National Report of Thailand in 2005[a)]

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Summary

Nertic tuna and king mackerel species in the Andaman Sea Coast, Thailand comprise 6 species (*Thunnus tonggol*, *Euthynnus affinis*, *Auxis thazard*, *Katsuwonus pelamis* and *Sarda orientalis, Scomberomorus* spp.). The fishing gear used to catch neritic tuna or tuna-like are purse seine, king mackerel gill net and trawl, purse seine is the main fishing gear. The trend of neritic tuna catches have been decreasing from 1997 accounting for 45, 083 mt to be around 15,000 in 1999. Further the production was quite stagnant during 1999 to 2004. These neritic tuna species are more or less have its production trend similarity.

For oversea tuna fishery, Thailand has two distance tuna long liners, namely Mook Andaman number 018 and 028 that had operated since 2000. Catch and catch rate of long liners varied from 94-387 tons and 1.1-1.7 no/100 hooks. The main fishing grounds of these long liners were concentrated in the Western Indian Ocean. Yellow fin tuna was the main composition, followed by bigeye tuna, albacore, swordfish, marlins and sharks.

Recently, six numbers of tuna purse seiners have started to operate in the Western Indian Ocean. These purse seiners have registered under Thai flag and the owners are Thais. The fishing obligation of these purse seiners are under Thailand, Department of Fisheries and of course under the IOTC umbrella. Research program for data collection and analysis have been set for these six purse seiners.

There are two research programs under the DOF entitled "The Fisheries Information and Statistics (for Purse seiners)" and "Data collection on oceanic tuna for longliners and purse seiners at Phuket, Thailand". Another cooperative projects under DOF/IOTC-OFCF entitled "Enhancement of the data collection and processing system for tuna fisheries in Thailand" and "Enhancement of the data collection and processing system for nertic tuna fisheries in Thailand" . These two projects under DOF/IOTC-OFCF have started since 1st April 2005 to 31st March 2006 and 1st October 2005 to 31st March 2006, respectively.

The results of cooperative project "Enhancement of the data collection and processing system for tuna fisheries in Thailand" has been reported to this meeting.

Neritic Tunas in the Andaman Sea

The development of marine fisheries in the past two decades in Thailand led to the currently rank among the top-ten fishing nations in the world. Marine fishery production in 1996 were shared about 78% of the total fishery production from all fishery sectors which consisted of 70% from the Gulf of Thailand and 30% from the Andaman Sea Coast. The small tunas was one of the important pelagic species. It had become the main target species for Thai fishermen since 1982 because of the high price offered by the tuna canneries. In Andaman Sea, the total catches of small tunas

[a)] A paper presented in the Seventh Session of the Scientific Committee

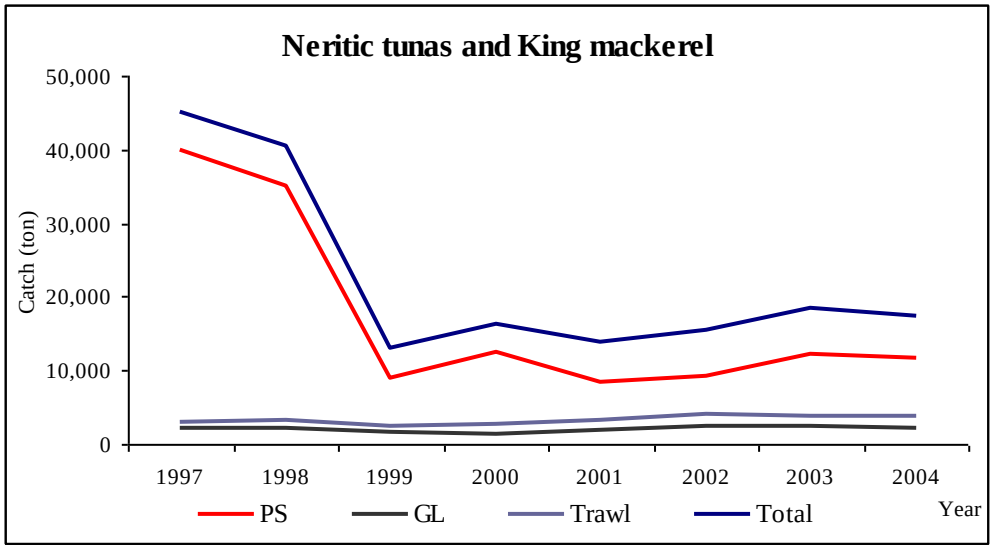

Figure 1. Change of neritic tunas and king mackerel catch in Andaman Sea, 1997-2004.

and king mackerel decreased from 45,083 metric tons in 1997 to 17,416 metric tons in 2004 (Figure 1). The production during 1997 to 2004 was rather stagnant at the level around 15,000 mt.

