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COOK ISLANDS



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COOK ISLANDS

Annual Fisheries Report - 2019

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1. Abstract

The 2018 Cook Islands National fleet consisted of thirty three longline and eight bunker vessels operating within the WCPF Convention Area, south of the equator. Overall fishing effort in number of hooks increased by 13% from 2017, however the total catch of primary species¹ (4050 t) noted a 7% increase with 2017 catch levels (3,752t). albacore accounted for 79% (3,075t) of the total longline catch within the Convention Area, followed by yellowfin tuna at 14% (531t) and bigeye at 5% (195t). All National Fleet longline catch is based of nominal catch and effort, noting 100% logsheet coverage was achieved in 2018.

No vessels target marlin species and all catches were taken as bycatch in the albacore longline fishery. Of the billfish catches, blue marlin was the highest 108t, followed by swordfish with a reported catch of 41t.

Artisanal fishers reported 96.4t of catch which spans across all 12 inhabited islands of the Cook Islands. Yellowfin tuna is the dominant catch and caught predominantly by trolling, handlining and spearfishing. Artisanal fishery data is not raised and is based on nominal data for the months Jan-Dec 2018.

In 2018 the Cook Islands authorised 50 purse seine fishing vessels to fish in its EEZ, 16 Korean purse seine vessels, 6 Kiribati, 2 Vanuatu, 2 Nauru, 2 Spanish and 1 Marshall Islands flagged vessel 1 Tuvaluan flagged vessel, in addition to the US multilateral Treaty vessels. The total purse seine catch estimate in the Cook Islands EEZ was 34, 400t. The Cook Islands has a purse seine limit for its EEZ of 1,250 days.

The retention of any shark or shark part within the Cook Islands EEZ is prohibited, and shark retention is prohibited for flagged vessels fishing in areas beyond national jurisdiction.

¹ Primary species for longline gear is albacore, yellowfin, bigeye and skipjack tuna, black marlin, blue marlin, striped marlin and

2. Background

In 2018, the Cook Islands national tuna fishing fleet consisted of longline fishing vessels targeting tuna and tuna-like species. Additionally there was an important artisanal fishery operating out of each of the twelve inhabited islands. In December 2016 a new longline regulation for a quota system (QMS) was promulgated. Under the QMS, purchased quota is reported on a weekly basis, with daily reporting when 80% of quota allocation is reached. A total allowable commercial catch (TACC) of 9,750 tonnes of albacore tuna and 3,500 tonnes of bigeye tuna has been set for commercial longline vessels. Of this, only 80% has been allocated to sell as quota in any given calendar year. The QMS was operationalised in January 2017.

The majority of the longline fishing activity is concentrated in the northern Cook Islands waters, delineated north of 15 degrees south latitude. Some longline fishing by Cook Islands vessels also takes place in areas beyond national jurisdiction within the WCPF Convention Area. Historically purse seine fishing has been conducted in the Cook Islands EEZ by US Treaty vessels only.

Albacore tuna is the main target species for Cook Island flagged longline vessels fishing in the Convention Area.

Two small locally based vessels operated out of Rarotonga in 2018 and targeted fish mainly for the local market, with some exports to Japan. These vessels are below 80t GRT and typically operate between 50nm and 100nm of Rarotonga.

The other Cook Islands flagged vessels are based out of the foreign ports of Suva, Pago Pago and Apia with most of the unloading taking place in Apia, Samoa.

3. FLAG STATE REPORTING

3.1 Catch and Effort Trends

Total longline effort in the WCPF Convention Area is approximately 5 million hooks (Table 1a), with approximately 3.7 million hooks of effort attributed to the CK EEZ (Table 1b). In 2018 the total Cook Islands catch of tuna and billfish within the Convention Area increased over the last five years and remains above the 2014-2017 catch levels by over 1500t (Figure 1). In 2018 the bulk of Cook Islands catch was taken within national jurisdiction, accounting for 75% of the total effort and 70% of the total catch (Table 1b).

In 2018, 18 vessels were placed under a charter agreement that allowed these vessels to fish within national jurisdiction with the corresponding catch and effort attributed to the Cook Islands domestic annual statistics in accordance with CMM [charter notification scheme]. Charter vessels contributed over 2,500t of catch which 51% of the total catch for the Cook Islands fleet.

albacore remained the primary catch species within the WCPF-Convention Area, comprising 71% of the total 2018 catch, and indicating a stable catch level of albacore catch composition from 2017. yellowfin tuna catch composition in 2018 accounted for 15% of total catch similar to 2017, while bigeye catch decreased to 5% of the total Cook Islands catch compared to 2017 levels.

