[CHINA] National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2023

Yanan Li, Shiyu Yang, Feng Wu, Jiangfeng Zhu*

Shanghai Ocean University,
999 HuchengHuan Rd., Shanghai 201306, China

jfzhu@shou.edu.cn
liyananxiada@yeah.net.cn

INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

In accordance with IOTC Resolution 15/02 (and other data related CMMs as noted below), final scientific data for the previous year were 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 2023, final data for the 2022 calendar year must be provided to the Secretariat by 30 June 2023)	Not applicable
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 2023, preliminary data for the 2022 calendar year were provided to the IOTC Secretariat by 30 June 2023). **REMINDER:** Final longline data for the previous year are due to the IOTC Secretariat by 30 Dec of the current year [e.g., for a National Report submitted to the IOTC Secretariat in 2023, final data for the 2022 calendar year must be provided to the Secretariat by 30 December 2023).	YES 29/06/2023
If no, please indicate the reason(s) and intended actions:	

Executive Summary [Mandatory]

Deep-frozen longline (LL) targeting for tropical tuna and frozen LL targeting albacore are the only two fishing gears used by Chinese fleets to catch tuna and tuna-like species in the Indian Ocean Tuna Commission (IOTC) Area of Competence. The total number of Chinese LL fleets operating in the IOTC Area of Competence in 2022 was 78. The number of active deep-frozen LL fleets and frozen LL fleets were remained 70 and 8 in 2022, which had no change compared with 2021. The tropical tuna catch (bigeye and yellowfin tuna) of Chinese LL fleets in 2022 was estimated at 7,491MT, which was 157 MT higher than that in 2021 (7,334MT). The albacore LL catch for 2022 was estimated at 5,930MT, higher than in 2021 (2,360MT). Both the logbook and observer programs are being implemented for the Chinese LL fleets. In 2022, five scientific observers were deployed on board LL fleets to collect data for both target and bycatch species as required.

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1. BACKGROUND/GENERAL FISHERY INFORMATION [MANDATORY]

LL is the only fishing gear for the China mainland fleet in the IOTC Area of Competence since 1995. One hundred-twenty LL fishing vessels were recorded at the peak time in 1998, which mainly consisted of small non-professional fishing vessels reconstructed from trawlers or gill-netters originally operated along China coastal waters. After 1998 the number of fishing vessels began to reduce due to poor management, low economic performance, and the shift of fishing grounds to other oceans. The total number of tuna fishing vessels registered with the IOTC Secretariat was reduced to 93 in 2001 and further cut down to 63 in 2002. The number of active fishing vessels was reduced from 46 in 2008 to 32 in 2009 due to piracy in the relevant areas, of which 27 belong to the deep-frozen longliners. Before 2008 the deep-frozen tuna longliners usually operated in waters between 40 ºE ~ 90ºE and 20ºN ~ 40ºS. Since 2009, most of the deep-frozen fishing efforts shifted to the southern Indian Ocean due to piracy. The number of deep-frozen longliners was 15 and 10 in 2010 and 2011, respectively. Since 2012 some deep-frozen longliners began to return to the tropical western Indian Ocean. The number of deep-frozen LL fleets and frozen LL fleets active in 2022 remained unchanged from 2021 at 70 and 8, respectively. (**Table 1**).

2. FLEET STRUCTURE [MANDATORY]

The Chinese tuna fleet consisted of longliners targeting tropical tuna and longliners targeting albacore in the Indian Ocean. The vessel number is shown in **Table 1**.

Table 1: Number of vessels operating in the IOTC area of competence, by gear type and size class

Year	Gear	Vessel size range	Number of vessels
2018	Deep-frozen LL	GRT over 400	75
	Frozen LL	GRT 250- 400	10

2019	Deep-frozen LL	GRT over 400	54
	Frozen LL	GRT 250- 400	34
2020	Deep-frozen LL	GRT over 400	72
	Frozen LL	GRT 250- 400	8
2021	Deep-frozen LL	GRT over 400	70
	Frozen LL	GRT 250- 400	8
2022	Deep-frozen LL	GRT over 400	70
	Frozen LL	GRT 250- 400	8

3. CATCH AND EFFORT (BY SPECIES AND GEAR) [MANDATORY]

Annual catch by species and effort of the Chinese fleet by gear and primary species in the IOTC area of competence were shown in **Table 2**. The Deep-frozen LL effort (hooks deployed) in 2022 was 47.4% less than that in 2021. The Frozen LL effort in 2021 was 53.2% higher than in 2021.

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

Table 2a Albacore caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Deep-frozen LL	24769	3102
2019	Deep-frozen LL	12330	215
2020	Deep-frozen LL	12753	268
2021	Deep-frozen LL	21395	1171
2022	Deep-frozen LL	11252	174

Table 2b Albacore caught by Chinese frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Frozen LL	8218	2348
2019	Frozen LL	14051	2274
2020	Frozen LL	15105	3495
2021	Frozen LL	12649	1189
2022	Frozen LL	27021	5756

Table 2c Bigeye tuna caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Deep-frozen LL	24769	3556
2019	Deep-frozen LL	12330	1011
2020	Deep-frozen LL	12753	1891
2021	Deep-frozen LL	21395	2915
2022	Deep-frozen LL	11252	1181

Table 2d Bigeye tuna caught by Chinese frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Frozen LL	8218	499
2019	Frozen LL	14051	826
2020	Frozen LL	15105	1696
2021	Frozen LL	12649	1717
2022	Frozen LL	27021	2634

Table 2e Yellowfin tuna caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Deep-frozen LL	24769	3665
2019	Deep-frozen LL	12330	2193
2020	Deep-frozen LL	12753	2484
2021	Deep-frozen LL	21395	2119
2022	Deep-frozen LL	11252	2058

Table 2f Yellowfin tuna caught by Chinese frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Frozen LL	8218	977
2019	Frozen LL	14051	1020
2020	Frozen LL	15105	1223
2021	Frozen LL	12649	583
2022	Frozen LL	27021	1618

Table 2g Swordfish caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Deep-frozen LL	24769	1836
2019	Deep-frozen LL	12330	695
2020	Deep-frozen LL	12753	968
2021	Deep-frozen LL	21395	958
2022	Deep-frozen LL	11252	701

Table 2h Swordfish caught by Chinese frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Frozen LL	8218	136
2019	Frozen LL	14051	310
2020	Frozen LL	15105	352
2021	Frozen LL	12649	425
2022	Frozen LL	27021	599

Table 2i Blue marlin caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Deep-frozen LL	24769	620
2019	Deep-frozen LL	12330	255
2020	Deep-frozen LL	12753	254
2021	Deep-frozen LL	21395	257
2022	Deep-frozen LL	11252	137

Table 2j Blue marlin caught by Chinese frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Frozen LL	8218	122
2019	Frozen LL	14051	81
2020	Frozen LL	15105	41
2021	Frozen LL	12649	22
2022	Frozen LL	27021	55

