

**2019 ANNUAL REPORT TO 13<sup>th</sup> THE ECOLOGICALLY RELATED SPECIES  
WORKING GROUP (ERSWG) OF CCSBT**

Republic of Indonesia

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## **1. Introduction**

Southern bluefin tuna (*Thunnus maccoyii*) considered as bycatch from Indonesia tuna longline vessel targeting bigeye tuna and yellowfin tuna in the Indian Ocean. Indonesia became the member of the Commission on Conservation of Southern Bluefin Tuna (CCSBT) on April, 2008 with a membership allocation of annual catch limits of 1,023 tons. Based on 2018 catch documentation scheme (CDS), as reported, SBT catch of Indonesian tuna longline fishery was 1,087 tons, derived from 152 authorized vessels. This report contains information on Ecologically Related Species (ERS) of Indonesia tuna longline fisheries collected by scientific observers on-board updated to 2017-2018.

## **2. Review of SBT Fisheries**

Longline fishing technique was first introduced by Japan in the 1930s, however, for commercial purpose it started in the early 1960s (Proctor et al., 2003; Simorangkir, 2000). At first it was designed for targeting yellowfin tuna, but as deep longline introduced in 1983, which allegedly targeting bigeye tuna, a bigger proportion of bluefin tuna (SBT) were also caught as by-catch (Sadiyah et al., 2011). Since 2010-2018, Indonesia's annual catch ranged from 593-1,383 tons, with average 885 tons/year. Since 2015, Indonesia started to allocate quota to each company through 2 associations, and 11 companies. Within this scheme, each company obliges to register their vessel in order to get authorization to catch SBT. Currently, in 2017, there were 199 registered vessels, 148 of which are above 30 GT. Indonesia has developed a system called Catch Documentation Scheme (CDS) to monitor catch activities of SBT and ensure that quota allocation limit for each company is not breached. Submission of the CDS form was conducted through online application.

The fishing ground extends from 70-125 °E and 0-35 °S. Mean observed hook rate ranged from 0.016-3.419 (SBT/1000 hooks) (Table 1). Higher CPUE were obtained below 25 °S.

Fishing season starts from September to April, high catch usually occurred between October to February and low catch between June to August. The number of registered Indonesian tuna longline vessels in CCSBT is shown in the Table 2 with exception year 2018 was derived from CDS data, as total registered vessels are not yet available.

### **3. Fisheries Monitoring for each fleet**

Indonesian scientific observer program first established in 2005. It carries out task in accordance with the template/guideline adopted by IOTC and CCSBT. Six observers have been deployed in 2018, with coverage less than 1% against estimated total effort in the same year as shown in Table 3. During the trip, they observed and collected data based on the template provided. Number of catches, discard/release (dead or live), species composition, gear type, catch and effort including biological data are among the data which mandatory collected. Catch and effort data was recorded daily in the fishing logbook and reported to the principal of base-port.

In order to increase data collection by observer on-board as required by RFMO such IOTC and CCSBT, since 2013 Directorate General of Capture Fisheries has established National Observer Program. Under this program, there were 6 and 11 tuna longline vessels had been observed both in 2016 and 2017, respectively. The data collected need to be further validated by the scientists from Research Center of Fisheries Management and Conservation, particularly in species identification such as sharks, ray as well as another species.

### **4. Seabirds**

There were total 28 interactions reported with seabird during longline operation in 2017-2018, 2 albatrosses, 19 petrels and 7 shearwaters. The absence of interaction in previous years due to low coverage of Indonesian scientific observers in high seas (above 25 °S), as a result of retention from the industry. Total numbers, CPUE and mortality of seabirds by species incidentally caught by Indonesian longline fishery are shown in Table 4.

