

Albacore Tuna by Thai Tuna Longline Fisheries in the Indian Ocean during 2007-2010

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Summary

Three Thai tuna longliners were operated in the Indian Ocean in 2007 but there were only two longliners operated during 2008-2010. The main fishing ground was in the southern part of the Indian Ocean (around the east and south coast of Madagascar). Information in this report based on the data extracted from logsheets which were delivered to the Department of Fisheries, Thailand. From the year 2007 to 2010, one thousand nine hundred and four days fishing operations in the Indian Ocean were recorded. The total catch was highest in 2010 for 607.69 tonnes followed by 461.75, 295.23 and 265.57 tonnes in 2007, 2009 and 2008, respectively. The highest CPUE was found in 2010 (13.62 fish/1000 hooks) followed by year 2007, 2008 and 2009 (10.20, 5.88 and 5.16 fish/1000 hooks, respectively). Albacore was the highest composition by weight and number in 2010 (263.41 tonnes and 11,456 fish) with CPUE 8.65 fish/1,000 hooks. It was the lowest composition by weight and number in 2008 (22.84 tonnes and 1,066 fish) with CPUE 0.91 fish/1,000 hooks. In 2010, albacore tuna catch and CPUE were highest in zone 3 with 244.60 tonnes and 12.10 fish/1,000 hooks following by zone 4, zone 2 and zone 5.

Fishing grounds

The study on albacore tuna (*Thunnus alalunga*) by Thai tuna longline fisheries in the Indian Ocean was based on data collected from logbooks which included information of fishing operation. Three Thai tuna longliners operated in the Western Indian Ocean in 2007, but 2008-2010 only two Thai tuna longliners kept on fishing there. The main fishing grounds were east coast and south Madagascar and southern part of the western Indian Ocean (Figure 1).

