The Review of Landing Billfishes in Phuket Ports, Thailand

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Abstract

This paper summarizes the landing of billfishes in Phuket, Thailand, during 1994-2016. The retain catch and species composition including billfishes have been figured. The relevant information and activities, as well as obstacles on collecting information of billfishes, in particular the identification of species due to their presentation of frozen and plastic wrapped, are addressed. The paper also addresses the inspection at port of Phuket duly the Port State Measures and remarks the possible missed identification of billfishes species that may accordingly impacts the traceability scheme applied by Thailand. Lastly, the recommendations to accommodate the issues and enhance the port inspection are included.

Keywords: tuna longlines, shortbill spearfish, marlins, swordfish, traceability scheme, port inspection, Port State Measures

1. Introduction

Phuket is a Province in the Andaman Sea coast where is merely the only place for landing of tuna longliners since 1994. The available infrastructure and directed flight to Narita airport of Japan are the factor of preference of the vessel owners to landing in Phuket. Although the catch information was generally derived from customs, it was on the purpose for tax collection rather than on fisheries biology purpose. The information is usually in form of total weight of groups of fish. Particularly, the miscellaneous bycatch were usually ignored to be recorded or in a rough total round weight on board of miscellaneous category. So, this study survey was expected to integrate information from both sources. Therefore, this study will update the picture and understand nature of tuna long liners fishing in the Indian Ocean and landed in Phuket. The behavior of tuna long line fishers on treating bycatch may lead to develop or seeking the way to further study on by-catch in this fishery.

2. Data Collection

The data were from three periods of collecting methodology. The first period was during 1994-1999, the data were mainly from the records of customs. So, the billfish composition was not identified in to species. The Second period was during 2000-2012, the data were from 2 sources; the first was from the record of customs where the information of vessels and catch of group of fish were acquired. So, the total entries per year and landing catch were from the records of customs. This information from custom was firstly used to facilitate the port sampling as it is the first point of declaration and then the sampling information will be used to calculate the species compositions of the total landing record of the customs. Port sampling was carried out at Maung District, Phuket Province, and five days monthly. The ports included four private ports and one Port of Fisheries Market Organization, semi-government organization. Prior to landing, companies was contacted for the information of time schedule and place of landing that usually could be known one to two days in advance of landing. The information acquired from this step including name of vessels and its nationality and total catch. The plan of sampling and preparing to locate fishing ground on map, as well as related information on fishing activities, baits, number of fishing and sailing days, catch, species composition, quantity of fish which passed to other fishing vessels for landing. The markings were always with these fish as to identify the owners' vessels during landing and sorting. Fifty fish per vessel were sampled to record individual weights (kg) which were dress weights. The Third period was during 2013-2016, the data were from the Port State Measure (PSM) inspection. Thailand had practiced the PSM Inspection in Phuket since 2013 as a pilot project before declaration of the designated port in 2015 and ratified the FAO Port State Measure Agreement in 2016. Currently, there are six designated port in Phuket from the total 27 ports entire the country. Since 2016, the coverage of inspection was 100% of landing. However, the main purpose of the port inspection was to approve the landing catch of groups of fish

to import rather than to identify the catch into species level. Therefore, except tuna, without sampling, the information of billfish species is still limited from PSM information.

3. Result

3.1 Tuna longline Vessels and Statistics of Entries

The landing vessels since 1994 commonly were Taiwan, Belize, Malaysia, Indonesia and India. These vessels mostly have fishing ground in eastern Indian Ocean where took only one to two days from the port. The high season of tuna fishing in this area was during November to March, yearly. The low fishing season was during Southwest monsoon season from May to October. Nevertheless, the number of entries has been decreasing from the peak of more than eight hundred to less than only 204 in 2016.

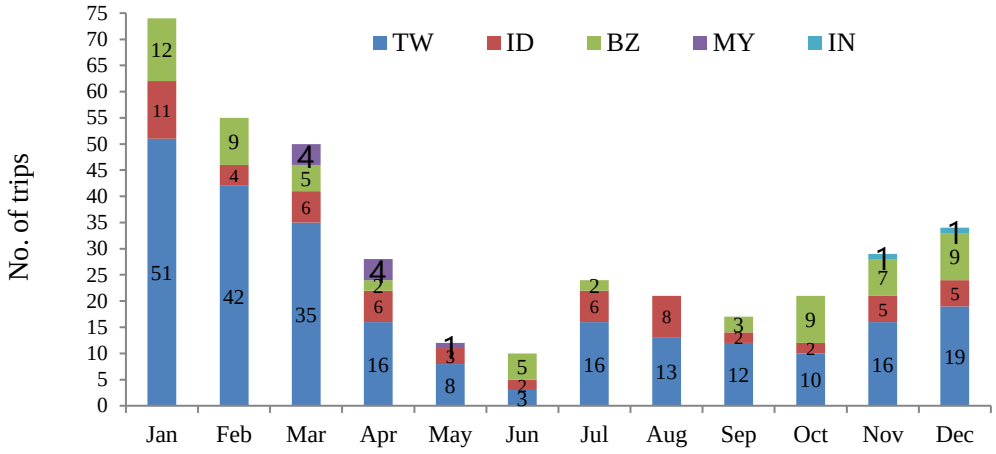

Figure 1 Statistic of entries of foreign longline vessel in port of Phuket in 2011 shows the season of tuna fishing in eastern Indian Ocean.

