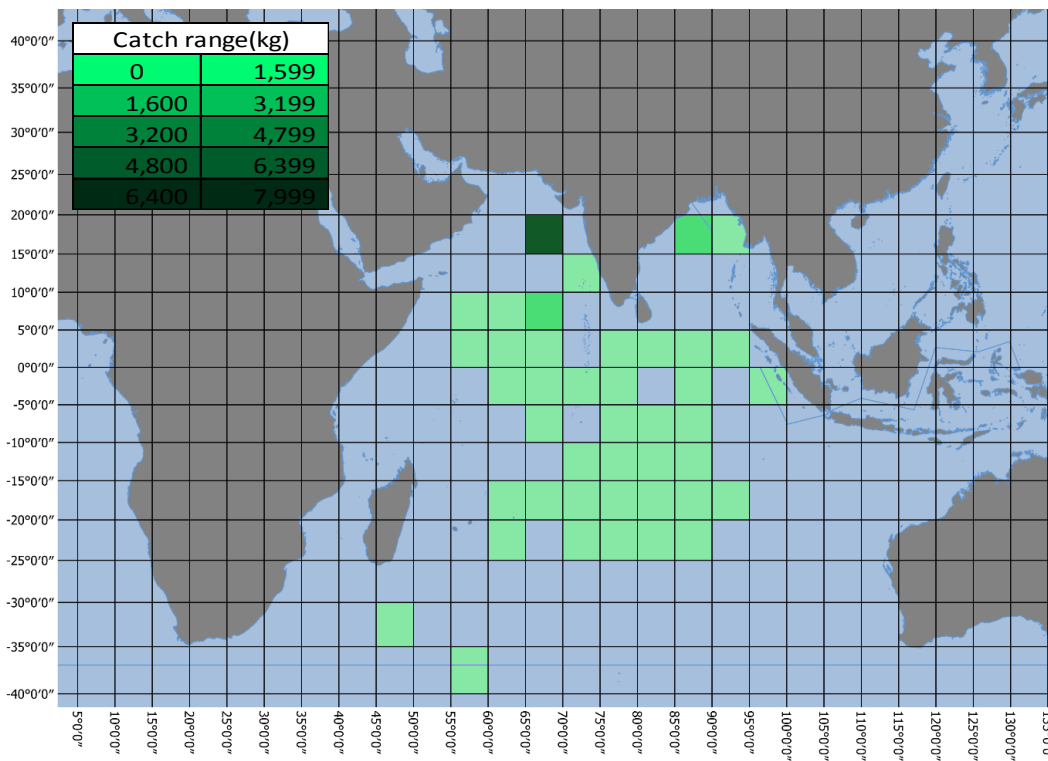
ALBACORE (ALB) AVERAGE CATCH DISTRIBUTION 2017-2021



SKIPJACK (SKJ) AVERAGE CATCH DISTRIBUTION 2017-2021



INDO PACIFIC SAILFISH (SFA) AVERAGE CATCH DISTRIBUTION 2017-2021



4. RECREATIONAL FISHERY

Recreational fishery for tuna and tuna-like species is not a widely fishing games in the Malacca Straits, and they are only occasional and seasonal events. Regulation for recreational fisheries in Malaysia is being drafted and being revised by Legal Advisor. Under this regulation, recreational fishing shall register online via e-Rekreasi Application. 7 species (coral catfish, swordfish, black marlin, striped marlin, indo pacific blue marlin, indo pacific sailfish and humphead wrasse) shall follow catch and release instruction. In recent event, DOF have regulation such as permit for the event, and information on catches should be submitted to the Department of Fisheries which include weight by species.

5. ECOSYSTEM AND BYCATCH ISSUES

Malaysia has taken measures to reduce the impact of fishing activities on marine ecology by promoting and encouraging the use of eco-friendly fishing gears as well as introducing various fishing regulations such as;

- Prohibit commercial fishing gears from fishing below 1nm (Conservation zone) from coast line as the areas for aquaculture activities, cockle culture and fisheries communities' activities only. Zoning of fishing areas: regulation, at which fishing areas are categorized into 4 zones, and for each zone only for vessels of certain range GRT and gears are permitted to fish.
- Fisheries Regulations on prohibition of method of fishing, Fisheries Regulations on endangered species, Fisheries Regulations on prohibited areas.
- Implementation of pilot project on Deep-sea Logbook to report catch operation for coastal fisheries replacing Landing reporting (LOV) in which data of fishing activities to help in the management of fisheries resources and stock assessment.
- To reduce by-catch, especially undersize fish, Juvenile and turtle excluding device (JTED) are promoted to the fishermen.
- Enforcement on mesh size of cod-end for trawl nets of 38mm have been enforced.
- Promoting the use of circle hook to the longline fishermen.
- Implementation of NPOA Sharks II, NPOA Turtles, NPOA Dugong

5.1 Sharks

Sharks are not a target species for longliners operating in high seas. In 2021 based on logbook record by the captain, there were shark interactions recorded for releasing alive and discarded dead. During inspection and interview at landing sites the crew had inform that sharks had been trapped during fishing operations but they released the sharks back to sea to reduce the risk of death.

5.1.1. NPOA sharks

Malaysian NPOA-Shark had been adopted and published in 2006. It was based on the guideline set by the FAO international Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks). In 2014, the revised NPOA-Sharks II was officially gazetted and published. The main objective of Malaysian NPOA- Sharks is to

ensure the conservation and management of sharks and their long-term sustainable use.

5.1.2. Sharks finning regulation

On legislation, Malaysia as a signatory to Convention on International Trade in Endangered Species of Wild Fauna and Flora in Washington D.C. and on 3rd March 1973, Malaysia introduced a CITES Act 2008 and gazetted it in 2008. Under this Act, all sharks under Appendix I and Appendix II lists the following sharks; Family Cetorhinidae - Basking shark (*Cetorhinus maximus*), Family Lamnidae - Great white shark (*Carcharodon carcharias*), Family Carcharinidae - Oceanic whitetip shark (*Carcharhinus longimanus*), Family Sphyrnidae - Great hammerhead shark (*Sphyrna mokarran*), Smooth hammerhead shark (*Sphyrna zygaena*), Winghead shark (*Eusphyra blochii*), and Family Rhincodontidae - Whale shark (*Rhincodon typus*). As for rays, list of species under Appendix I and Appendix II are as follows; Family Pristidae - Sawfishes (Pristidae spp., 7 species), Family Mobulidae - Reef manta ray (*Manta alfredi*) and Oceanic manta ray (*Manta birostris*).