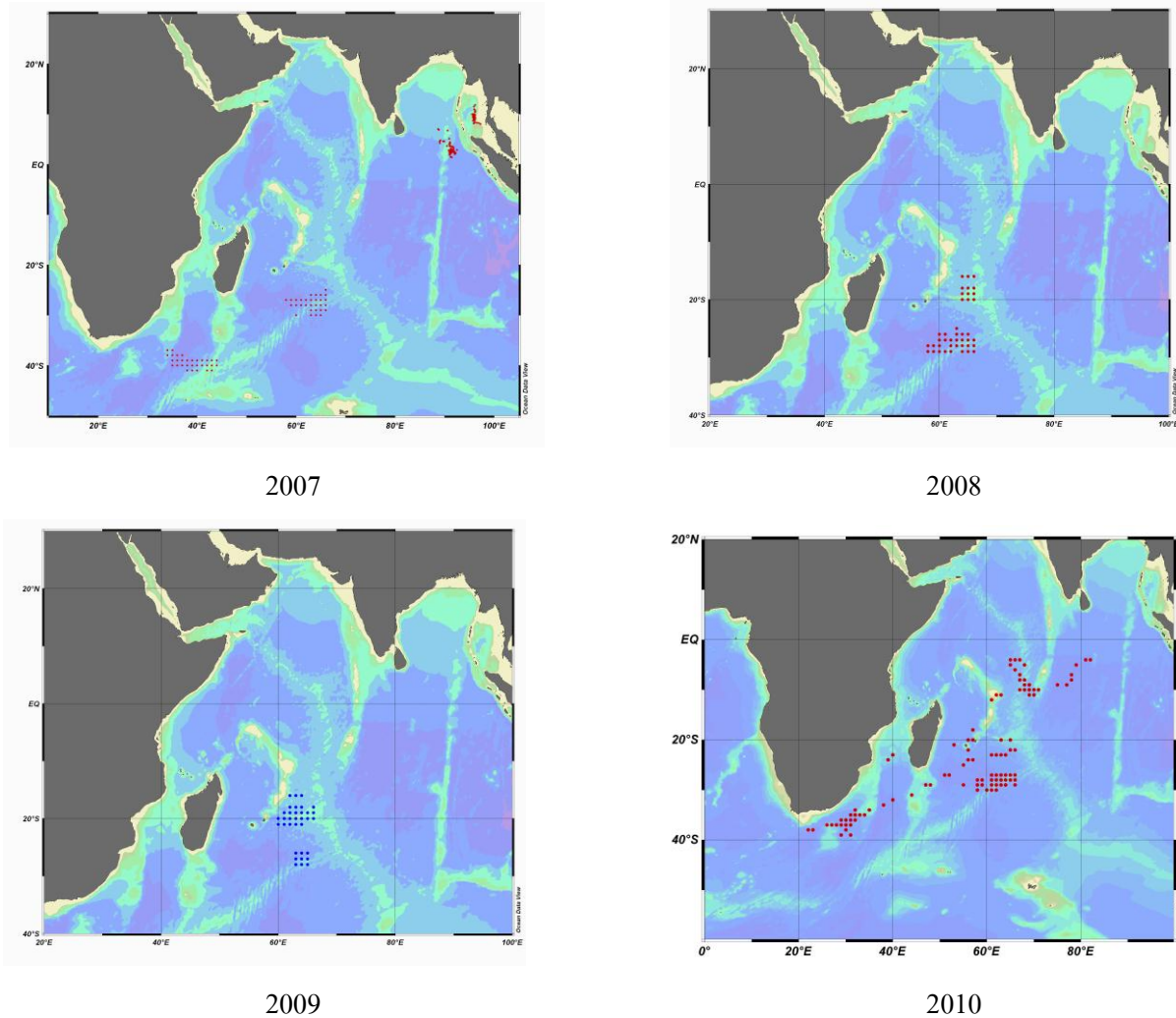


Figure 1 Fishing ground by Thai tuna longliners in the Indian Ocean during 2007-2010

Fishing efforts, catches, percentage compositions and CPUEs between 2007-2010

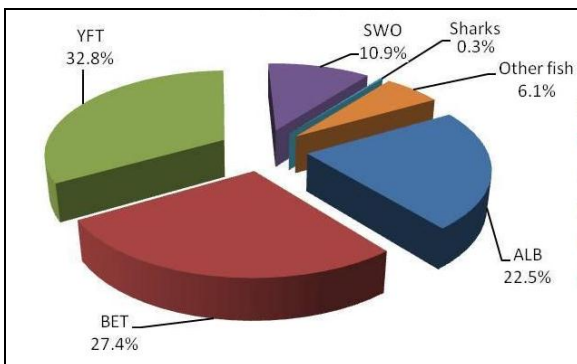
Fishing efforts during 2007-2010 were shown in table 1. In 2007, Thai tuna longliners exerted the highest fishing effort 1,503,600 hooks (537 fishing days). On the other hand, fishing efforts in 2010 were decreased to 1,324,400 hooks (473 fishing days).

Annual catches in 2007-2010 were estimated to 461.64, 269.53, 295.23 and 607.69 tonnes, respectively. The major species caught during 4 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 increased in 2010.

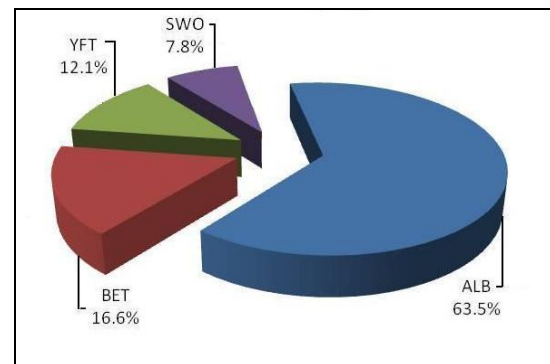
Especially, the catches of albacore tuna and bigeye tuna were highest in 2010 (263.41 and 170.10 tonnes, respectively) (Table 1).

During 2007-2009, the average percentage composition by number of albacore tuna, bigeye tuna, yellowfin tuna, swordfish and others was 22.5%, 27.4%, 32.8%, 10.9%, 0.3% and 6.1%, respectively. In contrast, catch composition in 2010 of albacore, bigeye tuna, yellowfin tuna, and swordfish were 63.5%, 16.6%, 12.1% and 7.8%, respectively. However, sharks and others were not reported by Thai tuna longliners in 2009-2010 (Figure 2).

