

CHINA National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2011

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INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

<p>In accordance with IOTC Resolution 10/02, final scientific data for the previous year was provided to the Secretariat by 30 June of the current year, for all fleets other than longline [e.g. for a National report submitted to the Secretariat in 2010, final data for the 2009 calendar year must be provided to the Secretariat by 30 June 2010)</p>	<p>YES 28/06/2011</p>
<p>In accordance with IOTC Resolution 10/02, provisional longline data for the previous year was provided to the Secretariat by 30 June of the current year [e.g. for a National report submitted to the Secretariat in 2010, preliminary data for the 2009 calendar year was provided to the Secretariat by 30 June 2010].</p> <p>REMINDER: Final longline data for the previous year is due to the Secretariat by 30 Dec of the current year [e.g. for a National report submitted to the Secretariat in 2010, final data for the 2009 calendar year must be provided to the Secretariat by 30 December 2010].</p>	<p>YES 28/06/2011</p>
<p>If no, please indicate the reason(s) and intended actions:</p>	

Executive Summary [Mandatory]

Longline is the only fishing method used by Chinese vessels to catch tuna and tuna-like species in the IOTC waters. The number of longliners operating in the Indian Ocean reduced from 32 in 2009 to 20 in 2010 due to piracy, with the main fishing area shifting to the central and eastern Indian Ocean (60 °E ~ 85°E , 5°N ~20°S). Chinese fishing fleet caught 1894 MT of main tunas (BET, YFT) in 2010 (39 % lower than the catch of 3114 MT in 2009). The bigeye tuna and yellowfin tuna catches both from deep freezing longliners and ice fresh longliners have been declined dramatically since 2006. There was a remarkable increase in albacore catch for deep freezing longliner since 2009 and for ice fresh longliners since 2008. The logbook and observer programs are going on for the Chinese longline fleets in the Indian Ocean, for which catch and effort data collection of bycatch species are being improved. The observer trip report for 2010 has been submitted to the secretariat.

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1. BACKGROUND/GENERAL FISHERY INFORMATION [MANDATORY]

Longline has been the only fishing gear for the China mainland fleets in the IOTC waters since 1995. One hundred-twenty longline fishing boats were recorded at the peak time in 1998, which mainly consisted of small non-professional boats reconstructed from trawlers or gill-netters, which originally operated along China coastal waters. After 1998 the number of fishing boats reduced due to poor management, low economic performance and fishing ground shift to other Oceans. The total number of tuna fishing boats registered in IOTC Secretariat reduced to 93 in 2001 and further cut to 63 in 2002. The number of fishing boats active reduced from 46 in 2008 to 32 in 2009, of which 27 belongs to the large-size deep frozen longliners due to the piracy activity in November 2008 when the tuna longliner “Tian Yu 8” was attacked by the pirate. More tuna fishing vessels moved out of the IOTC waters in 2010. The deep freezing tuna longliners usually operated in waters between 40 °E ~ 90°E and 20°N ~ 40°S before 2008. Since 2009, however, the fishing effort was shifted to eastern part of IOTC.

2. FLEET STRUCTURE [MANDATORY]

The Chinese tuna fleet consisted of Deep longliners and ICE fresh longliners in the Indian Ocean. The fleet structure was detailed in Table 1.

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

Year	Gear	Vessel size range	Number of vessel
2006	Deep LL	GRT over 400	41
	ICE LL	GRT 200- 400	26
2007	Deep LL	GRT over 400	41
	ICE LL	GRT 200- 400	26
2008	Deep LL	GRT over 400	31
	ICE LL	GRT 200- 400	15
2009	Deep LL	GRT over 400	27
	ICE LL	GRT 200- 400	5
2010	Deep LL	GRT over 400	15
	ICE LL	GRT 200- 400	5

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

Annual catch and effort of Chinese fleet by gear and primary species in the IOTC area of competence were shown in Table 2. The longlone effort in 2010 was about half of the level in 2006.

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

Table 2a Bigeye tuna

Year	Gear	Effort (1000 hooks)	Catch (mt)
2006	Deep LL	31643	8236
2007	Deep LL	27644	6974
2008	Deep LL	22215	4643
2009	Deep LL	14417	2657
2010	Deep LL	15305	1394

Table 2b Bigeye tuna

Year	Gear	Effort (1000 hooks)	Catch (mt)
2006	ICE LL	3642	466
2007	ICE LL	2431	193
2008	ICE LL	3931	320
2009	ICE LL	621	4
2010	ICE LL	1689	4

Table 2c Yellowfin tuna

Year	Gear	Effort (1000 hooks)	Catch (mt)
2006	Deep LL	31643	3592
2007	Deep LL	27644	2652
2008	Deep LL	22215	747
2009	Deep LL	14417	449
2010	Deep LL	15305	492

Table 2d Yellowfin tuna

Year	Gear	Effort (1000 hooks)	Catch (mt)
2006	ICE LL	3642	265
2007	ICE LL	2431	173
2008	ICE LL	3931	150
2009	ICE LL	14417	4
2010	ICE LL	1689	4.2

Table 2e Skipjack

Year	Gear	Effort (1000 hooks)	Catch (mt)
2006	Deep LL	31643	0
2007	Deep LL	27644	0
2008	Deep LL	22215	0
2009	Deep LL	14417	0
2010	Deep LL	15305	0

Table 2f Skipjack

Year	Gear	Effort (1000 hooks)	Catch (mt)
2006	ICE LL	3642	0
2007	ICE LL	2431	0
2008	ICE LL	3931	0
2009	ICE LL	14417	0
2010	ICE LL	1689	0

Figure 1. Historical annual catch for the national fleet, by gear and primary species, for the IOTC area of competence for the entire history of the fishery/fleet. [Mandatory]

