



**SCIENTIFIC COMMITTEE
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**Busan, Republic of Korea
8-16 August 2018**

**ANNUAL REPORT TO THE COMMISSION
PART 1: INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS**

WCPFC-SC14-AR/CCM-19

PAPUA NEW GUINEA

**Western and Central Pacific Fisheries Commission
14th Regular Session of the Scientific Committee**

**Busan, Republic of Korea
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ANNUAL REPORT TO THE COMMISSION

**PART 1: INFORMATION ON FISHERIES, RESEARCH AND
STATISTICS, 2017.**

PAPUA NEW GUINEA

**National Fisheries Authority,
Port Moresby, PNG.**

Scientific data was provided to the Commission in accordance with the decision relating to the provision of scientific data to the commission by the 30th April 2018.	YES
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Revision Notes:

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Summary

The Papua New Guinea (PNG) tuna fishery is made up of both the purse-seine and longline sectors with a small handline sector. The longline and handline vessels fish exclusively in PNG waters. The purse-seine sector is a mix of both domestic and foreign access vessels. The domestic sector comprises the PNG flag vessels and PNG chartered vessels (locally-based foreign) which support processing facilities onshore in PNG.

Total catch estimate of 2017 by PNG purse seine vessels was 280,255 mt. A total of 64 vessels in the PNG national fleet (both PNG Flag and LBF vessels) were active in the WCPFC Convention area with an estimated overall effort of 8,468 fishing days. Only a total estimated catch of 1,390 mt was from the domestic tuna longline vessels fishing in 2016. A total of 22 vessels were actively fishing in PNG waters with an estimated effort of 37,030 hundred hooks. Estimated catch by foreign vessels fishing under bilateral and multilateral access agreements in PNG waters in 2016 was 117,867 mt with an estimated effort of 3,647 fishing days.

PNG is striving towards building its fishing industry; therefore fishing licenses are linked to onshore investment. At full capacity PNG is looking to process all fish caught in PNG waters, back in PNG. The rights to fish in PNG are also linked to onshore investment.

1. Background

Tuna in the Papua New Guinea (PNG) national waters are caught by two main fishing methods, namely purse-seine and longline. Most of the catch (99%) is attributed to the purse-seine fishery. Purse-seining started in PNG waters in the early 1980s and has since intensified, with the 2010 catch being the highest on record (702,969 mt). The longline fishery started even earlier than the purse-seine fishery, originally only as access by foreign fleets. But in the mid-1990s a policy on domestication enabled the fishery to be a national activity only, hence doing away with access by foreign fleets.

The tuna fishery in PNG represents a balance of both domestic industry development and foreign distant water fishing nations (DWFN) access agreements. Domestic industry development is pursued by using a model whereby a fishing licence is granted on the condition that the vessels catch fish for processing facilities in-country. Vessels under this scheme are either re-flagged to PNG or are given incentives by way of reduced licence fees and allowing them to fish within archipelagic waters or sponsoring them to fish under the Federated States of Micronesia Arrangement (FSMA).

The fishery is guided by the National Tuna Fishery Management and Development Plan (NTFMDP) which establishes an overall management structure, and an application framework for all tuna fisheries. This include licence limits, catch and effort controls, gear restrictions, the use of Fish Aggregating Devices (FAD) and other management tools for the purpose of tuna resource conservation and management as well as combating illegal, unregulated and unreported fishing activities (IUU). The plan is updated where necessary to conform to the country's development plans as well as regional and international obligations and agreements.

The purse-seine fishery operates within the guidelines of important regional and sub-regional arrangements such as the Parties to the Nauru Agreement (PNA), whose requirements are incorporated in the National Tuna Management and Development Plan.

2. Flag State Reporting

This section reports activities by the national fleet in waters of the Western and Central Pacific Fisheries Commission (WCPFC) convention area including PNG's Exclusive Economic Zone (EEZ). The national fleet comprises of domestic longline and purse seine vessels which includes purse seine vessels under charter arrangements with domestic companies.

2.1 Purse Seine

PNG manages a purse seine fleet made up of two categories; Domestic PNG flagged vessels and Locally-Based Foreign (LBF). LBF vessels are foreign flagged and whose activities are governed under charter arrangements with locally based companies. These vessels support onshore processing plants in the country.

Table 1: Annual catch estimates and effort (mt) for the PNG purse seine fleet inside and outside of the PNG waters in the WCPFC Convention Area for 2013-2017.

Year	Vessels Category	Effort (Fishing Days)	SKJ (MT)		YFT (MT)		BET (MT)		OTH (MT)		TOTAL (MT)		WCPFC CA Total
			PNG Waters	Outside PNG	PNG Waters	Outside PNG	PNG Waters	Outside PNG	PNG Waters	Outside PNG	PNG Waters	Outside PNG	
2013	PNG Flag	2058	21,520	1,054	14,787	404	417		237	2	36,961	1,459	38,420
	LBFV	7770	79,890	66,394	27,741	7,349	287	266	6,602	114	114,520	74,122	188,642
2014	PNG Flag	2150	28,929	9,529	14,846	1,024	279	46	117	0	44,172	10,599	54,771
	LBFV	6403	44,719	87,866	18,643	7,413	334	694	93	670	63,789	96,644	160,433
2015	PNG Flag	3143	13,087	60,086	10,862	8,410	181	488	1,138	1,382	25,267	70,367	95,633
	LBFV	3243	21,927	54,394	13,531	14,340	516	750	1,842	1,585	37,815	71,068	108,884
2016	PNG Flag	4530	30,895	69,478	18,739	16,330	579	1,321	196	91	50,409	87,220	137,629
	LBFV	4335	51,665	43,237	40,266	12,003	584	904	106	23	92,621	56,168	148,788
2017 (Provisional)	PNG Flag	4327	29,512	66,367	17,900	15,599	552	1,262	188	87	48,152	83,315	131,467
	LBFV	4141	49,352	41,301	38,463	11,466	557	864	101	22	88,473	53,653	142,126
Average		8,420	74,299	99,941	43,156	18,867	857	1,319	2,124	795	120,436	120,923	241,359

Catches by purse seine vessels in the national fleet comprise mostly of skipjack with the highest composition, followed by yellowfin and bigeye tuna. Although, skipjack is the main target species in this fishery, yellowfin and bigeye are also commercially important. Catch by these vessels have increased over the years to an average 241,359 mt in the last 5 years.

Table 2: Number of PNG purse seine vessels by size category, active in the WCPFC Convention area for years 2013- 2017

Size class (GRT)	2013	2014	2015	2016	2017
0–500	11	11	3	7	7
500–1,000	9	9	8	14	13
1,000–1,500	25	28	30	37	35
1,500+	6	7	11	9	9
Unknown	-	-	1		
Total	51	55	53	67	64

