

Billfish Fishery of Thailand

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Abstract

Thai tuna longline that composed of 3 tuna longlines in 2007 and 2 tuna longliners during 2008-2012. The main fishing ground was central and southern part of the Indian Ocean. This report was based on the data extracted from fishing longsheets which were delivered to Department of Fisheries, Thailand During 2007-2012, is summarized and calculated the hook rate in Catch Per Unit Effort (CPUE).

The fishing operations were recorded 2,276 fishing days. The highest total catch was in 2010 with 607.69 tonnes followed by 2012, 2007, 2011, 2009 and 2008, respectively (494.95, 461.64, 370.39, 295.23 and 265.57 tonnes). The highest CPUE was found in 2010 with 13.62 fish/1,000 hooks followed by 2012 and 2007, respectively (10.80 and 10.20 fish/1,000 hooks). The major catch species were bigeye tuna (*Thunnus obesus*), yellowfin tuna (*T. albacores*) Albacore tuna (*T. alalunga*), swordfish and shark.

In 2012, the numbers of individual billfish were 736 individual fishes with 25.05 tonnes. The highest total catch of Billfish was in 2010 with 80.58 tonnes followed by 2008, 2009, 2012, 2011 and 2007, respectively (59.35, 54.63, 25.05, 16.00 and 8.23 tonnes) The highest CPUE was found in 2008 and 2010 with 1.0 fish/1000 hooks.

Introduction

The data of Billfish by Thai tuna longline fisheries in the Indian Ocean was collected from longline logbooks which included information about fishing operation. Two Thai tuna longliner vessels operated in the Western Indian Ocean in 2007-2012. The main fishing grounds in 2012 were distributed around central of the Indian Ocean. Fishing stationed from Latitude Ten degree North (10° N), to Fifteen degree South (15° S) and Fifty five degree East (55° E) to Eighty degree East (80° E) (Figure 1) Length data are very poor for billfish.