### **5. Other non-target species (sharks and rays)**

Blue shark (*Prionace glauca*) and crocodile shark (*Pseudocarcharias kamoharai*) dominated the incidental catch for sharks during 2010-2018. Most of the blue sharks were retained while crocodile sharks usually discarded dead. In the other hand, pelagic stingrays (*Pteroplatytrygon violacea*) was the only ray species to be found. Total numbers, CPUE and mortality of sharks and rays incidentally caught by Indonesian longline fishery are shown in Table 5.

### **6. Marine mammal and marine reptile**

Olive-ridley turtle was the dominant species which incidentally caught during longline operation. No interaction recorded in 2017, but in 2018, there were 4 olive-ridley turtles reported as incidental catch, 1 released alive and 3 dead. Total numbers, CPUE and mortality of non-target species incidentally caught by Indonesian longline fishery are shown in Table 6.

### **7. Mitigation measures to minimize seabird and other by-catch species**

In accordance with Ministerial Regulation No. 12/2002, it is mandatory for each tuna longline vessel to implement mitigation measure to seabirds when they are fishing in south of 25 °S. The option of night setting, seabirds scaling line and weight line has become a requirement. In relation to mitigation measure on marine turtle, it is a requirement for tuna longline vessel to carry on-board a necessary equipment to appropriate release of marine turtle caught incidentally, such as de-hooker, line-cutting and scope net.

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

Awareness building activity to protect ERS and bycatch such as marine turtle, seabirds and sharks, has been developed in form of printing material such as poster and leaflet. This material has been widely distributed to all stakeholders of tuna fisheries, particularly in Bali and Jakarta where SBT is commonly landed. Education on by-catch mitigation are actively proposed, i.e. observers training of trainers, basic safety training, legislation board members visitation, etc. Indonesia currently also exchange by-catch data with IOTC and International NGO (Birdlife foundation).

### **9. Information on other ERS (non-bycatch) such as prey and predator species**

Nothing

### **10. Others**

Nothing

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

Recent progress related to the management of shark in Indonesia after establishment of National Plan of Action of the Shark (NPOA-Shark) on 10th October 2010 is the issuance of ministerial decree no 12, 2012, chapter X which regulates a management and conservation of bycatch and ecological related species on tuna fisheries. Several activities to raise the fishers' awareness on the important of sharks' resource sustainability are through workshops, seminars and producing and distribute posters which prohibit several keys species of sharks to catch. In the framework of fisheries management of sharks and rays in Indonesia, the government through the minister of marine and fisheries has issued a ministerial regulation of marine and relevant fisheries management and use of sharks and rays in Indonesia, the latest regulations

contained in the Minister of Marine and Fisheries No. 34/PERMEN-KP/2015 on the amendment of the Minister of Marine Affairs and Fisheries No. 59/PERMEN-KP/2014 concerning prohibition on the issuance of Oceanic whitetip sharks (*Carcharhinus longimanus*) and hammerhead sharks (*Sphyrna* spp.) from the territory of Republic of Indonesia out of Indonesian territory. Indonesia also established National Plan of Action (NPOA) for sharks and rays 2015-2019. In term of seabird's mitigation, Indonesia, through Ministry of Marine Affairs and Fisheries have released Ministerial Decree (PERMEN KP) No. 12/2012 related to mitigation for ecologically related species mitigation, including seabirds which stated that installment of tori line is obligatory for every vessel operated beyond 25 °S. Identification card for Seabird from IOTC had been translated into Bahasa. Indonesia also developed NPOA for Seabird in 2016 and been reviewed by Birdlife South Africa. For Seabird, Indonesia has complied fully and gets the green status.

## 12. Reference

- Setyadji, B., Fahmi, Z., Nugroho, D. 2017. 2017 Annual Report To The Ecologically Related Species Working Group (ERSWG). CCSBT-ERS/1703/SBT Fisheries – Indonesia.
- Proctor, C.H., Merta, G.S., Sondita, M.F.A., Wahju, R.I., Davis, T.L., Gunn, J.S., Andamari, R., 2003. A review of Indonesia's Indian Ocean tuna fisheries. CSIRO Marine Research, Australia.
- Sadiyah, L., Dowling, N., Prisantoso, B.I., 2011. Changes in fishing pattern from surface to deep longline fishing by the Indonesian vessels operating in the Indian Ocean. Ind.Fis.Res.J 17, 87–99.

