

## **National Report of Taiwan: Ecologically Related Species in the Taiwanese Southern Bluefin Tuna Fishery 2011-2012**

### **Fisheries Agency of Taiwan**

#### **1. Introduction**

Southern Bluefin Tuna (*Thunnus maccoyii*, SBT) was bycatch of Taiwanese tuna longline fishery targeting albacore in the past, but after the fishing vessels equipped with deep-frozen freezers, some fishing vessels operating in the Indian ocean have started targeting SBT seasonally since 1990s. There are no whole year round vessels fishing for SBT. For Taiwanese fishing vessels, only longliner caught SBT and except by-catch vessels, seasonal target SBT vessels all operate in the Indian ocean. There are two main fishing grounds in general: one is in the southern central Indian ocean around 55°E – 95°E, 30°S – 40°S, and the other locates off the southeast coast of Africa around 30°E – 55°E, 35°S – 45°S. Two fishing seasons for Taiwanese seasonal target SBT fishing vessels have been in the southern central Indian ocean from April to September, and in the southern and western Indian ocean extending to the eastern limit of the Atlantic ocean from November to February of the following year.

This report includes information on Ecologically Related Species (ERS) of Taiwanese SBT fishery sampled by scientific observers updated to 2012.

#### **2. Review of SBT fisheries**

##### ***Fleet size and distribution***

More than 100 vessels had SBT catch records during 1998-2001. Since 2002, Taiwan has become a member of the Extended Commission of CCSBT and agreed on its national quota of 1,140 tons. Taiwan has imposed strict regulation and started to allocate individual quota to each vessel authorized to fish for SBT since 2002. Besides, those vessels are separated to either seasonal target ones or by-catch ones. The number of active vessels to fish for SBT is 30-100 from 2002 to 2012 shown as table 1.

### ***Distribution of Catch and Effort***

Historically, annual catches of SBT were less than 250 tons in early 1980s. Thereafter, with the improvement of vessel facilities, the fishing grounds and target species have also been changed. Apart from capturing albacore, Taiwanese vessels also capture SBT in the specific seasons. From 1989 to 2001, annual catch of SBT fluctuated around 900 to 1,600 tons. Since CCSBT has been established, Taiwan, in line with the CCSBT conservation and management measures, voluntarily set up its SBT catch limit at 1996 level of 1,450 tons since 1997. During 1996-2001 the average annual catch of SBT maintain around 1,450 tons. When Taiwan joined CCSBT in 2002, it compromised by reducing 310 tons from its original self restraint catch limit, and set up annual catch quota to 1,140 tons. In 2006, CCSBT adopted TAC arrangement based on binding allocated catch limits for 2007 – 2009, and Taiwan catch quota has being fixed in 1,140 tons. On the other hand, for contributing to the recovery of SBT stock, Taiwan committed to maintain annual catch at the level below 1,000 tons for 3 years.

The total annual catches were 1208 tons in 2010, 533 tons in 2011 and 497 tons in 2012 by calendar year. The annual catch of SBT by gear from 1990 to 2012 was shown in table 2.

The fishing locations of SBT fishing vessels are mainly concentrated in the waters of 30°S – 40°S in the Indian ocean and the waters adjacent to the Atlantic ocean. The distribution from 2009 to 2012 was showed in Fig. 1.

### **3. Fisheries Monitoring for Each Fleet**

Intensive efforts have been continuously exerted for monitoring the SBT fishery through the following measures:

- (1) Since April 2002, vessels authorized to fish for SBT have been required to install VMS equipment in order to monitor the positions of the vessels.
- (2) Weekly report for SBT catch is required for submission to Fisheries Agency of Taiwan through Taiwan Tuna Association. From 2002, provision of such information as daily catch, daily fishing location and daily discards is required in

the weekly report when applying for SBT statistical document. Since 1 January 2010, the CCSBT SBT statistical document has been replaced by CCSBT CDS. When fishers apply for validation on CDS, the officials authorized by Fisheries Agency of Taiwan shall check all of the above information consistent with the real catch.