The CPUEs of Thai tuna longliners in 2007-2010 ranged between 5.16 and 13.62 fish/1,000 hooks, and average CPUE was 8.84 fish/1,000 hooks. In 2007, the CPUE was 10.20 fish/1,000 hooks, and the lowest CPUE was 5.16 fish/1,000 hooks in 2009. Nevertheless, the CPUE was highest at 13.62 fish/1,000 hooks in 2010 (Table 1).



Average catches composition during 2007-2009



Catches composition in 2010

Figure 2 Catch compositions by number

Fishing efforts, catches, percentage compositions and CPUEs by Zone in 2010

Referring to the 2009 WPTT meeting, a five region (R 1-5) spatial stratification was taken for the CPUE analysis in 2010, and Thai tuna longline fisheries were operated in zone 2 to 5 (Figure 3). Those fishing efforts in each zone were shown in table 2. In 2010, the highest fishing effort was in zone 3 at 879,200 hooks, but it was lowest in zone 5 at 30,800 hooks.

Catches of all tuna species in zone 2, 3, 4, and 5 were estimated to 56.42, 470.45, 66.32 and 14.50 tonnes, respectively. Albacore tuna, bigeye tuna and yellowfin tuna were caught in all fishing zone with highest catch in zone 3 (244.60, 108.67 and 60.39 tonnes, respectively) whilst the lower catch was in zone 5 (1.86, 6.19 and 2.65 tonnes, respectively). In addition, swordfish were found in all fishing zone with the highest catch being 56.80 tonnes in zone 3 (Table 2). The percentage compositions by number of albacore tuna, bigeye tuna, yellowfin tuna and swordfish in each zone were shown in figure 4.

The CPUE of all zone ranged between 5.96 and 16.95 fish/1,000 hooks. The highest CPUE was in zone 3, but the lowest CPUE was in zone 4 (Table 2).