The Fishing gear

The fishing gear use to catch neritic tuna and king mackerel namely, purse seine, gill net and trawl.

Purse seiners: Purse seines along the Andaman Sea Coast of Thailand can be classified into regular purse seines (RPS- that are Thai purse seine (TPS), green purse seine (GPS), fish aggregating device (FAD), light luring purse seine (LPS) and tuna purse seine (TUN) and Chinese purse seine (CPS). Purse seiners are the main fishing to harvest neritic tuna in Andaman Sea.

Purse seiners with length over all (LOA) 18-25 meters are popular in the Andaman Sea Coast of Thailand from the year 1994 to the present year. The common mesh sizes used in TPS, LPS, FAD are approximately 2.5 centimeter, while the length and depth of the net range from 500-1,200 meters and 50-150 meters respectively. Number of crew is ranging 25-40 persons. For CPS, the mesh size is approximately 2.5 centimeter, 300-500 meters in length and 50-70 meters in depth and number of crew is about 20-30 persons. The length, depth and mesh size of GPS net are 500-1,300 meters, 60-140 meters and 3.8-4.3 centimeters respectively, and number of crew is ranging 25-40 persons.

Among the regular purse seiners, (TUN) boat length is longer than other regular purse seine that is more than 24 meter and the size of net used are also longer ranging 1,200-1,600 meters in length, 120-150 meters in depth, and 9.4 centimeter mesh size and number of crew is range 35-45 persons. Normally, TUN operates during the Northeast monsoon, from November to May in the offshore area. Apart from those months, the TUN boat moves to fish pelagic species in coastal area or offshore area by using the net of mesh size 2.5 centimeter and change the gear to be LPS and TPS.

King mackerel gill net and trawler catch some neritic tuna and most of king mackerel. The species breakdown of neritic tunas and tuna-like species in the nation statistic report is kawakawa or eastern little tuna (*Euthynnus affinis*), frigate tuna

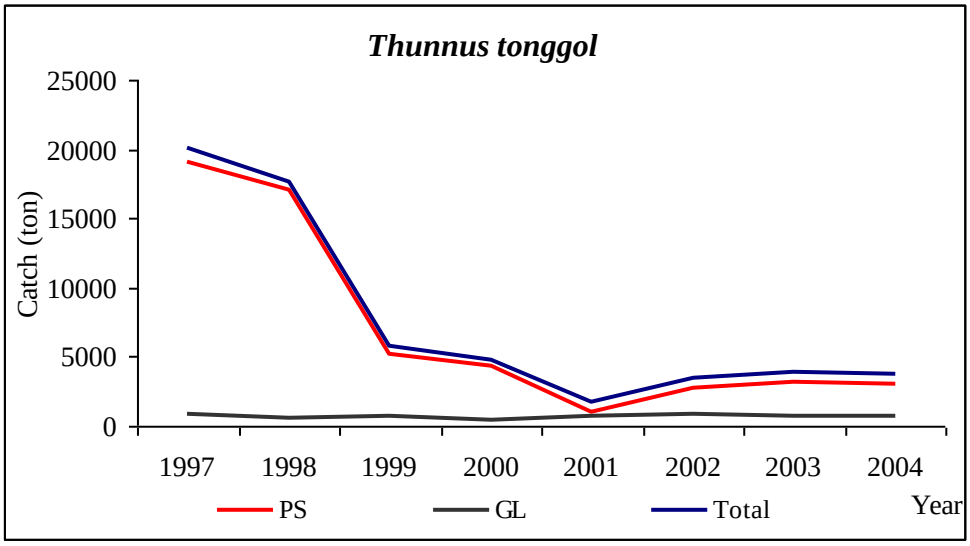

Figure 2. Change of longtail tuna catch in Andaman Sea, 1997-2004.

