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MALAYSIA National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2017

Samsudin, B[1]. Sallehudin, J.[1] Tengku. Balkis, T.S[2] and Nor Azlin.M[2]

Department of Fisheries, Malaysia.

October 2017

1. Captured Fisheries Division, FRI Kg Acheh, Department of Fisheries, 32000 Sitiawan, Perak

2. Management and Licensing Division, Department of Fisheries, PUTRAJAYA.

INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

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 2017, final data for the 2016 calendar year must be provided to the Secretariat by 30 June 2017)	YES 30/JUNE/2017
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 2017, preliminary data for the 2016 calendar year was provided to the IOTC Secretariat by 30 June 2017). **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 2017, final data for the 2016 calendar year must be provided to the Secretariat by 30 December 2017).	YES 30/JUNE/2017
If no, please indicate the reason(s) and intended actions:	

Executive Summary

Total catch of marine fish from Malaysian waters in 2016 were 1.57 million mt, a slide increased 6% compared to 1.48 million in 2015. The total landing in 2016 were attributed to the catch from 56,111 registered vessels with trawlers, purse seines, drift nets contributed large percentage of the catches. In 2016, marine fish production from the west coast of Peninsular Malaysia (Malacca Straits) contribute 813,758 mt (51.8%) out of the total catch. The remaining catches were from the South China Sea and Sulu Celebes Seas, east coast of Sabah. Coastal fisheries produced 76% (1,195,359 mt) and 24% (377,481 mt) from offshore fisheries.

Therefore, there is an emphasis by the government to develop tuna fisheries not only in coastal waters, but also in offshore waters within the Exclusive Economic Zone (EEZ). Tuna fisheries, which include both oceanic and neritic tuna, are targeted to be developed in the near future. The second strategic development plan for tuna fisheries was launched at the end of 2013.

During the early 1980s, small tuna (as neritic tuna were called then) were only caught as by-catch by gill nets and purse seines. When tuna purse seines were introduced in 1987, the neritic tuna fisheries started to develop. A tagging experiment on neritic tuna carried out in South China Sea showed that 50% of the recaptured tuna came from the purse seine operators. Initially purse seine operators visually searched for tuna schools. Gradually, some of these operators started to use lights to aggregate fish . Following complaints from other fishermen, the use of lights were regulated and limited to less than 30 kilowatts, although there have been incidences of non-compliance.

Neritic tuna contribute more 4.7% of Malaysia's marine fish landings in 2016. Purse sienes are the most important fishing gear in neritic tuna fisheries, especially the 40-69.9 GRT and >70 GRT vessel size. It contributed more than 82% of the annual catches of neritic tuna in Malaysia. In Kuala Perlis, neritic tuna species are the second most abundant (13%) landed by purse seines after scad (16%), with longtail tuna dominated the landings followed by kawakawa and frigate tuna. In the year 2016, neritic tuna landings in west coast Peninsular Malaysia amounted to 13,307 mt; decreasing by 3.45% compared to 13,783 mt in 2015. Meanwhile landings in Malaysia ranged from 40,000 mt to 65,000 mt. The highest catch was recorded in 2008 and 2002 with 65,000 mt and 62,000 mt respectively. There was a decreasing trend in landings from 2002 to 2005 before an increasing trend until 2008. Landings of neritic tune in Malaysia appear to have stabilised from 2010 to 2016.

The catch of oceanic tuna in 2016 increased significantly by 26.79% from 1270.78 tons in 2015 to 1,610.55 tons in 2016. Albacore showed most apparent increasing

from 1,049.1 tons in 2015 to 1,330.61 tons in 2016. The fleet which consisted of 5 fishing vessels and one carrier, unloaded and exported the catches at the Port Louis, Mauritius. Albacore tuna formed nearly 70% of the catches in the form of frozen tuna. Another 5 vessel were unload at Penang Port. On observer program, it will only be implemented accordingly when the size of Malaysian fleet increase to 20 units.

However, for domestic vessels operating beyond 30 nm offshore, there are plan by the DoF to implement observer on board and logbook system. The revised NPOA- Sharks is already complete and gazetted and will be published by end of 2014. On sea turtle, 2 sanctuary and information centres have regularly implementing awareness program for student and fishermen communities. Hatching program at these centres managed to release over 65,000 baby turtles back to the sea. There are several research programs on sea turtle been carried out at different areas in Malaysian waters and the ongoing projects are c-hook and satellite tracking.

Contents

1. BACKGROUND/GENERALFISHERYINFORMATION

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 catches 95% 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 are caught by handline with small traditional inboard boats, 4-5 days per trip. There is one large tuna purse seine that catch oceanic tuna using FAD in the south China Sea. The main species are skipjack and juvenile yellowfin. Malaysian longline vessels started to operate in the Indian Ocean in 2003 using tuna longline. From 15 tuna longline vessels in 2003, the number gradually increased to 58 vessels in 2010. However, in 2011, the number of active tuna longline vessels dropped drastically to 7 vessels due to management problem faced by the vessel company. From 2012, a fleet of 5 longline from new 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. Starting June 2016 another 5 tuna longline vessels were registered as Malaysia Fleets and operate in the East of Indian Ocean area and their catches were landed in Penang port.

2. FLEET STRUCTURE

Five from ten tuna longline vessels are operating in Southwest Indian Ocean and another five tuna longline vessels operating in the East of Indian Ocean. For vessels were operating in EIO, their target species are tropical tuna namely yellowfin and bigeye meanwhile the vessels were operating in SIO their target species is tuna albacore. The vessels normally undertake a long fishing trips and all their catches were transported back to the fishing port by other large fishing vessels.