National Regulation (Licensing Condition) 2014 stated no shark finning is allowed and No Shark Fin Campaign were conducted regularly for public awareness.

5.1.3. Blue shark

As required by the Resolution 18/02 Para 4, Blue sharks catch data are recorded in the logbook under the Bycatch Table. The captain of the vessel will record the bycatch for release alive or discarded dead and send the logbook weekly electronically to DOF. Malaysian Fleet vessel did not target blue sharks and no landing of blue sharks were recorded which are monitored by port inspector at landing port.

In the Terms and Condition of the ATF, no. 19: The Master of this vessel shall fully utilise their entire catches of blue sharks if accidentally caught any and the sharks has died. The master shall ensure the removal of shark fins on board is prohibited for the shark landed fresh. The total weight of onboard shark fins landed frozen shall not be more than 5% of the total weight of shark on board.

Table 3: Total number and weight of sharks, by species, retained by the national fleet in the IOTC area of competence (for the most recent five years at a minimum, e.g. 2017–2021).

| Year | SHARKS weight | Numbers |
|------|---------------|---------|
| 2017 | - | - |
| 2018 | - | - |
| 2019 | - | - |
| 2020 | - | - |
| 2021 | 0.33 mt | - |

Table 4: Total number of sharks, by species, released/discarded by the national fleet in the IOTC area of competence (for the most recent five years at a minimum, e.g. 2017–2021). Where available, include life status upon released/discard.

| YEAR | (BSH) | | (MAK) | | (POR) | | (SPN) | | (FAL) | | (THR) | | (OCS) | | Other (SKH) | | Seabirds | | Marine Mammals (MAM) | | Marine turtle (TTX) | | Manta (MAN) | | Pelagic Stingray (PLS) | |
|------|-------|----|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------------|---|----------|---|----------------------|---|---------------------|---|-------------|---|------------------------|---|
| | R | D | R | D | R | D | R | D | R | D | R | D | R | D | R | D | R | D | R | D | R | D | R | D | R | D |
| 2017 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2018 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2019 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2020 | 105 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2021 | 351 | 31 | 5 | 2 | 5 | 0 | 0 | 0 | 2 | 0 | 10 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |

5.2 Seabirds

Malaysian longline vessels only started to fish in areas below 25° S in mid of 2012. In 2021, only 6 Malaysian AFV operated south of 25°S. all 6 vessels have applied 2 types of mitigation measures recommended by the IOTC which are tori lines and fast sinking lines. Nil seabird interaction reported by the Malaysian fishing vessels in the logbook during their fishing operation in the southeast Indian Ocean. However, the fleets owner has been reminded about their responsibility on seabird conservation practice stated in the IOTC resolution. One National Workshop on Seabirds has been conducted in Malaysia on 20th September 2018. To date, Malaysia still does not develop NPOA-Seabird.

In the Terms and Condition of the ATF, no. 13: The Master of this vessel shall ensure the implementation of at least two of three seabird mitigation measures, namely, night setting with minimum deck lighting, bird-scaring lines and line weighting when operating at south of 25°S or in other area, as appropriate, consistent with the scientific advice.

| Seabirds mitigation measures | No of Vessels |
|--------------------------------|---------------|
| vessels operated south of 25°S | 6 |
| bird scaring lines | 6 |
| line weighting | 6 |
| night setting | 0 |

Table 5: Malaysia seabird mitigation measures on tuna longline operating below 25° S

5.3 Marine Turtles

Malaysia is one of the countries that actively involved in the conservation program on turtles. In 2008 the NPOA-Marine Turtle was published and becomes a guideline for the conservation and management of sea turtles. As one of the conservation measures to prevent possible interaction the turtles by the fishing gears especially trawlers, a device known as “Juvenile and Turtle Excluding Device” (JTED) is developed and promoted to the fishermen to use in their trawl nets. The use of circle hook for longline is also been encouraged and promoted to the artisanal fishermen. Several joint trails and training were conducted between the government and fishermen for the use of C-hook.

There are a total of 26 Turtle Hatcheries Centres throughout Malaysia and seven (7) turtle conservation and information centres in Malaysia have regularly implementing awareness program for student and fishermen communities. Four (4) centres are located in the west coast of Malaysia; Padang Kemunting (Melaka), Pantai Kerachut (Penang) Port Dickson (N.Sembilan) and Segari (Perak). Main activities of these centres are to protect natural nesting areas of turtles and hatching and release baby turtles back to the sea. Education and awareness programs were conducted for the students and public.

Fisheries Act 1985 section 27 provides legal instrument to protect marine turtle and marine mammals from any type of fishing. However, there is separate legal instrument on state level that cover marine turtles as stated in the Federal Constitution. So far very few interactions were recorded between fishermen and turtles reported by the traditional and commercial fishermen.

From the logbook report and observer transshipment report for vessels operating in the IOTC area of competence, there is nil interaction of marine turtles recorded by the fishing master in 2021. The data collection consist of latitude and longitude only started in 2021.

| Year | Fishery | | | Observed (Logbook) | | | | |
|------|------------|-----|--------------|-----------------------|---------|-------------------|----------------------|------------------------|
| | Lat* (5x5) | Lon | Total effort | Total effort observed | Species | Captures (number) | Mortalities (number) | Live releases (number) |
| 2021 | 15 | 080 | 24000 | 24000 | TTX | 0 | 0 | 0 |
| 2021 | 00 | 090 | 18900 | 18900 | TTX | 0 | 0 | 0 |
| 2021 | 20 | 075 | 3000 | 3000 | TTX | 0 | 0 | 0 |

Table 6: Malaysian AFV marine turtles interaction from logbook bycatch release and discard report

5.4 Other ecologically related species (e.g. marine mammals, whale sharks)

Nil interaction reported for 2021 by the Malaysian tuna fishing vessels operated in Indian Ocean. Reported cases in Malaysian Fisheries Waters mostly on marine mammals sighted at sea or stranded by the beach and all reports are handled by Department of Fisheries Malaysia.