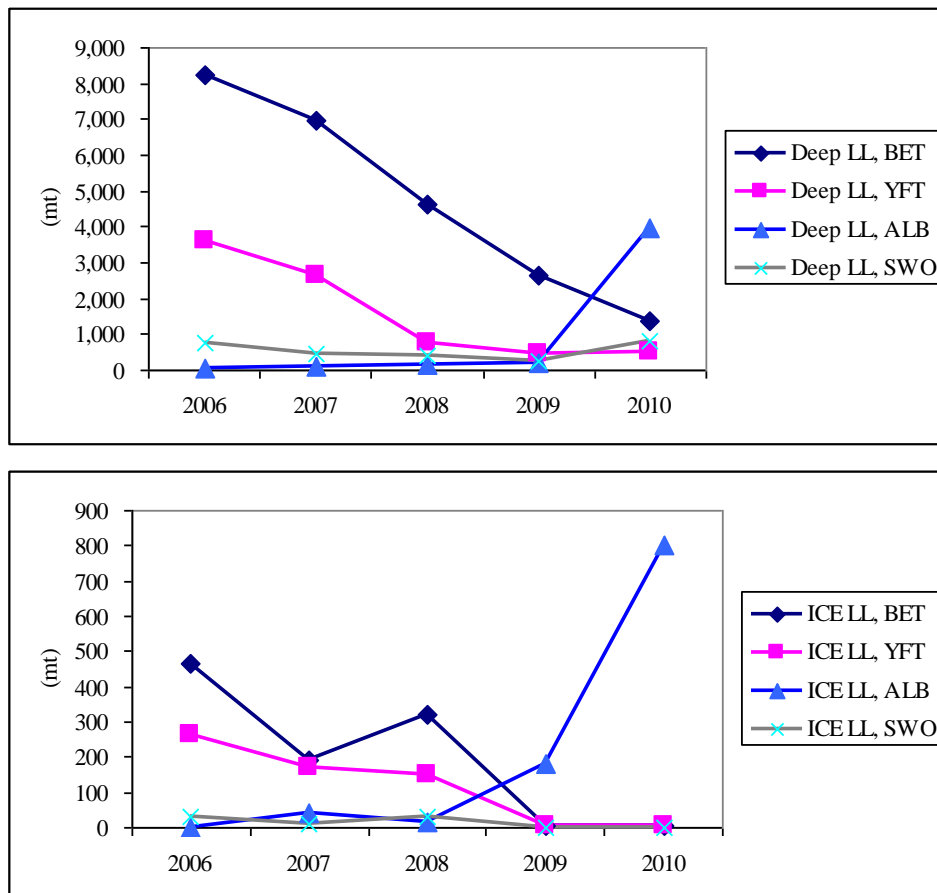


Figure 2a. Map of the distribution of fishing effort, by gear type for the national fleet in the IOTC area of competence (most recent year *e.g.* 2009) [*may require a separate map for each gear type*]. **[Mandatory]**

Maps for ICE LL are available; however, we decide to submit those to the secretariat on the scientific meeting as the current report file is too large.

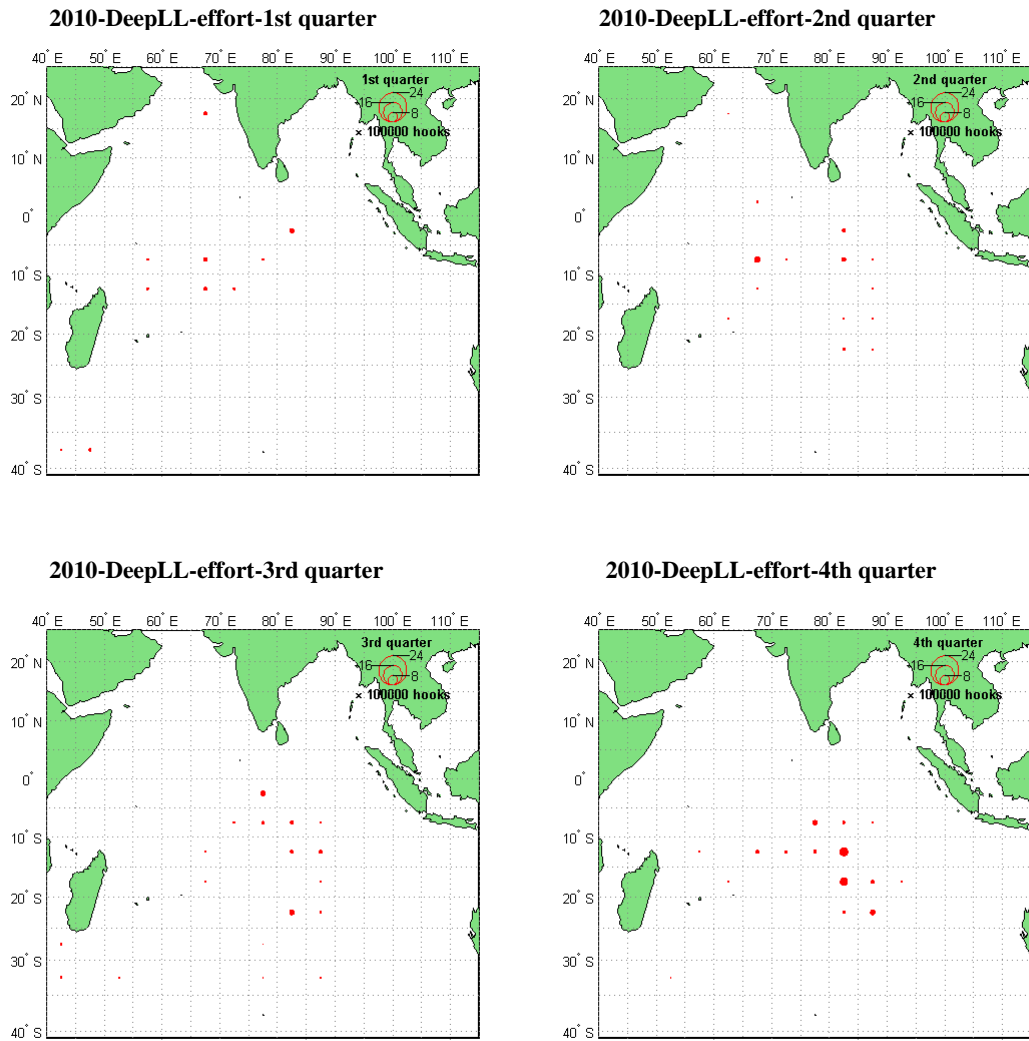
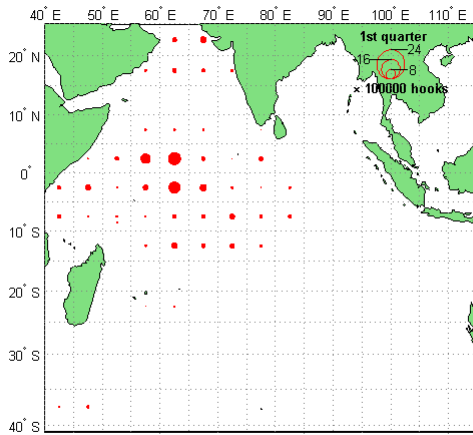