Some of the vessels used fishing port from other countries such as Port Louis in Mauritius. The size of vessels varies in LOA and gross registered tonnage (GRT) from 19-65 m and 38 – 882 GRT respectively. Five new registered tuna longline vessels were operate in east Indian Ocean and brought back the catches to Penang port.

Table 1: Number of registered tuna longline vessels.

* Represent number of active vessels.

Year	<24 m	>24 m	Registered vessels
2003	1	14	15
2004		14	14
2005	1	18	19
2006	9	19	28
2007	9	24	33
2008	18	39	57
2009	18	44	62
2010	16	42	58
2011	1	6	23 (7*)
2012		5	5
2013		5	5
2014		10	10
2015		5	5
2016		10	10

3. CATCH AND EFFORT (BY SPECIES AND GEAR)

Catch of tuna and tuna-like species by Malaysian vessels in the Indian Ocean. The efforts represented by the number of berthing of the vessels at the fishing port. In most of the occasion, the vessels berthing at the port were carrier vessels where they pooled the catch from several fishing vessels (7-10 vessels) at the fishing grounds before they returned to the fishing port in Malaysia. The highest number of berthing was in 2007 with 110 times and since then, the number of berthing reducing steeply to 30 in 2010. In Since 2008, due to increase in operation cost, some of the Malaysian vessels moved their operations in the western Indian Ocean and land their catch at the Port Louis, Mauritius

Table 2: Annual catch (by weight – tonnes) and effort by Malaysian longline vessels in the Indian Ocean until 2016

YEAR	REGISTERED VESSELS	YFT	BET	MAR	SWO	SFA	SHK	ALB	MISC
2003	7	461.9	307.9	40.5	22.6	-	5.3	-	-
2004	14	591.53	0	20.76	12.14	-	2.66	-	108.96
2005	19	2228.7	657	225.3	162	-	134.2	-	29.2
2006	28	1078.7	501.53	83.74	124.78	48	11.5	-	-
2007	33	1228.93	892.81	145.66	217.13	81.14	35.24	349.62	-
2008	48	1210.83	1321.79	137.76	141.86	162.17	29.01	285.46	-
2009	62	970.5	1179.6	69.44	182.44	-	33.33	202.34	-
2010	44	545.69	592.39	69.56	45.87	38.11	9.9	3.55	-
2011	7	44.2	69.46	1.61	2.6	1.13	0.63	131.68	-
2012	5	119.7	46.8	35.8	30	-	6	681.8	58.66
2013	5	107.49	32.28	31.49	22.3	-	-	107.49	100.91
2014	5	77.32	60.11	25.419	93.14	-	-	713.92	76.316
2015	5	161.678	59.982	24.58	116.73	-	-	1049.1	126.72
2016	10	155.908	124.028	33.532	41.6	-	4.726	1330.61	107.154

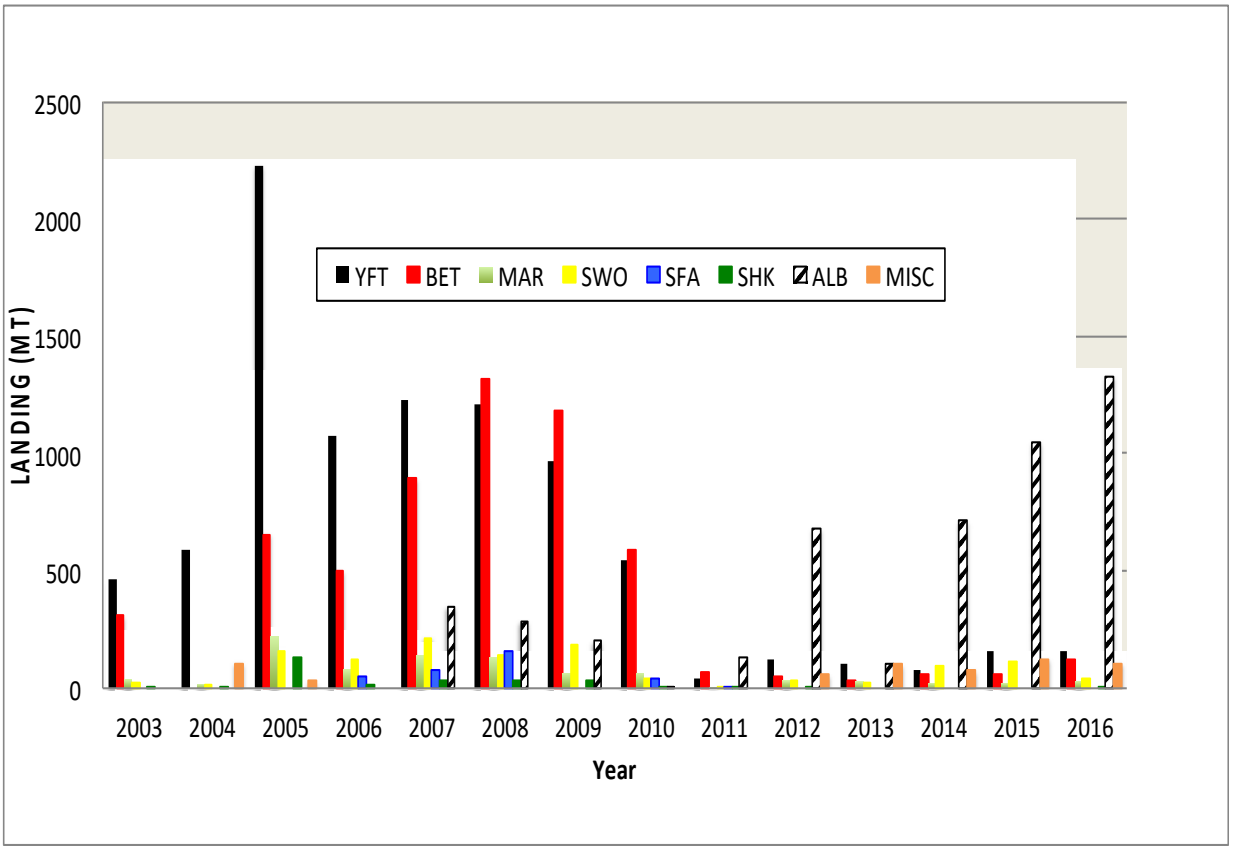

Figure 1 : Historical catch of tuna and tuna-like species by Malaysian tuna longliners.