## 13. Appendix

**Table 1.** Mean observed hook rates of SBT caught by Indonesian tuna longline fisheries based on scientific observer data 2010-2018.

Year	Observed hook rate (SBT/1000 hooks)	
	Area 1	Area 2
2010	0.016	N/A
2011	0.045	N/A
2012	0.223	0.032
2013	0.116	N/A
2014	0.087	N/A
2015	0.080	N/A
2016	0.042	N/A
2017	0.000	3.221
2018	0.573	3.419

Note: N/A means No observations

**Table 2.** Annual catch of SBT in the CCSBT convention area, 2010-2018

Year	Number of registered vessels	Total Catch (tons)
2010	272	651
2011	274	843
2012	319	910
2013	550	1,383
2014	498	1,063
2015	422	593
2016	226	600
2017	199	835
2018	152*	1,087*

Note: Number of registered vessel from 2010-2017 are derived from Indonesia's CCSBT Compliance Committee Document: CCSBT-CC/1810/SBT Fisheries – Indonesia (CC Agenda item 2.2).

\*) Total number of vessels submitted CDS from Jan-Dec, 2018.

**Table 3.** Coverage percentage from the Indonesian observer program, 2010-2018

Year	Trips Observed	Observed effort <sup>1</sup> (X1,000)	Total estimated effort (X1,000)	Coverage (%)
2010	8	190	N/A	N/A
2011	6	110	N/A	N/A
2012	7	253	N/A	N/A
2013	3	223	N/A	N/A
2014	6	161	N/A	N/A
2015	5	150	N/A	N/A
2016	3	95	N/A	N/A
2017	4	96	22,911*	0.4
2018	6	180	35,138*	0.5

Note: \*) provisional estimation

<sup>1</sup> Total hooks observed from area 1, 2 and 8

**Table 4.** Estimation of total seabirds caught incidentally by Indonesian tuna longline fleets from 2010-2018

Country / Fishing Entity	Calendar Year	Fishery		CCSBT Statistical Area	Species/ Species Group Code	English	Observed Captures					Estimate	
		Gear Code	Fleet Code				Captures (number)	Capture Rate	Fate (numbers)			Mortality Rate	Estimated total mortalities (number)
									Retained (dead)	Discarded (dead)	Released (live)		
ID	2012	LL	IDD	1	USB	<i>Other seabird</i>	3	0.030	0	3	0	0.030	N/A
ID	2012	LL	IDD	2	USB	<i>Other seabird</i>	6	0.039	0	6	0	0.039	N/A
ID	2013*	LL	IDD	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ID	2014*	LL	IDD	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ID	2015	LL	IDD	1	USB	<i>Other seabird</i>	7	0.047	0	7	0	0.047	N/A
ID	2016*	LL	IDD	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ID	2017	LL	IDD	2	DCU	<i>Thalassarche cauta</i>	1	0.031	0	0	1	0.000	N/A
ID	2017	LL	IDD	2	PDM	<i>Pterodroma macroptera</i>	18	0.559	2	16	0	0.559	N/A
ID	2017	LL	IDD	2	PHU	<i>Phoebetria fusca</i>	1	0.031	0	1	0	0.031	N/A
ID	2018	LL	IDD	1	PFC	<i>Puffinus carneipes</i>	6	0.037	0	6	0	0.094	N/A
ID	2018	LL	IDD	2	PFC	<i>Puffinus carneipes</i>	1	0.050	0	1	0	0.006	N/A
ID	2018	LL	IDD	2	PDM	<i>Pterodroma macroptera</i>	1	0.050	0	1	0	0.006	N/A

