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Albacore Tuna Fishery in the Indian Ocean by Thai Longliners during 2007-2011

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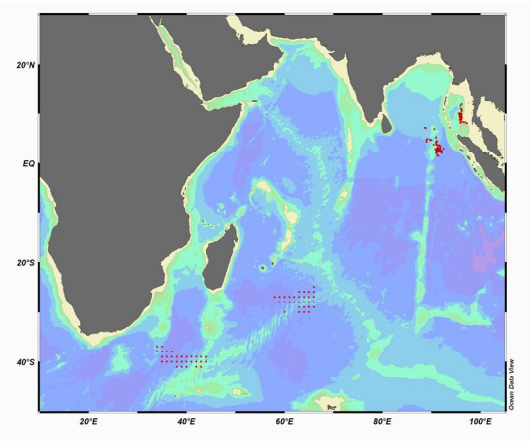
Summary

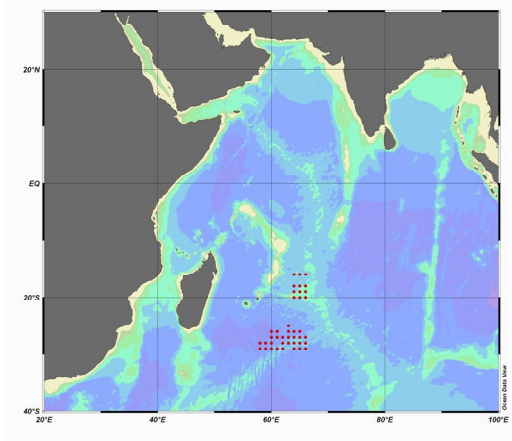
Three Thai tuna longliners were operated in the Indian Ocean since 2007, but there were only two longliners operated during 2008-2011. The main fishing ground was the central and southern part of the Indian Ocean. This report was based on the data extracted from fishing logsheets which were delivered to Department of Fisheries, Thailand. During 2007-2011, fishing operations in the Indian Ocean were recorded 2,276 fishing days. The highest total catch was in 2010 with 607.69 tonnes followed by 2007, 2011, 2009 and 2008, respectively (461.75, 370.39, 295.23 and 265.57 tonnes). The highest CPUE was found in 2010 with 13.62 fish/1000 hooks followed by 2007 and 2011, respectively (10.20 and 9.36 fish/1,000 hooks). In 2011, albacore tuna was the lowest catch by weight and number (11.44 tonnes and 353 fish), and its CPUE reduced to 0.34 fish/1,000 hooks. Moreover, the average composition by number of this species decreased from 32.8% (2007-2010) to 3.7% in 2011. The composition of albacore tuna by zone was the highest catch in the 3rd zone (3.74 tonnes and 119 fish). It was the lowest catch in the 4th zone (1.96 tonnes and 53 fish); however this zone was the highest CPUE of albacore tuna (0.59 fish/1,000 hooks).

Fishing grounds

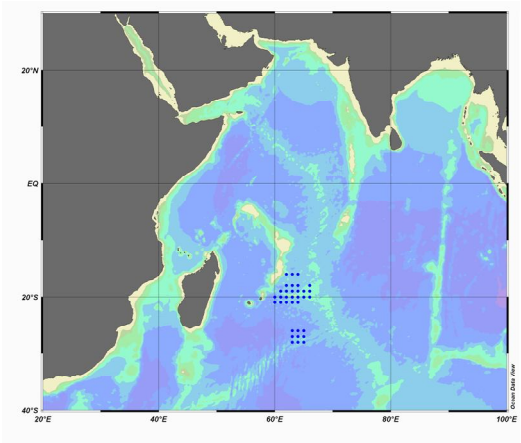
The data of albacore tuna (*Thunnus alalunga*) by Thai tuna longline fisheries in the Indian Ocean was collected from longliners logbooks which included information about fishing operations. Three Thai tuna longliners were operated in the Western Indian Ocean in 2007, but during 2008-2011 only two Thai tuna longliners kept on fishing there. The main fishing grounds in 2011 were distributed around central and southern part of the Indian Ocean (Figure 1).