- (3) Taiwan has designated two foreign ports (Port Louis and Cape Town) for SBT transshipment of its flagged vessels since March 2010 and has prohibited transshipment at other foreign ports. Government officials stationed at Port Louis and Cape Town are responsible for sampling inspection and supervising all SBT catch. Any catch without inspection by its officials shall not obtain validated catch document.
- (4) Besides, Taiwan has designated fishing port of Cianjhen in Kaohsiung for domestic SBT unloading port by carrier vessels or fishing vessels. Since September 2009, Fisheries Agency of Taiwan has dispatched officials to supervise all of SBT catch. Only for those catch are verified, the officials of Fisheries Agency of Taiwan shall validate catch documents.
- (5) In case of transshipment at sea, regional observer of IOTC, ICCAT boarding on carrier vessel shall observe if all of SBT transshipped quantities consistent with the reported catch in the transshipment declaration since 1 April 2009. Besides, catch data were also verified by scientific observers on board. With exception of 2008 and 2011, the observer coverage rate was all above 10% in terms of effort since 2005. In 2008, due to high fuel price, fishing vessels reduced visiting ports and meeting with carrier vessels, it is difficult to dispatch observer onboard. Then in 2011 quota year, because of the increasing threat of Somalia piracy, considering the safety of observer, we stopped dispatching observer on board in the Indian Ocean until at the end of December. In 2012, due to the above mentioned reason we stopped dispatching observers to tropical area of India Ocean, so that observers were assigned to southern India Ocean. Therefore the observer coverage rate increased in southern India Ocean. For 2012 quota year, 8 SBT scientific observers were deployed on 8 fishing vessels. The observer coverage rate by efforts was about 31.34% as shown in table 3. In addition to

catch data, observers also collected and recorded ecologically related species (ERS) data, such as sea birds, sea turtles, marine mammals, and sharks data. Besides, mitigation measures adopted by fishing vessels shall be recorded.

- (6) Besides, patrol boats were also dispatched to inspect Taiwanese fishing vessels operating in three oceans. In 2008, 2 SBT fishing vessels were boarded and inspected by patrol boat. It accounts for 4.9% of Taiwanese SBT fishing vessels. In 2009, 5 SBT fishing vessels were boarded and inspected. It accounts for 7.5% of Taiwanese SBT fishing vessels. Since 2010, due to the threat of Somalia piracy and for safety consideration, no patrol boat was dispatched in the Indian ocean.
- (7) There are penalties for over catch, transshipment or unloading catch at any other non-designated ports or any violation of regulation.

#### **4. Seabirds**

There was no seabird recorded by observers in 2011 due to low observer coverage rate for the above mentioned reason. In 2012, 42 seabirds were incidentally caught among which 6 were still alive and released, and 36 were dead and discard. Table 4 shows capture rate, and mortality rate by CCSBT statistical areas for each seabird species observed by observers in 2012.

#### **5. Other Non-target Fish**

For Taiwanese SBT vessels, the main catch is albacore and SBT. Other non-target fish include bigeye tuna, yellowfin tuna, sharks, and billfish. For shark species, blue shark was the most dominant species accounting for 90.36% in 2011, and 97.34% in 2012. Shown CPUE and total numbers of shark by area and fleet from 2011-2012 were showed separable in Table 5 and Table6 separately.

#### **6. Marine Mammal and Marine Reptile**

According to observer record in 2011-2012, there were no cetaceans sighted during observation trips.

Sea turtles in general live in the waters near the equator and the depth of habitat is above 150m, but all of Taiwanese SBT vessels operated in the area southern than 25°S

and fishing depth is about 300-400m, so sea turtle was bycatch rarely. There were no sea turtles observed in 2011-2012.

## **7. Mitigation Measures to Minimize Seabird and Other Species Bycatch**

### **Current Measures**

#### **➤ Mandatory Measures for Each Fleet**

Taiwanese SBT fishing vessels (including seasonal targeting SBT and SBT bycatch vessels) mainly operate in the IOTC area, and partial SBT bycatch vessels operate in the ICCAT and WCPFC area, so that fishers shall comply with the resolutions / recommendations adopted by these organizations.

#### **➤ Seabird**

The government of Taiwan has introduced a regulation which requires vessels fishing at the areas of southern than 30°S to deploy a tori line to reduce seabird incidental catch since 2004. Besides, in line with the IOTC resolution 08/03 on reducing the incidental bycatch of seabirds in longline fisheries, all Taiwanese longline vessels fishing south of 30°S shall use at least two of mitigation measures in consistence with the resolution since 2009.