Note: \*) No interactions

**Table 5.** Observed of total sharks and rays caught incidentally by Indonesian tuna longline fleets from 2010-2018

Country / Fishing Entity	Calendar Year	Fishery		CCSBT Statistical Area	Species/ Species Group Code	English	Observed Captures					Estimate	
		Gear Code	Fleet Code				Captures (number)	Capture Rate	Fate (numbers)			Mortality Rate	Estimated total mortalities (number)
									Retained (dead)	Discarded (dead)	Released (live)		
ID	2010	LL	IDD	1	BSH	<i>Prionace glauca</i>	79	0.418	78	1	0	0.418	
ID	2010	LL	IDD	1	PSK	<i>Pseudocarcharias kamoharai</i>	280	1.481	234	11	35	1.296	
ID	2010	LL	IDD	1	PLS	<i>Dasyatis violacea</i>	438	2.316	50	185	203	1.243	

Country / Fishing Entity	Calendar Year	Fishery		CCSBT Statistical Area	Species/Species Group Code	English	Observed Captures						Estimate
		Gear Code	Fleet Code				Captures (number)	Capture Rate	Fate (numbers)			Mortality Rate	Estimated total mortalities (number)
									Retained (dead)	Discarded (dead)	Released (live)		
ID	2010	LL	IDD	1	FAL	<i>Carcharhinus falciformis</i>	2	0.011	0	2	0	0.011	
ID	2010	LL	IDD	1	POR	<i>Lamna nasus</i>	3	0.016	3	3	0	0.016	
ID	2010	LL	IDD	1	MAK	<i>Isurus spp</i>	1	0.005	0	1	0	0.005	
ID	2010	LL	IDD	1	OCS	<i>Carcharhinus longimanus</i>	12	0.063	12	0	0	0.063	
ID	2010	LL	IDD	1	SKR	<i>Skates and rays</i>	1	0.005	0	0	1	0.000	
ID	2010	LL	IDD	1	SHK	<i>Other sharks</i>	1	0.005	1	0	0	0.005	
ID	2011	LL	IDD	1	SPY	<i>Sphyrnidae</i>	1	0.005	1	0	0	0.005	
ID	2011	LL	IDD	1	BSH	<i>Prionace glauca</i>	2	0.018	2	0	0	0.011	
ID	2011	LL	IDD	1	PSK	<i>Pseudocarcharias kamoharai</i>	63	0.571	32	9	32	0.164	
ID	2011	LL	IDD	1	PLS	<i>Dasyatis violacea</i>	359	3.252	1	200	76	1.497	
ID	2011	LL	IDD	1	OCS	<i>Carcharhinus longimanus</i>	7	0.063	7	0	0	0.037	
ID	2011	LL	IDD	1	SPY	<i>Sphyrnidae</i>	1	0.009	1	0	0	0.005	
ID	2011	LL	IDD	1	SHK	<i>Other sharks</i>	1	0.009	1	0	0	0.005	
ID	2012	LL	IDD	1	BSH	<i>Prionace glauca</i>	20	0.202	20	0	0	0.202	
ID	2012	LL	IDD	1	CCB	<i>Carcharhinus brevipinna</i>	1	0.010	1	0	0	0.010	
ID	2012	LL	IDD	1	PSK	<i>Pseudocarcharias kamoharai</i>	25	0.253	17	8	0	0.253	
ID	2012	LL	IDD	1	PLS	<i>Dasyatis violacea</i>	229	2.315	18	206	5	2.265	
ID	2012	LL	IDD	1	MAK	<i>Isurus spp</i>	1	0.010	0	1	0	0.010	
ID	2012	LL	IDD	1	OCS	<i>Carcharhinus longimanus</i>	2	0.020	2	0	0	0.020	
ID	2012	LL	IDD	1	SHK	<i>Other sharks</i>	1	0.010	1	0	0	0.010	
ID	2012	LL	IDD	1	TSK	<i>Scylliogaleus queckettii</i>	2	0.020	2	0	0	0.020	
ID	2012	LL	IDD	2	BSH	<i>Prionace glauca</i>	356	2.311	106	250	0	2.311	
ID	2012	LL	IDD	2	PSK	<i>Pseudocarcharias kamoharai</i>	139	0.902	12	127	0	0.902	

