Western and Central Pacific Fisheries Commission

SCIENTIFIC COMMITTEE
SIXTEENTH REGULAR SESSION

ELECTRONIC MEETING
11-20 August 2020

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

WCPFC-SC16-AR/CCM-15

NEW CALEDONIA

WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION

NEW CALEDONIA - ANNUAL REPORT 2019
Part 1

Scientific data was provided to the Commission in accordance with the decision relating to the provision of scientific data to the Commission by 30 April 2020	

Summary:

Fishing for tuna and associated species by New Caledonian vessels started in 1981 with pole-and-line (less than 3 vessels) which stopped very rapidly (1981: 228 mt; 1982: 998 mt; 1983: 492 mt).

Some domestic longliners started operating at the same time and it took almost 20 years before this domestic fleet had a significant activity.

The New-Caledonian fleet operates in the New Caledonian EEZ and very rarely in the adjacent high seas.
In 2019, the New-Caledonian government has granted 20 licences to longliner vessels. One of the armaments proceeds to the renewal of its fleet: at the end of the year three ships were sold and three new ones arrived. These last three fished in December 2019 and January 2020. One vessels
All of those licensed domestic longliners were active. Similarly to past years there were no foreign vessels licensed or chartered to operate in the New Caledonian EEZ.

In 2019, the total catch was higher (+17%) compared to 2018. The annual catches of 2,828 mt were mainly composed of albacore which is the target species of all the vessels and accounted for 69% of the total (1,965 mt). Yellowfin was second with 664 mt (23% of the total catch). Striped marlin is the main bycatch of the fishery (84 mt; 3% of the total catch).

Catches of sharks have been decreasing since 2006, due to an increasing use of monofilament branchlines and the adoption of a regulation in April 2013 prohibiting the catch, the disturbance and the retention on-board of any shark or ray.

In 2019, observer activities carried out under the New Caledonia programme punctually reached a 8.9% coverage rate of the longline hooks. The aim of this activity is to collect information to be checked with other sources of data and to provide accurate data for stock assessments (biological samples, size composition, estimates of incidental catch).

During all the trips observed in 2019, there were 1 manta ray, 1 sea turtle, 3 sea birds and 2 marine mammal interactions.
The incidental catches of shark and ray species were reported by the observer programme at 989 individuals in 2019 (including 101 rays).

Catch statistics

As a counterpart to their licenses the New Caledonian fishing companies must provide logsheets which are collected by the New Caledonia fisheries authority at the end of the trips. The coverage rate of collected logsheets is 100%.

In accordance with the provision of scientific data to the Commission all the logsheets data are made available to the SPC/OFP by the TUFMAN2 software. Before 2019, the data presented in this report were extracted by the DORADO system operated by SPC. In 2019, the data presented are both extracted from the DORADO system, provided by the New Caledonia Observer Programme, and from the Annual Catch Estimates document produced during the Tuna Data Workshop, carried out by SPC.

The catch level estimated is 2,828 mt, all species combined. The main tuna species catch estimated represent 2,678 mt in 2019.

As the target species of the New Caledonian tuna fisheries, the South Pacific albacore is the predominant specie in the catches with 1,965 mt (69%) in 2019.

In 2019 the average weight of albacore was 19 kg, which is very similar to the weights recorded in the previous years. The average weight of yellowfin was 29.6 kg (34 kg in 2018) and 39.6 kg (40 kg in 2018) for bigeye.

No New Caledonian vessel targets bigeye, sharks, marlins or swordfish. Therefore, all the catch reported for these species are bycatch. In particular, only 84 mt of striped marlin (south of 15° South) and 8 mt of swordfish were landed in 2019, of which 5.7 mt were caught south of 20° South.

Since the adoption of the regulation for the conservation of sharks in April 2013, which prohibits the catch, the disturbance and the retention of any shark and ray, all the sharks must be discarded.

Many species show seasonal patterns in their abundance around New Caledonia which induces similar fluctuations in the reported catch levels.

No New Caledonian vessel takes part in transshipment activities in the WCPFC area.

Fleet structure and fishing activity

In 2019, 20 domestic tuna longliners were licensed to fish and all of them were active. Similarly to past years there were no foreign vessels licensed or chartered to operate in the New Caledonian EEZ.

All active vessels in 2019 are less than 200 tons GRT. These vessels have limited cruising range within the EEZ. The larger longliners nearing 150 tons can stay at sea for two or more weeks. The average trip length for the whole fleet is 12 days, 8 of which are fished.