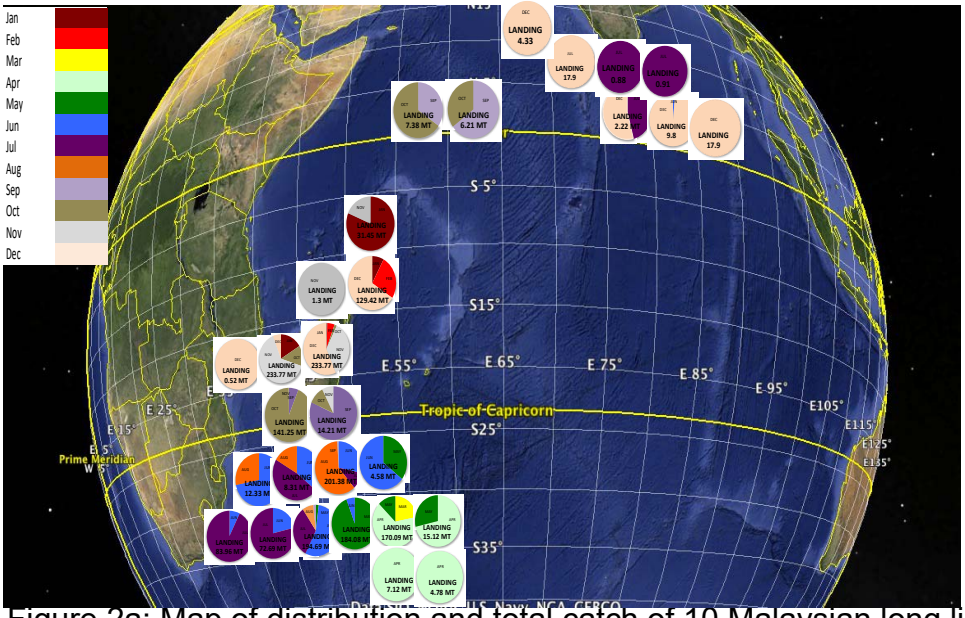

Figure 2a: Map of distribution and total catch of 10 Malaysian long line vessels in 2016.

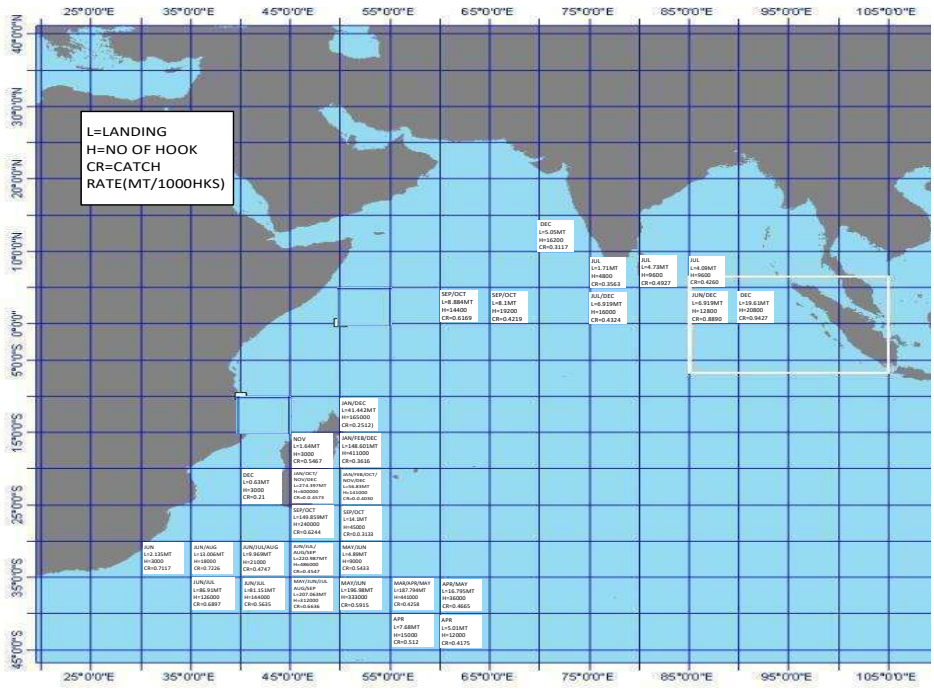

Figure 2b. Map of the distribution of fishing effort, by gear type for the national fleet in the IOTC area of competence (average of the 5 previous years e.g. 2012–2016