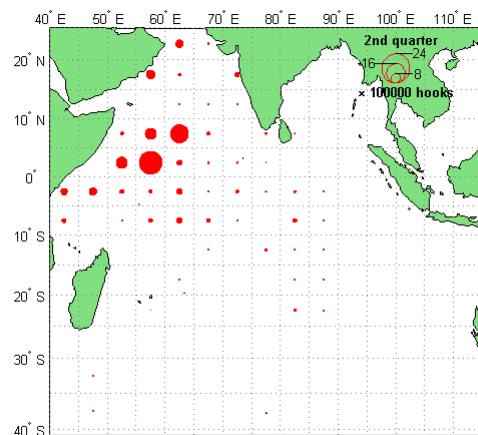
Figure 2b. Map of the distribution of fishing effort, by gear type for the national fleet in the IOTC area of competence (average of the 5 previous years *e.g.* 2005-2009) [*may require a separate map for each gear type*]. **[Mandatory]**

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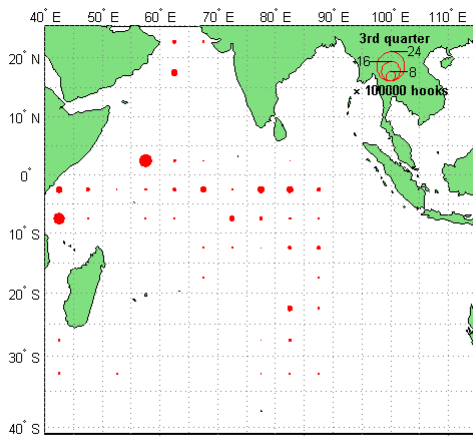
2006-2010-DeepLL-effort-1st quarter



2006-2010-DeepLL-effort-2nd quarter



2006-2010-DeepLL-effort-3rd quarter



2006-2010-DeepLL-effort-4th quarter

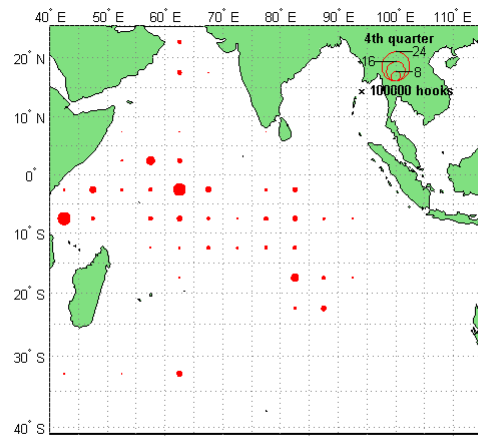
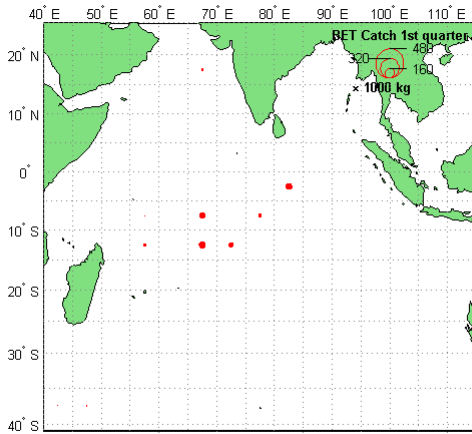
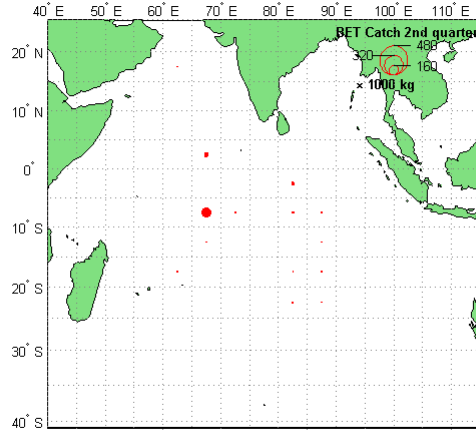


Figure 3a. Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence (most recent year e.g. 2009) [may require a separate map for each species]. [Mandatory] Maps for ICE LL and for other species (ALB and SWO) are available; however, we decide to submit those to the secretariat on the scientific meeting as the current report file is too large.