Since 2011, according to IOTC resolution 10/06 on reducing the incidental bycatch of seabirds in longline fisheries, Taiwan imposed regulation requiring all Taiwanese longline vessels fishing south of 25°S in Indian ocean shall use at least two different mitigation measures including tori line and one other measure, such as night setting, weighted branch lines, offal discharge control or line shooting device . Fishers shall fill out the specified form regarding the measures adopted by its vessels with photos of tori line and inform the Fisheries Agency of Taiwan in advance of one month the vessel fishing south of 25°S in the Indian Ocean. Government officials stationed at Port Louis and Cape Town shall examine the tori line by random and request fishers to make rectification so as to be consistent with the resolution.

Besides, in accordance with ICCAT's recommendation 2011-09, Taiwan imposed regulation requiring all Taiwanese longline vessels fishing south of 25°S in the

Atlantic Ocean have to use tori lines and line weighting as the mitigation measure, with between 20°S to 25°S that tori lines as compulsory.

In accordance with WCPFC CMM 2012-07, Conservation and Management Measure to mitigate the impact of fishing for highly migratory fish stocks on seabirds. We have required our fishers and industries to take appropriate measures in accordance with the NPOA-seabird to mitigate incidental catch of seabirds. Furthermore, according to domestic regulations, fishing vessels are required to employ at least two seabird mitigation measures, one should be tori lines, the other should be one of those including, tori line, weighted branch lines, night setting with minimum deck lighting. Incidentally caught seabirds are encouraged to release alive. For this purpose, fishing vessels are required to carry de-hookers and line cutters on board.

➤ **Sea turtle**

To conserve sea turtles, Taiwan has publicized domestic management regulations since 2006, requiring fishing vessels to carry necessary devices on board, such as dig nets, de-hookers and line cutters, during voyage or operation periods, for appropriate release of incidentally caught sea turtles. The incidental catch individuals shall be released alive, and the operators shall record in their logbooks all incidents involving marine turtles during fishing operations.

In addition to the above mentioned regulations, Taiwan government has imposed “Wild Life Protection Act”, forbidding fishers to capture or possess the following kinds of sea turtles, which include green turtle, loggerhead turtle, olive ridley turtle, leatherback turtle and hawksbill turtle. The incidentally caught sea turtles must be released and the fishers are required to record this event in the logbook.

➤ **Shark**

According to the Resolution adopted by ICCAT and IOTC, Taiwan has applied mandatory regulations to require its authorized vessels fishing in the Atlantic Ocean and the Indian Ocean not to have onboard fins that total more than 5% of the weight of sharks onboard, up to the first point of landing since 2005. The

regulation has subsequently applied to the fleets operating in the Pacific ocean since 2006. Besides, Taiwan has imposed regulation to prohibit *Rhincodon typus* (whale shark) to be captured, possessed and sold since 2008.

In line with IOTC resolution 10/12, 12/09, Taiwan has required that fishers operating in the Indian ocean are prohibited from retaining on board, transshipping, landing, storing, selling or offering for sale any part or whole carcass of thresher sharks of all the species of the family Alopiidae since 2011.

Besides, based on the ICCAT recommendations 2009-07, 2010-07, 2010-08 and 2011-08 on sharks, we have enacted and revised periodically various domestic regulations, including prohibiting our vessels operating in the Atlantic Ocean prohibiting from thresher sharks (family Alopiidae), hammerhead sharks(family Sphyrnidae), oceanic whitetip sharks, silky sharks.

To further ensure the sustainable use of shark resources, Taiwan has imposed the regulation of “fins naturally attached” on January 19, 2012 on a step by step basis. According to the regulation, the measure applies to Taiwanese fishing vessels operating within in its coastal and inshore waters at the first stage and then gradually expands its application to the rest of fishing vessels operating outside its EEZ.

#### ***Voluntary Measures for Each Fleet***

No information

#### ***Measures under Development/Testing***

For mitigation of sea turtle by-catch for tuna longliner, Taiwan has collaborated with the United States of America for circle hook experiment in the Atlantic ocean from September 2012 to May 2013. Both sides presented a joint paper to the ICCAT SCRS meeting in July 2013.

Besides, Taiwan has selected one Taiwanese longline vessel operating in the South Atlantic Ocean to conduct a research for evaluation of seabird mitigation measure, includes bird-scaring lines, branch line weighting and night vs. day

setting. The experiment has been commenced from April 27, 2013 and will be lasted for 5 months. When we finalized the experiment, we will have a paper to share the results in the next ERS meeting of CCSBT.