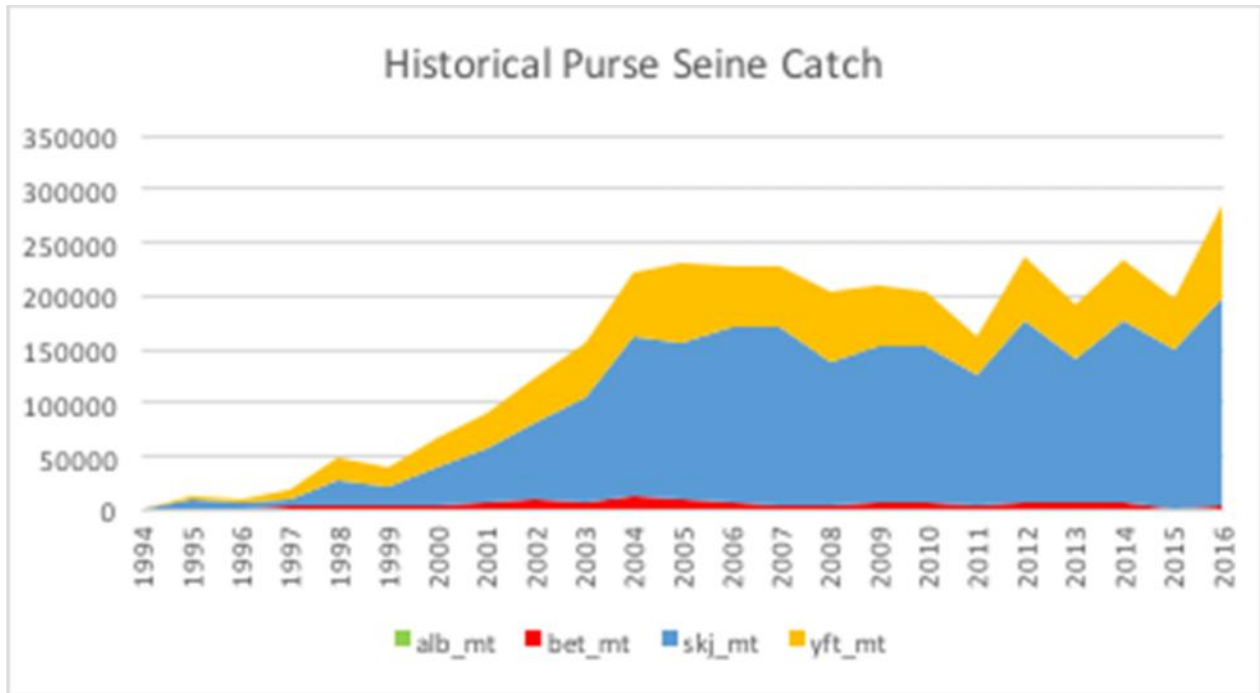


Figure 1: Historical annual catch for the PNG purse seine fleet by primary species in the WCPFC Convention area.

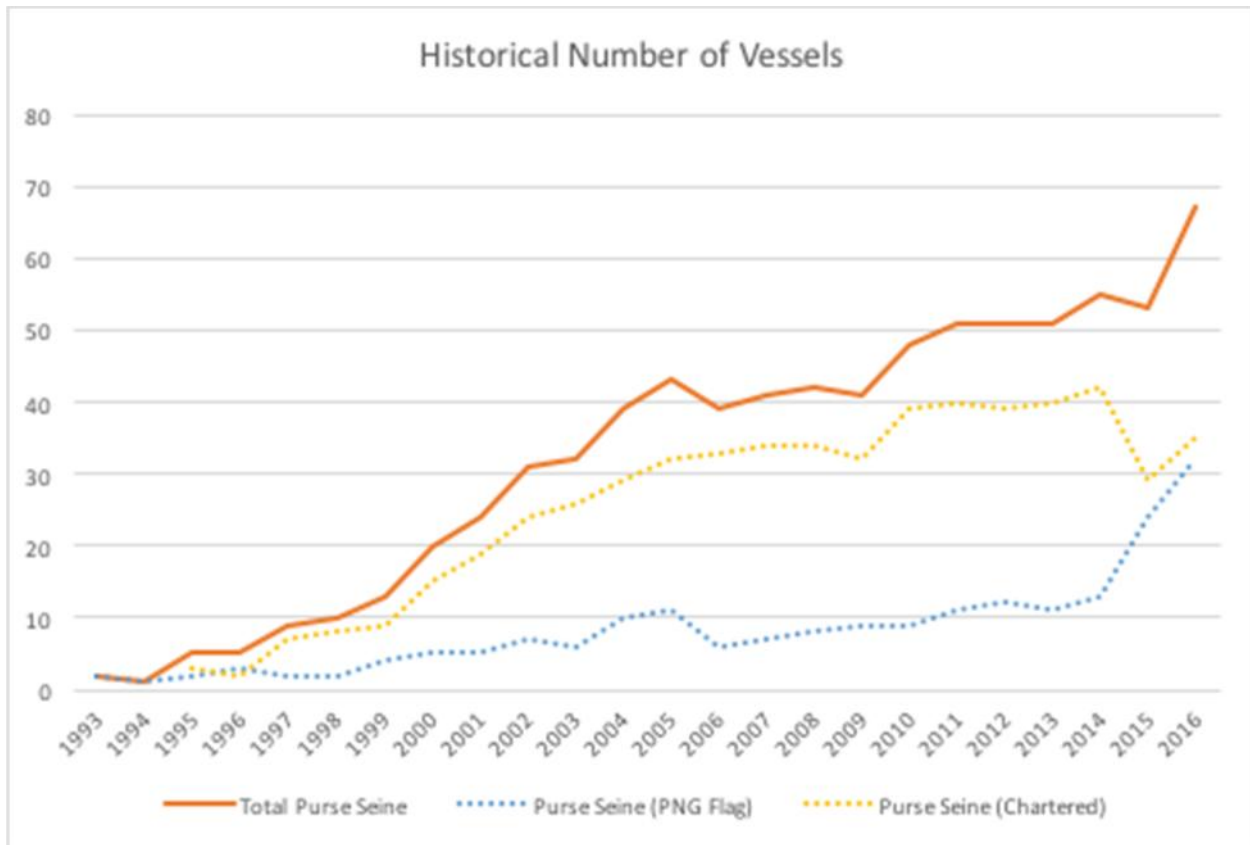


Figure 2: Historical annual vessel numbers for the PNG purse seine fleet in the WCPFC Convention area.

2.2 Domestic Tuna Longline

The target catches by tuna longline vessels in PNG waters are dominated by yellowfin tuna with an average of 877 mt in the last five years (2013-2017), followed by albacore (199 mt) and bigeye (59 mt). Billfishes that are caught by this fishery as bycatch are mainly blue marlin, swordfish, black marlin and striped marlin. Total sharks species also make up a significant amount of the catch with a combined average of 67 mt. The annual catch and effort estimates for the previous 5 years are shown in Table 3. Table 4 shows the number of domestic longliners from 2013-2017.

Table 3: Annual catch estimates (mt) of primary species and effort estimate (hundred hooks) for PNG tuna longline fleet in PNG waters.

Year		2013	2014	2015	2016	2017 Provisional	Average
Effort (HHooks)		30,138	16,163	35,190	28,092	37,030	38,291
Tuna	Albacore	220	182	407	80	106	284
	Bigeye	4	9	83	86	114	50
	Skipjack	0	0	7	1	1	2
	Yellowfin	852	555	1,288	728	960	1,088
Billfish	Black Marlin	22	10	18	39	51	23
	Blue Marlin	69	35	25	44	58	58
	Striped Marlin	0	5	8	6	8	5
	Swordfish	35	19	4	6	7	25
Shark	Blue Shark			0	-	-	0
	Silky Shark			7	0	0	3
	Mako Shark			0	-	-	0
	Oceanic White Tip			1	-	-	1
	Thresher Shark				-	-	-
	Shark Unidentified	115	202	4	0	0	80
Other	Others	119	52	66	63	84	110
Total		1,438	1,069	1,919	1,055	1,390	1,727

Table 4: Number of PNG longline vessels by size category, active in the WCPFC Convention area for years 2013- 2017.