Under the Fisheries Regulation on (Control of Endangered Species of Fish) Regulation 1999, 5 group of endangered species listed (30 which are dugong group, whale group, dolphin group, whale shark group and clams group. Whale shark (*Rhincodon typus*) is one out of 30 species listed under Fisheries (Control of Endangered Species of Fish) Regulation 1999.

In the Terms and Condition of the ATF, no 22. The Master of this vessel (purse seiner) shall prohibit their vessels from intentionally setting a fishing gear around a cetacean and whale shark in the IOTC area of competence, if a cetacean or whale shark is unintentionally encircled, the Master of the vessels shall take all reasonable steps to ensure the safe

release of the cetacean or whale shark while taking into consideration the safety of the crew;

| YEAR | Seabirds | | Marine Mammals (MAM) | | Marine turtle (TTX) | |
|------|----------|---|----------------------|---|---------------------|---|
| | R | D | R | D | R | D |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2018 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 7: Observed annual catches of species of special interest by species (seabirds, marine turtles and marine mammals) by tuna longline vessel for the national fleet, in the IOTC area of competence for the previous 5 years 2017–2021.

6. NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS

6.1. Logsheet data collection and verification

As the need for conservation of the national marine resources increases, the need for more and better-quality data on how these resources are utilized also increases. One of the most useful types of data is catch per unit effort. To meet these needs, Department of Fisheries Malaysia has started in September 2017 to implemented vessel logbook programs and these programs were initiated for the longline fisheries and in 2021, pilot project for national logbook is extended to deep-sea fisheries. Malaysia have updated the national logbook to include all the species as requested in Resolution 19/04, and monitor tuna landing and inspection at port by Port Inspector. Fishermen are required to report daily the numbers of each species caught, the numbers of animals retained. release alive or discarded dead (longline gear is non-selective and unwanted or prohibited species such as, marine mammals, sea turtles, seabirds, must be returned to the water), the location of the set, the types and size of gear, and the duration of the set. DOFM received weekly report from the vessel owner by email for verification.

Malaysia will be implementing the e-logbook by phases to the vessel master. Therefore in 2020 and 2021, road tours and training has been done by the Department of Fisheries Malaysia on the introduction of e-logbook.

6.2. Vessel Monitoring System

Department of Fisheries Malaysia has successfully implemented a Vessel Monitoring System (VMS) for all deep-sea and tuna fishing vessels. VMS/MTU for deep sea vessel is based on Inmarsat, utilizing Inmarsat C, Mini C and D+/B equipment. Currently, 20 Malaysian tuna longline vessels operating in high seas using Argos and Iridium system for their VMS and monitor on CLS Themis Web. Monitoring and tracking of deep-sea and tuna vessels using National VMS are conducted daily to make sure compliance with the



geographical limits contained in their license and to check position data contained in their catch and effort/transshipment reports.

The installation of Mobile Transceiver Units (MTU) is mandatory under vessel licensing regulation since January 2012. Failure to do so, will cause the license of the vessel to be revoked or suspended as provided under the Fisheries Act 1985. To date, all Malaysian longline have the devices installed and active.

In the Terms and Condition of the ATF, no 10. The Operator of this vessel shall install, maintain and operate a registered National VMS or such other approved MTU at all time. The Master of this vessel and owner shall ensure that the MTU on board their vessels within the IOTC area of competence are at all times fully operational and shall immediately notify any technical failure or non-functioning MTU to DOFM.

6.3. Observer scheme

To further improve quality of tuna catch data, DOF Malaysia plans to implement observer onboard for purse seine vessels fishing in the domestic waters. Due to the lacking of financial resources (insufficient fund), the lacking of man power (staff) or human capacity and communication problem within captain and crew, the observer onboard program planning are still under consideration.

DOF Malaysia also have installed CCTV on 19 fishing vessels as a tool for EMS and as an alternative for observer on board. SOP for monitoring of CCTV has been develop as a guidelines for monitoring catch and bycatch.

Until 2021, 13 tuna vessels installed CCTV under the Department of Fisheries Malaysia (DOF) and 6 tuna vessels installed CCTV under the Indian Ocean Longline Tuna FIP (Fishing Improvement Project).

The CCTV monitoring and reporting were done by DOF staff in Penang Fisheries Office for the duration of 3 – 6 months voyage. The hard disc will be taken from the vessels to the office once the vessel coming back to Penang Port, Malaysia for landing purposes and replaced with a new / empty disc for the next voyage.

Although Malaysia has yet to conduct Observer scheme as required by Resolution 11/04, there are 6 fishing vessels involved in a programme for Transshipment by large- scale fishing vessels which indirectly being monitored by observer. Under resolution 19/06, Malaysia longliners transhipped at sea monitor by the IOTC observer under ROP. Malaysia participated in the Regional Observer Program in 2021 for carrier vessel and fishing vessel to monitor transshipment at sea but, due to Covid 19 Pandemic, transshipment are allowed by the IOTC Secretariat without the attendance of Observer on Board.

6.4. Port sampling programme

From 2010, permanent staff from the DOF has conducted regular sampling activities at the MITP, Penang. They are responsible to collect, process and assist tuna scientists to analyse catch data. However, since 2012 until middle 2016, all Malaysian flag vessels unload their catches outside Malaysian port, then, no port samplings program were carried out. The port sampling program were resumed conducted after Malaysia register two designated tuna port in 2016 (Penang Port and Langkawi Port). **Starting 2017** onwards, 13 tuna fishing vessels unload their catches at Penang Port. Monitoring of tuna landing and inspection at port by Port Inspector also carried out for Malaysian tuna fishing vessels and foreign tuna fishing vessels unloading in Malaysia designated tuna port.