## **8. Public Relations and Education Activities**

### *Public Relations Activities*

- (1) Distribution of posters, sheets and booklets for guidance of mitigation measures of reducing seabird by-catch, shark full utilization, and species identification for seabirds, sharks and sea turtles to fishers. ( CCSBT/0402/Info28 )
- (2) For sea turtles, we encouraged fishers to carry dip net and line clipper on board to safely release sea turtles. Meanwhile, we also distributed 3000 copies of posters entitled “Release the sea turtle incidentally caught” to our fishers in 2003.
- (3) In order to avoid incidental catch of sea bird, sea mammal and sea turtle by deep-sea fisheries, Taiwan government sponsored the World Wildlife Fund (WWF) international and Chinese Wild Bird Federation to hold the International Smart Gear Competition Judges Workshop in Taiwan in September 2007. After the workshop, Fisheries Agency of Taiwan hosted a forum inviting the international experts and the related industries to discuss how to mitigate by-catch species during fishing operation.
- (4) Taiwan published seabird identification guideline in 2009 and shark identification pamphlet for observer training and for the related staffs training in 2011. Besides, Taiwan also published shark identification pads 2000 copies for fishers in 2011.
- (5) For disseminating shark fins naturally attached policy, Taiwan distributed posters, brochures and CD for fishers, the related fisheries associations and managers further understanding the regulation and the practical process for how to naturally attach fins in January 2012.
- (6) Fisheries journal (two times per month) and magazines are published and



distributed domestically and overseas to fishers, the related fisheries associations/organizations, and managers.

- (7) All local governments and related fisheries associations/organizations have been required to strengthen the knowledge to fishers. Besides, broadcasting for educating fishers through the professional fisheries radio station has been conducted regularly. The related information has been passed on to ship masters and crews during observer trips and while in port.

#### *Education*

- (1) Fisheries Agency of Taiwan had authorized Wild Bird Federation Taiwan (WBFT) to implement a fishers' education program for mitigating seabird by-catch in 2005. Wild Bird Federation Taiwan (WBFT) conducted an educational program for Taiwanese fishers in the Port Louis, Mauritius in the fall of 2005. The program was the first trial to discuss the by-catch problems and the efficiency of mitigation measures with fishers in their cabins.
- (2) Candidate observers who have passed the oral examination will have to take a 3-week training program, and only those who pass the training program and medical check will be qualified and deployed on board as scientific observers. Observer training program includes basic safety training for seafaring, operations of navigation devices, mini-log thermometer and VMS system, identification of tuna, tuna-like species, sea turtles, seabirds, sharks and marine mammals, sampling skill for muscle tissue, otolith, stomach content and gonad, and data collection for fishing activities, catches and locations. After the training program, they are required to undergo at sea training on a training ship for one week and have a test in identifying tuna and tuna-like species at local fish market.
- (3) In addition to the above mentioned posters, brochures, and CD, Taiwan has held a series of education training for fishers, the related association and managers for promoting shark fins naturally attached since January 2012.

#### *Information Exchange*

In line with the resolution/recommendation adopted by IOTC, ICCAT, WCPFC and

IATTC aimed at the protection of ecologically related species (ERS), Taiwan has reported on its compliance with all current binding and recommendatory measures and on exchanging ERS information to these regional fisheries management organizations annually.

### **9. Information on Other ERS (Non-bycatch) Such as Prey and Predator Species**

For investigating the prey species of southern bluefin tuna (SBT), Fisheries Agency of Taiwan commissioned scientists to conduct analysis on the stomach content of SBT in 2006 and 2009. The results were as follows.

- (1) The stomach contents of 131 southern bluefin tunas captured by Taiwanese longliners in southern central Indian ocean in August 2004 and in June-July 2005 were examined. The size ranged from 84-187 cm FL (12-115 kg GG). The length and weight frequency distributions indicated that most specimens were in the range of 100-120 cm FL with a body weight between 10 and 20 kg. For the stomachs with prey items, almost all the preys are Pisces and the proportion of each prey groups are fishes (56.02%), cephalopods (5.39%), and crustaceans (38.59%). In total, 7 prey taxa were identified – 4 species of fish, 1 unidentified Pisces, 1 unidentified crustacean, and 1 unidentified cephalopod. The 4 fish species fall in the family of Carangidae, Clupeidae, Emmelichthyidae, and Hemiramphidae.
- (2) In total 53 stomach samples were collected by observers at mid-western South Indian ocean from Nov. 2007 to Jan. 2008 and Jun. – Sep. 2008. The mean fork length (FL) were  $118.9 \pm 1.84$  (90-175) cm and  $27.2 \pm 12.9$  (9-74) kg. 95% of the fish samples were within 91-150 cm FL. Among the 18 good stomach samples, the rate of empty stomach was 38.9%, having 11 non-empty stomachs for further analysis. The prey items can be distinguished into four major groups, i.e. fish, cephalopod, crustacean and marine pollution, and subdivided into 12 items. Paralepididae (Pisces) and Euphausiidae (Crustacean) were the only two families can be identified. The descending orders of the prey-importance were fish > cephalopod > crustacean = marine pollution by occurrence.