The Cook Islands artisanal fleet operates out of each inhabited island. Yellowfin tuna is the main pelagic target species of the artisanal fishery with more than 87t of yellowfin tuna caught in 2018 (Table 1b). Trolling, handlining, and spearfishing are the most common fishing methods used by artisanal fishers. Artisanal catch reporting is not regulated, however in June 2017, the Ministry of Marine Resources (MMR) announced a fuel subsidy program for small scale artisanal fisherman. The rationale for this subsidy is the increasing costs of fishing reported by artisanal fisherman via island fishing associations, and its impacts on food security and livelihoods. The subsidy is partially funded by the Government of the Cook Islands and the European Union through the Sustainable Fisheries Partnership Agreement (SFPA) fund. While logsheet data collection has improved, more work is needed to improve logsheet submissions to MMR. Due to the geographic isolation of some islands, particularly in the northern group of the Cook Islands, the transportation of logsheets to Rarotonga for processing into the artisanal database is logistically difficult. There are data gaps which hinders the understanding of artisanal fisheries fishing effort, and therefore coverage. Such information is vital to establish catch, catch-effort and means to determine fuel subsidy allocations submitted to MMR. The MMR anticipates improved coverage in artisanal data collections with the introduction of E-Reporting initiatives such as the Pacific Community (SPC) Tails application, which provides direct reporting of artisanal catch data to the database from mobile devices, even with limited internet connectivity.

 Table 1a. Annual catch estimates in metric tonnes for the National Fleet by gear and primary species within and beyond national jurisdiction in 2018. Operational logsheet data is raised using VMS data.

Area	Gear	Effort	ALB	BET	YFT	SKJ	PBF	BLM	BUM	MLS	SWO
CK EEZ	LL	37,670 Hhks	2089.4	129.8	525.6	37	0	11.6	86.6	8.3	31.7
Beyond CK EEZ	LL	12,540 Hhks	986	65.5	136.1	136.1	0	5	21.3	1	9.2



Figure 1. Historical total annual catch estimates for the National Longline Fleet for the WCPF Convention Area, 2014 – 2018.

Year	Gear	Effort	ALB	BET	YFT	SKJ	PBF	BLM	BUM	MLS	SWO
	LL	90,472 Hhks	1,186.0	184.0	504.0	137.0	0.0	11.0	30.0	19.0	14.0
2014	Troll	9,200 Hk Hrs	21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Artisanal	32,349 Hrs	2.5	0.3	116.1	15.7	0.0	0.2	6.9	0.0	0.1
2015	LL	64,152 Hhks	1,167.0	151.0	339.0	86.0	0.0	15.0	36.0	19.0	18.0
2013	Artisanal	18,713 Hrs	1.3	0.3	92.2	11.3	0.0	0.0	0.8	0.0	0.0
2016	LL	110,645 Hhks	1,265.0	183.0	314.0	37.0	1.0	16.0	43.0	19.0	23.0
2010	Artisanal	14, 965 Hrs	6.8	0.1	76.8	6.8	0.0	0.0	0.4	0.1	0.1
2017	LL	43,605 Hhks	2,567.0	298.0	608.0	67.0	2.0	41.0	89.0	24.0	56.0
2017	Artisanal	17,302 Hrs	0.3	0.1	92.1	4.2	0.0	0.1	2.7	1.0	0.0
2018	LL	50,210Hhks	3,075.0	195.0	531.0	75.0	0.0	16.0	108.0	9.0	41.0
2010	Artisanal	19,393 Hrs	0.6	0.6	87.1	5.4	0.0	0.6	2.0	0.2	0.0

Table 1b. Annual catch in metric tonnes and effort estimates for the <u>National Fleet</u> by gear and primary species in the <u>WCPF Convention Area</u>, 2014 – 2018. Longline catch estimates are raised using VMS data and nominal artisanal catches are unraised from southern group catch estimates for 2018.

 Table 2. Annual catch estimates in metric tonnes for the National Fleet in the WCPF Convention

 Area for non-target and by-catch species (including key shark species²) for 2017. Nominal artisanal catches are not raised. No key shark species were retained.