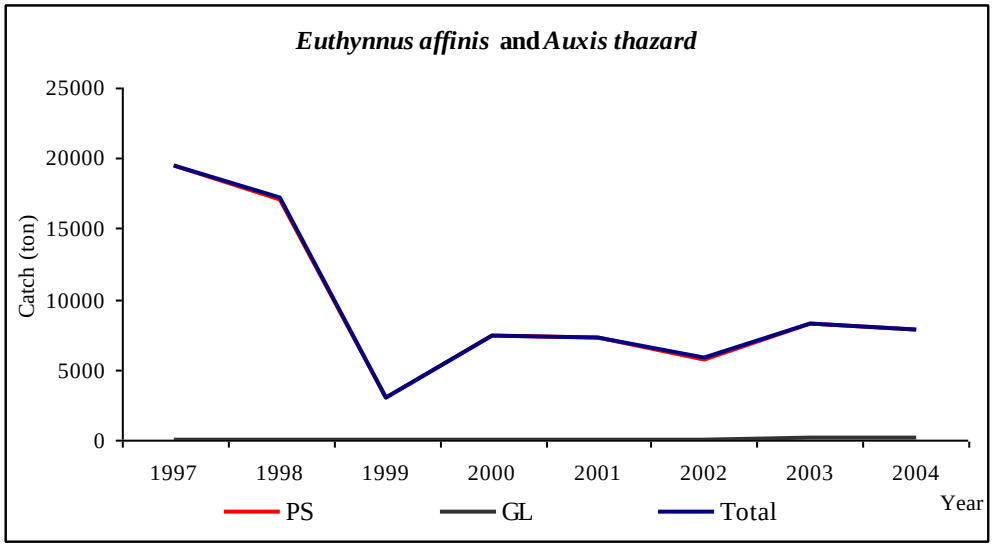

Figure 3. Change of kawakawa and frigate tuna catch in Andaman Sea, 1997-2004.

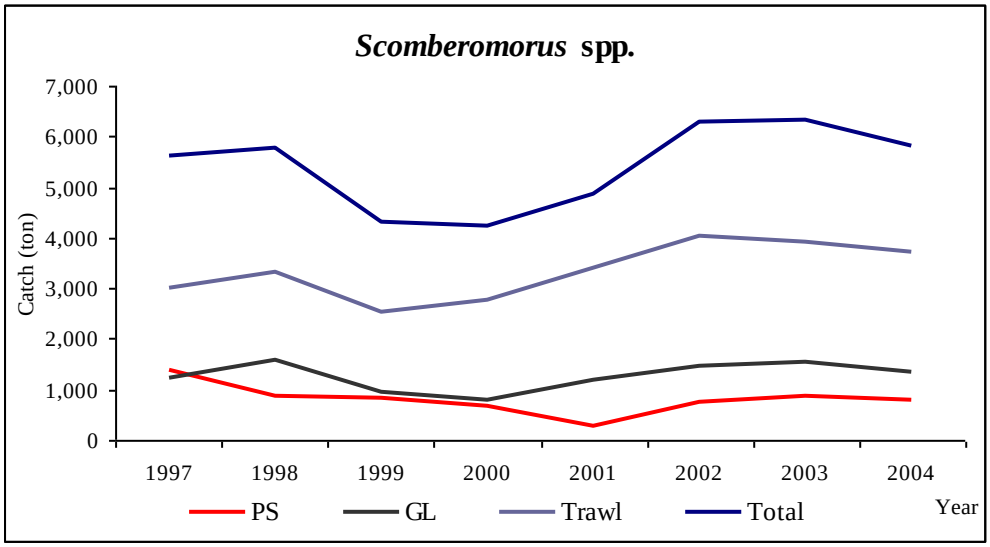

Figure 4. Change of king mackerel catch in Andaman Sea, 1997-2004.

(*Auxis thazard*), longtail tuna (*Thunnus tonggol*) and *Scomberomorus* spp. Figures 2-4 show change of catch by species and gear.