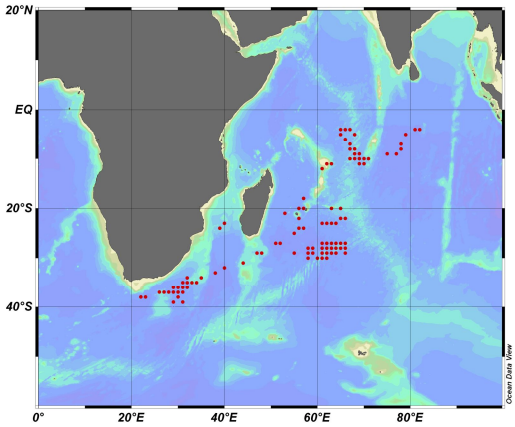
2007



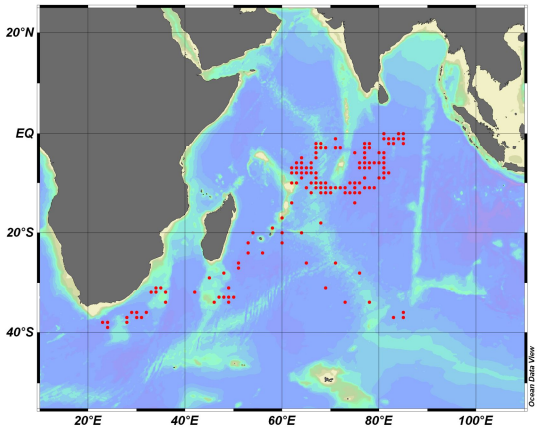
2008



2009



2010



2011

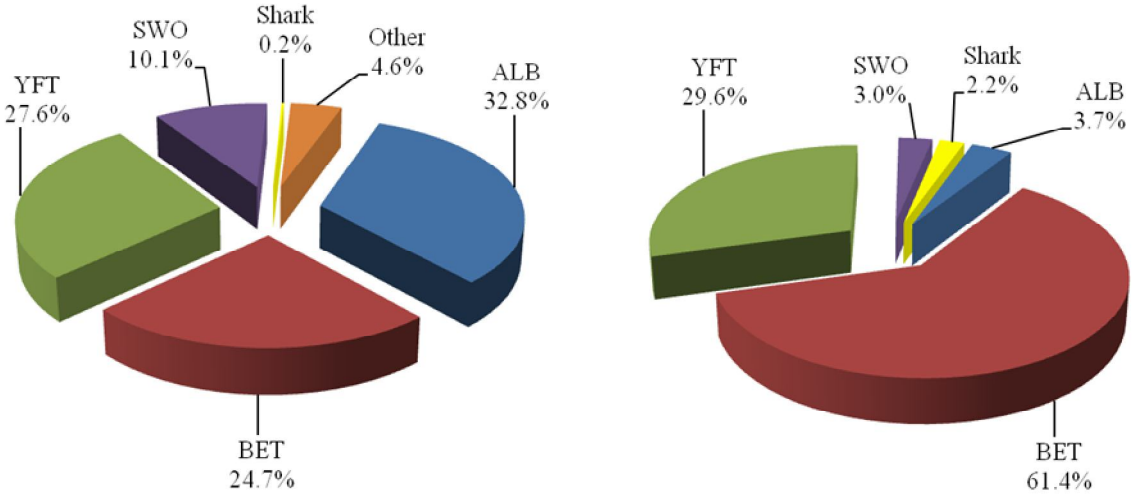
Figure 1 Fishing ground by Thai tuna longliners in the Indian Ocean during 2007-2011

Fishing efforts, catches, percentage compositions and CPUEs between 2007-2011

Fishing efforts during 2007-2011 were shown in table 1. In 2007, Thai tuna longliners exerted the highest fishing effort 1,503,600 hooks (537 fishing days). On the other hand, fishing efforts in 2011 were decreased to the lowest as 1,041,600 hooks (372 fishing days).