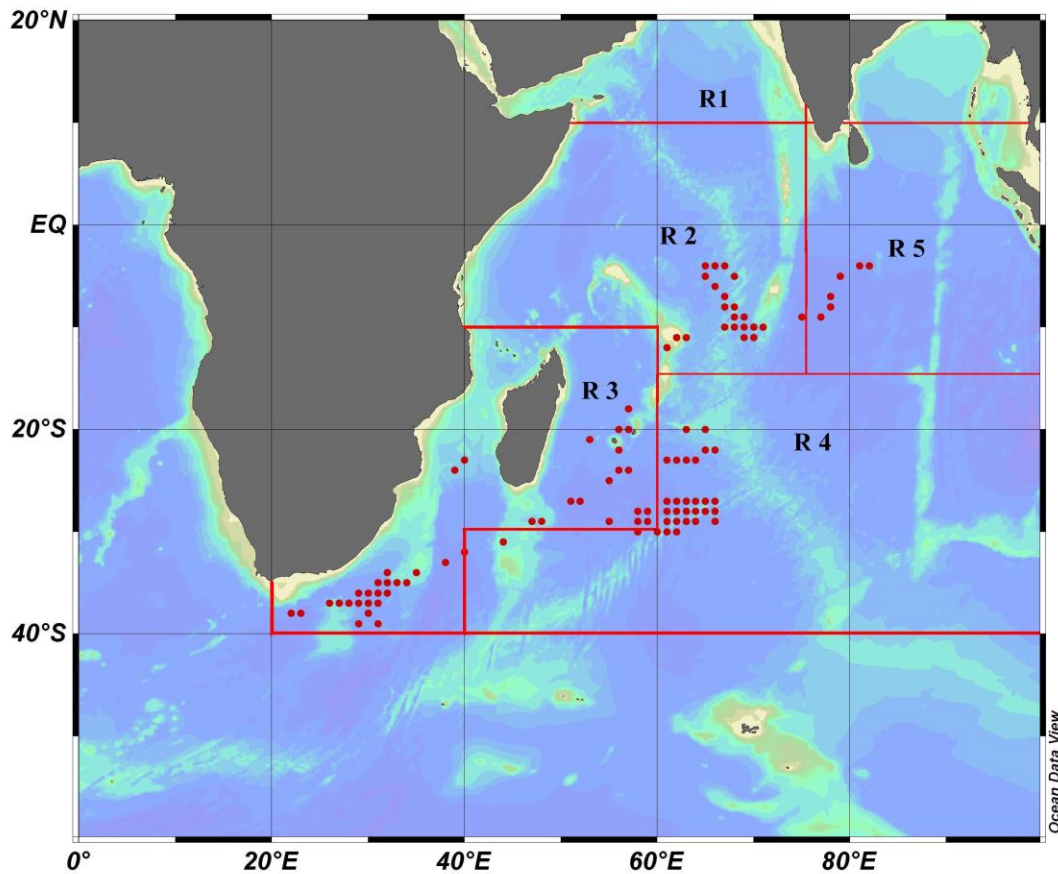


Figure 3 Fishing operation of Thai tuna longliners by zone in 2010

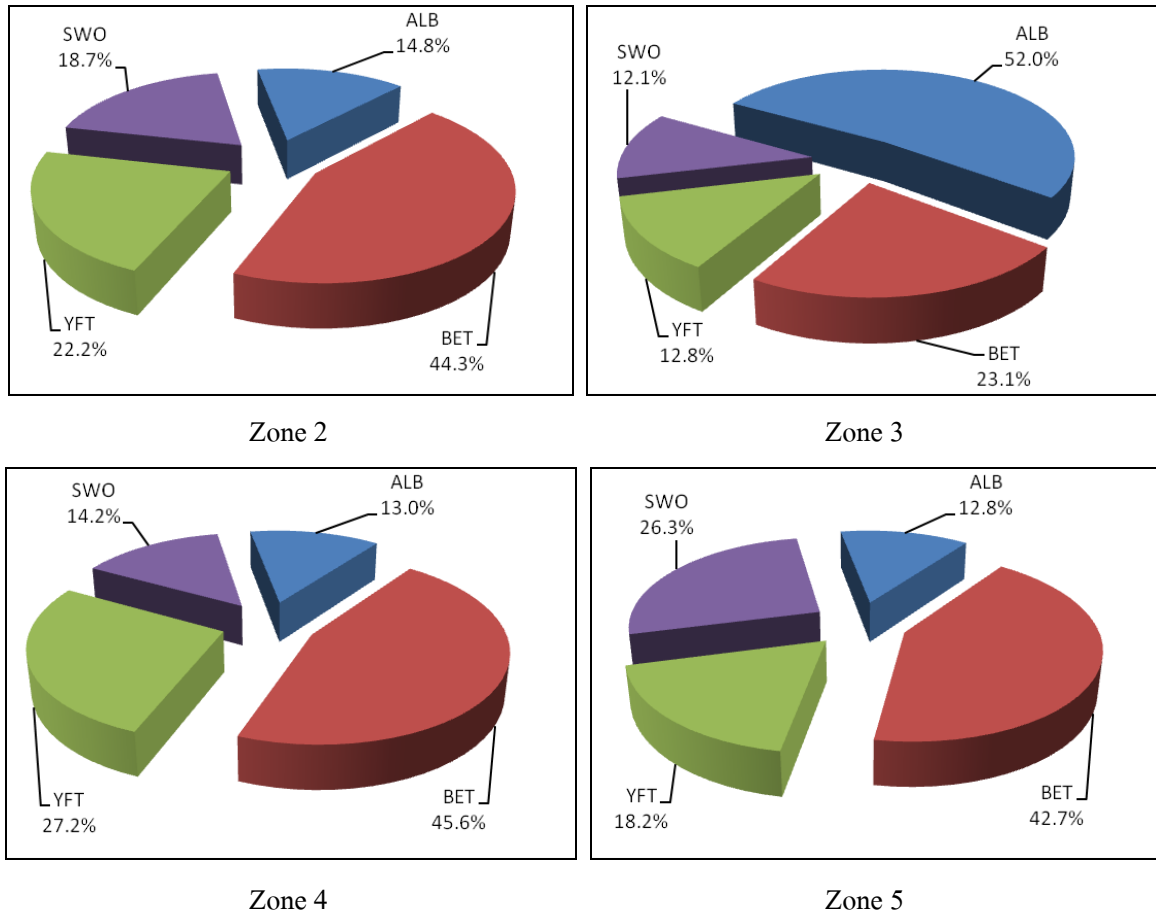


Figure 4 Catch compositions by number in each zone in 2010

The trend of albacore tuna catch and CPUE during 2007-2010

Albacore tuna were caught during 2007-2010 which the catch by weight and number, percentage composition by number and CPUE were highest in 2010 (263.41 tonnes, 11,456 fish, 63.5% and 8.56 fish/1,000 hooks). Those