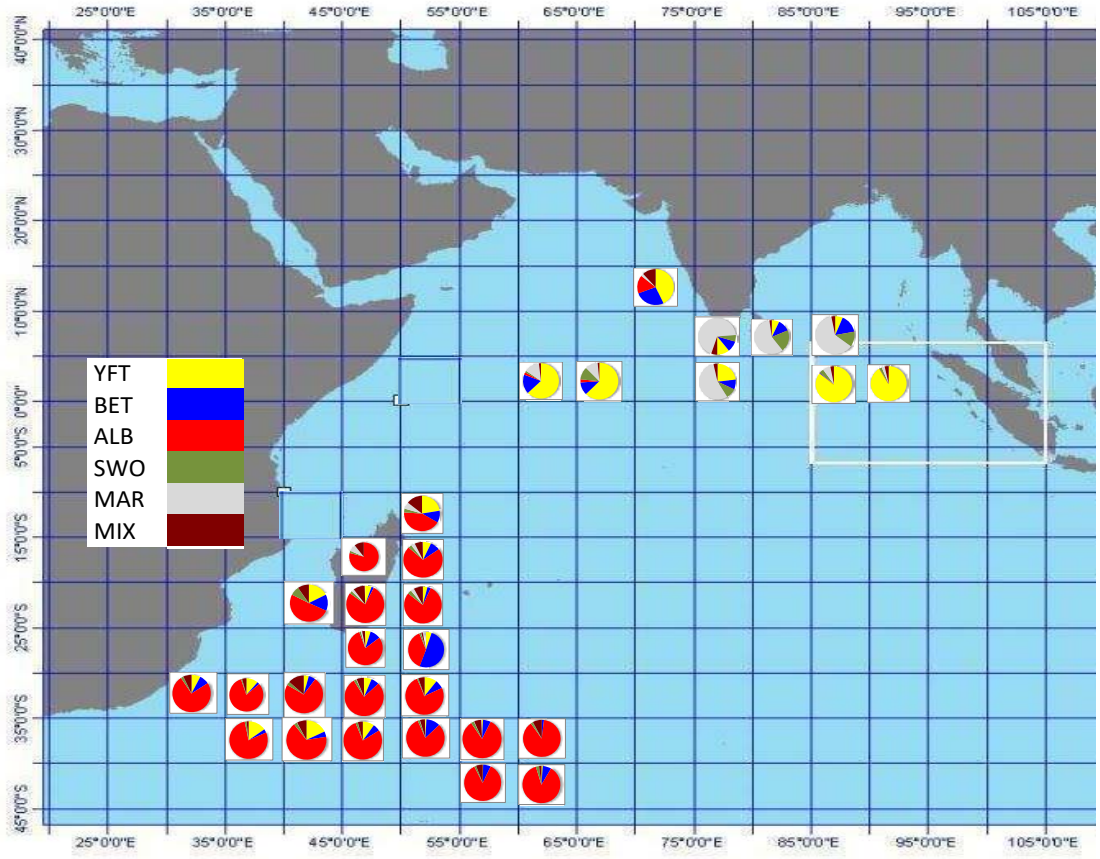

Figure 3a. Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence (most recent year e.g. 2016).

Table 2b : Annual landings of neritic tuna, Spanish mackerel and sharks in the Malacca Straits, under IOTC area of competence

Year	Longtail	Kawakawa	Frigate	Com	Sharks
	Thunnus tonggol	*Euthynnus affinis*	*Auxis thazard*	*Katsuwonus pelamis*	*Scomberomorus commerson*
2001	-	8978*	-	1,253	3,857
2002	-	15510*	-	1,373	4,695
2003	12,599	819	11	1,088	4,625
2004	8,248	3,934	-	1,043	4,603
2005	8,834	2,862	3	805	3,469
2006	10,601	6,348	24	1,170	4,647
2007	15,749	3,487	-	1,162	4,292
2008	13,692	2,759	-	863	4,542
2009	13,764	5,160	83	1,463	4,178
2010	14,549	5,598	1	1,228	5,501
2011	13,122	8,405	148	4,743	1,059
2012	13,260	10,478	429	4,815	1,202
2013	10,376	7,259	339	5,937	1,334
2014	7,372	6,214	920	6,189	-
2015	5,323	8,188	272	5,446	-
2016	6,483	6,597	227	140	-

* Mixed species of longtail, kawakawa and frigate

Table 2c : Catch of neritic tuna by major fishing gears in the Malacca Straits.

Year	Trawl Net	Purse Seine	Drift/Gill Net	Hook & Line
2001	63	8,590	325	-
2002	82	14,910	502	-
2003	140	12,999	291	-
2004	157	11,743	277	5
2005	206	11,182	310	1
2006	469	16,355	164	1
2007	4,322	17,742	171	-
2008	1,425	14,706	132	8
2009	664	18,182	156	4
2010	1,668	18,275	204	-
2011	1,271	20,390	102	1
2012	385	23,508	273	2
2013	338	9,154	883	1
2014	13	12,894	2,029	1
2015	19	13,125	639	-
2016	17	12,332	957	0