Oversea Thai Tuna long liners

For distant tuna long liners, Thailand has two tuna long liners, namely Mook Andaman number 018 and Mook Andaman number 028 since 2000 to present. Catch and catch rate showed in Table 1, average catch and catch rate indices of two long liners varied from 94-387 tons and 1.1-1.7 no/100 hooks. In 2002, it showed the lowest catch because Mook Andaman 028 was not operated. The main fishing ground of these vessels were concentrated in the Western Indian Ocean (Table 2).

Catch composition found yellowfin tuna 47.81 % (weight 20 - 120 kg), followed by bigeye tuna 31.40 % (weight 20 - 150 kg), albacore 10.70 % (weight 10 - 50 kg), swordfish 4.20 %, marlins 4.89 % and sharks1.00 %. Figure 5 showed catch composition by fishing ground. Yellowfin tuna, swordfish and marlin dominated in the Western Indian Ocean, while bigeye tuna and albacore dominated in the east and south of Seychelles, and the Southern Indian Ocean, respectively.

Table 1. Number of sets, hooks and fish, Catch and catch rate of tropical tunas and species from Mook Andaman 018 and 028 from 2000-2004.

Year	No.of sets	No.of hooks	No.of fish	catch (tons)	tons /set	N/100hooks	ton /100hooks
2000	322	967,978	11793	385	1.2	1.2	0.04
2001	264	819,800	12235	387	1.5	1.5	0.05
2002	*54*	*172,800*	*2979*	*94*	*1.7*	*1.7*	*0.05*
2003	300	604,000	8583	253	0.8	1.4	0.04
2004	231	693,000	7573	272	1.2	1.1	0.04

Table 2. Number of sets, hooks and fish, Catch and CPUE of tropical tunas and species from Mook Andaman 018 and 028 in each fishing zones.

zone	No. of sets	No. of hooks	No.of fish	catch (tons)	ton/set	N/100hooks	tons/100hooks
ESM	376	1,140,778	14,772	478,431	1.3	1.3	3.2
E&S SEY	470	116,200	16,289	568,720	1.2	1.4	3.5
S IO	150	393,000	5,511	140,934	0.9	1.4	2.6
M&C	60	180,200	2,627	79,196	1.3	1.5	3.0
WI	58	174,000	2,702	72,882	1.3	1.6	2.7
BG	57	193,400	1,262	51,108	0.9	0.7a	4.0

Remark: ESM= East Somalia, E&S SEY=East & South Seychelles, SIO= South Indian Ocean, M&C =Maldives & Chagos, WI=West coast of Indonesia, BG =Bay of Bengal