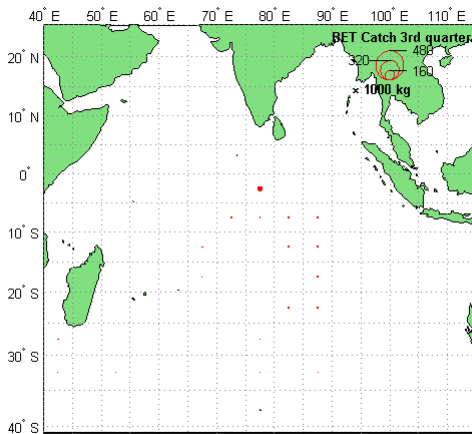
2010-DeepLL-catch--BET Catch-1st quarter



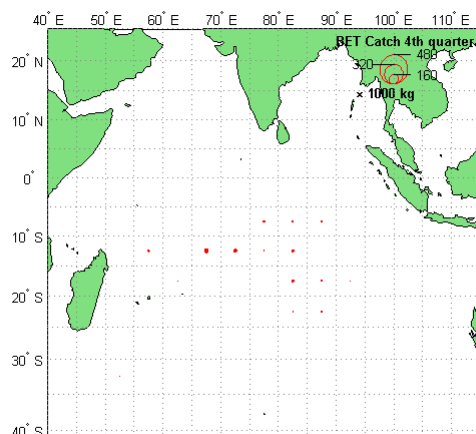
2010-DeepLL-catch--BET Catch-2nd quarter



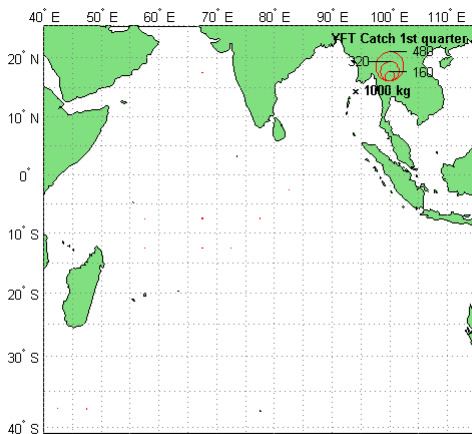
2010-DeepLL-catch--BET Catch-3rd quarter



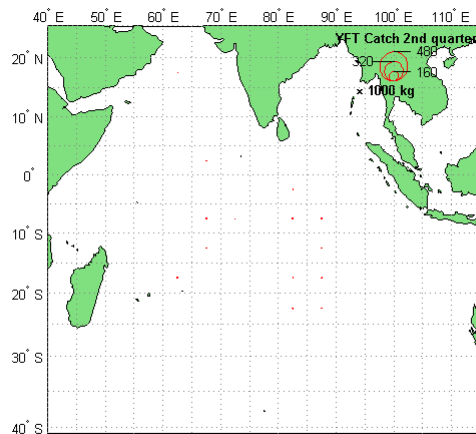
2010-DeepLL-catch--BET Catch-4th quarter



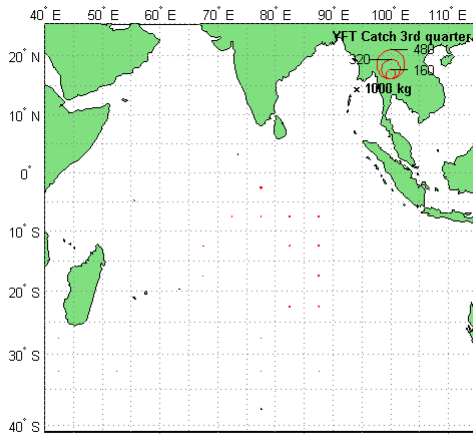
2010-DeepLL-catch--YFT Catch-1st quarter



2010-DeepLL-catch--YFT Catch-2nd quarter



2010-DeepLL-catch--YFT Catch-3rd quarter



2010-DeepLL-catch--YFT Catch-4th quarter

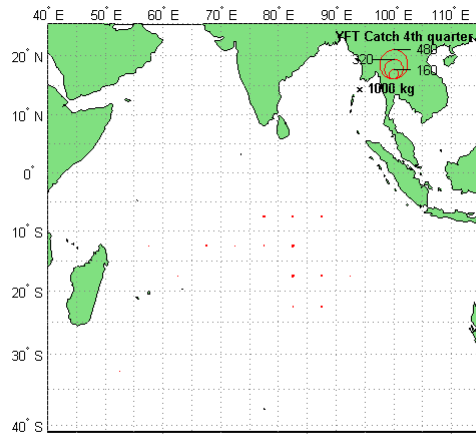
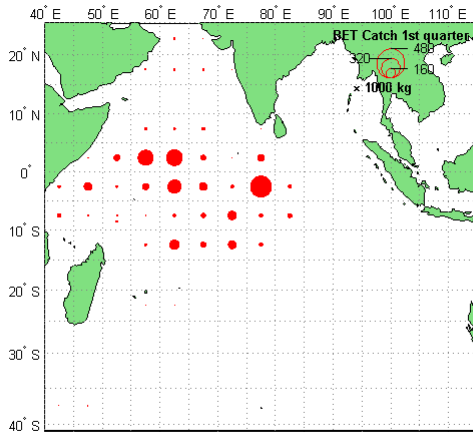


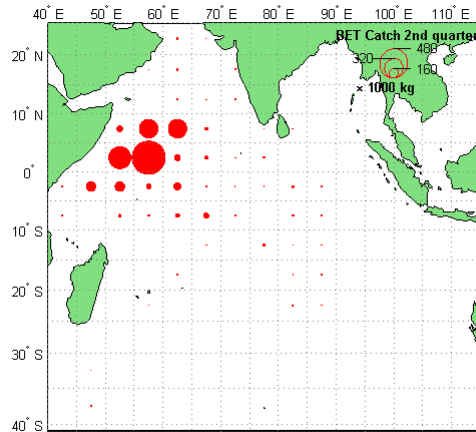
Figure 3b. Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence (average of the 5 previous years e.g. 2005-2009) [*may require a separate map for each species*]. **[Mandatory]**

Maps for ICE LL and for other species (ALB and SWO) are available; however, we decide to submit those to the secretariat on the scientific meeting as the current report file is too large.