Sampling for neritic tuna for research purpose have been done monthly (12 month) **since 2015**. Their sampling program covers all landing sites and fishing ports along the west coast of Peninsular Malaysia, only on vessels operating in the Malaysian Fisheries waters. The sampling was taken by researchers and enumerators. The port sampling data at landing site covers 70% of landing and taken by Fisheries officer of DOF Malaysia

| No | Name of Vessel | Date of Landing | Gears | Weight by Species | | | | | | | | | | | | TOTAL (KG) |
|----|----------------|-----------------|-------|-------------------|----------|----------|---------|----------|---------|---------|---------|---------|---------|----------|---------------------|------------|
| | | | | YFT | BET | ALB | SKJ | SWO | MLS | BUM | BLM | SFA | SPP | OTH | | |
| 1 | FAJAR 3 | 05/01/2021 | LL | 4.83.1 | 12255.10 | 59373.50 | 489.30 | 6447.20 | 398.00 | 457.20 | 4784.60 | 1129.00 | 48.10 | 16551.60 | 101,933.60 | |
| 2 | FAJAR 6 | 13/01/2021 | LL | 1485.10 | 1194.70 | 38700.00 | 648.30 | 1206.50 | 669.60 | 0.00 | 849.30 | 209.10 | 0.00 | 5432.80 | 50,395.40 | |
| 3 | FAJAR 11 | 29/01/2021 | LL | 3505.30 | 5137.30 | 78266.10 | 1970.10 | 8661.10 | 547.50 | 1735.40 | 4262.70 | 1156.80 | 0.00 | 19186.70 | 124,429.00 | |
| 4 | FAJAR 2 | 01/02/2021 | LL | 1200.30 | 7058.30 | 42140.00 | 748.30 | 1698.30 | 109.10 | 1007.60 | 1249.30 | 228.90 | 0.00 | 5679.90 | 61,120.00 | |
| 5 | FAJAR 1 | 04/02/2021 | LL | 1476.10 | 5884.70 | 61183.90 | 0.00 | 5870.40 | 547.80 | 2702.90 | 939.90 | 872.20 | 0.00 | 7787.40 | 87,265.30 | |
| 6 | FAJAR 13 | 08/02/2021 | LL | 1322.90 | 5129.10 | 43720.00 | 688.20 | 3506.90 | 542.00 | 0.00 | 1845.90 | 228.10 | 52.00 | 6968.30 | 64,003.40 | |
| 7 | IBU WIRA 3 | 16/02/2021 | LL | 30875.50 | 1623.00 | 879.00 | 780.00 | 24960.00 | 671.00 | 0.00 | 8987.00 | 2980.00 | 1151.00 | 3374.00 | 76,280.50 | |
| 8 | IBU WIRA 2 | 01/03/2021 | LL | | | | | | | | | | | | 59,360.00 | |
| 9 | FAJAR 7 | 30/03/2021 | LL | | | | | | | | | | | | 39,840.00 | |
| 10 | FAJAR 6 | 30/03/2021 | LL | | | | | | | | | | | | 45,260.00 | |
| 11 | FAJAR 17 | 06/05/2021 | LL | | | | | | | | | | | | 42,120.00 | |
| 12 | FAJAR 9 | 02/06/2021 | LL | | | | | | | | | | | | 85,543.20 | |
| 13 | FAJAR 8 | 10/06/2021 | LL | | | | | | | | | | | | 64,620.00 | |
| 14 | FAJAR 2 | 16/06/2021 | LL | | | | | | | | | | | | 57,400.00 | |
| 15 | FAJAR 3 | 17/06/2021 | LL | | | | | | | | | | | | 63,040.00 | |
| 16 | FAJAR 6 | 16/07/2021 | LL | | | | | | | | | | | | 49,680.00 | |
| 17 | FAJAR 11 | 16/07/2021 | LL | | | | | | | | | | | | 88,120.00 | |
| 18 | FAJAR 13 | 19/07/2021 | LL | | | | | | | | | | | | 59,840.00 | |
| 19 | FAJAR 1 | 02/08/2021 | LL | | | | | | | | | | | | 39,920.00 | |
| 20 | FAJAR 7 | 16/08/2021 | LL | | | | | | | | | | | | 40,640.00 | |
| 21 | IBU WIRA 1 | 09/09/2021 | LL | | | | | | | | | | | | 15,400.00 | |
| 22 | IBU WIRA 2 | 09/09/2021 | LL | | | | | | | | | | | | 34,460.00 | |
| 23 | IBU WIRA 3 | 07/10/2021 | LL | | | | | | | | | | | | 74,000.00 | |
| 24 | FAJAR 17 | 21/10/2021 | LL | 2232.30 | 6305.10 | 17939.00 | 406.10 | 3115.10 | 2167.60 | 0.00 | 0.00 | 993.10 | 0.00 | 9301.70 | 42,460.00 | |
| 25 | FAJAR 6 | 23/11/2021 | LL | 1099.70 | 7210.40 | 32468.40 | 0.00 | 2809.70 | 569.80 | 0.00 | 0.00 | 19.90 | 0.00 | 8102.10 | 52,280.00 | |
| 26 | FAJAR 9 | 08/12/2021 | LL | 737.60 | 7300.00 | 54274.30 | 426.00 | 5748.00 | 0.00 | 1035.30 | 0.00 | 888.00 | 0.00 | 10929.90 | 81,339.10 | |
| 27 | FAJAR 2 | 13/12/2021 | LL | 643.80 | 3221.20 | 45080.00 | 748.90 | 1912.00 | 0.00 | 952.10 | 304.50 | 734.30 | 0.00 | 5263.20 | 58,860.00 | |
| 28 | FAJAR 8 | 14/12/2021 | LL | 1210.30 | 3062.50 | 41820.00 | 750.60 | 2943.10 | 454.10 | 133.90 | 581.70 | 0.00 | 0.00 | 6256.00 | 57,212.20 | |
| 29 | FAJAR 13 | 27/12/2021 | LL | 799.10 | 3533.70 | 47560.00 | 421.50 | 3752.40 | 0.00 | 1278.60 | 697.20 | 579.10 | 0.00 | 7018.40 | 65,640.00 | |
| 30 | FAJAR 3 | 28/12/2021 | LL | 1477.00 | 5775.20 | 62698.20 | 983.50 | 3482.00 | 0.00 | 2522.10 | 854.00 | 1122.60 | 0.00 | 10205.00 | 89,119.60 | |
| | | | | | | | | | | | | | | | 1,871,581.30 | |