Size class (GRT)	2013	2014	2015	2016	2017
0–50	3	3	5	6	7
50–200	17	9	15	9	15
200–500	0	0	0	0	
500+	0	0	0	0	
Total	20	12	20	15	22

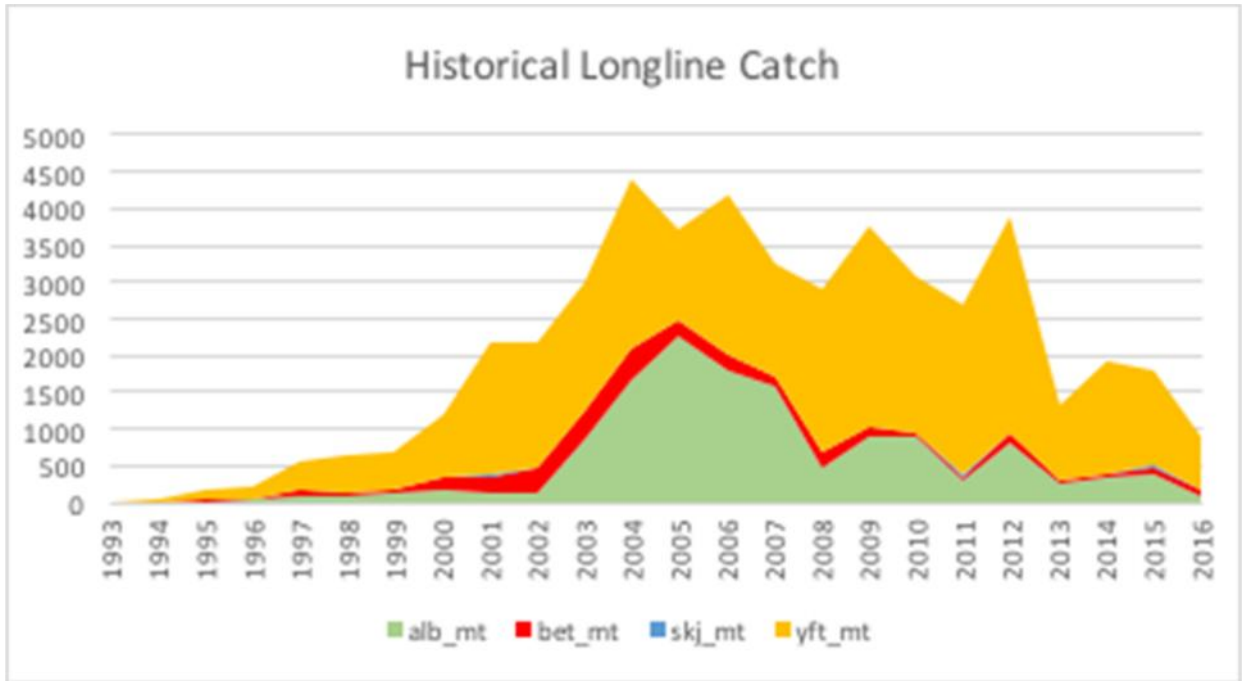


Figure 3: Historical annual catch for the PNG longline fleet by primary species in the WCPFC Convention area.

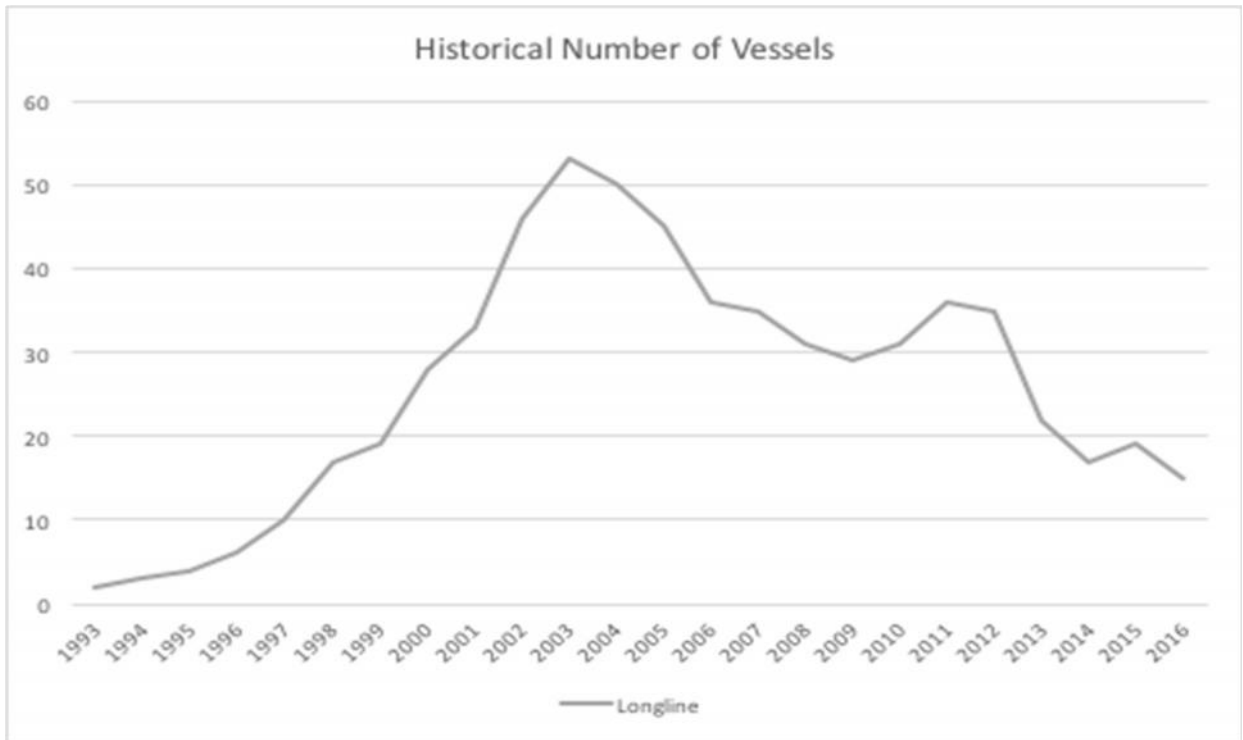


Figure 4: Historical annual vessel numbers for the PNG longline fleet in the WCPFC Convention area.

3. Coastal State Reporting

This section reports activities in national waters by foreign fleets which comprise of tuna purse seine vessels. Activities of a domestic shark longline and a very small handline fishery are also reported in this section since all their activities are inside PNG waters.

3.1 Purse Seine - Foreign Vessels

Foreign vessels that fish in PNG waters are mainly purse-seiners and are licensed under the conditions of access agreements between PNG and their company, fishing association or home party state and also include foreign vessels fishing under the terms of the US Treaty and FSM Arrangement. In the last five years, catches by foreign vessels fishing in PNG waters has averaged around 169,464 mt. Table 5 shows the annual catch and effort estimates for the years 2013-2017.

Table 5: Catch and effort estimates for foreign purse seiners fishing in PNG waters from 2013-2017.

Year	Fishing Days	Catch (mt) / Species				
		SKJ	YFT	BET	OTH	Total
2013	14,980	287,764	71,030	2,977	424	362,195
2014	8,907	134,352	51,033	2,292	434	188,112
2015	3,219	49,827	23,872	1,884	110	75,694
2016	3,201	75,173	26,840	1,436	6	103,455
2017	3,647	85,645	30,597	1,636	7	117,867
Average	6,791	126,552	40,671	2,045	196	169,464

3.2 Shark Longline

The shark longline fishery was managed under a separate management plan from the tuna longline fishery. The fishery was limited to 9 vessels, setting 1,200 hooks per day with a total allowable catch of 2,000 mt dressed weight per year. All vessels in this fishery fished only in PNG waters.