Table 2k Striped marlin caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Deep-frozen LL	24769	184
2019	Deep-frozen LL	12330	60
2020	Deep-frozen LL	12753	53
2021	Deep-frozen LL	21395	80
2022	Deep-frozen LL	11252	40

Table 2l Striped marlin caught by Chinese frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Frozen LL	8218	6
2019	Frozen LL	14051	16
2020	Frozen LL	15105	1
2021	Frozen LL	12649	8
2022	Frozen LL	27021	10

Table 2m Black marlin caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Deep-frozen LL	24769	14
2019	Deep-frozen LL	12330	1
2020	Deep-frozen LL	12753	1
2021	Deep-frozen LL	21395	38
2022	Deep-frozen LL	11252	27

Table 2n Black marlin caught by Chinese frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2018	Frozen LL	8218	5
2019	Frozen LL	14051	8
2020	Frozen LL	15105	34
2021	Frozen LL	12649	34
2022	Frozen LL	27021	51

Figure 1. Historical annual catch for the national fisheries by primary species, for the IOTC area of competence for the entire history of the fisheries. **[Mandatory]**

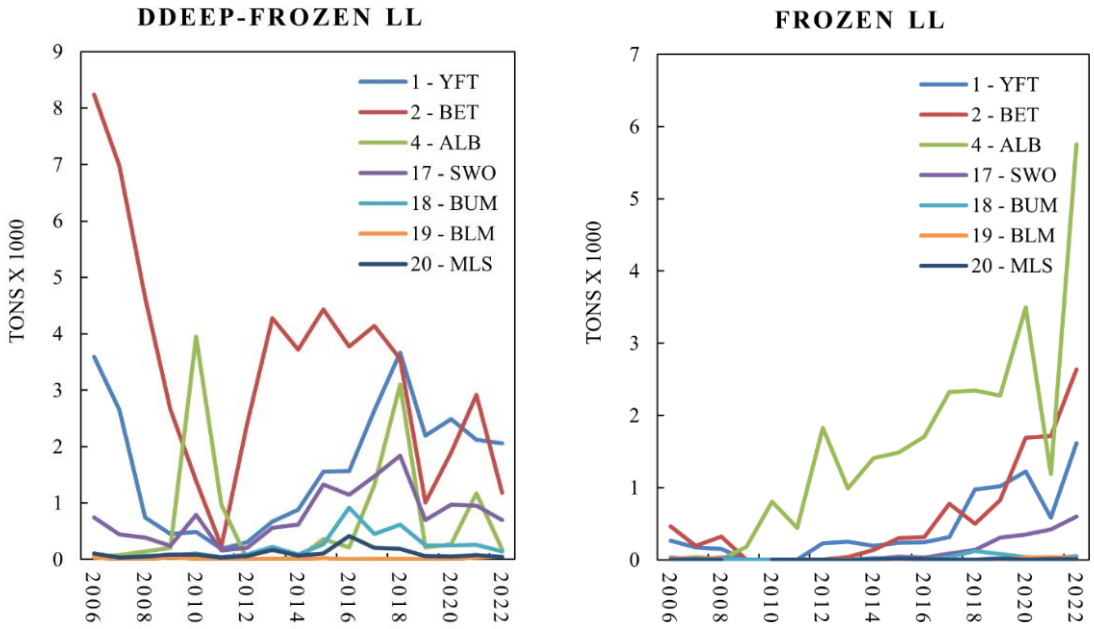


Figure 2a. Distribution of fishing effort (hooks) by gear type in the IOTC area of competence in 2022

Deep-frozen LL 2022 **Frozen LL 2022**

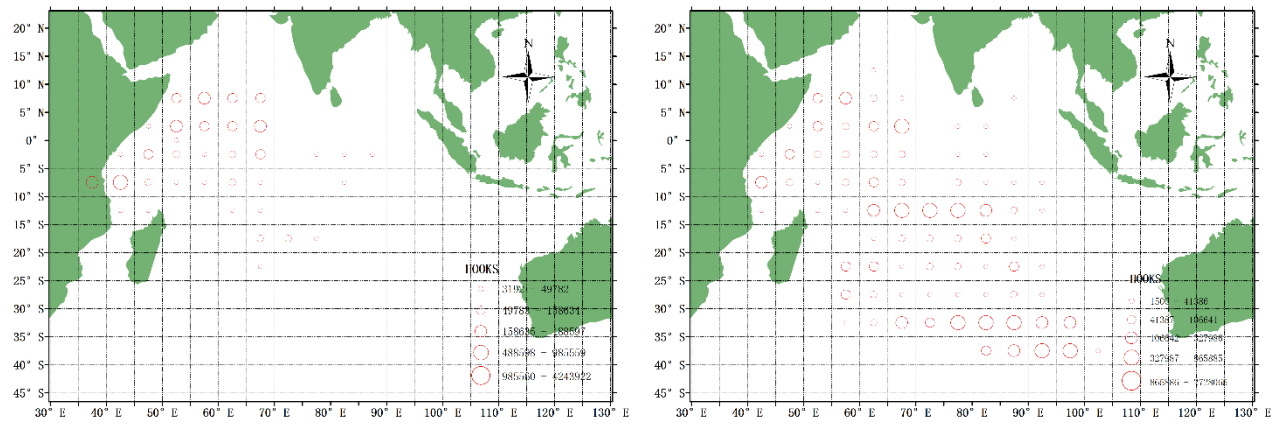
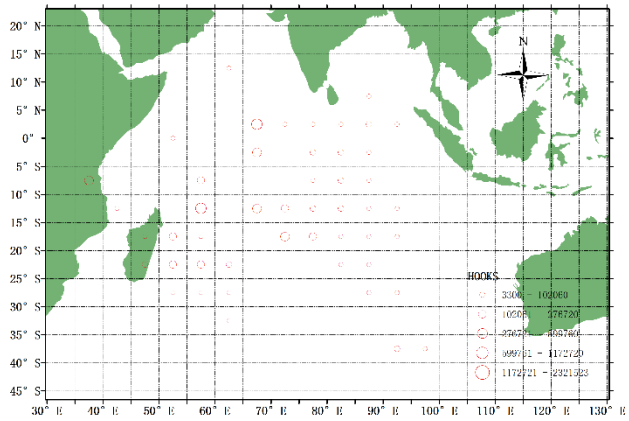


Figure 2b. Distribution of average fishing effort (hooks) of 2018-2022 by gear type in the IOTC area of competence