Gear	SSP	SFA	DOL	LAG	OIL	WAH
LL	11.2	10.8	18	0.2	38.4	70
Artisanal	0	0.1	2.5	0	1.2	11

² Key species include BSH, FAL, OCS, MAK, THR, SPZ, and RHN. Shark species are recorded by catch numbers

Area	Year	ALB	BET	YFT	SKJ	PBF	BUM	BLM	MLS	SWO
	2014	1,186.20	184.15	504.95	137.90	0.37	30.93	11.33	19.55	14.91
1. WCPF	2015	1,167	151	339	86	0	15	36	19	18
Convention	2016	962	123	229	31	1	22	14	16	17
	2017	2281	201	467	56	1	62	33	18	39
	2018	1635	163	319	44	1	43	18	9	26
2. WCPF	2014	1,186.20	184.15	504.95	137.90	0.37	30.93	11.33	19.55	14.91
Convention	2015	1,167	151	339	86	0	15	36	19	18
Area (Sth of	2016	961	112	224	31	1	19	21	16	16
Equator)	2017	1868	156	439	50	1	58	28	16	34
	2018	3073	179	521	75	0.4	105	16	9	40
	2014	-	-	-	-	-	-	-	-	-
3. WCPF	2015	-	-	-	-	-	-	-	-	-
Convention Area (Nth of	2016	0.3	10.5	3.9	0.1	0	1.2	0	0.1	0.3
Equator)	2017	3	22	13	0.9	0	3	0	0	0.2
	2018	1.5	16	10	0.2	0	2.3	0	0	0.2
	2014	1,186.20	184.15	504.95	137.90	0.37	30.93	11.33	19.55	14.91
4. WCPO	2015	1,167	151	339	86	0	15	36	19	18
Area	2016	962	123	229	31	1	22	14	16	17
	2017	1807	173	449	50	1	61	28	16	33
	2018	3075	195	531	75	0.4	108	16	9	41
	2014	-	-	-	-	-	-	-	-	-
5. North	2015	-	-	-	-	-	-	-	-	-
Pacific	2016	0.3	10.5	3.9	0.1	0	1.2	0	0.1	0.3
Ocean	2017	3.7	22	13	0.8	0	3.8	0	0	0.2
	2018	1.5	16	10	0.2	0	2.4	0	0	0.2
			400.00		407 65					
6. South	2014	1,186.20	184.15	504.95	137.90	0.37	30.93	11.33	19.55	14.91
Pacific	2015 2016	1,167 2103	151 294	339 544	86 46	0.3	15 99	36 14	19 17	18 42
Ocean	2016	2103	178	453	40 55	1.7	58	33	17	39
	2017	3073	170	521	75	0.4	105	16	9	41

Table 1c. Annual un-raised catch estimates in metric tonnes for the <u>National Longline Fleet</u>, by primary species and broad ocean area for 2018.

3.2 Catch and Effort Spatial Distribution

In 2018, around 75% of all Cook Islands longline fishing effort took place within the Cook Islands EEZ, indicating a decrease to in-zone effort of 5% when compared to 2017. In zone effort is quite distinct between the northern and southern fisheries delineated at 15°S. There is a prominent band of fishing effort from the northwest and central northern regions of the EEZ with increased yellowfin and albacore catch west of Pukapuka Island. This pattern is typically attributed to the fact that most Cook Islands vessels operate out of the Pago Pago, American Samoa and Apia, Samoa conducting shorter, more frequent trips to the Cook Islands EEZ and not travelling very far into the zone. Approximately 14% of the total national catch was caught within the north western sector of the EEZ which borders American Samoa's EEZ. Approximately 10% of Cook Islands catch was taken in the EEZ of Niue and 9% in the Samoa EEZ. The relatively small amount of effort not far from Rarotonga is ascribed to the small domestic fleet that operates out of Avatiu (Figure 3a).

In July 2017, the Cook Islands government enacted the 2017 Marae Moana Act, which set a 50 nautical mile (nm) commercial exclusion zone around all islands in the Cook Islands. The intent of Marae Moana is to protect and conserve the ecological, biodiversity and heritage values of the Cook Islands marine environment. Marae Moana is designed as a multi-use marine protected area extending over the entire Exclusive Economic Zone of the Cook Islands. Longlining and purse seine activity were prohibited within 50nm around all islands, by an effective date of 9th July 2018.