The shark fishery was closed in the first quarter of 2014. Figure 9 and 10 shows the recorded catch, number of vessels and effort (hundred hooks) since 2009. Considerable amount of tuna (mainly yellowfin) and billfishes are also caught in this fishery as bycatch. The average estimated catch in 2010-2015 was 1,344.26 mt with 1011.47 mt being shark catches alone (Table 6).

Table 6: Annual catch estimates (mt) of shark species and effort estimate (hundred hooks) for PNG domestic shark longline fleet in waters under national jurisdiction. Data source: NFA.

Year	2010	2011	2012	2013	2014	Average	
<i>Effort (HHooks)</i>	22,790	27,934	20,817	16,367	6,129	18,808	
Catch (mt)	Blacktip Shark	18.93	2.81	1.31	5.59	7.45	9.22
	Blacktipped Reef Shark	19.75	43.98	36.53	11.17	12.79	24.85
	Blue Shark	10.21	18.93	16.08	16.59	9.38	14.24
	Galapagos Shark	0.99	0.29	0.06	2.89	2.69	1.38
	Grey Reef Shark	23.87	8.42	2.59	4.68	2.10	8.33
	Hammerhead Shark	39.15	22.34	18.64	31.06	15.09	25.26
	Oceanic White Tip	12.90	7.15	3.74	7.42	7.66	7.77
	Silky Shark	907.26	1,292.90	902.46	796.12	399.27	859.60
	Silvertip Shark	6.37	0.45	0.39	0.38	0.30	1.58
	Tiger Shark	8.76	2.15	1.21	2.16	0.16	2.89
	Shark Unidentified	71.72	80.25	52.65	54.61	22.60	56.37
	SHARK TOTAL	1,119.90	1,479.66	1,045.64	932.65	479.48	1,011.47
	Albacore	1.46	7.32	9.68	1.37	0.23	4.01
	Bigeye	3.66	2.37	10.69	18.96	15.56	10.25
	Yellowfin	140.03	173.98	205.34	112.84	25.58	131.55
	Black Marlin	10.85	4.38	3.51	9.12	2.79	6.13
	Blue Marlin	53.92	113.04	65.63	64.83	16.32	62.75
	Sailfish	43.85	65.90	35.16	28.69	9.98	36.72
	Striped Marlin	0.99	1.23	1.69	1.13	0.65	1.14
	Swordfish	49.30	77.57	86.61	56.39	21.71	58.31
Other	36.75	21.79	20.53	26.37	4.28	21.94	
OVERALL TOTAL	1,460.72	1,947.22	1,484.46	1,252.35	576.57	1,344.26	

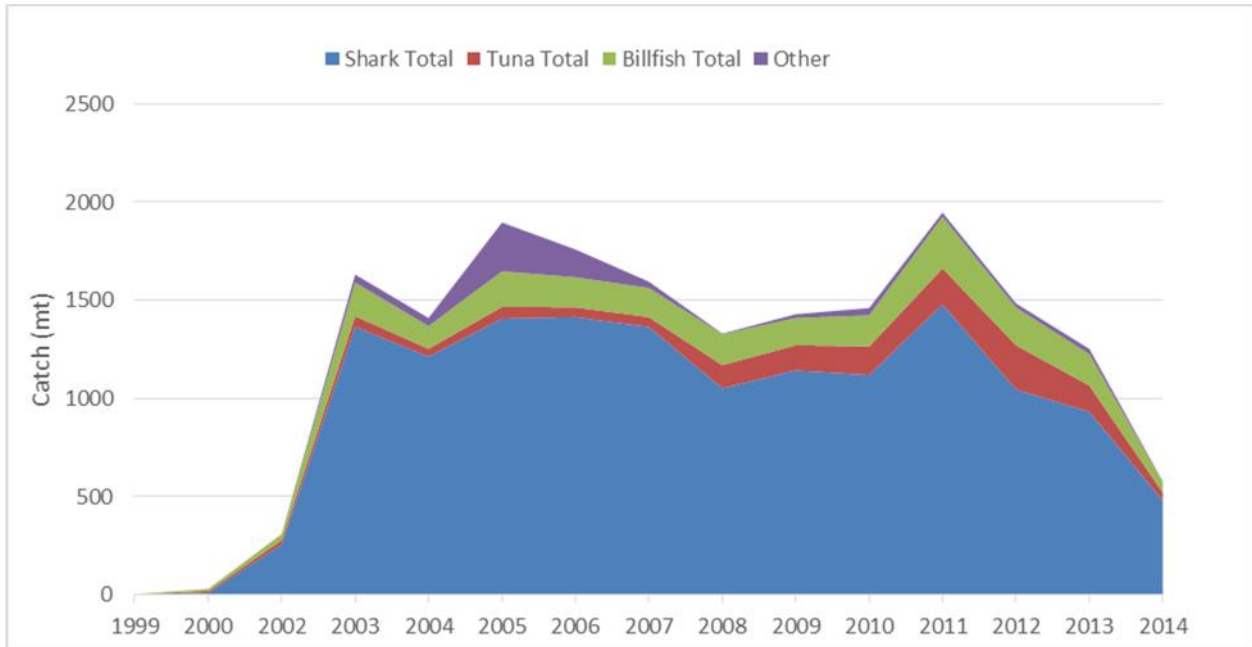


Figure 5: Catch estimate by shark longline vessels. Data source: NFA

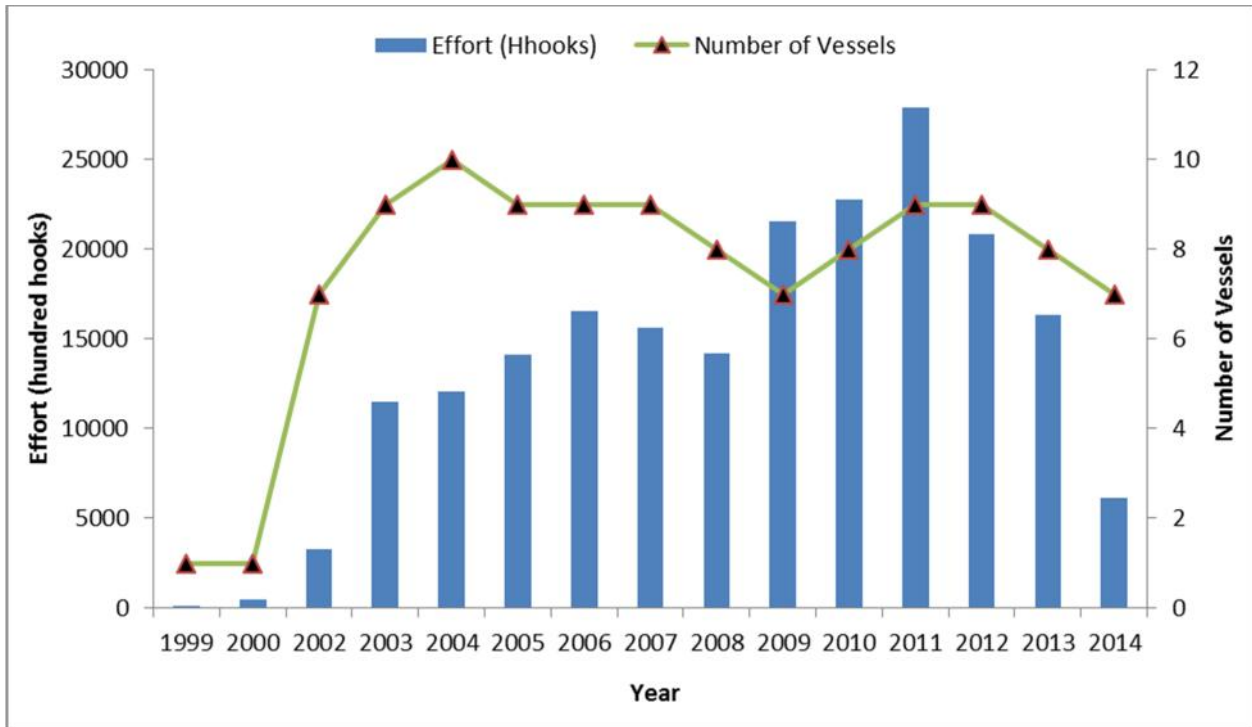


Figure 6: Effort estimates (hhooks) and the number of shark longline vessels. Data source: NFA