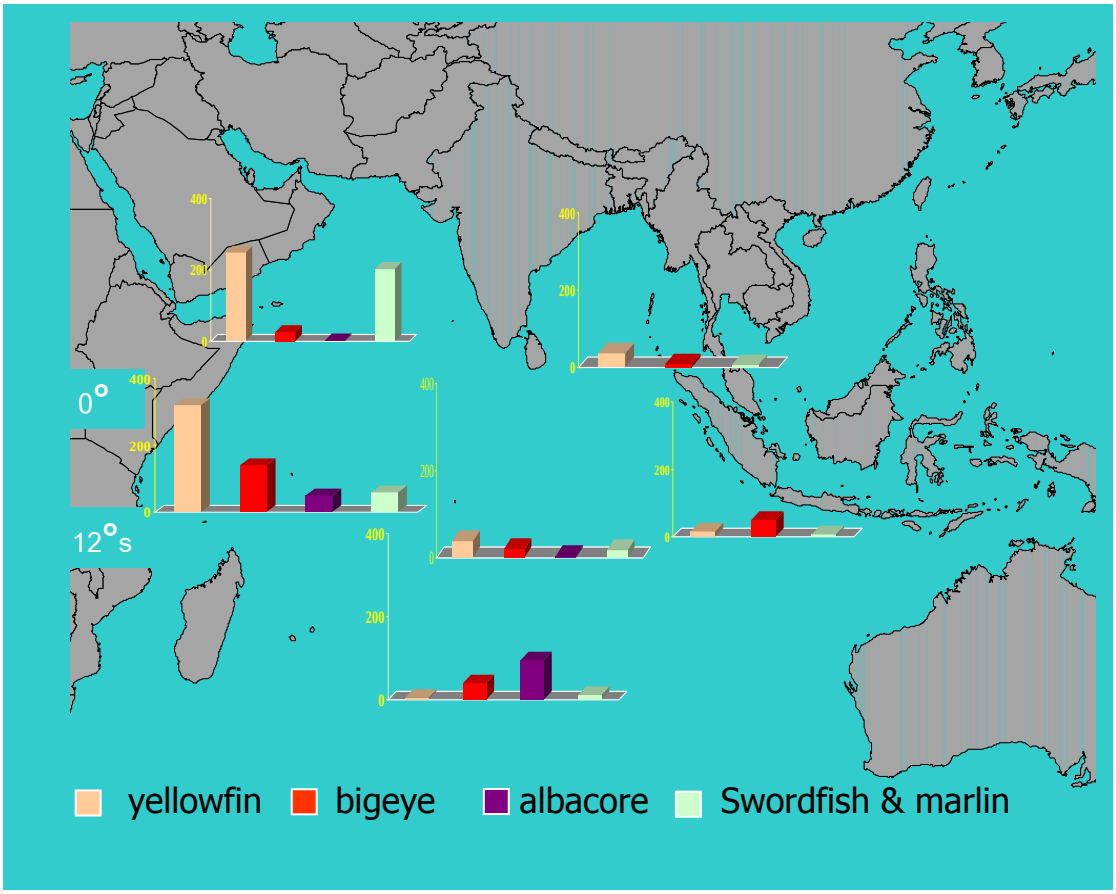

Figure 5. Fishing ground of Thai tuna long liner in the Indian Ocean.

Oversea Thai Tuna Purse Seiners

At present, Thailand has six tuna purse seiners namely, Eternity, Longgevity, Golden Success, Prosperous, Crystal Crown and Glorius Harmany. The boats are registered as Thai fishing boats and use Thai flag. The six steel vessels LOAs and GRTs range 72.5-85 m and 1,413-2,660 tons respectively. The fleet has started to operate in the Western Indian Ocean. These purse seiners would fish tuna under DOF and the fishing obligation is under IOTC umbrella. Plan for data collection and log book have been set.

Research Programs

Thai research program

1.The fishery information and fishery statistics (of purse seiners) are collected by the Fishery Information Technology Center and the Andaman Sea Fisheries Research and Development Center, Marine Fisheries Research and Development Bureau, Department of Fisheries, Thailand.

2.Data collection on oversea tuna from long liners and purse seiners at Phuket, Thailand have been operated by the Andaman Sea Fisheries Research and Development Center (AFRDEC), Marine Fisheries Research and Development Bureau, Department of Fisheries (DOF), Thailand.

Cooperative project

Under DOF and IOTC-OFCF

1. Enhancement of the data collection and processing system for tuna fisheries in Thailand. The project have been started since 1st April 2005 to 31st March 2006.

2. Enhancement of the data collection and processing system for nertic tuna fisheries in Thailand. The project have been started since 1st October 2005 to 31st March 2006.

The results of "Enhancement of the data collection and processing system for tuna fisheries in Thailand" was presented to the meeting. Indian Ocean Tuna Commission (IOTC) has supported the Department of Fisheries (DOF) in implementing the Sampling Program on Tuna Longline Vessels Unloading in Phuket, in addition, Oversea Fishery Cooperation Foundation (OFCF) have supported the budget for this program since October 2003 to present. The result of the sampling program since April 2000 to March 2004 reported the total number of landings(622, 945 683 and 621 trips), vessel operating (622, 965 680 and 599 boats), weight samples (50,617, 38,950 51,847 and 36,692 samples), interview forms (I-II, 49, 4 15 and 6 forms; III, 65, 26, 40 and 9 forms), biological samples (5,160, 6,625, 5,219 and 3,080 samples) and others activities (1,001, 365, 320 and 292 samplers); total catch from customs recorded as 2,645 , 2,086 2,611, and 3,730 mts.

The objective of this sampling program is to improve data collection on tuna longline fisheries in the East Indian Ocean as well as information on the activities, nominal catches, catch breakdown by species and size composition for each species caught by tuna longliners and unloaded in Phuket since April 2003.