2018 annual catch and effort distribution (Figure 3a) indicated an increase of effort by national fleet authorised to fish outside the CK EEZ, compared to spatial trends in previous years. Figure 3a also shows a significant amount of fishing effort in the EEZ's of Samoa and American Samoa. Albacore continues to dominate the national longline fishery, with yellowfin and bigeye tuna being important secondary target species. The bulk of the catch is taken in the northern Cook Islands.



Figure 3a. Catch distribution (5 x 5) of key tuna species for the National Longline Fleet within the WCPFC-CA 2018.

Figure 3b. Catch distribution (5 x 5) of key tuna species for the National Longline Fleet within the WCPFC-CA 2017.



Figure 3c. Catch distribution (5 x 5) of key tuna species for the National Longline Fleet within the WCPFC-CA 2016.

3.3 Licencing and Fleet Structure

Since January 2017 the Cook Islands commercial longline fishery has been managed with a quota based management system, which removes the vessel cap limits previously in place. In 2018, the Cook Islands National fleet consisted of thirty three longline vessels and eight bunker vessels operating within the WCPF-Convention Area. Of these, twenty one vessels including chartered vessels were licenced to fish within national jurisdiction only. Five vessels were licensed to fish in the Cook Islands EEZ and on the High Seas. Seven vessels were authorised to fish on the High Seas only.

The Majority of licensed commercial vessels were between 51 and 200 GRT (Table 3). All vessels licenced to fish in the Cook Islands EEZ were prohibited to fish within 50nm of all islands. Purse seine vessels were also prohibited to fish within 50nm of all islands. This exclusion zone is in line with the Marae Moana Act as operationalized in 2018. An estimated 250 artisanal vessels actively fished throughout the Cook Islands in 2018.

Maar	00-50 GRT		51-20	0 GRT	201-500 GRT	5	500+ GRT	Total
Year	LL	Artisanal	LL	Troll	LL	LL	Bunker	Iotai
2014	0	420	12	1	1	0		14
2015	0	315	10	0	1	1	3	15
2016	0	292	10	0	1	0	4	15
2017	0	265	17	0	21	0	6	46
2018	0	250	22	0	11	0	8	42

 Table 3. Number of National Fleet
 vessels by gear, size and authorised area, active within the WCPF

 Convention Area 2014-2018.

4. COASTAL STATE REPORTING

4.1 Catch and Effort Trends

Foreign flagged longline vessel catch within the Cook Islands EEZ was 1,606t (Table 4), comprising 28% of the total longline catch. Cook Islands National Fleet vessels, including chartered vessels, accounted for the remaining 69% of the total catch. Albacore comprised of 71% for overall longline catch composition, followed by yellowfin tuna, comprised of 15% and other species catch comprised 9%. bigeye tuna comprised 5% of the total catch (Figure 4b).

The Cook Islands purse seine fishery has been limited to 1,250 days any consecutive 4 quarter period. The US fleet took 46% of the overall purse seine catch followed by Korea (29%) and then Kiribati (12%), highlighted in Figure 4c). Foreign flagged purse seine vessel catch totalled 34, 382t (Table 4). The catch was predominantly skipjack tuna, comprising 96% of the total purse seine catch (Figure 4d).

Table 4. Annual catch estimates in metric tonnes for all <u>licensed foreign vessels by gear</u> within the <u>Cook</u> <u>Islands EEZ</u>, for tuna and billfish species in 2018. Operational logsheet data was raised using VMS data, with 100% logsheet coverage for foreign flagged longline vessels and 100% logsheet coverage for foreign purse seine vessels.

Foreign Vessels	Gear	Effort	ALB	BET	YFT	SKJ	PBF	BLM	BUM	MLS	SWO	Total (inc OTH)
CK EEZ	LL	50,210 Hhks	3,075	195	531	75	0	16	108	9	41	2,598
CK EEZ	PS	676	0	326	1162	32, 894	0	0	3	0	0	34, 382

A total of Fifty seven foreign flagged vessels were licenced and authorised to operate within the Cook Islands EEZ during 2018, 7 longliners (Figure 4a) and 50 purse seiners (Table 5). Foreign flagged fishing in 2018 was undertaken by two Chinese longline companies, one Spanish purse seine companies, three Korean purse seine companies, one Nauru and US purse seine companies under the US Treaty.



