

## **Tuna Longline Fishery in the Indian Ocean by Thai Fleet during 2010-2012**

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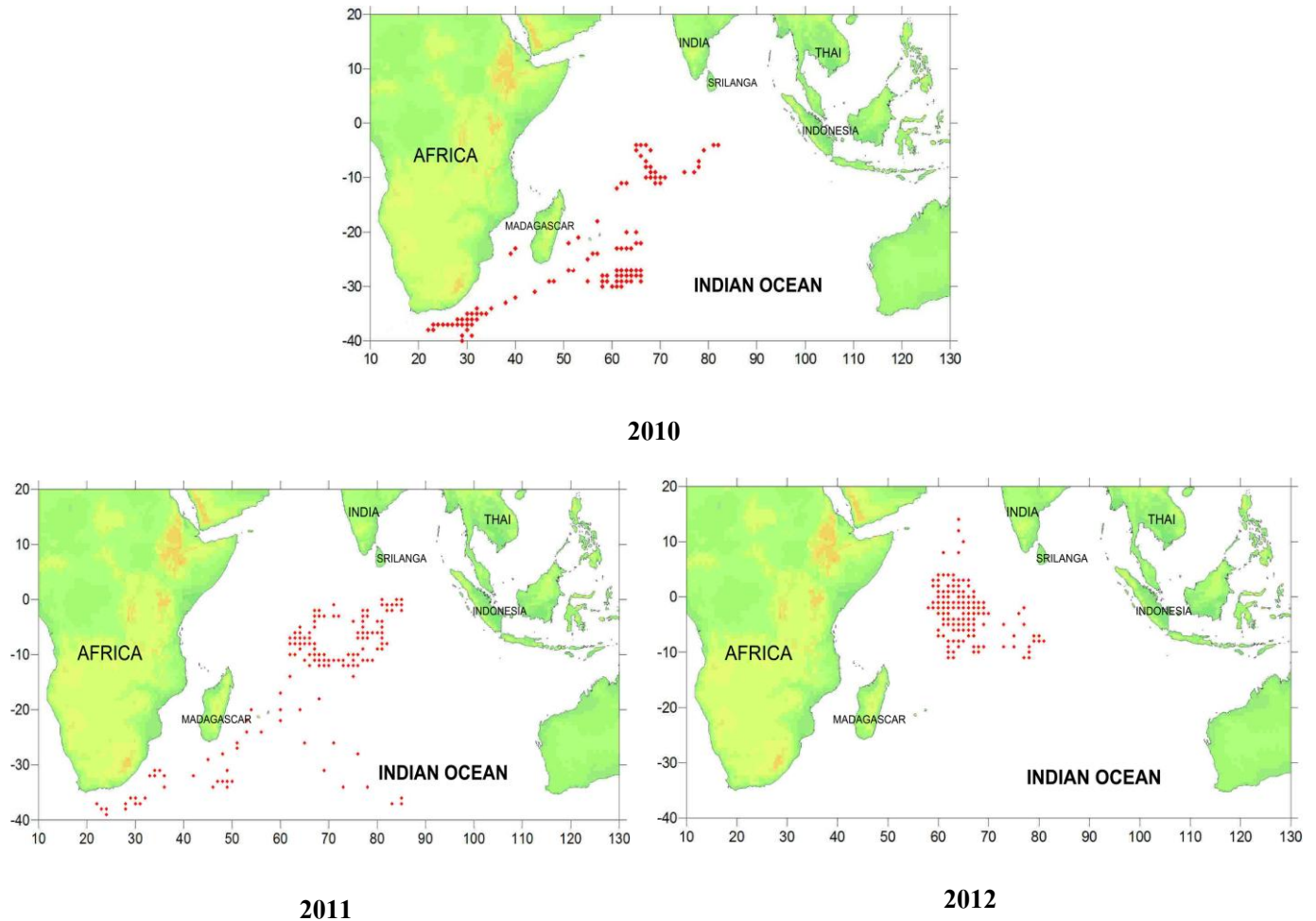
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### **Summary**

Thai tuna longline fishery were operated in the Indian Ocean during 2010 - 2012 composed of 2 tuna longliners. The main fishing ground was located in the western part of the Indian Ocean. In 2010-2011 fishing ground was located cover the central and the western part of the ocean whereas in 2012 the fishing ground was located mostly in the central part of the Western Indian Ocean. The data of tuna fishery was collected from Thai longliner logbooks. The fishing operations targeted on tropical tuna species, bigeye tuna and yellowfin tuna. During 2010-2012, the fishing operation amount 1,232 days or 3,449,600 hooks were recorded. The highest catch of these species was in 2012, followed by 2011 and 2010, respectively. A total of bigeye tuna and yellowfin tuna composition during 2010-2012 was 61.33% by number and 71.01% by weight of total catch. The highest CPUE of total catch was found in 2012, followed by 2011 and 2010, respectively.