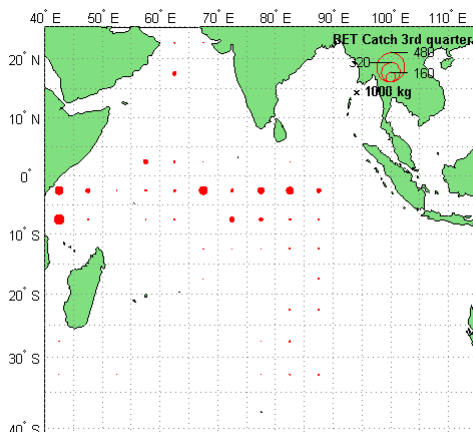
2006-2010-DeepLL-catch--BET Catch-1st quarter



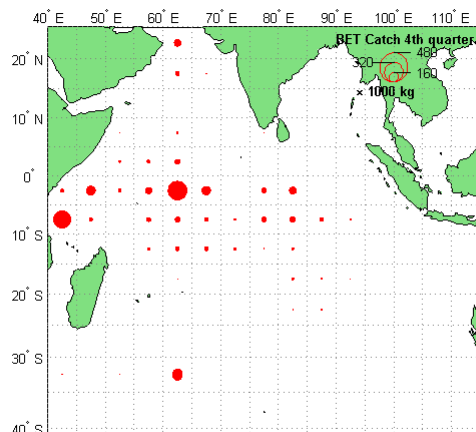
2006-2010-DeepLL-catch--BET Catch-2nd quarter



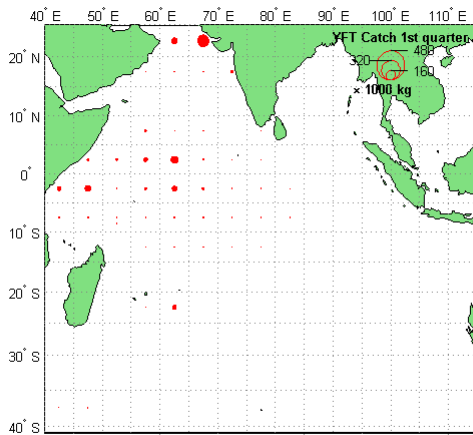
2006-2010-DeepLL-catch--BET Catch-3rd quarter



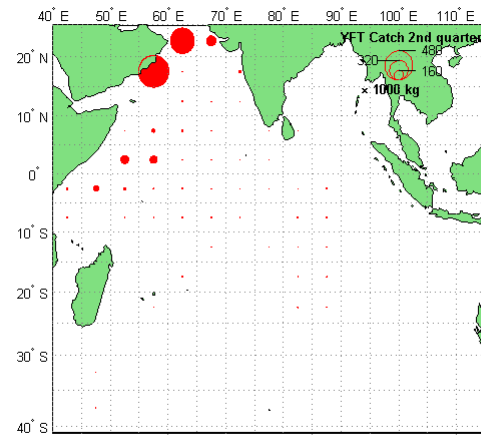
2006-2010-DeepLL-catch--BET Catch-4th quarter



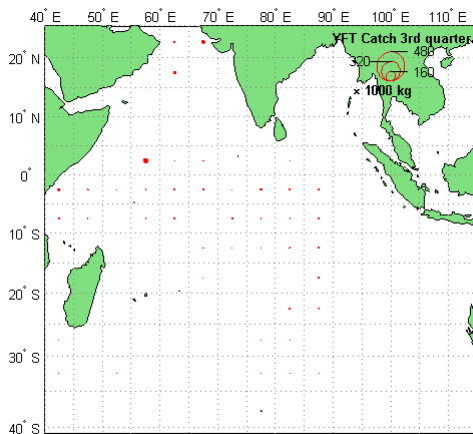
2006-2010-DeepLL-catch--YFT Catch-1st quarter



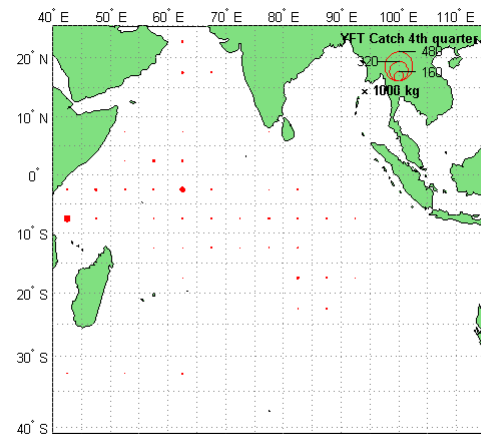
2006-2010-DeepLL-catch--YFT Catch-2nd quarter



2006-2010-DeepLL-catch--YFT Catch-3rd quarter



2006-2010-DeepLL-catch--YFT Catch-4th quarter



4. RECREATIONAL FISHERY [Mandatory]

No recreational fishing activities.

5. ECOSYSTEM AND BYCATCH ISSUES [Mandatory]

China is making its effort in contribution of data collection for ecosystem and bycatch issues in the Indian Ocean, based on our observer and logbook programs. We are also conducting various scientific research projects in terms of ecosystem and bycatch issues. Scientists and analysts from Shanghai Ocean University take a majority of work in China's tropical tuna and bycatch research in the Indian Ocean. Although not conducted yet, national plans of action for sharks and seabirds are under developments. We are also planning an ecological risk analysis for sharks using data from our observer program and other data sources.