Figure 4a: Longline catch by all vessels within the CK EEZ - Figure 4b: Longline catch of all vessels by species composition within CK EEZ





Figure 4c: Purse seines catch composition by flag state, based on logsheet data

Figure 4d: Purse seine catch composition by main species, based on logsheet data

by size in 201	by size in 2018										
GRT Range	Longline	Carrier	Bunker	Purse seine	Total						
0-10	-	-	-	-	-						
10-50	-	-	-	-	-						
50-200	0	-	-	-	0						
200-500	7	-	-	-	7						
500+	-	-	11	50	59						
Total	7	-	-	48	66						

 Table 5. Number of active foreign flagged
 vessels by gear authorised to operate within the Cook Islands EEZ

 by size in 2018
 Vessels by gear authorised to operate within the Cook Islands EEZ

5. Socio-economic Factors

High operating costs out of Cook Islands ports continue to hinder domestic industry growth. In 2018 only two small scale domestic fresh fish vessels operated out of Rarotonga, with unloading to the Port of Avatiu. The local economy benefits from the purchase of fuel, temporary labour to assist with unloadings, purchase of provisions and associated port fees. These vessels are also permitted to seasonally sell frozen by-catch to local businesses. The Ministry of Marine Resources conducts routine port side boarding and inspections and port sampling of catches.

6. New Fishery Developments

MMR has experienced a significant increase to artisanal coverage since the introduction of E-Reporting (ER) initiatives such as the SPC 'Tails' application in 2017. The application is designed to populate artisanal catch data directly in to the Cook Islands catch and effort databases from mobile devices. A significant outcome of this is that the technology can operate with limited internet connectivity, and provides a solution to the problems of geographic isolation that is experienced on many islands. In 2018, the Ministry of Marine Resources hosted a workshop to strengthen user knowledge for the 'Tails' application. The workshop was targeted for MMR Pa Enua (outer islands) Fisheries Officers which focused on the integration of coastal monitoring and data collection methods.

MMR has noted several benefits to the introduction of ER, as the tool assisted in better understanding and quantifying fishing effort and trends in the Cook Islands, in particular to be able to provide raised catch estimates from logsheets and reported data. This data has supported local fishing communities and provided information to support MMR and island fishing clubs reporting responsibilities to local communities as well as assist MMR in its scientific data collection functions.

7. Research and Statistics

7.1 Status of Tuna Fishery Data Collection Systems

a) Log sheet data collection and verification

100% logsheet coverage was achieved for the commercial longline fleet in 2018. Most logsheets were received as original copies via post after the completion of a trip or, received in electronic format via email either weekly or after the completion of a trip (scanned). Unloading forms were received by all foreign flagged vessels.

MMR aims to achieve 100% electronic reporting by 2019 and has implemented resources such as the 'on-board' application to achieve this. MMR has conducted annual industry consultations with operators fishing in Cook Islands waters. As a result, MMR has experienced a positive uptake with industry led applications retrofitted to conform to WCPFC reporting standards and reporting to the Cook Islands catch and effort database, TUFMAN 2.

Locally based commercial vessels undertake short trips (< 1 week), allowing MMR to provide feedback and regular updates. Vessels operating out of Pago Pago spend longer time at sea and are consequently more difficult to provide timely feedback to.

b) Observer Programme.

Due to a significant restructure of the Cook Islands National Observer Programme in 2016, at the beginning of 2018 only 3 active Observers remained in the employ of the Cook Islands. An MOU was signed in June 2016 between MMR and the Fisheries Department of Tonga to utilise their observers, with a pool of 15 Observers made available. In 2017, MMR recruited and trained two more Observers to retain on staff at MMR and contracted another pool of Observers from around the Pacific to be available. A total of 348 sea days were observed on Cook Islands longline vessels in 2018 within the WPCF-Convention Area with an overall coverage of 10.7% (Table 6).