Deep-frozen LL 2018-2022



Frozen LL 2018-2022

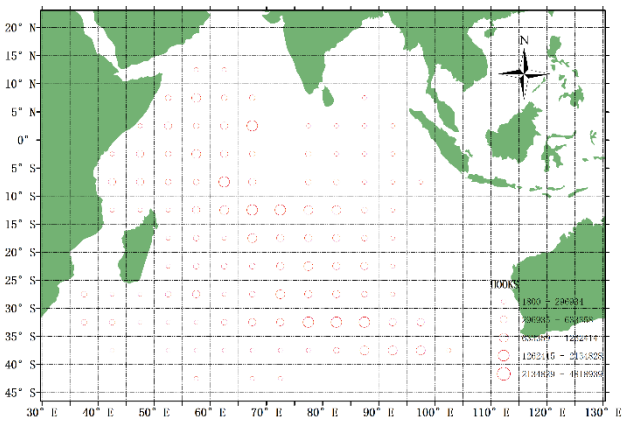
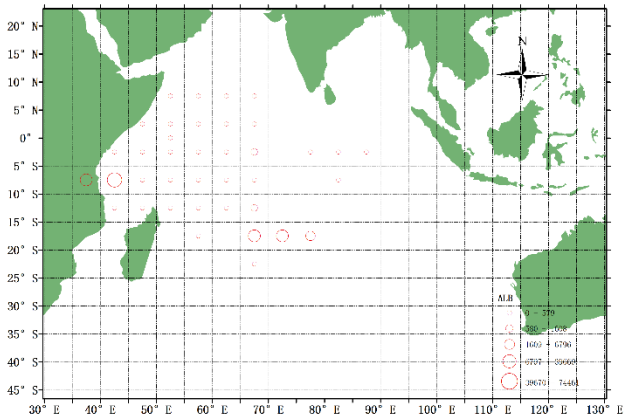
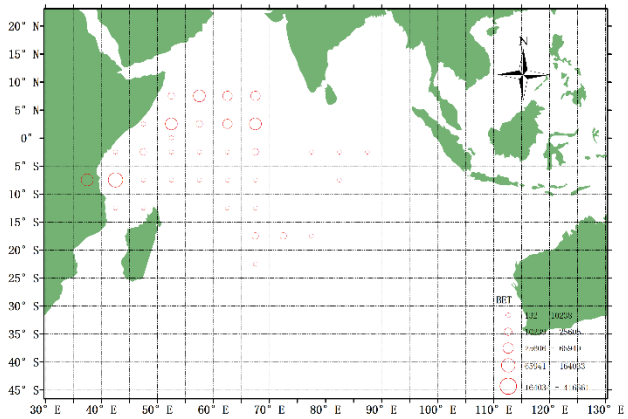


Figure 3a. Distribution of LL catch (kg) by gear type and species in the IOTC area of competence in 2022