Sharks [Mandatory]

China is developing a national plan of action for sharks. China is also collecting biological and ecological information based on longline observer program. Now, species specific catch and effort data are being recorded in the logbook data collection. However, in consideration of fishermen's poor knowledge in species identification and workload onboard, complete recording for species on the recommended list is hard at least for the current years.

Table 3 Total number and weight of sharks, by species, retained by the Chinese national fleet in the IOTC area of competence

Table 3a Blue shark

Year	Gear	Catch (number)	Catch (kg)
		No	No
2006	Deep LL	data(unclassified)	data(unclassified)
2007	Deep LL	No data	108000
2008	Deep LL	6965	314552
2009	Deep LL	5009	239394
2010	Deep LL	2410	100282

Table 3b Blue shark

Year	Gear	Catch (number)	Catch (kg)
		No	No
2006	ICE LL	data(unclassified)	data(unclassified)
2007	ICE LL	No data	4000
2008	ICE LL	452	26743
2009	ICE LL	64	2060
2010	ICE LL	56	1818

Table 3c Oceanic whitetip shark

Year	Gear	Catch (number)	Catch (kg)
		No	No
2006	Deep LL	data(unclassified)	data(unclassified)
		No	No
2007	Deep LL	data(unclassified)	data(unclassified)
		No	No
2008	Deep LL	data(unclassified)	data(unclassified)
2009	Deep LL	1346	55839
2010	Deep LL	5125	160026

Table 3d Oceanic whitetip shark

Year	Gear	Catch (number)	Catch (kg)
		No	No
2006	ICE LL	data(unclassified)	data(unclassified)
		No	No
2007	ICE LL	data(unclassified)	data(unclassified)
		No	No
2008	ICE LL	data(unclassified)	data(unclassified)
2009	ICE LL	0	0
2010	ICE LL	7	282

Table 4 Total number of sharks, by species, released/discarded by the Chinese national fleet in the IOTC area of competence (for the most recent five years at a minimum)

We are unable to provide estimates of total discard and release status since this information is not routinely recorded in our logbook data.

Seabirds [Mandatory]

Most of China tuna longline vessels are operating in the tropical areas of IOTC waters and there are no interactions with seabirds.

No seabird mortality was observed by China tuna longline fleet, which was confirmed by national observer programme.

Marine Turtles [Mandatory]

The observer is responsible for recording species specific interactions of marine turtles in longline fisheries, including number of caught, fate, and release status. No national plan of action for marine turtles is under development.

No sea turtle was reported to be incidentally caught by Chinese longline vessels in 2010.

Other ecologically related species (e.g. marine mammals, whale sharks) [Desirable]

The observer is responsible for recording species specific interaction of marine mammals in longline fisheries, including number of caught, fate, and release status. No national plan of action for marine turtles is under development.

Table 5 Observed annual catches of species of special interest by species (seabirds, marine turtles and marine mammals) by gear for the Chinese national fleet, in the IOTC area of competence

Table 5a Marine turtles

Year	Gear	Species	Catch (number)	Species	Catch (number)
2006	Deep LL		No mortality		
2007	Deep LL		No mortality		
2008	Deep LL		No mortality		
2009	Deep LL		No mortality		
2010	Deep LL		No mortality		

Table 5b Marine turtles

Year	Gear	Species	Catch (number)	Species	Catch (number)
2006	ICE LL		No mortality		
2007	ICE LL		No mortality		
2008	ICE LL		No mortality		
2009	ICE LL		No mortality		
2010	ICE LL		No mortality		

Table 5c Marine mammals

Year	Gear	Species	Catch (number)	Species	Catch (number)
2006	Deep LL		No mortality		
2007	Deep LL		No mortality		
2008	Deep LL		No mortality		
2009	Deep LL		No mortality		
2010	Deep LL		No mortality		

Table 5d Marine mammals

Year	Gear	Species	Catch (number)	Species	Catch (number)
2006	ICE LL		No mortality		
2007	ICE LL		No mortality		
2008	ICE LL		No mortality		
2009	ICE LL		No mortality		
2010	ICE LL		No mortality		

6. NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS [Mandatory]

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

The pilot logbook data submission system of China started in 2005 in order to obtain more detailed information about catch and fishing effort as required by the IOTC Secretariat. In 2006 the Fisheries Bureau, Ministry of Agriculture, required all fishing boats to fill logbook and announced that implementation of logbook work would be considered as one of the main factors for renewing the fishing permission and licenses. Under the support of the Branch of Distant Water Fisheries of China Fisheries Association and cooperation of the tuna fishing companies, China’s logbook system has been carried out smoothly as a normal data collection work. Since 2009, 100% logbook coverage for the longline fishery has been carried out. So far about 80% of the logbooks have been returned to Shanghai Ocean University by the Bureau of Fisheries. All the information of those logbooks is being input into the database located at Shanghai Ocean University.

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

All the Chinese longline vessels operating in the Indian Ocean have been equipped with VMS system. China has submitted a VMS report to IOTC on June 22, 2010.

6.3. Observer programme (including date commenced and status; number of observer, include percentage coverage by gear type)

China has been conducting national observer program across three oceans. In the Indian Ocean, we are training observers since 2008 and so far two observers have been working on deep longliners in the Indian Ocean (one in 2008 and the other in 2010). No observer was sent out for the year 2009 due to the piracy issue.