Year	Operational Catch & Effort	Port Sampling	Observer Data (Days at Sea)
2013	97%	16%	8.9%
2014	97%	23%	9.8%
2015	100%	35%	12.8%
2016	100%	18%	7.7%
2017	88%	10%	7.6%
2018	100%	9.5%	10.7%

 Table 6. Estimated annual coverage of operational catch and effort, port sampling and observer data for the National Fleet, active in the WCPF Convention area for 2013 – 2018.

c) Port Sampling Programme

In 2018 most port sampling occurred in Rarotonga on locally based fresh fish longliners which average a catch of 2-3t per trip. Coverage of port sampling of the domestic fleet in 2017 was 9.5% (Table 6). In 2017 MMR commenced a programme to increase port sampling in foreign ports, especially Apia and Pago Pago.

7.2 Research Activities

No major research activities were carried out during 2018.

Appendix 1

CMM Reporting 2018

CMM 2005-03 [North										
Pacific albacore], Para 4	NOT APPLICABLE, no Co	ok Island flagger	l vessel fished no	orth of the equator in						
	2018									
CMM 2006-04 [South	Striped Marlin is not tar	geted by Cook Is	lands flagged ves	ssels, but it is caught						
West striped Marlin],	and retained as bycatch									
Para 4		-								
	In 2018, 21 Cook Island	flagged longline	vessels caught 2	50 Striped Marlin						
	(MLS) totaling 8.6t in th		-							
CMM 2009-03	The Cook Islands have n			/O), but it is caught						
[Swordfish], Para 8	and retained as bycatch	-	•							
	In 2018, 8 Cook Island fl	In 2018, 8 Cook Island flagged vessels caught 224 Swordfish weighing 15.6 tt in								
	total in the Convention	Area south of 20	°S. No catches w	ere retained by						
	charter or foreign flagge	ed vessels license	ed to fish in Cook	Islands waters South						
	of 20°S.									
CMM 2009-06	NOT APPLICABLE. The Cook Islands had no Cook Island flagged transshipment									
[Transshipment], Para	vessels operating in the	Convention Area	a in 2018.							
11 (ANNEX II)										
CMM 2010-07 [Sharks],	After the establishment									
Para 4	by any vessel in the Coo			blowing table lists the						
	raised sharks interaction	is based on Obse	erver data.							
	Species	Number	Number	Catch Retained						
	Species	Caught	Discarded							
	Silky Shark	65	65	(t) 0						
	Blue Shark	336	336	0						
	Oceanic Whitetip	103	103	0						
	Thresher Sharks	9	9	0						
	Mako Shark	28	28	0						
	Bronze Whaler	103	103	0						
	Shark	105	105	0						
	Porbeagle	0	0	0						
	Hammerhead	0	0	0						
CMM 2011-03 [Impact	NOT APPLICABLE. The C	ę		Ţ						
of PS fishing on	vessels.			eged purse serie						
cetaceans], Para 5										
CMM 2011-04 [Oceanic	Observer data was raise	d and 103 Ocea	nic whitetin shar	k interactions were						
whitetip sharks], Para 3	estimated. There was n		•							
	observed as dead and 8		•							
CMM 2012-04 [Whale	NOT APPLICABLE. The C			ed purse seine vessels						
sharks], Para 06			, 88							
CMM 2013-08 [Silky	Observer data was raise	d and 65 silky sh	ark interactions	were estimated. 7						
sharks], Para 3	Observer data was raised and 65 silky shark interactions were estimated. 7 were observed to have been caught, 6 were alive upon release and 1 dead.									

	There was no retention of silky sharks.							
Observer coverage	Observer coverage is measured using 'at sea days'. Based on an estimated							
(WCPFC 11 decision –	3,255 VMS days, and 348 observed days in 2018, the Cook Islands observer							
para 484(b)	coverage of the National Fleet in the WCPF-CA for 2018 was 10.7%.							
CMM 2015-02	This requirement is covered by the comprehensive operational data that is							
[South Pacific albacore]	provided to the WCPFC on a regular basis.							
Para 4								
CMM 2017-06	Not applicable. No Cook Island flagged vessels operated south of 30°S or north							
[Seabirds] Para 9	of 23°N.							
	Year	Year Fishing Effort Observed seabird						
		captures						
		No.	No. hooks	Observed	% hooks	Number	Rate ²	
		Vessels		Hooks	Observed			
	2014	0	9301865	477547	5.1	0	0	
	2015	0	6218449	422068	6.8	0	0	
	2016	0	14177626	189752	1.3	0	0	
	2017	0	25935995	660529	2.5	0	0	
	2018	0	16382515	468345	2.9	0	0	
		•	-	•	•	•		