### **10. Others**

No other information.

## **11. Implementation of the IPOA-Seabirds and IPOA-Sharks**

In line with “International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries” of FAO, Taiwan has adopted “National Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (NPOA-Seabirds)” which came into force in October 2006 to act as a basis for establishing seabird conservation policy.

Similarly, in respect of sharks conservation, we have adopted NPOA-sharks which entered into force in May 2006, not only for the guidance to encourage full usage of shark caught, but also for avoidance of waste.

For consistent with global trend for the conservation and management of sharks, and seabird mitigation measures Taiwan is updating its NPOA-sharks and NPOA-seabirds.

Table1 . The number of active vessels fishing for SBT during 2002-2012

Year	No. of seasonal target vessels	No. of by-catch vessels	Total vessels
2002	21	50	71
2003	76	24	100
2004	79	18	97
2005	49	8	57
2006	33	3	36
2007	27	3	30
2008	35	6	41
2009	34	33	67
2010	65	17	82
2011	28	28	56
2012	12	24	36

Table 2. Annual SBT catches by gear for Taiwanese fishing vessels during 1972-2012  
calendar year

Unit: MT

Year	Longliner	Drift Net	Total
1972	70		70
1973	90		90
1974	100		100
1975	15		15
1976	15		15
1977	5		5
1978	80		80
1979	53		53
1980	64		64
1981	92		92
1982	171	11	182
1983	149	12	161
1984	244	0	244
1985	174	67	241
1986	433	81	514
1987	623	87	710
1988	622	234	856
1989	1,076	319	1,395
1990	872	305	1,177
1991	1,353	107	1,460
1992	1,219	3	1,222
1993	958		958
1994	1,020		1,020
1995	1,431		1,431
1996	1,467		1,467
1997	872		872
1998	1,446		1,446
1999	1,513		1,513
2000	1,448		1,448
2001	1,580		1,580
2002	1,137		1,137
2003	1,128		1,128
2004	1,298		1,298
2005	941		941
2006	846		846
2007	841		841
2008	913		913
2009	921		921
2010	1208		1208
2011 <sup>1</sup>	533		533
2012 <sup>2</sup>	497*		497