Port-sampling and landing surveys were conducted to collect fishing and biological data of tuna, tuna-like and by-catch species: e.g., catch (metric ton, mt), effort (number of trips), sizes by individual folk length (cm) and length at first dorsal fin (cm) and weight (kg). The staffs of the Andaman Sea Fisheries Research and Development Center (AFRDEC) have conducted the samplings monthly at the Phuket fishing port. The methodology employed and all the forms used in fishery interviews and software, WinTuna, were provided by IOTC.

Total landing and effort of longliner showed the increasing trend during 1994 (622 mts and 72 trips) to 1999 (4,373 mts and 883 trips), decreased in 2000 (3,118 mts and 665 trips), The trend of landing increased again from 2001 to 2004 (4,397, 4,997, 4,996 and 5,317 tons) while the number of effort decreased slightly from 2001 to 2002 and decreased obviously in 2003 (876, 816, 563 and 582 trips) cause of changing of the fishing activity at sea, this activity has started since July 2003 to present. The main target of this gear is yellowfin (53 %), bigeye (31 %), bill fish (*Makaira* spp., *Tetrapturus* spp, *Istiophorus* spp.) (8%), sword fish (6%) and miscellaneous species (Shark, *Lepidocybium* spp., *Coryphaena* spp., *Thunnus alalunga*, *Molar* spp., *Ruretlus pretiosus*, *Sphyraena* spp. and *Taractichtis* spp.) (1%) during 1994 to 2004.

Catch rate and total landing (9.14 tons/trip and 5,317 tons) in 2004 was higher more than 2001 (5.02 mts/trip, 4,397 tons/trip), 2002 (6.12 mts/trip, 4,997 tons/trip) and 2003 (8.87 mts/trip and 4,996 tons/trip). The present result will support the reason in the previous paragraph. Yellowfin (70%) was the highest proportion followed by bigeye (23%), bill fish (4%), sword fish (3%).

Total landing of longliner from 1994 to 2004, the composition of bigeye show increasingly, especially in 1999 to 2004. Trend of monthly catch was at similar levels from 1995 to 1999 while found the increasing of fishing effort during this time, cause of declining of CPUE. Catch and effort show the highest peak in 2004 and 2000, respectively. The peak season of longliner is at the arrival of the northeast monsoon. Table 3 show the activities under the Cooperative project since January 2000 to March 2005.

Table 3 Long line Port Sampling Activities at Phuket, Thailand from January 2000 to March 2005.

Month	Total no. of landing	Total no. of vessel operating	Total catch (mts) from customs	Total no. of weight samples	Total no. of interview (I-II)	Total no. of interview (III)	Total no. of biological samples	Total no. of others activity		
								Shark	Other species	Otolith
Jan 2000	104	104	532	2,639	-	-	65	-	-	-
Feb 2000	109	109	461	1,710	-	-	-	-	-	-
Mar 2000	96	96	270	3,782	-	-	300	-	-	-
Apr 2000	37	37	87	1,298	12	9	238	2	14	5
May 2000	19	19	32	1,102	3	3	268	58	19	23
Jun 2000	31	31	96	1,097	1	1	547	1	11	4
Jul 2000	30	30	109	940	2	6	303	19	15	-
Aug 2000	25	25	106	386	1	2	264	13	-	49
Sep 2000	31	31	113	1,372	-	1	187	11	19	-
Oct 2000	42	42	168	3,161	6	11	661	61	11	-
Nov 2000	54	54	181	3,806	5	4	673	-	69	-
Dec2000	87	87	512	8,013	11	13	509	32	175	-
Jan2001	106	106	500	16,282	1	7	462	28	234	3
Feb 2001	82	82	426	6,103	2	2	112	-	22	-
Mar 2001	78	78	316	7,057	5	6	936	-	103	-
Apr 2001	80	80	265	3,089	-	3	585	15	9	-
May 2001	73	73	174	4,414	-	5	738	77	45	-
Jun 2001	56	56	99	2,547	-	-	497	9	4	-
Jul 2001	25	25	13	1,824	-	-	504	30	122	18
Aug 2001	36	36	45	1,759	1	2	359	-	-	18
Sep 2001	23	23	61	441	-	-	54	-	-	-
Oct 2001	45	45	82	2,889	-	-	242	-	-	-
Nov 2001	99	99	166	6,197	1	6	718	4	-	-