Country / Fishing Entity	Calendar Year	Fishery		CCSBT Statistical Area	Species/Species Group Code	English	Observed Captures					Estimate	
		Gear Code	Fleet Code				Captures (number)	Capture Rate	Fate (numbers)			Mortality Rate	Estimated total mortalities (number)
									Retained (dead)	Discarded (dead)	Released (live)		
ID	2012	LL	IDD	2	PLS	<i>Dasyatis violacea</i>	164	1.064	2	162	0	1.064	
ID	2012	LL	IDD	2	OCS	<i>Carcharhinus longimanus</i>	2	0.013	1	1	0	0.013	
ID	2012	LL	IDD	2	SPY	<i>Sphyrnidae</i>	2	0.013	2	0	0	0.013	
ID	2013	LL	IDD	1	BSH	<i>Prionace glauca</i>	44	0.180	43	1	0	0.180	
ID	2013	LL	IDD	1	CCB	<i>Carcharhinus brevipinna</i>	4	0.016	4	0	0	0.016	
ID	2013	LL	IDD	1	PSK	<i>Pseudocarcharias kamoharai</i>	57	0.233	16	41	0	0.233	
ID	2013	LL	IDD	1	PLS	<i>Dasyatis violacea</i>	882	3.609	4	623	255	2.566	
ID	2013	LL	IDD	1	SHK	<i>Other sharks</i>	1	0.004	1	0	0	0.004	
ID	2013	LL	IDD	1	MAK	<i>Isurus spp</i>	2	0.008	2	0	0	0.008	
ID	2013	LL	IDD	1	OCS	<i>Carcharhinus longimanus</i>	2	0.008	2	0	0	0.008	
ID	2013	LL	IDD	1	SKR	<i>Skates and rays</i>	2	0.008	0	1	1	0.004	
ID	2013	LL	IDD	1	SPY	<i>Sphyrnidae</i>	1	0.004	1	0	0	0.004	
ID	2013	LL	IDD	1	TIG	<i>Galeocerdo cuvier</i>	1	0.004	1	0	0	0.004	
ID	2013	LL	IDD	1	TSK	<i>Scylliogaleus quecketti</i>	1	0.004	1	0	0	0.004	
ID	2014	LL	IDD	1	BSH	<i>Prionace glauca</i>	46	0.325	45	1	0	0.325	
ID	2014	LL	IDD	1	CCB	<i>Carcharhinus brevipinna</i>	17	0.120	0	0	0	0.120	
ID	2014	LL	IDD	1	PSK	<i>Pseudocarcharias kamoharai</i>	71	0.502	45	26	0	0.502	
ID	2014	LL	IDD	1	PLS	<i>Dasyatis violacea</i>	250	1.768	0	248	2	1.754	
ID	2014	LL	IDD	1	LMA	<i>Isurus paucus</i>	2	0.014	2	0	0	0.014	
ID	2014	LL	IDD	1	SMA	<i>Isurus oxyrinchus</i>	2	0.014	2	0	0	0.014	
ID	2014	LL	IDD	1	OCS	<i>Carcharhinus longimanus</i>	5	0.035	5	0	0	0.035	
ID	2014	LL	IDD	1	SKR	<i>Skates and rays</i>	1	0.007	0	1	0	0.007	
ID	2014	LL	IDD	1	TSK	<i>Scylliogaleus quecketti</i>	1	0.007	1	0	0	0.007	