## Fishing grounds

The fishing data were collected from logbooks of two Thai tuna longliners during 2010-2012. Fishing grounds in 2010-2011 were distributed around central and southern part of Indian Ocean. The fishing grounds in 2012 were mostly distributed in the middle part of Western Indian Ocean (Figure 1).



**Figure 1** Fishing ground by Thai tuna longliners operated in Indian Ocean during 2010- 2012

### **Fishing efforts**

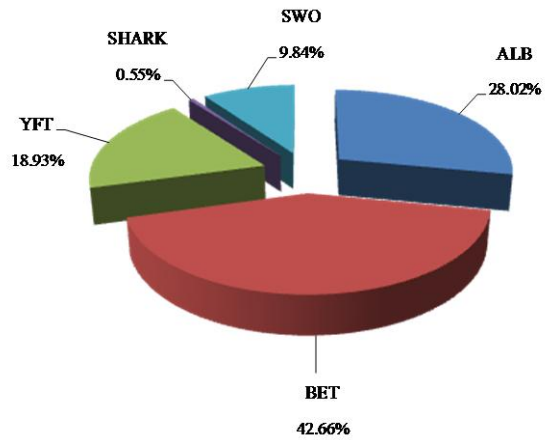
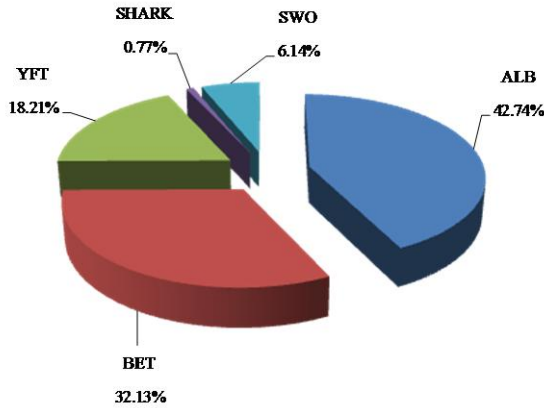
Fishing efforts during 2010-2012 were shown in table 1. In 2010, Thai tuna longliners exerted the highest fishing effort 1,324,400 hooks (473 fishing days). On the other hand, fishing efforts in 2011 were decreased to the lowest as 1,041,600 hooks (372 fishing days). In 2012, the fishing efforts were a little increased from the year 2011 with 387 fishing days and 1,083,600 hooks were used.

Annual catches in 2010-2012 were estimated to 607.69, 370.39 and 470.40 tonnes, respectively. The main tuna species caught during 3 years were bigeye tuna (*Thunnus obesus*), albacore tuna (*T. alalunga*) and yellowfin tuna (*T. albacares*). Albacore tuna was the highest catch with 263.41 tonnes in 2010. The catch of this species was decreased to 2.73 tonnes in 2012, while bigeye tuna catch was increased and attained to the highest at 248.60 and 342.18 tonnes in 2011 and 2012, respectively. Yellowfin tuna catch was decreased from 93.60 tonnes in 2010 to 81.92 tonnes in 2012 (Table 1).

### **Catch compositions**

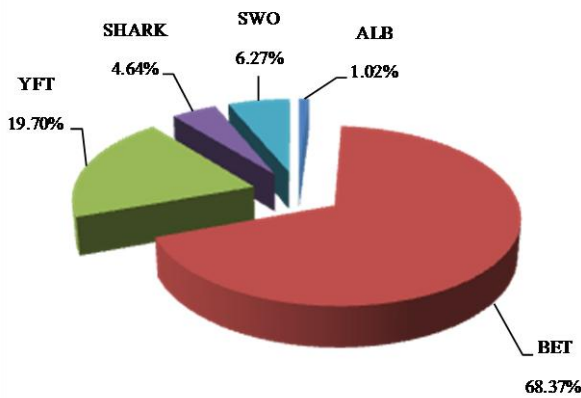
A total of bigeye and yellowfin tuna catch composition during 2010-2012 was shown 24,392 fish with 1,028.52 tonnes or equal to 61.33% by number and 71.01% by weight of total catch composition. The percentage composition by number of bigeye tuna and yellowfin tuna were found 69.71% and 30.29%, respectively. The percentage composition by weight was 73.98% and 26.02%, respectively.