Annual catches in 2007-2011 were estimated to 461.64, 269.53, 295.23, 607.69 and 370.39 tonnes, respectively. The major species caught during 5 years were albacore tuna, bigeye tuna (*T. obesus*), yellowfin tuna (*T. albacares*) and swordfish (*Xiphias gladius*). Their catches were 115.07, 138.61, 111.18 and 8.23 tonnes, respectively in 2007. Those species yield lower catches during 2008-2009, but their catches were increased in 2010. Although the total catch of those species in 2011 was lower than 2010, bigeye tuna was attained the highest catch with 248.60 tonnes (Table 1).

During 2007-2010, the average percentage composition by number of albacore tuna, bigeye tuna, yellowfin tuna and swordfish were 32.8%, 24.7%, 27.6% and 10.1%, respectively. In contrast, catch composition in 2011 of albacore, bigeye tuna, yellowfin tuna, and swordfish were 3.7%, 61.4%, 29.6% and 3.0%, respectively. Showing the distinct change of catch composition from the past, albacore tuna was decreased from 32.8% (2007-2010) to 3.7% in 2011 that composition of albacore tuna was nearly 9 times lower than 4 years ago (Figure 2).



Average catch composition during 2007-2010 Catch composition in 2011

Figure 2 Catch composition by number

The CPUEs of Thai tuna longliners in 2007-2011 ranged between 5.16 and 13.62 fish/1,000 hooks, and the average CPUE was 8.93 fish/1,000 hooks. The lowest CPUE was in 2009, and the highest CPUE was in 2010. In 2011, the CPUE decreased from 13.62 fish/1,000 hooks in 2010 to 9.36 fish/1,000 hooks (Table 1).

Fishing efforts, catches, percentage compositions and CPUEs by Zone in 2011

Referring to the 2009 WPTT meeting, a five-region (R 1-5) spatial stratification was taken for the CPUE analysis in 2011, and Thai tuna longline fisheries were operated in the 2nd-5th zone (R 2-5) following the Figure 3. The fishing efforts in each zone were shown in table 2. The highest fishing effort was in the 5th zone at 344,400 hooks (123 fishing days), but it was the lowest in the 4th zone at 89,600 hooks (32 fishing days).