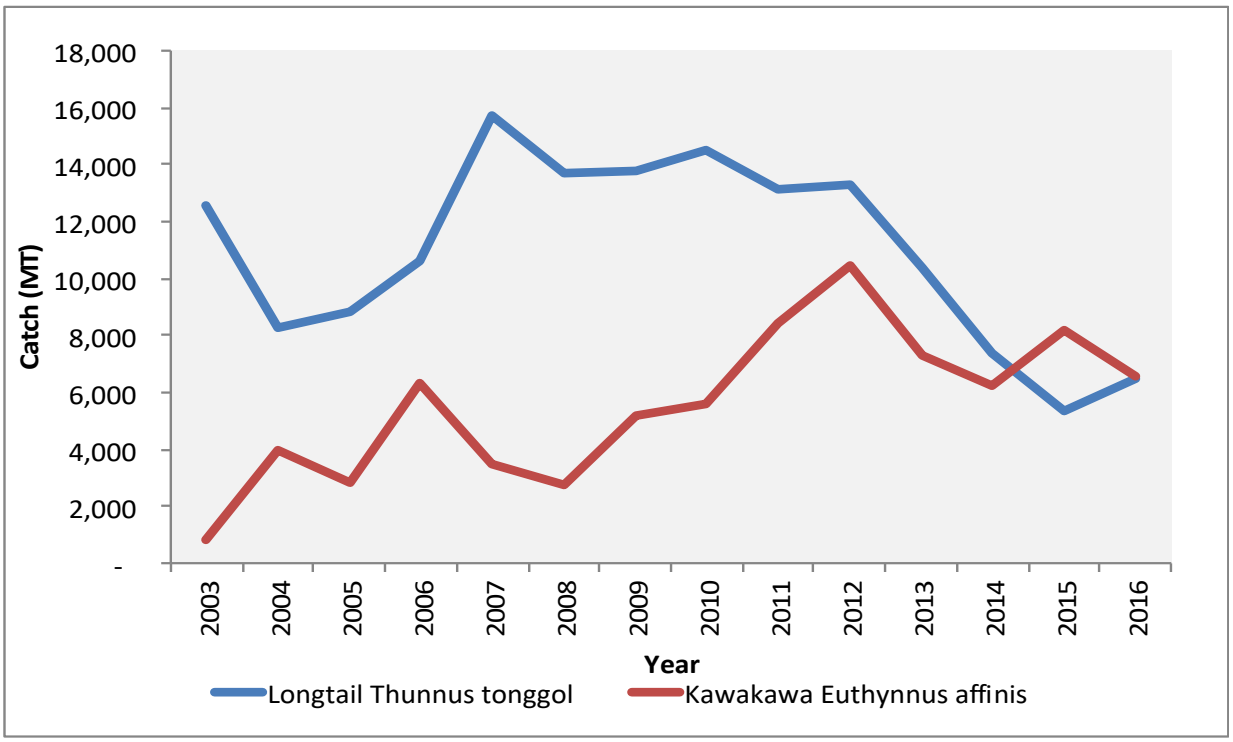

Figure 4 : Annual catches of neritic tuna (longtail and kawakawa) in the Malacca Straits 2003 - 2016.

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. Currently there is no specific Act to regulate the recreational fishery. However, there is the Marine Recreational Fishing Regulations, promulgated under the Fisheries Act 1985 that have been gazetted and implemented. Under this regulation, recreational fishing shall only be allowed prior to written permission issued by the Director General of Fisheries. Several species listed under the regulation in the First Schedule are prohibited from being landed. The species include 2 shark species; *Atelomycterus marmoratus* (coral catshark) and *Rhincodon typus*

(Whale shark). In recent event, DoF was taking a step to regulate the recreational fishery by imposing regulation such as permit for the event, and information on catches should be submitted to the Department of Fisheries which include individual weight and length by species.

5. ECOSYSTEM AND BY-CATCH 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 any 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 categorised into 4 zones, and for each zone only for vessels of certain range GRT are permitted to fish.
- Implementation of „vessel operation reports" LOV in which data of fishing activities help in the management of fisheries resources.
- To reduce by-catch, especially undersize fish, Juvenile and turtle excluding device (JTED) are promoted to the fishermen.
- Research on cod end size mess size for trawl nets have been carried out.
- Promoting the use of circle hook to the longline fishermen. Sharks
-

5.1 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 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. On legislation, Malaysia as a signatory to Convention on International Trade in Endangered Species of Wild Fauna and Flora in Washington D.C. on 3rd March 1973, introduced a CITES Act 2008 and gazetted it in 2010. Under this Act, Appendix II lists the following sharks; Family Cetorhinidae (Basking shark) - *Cetorhinus maximus*, Family Lamnidae (Great white shark) - *Carcharodon carcharias* and Family Rhincodontidae (Whale shark) - *Rhincodon typus.*

Table 3: Total catch of sharks (tons) caught by the Malaysian tuna longline in the Indian Ocean (from 2013-2015, sharks caught by the longline tuna in the IO were discarded.)

YEAR	SHARKS
2003	5.3
2004	2.66
2005	134.2
2006	11.5
2007	35.24
2008	29.01
2009	33.33
2010	9.9
2011	0.63
2012	5.8
2013	-
2014	-
2015	-
2016	4.726

Trawlers caught high numbers of sharks as by-catch and all the catch are sold in wholesome in the wet market. The coastal sharks species found in Malaysia waters are of small size and they are not suitable for finning.

Under 'The Regional Technical Working Group on Data Collection for Sharks in Southeast Asia' held in Phuket, Thailand on 22 – 24 April 2014. The European Union and The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) through the Southeast Asian Fisheries Development Center (SEAFDEC) had agreed to fund a one-year project for conducting activities in Malaysia with a grant of US$6,000. Apart from that, the Malaysian Government allocated RM70,000 (about US$19,000) more to ensure the smooth implementation of the project. With the funding in place, eight districts were identified with four fully sponsored by SEAFDEC and four more by the Malaysian Government.

The project aimed to enhance human resource development in elasmobranch taxonomy, to increase awareness on conservation, to improve landings data recording from generic 'sharks' and 'rays' to species level and as a preparation for Malaysia to conduct Non-detriment Findings (NDFs) study for sharks and rays in the near future. During the period of 12 months from August 2015 to July 2016, recording of landings data were conducted in eight districts, with four each in the states of Perak and Sabah. Four districts, of which two facing the Straits of Malacca, namely Larut Matang and Selama, and Manjung Utara in Perak, and the districts of Kota Kinabalu and Sandakan in Sabah were selected as the study sites under the sponsorship of SEAFDEC. The other four districts that were funded by the Malaysian Government are Manjung Selatan and Hilir Perak in Perak and two on the east coast of Sabah, namely Semporna and Tawau.