<sup>1</sup> Catch by quota year in 2011 ( from 2011/4/1 to 2012/3/31): 502 MT

<sup>2</sup> Catch by quota year in 2012 ( from 2012/4/1 to 2013/3/31): 505\* MT

\*landed weight

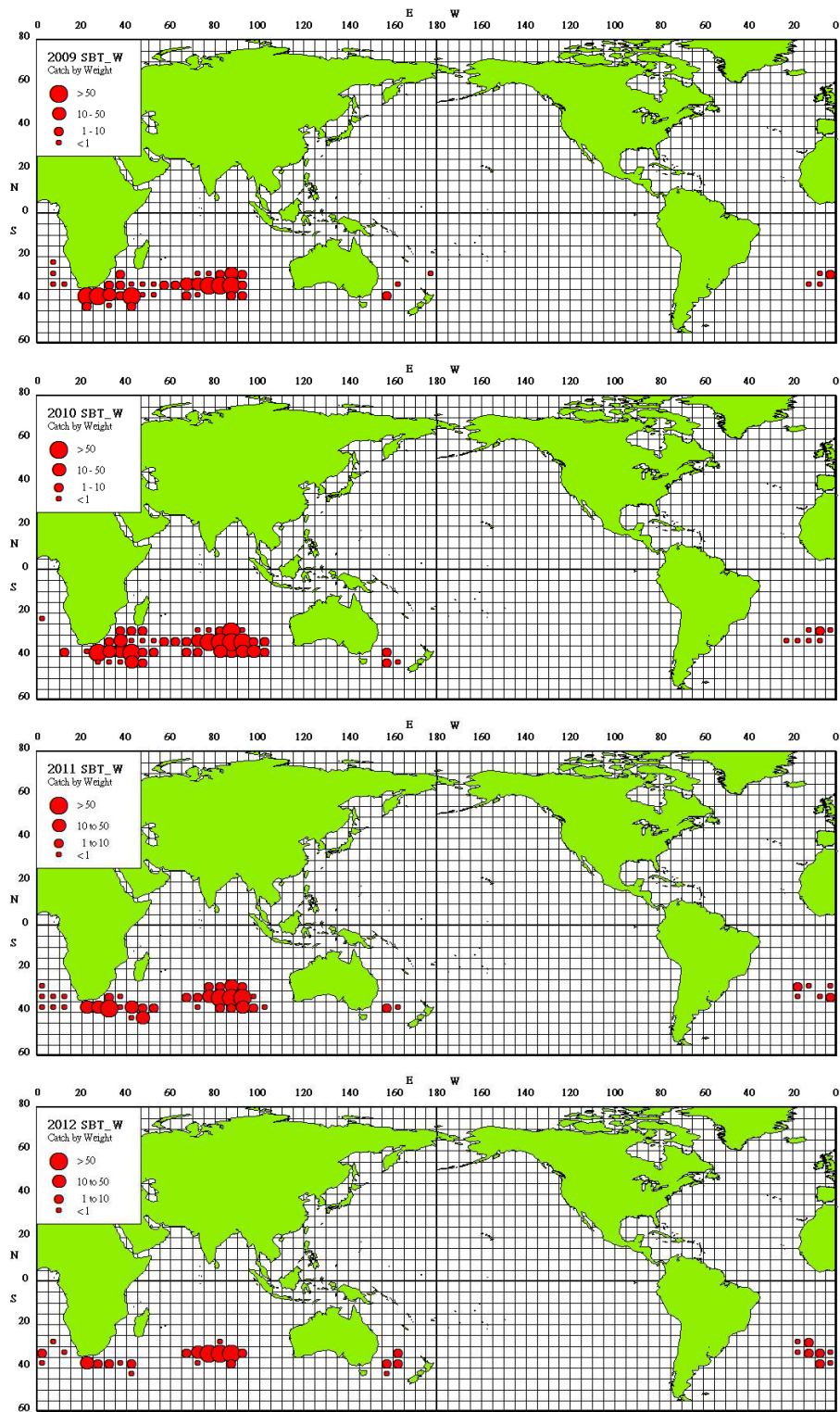


Fig. 1 Distribution of SBT catch by Taiwanese longline fishery from 2009 to 2012. (Data in 2012 is preliminary.)

Table 3. Summary of results for scientific observer programs during 2002-2012.

Year	Observers Deployed	Observed Trips	Sea Days	Set Observed	Observer Vessels (%)	Observed Effort (%)	Observed Catch (%)
2002	1	1	202	126	4.76	6.57	1.44
2003	2	2	177	133	2.63	2.43	0.86
2004	3	5	263	165	3.8	4.17	3.10
2005	4	4	681	444	8.16	11.57	9.62
2006	3	3	296	253	9.09	10.46	6.08
2007	4	4	441	394	14.81	14.84	13.72
2008	2	2	252	227	5.71	6.65	3.63
2009	5	6	531	457	18.18	15.01	12.75
2010	7	11	964	927	16.67	11.95	8.35
2011	2	2	135	129	7.14	4.19	0.02
2012	8	8	717	645	66.67	31.34	34.89

\*Data from 2009 was for quota year.

Table 4. Incidental catch of seabirds recorded by observers deployed on Taiwanese SBT vessels  
Country: Taiwan Year (calendar year): 2012