Table 6 Annual observer coverage by operation (e.g. longline hooks, purse seine sets)

Table 6 Observer programme

Year	Gear	Hooks deployed	Number of observers	Hooks observed	Coverage (%)
2006	Deep LL	31643000	0	0	0.000
2007	Deep LL	27643505	0	0	0.000
2008	Deep LL	22215000	1	296020	1.3
2009	Deep LL	14417000	0	0	0.000
2010	Deep LL	15304660	1	153000	1.0

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

Fig 4a Observed longline sets location in the observer trip in 2008

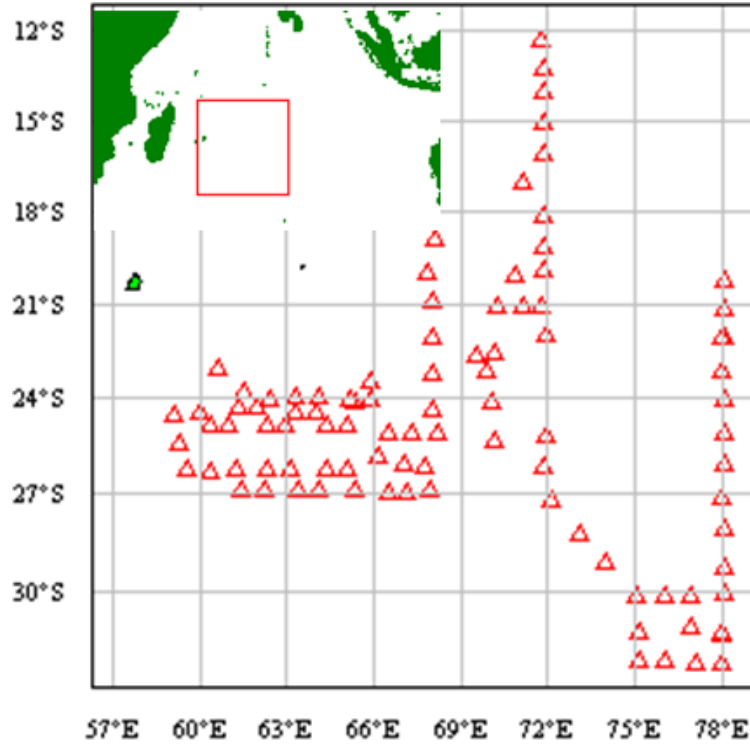
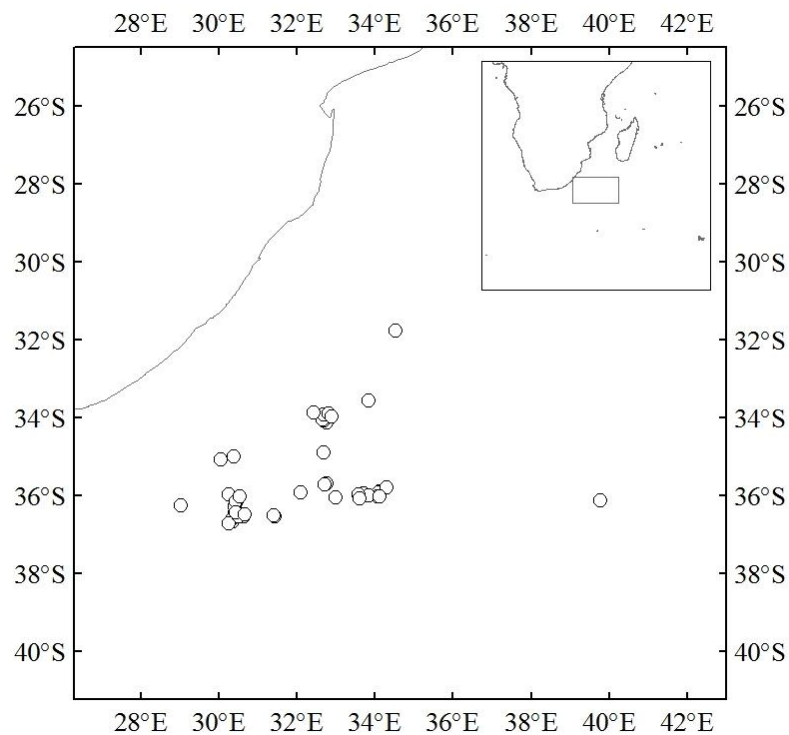


Fig 4b Observed longline sets location in the observer trip in 2010



6.4. Port sampling programme [including date commenced and status of implementation]

No port sampling programme.

6.5. Unloading/Transshipment [including date commenced and status of implementation] [Mandatory]

The transshipment of main species from China fleet in the Indian Ocean in 2010 was shown in Table 8

Table 8 Transshipment of China fleet in 2010

Transshipment at sea (kg)				
Transshipment date	Bigeye Tuna	Yellowfin Tuna	Albacore	Swordfish
26/01/2010	90465	3356		2943
23/01/2010	75672	4248		2841
23/01/2010	91331	7915		3180
14/02/2010	38465	2322		
07/02/2010	51500	3350		
01/05/2010	85702	6755		3168
02/05/2010	92133	7500	6006	3017
01/05/2010	43105	3582		
07/09/2010	52141	22272	518	3928
08/09/2010	49270	13971	221	5794

Transshipment at port (kg)				
Transshipment date	Bigeye	Yellowfin	Albacore	Swordfish (Headed)
03/06/2010	56157	6870	2318	10115
15/06/2010	64804	5558	8222	8885
17/10/2010			1871	8500
17/10/2010	9360		6411	
17/10/2010	9354		17272	
17/10/2010			3550	11316

7. NATIONAL RESEARCH PROGRAMS [Desirable]

China has launched a couple of domestic research projects regarding tuna fisheries and stock status of key species in the Indian Ocean, which are funded by China government and undertaken by Shanghai Ocean University. Table 9 shows a representative project. Besides of these specific projects, scientists from Shanghai Ocean University are collecting and analyzing biological and size composition data based on national longline observer program.