3.3 Handline

Since the trial of handline fishery in 2005, the number of pumpboats reduced from 10 to 5 vessels in 2009 (Kumoru, 2010). Although there is some growth potential for this fishery, most of the vessels failed to continue fishing mainly due to lack of proper business management, and the high operational cost for artisanal operators during its inception. Currently, the small handline fleet of about 5 vessels is operating in waters around Madang and Morobe provinces. The vessels are solely owned and operated by local fishermen. Catch by these vessels, which do not normally exceed 10 mt (estimate) per year, is sold to processing companies as well as local supermarkets.

4. Socio – Economic Factors

Papua New Guinea is focused on building its domestic tuna industry to an extent where the generated revenue can offset that currently obtained from bilateral access fees. The government's main objective is to maximize the benefits from tuna resource to citizens and promote the involvement of nationals in the industry. A growth in the industry would provide an increase in employment opportunities, increased foreign exchange earnings for the country and direct and indirect spin-off benefits among other benefits of value-adding the tuna resources. Currently, the industry supports almost 7,000 people in direct employment and almost 2,000 indirect employments in the country of over 6 million people. New commitments and investments would triple these figures.

5. Exports

The quantity of exports in the domestic industry have been steadily increasing since the 90's to over 100,000 mt of processed products in 2012 and 2013 (Figure 11). In relation, the value of exports have also been increasing to over USD270 million in 2012. The total value estimated in 2014 was around USD218 million. This growth is in line with the country's industry development aspirations. Analysis of export figures for the year 2015 was not ready at the time of writing this report.

Most of the export products are canned and frozen tuna (Figure 12). The quantity of canned tuna exports have been increasing with more fish processed onshore and the trend is likely to continue as more processing facilities are being developed in the country.



Figure 7: Quantity (mt) and value (USD) of processed tuna export products by domestic companies. Data source: NFA

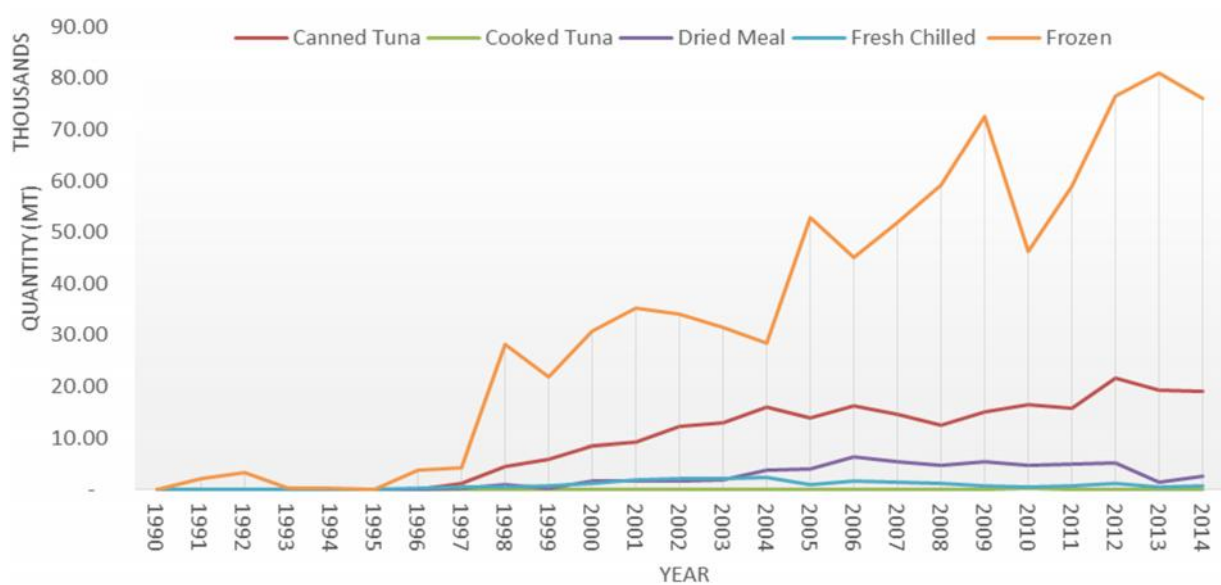


Figure 8: Quantity of exports by processed product type. Data source: NFA

6. References

Kumoru, L.2010. Annual Report to the Commission, Part 1: Information of Fisheries, Research and Statistics, WCPFC-SC6-AR/CCM18.

7. ADDENDUM – CMM REPORTING

Specific information as required by CMMs.

CMM Reference	Description	Response
CMM 2005-03 [North Pacific Albacore], Para 4	<p>All CCMs shall report annually to the WCPFC Commission all catches of albacore north of the equator and all fishing effort north of the equator in fisheries directed at albacore. The reports for both catch and fishing effort shall be made by gear type. Catches shall be reported in terms of weight. Fishing effort shall be reported in terms of the most relevant measures for a given gear type, including at a minimum for all gear types, the number of vessel-days fished.*</p> <p>[* footnote 1: The first such report shall be due on April 30th, 2006 and shall cover calendar year 2004. Small Island Developing States will make their best efforts to comply with this first reporting deadline.]</p> <p><i>* Note: WCPFC10 clarified that this reporting responsibility lies with the flag State</i></p>	<p>There were no catches and effort directed at Albacore north of the equator by PNG vessels in 2013, 2014, 2015, 2016 and 2017</p>
CMM 2006-04 [South West striped Marlin], Para 4	<p>In accordance with paragraph 1, CCMs shall provide information to the Commission, by 1 July 2007, on the number of their vessels that have fished for striped marlin in the Convention area south of 15°S, during the period 2000 – 2004, and in doing so, nominate the maximum number of vessels that shall continue to be permitted to fish for striped marlin in the area south of 15°S. CCMs shall report annually to the Commission the catch levels of their fishing vessels that have taken striped marlin as a bycatch as well as the number and catch levels of vessels fishing for striped marlin in the Convention Area south of 15°S.</p>	<p>Not applicable. There were no PNG vessels fishing south of 15°S.</p>
CMM 2009-03 [Swordfish], Para 8	<p>CCMs shall report to the Commission the total number of vessels that fished for swordfish and the total catch of swordfish for the following:</p> <p>a. vessels flying their flag anywhere in the Convention Area south of 20°S other than vessels operating under charter, lease or other similar mechanism as part of the domestic fishery of another CCM;</p>	<p>Not applicable. There were no PNG vessels fishing south of 20°S.</p>