values were lowest in 2008 (22.84 tonnes, 1,066 fish, 24.90% and 0.91 fish/1,000 hooks). In 2010, the catch of albacore tuna was highest in zone 3 with 244.60 tonnes following by zone 4, zone 2 and zone 5. Moreover, the highest CPUE of this species was in zone 3 with 12.10 fish/1,000 hooks, but the lowest CPUE was in zone 4 (Figure 5-6).

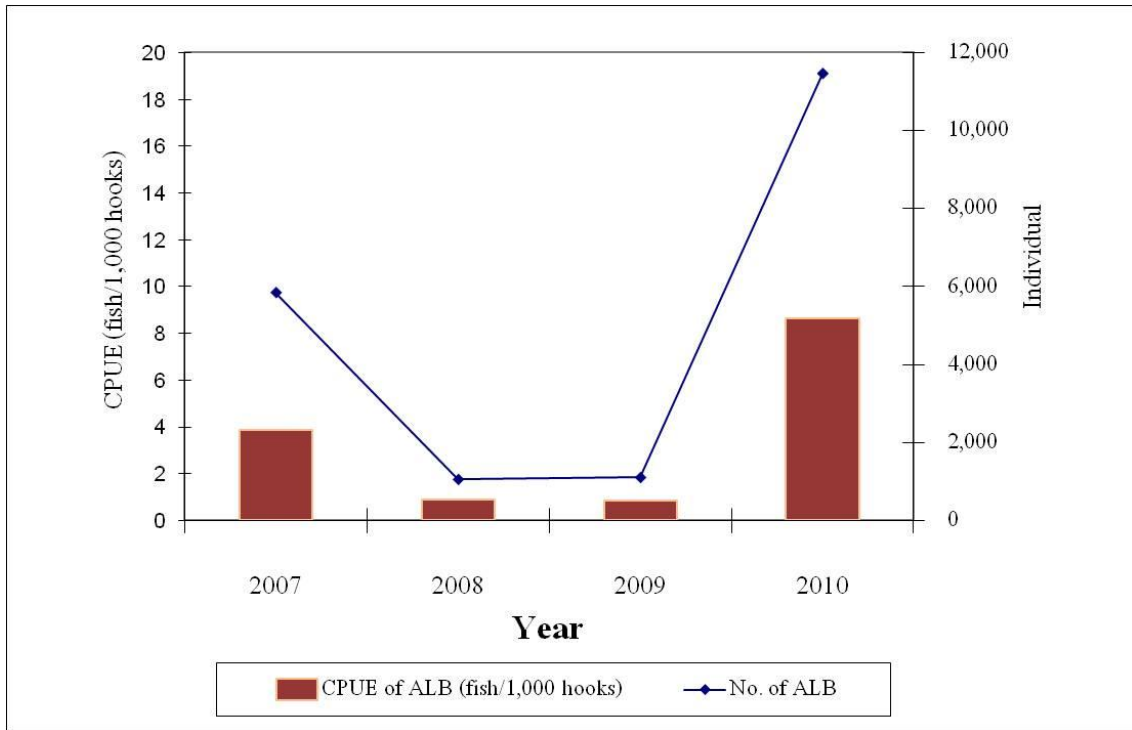


Figure 5 Number and CPUE of albacore tuna by Thai tuna longline fisheries during 2007-2010