Table 9 Summary table of national research programs, including dates.

Project title	Period	Countries involved	Budget total	Funding source	Objectives	Short description
Stock assessment and risk analysis of bigeye tuna in the IO	2012-2014	China		Innovation Program of Shanghai Municipal Education Commission, China	Test alternative management strategies and quantify stock risk to these strategies	

8. IMPLEMENTATION OF SCIENTIFIC COMMITTEE RECOMMENDATIONS AND RESOLUTIONS OF THE IOTC RELEVANT TO THE SC. [Mandatory]
Table 10 Respond with progress made to recommendations of the SC and specific Resolutions relevant to the work of the Scientific Committee – the Secretariat to provide a table for completion no later than 60 days prior to the next SC meeting.
Table 10 Scientific requirements contained in the Resolutions of the Commission, adopted from 2005 to 2011.

No.	Resolution	Scientific requirement	CPC progress
05/05	Concerning the conservation of sharks caught in association with fisheries managed by IOTC	Paragraphs 1–12.	<p>Paragraph 1- China is improving its species specific data collection in logbook task, also is trying to make reliable bycatch estimates for commonly captured sharks.</p> <p>Paragraph 2- Research plan was developed. Stock assessments not conducted yet.</p> <p>Paragraph 3- China is encouraging full utilisation of sharks captured by all longline vessels operation in the IOTC areas.</p> <p>Paragraph 4- The 5 % ratio strategy was being implemented on China longline vessels.</p> <p>Paragraph 5- The 5 % ratio strategy was not fully reviewed by China.</p> <p>Paragraph 6- China is making effort to reduce finning activity on board tuna vessel.</p> <p>Paragraph 7- non-valuable sharks captured (e.g. crocodile shark) are discarded (most alive).</p> <p>Paragraph 8- circle hook experiments were conducted by researchers in Shanghai Ocean University</p> <p>Paragraph 9- China is making effort to collect biological (in particular reproductive info.) data through its observer program, to study reproduction of commonly captured sharks. However, sample size from IO was small, compared with the Pacific Ocean where we have a couple of shark reproduction papers published recently.</p> <p>Paragraph 10- The commission has provided assistances such as species identification and observer training guideline for China.</p>

No.	Resolution	Scientific requirement	CPC progress
			<p>Paragraph 11- no response</p> <p>Paragraph 12- no response</p>
08/04	Concerning the recording of catch by longline fishing vessels in the IOTC area	Paragraph 1–3.	<p>Paragraph 1- China has launched national logbook program for all longline vessels of tuna fleet in the Indian Ocean in 2009.</p> <p>Paragraph 2- The basic information collected in our LL logbook is similar to what the Resolution requests, with some differences in the logbook form.</p> <p>Paragraph 3-logbook data not submitted yet. We are working on logbook return and raw data check/validation and hopefully can submit in the short coming years</p>
09/06	On marine turtles	Paragraphs 2, 8, 11, 12, 13 and 14.	<p>Paragraph 2- recording on detailed interactions with marine turtles is requirement in China’s LL observer program. China is also improving marine turtle data collection through logbooks and it may need more time to train the fishermen for their ability of releasing turtle alive. As long as these data are available, they will be submitted to the Secretariat.</p> <p>Paragraph 8- Preliminary research trials of circle hooks has been conducted by researchers from Shanghai Ocean University. China is promoting necessary release techniques for fishermen on board LL vessels.</p> <p>Paragraph 11- China will continue to undertake research and develop marine turtle mitigation measures for LL.</p> <p>Paragraph 12- China will consider this point in developing new mitigation methods.</p> <p>Paragraph 13- China is willing to work together with scientists from various countries and institutes.</p> <p>Paragraph 14- no response.</p>
10/02	Mandatory statistical requirements for IOTC members and cooperating non contracting parties	Paragraphs 1–7.	<p>Paragraph 1- China has submitted required data to the secretariat.</p> <p>Paragraph 2- China has provided total catch by species and gear</p>

No.	Resolution	Scientific requirement	CPC progress
			<p>for tunas, billfishes, three shark species (BSH, SMA, OCS), and others.</p> <p>Paragraph 3- China has provided catch and effort by species and gear (Deep LL and Ice LL) for tunas, billfishes, three shark species (BSH, SMA, OCS), and others, by 5° grid area and month strata.</p> <p>Paragraph 4- China has provided size data for BET and ALB captured by LL. These size data are based on individual weight data in logbooks. China has size data available for all species from only one observer trip and has not been submitted to the secretariat.</p> <p>Paragraph 5- No response.</p> <p>Paragraph 6- Data has been submitted before deadline.</p> <p>Paragraph 7- No response.</p>
10/06	On reducing the incidental bycatch of seabirds in longline fisheries.	Paragraph 7.	Paragraph 7- All Chinese longliners operating in the Indian Ocean are equipped with bird scaring lines, and longliners fishing in the south of 25° S are required to make their bird scaring lines work during the whole operating period.
10/12	On the conservation of thresher sharks (family Alopiidae) caught in association with fisheries in the IOTC area of agreement	Paragraphs 6 and 7.	<p>Paragraph 6- China is collecting biological and ecological data on thresher sharks through observer program, and will provide preliminary results in the near future once relatively enough sample size is available.</p> <p>Paragraph 7- China is improving catch and effort data collection for sharks through logbooks. More detailed biology and capture status information on thresher sharks is mandatorily recorded by observers.</p>
11/04	On a regional observer scheme	Paragraph 9.	Paragraph 9- This information has been included in this report and Observer Trip Report submitted previously.

9. LITERATURE CITED [Mandatory]

No literature cited.