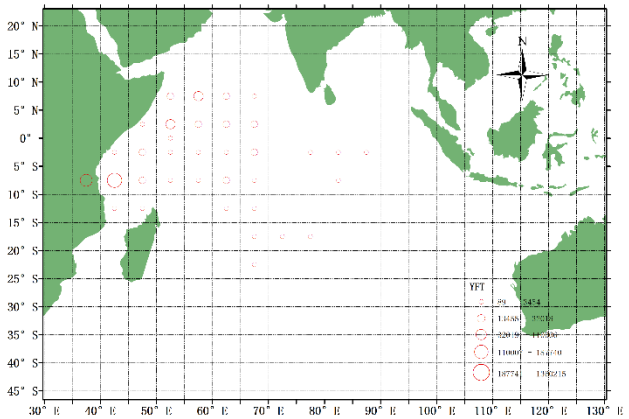
Deep-frozen ALB 2022



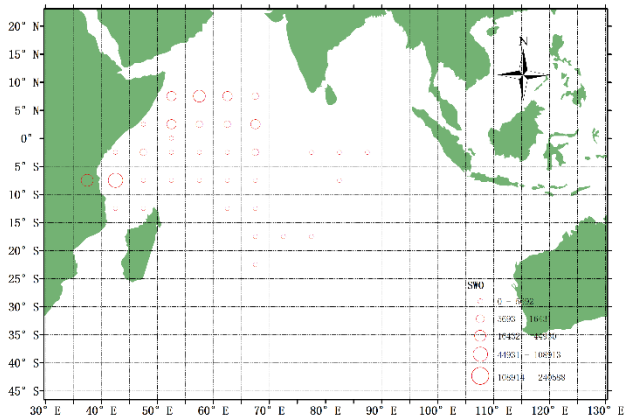
Deep-frozen BET 2022



Deep-frozen YFT 2022

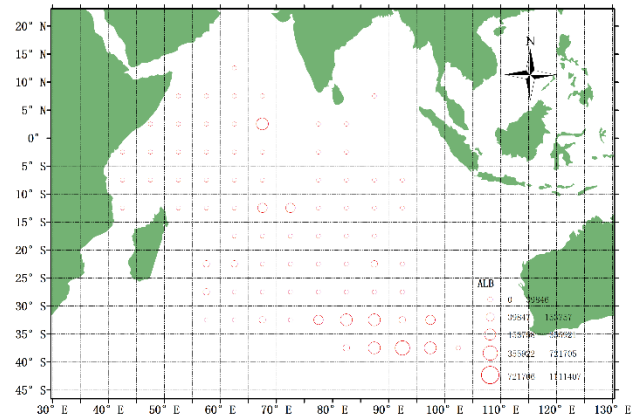


Deep-frozen SWO 2022

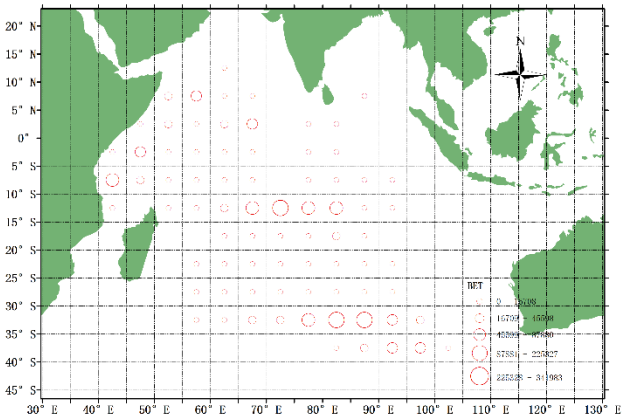


Frozen ALB 2022

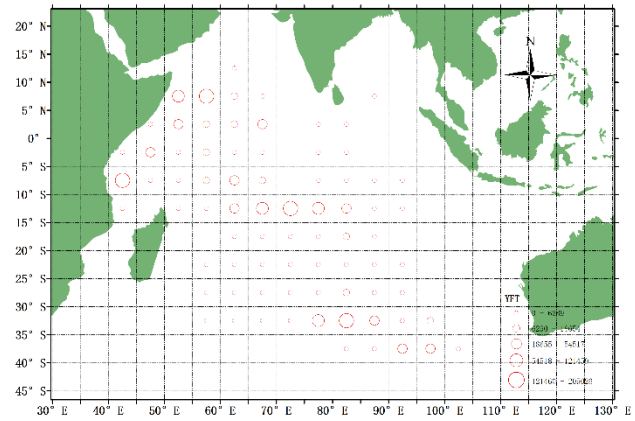
Frozen BET 2022



Frozen YFT 2022



Frozen SWO 2022



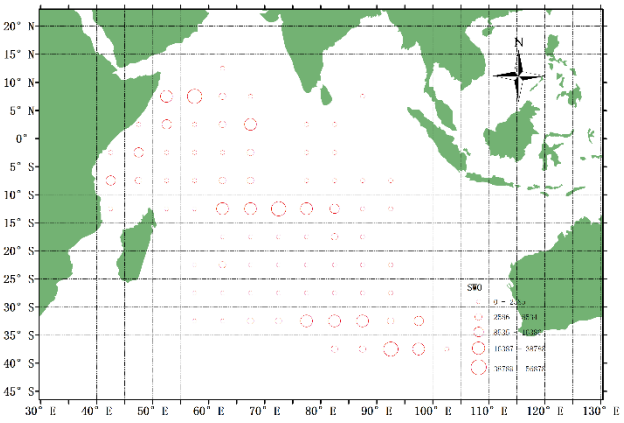
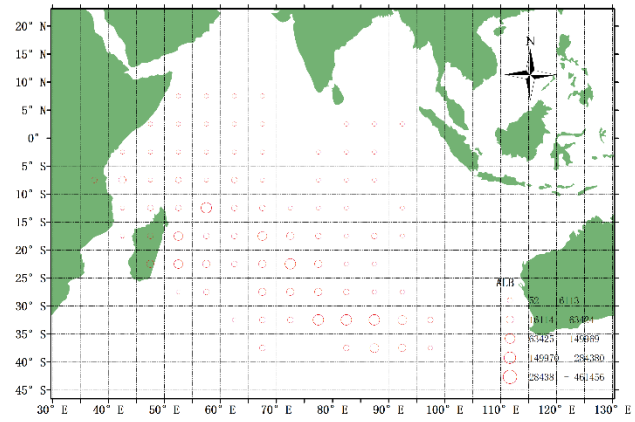
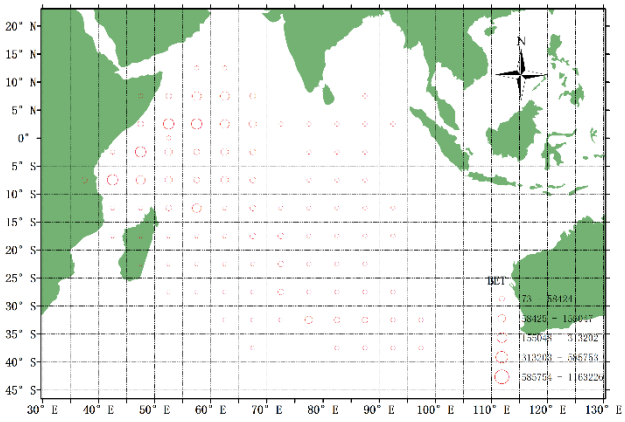


Figure 3b. Distribution of LL catch by gear type and species in the IOTC area of competence (average of 2018-2022)