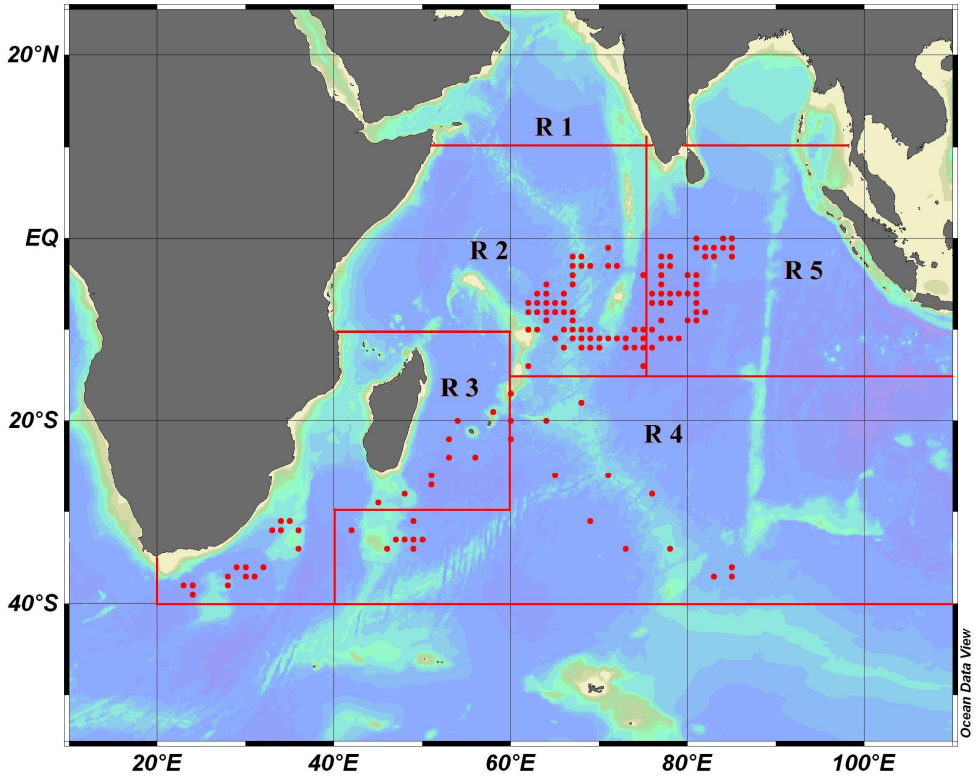


Figure 3 Fishing operation of Thai tuna longliners by zone in 2011

Catches of all species in zone 2, 3, 4, and 5 were 148.00, 30.10, 13.89 and 178.4 tonnes, respectively. Albacore tuna, bigeye tuna and yellowfin tuna were caught in all fishing zone with highest catch in the 5th zone (2.51, 126.58 and 42.36 tonnes, respectively) whilst the lower catch was in the 2nd zone (3.24, 97.14 and 42.01 tonnes, respectively). In addition, swordfish were found in all fishing zone with the highest catch being 5.61 tonnes in the 2nd zone, but sharks were reported on the catch only in the 5th zone with 2.22 tonnes (Table 2). The percentage compositions by weight in each zone were shown in figure 4.

The CPUE of all species by zone ranged between 3.31 and 13.31 fish/1,000 hooks. The highest CPUE was in the 5th zone, but the lowest CPUE was in the 3rd zone (Table 2).