CMM Reference	Description	Response
	<p>b. vessels operating under charter, lease or other similar mechanism as part of their domestic fishery south of 20°S; and c. any other vessels fishing within their waters south of 20°S.</p> <p>This information shall be provided in Part 1 of each CCM's annual report. Initially, this information will be provided in the template provided at Annex 2 for the period 2000-2009 and then updated annually.</p> <p>¹Reporting requirements requested by CMMs and decisions by the Commission, as of WCPFC 11</p> <p><i>*Note: WCPFC11 confirmed a common understanding that "total catch" in this reporting requirement refers to both targeted and bycatch catches of swordfish.</i></p>	
<p>CMM 2009-06 [Transshipment], Para 11 (ANNEX II)</p>	<p>CCMs shall report on all transshipment activities covered by this Measure (including transshipment activities that occur in ports or EEZs) as part of their Annual Report in accordance with the guidelines at Annex II. In doing so, CCMs shall take all reasonable steps to validate and where possible, correct information received from vessels undertaking transshipment using all available information such as catch and effort data, position data, observer reports and port monitoring data.</p> <p>ANNEX II TRANSHIPMENT INFORMATION TO BE REPORTED ANNUALLY BY CCMs</p> <p>Each CCM shall include in Part 1 of its Annual Report to the Commission:</p> <p>(1) the total quantities, by weight, of highly migratory fish stocks covered by this measure that were transhipped by fishing vessels the CCM is responsible for reporting against, with those quantities broken down by:</p> <p>a. offloaded and received;</p> <p>b. transhipped in port, transhipped at sea in areas of national jurisdiction, and</p> <p>transhipped beyond areas of national jurisdiction;</p>	<p>Refer to Table A1 for 2017 estimates for required information 1a, b, c, e, f, g and 2a, b, c, e, f, g. For required information 1d) and 2d), please see catch tables above.</p>

CMM Reference	Description	Response
	<p>c. transhipped inside the Convention Area and transshipped outside the Convention Area;</p> <p>d. caught inside the Convention Area and caught outside the Convention Area;</p> <p>e. species;</p> <p>f. product form; and</p> <p>g. fishing gear used</p> <p>(2) the number of transshipments involving highly migratory fish stocks covered by this measure by fishing vessels that is responsible for reporting against, broken down by:</p> <p>a. offloaded and received;</p> <p>b. transhipped in port, transhipped at sea in areas of national jurisdiction, and transhipped beyond areas of national jurisdiction;</p> <p>c. transhipped inside the Convention Area and transhipped outside the Convention Area;</p> <p>d. caught inside the Convention Area and caught outside the Convention Area; and</p> <p>e. fishing gear.</p>	
<p>CMM 2010-07 [Sharks], Para 4</p>	<p>Each CCM shall include key shark species*, as identified by the Scientific Committee, in their annual reporting to the Commission of annual catch and fishing effort statistics by gear type, including available historical data, in accordance with the WCPF Convention and agreed reporting procedures. ...</p> <p>*footnote 2: The key shark species are blue shark, silky shark, oceanic whitetip shark, mako sharks, and thresher sharks, porbeagle shark (south of 20°S, until biological data shows this or another geographic limit to be appropriate) and hammerhead sharks (winghead, scalloped, great, and smooth).</p> <p>*Note; Whale Sharks (<i>Rhincodon typus</i>) was included as a key shark species by WCPFC9 (2012)</p> <p>** Note also; para 4 is under the resolve part of the CMM <i>Commencing in reports that cover activities post-1 January 2013</i></p>	<p>Refer to Table A2 for 2017 estimates. Also refer to Section 2.2 of the report for catch estimates by LL gear.</p>

CMM Reference	Description	Response
CMM 2011-03 [Impact of PS fishing on cetaceans], Para 5	CCMs shall include in their Part 1 Annual Report any instances in which cetaceans have been encircled by the purse seine nets of their flagged vessels, reported under paragraph 2(b).	Refer to Table A3 for 2017 estimates.
CMM 2011-04 [Oceanic whitetip sharks], Para 3	CCMs shall estimate, through data collected from observer programs and other means, the number of releases of oceanic whitetip shark, including the status upon release (dead or alive), and report this information to the WCPFC in Part 1 of their Annual Reports. <i>Commencing in reports that cover activities post-1 January 2014</i>	Refer to Table A4 for 2014 - 2017 estimates.
CMM 2012-04 [Whale sharks], Para 06	CCMs shall advise in their Part 1 Annual Report of any instances in which whale sharks have been encircled by the purse seine nets of their flagged vessels, including details required under paragraph 4(b). <i>Commencing in reports that cover activities post-1 July 2014</i>	Refer to Table A5 for 2014 and 2017 estimates.
CMM 2013-08 [Silky sharks], Para 3	CCMs shall estimate, through data collected from observer programs and other means, the number of releases of silky shark caught in the Convention Area, including the status upon release (dead or alive), and report this information to the WCPFC in Part 1 of their Annual Reports.	Refer to Table A6 for 2017 estimates.
Observer coverage (WCPFC 11 decision – para 484(b))	CCMs are expected to include in Annual Report Part 1 their reported longline observer coverage for the 2014 calendar year.	No ROP trips in 2017.
CMM 2015-02 [South Pacific albacore], Para 4	CCMs shall report annually to the Commission the annual catch levels taken by each of their fishing vessels that has taken South Pacific albacore, as well as the number of vessels actively fishing for South Pacific albacore, in the Convention area south of 20°S. Catch by vessel	Not applicable. There were no PNG vessels fishing south of 20°S during the period 2006-

CMM Reference	Description	Response
	shall be reported according to the following species groups: albacore tuna, bigeye tuna, yellowfin tuna, swordfish, other billfish, and sharks. Initially this information will be provided for the period 2006-2014 and then updated annually. CCMs are encouraged to provide data from periods prior to these dates.	2010 and years after this period till current.
CMM 2017-06 [Seabirds] Para 9	CCMs shall annually provide to the Commission, in Part 1 of their annual reports, all available information on interactions with seabirds reported or collected by observers to enable the estimation of seabird mortality in all fisheries to which the Convention applies. (see Annex 2 for Part 1 reporting template guideline). These reports shall include information on: 1. the proportion of observed effort with specific mitigation measures used; and 2. observed and reported species specific seabird bycatch rates and numbers or statistically rigorous estimates of species- specific seabird interaction rates (for longline, interactions per 1,000 hooks) and total numbers.	Refer to Table A7 for 2017 estimates. No observer trip on PNG Longline flag vessels in 2017.

Table A1: Estimates for transshipment and landings by the National Fleet in 2017.

Activity	Areas	Gear	Number of Activity	BET (MT)			SKJ (MT)			YFT (MT)			ALB (MT)			Total (MT)			
				Frozen	Fresh	Other	Frozen	Fresh	Other	Frozen	Fresh	Other	Frozen	Fresh	Other	Frozen	Fresh	Other	
<i>Offloaded and received</i>	<i>PG</i>	<i>PS</i>	216	376	-	-	20,772	-	-	12,876	-	-				34,024	-	-	
		<i>LL</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Transhipped in Port</i>	<i>PG</i>	<i>PS</i>	796	3,356	-	-	47,220	-	-	60,666	-	-	-	-	-	111,242	-	-	
		<i>LL</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	<i>Other Ports in the Convention Area</i>	<i>PS</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		<i>LL</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	<i>Ports Outside Convention Area</i>	<i>PS</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		<i>LL</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Transhipped at Sea</i>	<i>PG</i>	<i>PS</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		<i>LL</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	<i>Other areas in the convention area</i>	<i>PS</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		<i>LL</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	<i>Outside Convention Area</i>	<i>PS</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		<i>LL</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A2. Estimates of sharks catches by gear and species in 2017.