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In Perak, Larut Matang recorded 19 species of rays from five families, and 14 spesies of sharks from three Families. Whereas Manjung Utara recorded 14 species of rays from four families, and six species of sharks three Families. In term of percentage of total marin landings, rays and sharks contributed 2.03% and 0.56% at Larut Matang, while for Manjung Utara at 1.38% and 0.38% respectively. For Sabah, Kota Kinabalu recorded the highest number of species with 20 rays from six families and 17 sharks from 11 families compare to Sandakan with 19 species of rays from six families and 14 sharks species from six families. The landings of rays and sharks were minimal in the state, with the contribution of 0.39% and 0.24% at Kota Kinabalu, and 1.81% and 0.53% at Sandakan respectively. These figures confirmed earlier data as published in Malaysian National Statistics that rays and sharks were only by-catch and not targeted and contributed less than 2% of the total annual marine landings.

The abundance of sharks and rays species varied between the study sites. The most abundant sharks species at Larut Matang were *Chiloscyllium hasseltii, Chiloscyllium punctatum, Atelomycterus marmoratus* and *Carcharhinus sorrah* while for rays were *Neotrygon kuhlii, Himantura gerrardi, Himantura walga* and *Dasyatis zugei.* The most abundant shark species at Manjung Utara were *Chiloscyllium hasseltii, Chiloscyllium punctatum* and *Atelomycterus marmoratus* while for rays were *Himantura walga, Himantura gerrardi, Neotrygon kuhlii*, and *Dasyatis zugei.* For Sabah, the most abundant sharks species at Kota Kinabalu were *Chiloscyllium punctatum* followed by *Chiloscyllium plagiosum* and *Atelomycterus marmoratus* and for rays *Neotrygon kuhlii* followed by *Himantura gerrardi* and *Dasyatis zugei*. As for Sandakan, the most abundant sharks species were *Chiloscyllium punctatum* followed by *Carcharhinus sorrah* and *Chiloscyllium plagiosum,* and for rays *Neotrygon kuhlii* followed by *Himantura gerrardi* and *Taeniura lymma*.

The top 10 catch per unit effort (CPUE) (kg/days and kg/hauls) for rays species captured by trawl net Zone C in Perak were *Neotrygon kuhlii, Himantura gerrardi* and *Himantura walga,* while for sharks were dominated by *Chiloscyllium hasseltii, Chiloscyllium punctatum* and *Carcharhinus sorrah.* The top 10 catch per unit effort (CPUE) rays and sharks species captured by trawl net, combined for Kota Kinabalu

and Sandakan in Sabah, were determined in Zone 3 and Zone 4. For rays, *Himantura gerrardi* topped the list, followed by *Neotrygon kuhlii* and *Himantura fai* in Zone 3. In Zone 4, *Neotrygon kuhlii* was the main species, followed by *Himantura fai* and *Himantura uarnacoides.* For sharks, the top three species for both Zone 3 and Zone 4 were in the same order, with *Chiloscyllium punctatum* came first, followed by *Chiloscyllium plagiosum* and *Carcharhinus sorrah.*

Table 3b: Total weight (mt) of sharks caught by various fishing gears in the Malacca Straits.

YEAR	TRAWL NET	PURE SEINE	DRIFT/ GILL NET	HOOKS & LINE
2001	866	0	308	55
2002	1023	0	273	50
2003	819	0	201	54
2004	754	2	216	52
2005	660	0	83	41
2006	750	81	287	38
2007	733	1	351	57
2008	608	0	130	110
2009	1217	39	120	114
2010	1053	1	129	45
2011	960	93	144	33
2012	1170	1	152	68
2013	993	4	330	70
2014	1054	21	194	62
2015	188.23	7.34	172.75	12.62
2016	102.43	8.54	102.25	13.06

Common shark caught in the Malacca Strait is *Carchrhinus sorah, Chiloscyllium puntatum, Chiloscyllium hasseltii, Atelomycterus marmoratus* and *Carcharhinus selai.*

5.2 Seabirds

Malaysian longline vessels only started to fish in areas below 25° S in mid 2012. To present, no report of seabird interaction by the Malaysian fishing vessels 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. Malaysian vessels have applied 2 types of mitigation recommended by the IOTC; tori lines and fast sinking lines. To this date, Malaysia still does not develop NPOA-Seabird.

5.3 Marine Turtles

Malaysia is one of the country that actively involved in the conservation program on turtles. In 2008 the NPOA-Marine Turtle was be published it becomes a guideline for the conservation and management of sea turtles. As one of the conservation measure 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 join 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 three of them are located in the west coast of Malaysia; Pulau Tinggi Melaka, Pantai Kerachut, Penang 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. In 2015 alone a total of nesting in Melaka, Penang and Perak was 340, 61 and 61 respectively.

Fisheries Act 1985 provides legal instrument to protect turtle and other marine mammals from any type of fishing. So far very few interaction were recorded between fishermen and turtles were reported by the traditional and commercial fishermen.

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

No record available on the number of accidently caught marine animals and whale sharks by Malaysian vessels in the Indian Ocean.

For conservation, whale shark (*Rhincodon typus*) is one out of 30 species listed as endangered marine animals in Malaysia under Fisheries (Control of Endangered Species of Fish) Regulation 1999.

6. NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS

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

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 pelagic longline fisheries. Fishermen are required to report the numbers of each species caught, the numbers of animals retained or discarded alive or discarded dead (longline gear is non-selective and unwanted or prohibited species such as, billfishes, sea turtles, etc., must be returned to the water), the location of the set, the types and size of gear, and the duration of the set. Because some of the needed catch/effort information for pelagic longline fisheries remains the same for the entire trip (i.e., it would be redundant to report it for every set), a supplemental form is used to report this type of data. Information on the port of departure and return, unloading dealer and location, number of sets, number of crew, date of departure and landing are reported on the Trip Summary form. In addition, information on costs associated with the trip can be reported on this form. Information on the quantity caught for each species, the area of catch, the type and quantity of gear, the date of departure and return, the dealer and location (county and state where the trip is unloaded), the duration of the trip (time away from dock), an estimate of the fishing time, and the number of crew are included on this form.

At the same time, all vessels operating beyond 12 nm from the shore in the Malaysian waters are compulsory to record their landings in the “Vessels Operation Report” or LOV. Data recording in the LOV is part of the vessel licensing regulation, to renew their annual license. The operators are required to provide information based on the Vessel Operation Report (LOV) forms and submit the forms to the nearby Department of Fisheries office. This form contains detailed information on fishing areas, times/dates, catches by species, details of by- catches if any, names of ports or details of transhipments. Failure to do so, will cause the license of the vessel to be revoked or suspended as provided under the Fisheries Act 1985. Subsequently the fisheries officers will provide the data to the IOTC.

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

Department of Fisheries Malaysia has successfully implemented a Vessel Monitoring System (VMS) for all highseas fishing vessels. It is based on Inmarsat, utilizing Inmarsat C, Mini C and D+/B equipments. For tuna longline vessels operating beyond Malaysian EEZ, they use Argos system for their VMS. It enables us to track a vessel"s 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. 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.

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

To further improve quality of tuna catch data, Department of Fisheries plans to implement observer onboard (OBB) 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 still under consideration. To be improving quality of tuna catch data with other alternative were been suggested. Department was propose to install CCTV on the tuna vessels to monitored fishing activities at sea and also help to prevent illegal transshipments, discards and potential overfishing

However, serious discussion and planning have taken place to implement this program for the vessels of >70 GRT (fishing >30nm outside coastalline) operating within the EEZ Malaysia.

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 collected, process and assist tuna scientists to analyze 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 programme were resume conducted in middle 2016 when 5 new registered longline tuna vessels unload their catches at Penang Port.

Sampling for neritic tuna and other tuna-like species is under the responsibility of Fisheries Information Management Division. 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.

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

For neritic tuna fisheries, there were not transhipment activities among the fishing vessels as all the vessels were operating within the EEZ Malaysia and have at most one week period per fishing trip. For longline vessels operating outside EEZ, there was only one carrier of Malaysian flag authorised to carry out transhipment at sea which started November 2012. The first transhipment report was submitted to the Secretariat of IOTC on September 2013.

7. NATIONAL RESEARCH PROGRAMS

For the last 5 years only one research was carried out on tuna and tuna-like species in the IOTC fishing areas namely on neritic tuna by the Fisheries

Research Institute, Kampong Acheh, Perak. The other study on oceanic tuna only involve in area of Sulawesi Sea, east coast of Sabah.

Table 4. Summary table of national research programs, including dates

Project Title	Period	Funding	Objective	Status
Landing and biology of longtail and kawakawa tuna in the northeast of peninsular Malaysia	2014-2016	National R&D Fund.	Landing trend by species. Spawning season of kawakawa	On going
Qualitative determination of small tuna leaking of catches from Malaysian eez.	2014 -2015	National R&D Fund	To determine the leaking trend of neritic tuna resources by local purse seine vessels.	Completed

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

Malaysia is committed to abide to all the adopted resolutions. Below are the feedbacks regarding compliance issues

Table 9. Scientific requirements contained in Resolutions of the Commission, adopted between 2005 and 2017.

Res. No.	Resolution	Scientific requirement	CPC progress
15/01	On the recording of catch and effort by fishing vessels in the IOTC area of competence	Paragraphs 1–10	Logbook for lonliners has been updated and submitted to Secretariat. The updated logbook include mandatory to provide size frequency. For vessels <24m, operating within EEZ data collection using Vessel Operating Activity (LOV).
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 for year 2017 Malaysia had submitted the catch and effort data to the secretariat as required under resolution 15/02. The catch and effort data are from 10 tuna longline vessels currently fishing on albacore tuna.
15/05	On conservation measures for	Paragraph 4	Not applicable to Malaysia as no permit for gillnet to

Res. No.	Resolution	Scientific requirement	CPC progress
	striped marlin, black marlin and blue marlin		catch tuna outside EEZ was given. Malaysian Tuna longliners are fishing on albacore tuna.
13/04	On the conservation of cetaceans	Paragraphs 7– 9	Under Malaysian Fisheries Act 1985, cetaceans species are protected species.
13/05	On the conservation of whale sharks (*Rhincodon typus*)	Paragraphs 7– 9	Whale shark is protected species under Malaysian Fisheries Act 1985.
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. So far no research has been carried out on the species.
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 include Families Alophiidae to be recorded by the tuna longline operators. No research on species from Alophiidae was carried out. Malaysia will cooperated for any research activity.
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.
12/04	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 and 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.
11/04	On a regional observer scheme	Paragraph 9	Despite difficulty to implement the ROS, Malaysia has taken the initiative to develop the National Observer Scheme especially on implement on the EEZ waters. The main factor impede the progress is insufficiency of financial supports and human resources.
05/05	Concerning the conservation of sharks caught in association with fisheries managed by IOTC	Paragraphs 1–12	Very low interaction on shark species by Malaysian tuna longlines and they were required to record on any interaction. For shark species caught by within EEZ waters, the majority are from demersal species which are not listed under endangered species.
16/06	On measures applicable in case of non-fulfilment of reporting obligations in the IOTC	Paragraph 1	Malaysia will take note of the resolution

Describe the actions taken, under national legislation, to implement conservation and management measures adopted by the Commission in previous Sessions, and which have not been reported previously.