During 2010-2011, average percentage compositions by number of bigeye tuna and yellowfin tuna were 32.13% and 18.21%, respectively. Average percentage compositions by weight of bigeye tuna and yellowfin tuna were 42.66% and 18.93%, respectively. In contrast, catch compositions in 2012 of bigeye tuna and yellowfin tuna by number were 68.37% and 19.70%, respectively. Indeed, catch compositions by weight of bigeye tuna and yellowfin tuna were 72.74% and 17.41%, respectively (Figure 2).

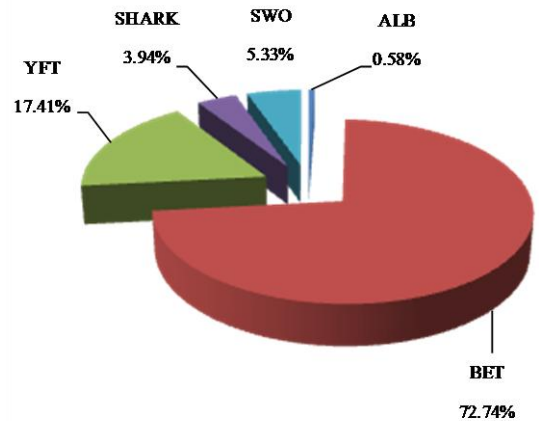


Average catch composition by number during 2010-2011

Average catch composition by weight during 2010-2011



Catch composition by number in 2012



Catch composition by weight in 2012

**Figure 2** Catch composition by number and weight

**Catch per unit efforts (CPUEs)**

The CPUE of total catch by Thai tuna longliners in 2010-2012 ranged between 9.36 and 13.62 fish/1,000 hooks, and the average CPUE was 11.46 fish/1,000 hooks. The highest CPUE was in 2010, and the lowest CPUE was in 2011. In 2012, the CPUE by number were shown 10.83 fish/1,000 hooks (Table 1).

During 3 year, Total CPUE of tropical tuna species (bigeye tuna and yellowfin tuna) was 7.03 fish/1,000 hooks and 298 kilograms/1,000 hooks. In 2012, total CPUE of 2 species was 9.50 fish/1,000 hooks and 391 kilograms/1,000 hooks in 2012. In 2011, total CPUE of these species was the lowest with 3.91 fish/1,000 hooks and 199 kilograms/1,000 hooks.

For each species in 2012, the CPUE of bigeye tuna was shown 4.90 fish/1,000 hooks and 220 kilograms/1,000 hooks, while the CPUE of yellowfin tuna was 2.13 fish/1,000 hooks and 78 kilograms/1,000 hooks. (Table 2).

**Table 1** Fishing efforts, catches and CPUEs of Thai tuna longliners in the Indian Ocean during 2010-2012

Year	Fishing days	No. of hooks	Total no. of fish	Catches weight (tonnes)					CPUE (per 1,000 hooks)		
				ALB	BET	YFT	SWO	Sharks	Total	No.	tonnes
2010	473	1,324,400	18,044	263.41	170.10	93.60	80.58	-	607.69	13.62	0.459
2011	372	1,041,600	9,746	11.44	248.60	92.12	16.00	2.22	370.39	9.36	0.356
2012	387	1,083,600	11,732	2.73	342.18	81.92	25.05	18.52	470.40	10.83	0.434
Total	1,232	3,449,600	39,522	277.58	760.88	267.64	121.63	20.74	1,448.48	11.46	0.420

**Table 2** Fishing efforts, catches and CPUEs of bigeye tuna and yellowfin tuna by Thai tuna longliners in the Indian Ocean during 2010-2012

Year	Fishing days	No. of hooks	Total catch		BET		YFT		Tuna catch		Tuna CPUE (per 1,000 hooks)	
			No.	tonnes	No.	tonnes	No.	tonnes	No.	tonnes	No.	tonnes
2010	473	1,324,400	18,044	607.69	2,994	170.10	2,188	93.60	5,182	263.70	3.91	0.199
2011	372	1,041,600	9,746	370.39	5,883	248.60	2,842	92.12	8,725	340.72	8.38	0.327
2012	387	1,083,600	11,732	470.40	8,021	342.18	2,311	81.92	10,332	424.10	9.50	0.391
Total	1,232	3,449,600	39,522	1,448.48	16,898	760.88	7,341	267.64	24,239	1,028.52	7.03	0.298
		%			69.71	73.98	30.29	26.02	61.33	71.01		
		CPUE (per 1,000 hooks)			4.90	0.220	2.13	0.078				