Gear	Species	Number	Retained	Discarded	Finned and trunk Retained	Finned but Trunk Discarded
Purse Seine	BIGEYE THRESHER SHARK	2	0	2	0	0
Purse Seine	BLACKTIP REEF SHARK	1	0	1	0	0
Purse Seine	BLACKTIP SHARK	378	0	378	0	0
Purse Seine	BRONZE WHALER SHARK	33	0	33	0	0
Purse Seine	BULL SHARK	3	0	1	0	0
Purse Seine	Devil Manta Ray (Mobula nei)	90	0	90	0	0
Purse Seine	Giant manta	114	1	113	0	0
Purse Seine	GREAT HAMMERHEAD	1	0	0	0	0
Purse Seine	GREAT WHITE SHARK	2	0	2	0	0
Purse Seine	GREY REEF SHARK	1	0	1	0	0
Purse Seine	MANTA RAYS (UNIDENTIFIED)	6	0	6	0	0
Purse Seine	OCEANIC WHITE-TIP SHARK	12	0	12	0	0
Purse Seine	PELAGIC STING-RAY	7	0	7	0	0
Purse Seine	PELAGIC THRESHER SHARK	2	0	2	0	0
Purse Seine	SCALLOPED HAMMERHEAD	4	0	4	0	0
Purse Seine	SILKY SHARK	6266	0	6266	0	0
Purse Seine	WHALE SHARK	36	0	36	0	0

Table A3. Estimates of number of cetacean interactions with purse seine gear in 2017 from observer data.

Gear	Flag	Species	Date	Latitude	Longitude	EEZ	FATE	Type	# of Individuals
Purse seine	PG	BEAKED WHALE NEI	10-01-17	0402.015S	14912.822E	PG	DPA	INTERACTION	1
Purse seine	PG	BOTTLENOSE DOLPHIN	26-02-17	0428.340S	14627.442E	PG	DPA	INTERACTION	5
Purse seine	PG	BOTTLENOSE DOLPHIN	26-02-17	0428.340S	14627.442E	PG	DPA	INTERACTION	1

Purse seine	PG	BOTTLENOSE DOLPHIN	26-02-17	0428.340S	14627.442E	PG	DPD	INTERACTION	5
Purse seine	PG	BOTTLENOSE DOLPHIN	26-02-17	0428.340S	14627.442E	PG	DPD	INTERACTION	1
Purse seine	PG	BOTTLENOSE DOLPHIN	26-02-17	0428.340S	14627.442E	PG	DPD	LANDED	1
Purse seine	PG	BOTTLENOSE DOLPHIN	28-01-17	0410.122S	14956.327E	PG	DPA	INTERACTION	4
Purse seine	PG	BOTTLENOSE DOLPHIN	28-01-17	0410.122S	14956.327E	PG	DPU	LANDED	1
Purse seine	PG	BRIDE'S WHALE	11-01-17	0433.314S	14946.344E	PG	DPA	INTERACTION	1
Purse seine	PG	BRIDE'S WHALE	11-01-17	0434.028S	15550.765E	PG	DPA	INTERACTION	3
Purse seine	PG	BRIDE'S WHALE	12-01-17	0421.671S	15103.313E	PG	DPA	INTERACTION	4
Purse seine	PG	BRIDE'S WHALE	14-01-17	0427.846S	15558.144E	PG	DPU	INTERACTION	3
Purse seine	PG	BRIDE'S WHALE	16-09-17	0145.749S	17828.902E	GL	DPA	INTERACTION	1
Purse seine	PG	COMMON DOLPHIN	20-01-17	0119.531N	16414.258E	NR	DPD	LANDED	8
Purse seine	PG	FALSE KILLER WHALE	01-03-17	0146.652S	15759.941E	PG	DPA	INTERACTION	6
Purse seine	PG	FALSE KILLER WHALE	03-01-17	0223.278S	16109.573E	PG	DPA	INTERACTION	12
Purse seine	PG	FALSE KILLER WHALE	05-01-17	0205.161S	15446.326E	PG	DPA	INTERACTION	8
Purse seine	PG	FALSE KILLER WHALE	05-01-17	0315.584S	16922.514E	KI	DPA	INTERACTION	2
Purse seine	PG	FALSE KILLER WHALE	05-03-17	0008.945S	15051.824E	PG	DPA	INTERACTION	2
Purse seine	PG	FALSE KILLER WHALE	06-02-17	0412.270S	14929.628E	PG	DPA	INTERACTION	1
Purse seine	PG	FALSE KILLER WHALE	06-03-17	0734.359S	15226.606E	PG	DPD	LANDED	11
Purse seine	PG	FALSE KILLER WHALE	08-07-17	0318.654S	16834.110E	GL	DPA	LANDED	10
Purse seine	PG	FALSE KILLER WHALE	09-01-17	0626.733S	15055.888E	PG	DPA	INTERACTION	1
Purse seine	PG	FALSE KILLER WHALE	11-01-17	0145.695S	16042.534E	PG	DPA	INTERACTION	5
Purse seine	PG	FALSE KILLER WHALE	11-05-17	0107.878S	14832.230E	PG	DPA	INTERACTION	10
Purse seine	PG	FALSE KILLER WHALE	12-06-17	0029.755N	15720.613E	FM	DPA	INTERACTION	1
Purse seine	PG	FALSE KILLER WHALE	15-01-17	0436.800S	14952.576E	PG	DPA	INTERACTION	20
Purse seine	PG	FALSE KILLER WHALE	19-01-17	0631.934S	15120.963E	PG	DPA	INTERACTION	1
Purse seine	PG	FALSE KILLER WHALE	21-01-17	0715.631S	15353.324E	PG	DPA	INTERACTION	1
Purse seine	PG	FALSE KILLER WHALE	22-02-17	0009.371S	14651.420E	PG	DPA	INTERACTION	2
Purse seine	PG	FALSE KILLER WHALE	22-02-17	0010.637S	14651.069E	PG	DPA	INTERACTION	2
Purse seine	PG	FALSE KILLER WHALE	22-02-17	0013.083S	14654.877E	PG	DPA	INTERACTION	2
Purse seine	PG	FALSE KILLER WHALE	23-02-17	0026.972N	14646.507E	PG	DPA	INTERACTION	3

Purse seine	PG	FALSE KILLER WHALE	24-02-17	0050.312N	14641.888E	PG	DPA	INTERACTION	3
Purse seine	PG	FALSE KILLER WHALE	24-03-17	0325.301S	15844.794E	PG	DPA	INTERACTION	8
Purse seine	PG	FALSE KILLER WHALE	26-04-17	0140.814S	15143.399E	PG	DPA	INTERACTION	5
Purse seine	PG	FALSE KILLER WHALE	29-04-17	0221.104S	14452.286E	PG	DPA	INTERACTION	1
Purse seine	PG	GINKGO-TOOTHED BEAKED WHALE	03-01-17	0314.457S	14901.491E	PG	DPA	INTERACTION	1
Purse seine	PG	INDO-PACIFIC BOTTLENOSE DOLPHIN	20-01-17	0309.708S	14525.798E	PG	DPD	INTERACTION	17
Purse seine	PG	LONG-BEAKED COMMON DOLPHIN	24-01-17	0326.583S	14914.970E	PG	DPA	INTERACTION	7
Purse seine	PG	Melon-headed whale	02-01-17	0255.961S	14917.876E	PG	DPA	INTERACTION	6
Purse seine	PG	Melon-headed whale	16-02-17	0216.782S	14502.278E	PG	DPA	INTERACTION	4
Purse seine	PG	RISSO'S DOLPHIN	03-07-17	0417.371S	14850.249E	PG	DPD	LANDED	2
Purse seine	PG	RISSO'S DOLPHIN	03-07-17	0417.371S	14850.249E	PG	DPU	INTERACTION	3
Purse seine	PG	RISSO'S DOLPHIN	09-04-17	0718.752S	14945.166E	PG	DPA	INTERACTION	1
Purse seine	PG	RISSO'S DOLPHIN	09-04-17	0718.752S	14945.166E	PG	DPA	INTERACTION	6
Purse seine	PG	RISSO'S DOLPHIN	09-04-17	0718.752S	14945.166E	PG	DPD	INTERACTION	1
Purse seine	PG	RISSO'S DOLPHIN	09-04-17	0718.752S	14945.166E	PG	DPD	INTERACTION	6
Purse seine	PG	RISSO'S DOLPHIN	21-06-17	0226.324S	14222.286E	PG	DPA	INTERACTION	6
Purse seine	PG	Rough-toothed dolphin	04-02-17	0339.595S	14849.519E	PG	DPD	LANDED	2
Purse seine	PG	Rough-toothed dolphin	07-01-17	0344.261S	14909.854E	PG	DPD	LANDED	1
Purse seine	PG	Sei whale	01-06-17	0150.345S	15547.574E	PG	DPA	INTERACTION	1
Purse seine	PG	Sei whale	01-06-17	0151.395S	15556.088E	PG	DPA	INTERACTION	1
Purse seine	PG	Sei whale	08-05-17	0515.394N	16556.611E	MH	DPA	INTERACTION	2
Purse seine	PG	Sei whale	08-05-17	0517.027N	16556.060E	MH	DPA	INTERACTION	3
Purse seine	PG	Sei whale	08-06-17	0023.828S	15424.263E	FM	DPA	INTERACTION	1
Purse seine	PG	SHORT-FINNED PILOT WHALE	06-10-17	0443.312N	14951.671E	FM	DPA	INTERACTION	4
Purse seine	PG	SPINNER DOLPHIN	04-02-17	0339.595S	14849.519E	PG	DPD	LANDED	1