Fishery		Observed								Estimate
Stratum (CCSBT Statistical Areas or finer scale)	Total Effort <sup>1</sup>	Species	Total Observed Effort <sup>1</sup>	Observer Coverage <sup>2</sup> (%)	Captures (Number)	Capture Rate <sup>3</sup> (Number/ Thousand Hooks)	Mortalities (Number)	Mortality Rate <sup>3</sup> (Number/ Thousand Hooks)	Live releases (Number)	Estimated total mortalities (Number)
2	2112340	ALZ	621401	29.42	1	0.0016	1	0.0016	0	
2	2112340	DCU	621401	29.42	3	0.0048	3	0.0048	0	
2	2112340	TQH	621401	29.42	12	0.0193	12	0.0193	0	
9	6390123	DCU	663624	10.39	2	0.0030	1	0.0015	1	
9	6390123	DIM	663624	10.39	1	0.0015	0	0	1	
9	6390123	DIX	663624	10.39	2	0.0030	1	0.0015	1	
9	6390123	PRO	663624	10.39	6	0.0090	6	0.0090	0	
9	6390123	PTZ	663624	10.39	1	0.0015	0	0	1	
9	6390123	TQH	663624	10.39	2	0.0030	0	0	2	
14	1525961	ALZ	449598	29.46	4	0.0089	4	0.0089	0	
14	1525961	DCU	449598	29.46	3	0.0067	3	0.0067	0	
14	1525961	PRO	449598	29.46	1	0.0022	1	0.0022	0	
14	1525961	PTZ	449598	29.46	1	0.0022	1	0.0022	0	
14	1525961	TQH	449598	29.46	3	0.0067	3	0.0067	0	

<sup>1</sup> For longline provide number of hooks, for purse seine provide number of sets.



Table 5. Incidental catch of sharks recorded by observers deployed on Taiwanese SBT vessels in 2011

Country: Taiwan Year (calendar year): 2011

Fishery		Observed								Estimate
Stratum (CCSBT Statistical Areas or finer scale)	Total Effort <sup>4</sup>	Species	Total Observed Effort <sup>4</sup>	Observer Coverage <sup>5</sup> (%)	Captures (Number)	Capture Rate <sup>6</sup> (Number/ Thousand Hooks)	Mortalities (Number)	Mortality Rate <sup>6</sup> (Number/ Thousand Hooks)	Live releases (Number)	Estimated total mortalities (Number)
9	2401044	BSH	80730	3.36	497	6.1563	303	3.7532	194	
9	2401044	SMA	80730	3.36	48	0.5946	33	0.4088	15	
9	2401044	other sharks	80730	3.36	5	0.0619	0	0	5	

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<sup>4</sup> For longline provide number of hooks, for purse seine provide number of sets.

<sup>5</sup> For longline provide as a percentage of the number of hooks, for purse seine provide as a percentage of the number of shots.

<sup>6</sup> For longline provide as captures per thousand hooks, for purse seine provide as captures per set.

Table 6. Incidental catch of sharks recorded by observers deployed on SBT vessels in 2012

Country: Taiwan Year (calendar year): 2012

Fishery		Observed								Estimate
Stratum (CCSBT Statistical Areas or finer scale)	Total Effort <sup>7</sup>	Species	Total Observed Effort <sup>7</sup>	Observer Coverage <sup>8</sup> (%)	Captures (Number)	Capture Rate <sup>9</sup> (Number/ Thousand Hooks)	Mortalities (Number)	Mortality Rate <sup>9</sup> (Number/ Thousand Hooks)	Live releases (Number)	Estimated total mortalities (Number)
2	2112340	BSH	621401	29.42	1475	2.3737	1435	2.3093	40	
2	2112340	SMA	621401	29.42	11	0.0177	10	0.0161	1	
9	6390123	BSH	663624	10.39	1177	1.7736	332	0.50028	845	
9	6390123	BTH	663624	10.39	4	0.0060	0	0	4	
9	6390123	FAL	663624	10.39	3	0.0045	0	0	3	
9	6390123	LMA	663624	10.39	2	0.0030	1	0.0015	1	
9	6390123	PSK	663624	10.39	4	0.0060	2	0.0030	2	
9	6390123	SMA	663624	10.39	66	0.0995	32	0.0482	34	
9	6390123	SPL	663624	10.39	1	0.0015	0	0	1	
9	6390123	SPZ	663624	10.39	1	0.0015	0	0	1	
14	1525961	BSH	449598	29.46	973	2.1642	846	1.8817	127	
14	1525961	SMA	449598	29.46	7	0.0156	7	0.0157	0	

<sup>7</sup> For longline provide number of hooks, for purse seine provide number of sets.

<sup>8</sup> For longline provide as a percentage of the number of hooks, for purse seine provide as a percentage of the number of shots.

<sup>9</sup> For longline provide as captures per thousand hooks, for purse seine provide as captures per set.