Table 8: Number of vessel trips or vessels active monitored, by species and gear

| No | Name of Vessel | Date of Landing | Gears | Number of individual measured | | | | | | | | | | | TOTAL (Number) |
|----|----------------|-----------------|-------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|----------------|
| | | | | YFT | BET | ALB | SKJ | SWO | MLS | BUM | BLM | SFA | SPP | OTH | |
| 1 | FAJAR 3 | 05/01/2021 | Gears | 6 | 13 | 72 | 0 | 7 | 1 | 1 | 5 | 1 | 1 | 17 | 124 |
| 2 | FAJAR 6 | 13/01/2021 | LL | 9 | 6 | 38 | 1 | 1 | 1 | 0 | 6 | 5 | 1 | 69 | |
| 3 | FAJAR 11 | 29/01/2021 | LL | 4 | 5 | 78 | 1 | 9 | 1 | 2 | 4 | 2 | 0 | 20 | 126 |
| 4 | FAJAR 2 | 01/02/2021 | LL | 2 | 7 | 42 | 1 | 2 | 1 | 1 | 1 | 0 | 6 | 64 | |
| 5 | FAJAR 1 | 04/02/2021 | LL | 4 | 6 | 62 | 0 | 6 | 1 | 3 | 1 | 1 | 0 | 8 | 92 |
| 6 | FAJAR 13 | 08/02/2021 | LL | 2 | 5 | 48 | 1 | 4 | 1 | 0 | 2 | 1 | 1 | 7 | 72 |
| 7 | IBU WIRA 3 | 16/02/2021 | LL | 32 | 2 | 2 | 1 | 25 | 1 | 0 | 9 | 3 | 2 | 4 | 81 |
| 8 | IBU WIRA 2 | 01/03/2021 | LL | No Port Sampling due to Covid 19 lockdown | | | | | | | | | | | |
| 9 | FAJAR 7 | 30/03/2021 | LL | | | | | | | | | | | | |
| 10 | FAJAR 6 | 30/03/2021 | LL | | | | | | | | | | | | |
| 11 | FAJAR 17 | 06/05/2021 | LL | | | | | | | | | | | | |
| 12 | FAJAR 9 | 02/06/2021 | LL | | | | | | | | | | | | |
| 13 | FAJAR 8 | 10/06/2021 | LL | | | | | | | | | | | | |
| 14 | FAJAR 2 | 16/06/2021 | LL | | | | | | | | | | | | |
| 15 | FAJAR 3 | 17/06/2021 | LL | | | | | | | | | | | | |
| 16 | FAJAR 6 | 16/07/2021 | LL | | | | | | | | | | | | |
| 17 | FAJAR 11 | 16/07/2021 | LL | | | | | | | | | | | | |
| 18 | FAJAR 13 | 19/07/2021 | LL | | | | | | | | | | | | |
| 19 | FAJAR 1 | 02/08/2021 | LL | | | | | | | | | | | | |
| 20 | FAJAR 7 | 16/08/2021 | LL | | | | | | | | | | | | |
| 21 | IBU WIRA 1 | 09/09/2021 | LL | | | | | | | | | | | | |
| 22 | IBU WIRA 2 | 09/09/2021 | LL | | | | | | | | | | | | |
| 23 | IBU WIRA 3 | 07/10/2021 | LL | | | | | | | | | | | | |
| 24 | FAJAR 17 | 21/10/2021 | LL | 7 | 7 | 19 | 1 | 3 | 3 | 0 | 0 | 1 | 0 | 1 | 42 |
| 25 | FAJAR 6 | 23/11/2021 | LL | 2 | 7 | 35 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 8 | 57 |
| 26 | FAJAR 9 | 08/12/2021 | LL | 1 | 7 | 55 | 1 | 6 | 0 | 1 | 0 | 1 | 0 | 11 | 83 |
| 27 | FAJAR 2 | 13/12/2021 | LL | 1 | 7 | 45 | 1 | 2 | 0 | 1 | 1 | 1 | 0 | 5 | 64 |
| 28 | FAJAR 8 | 14/12/2021 | LL | 2 | 5 | 42 | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 6 | 64 |
| 29 | FAJAR 13 | 27/12/2021 | LL | 3 | 6 | 48 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 7 | 73 |
| 30 | FAJAR 3 | 28/12/2021 | LL | 3 | 6 | 63 | 0 | 4 | 0 | 3 | 1 | 1 | 0 | 11 | 92 |
| | | | | | | | | | | | | | | 1,103 | |

Table 9: Number of individuals measured, by species and gear] [Mandatory]

6.5. Unloading/Transshipment of flag vessels

Under resolution 19/06, 6 Malaysian longliners were allowed to do transshipment at sea on the Malaysian Carrier Vessel and monitored by the IOTC observer under ROP since June 2012. Malaysia participated in the Regional Observer Program in 2021 but there are temporary suspension of observer deployments under the IOTC Regional Observer Programme due to Covid-19 Pandemic (IOTC REF: 2020-063). All data were declared by the Carrier vessel captain (Kha Yang 333) and record information of transshipments from LSTLV as outlined by the Commission. Data of weight by species and location of transshipment were submitted to the IOTC Secretariat for all transshipment. All transshipment was done in the South WIO and the carrier vessels enter Port Louis, Mauritius for unloading. No infraction recorded under ROP in 2021.

13 other Malaysian longliners are not involved in the transshipment activities and unloading their catches at Penang Port, Malaysia every month and monitored by the Port Inspectors.