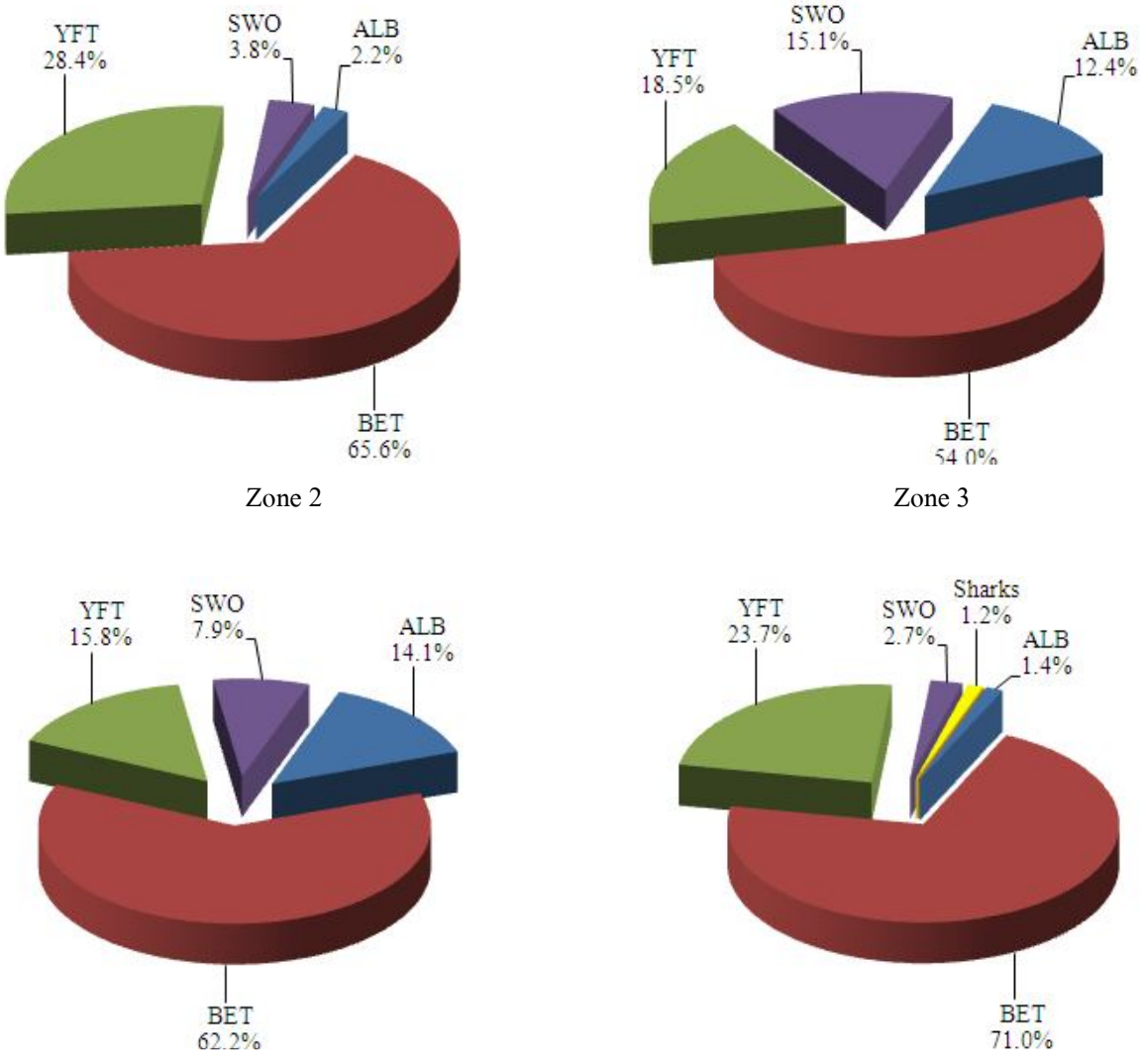


Figure 4 Catch compositions by number in each zone in 2011

The trend of albacore tuna catch and CPUE during 2007-2011

Albacore tuna were caught during 2007-2011 which the catch by weight and number, and CPUE were the highest in 2010 (263.41 tonnes, 11,456 fish, and 8.56 fish/1,000 hooks). Those values were the lowest in 2011 (11.44 tonnes, 353 fish, and 0.34 fish/1,000 hooks). Zoning of 2011, the catch of albacore tuna was the highest catch in the 3rd zone with 3.74 tonnes following by the 2nd and 5th zone, respectively. The lowest catch was in the 4th zone; however the CPUE of this species was the highest in this zone with 0.59 fish/1,000 hooks followed by the 3rd and 5th zone, respectively (Figure 5-6).

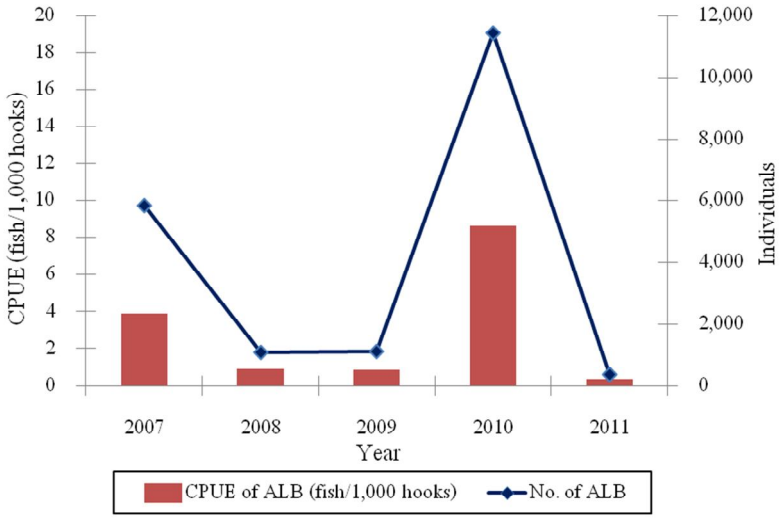


Figure 5 Number and CPUE of albacore tuna by Thai tuna longline fisheries during 2007-2011