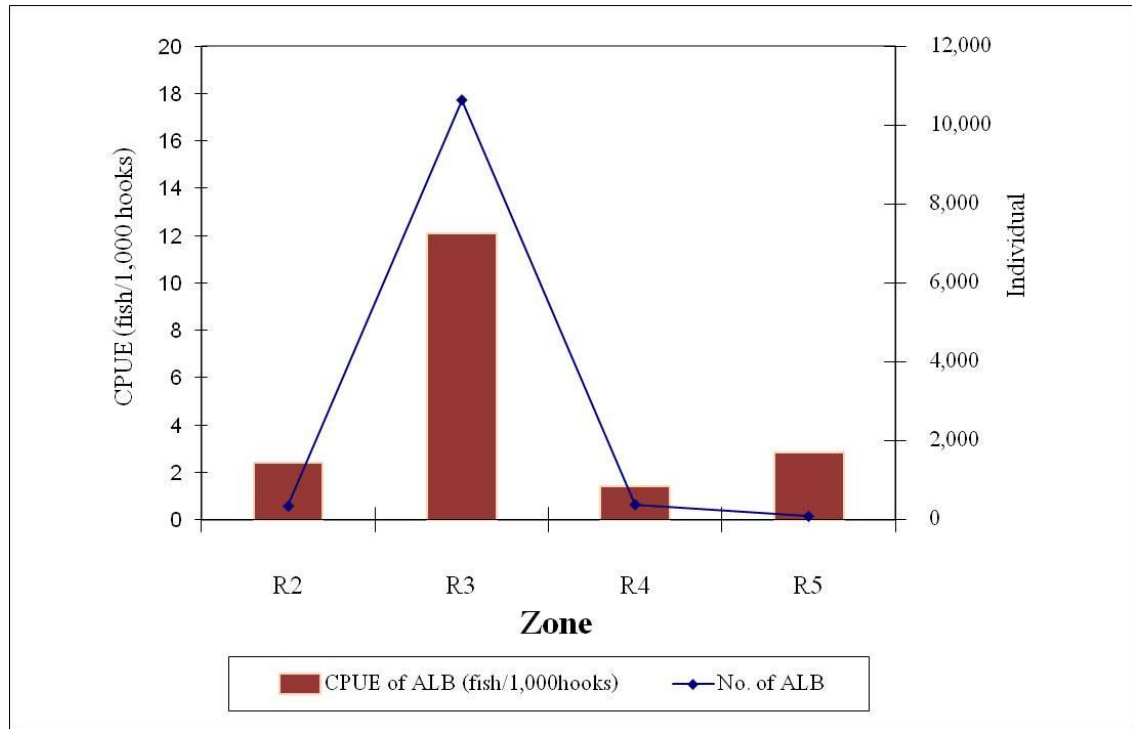


Figure 6 Number and CPUE of albacore tuna by Thai tuna longline fisheries in each zone for 2010

Table 1 Fishing efforts, catches and CPUEs of Thai tuna longliners in the Indian Ocean during 2007-2010

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	1,338,400	18,044	11,456	263.41	170.10	93.60	80.58	-	-	607.69	13.48	8.56
Total	1,904	5,345,200	47,138	19,489	424.89	530.52	359.50	202.79	0.71	115.68	1,634.09	8.82	3.65

Table 2 Fishing efforts, catches and CPUEs by zone in 2010

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	Total		
R2	52	145,600	1,220	348	8.35	24.99	12.53	10.56	56.42	8.38	2.39
R3	314	879,200	14,902	10,638	244.60	108.67	60.39	56.80	470.45	16.95	12.10
R4	96	268,800	1,601	383	8.60	30.25	18.04	9.42	66.32	5.96	1.42
R5	11	30,800	321	87	1.86	6.19	2.65	3.81	14.5	10.42	2.82