Authorisation to Fish (ATF) Terms and Conditions

The owner or operators and Master of the Malaysian Tuna Fishing Vessel shall comply with the following terms and conditions at all times:

1. This vessel is authorised only to fish (ATF) for tuna and tuna-like species in the Indian Ocean Area of Competence using longline / Purse seine gear.
2. This ATF is only valid with a valid local Fishing License.
3. Fishing activities are allowed in designated areas as stated in the ATF only.
4. All Malaysia tuna fishing vessel are not allowed to use fishing gear other than the licensed gears. Large-scale driftnets shall be prohibited.
5. The Master of this vessel must at all times comply with the Malaysia Fisheries Act 1985 and all regulations made thereunder, and the laws, rules, regulations and national policies from time to time in force in Malaysia as well as the Indian Ocean Tuna Commission (IOTC) Resolutions.
6. The Master of this vessel shall keep this ATF, National Fishing Licence and Vessel Registration Certificate on board at all times, and shall produce these documents for inspection upon the request of an authorised officer.
7. Markings and identification of the vessel shall be clearly displayed in accordance with the Standard Specifications for the Marking and Identification of Fishing Vessels. The vessel shall clearly display, on both sides and on its deck, its International Radio Call Sign (IRCS) and the country (flag state) registration number.
8. The Master of this vessel shall maintain a record of the catch in the logbook in relation to each fishing trip and submit to the Department every Friday. The log book shall be produced for inspection to any authorized officer, if so required by such officer.
9. The Operators of this vessel shall install, maintain and operate a registered VMS or such other approved MTU at all times;
10. The Master shall ensure that one hundred percent (100%) of its catch is landed at a designated port in Malaysia. Any landings at foreign ports must obtain prior written permission from the Director General of Fisheries Malaysia.
11. The Master of this vessel: (i) is prohibited from using the vessel to target sharks or turtle and (ii) shall promote live release.
12. The Master of this vessel shall ensure line cutters and de-hookers are always on board (Longliners).
13. The Master of this vessel shall ensure the Implementation of mitigation measures when operating at south of 25°S
14. Fishing, storing or retaining on board, transhipping or landing in whole or in part, any of the following sharks listed below shall be prohibited:

a. species of the family *Alopiidae; and*
b. Oceanic whitetip shark;

15. The Master of this vessel shall ensure that all necessary steps has been taken to guarantee the safe release of shark (listed in paragraph (vi) of the IOTC Resolutions) that is unintentionally caught and report all incidents of the shark releases, including the status at time of release

FAILURE TO COMPLY WITH THESE AND OTHER TERMS AND CONDITIONS OF THE LICENCE, NATIONAL LAWS AND REGULATIONS MAY, IN ADDITION TO ANY JUDICIAL PENALTIES THAT MAY BE INCURRED, RESULT IN THE SUSPENSION OR CANCELLATION OF THE LICENCE, EITHER TEMPORARILY OR PERMANENTLY

9. LITERATURE CITED

Ahmad A.N, Sallehudin J, Effarina M.F, Samsudin B 2015. Neritic Tuna Fishery and Some Biological Aspect in West Coast of Peninsular Malaysia.

Ahmad A.N, Samsudin B , Sallehudin J, Mohammad Faisal M.S 2015 Catch of billfishes by Malaysian tuna longliners n the southwestern Indian Ocean.

Annual Fisheries Statistic, Department of Fisheries, Malaysia.

Department of Fisheries Malaysia, 2003. Tuna Fisheries in Malaysia. Ministry of Agriculture. 114 pp.

Department of Fisheries Malaysian, 2006. Malaysia National Plan of Action for the Conservation and Management of Shark. Ministry of Agriculture and Agro-based Industry Malaysia, Putrajaya. 66 pp.

Sallehudin, J., Samsudin, B. and M.F. Effarina. 2013. Small Tuna Fisheries in the West Cost of Peninsular Malaysia. Working Party on Neritic Tuna. IOTC-2013- WPNT03. 2-5 July 2013. Bali, Indonesia.

Samsudin, B. and A.B. NorAisyah, 2013. Catches of billfishes by the Malaysian tuna longliners targeting tropical and temperate tuna in the Indian Ocean. IOTC-2013- WPB11-15. 08-14 September 2013. Reunion.

Samsudin, B., Mohd, N.N, and M. NorAzlin, 2013 The bycatch records of

sharks, marine turtle and marine mammals by the Malaysian tuna longliners and the Malaysian coastal fisheries. Working Paty on Ecosystem and Bycatch. IOTC-2013-WPEB09-35. 12-16 September 2013, Reunion.

Samsudin, B. Sallehudin, J. and A.B., Noraisyah 2014. Malaysia national Report to the Scientific Committee of the Indian Ocean Tuna Commission for 2014

Samsudin, B., Sallehudin' J., Mohd_Noor, N. and M., NorAzlin. 2014. Malaysia national Report to the Scientific Committee of the Indian Ocean Tuna Commission for 2013

Samsudin, B., Sallehudin' J., Mohd_Noor, N. and M., NorAzlin. 2015. Malaysia national Report to the Scientific Committee of the Indian Ocean Tuna Commission for 2014

Samsudin, B., Sallehudin' J., Mohd_Noor, N. and M., NorAzlin. 2016. Malaysia national Report to the Scientific Committee of the Indian Ocean Tuna Commission for 2015

Samsudin, B., Sallehudin' J., Mohd_Noor, N. and M., NorAzlin. 2017. Malaysia national Report to the Scientific Committee of the Indian Ocean Tuna Commission for 2016