Deep-frozen ALB 2018-2022

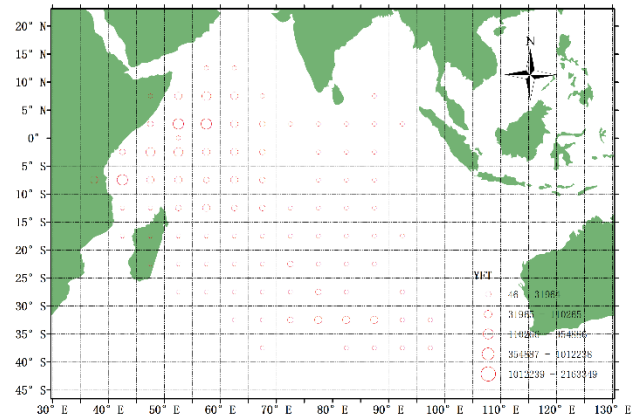


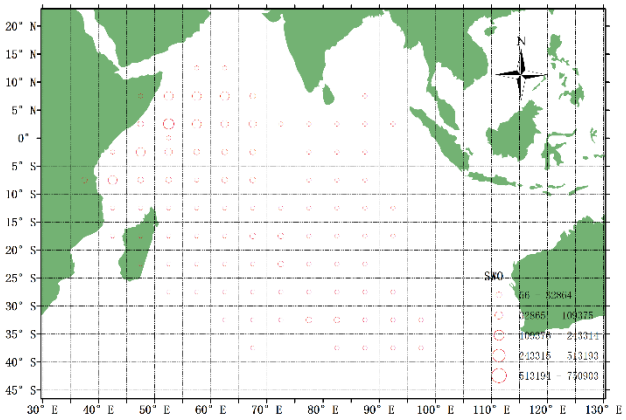
Deep-frozen BET 2018-2022



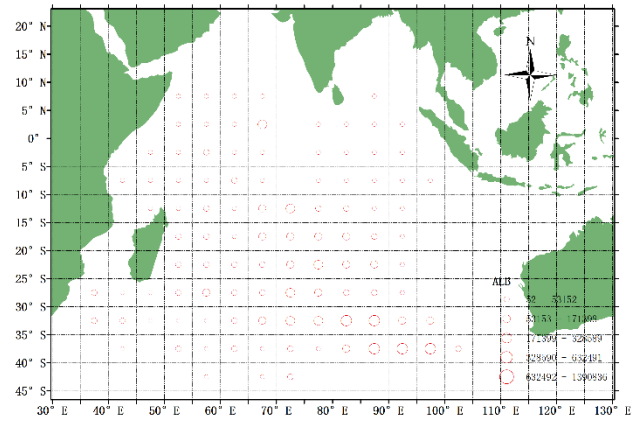
Deep-frozen YFT 2018-2022

Deep-frozen SWO 2018-2022

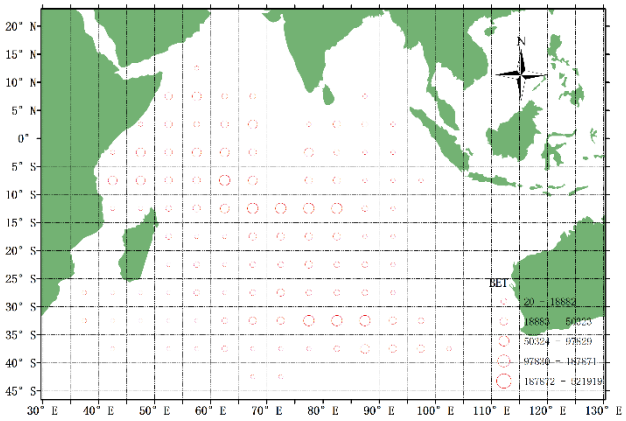




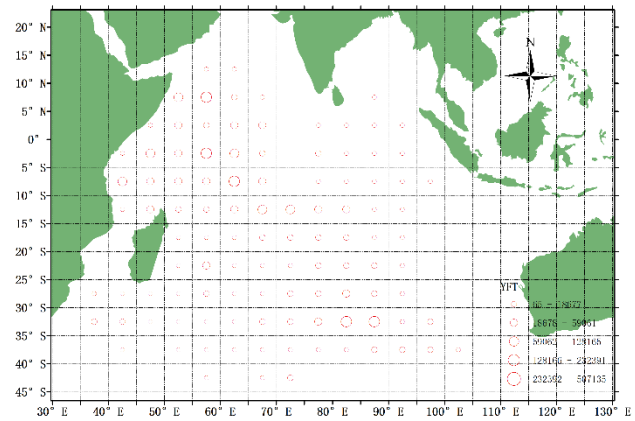
Frozen ALB 2018-2022



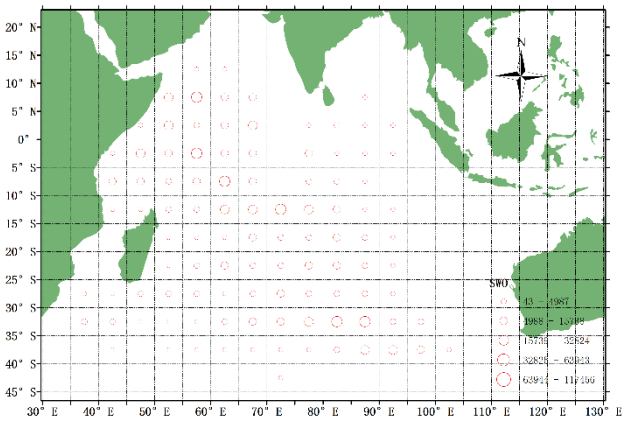
Frozen BET 2018-2022



Frozen YFT 2018-2022



Frozen SWO 2018-2022



4. RECREATIONAL FISHERY [MANDATORY]

Not applicable. China is not operating recreational fishing in the Indian Ocean.

5. ECOSYSTEM AND BYCATCH ISSUES [MANDATORY]

China is making efforts to contribute to data collection for ecosystem and bycatch issues in the Indian Ocean, based on our observer and logbook programs. China pays close attention to the sustainable development of bycatch species related to the target species, emphasizes the assessment and monitoring of bycatch species resources, and encourages and participates in information collection and scientific research. It actively

implements the FAO *International Plan of Action for Conservation and Management of Sharks*, and strictly abides by the conservation and management measures of IOTC on sharks and other species. China has formulated and implemented the *Action Plan of Sea Turtle Conservation (2019-2033)*, and has prepared an overall plan of sea turtle conservation and management at the national level. China further strengthens conservation and management of marine mammals, requiring distant-water fishing vessels to strictly comply with the conservation and management measures of IOTC, and to make sure safe release, data collection, information reporting, scientific research, and supervision and management of marine mammals and other bycatch species are well-conducted. Scientists and researchers from the SHOU take responsibility for China's tuna fishery and bycatch research in the Indian Ocean. The researchers are also working on using ecosystem models to evaluate the population dynamics and fisheries stock assessment and adaptive management based on non-stationary population dynamics. China has provided scientific data from its observer program, which was used for biological study and ecological risk analysis for sharks.

5.1 Sharks [Mandatory]

China attaches great importance to the implementation of fishing vessels operating in the Indian Ocean. In the newly revised *Notification by General Office of Ministry of Agriculture and Rural Affairs on Completely Comply with International Tuna Measures, Nongbanyu (2022) No.1*, which are corresponding regulations on the filling of logbooks and the protection of bycatch sharks. China does not approve distant water fishery projects that target sharks and requests all distant water fishery companies and fishing vessels to take effective measures to avoid or reduce shark bycatch as much as possible. Except for the shark species prohibited by RFMOs to keep on board, bycatch sharks should be fully utilized (i.e. all fish bodies and fins except the head, viscera, and skin should be kept), and shark fins should not be cut off to discard the shark body. The weight of shark fins kept on board shall not exceed 5% of the shark's body weight until the fishing boat arrives at the first port of discharge. To facilitate port inspection or relevant high sea boarding & inspection, tuna LL fishing vessels shall pack the shark fins and corresponding fish bodies that are allowed to be kept on board in bags made of degradable materials; or bundle the severed shark fins in on the same shark body; or separate the shark fins from the fish body, mark them accordingly, and store them in the same cabin to ensure that the fins and fish body of the same shark are easy to identify. China prohibits keeping, transhipping, or unloading Indian Ocean thresher sharks, oceanic whitetip sharks, and mobulid rays in ports on fishing vessels.

5.1.1. NPOA sharks [Desirable]

The National Plan of Action for Conservation and Management of Sharks has yet to be developed. China manages such issues through regulations that cover the conservation of sharks and seabirds. For details, refer to *Notification by General Office of Ministry of Agriculture and Rural Affairs on Completely Comply with International Tuna Measures, Nongbanyu (2022) No.1.*

5.1.2. Sharks finning regulation [Mandatory]

In the newly revised *Notification by General Office of Ministry of Agriculture and Rural Affairs on Completely Comply with International Tuna Measures, Nongbanyu (2022) No.1*, which are corresponding regulations on the implementation of shark finning regulations. Except for the shark species prohibited by RFMOs to keep on board, bycatch shark fins should not be cut off to discard the shark body. The weight of shark fins kept on board shall not exceed 5% of the shark's body weight until the fishing boat arrives at the first port of discharge. To facilitate port inspection or relevant high sea boarding & inspection, tuna LL fishing vessels shall pack the shark fins and corresponding fish bodies that are allowed to be kept on board in bags made of degradable materials; or bundle the severed shark fins in on the same shark body; or separate the shark fins from the fish body, mark them accordingly, and store them in the same cabin to ensure that the fins and fish body of the same shark are easy to identify.

5.1.3. Blue shark [Mandatory]

Blue shark catches are being routinely recorded based on the catch statistics program and observer program. All observers were required to collect catch, effort, size, and discard data of blue sharks and submitted the data to

the IOTC secretariat by 29 June. China is collecting blue shark biological and ecological information based on LL observer program. Species-specific catch and effort data are recorded in the logbook.

5.2 Seabirds [Mandatory]

China attaches great importance to the implementation of fishing vessels operating in the Indian Ocean. In the newly revised *Notification by General Office of Ministry of Agriculture and Rural Affairs on Completely Comply with International Tuna Measures, Nongbanyu (2022) No.1,* which are corresponding regulations on the protection of seabirds. Mitigation measures on the Chinese LL fleet are being implemented according to the management measures, bird-scaring lines, night-setting, and/or line weighting. Most of China's tuna LL fleets are operating in the tropical areas of IOTC waters and there are no interactions with seabirds. No seabird mortality in the tropical water was observed by LL observers onboard. The frozen longliners operating in the water south of 25°S might interact with seabirds, as observed by observers in previous years. In 2022, no seabird was observed by five Chinese observers in the Indian Ocean area.