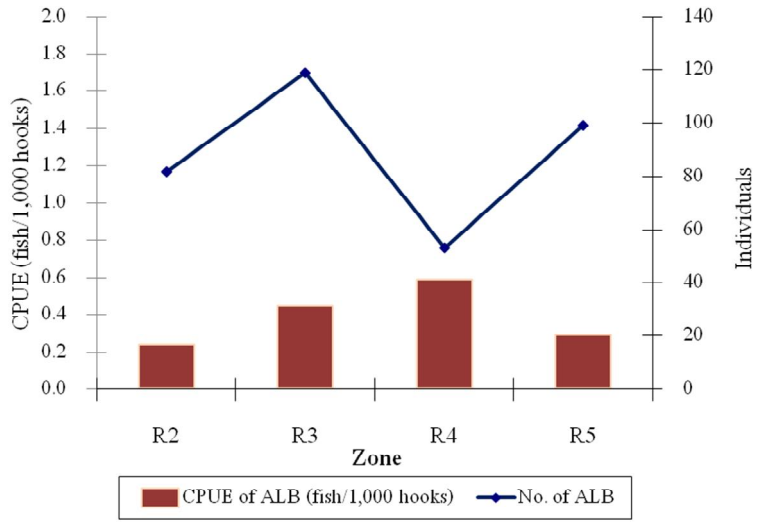


Figure 6 Number and CPUE of albacore tuna by Thai tuna longline fisheries in each zone for 2011

Table 1 Fishing efforts, catches and CPUEs of Thai tuna longliners in the Indian Ocean during 2007-2011

Year	Fishing days	No. of Hooks	Total no. of fish	No. of ALB	Catches weight (tonnes)							CPUE (fish/1,000 hooks)	CPUE of ALB (fish/1,000 hooks)
					ALB	BET	YFT	SWO	Sharks	Other	Total		
2007	537	1,503,600	15,334	5,850	115.07	138.61	111.18	8.23	0.71	87.84	461.64	10.20	3.89
2008	417	1,167,600	6,863	1,066	22.84	69.74	89.76	59.35	-	27.84	269.53	5.88	0.91
2009	477	1,335,600	6,897	1,117	23.57	152.07	64.96	54.63	-	-	295.23	5.16	0.84
2010	473	1,324,400	18,044	11,456	263.41	170.10	93.60	80.58	-	-	607.69	13.62	8.65
2011	372	1,041,600	9,746	353	11.44	248.60	92.12	16.00	2.22	-	370.39	9.36	0.34
Total	2,276	6,372,800	56,884	19,842	436.33	779.12	451.62	218.79	2.93	115.68	2,004.48	8.93	3.11

Table 2 Fishing efforts, catches and CPUEs by zone in 2011

Zone	Fishing days	No. of Hooks	Total no. of fish	No. of ALB	Catches weight (tonnes)						CPUE (fish/1,000 hooks)	CPUE of ALB (fish/1,000 hooks)
					ALB	BET	YFT	SWO	Sharks	Total		
R2	122	341,600	3,986	82	3.24	97.14	42.01	5.61	-	148.00	11.67	0.24
R3	95	266,000	880	119	3.74	16.24	5.56	4.56	-	30.10	3.31	0.45
R4	32	89,600	297	53	1.96	8.64	2.19	1.10	-	13.89	3.32	0.59
R5	123	344,400	4,583	99	2.51	126.58	42.36	4.73	2.22	178.40	13.31	0.29