| No | Name of Vessel | Date of Landing | Gears | Weight by Species | | | | | | | | | | | TOTAL (KG) |
|----|----------------|-----------------|-------|-------------------|----------|----------|---------|----------|---------|---------|---------|---------|---------|----------|---------------------|
| | | | | YFT | BET | ALB | SKJ | SWO | MLS | BUM | BLM | SFA | SPP | OTH | |
| 1 | FAJAR 3 | 05/01/2021 | LL | 4,83.1 | 12255.10 | 59373.50 | 489.30 | 6447.20 | 398.00 | 457.20 | 4784.60 | 1129.00 | 48.10 | 16551.60 | 101,933.60 |
| 2 | FAJAR 6 | 13/01/2021 | LL | 1485.10 | 1194.70 | 38700.00 | 648.30 | 1206.50 | 669.60 | 0.00 | 849.30 | 209.10 | 0.00 | 5432.80 | 50,395.40 |
| 3 | FAJAR 11 | 29/01/2021 | LL | 3505.30 | 5137.30 | 78266.10 | 1970.10 | 8661.10 | 547.50 | 1735.40 | 4262.70 | 1156.80 | 0.00 | 19186.70 | 124,429.00 |
| 4 | FAJAR 2 | 01/02/2021 | LL | 1200.30 | 7058.30 | 42140.00 | 748.30 | 1698.30 | 109.10 | 1007.60 | 1249.30 | 228.90 | 0.00 | 5679.90 | 61,120.00 |
| 5 | FAJAR 1 | 04/02/2021 | LL | 1476.10 | 5884.70 | 61183.90 | 0.00 | 5870.40 | 547.80 | 2702.90 | 939.90 | 872.20 | 0.00 | 7787.40 | 87,265.30 |
| 6 | FAJAR 13 | 08/02/2021 | LL | 1322.90 | 5129.10 | 43720.00 | 688.20 | 3506.90 | 542.00 | 0.00 | 1845.90 | 228.10 | 52.00 | 6968.30 | 64,003.40 |
| 7 | IBU WIRA 3 | 16/02/2021 | LL | 30875.50 | 1623.00 | 879.00 | 780.00 | 24960.00 | 671.00 | 0.00 | 8987.00 | 2980.00 | 1151.00 | 3374.00 | 76,280.50 |
| 8 | IBU WIRA 2 | 01/03/2021 | LL | | | | | | | | | | | | 59,360.00 |
| 9 | FAJAR 7 | 30/03/2021 | LL | | | | | | | | | | | | 39,840.00 |
| 10 | FAJAR 6 | 30/03/2021 | LL | | | | | | | | | | | | 45,260.00 |
| 11 | FAJAR 17 | 06/05/2021 | LL | | | | | | | | | | | | 42,120.00 |
| 12 | FAJAR 9 | 02/06/2021 | LL | | | | | | | | | | | | 85,543.20 |
| 13 | FAJAR 8 | 10/06/2021 | LL | | | | | | | | | | | | 64,620.00 |
| 14 | FAJAR 2 | 16/06/2021 | LL | | | | | | | | | | | | 57,400.00 |
| 15 | FAJAR 3 | 17/06/2021 | LL | | | | | | | | | | | | 63,040.00 |
| 16 | FAJAR 6 | 16/07/2021 | LL | | | | | | | | | | | | 49,680.00 |
| 17 | FAJAR 11 | 16/07/2021 | LL | | | | | | | | | | | | 88,120.00 |
| 18 | FAJAR 13 | 19/07/2021 | LL | | | | | | | | | | | | 59,840.00 |
| 19 | FAJAR 1 | 02/08/2021 | LL | | | | | | | | | | | | 39,920.00 |
| 20 | FAJAR 7 | 16/08/2021 | LL | | | | | | | | | | | | 40,640.00 |
| 21 | IBU WIRA 1 | 09/09/2021 | LL | | | | | | | | | | | | 15,400.00 |
| 22 | IBU WIRA 2 | 09/09/2021 | LL | | | | | | | | | | | | 34,460.00 |
| 23 | IBU WIRA 3 | 07/10/2021 | LL | | | | | | | | | | | | 74,000.00 |
| 24 | FAJAR 17 | 21/10/2021 | LL | 2232.30 | 6305.10 | 17939.00 | 406.10 | 3115.10 | 2167.60 | 0.00 | 0.00 | 993.10 | 0.00 | 9301.70 | 42,460.00 |
| 25 | FAJAR 6 | 23/11/2021 | LL | 1099.70 | 7210.40 | 32468.40 | 0.00 | 2809.70 | 569.80 | 0.00 | 0.00 | 19.90 | 0.00 | 8102.10 | 52,280.00 |
| 26 | FAJAR 9 | 08/12/2021 | LL | 737.60 | 7300.00 | 54274.30 | 426.00 | 5748.00 | 0.00 | 1035.30 | 0.00 | 888.00 | 0.00 | 10929.90 | 81,339.10 |
| 27 | FAJAR 2 | 13/12/2021 | LL | 643.80 | 3221.20 | 45080.00 | 748.90 | 1912.00 | 0.00 | 952.10 | 304.50 | 734.30 | 0.00 | 5263.20 | 58,860.00 |
| 28 | FAJAR 8 | 14/12/2021 | LL | 1210.30 | 3062.50 | 41820.00 | 750.60 | 2943.10 | 454.10 | 133.90 | 581.70 | 0.00 | 0.00 | 6256.00 | 57,212.20 |
| 29 | FAJAR 13 | 27/12/2021 | LL | 799.10 | 3533.70 | 47560.00 | 421.50 | 3752.40 | 0.00 | 1278.60 | 697.20 | 579.10 | 0.00 | 7018.40 | 65,640.00 |
| 30 | FAJAR 3 | 28/12/2021 | LL | 1477.00 | 5775.20 | 62698.20 | 983.50 | 3482.00 | 0.00 | 2522.10 | 854.00 | 1122.60 | 0.00 | 10205.00 | 89,119.60 |
| | | | | | | | | | | | | | | | 1,871,581.30 |

Table 10: Quantities by species and gear landed in ports located in the IOTC area of competence (Penang Port, Malaysia)