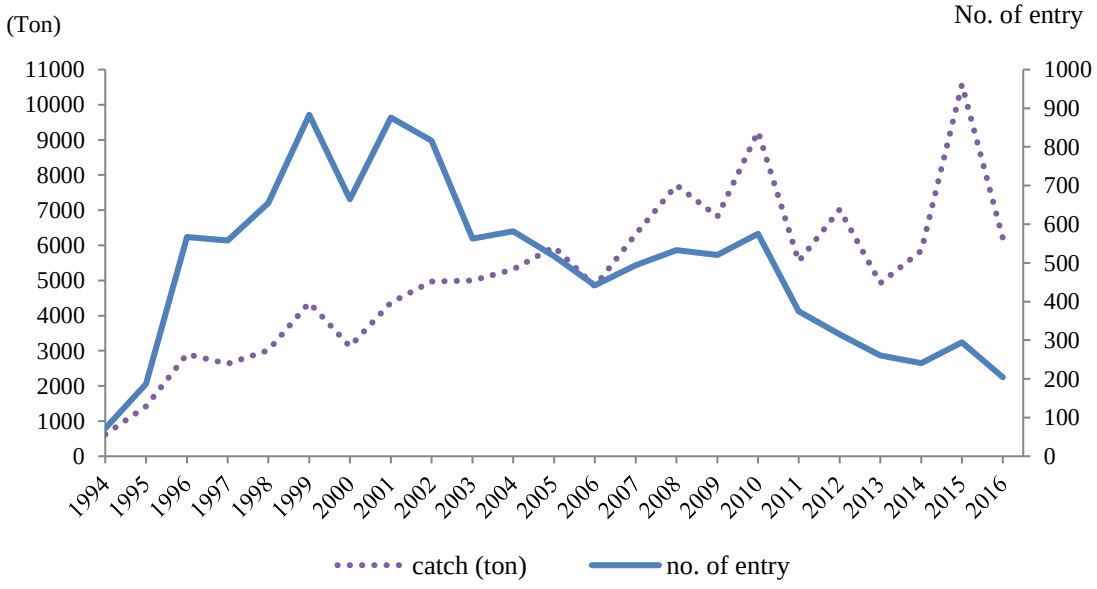

Figure 2 Statistic of entries and landing retained catch of foreign longline vessels in port of Phuket

during 1994-2016.

3.2. Landing Retained Catch and Species Composition

The landing retained catch included the 4 majority groups of tunas, billfish, sharks and other miscellaneous species which included Spanish mackerel (*Scomberomerus commersoni*) and oil fish (*Ruvettus pretiosus*) . Billfishes comprised blue marlin (*Makaira mazara*), striped marlin (*Tetrapturus audax*), black marlin (*M. indica*), sailfish (*Istiophorus platypterus*), short bill spearfish (*Tetrapturus angustirostris*) and swordfish (*Xiphias gladius*). During the first records, 1994 to 2000, these billfishes had not been identified (Table 1 and Figure 3). So, the Figure 4 shows the composition of billfish during 2001-2016, notably that, in 2016, the swordfish disappeared while short bill spearfish significantly increased.

Table 1 Total landings (tons) catch from foreign longliners landed in Phuket during 1993 -2016.

Year	No. of entry	Total landing catch	Tuna		Billfish						SHA	Other**
				Sub Total	BUM	MLS	BLM	SFA	SSP	SWO		
1994	72	622	381	122	56					66	20	-
1995	187	1,416	1,158	246	133					113	13	-
1996	567	2,903	2,003	851	426					425	49	-
1997	558	2,632	1,814	808	425					383	10	-
1998	655	3,015	2,867	147	84					63	1	-
1999	883	4,373	4,033	340	200					140	1	-
2000**	665	3,118	2,554	456	247					209	0	
2001**	876	4,372	3,273	1031	47	51	27	11	1	500	20	48
2002**	816	4,971	4,445	441	146	85	63	1	1	145	20	65
2003**	563	4,996	4,554	415	111	37	82	2	8	175	11.5	16
2004**	582	5,317	4,905	388	110	41	84	0	0	153	0	24
2005**	517	5,953	5,431	284	74	23	70	1	3	113	0.5	238
2006**	442	4,830	4,199	220	70	14	34	4	11	87	0	411
2007**	494	6,315	5,158	451	128	69	78	40	31	105	30	676
2008**	533	7,710	6,359	655	131	57	169	28	3	268	20	676
2009**	521	6,821	5,951	156	13	4	10	0	0	129	0	714
2010**	575	9,230	7,796	80	35	13	28	0	0	4	854	500
2011**	375	5,543	4,317	91	31	11	21	0*	0	25	5	1,130
2012**	315	7,024	4,919	135	41	15	32	0	0	47	0	1,970
2013	261	4,924	2,947	1,274	258	94	203	0	25	694	0	703
2014	241	5,841	3,770	1,465	306	112	241	0	14	792	0	606
2015	295	10,575	7,199	2,465	593	217	466	0	0	1,189	0	911
2016	204	6,200	4,802	1,113	212	78	167	0	656	0	0	285