Country / Fishing Entity	Calendar Year	Fishery		CCSBT Statistical Area	Species/ Species Group Code	English	Observed Captures					Estimate	
		Gear Code	Fleet Code				Captures (number)	Capture Rate	Fate (numbers)			Mortality Rate	Estimated total mortalities (number)
									Retained (dead)	Discarded (dead)	Released (live)		
ID	2015	LL	IDD	1	BSH	<i>Prionace glauca</i>	124	0.841	124	0	0	0.841	
ID	2015	LL	IDD	1	CCB	<i>Carcharhinus brevipinna</i>	1	0.007	1	0	0	0.007	
ID	2015	LL	IDD	1	CCL	<i>Carcharhinus limbatus</i>	1	0.007	1	0	0	0.007	
ID	2015	LL	IDD	1	PSK	<i>Pseudocarcharias kamoharai</i>	107	0.725	4	103	0	0.725	
ID	2015	LL	IDD	1	PLS	<i>Dasyatis violacea</i>	196	1.329	1	194	1	1.322	
ID	2015	LL	IDD	1	FAL	<i>Carcharhinus falciformis</i>	25	0.169	25	0	0	0.169	
ID	2015	LL	IDD	1	OCS	<i>Carcharhinus longimanus</i>	5	0.034	5	0	0	0.034	
ID	2015	LL	IDD	1	SKR	<i>Skates and rays</i>	1	0.007	0	0	1	0.000	
ID	2015	LL	IDD	1	SMA	<i>Isurus oxyrinchus</i>	1	0.007	0	1	0	0.007	
ID	2015	LL	IDD	1	SPL	<i>Sphyrna lewini</i>	1	0.007	1	0	0	0.007	
ID	2015	LL	IDD	1	TSK	<i>Scylliogaleus quecketti</i>	6	0.041	6	0	0	0.041	
ID	2016	LL	IDD	1	BSH	<i>Prionace glauca</i>	77	0.809	77	0	0	0.809	
ID	2016	LL	IDD	1	CCB	<i>Carcharhinus brevipinna</i>	2	0.021	2	0	0	0.021	
ID	2016	LL	IDD	1	PSK	<i>Pseudocarcharias kamoharai</i>	174	1.828	6	168	0	1.828	
ID	2016	LL	IDD	1	PLS	<i>Dasyatis violacea</i>	155	1.629	0	155	0	1.629	
ID	2016	LL	IDD	1	MAK	<i>Isurus spp</i>	3	0.032	3	0	0	0.032	
ID	2016	LL	IDD	1	OCS	<i>Carcharhinus longimanus</i>	5	0.053	5	0	0	0.053	
ID	2016	LL	IDD	1	SMA	<i>Isurus oxyrinchus</i>	1	0.011	1	0	0	0.011	
ID	2016	LL	IDD	1	TSK	<i>Scylliogaleus quecketti</i>	2	0.021	2	0	0	0.021	
ID	2017	LL	IDD	1	BSH	<i>Prionace glauca</i>	23	0.714	4	19	0	0.714	
ID	2017	LL	IDD	1	PLS	<i>Dasyatis violacea</i>	23	0.714	0	23	0	0.714	
ID	2017	LL	IDD	1	FAL	<i>Carcharhinus falciformis</i>	1	0.031	0	1	0	0.031	
ID	2017	LL	IDD	1	ISB	<i>Isistius brasiliensis</i>	4	0.124	0	4	0	0.124	