| Port of transhipment | Name of Vessel | Date of transhipment | ALB | BET | BLM | CCL | BUM | BSH | DOL | SFA | MAK | MOO | OIL | SKJ | MLS | SWO | WAH | YFT | TOTAL | |
|----------------------|----------------|----------------------|--------|-------|------|-----|------|-------|-----|------|-----|-----|-------|-----|------|-------|-----|-------|--------|--------|
| Port Louis | KHA YANG 1 | 18/01/2021 | 3097 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3097 | |
| Port Louis | KHA YANG 333 | 19/02/2021 | 95508 | 63822 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60538 | 219868 |
| Port Louis | KHA YANG 333 | 22/03/2021 | 56298 | 0 | 3100 | 125 | 8220 | 10307 | 0 | 360 | 355 | 0 | 13360 | 0 | 1110 | 8400 | 0 | 24430 | 126065 | |
| Port Louis | KHA YANG 333 | 06/05/2021 | 428220 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 428220 | |
| Port Louis | KHA YANG 333 | 16/06/2021 | 321632 | 16479 | 1270 | 120 | 2015 | 2693 | 0 | 1400 | 0 | 0 | 23410 | 0 | 0 | 8934 | 0 | 70099 | 448052 | |
| Port Louis | KHA YANG 333 | 16/07/2021 | 259730 | 12136 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1670 | 0 | 0 | 15725 | 0 | 34052 | 323313 | |
| Port Louis | KHA YANG 333 | 19/08/2021 | 256572 | 11780 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1100 | 0 | 0 | 0 | 0 | 47290 | 316742 | |
| Port Louis | KHA YANG 1 | 04/09/2021 | 16928 | 735 | 185 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2024 | 0 | 30 | 1315 | 0 | 2256 | 23473 | |
| Port Louis | KHA YANG 5 | 09/09/2021 | 15635 | 1410 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3750 | 0 | 0 | 2319 | 0 | 5000 | 28114 | |
| Port Louis | KHA YANG 3 | 07/09/2021 | 18683 | 1725 | 100 | 0 | 130 | 0 | 0 | 0 | 0 | 0 | 1433 | 0 | 0 | 1145 | 0 | 8046 | 31262 | |
| Port Louis | KHA YANG 9 | 09/09/2021 | 17629 | 960 | 45 | 0 | 0 | 0 | 20 | 110 | 0 | 220 | 1594 | 0 | 150 | 3116 | 80 | 3331 | 27255 | |
| Port Louis | Kha Yang 35 | 09/09/2021 | 14025 | 900 | 150 | 0 | 90 | 0 | 0 | 0 | 0 | 0 | 900 | 0 | 65 | 1845 | 0 | 3430 | 21405 | |
| Port Louis | KHA YANG 333 | 10/12/2021 | 68103 | 32950 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69750 | 170803 | |

Table 11: Quantities by species and gear transhipped in ports located in the IOTC area of competence (Port Louis, Mauritius)

6.6. Actions taken to monitor catches & manage fisheries for Striped Marlin, Black Marlin, Blue Marlin and Indo-pacific Sailfish

In the Terms and Condition of the ATF, No 18: The Master of this vessel shall not retain on board, trans-ship, land, any specimen smaller than 60 cm Lower Jaw Fork Length (LJFL) of any of the following species; Striped Marlin, Black Marlin, Blue Marlin and Indo Pacific Sailfish and shall ensure that all necessary steps have been taken to guarantee the safe release of unintentionally or accidentally caught.

DOF Malaysia includes report of Size Frequency (SF) in the logbook for all tuna and tuna like Species. From the logbook SF 2021 record, the average length (LJFL) are between 100 cm – 200 cm.

Table 12: Length (LJFL) by species recorded from report of size frequency

| Species | Lower LJFL (cm) | Higher LJFL (cm) |
|-----------------------|-----------------|------------------|
| Striped Marlin | 137 | 233 |
| Black Marlin | 71 | 313 |
| Blue Marlin | 75 | 300 |
| Indo Pacific Sailfish | 62 | 191 |
| Sword Fish | 61 | 203 |

6.7. Gillnet observer coverage and monitoring

In the Terms and Condition of the ATF, No.5: All Malaysia tuna fishing vessels are not allowed to use fishing gears other than the licensed gears. Large-scale driftnets shall be prohibited. No large-scale driftnet is licensed in the Malaysian Waters. For small drift net vessel, 30% of field sampling are collected for data analysis.

6.8 Sampling plans for mobulid rays

Mobulid Rays are protected under **section 27 Fisheries Act 1985** and Fisheries (Control of Endangered Species of Fish) (Amendment) Regulations 2019. In the Terms and Condition of the ATF, No 15: The Master of this vessel: (i) is prohibited from using the vessel to target mobulid rays, sharks, or turtle; and (ii) shall ensure that all necessary steps have been taken to promote the live release. To date, no national research has been conducted on mobulid rays. No Mobulid rays found in the Malacca Straits.

7. NATIONAL RESEARCH PROGRAMS

From 2015 – 2021, research has been carried out on tuna and tuna-like species in the IOTC area of competent for neritic tuna and scombridae sp. by the Fisheries Research Institute, Kampong Acheh, Perak.

The other study on oceanic tuna involved in area of South China Sea and Sulu Sulawesi Sea.

For additional, the size frequency of oceanic tuna was provided by the fishing vessels in the logbook and some of the oceanic tuna were measured at the landing site by the Port Inspector.

7.1. National research programs on blue shark

No specific national research programs on blue sharks.

7.2. National research programs on Striped Marlin, Black Marlin, Blue Marlin and Indo-pacific Sailfish

No national research programs on Striped Marlin, Black Marlin, Blue Marlin and Indo-pacific Sailfish.

7.3. National research programs on sharks

Research collaboration with SEAFDEC to undertake the management issues on sharks in Malaysia. List of research programs that have been conducted are:

- Landing data collection by species at major landing fish sites
- Identification species through DNA barcoding
- Trainings and workshops on taxonomy, biology and data collection of sharks and rays
- Marketing and trade surveys
- Nursery ground of sharks and rays
- Survey and biological study on freshwater stingrays

7.4. National research programs on oceanic whitetip sharks

No specific national research programs on oceanic whitetip sharks.

7.5. National research programs on marine turtles

As one of the conservation measures to prevent possible interaction the turtles by the fishing gears especially trawlers, a device known as "Juvenile and Turtle Excluding Device" (JTED) is developed and promoted to the fishermen to use in their trawl nets. The use of circle hook for longline is also been encouraged and promoted to the artisanal fishermen. Several joint trails and training were conducted between the government and fishermen for the use of C-hook.

There are a total of 26 Turtle Hatcheries Centres throughout Malaysia and seven (7) turtle conservation and information centres in Malaysia have regularly implementing awareness program for student and fishermen communities.