Remark: *less than 0.1 ton; ** others= kingfish, sunfish & oilfish

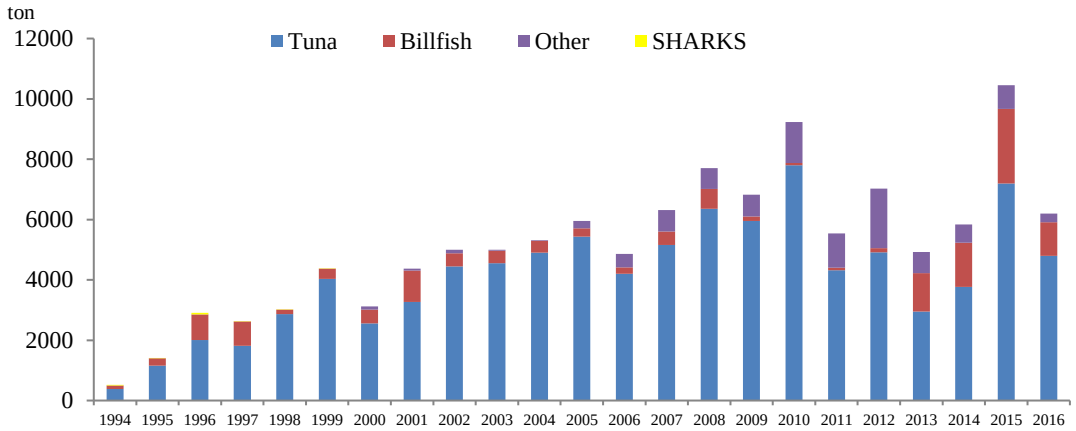

Figure 3 Retained catch of longliners landing at Phuket ports of Thailand during 2001-2016.

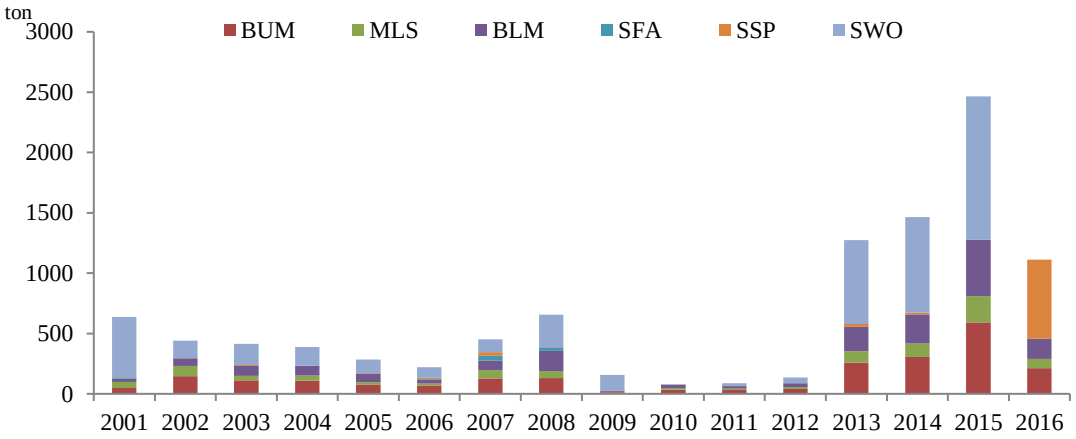

Figure 4 Species composition of retained billfish of longliners landing at Phuket ports of Thailand during 2001-2016.

4. Discussion

Although the catch of longliners are not much rich in term of number of species, the identification of species particularly of billfishes still needs skill and experience of inspectors. Moreover, the frozen presentation of billfishes is more difficult than the chilled while billfishes are likely to be frozen as their prices are lower than tunas. In addition, sometime, frozen fish were wrapped in plastic bags that were more difficult to be identified. Mostly, based on their quality, from the landing place, these billfish are not exported directly to the Japan raw fish Market. Instead, they firstly identified as non-exporting graded that supplied to the local processing plants in Phuket. After the processing, they will be exported in a packed of fillet, loin or saku. This process required the traceability of the products. So, the identification of billfish species is crucial for this process. Another important point is that while their catch shows the increasing trend, it is not IOTC species of competent.

5. Recommendations

The labeling of catch including billfishes before retaining onboard may facilitate the species identification when conducting the observation of transhipment and inspection in port. The shortbill spearfish has been more impacted by tuna fisheries; it should be included in the IOTC species of competent.