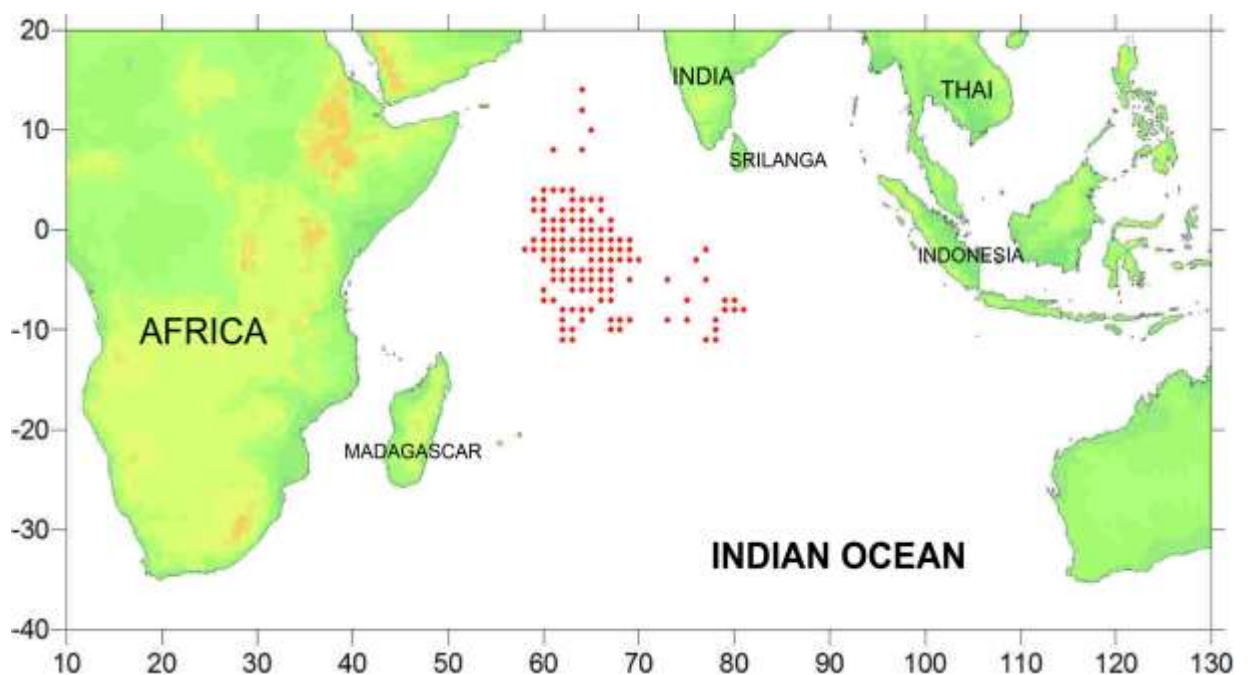


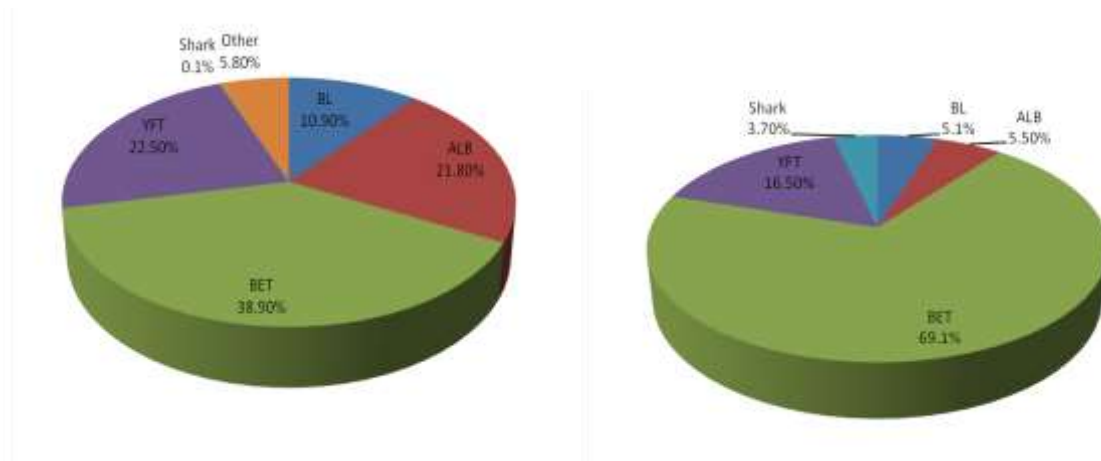
Figure 1 Fishing ground by Thai tuna longliners in the Indian Ocean in 2012

Fishing efforts, catches, percentage compositions and CPUEs between 2008-2012

Fishing efforts during 2007-2012 were shown in table 1. Thai tuna longliners exerted the highest fishing effort 1,503,600 hooks (537 fishing days). On the other hand, fishing efforts in 2012 were decreased to the lowest as 1,083,600 hooks (387 days).

Annual catches in 2007-2012 were estimated to 461.64, 269.53, 295.23, 607.69, 370.39 and 494.95 tonnes, respectively. The major species caught during 6 years were albacore tuna (*Thunnus alalunga*), bigeye tuna (*T. obesus*), yellowfin tuna (*T. albacores*) and swordfish (*Xiphias gladius*). Their catch were 115.07, 138.61, 111.18, and 8.23 tonnes, respective. Those species yield lower catches during 2008-2009, but their catches were increased in 2010. Although the total catch of those species in 2011 and 2012 was lower than 2010, bigeye tuna was attained the highest catch with 342.18 tonnes in 2012. (Table 1).

During 2007-2011, average percentage composition by weight of billfish, bigeye tuna, yellowfin tuna, albacore tuna, shark, and other were 0.1%, 38.9%, 22.5%, 21.8%, 10.9% and 5.8%. In 2012 the percentage of catch composition of billfish, bigeye tuna, yellowfin tuna, albacore tuna, and shark were 5.1%, 69.2%, 16.5%, 5.5%, 3.7%. (Figure2).



Average catch composition during 2007-2011

Catch composition in 2012

Remark: BL= billfish, ALB= Albacore, BET=Bigeye tuna, YET=Yellowfin tuna

Figure 2 Catch compositions by weight

The CPUEs of Thai tuna longliners in 2007-2012 ranged between 5.16 and 13.62 fish/1,000 hooks, and the average CPUE was 9.20 fish/1,000 hooks.

The lowest CPUE was in 2009, and the highest CPUE was in 2010. In 2012, the CPUE was 9.20 fish/1,000 hooks.

The trend of billfish

Billfish catch was increased from 8.23 to 80.58 tons during 2007-2010. The trend of catch was decreasing in 2010 (16.00 tons) and had increased again in 2012 (25.05 tons). The changing of catch shows in Figure 3

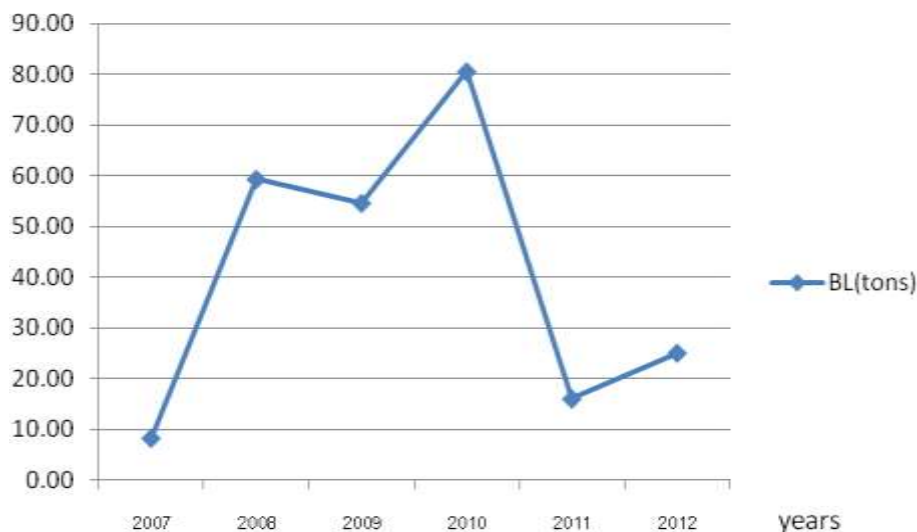


Figure 3 Change of Billfish catch by Thai tuna longliners during 2007-2012

Billfish fisheries by research vessel

The fisheries research survey by R.V.CHULABHORN, Department of Fisheries, Thailand during 16 February to 5 April 2012. Area of survey was in international sea of Eastern Indian Ocean. Research station was positioned from Latitude Three degree North (3° N) to Five degree South (5° S) and Eighty-eight degree and thirty minutes East ($88^{\circ} 30'$ E) to Ninety-one degree and thirty minutes East ($91^{\circ} 30'$ E). Area of exploration covered Ninety East Ridge with 76,800 square nautical mile.