Country / Fishing Entity	Calendar Year	Fishery		CCSBT Statistical Area	Species/ Species Group Code	English	Observed Captures						Estimate
		Gear Code	Fleet Code				Captures (number)	Capture Rate	Fate (numbers)			Mortality Rate	Estimated total mortalities (number)
									Retained (dead)	Discarded (dead)	Released (live)		
ID	2017	LL	IDD	1	MAK	<i>Isurus spp</i>	2	0.062	0	2	0	0.062	
ID	2017	LL	IDD	1	OCS	<i>Carcharhinus longimanus</i>	1	0.031	1	0	0	0.031	
ID	2017	LL	IDD	1	PSK	<i>Pseudocarcharias kamoharai</i>	35	1.087	1	34	0	1.087	
ID	2017	LL	IDD	2	BSH	<i>Prionace glauca</i>	135	4.191	135	0	0	4.191	
ID	2017	LL	IDD	2	PSK	<i>Pseudocarcharias kamoharai</i>	24	0.375	0	24	0	0.745	
ID	2017	LL	IDD	2	PTH	<i>Alopias pelagicus</i>	2	0.031	2	0	0	0.062	
ID	2017	LL	IDD	2	SMA	<i>Isurus oxyrinchus</i>	35	0.547	7	27	1	1.056	
ID	2018	LL	IDD	1	BSH	<i>Prionace glauca</i>	187	1.143	90	93	4	2.861	
ID	2018	LL	IDD	1	BTH	<i>Alopias superciliosus</i>	3	0.018	1	2	0	0.047	
ID	2018	LL	IDD	1	DUS	<i>Carcharhinus obscurus</i>	2	0.012	2	0	0	0.031	
ID	2018	LL	IDD	1	FAL	<i>Carcharhinus falciformis</i>	9	0.055	9	0	0	0.141	
ID	2018	LL	IDD	1	ISB	<i>Isistius brasiliensis</i>	3	0.018	0	3	0	0.047	
ID	2018	LL	IDD	1	LMA	<i>Isurus paucus</i>	5	0.031	0	5	0	0.078	
ID	2018	LL	IDD	1	OCS	<i>Carcharhinus longimanus</i>	7	0.043	5	0	2	0.078	
ID	2018	LL	IDD	1	PLS	<i>Dasyatis violacea</i>	138	0.843	0	110	28	1.720	
ID	2018	LL	IDD	1	PSK	<i>Pseudocarcharias kamoharai</i>	143	0.874	2	141	0	2.236	
ID	2018	LL	IDD	1	PTH	<i>Alopias pelagicus</i>	2	0.012	0	1	1	0.016	
ID	2018	LL	IDD	1	SMA	<i>Isurus oxyrinchus</i>	5	0.031	1	4	0	0.078	
ID	2018	LL	IDD	1	TIG	<i>Galeocerdo cuvier</i>	3	0.018	2	1	0	0.047	
ID	2018	LL	IDD	2	BSH	<i>Prionace glauca</i>	19	0.955	14	5	0	0.116	
ID	2018	LL	IDD	2	PSK	<i>Pseudocarcharias kamoharai</i>	3	0.151	0	3	0	0.018	

**Table 6.** Estimation of total sea turtles caught incidentally by Indonesian tuna longline fleets from 2010-2018

Country / Fishing Entity	Calendar Year	Fishery		CCSBT Statistical Area	Species/ Species Group Code	English	Observed Captures					Estimate	
		Gear Code	Fleet Code				Captures (number)	Capture Rate	Fate (numbers)			Mortality Rate	Estimated total mortalities (number)
									Retained (dead)	Discarded (dead)	Released (live)		
ID	2010	LL	IDD	1	LKV	<i>Lepidochelys olivacea</i>	2	0.011	0	2	0	0.011	
ID	2011	LL	IDD	1	DKK	<i>Dermochelys coriacea</i>	1	0.009	1	0	0	0.005	
ID	2011	LL	IDD	1	LKV	<i>Lepidochelys olivacea</i>	1	0.009	1	0	0	0.005	
ID	2012	LL	IDD	1	LKV	<i>Lepidochelys olivacea</i>	3	0.030	2	1	0	0.030	
ID	2013	LL	IDD	1	LKV	<i>Lepidochelys olivacea</i>	6	0.025	0	6	0	0.025	
ID	2014	LL	IDD	1	LKV	<i>Lepidochelys olivacea</i>	1	0.007	0	0	1	0.000	
ID	2015*	LL	IDD	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ID	2016	LL	IDD	1	LKV	<i>Lepidochelys olivacea</i>	12	0.126	0	11	1	0.116	
ID	2017*	LL	IDD	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ID	2018	LL	IDD	1	LKV	<i>Lepidochelys olivacea</i>	4	0.024	0	3	1	0.047	

Note: \*) No interactions