5.3 Marine Turtles [Mandatory]

China attaches great importance to the implementation of fishing vessels operating in the Indian Ocean. In the newly revised *Notification by General Office of Ministry of Agriculture and Rural Affairs on Completely Comply with International Tuna Measures, Nongbanyu (2022) No.1,* which are corresponding regulations on the protection of sea turtles. All LL fishing vessels must be equipped with de-hooks, and encourage the use of circle hooks as much as possible to reduce damage to sea turtles that may be caught by accident. Sea turtles should be released safely as required in case of bycatch. All LL fishing vessels must be equipped with de-hooks, and encourage the use of circle hooks as much as possible to reduce damage to sea turtles that may be caught by accident. Sea turtles should be released safely as required in case of bycatch. Shallow LL fishing vessels (most hooks are located in water depths of less than 100m) must use circle hooks, baiting finfish is encouraged and squid is not encouraged. The companies should record the incidental catching of sea turtles during the operation period, and collect and report the incidental catching situation promptly according to the regulations. Since 2008, the Chinese management department has provided free turtle release tools, such as de-hooks, line cutters, and dip nets for all LL fishing vessels. Also, teach the officers and crews how to safely release sea turtles at sea. China's fishery authorities organize training to explain how to identify bycatch species and the relevant treatment requirements for reducing the mortality of bycatch species for fishery companies every year. All LL fishing vessels are equipped with turtle identification guides and map posters. Observers are responsible for recording species-specific interactions of marine turtles in LL fisheries, including the number of turtles caught, their fates, and release status. In March 2022, a Hawksbill turtle was caught and released alive by observer SU SHIWEN in vessel XINSHIJI 72.

5.4 Other ecologically related species (e.g., cetaceans, mobulid rays, whale sharks) [Desirable]

China attaches great importance to the implementation of fishing vessels operating in the Indian Ocean. In the newly revised *Notification by General Office of Ministry of Agriculture and Rural Affairs on Completely Comply with International Tuna Measures, Nongbanyu (2022) No.1,* which are corresponding regulations on the protection of marine mammals and whale sharks. Purse seine fishing is prohibited from fishing tuna schools following cetaceans or whale sharks when cetaceans or whale sharks are sighted. When there are cetaceans or whale sharks unintentionally encircled in the purse seine net, the purse seiner vessel shall stop the net roll, release the cetacean or the whale shark, and report it to the China Oversea Fishery Data Center. Observers are responsible for recording species-specific interactions of marine mammals in LL fisheries, including several species caught, their fate, and release status. No national plan of action for marine mammals is under development. In 2022, no marine mammal or whale was observed by five Chinese observers in the Indian Ocean area.

6. NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS [MANDATORY]

6.1. Logsheet data collection and verification (including date commenced and status of implementation)

China started the pilot logbook data submission system in 2005 to obtain more detailed information about catch and fishing efforts as required by the IOTC. In 2006 the Bureau of Fisheries, Ministry of Agriculture and Rural

Affairs, required all tuna fishing vessels to fill out logbooks and return them to the Bureau of Fisheries. The Bureau also announced that the implementation of the logbook program would be considered as one of the main factors for renewing fishing permission and licenses. With the support of the China Overseas Fisheries Association (COFA) and the cooperation of the tuna fishing companies, China's logbook system has been developed and implemented smoothly as a regular monitoring program. Since 2009, 100% logbook coverage for the LL fishery has been achieved. In 2022, 100% of the logbooks have been returned to the SHOU for data checking. All the information in those logbooks has been entered into the national tuna fishery database at SHOU and is being processed. Preliminary analyses showed that the data quality of logbooks has improved than before. As indicated above, records for bycatch species, low-value species, in particular, are developing higher quality. In July 2022, the Chinese government issued administrative measures for electronic reporting, and announced the full implementation of the system as from January 2024 for all China-approved fishing vessels on the high seas.

6.2. Vessel Monitoring System (including date commenced and status of implementation)

The Regulations on the Management of Distant Water Fisheries have been implemented since 2003, to strengthen the supervision and management of DWF. In 2020, the revised *Regulations on the Management of Distant Water Fisheries* were issued and implemented. All the Chinese LL fleets operating in the Indian Ocean have been equipped with the VMS system. Implement the most stringent monitoring system for distant water fishing vessels in the world, requiring reporting of vessel positions every 1 hour, which is higher than the internationally accepted requirement of reporting every 4 hours, and strictly preventing fishing vessels from illegally crossing the border.

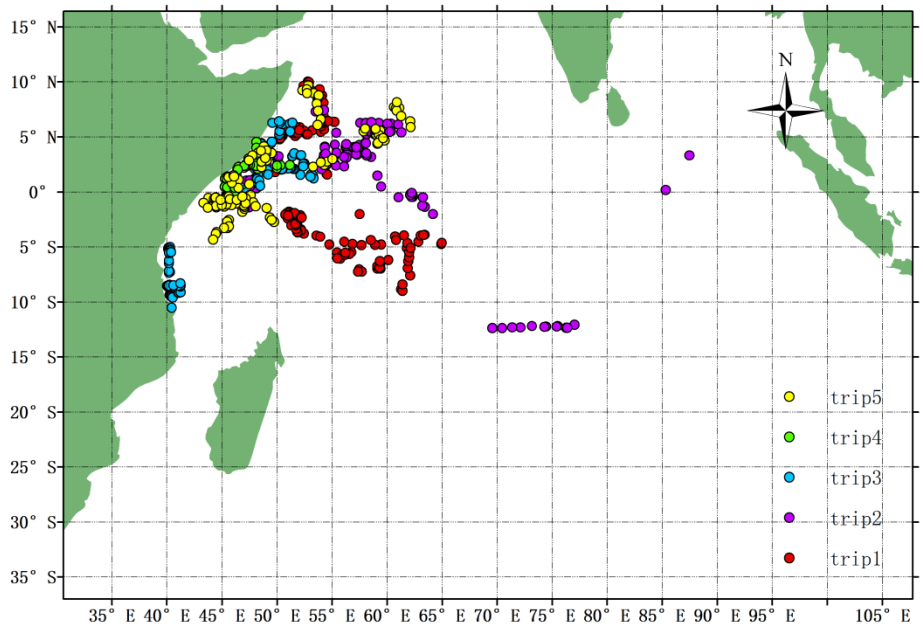
6.3. Observer scheme (including date commenced and status; number of observers, include percentage of coverage by fishery. Also, a description of the protocols supporting the observer programs and sampling schemes mentioned in paragraphs 3, 5, 7 and 8 of Res [22-04])

Under authorization by the Bureau of Fisheries, Ministry of Agriculture and Rural Affairs, the SHOU has been in charge of the national tuna observer program in the Pacific Ocean, Atlantic Ocean, and Indian Ocean. China began to implement the Scientific Observer program for tuna fishery in IOTC in 2002. So far, the program has been implemented successfully with the support of COFA. Observers have been dispatched each year since then, except the year 2011 due to the piracy activity (even though the observer had been selected and trained). In 2016, to further promote the normalization and institutionalization of the national distant water fisheries observers' program, the Ministry of Agriculture and Rural Affairs formulated the implementation rules for national distant-water fisheries observer management. Since then, the government of China has provided more funding to support the observer program and a series of reforms have taken place in recruitment, training, dispatching, and management for observers. The development of national observer database and recruitment of observers from the general public guarantee the numbers required to meet the coverage. There were five observer trips conducted in 2022, details were described in the observer trip report submitted to the Secretariat.