7.6. National research programs on thresher sharks

No specific national research programs on thresher sharks.

| Project title | Period | Countries involved | Budget total* | Funding source | Objectives | Short description |
|------------------------|--------|--------------------|---------------|----------------|------------------|-------------------|
| Landing and biology of | 2015- | Malaysia | RM | National R&D | Landing trend by | On going |

| | | | | | | |
|---|-------------|----------|--------------|--------------------|--|----------|
| longtail, kawakawa and Scombridae sp. in the northwest of peninsular Malaysia | 2021 | | 1,150,000 | Fund. | Species and spawning season of kawakawa | |
| Landing of Oceanic Tuna in West Malaysia | 2015 - 2021 | Malaysia | RM 1,150,000 | National R&D Fund. | Landing trend by Species of oceanic tuna | On going |

*(1 USD = RM 4.60)

Table 13: Summary table of national research programs

8. IMPLEMENTATION OF SCIENTIFIC COMMITTEE RECOMMENDATIONS AND RESOLUTIONS OF THE IOTC RELEVANT TO THE SC.

Table 14: Scientific requirements contained in Resolutions of the Commission, adopted between 2012 and 2021.

| Res. No. | Resolution | Scientific requirement | CPC progress |
|----------|---|------------------------|--|
| 11/04 | On a regional observer scheme | Paragraph 9 | Malaysia has communicated with IOTC Secretariat on the Support for the implementation of the IOTC Regional Observer Scheme. DOF Malaysia also have installed CCTV on every vessel as a tool for EMS as an alternative for observer on board. |
| 12/04 | On the conservation of marine turtles | Paragraphs 3, 4, 6–10 | Sea turtle is protected under section 27, Fisheries Act 1985 and Malaysia has published the National Plan of Action for Conservation and Management of Sea Turtles. The NPOA is currently being reviewed for further improvement. Malaysia has sets requirement in the license and ATF terms and condition for all fishing vessels to carry line cutters and de hookers on board. Release and discard table also included in the updated logbook for recording any interaction with the species. |
| 12/06 | On reducing the incidental bycatch of seabirds in longline fisheries. | Paragraphs 3–7 | Malaysia requires all vessels operating in the area south of 25°S to take mitigation measures as required under license condition and ATF. All Malaysian flag fishing vessels are |

| | | | |
|-------|---|-----------------|---|
| | | | using weighted branch lines and tori lines as the mitigation measures on seabirds when operating in areas south of 25 °S. |
| 12/09 | On the conservation of thresher sharks (family alopiidae) caught in association with fisheries in the IOTC area of competence | Paragraphs 4–8 | Any interaction of shark species includes Families Alopiidae to be recorded by the tuna longline operators. Fishing, storing or retaining on board, transshipping or landing in whole or in part, any of the following sharks shall be prohibited: species of the family Alopiidae; and Oceanic whitetip shark. Release and discard table also included in the updated logbook for recording any interaction with the species. |
| 13/04 | On the conservation of cetaceans | Paragraphs 7– 9 | Under Malaysian Fisheries Act 1985, Fisheries Regulation on (Control of Endangered Species of Fish) Regulation 1999, cetacean under dolphin group were protected. Release and discard table also included in the updated logbook for recording any interaction with the species. |
| 13/05 | On the conservation of whale sharks (<i>Rhincodon typus</i>) | Paragraphs 7– 9 | Under Malaysian Fisheries Act 1985, Fisheries Regulation on (Control of Endangered Species of Fish) Regulation 1999, whale shark (<i>Rhincodon typus</i>) were protected and listed in Malaysia CITES Act 2008. Release and discard table also included in the updated logbook for recording any interaction with the species. |
| 13/06 | On a scientific and management framework on the conservation of shark species caught in association with IOTC managed fisheries | Paragraph 5–6 | Each Malaysian tuna longline vessels fishing in the Indian Ocean have been provided with booklet on shark species identification for them to records any interaction and to report to the fisheries authority. Sharks and rays listed in CITES also listed in the Malaysia CITES Act 2008. Release and discard table also included in the updated logbook for recording any interaction with the species. |
| 15/01 | On the recording of catch and | Paragraphs 1–10 | Malaysia have updated the national |

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|-------|--|---------------------|--|
| | effort by fishing vessels in the IOTC area of competence | | logbook to include all the species as requested in Resolution 15/01 and submitted to the Secretariat in 2017 and in 2019 for purse seine. The updated logbook includes mandatory to provide size frequency and interaction with protected species. For vessels <24m, operating within EEZ, data collection using Vessel Operating Activity (LOV) and researcher enumerator. |
| 15/02 | Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs) | Paragraphs 1–7 | Malaysia has started compiling data on size frequency for coastal fisheries from year 2017 – 2019. Malaysia had submitted the catch and effort data to the Secretariat as required under data to the secretariat as required under resolution 15/02. The size frequency of oceanic tuna was provided by the fishing vessels in the logbook and some of the oceanic tuna was measured at the landing site by the Port Inspector. |
| 17/05 | On the conservation of sharks caught in association with fisheries managed by IOTC | Paragraphs 6, 9, 11 | Interaction on shark species by Malaysian tuna longliners were recorded in bycatch logsheet for release/discard. For shark species caught by within EEZ waters, the majority are from demersal species which are not listed under endangered species. The Master vessel shall ensure that all necessary steps have been taken to guarantee the safe release of shark that is unintentionally caught and report all incidents of the shark releases, including the status at time of release. |
| 18/02 | On management measures for the conservation of blue shark caught in association with IOTC fisheries | Paragraphs 2-5 | National logbook includes reporting on blue shark, released/discarded and size frequency. No specific national research programs on blue sharks. |
| 18/05 | On management measures for the conservation of the Billfishes: Striped marlin, black marlin, blue marlin and | Paragraphs 7 – 11 | National logbook includes reporting on blue shark, released/discarded and size frequency. No specific national research programs on blue |

| | | | |
|-------|---|-----------------|--|
| | Indo-Pacific sailfish | | sharks. |
| 18/07 | On measures applicable in case of non-fulfilment of reporting obligations in the IOTC | Paragraphs 1, 4 | National logbook includes reporting on shark species, released/discarded and size frequency. Malaysia sent full set of data reporting in 2020 including data on zero catches. |
| 19/01 | On an Interim Plan for Rebuilding the Indian Ocean Yellowfin Tuna Stock in the IOTC Area of Competence | Paragraph 22 | Malaysia longliners catches of yellowfin tuna for 2020 were below 5000 mt. |
| 19/03 | On the Conservation of Mobulid Rays Caught in Association with Fisheries in the IOTC Area of Competence | Paragraph 11 | Mobulid Rays are protected under section 27 Fisheries Act 1985 and Fisheries (Control of Endangered Species of Fish) (Amendment) Regulations 2019. To date, no national research has been conducted on mobulid rays. |

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