Table 3 (con't)

Month	Total no. of landing	Total no. of vessel operating	Total catch (mts) from customs	Total no. of weight samples	Total no. of interview (I-II)	Total no. of interview (III)	Total no. of biological samples	Total no. of others activity		
								Shark	Other species	Otolith
Dec 2001	153	153	346	6,438	-	3	1,117	-	1	13
Jan 2002	131	131	404	3,812	1	1	806	-	-	-
Feb 2002	125	125	206	2,352	1	5	339	-	-	-
Mar 2002	99	99	225	3,188	-	1	666	-	-	-
Apr 2002	68	68	135	3,578	-	4	824	-	-	-
May 2002	47	47	77	2,625	1	4	442	-	-	-
Jun 2002	48	48	48	2,058	-	2	378	-	-	-
Jul 2002	36	36	40	1,663	1	2	287	2	19	41
Aug 2002	26	26	94	1,120	-	3	130	10	7	-
Sep 2002	21	21	75	1,969	-	1	272	-	-	-
Oct 2002	46	46	91	2,634	2	2	305	-	-	51
Nov 2002	76	76	285	7,272	5	7	523	-	-	50
Dec 2002	93	93	392	8,187	3	4	541	-	-	-
Jan 2003	71	71	285	6,937	-	2	628	-	-	-
Feb 2003	91	91	673	6,570	-	3	482	-	30	49
Mar 2003	60	60	416	7,234	3	6	407	-	1	60
Apr 2003	60	60	342	2,589	-	-	339	-	-	-
May 2003	12	12	49	1,207	1	2	103	-	-	-
Jun 2003	25	25	97	2,508	1	1	355	-	-	-
Jul 2003	17	17	11	3,609	2	3	234	14	4	2
Aug 2003	14	14	17	1,074	-	1	164	-	-	54
Sep 2003	15	15	66	982	2	2	97	-	-	19

Table 3 (con't)

Month	Total no. of landing	Total no. of vessel operating	Total catch (mts) from customs	Total no. of weight samples	Total no. of interview (I-II)	Total no. of interview (III)	Total no. of biological samples	Total no. of others activity		
								Shark	Other species	Otolith
Oct 2003	26	26	67	1,623	-	-	224	-	-	50
Nov 2003	32	32	163	2,997	-	-	387	-	-	52
Dec 2003	140	140	976	7,534	-	-	319	-	6	32
Jan 2004	93	92	618	6,103	-	-	290	-	-	21
Feb 2004	96	94	742	3,913	-	-	299	-	-	28
Mar 2004	91	88	582	2,553	-	-	269	-	-	10
Apr 2004	**47**	**45**	309	**1,812**	3	5	**102**	-	**-**	**-**
May 2004	**29**	**28**	166	**1,683**	2	4	**180**	-	**-**	**-**
Jun 2004	**25**	**25**	185	**1,120**	-	1	**135**	-	**-**	**-**
Jul 2004	**21**	**21**	109	**782**	2	3	**151**	**-**	-	-
Aug 2004	**25**	**25**	171	**966**	2	3	**60**	**-**	-	**-**
Sep 2004	**17**	**16**	121	**881**	-	-	**27**	-	**-**	**-**
Oct 2004	**16**	**13**	973	**356**	0	1	**89**	-	**-**	-
Nov 2004	**37**	**34**	318	**1,686**	1	3	**276**	-	**-**	-
Dec 2004	**85**	**67**	903	**1,501**	2	4	**614**	-	**-**	**-**
Jan 2004	**90**	**80**	1,486	**2,233**	1	3	**513**	-	**-**	**-**
Feb 2004	**89**	**86**	899	**4,508**	1	1	**1,183**	-	-	-
Mar 2004	**68**	**62**	616	**1,979**	1	2	**10**	-	-	-
Total	**3,749**	**3,677**	18,592	**205,744**	89	170	**23,789**	386	**940**	**652**