Table 3. Annual observer coverage by operation, e.g., LL hooks, purse seine sets (for the most recent five years at a minimum, e.g., 2018–2022 or to the extent available). **[Mandatory]**

Year	Gear	Hooks deployed	Number of observers	Hooks observed	Coverage
2018	Deep & Frozen LL	32,987,773	5	1,681,983	5.09%
2019	Deep & Frozen LL	26,380,951	4	1,814,426	6.88%
2020	Deep & Frozen LL	27,860,364	3	1,420,779	5.09%
2021	Deep & Frozen LL	34,043,659	4	1,702,418	5.00%
2022	Deep & Frozen LL	38,273,218	5	2,013,450	5.26%

Figure 4. Map showing the spatial distribution of observer coverage. **[Mandatory]**



6.4. Port sampling programme [Mandatory]

China set up a port sampling program in early 2012. The program was designed for vessels that return and unload catch in domestic ports in China. Size and species composition are the main information to be collected from the program. The challenge is the lack of detailed capture information (e.g., catch date and position) for the pooled catch unloaded in port. In 2022, 11 vessels were in the port sampling program, and about 15399 individuals were measured from port sampling (Table 5).

Table 4. Number of vessel trips or vessels active monitored, by species and fishery] **[Mandatory]**

Species	Number Vessels (observed)	Fishing gear
Albacore	10	Deep-frozen LL
Bigeye tuna	11	Deep-frozen LL
Yellowfin tuna	11	Deep-frozen LL
Swordfish	11	Deep-frozen LL
Blue Shark	22	Deep-frozen LL
Striped marlin	7	Deep-frozen LL
Blue marlin	10	Deep-frozen LL
Black marlin	1	Deep-frozen LL
Oilfish	7	Deep-frozen LL
Opah	4	Deep-frozen LL
Sailfish	9	Deep-frozen LL
WAHOO	2	Deep-frozen LL

Table 5. Number of fish measured, by species and fishery] **[Mandatory]**

Species	Number of individuals measured	Fishing gear
Albacore	480	Deep-frozen LL
Bigeye tuna	3177	Deep-frozen LL

Yellowfin tuna	9465	Deep-frozen LL
Swordfish	1194	Deep-frozen LL
Blue Shark	20	Deep-frozen LL
Striped marlin	251	Deep-frozen LL
Blue marlin	182	Deep-frozen LL
Black marlin	2	Deep-frozen LL
Oilfish	485	Deep-frozen LL
Opah	8	Deep-frozen LL
Sailfish	110	Deep-frozen LL
WAHOO	25	Deep-frozen LL

6.5. Unloading/Transhipment of flag vessels [including date commenced and status of implementation] **[Mandatory]**

The transshipment is of high quality and contains comprehensive and clear information about IOTC measures. The clear information on possible infractions highlighted in the report, if any, helps us to conduct self-inspection on transshipment activities and conduct internal investigation on possible infractions to make Chinese ships better comply with relevant regulations. The observers have well undertaken his task on transshipment monitoring regarding checking, noting and estimating products transshipped in detail, which also benefit us to verify the catch data and understand the catch composition. Well done the work for verification of marking of fishing vessels. It is known from the report that all LSTLVs that completed transshipment were photographed and cross-checked the markings on the hull such as name, call sign for consistency with IOTC authorized vessel list. Chinese vessels have names, IRCS markings on the hull in accordance with FAO Standard Specifications for the Marking and Identification of Fishing Vessels and IOTC Measures. As for Registration Number, Chinese vessels are not required for such markings in accordance with aforementioned regulations and Chinese regulations. Well done the work on identifying vessels 'authorization or license to fish tuna and tuna-like species in IOTC. Each Chinese fishing vessel operating on waters outside the jurisdiction of China is obliged by Chinese regulation that all necessary and original documents/certificates, including Fishing License, if the vessel operates on high seas, must be valid and properly kept on board of the vessels. Each Fishing License issued by China is composed of 2 pages where all necessary information is indicated. The job is finished with high quality. China distributes official logbook to each LL vessel free of charge, and requires the vessel to fill in the logbook to record its each-day operation.

Table 6. Quantities by species and fishery landed in ports located in the IOTC area of competence **[Mandatory]**

IOTC Species	**Transshipment at sea** (unit: metric ton)
Bigeye	877.1
Yellowfin	389.4
Swordfish	126
Albacore	644.6
Marlin	13.1
Sharks	12.2
OTH	307.8

Table 7. Quantities by species and fishery transhipped in ports located in the IOTC area of competence **[Mandatory]**

IOTC Species	**Transshipment at sea** (unit: metric ton)
Albacore	4980.4

Yellowfin	3649.1
Bigeye	3070.9
Blue Marlin	225.2
Black Marlin	75.5
Sailfish	11.6
Swordfish	1210.1
Oil fish	346.6

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

China has been monitoring marlin catch by logbooks and observer programs. As marlins are not the main target species of Chinese LL fisheries, the catch level is low especially in recent years (see Table 2i-2n).

6.7. Gillnet observer coverage and monitoring [Desirable]

Not applicable. China is not operating gillnet fishery in the Indian Ocean.

6.8 Sampling plans for mobulid rays [Mandatory]

Not applicable. China is not operating subsistence and artisanal fisheries in the Indian Ocean.

7. NATIONAL RESEARCH PROGRAMS [DESIRABLE]

China has launched several domestic research projects regarding tuna fisheries and the stock status of key species in the Indian Ocean, which are funded by different sources (e.g., Shanghai Municipal Education Commission, and Ministry of Agriculture and Rural Affairs). Scientists from Shanghai Ocean University are collecting and analysing biological and size composition data based on the national LL observer program. Some of the results have been presented to relevant IOTC working parties.

7.1. National research programs on blue shark

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

7.3. National research programs on sharks

7.4. National research programs on oceanic whitetip sharks

7.5. National research programs on marine turtles

7.6. National research programs on thresher sharks

No information is prepared for 7.1-7.6.

Table 8. Summary table of national research programs, including dates.

No information is prepared for Table 8.

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

Table 9. Scientific requirements contained in Resolutions of the Commission, adopted between 2012 and 2022.