Seven longline fishing operation, total hook deployed on the pelagic resources survey were 2,613 hooks, 28 individuals to 9 different species were recorded. The largest proportion of catches by weight was target species, primarily tunas (13.76%), billfish (9.63%), shark (53.87%) and other (22.74%)

and the proportion by number billfish, tunas, shark and other were 3.7%, 3.7%, 11.11% and 81.48%. (Figure 4, 5)

The total CPUE was 10.72 fish/1,000 hooks. For billfish, the CPUE reached 0.38 fish/1,000 hooks

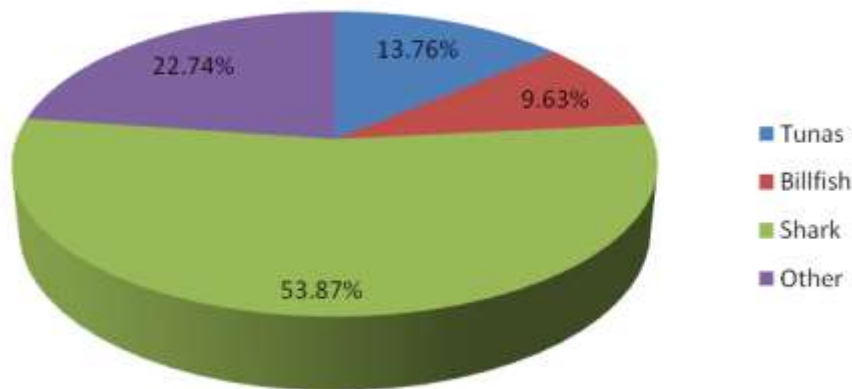


Figure 4 Catch compositions by weight

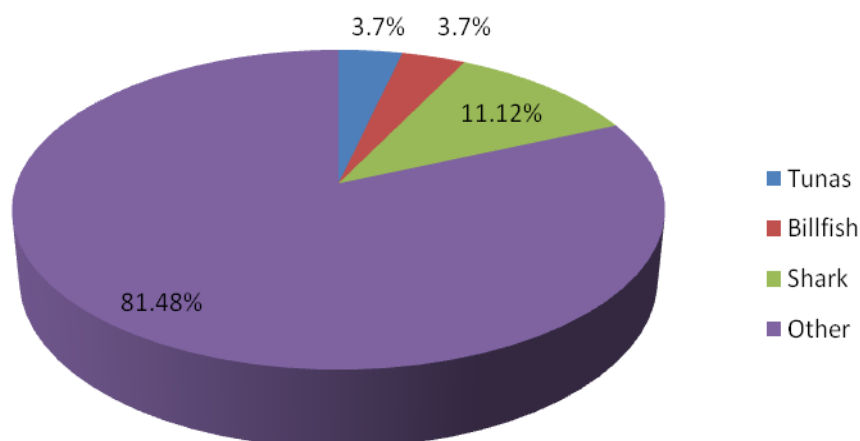


Figure 5 Catch compositions by number

Table 1 fishing efforts, catches and CPUEs of Thai tuna longliners in the Indian Ocean during 2007-2012

Year	Fishing days	No. of hooks	Total no. of fish	No. of BL	Catches weight (tonnes)						CPUE (fish/1,000 hooks)	CPUE of BL (fish/1,000 hooks)	
					BL	ALB	BET	YFT	Sharks	Other			Total
2007	537	1,503,600	15,334	24	8.23	115.07	138.61	111.18	0.71	87.84	461.64	10.20	0.02
2008	417	1,167,600	6,863	1,174	59.35	22.84	69.74	89.76	-	27.84	269.53	5.88	1.00
2009	477	1,335,600	6,897	935	54.63	23.57	152.07	64.96	-	-	295.23	5.16	0.70
2010	473	1,324,400	18,044	1,406	80.58	263.41	170.10	93.60	-	-	607.69	13.62	1.00
2011	372	1,041,600	9,746	291	16.00	11.44	248.60	92.12	2.22	-	370.39	9.36	0.20
2012	387	1,083,600	11,732	736	25.05	27.27	342.18	81.90	18.53	-	494.95	10.80	0.60
Total	2,276	7,456,400	68,616	4,566	243.84	463.60	1121.30	533.52	21.46	115.68	2499.43	9.20	0.09

Remark: BL=Billfish, ALB= Albacore tuna, BET=Bigeye tuna, YFT=Yellowfin tuna