Table A4: Estimates of the number of Oceanic White Tip Shark released dead or alive by gear type in 2017.

gear	flag	species	date	latitude	longitude	EEZ	FATE	Caught condition	Discard condition	# of Individuals
S	PG	OCEANIC WHITE-TIP SHARK	01-07-17	0246.639S	17346.534E	GL	DPA	A1	A1	1
S	PG	OCEANIC WHITE-TIP SHARK	03-04-17	0018.745S	15706.760E	FM	DPA	A2	A2	1
S	PG	OCEANIC WHITE-TIP SHARK	03-04-17	0018.745S	15706.760E	FM	DPU	U	U	1
S	PG	OCEANIC WHITE-TIP SHARK	06-06-17	0033.61N	15648.400E	FM	DPA	A2	A2	1
S	PG	OCEANIC WHITE-TIP SHARK	11-04-17	0203.934N	15340.061E	FM	DPD	U	D	1
S	PG	OCEANIC WHITE-TIP SHARK	13-03-17	0108.210N	16412.525E	NR	DPA	A0	A0	1
S	PG	OCEANIC WHITE-TIP SHARK	15-01-17	0459.700N	17053.575E	MH	DPA	A5	A3	1
S	PG	OCEANIC WHITE-TIP SHARK	17-01-17	0432.801N	16808.671E	MH	DPA	A2	A0	1
S	PG	OCEANIC WHITE-TIP SHARK	19-01-17	0031.629N	16847.151E	KI	DPA	A2	A0	1
S	PG	OCEANIC WHITE-TIP SHARK	19-03-17	0239.776N	15740.774E	FM	DPS	A2	A2	1
S	PG	OCEANIC WHITE-TIP SHARK	21-04-17	0009.500N	15132.845E	PG	DPD	A2	D	1
S	PG	OCEANIC WHITE-TIP SHARK	27-05-17	0204.621S	15813.522E	PG	DPD	D	D	1

Table A5: Number of instances of Whale Shark interaction with purse seine gear in 2017 by PNG flagged vessels.

Date	Latitude	Longitude	EEZ	FATE	Type	# of Individuals	Metric tons	Est
26-01-17	0745.203S	14935.170E	PG	DPA	LANDED	1	2.2	1
26-01-17	0040.280S	14642.230E	PG	DPA	LANDED	1	3	1
08-08-17	0024.888S	16614.004E	NR	DPA	INTERACTION	1	0	1
20-01-17	0630.974S	15128.051E	PG	DPA	INTERACTION	1	0	1
07-01-17	0006.552N	16548.668E	NR	DPU	INTERACTION	1	0	1
18-01-17	0644.707S	15137.269E	PG	DPA	INTERACTION	1	0	1

19-01-17	0635.849S	15136.085E	PG	DPA	INTERACTION	1	0	1
26-01-17	0041.543S	14636.816E	PG	DPA	INTERACTION	1	0	1
27-01-17	0412.146S	14951.990E	PG	DPA	LANDED	1	0.25	1
21-02-17	0006.527S	14647.727E	PG	DPA	INTERACTION	1	0	1
25-02-17	0112.095N	14618.881E	PG	DPA	INTERACTION	2	0	2
10-03-17	0732.299S	15319.170E	PG	DPA	LANDED	1	5	1
10-03-17	0732.299S	15319.170E	PG	DPA	INTERACTION	1	0	1
03-03-17	0637.817S	15027.343E	PG	DPA	INTERACTION	1	0	1
08-04-17	0138.065N	14930.161E	PG	DPA	INTERACTION	1	0	1
08-04-17	0138.065N	14930.161E	PG	DPA	INTERACTION	1	0	1
08-04-17	0138.065N	14930.161E	PG	DPU	INTERACTION	1	0	1
08-04-17	0138.065N	14930.161E	PG	DPU	INTERACTION	1	0	1
18-05-17	0001.470N	15343.050E	FM	DPA	INTERACTION	1	0	1
09-07-17	0227.140S	17131.230E	KI	DPA	INTERACTION	1	0	1
13-07-17	0221.210S	17147.450E	KI	DPA	INTERACTION	1	0	1
28-02-17	0144.779S	15833.507E	PG	DPA	INTERACTION	1	0	1
27-02-17	0207.673S	16007.184E	PG	DPA	LANDED	1	0.06	1
23-05-17	0348.408N	16815.650E	MH	DPA	LANDED	1	0.2	1
03-06-17	0112.147N	15720.188E	FM	DPA	INTERACTION	1	0	1
10-05-17	0709.471S	16745.810E	SB	DPA	LANDED	1	0	1
15-01-17	0619.426S	15108.358E	PG	DPU	LANDED	1	0.2	1
15-01-17	0619.426S	15108.358E	PG	DPA	INTERACTION	1	0	1
16-02-17	0103.926S	14758.090E	PG	DPA	INTERACTION	1	0	1
16-02-17	0103.926S	14758.090E	PG	DPA	INTERACTION	1	0	1
21-02-17	0048.082S	14655.358E	PG	DPA	INTERACTION	1	1	1
22-02-17	0045.108S	14658.002E	PG	DPA	INTERACTION	1	0	1
22-02-17	0045.108S	14658.002E	PG	DPA	INTERACTION	2	0	2
01-08-17	0253.888S	14349.944E	PG	DPA	LANDED	1	0	1

Table A6: Estimates of the number of Silky Sharks released by gear in 2014-2017

Year	Gear	Alive	Dead	Unknown	Total
2014	LL	180	108	12	300
2014	PS	41	3957	17	4015
2015	PS	2241	2998	177	5416
2016	PS	1717	5620	0	7337
2017	PS	234	449	55	738

Table A7: Estimates of the number of sea bird interaction by the PNG vessels in 2017.

Species	Date	Time	Latitude	EEZ	FATE	# of individuals	Alive	Dead	Unknown	Sighted
GULLS - TERNS AND SKUAS	12-02-17	-	< 23N > 30S	PG	-	37				37
BOOBIES AND GANNETS	06-03-17	-	< 23N > 30S	PG	-	5				5