Res. No.	Resolution	Scientific requirement	CPC progress
12/04	On the conservation of marine turtles	Paragraphs 3, 4, 6–10	**Paragraphs 3, 4.** Interactions with marine turtles have been recorded and reported by observers. Detailed data of each observer trip has been submitted to the IOTC secretariat by 29 June. **Paragraph 6.** Fishermen are required to help recover marine turtles captured and released. De-hooking techniques and guidelines have been equipped onboard fishing vessels. **Paragraph 7.** Not applicable, no corresponding fishery. **Paragraph 8.** Line cutters and de-hookers are in place on board longliner. The fishing operators are required to hand and promptly release marine turtles caught or entangled, in accordance with the IOTC Guidelines. Marine Turtle Identification Cards were distributed to all fishing vessels. **Paragraph 9.** Not applicable, no corresponding fishery. **Paragraph 10.** No national plan of action for marine turtles is under development.
12/06	On reducing the incidental bycatch of seabirds in longline fisheries.	Paragraphs 3–7	**Paragraphs 3-7.** China has complied with the requirements. Implementation of seabird conversation measures is documented in the national report. All the Chinese LL vessels operating in the area south of 25-degree South are required to comply with this CMM. Mitigation measures on Chinese LL vessels are being implemented according to the management measures, bird-scaring lines, night-setting, and/or line weighting.
12/09	On the conservation of thresher sharks (family alopiidae) caught in association with fisheries in the IOTC area of competence	Paragraphs 4–8	**Paragraph 4.** The incidental catch of thresher sharks was released directly onboard, and the fishermen are required to record and report incidental catches of thresher sharks in logbooks. **Paragraph 5.** Not applicable, no corresponding fishery. **Paragraph 6.** This information is required to be collected in the observer program. **Paragraph 7.** Specific projects or biological sampling for tissues (vertebrae, reproductive tracts, stomachs, etc.) has not been set up for thresher sharks. **Paragraph 8.** China has submitted partial catch data on sharks.
13/04	On the conservation of cetaceans	Paragraphs 7– 9	Not applicable. China is not operating purse seine fisheries in the Indian Ocean.
13/05	On the conservation of whale sharks (*Rhincodon typus*)	Paragraphs 7– 9	Not applicable. China is not operating purse seine fisheries in the Indian Ocean.
13/06	On a scientific and management framework on the conservation of shark species caught in association with IOTC managed fisheries	Paragraph 5–6	**Paragraphs 5-6.** China has complied with the requirements. Oceanic whitetip sharks were released onboard by fishermen. The fishermen made records of the incidental catch of oceanic whitetip sharks and the data have been submitted to IOTC.
15/01	On the recording of catch and effort by fishing vessels in the IOTC area of competence	Paragraphs 1–10	**Paragraphs 1-10.** China has complied with the requirements. Detailed data on the vessel, trip, gear configuration, operations, catch & effort have been

Res. No.	Resolution	Scientific requirement	CPC progress
			submitted to the IOTC secretariat by 29 June (forms 1RC, 3CE, 4SF, 1D1, 1DR).
15/02	Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs)	Paragraphs 1–7	**Paragraphs 1-7.** China has complied with the requirements. Detailed data on the total catch, catch, and effort data, bycatch, and size data have been submitted to the IOTC secretariat by 29 June (forms 1RC, 3CE, 4SF, 1D1, 1DR).
17/05	On the conservation of sharks caught in association with fisheries managed by IOTC	Paragraphs 6, 9, 11	**Paragraphs 6.** China has complied with the requirements. Detailed data on the catch, catch, and effort data, discards, and size frequency have been submitted to the IOTC secretariat by 29 June (forms 1RC, 3CE, 4SF, 1D1, 1DR). **Paragraphs 9,11.** China is making its effort in making a contribution to data collection for ecosystem and bycatch issues in the Indian Ocean, based on our observer and logbook programs. Scientists and analysts from the Shanghai Ocean University (SHOU) take major responsibility for China's tuna fishery and bycatch research in the Indian Ocean. China is also working on stock assessments using data-poor approaches for sharks. China has provided scientific data from its observer program, which was used for biological study and ecological risk analysis for sharks. In accordance with various management resolutions, China is enhancing its implementation of management and conservation measures for important bycatch species (i.e., sharks, seabirds, and marine turtles), and is involved in bycatch mitigation initiatives from various programs.
18/02	On management measures for the conservation of blue shark caught in association with IOTC fisheries	Paragraphs 2-5	**Paragraph 2.** China has complied with the requirements. Blue shark catches are being routinely recorded based on the catch statistics program and observer program. **Paragraph 3.** All observers were required to collect catch, effort, size, and discard data of blue sharks and submitted the data to the IOTC secretariat by 29 June. **Paragraphs 4-5.** China is collecting blue shark biological and ecological information based on LL observer program. Species-specific catch and effort data are recorded in the logbook.
18/05	On management measures for the conservation of the Billfishes: Striped marlin, black marlin, blue marlin and Indo-Pacific sailfish	Paragraphs 7 – 11	**Paragraphs 7-8.** China has complied with the requirements. China has submitted the catch and effort data of Striped Marlin, Black Marlin, Blue Marlin, and Indo-pacific Sailfish to the IOTC secretariat by 29 June. **Paragraphs 9-11.** National plan of action for sustainable exploitation and conservation of Striped Marlin, Black Marlin, Blue Marlin and Indo-pacific Sailfish has yet to be developed. China manages such issues through regulations that cover the conservation of Striped Marlin, Black Marlin, Blue Marlin and Indo-pacific Sailfish. In the newly revised *Notification by General Office of Ministry of Agriculture and Rural Affairs on Completely Comply with International Tuna Measures, Nongbanyu (2022) No.1*, which are corresponding regulations on the protection of Striped Marlin, Black Marlin, Blue Marlin and Indo-pacific Sailfish. For details, refer to Article 5 of the Annex.

Res. No.	Resolution	Scientific requirement	CPC progress
18/07	On measures applicable in case of non-fulfilment of reporting obligations in the IOTC	Paragraphs 1, 4	**Paragraphs 1, 4.** China has included information in its Annual Reports on actions taken to implement its reporting obligations for all IOTC fisheries.
19/01	On an Interim Plan for Rebuilding the Indian Ocean Yellowfin Tuna Stock in the IOTC Area of Competence (*If not provided under Res 21/01 below*)	Paragraph 22	**Paragraph 22,** Not applicable. China is not operating gillnet fisheries in the Indian Ocean.
19/03	On the Conservation of Mobulid Rays Caught in Association with Fisheries in the IOTC Area of Competence	Paragraph 11	**Paragraph 11,** In the newly revised *Notification by General Office of Ministry of Agriculture and Rural Affairs on Completely Comply with International Tuna Measures, Nongbanyu (2022) No.1*, which are corresponding regulations on the protection of Mobulid Rays Caught in Association with Fisheries in the IOTC Area of Competence. For details, refer to Article 10 of the Annex.
21/01	On an Interim Plan for Rebuilding the Indian Ocean Yellowfin Tuna Stock in the IOTC Area of Competence (*If not provided under Res 19/01 above*)	Paragraph 23	**Paragraph 23,** Not applicable. China is not operating gillnet fisheries in the Indian Ocean.
22/04	On a regional observer scheme	Paragraph 12	**Paragraph 12，** China provided 4 observers' data to the IOTC secretariat by 29 June (SONG XINGLONG, ZHENG WEI, GENG SHILING, SU SHIWEN) which detailed the number of fishing vessels and fishing effort sampled, as well as the coverage achieved by gear type by the provisions of this Resolution. Since the one observers returned to land after July 2023, the observer information will be submitted to the IOTC secretariat before November 19.

9. LITERATURE CITED [MANDATORY]

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