There was no fishing activity by the New Caledonian fleet neither north of the equator, nor south of 30° South.

Globally, 317 fishing trips were reported in 2019, totalling 3,864 days at sea, 2,460 days fished and a little more than 5 million hooks.

Monitoring activities

Observer activity has been carried out in New Caledonia for more than 20 years. After being operated under EU-funded programmes, this activity is now funded by the New Caledonia government.

Observer activity

In 2019, 28 trips were observed by 3 observers on-board 17 vessels of the domestic companies, representing 219 fishing days 460 218 hooks and 13 807 fish observed. Over this period the observer activity covered about 9 % of the fishing activity (in number of hooks observed).

During the trips observed in 2019, 1 manta ray, 1 turtle, 3 sea birds and 2 marine mammals were unintentionally captured.
The accidental catch of shark and ray species were reported by the observer program at 989 individuals in 2019.

Port sampling activity

In 2019, no port sampling was carried out. However, length frequency data are still collected by observers on-board the vessels.

No unloading or transhipment involving foreign vessels, carriers and bunkers, took place in the domestic ports.

Vessel Monitoring System

New Caledonia has been operating a Vessel Monitoring System in its EEZ since early 2005.

All licensed vessels must have transmitters on board. Due to safety regulations all of them are equipped with Inmarsat-C terminals but some vessels also have a dedicated Argos beacon on board.

The monitoring is carried out by the New Caledonia fisheries department, so as to help:
   a. check the VMS data with the number of logsheets provided by the fishing companies,
   b. the monitoring and surveillance of the marine traffic in the EEZ operated by the French navy.

Since 2010 all the location data have been managed under an dedicated software which can accept various sources of VMS data and provide related statistics. The development of a new VMS application has been engaged in 2017, it is fully operational since 2018

Scientific activities

Spatial ecology of micronecton: distribution, diversity and importance in the structure of the pelagic ecosystem in the southwest Pacific

A study carried out by a PhD student, based in SPC in New Caledonia, in collaboration with IRD, has allowed to analyse the biodiversity and the functioning of the micronektonic compartment, and the influence of prey on top predators' distribution.

Thanks to backscatter echo-intensity data of Shipboard Acoustic Doppler Current Profiler, recorded during 54 cruises across 19 years, the evaluation on inter-annual variabilities and spatial distribution of micronekton was carried out. The micronekton relative abundance has decreased until 2007, then increased, particularly during El Niño events, the sea temperature being the main factor driving the variability in it distribution. However, the spatial cohesion between this model and SEAPODYM (ecosystemic model) predictions were poor.

Through analyze of EK60 from 6 cruises happening between 2011 and 2017, it appears that there are three homogeneous regions of micronekton in new Caledonia: north of 21° South, where the Deep Scattering Layer (DSL) and the Shallow Scattering Layer (SSL) are weak, the "southwest corner", with intense DSL and SSL, and the "southeast corner", with intense DSL and SSL too.

Based on the analysis of the 22 species present in 141 trawls, 7 major assemblages were identified. They are driven by the moment of the day and trawl depth as well as temperature, oxygen and bathymetry. Northern assemblages were dominated by crustaceans and in the south by cephalopods and fish.

An innovative oceanographic regional simulation from a coupled dynamical-biogeochemical model (NEMO-PISCES) used to force acoustic modelling predicted the micronekton evolution in climate change condition. The model developed shows a micronekton abundance decreasing by 2100 in the Coral Sea but acoustic predictions shows a large increase of the bathypelagic layer whereas SEAPODYM shows a large decrease for this same layer.

Finally, the study shows that the spatial distribution of this micronekton influenced the presence of 6 predator species among the 9 studied: yellowfin tuna, albacore tuna, dolphinfish, dolphin, shearwater and red-footed body.

Receveur, A. (2019). *Micronekton spatial ecology: distribution, diversity and importance for the structure of the southwest Pacific pelagic ecosystem* (Doctoral dissertation, Aix Marseille Université).

TABLES AND FIGURES

Table 1: Historical annual fishing effort and catch estimates by species from New Caledonian longliners in the WCPFC area in 2019

Effort	2015	2016	2017	2018	2019
Days fished	2 278	2 694	2 386	2 463	2 460
Hooks	4 359 200	4 715 600	4 811 570	5 121 700	5 158 200
Catch (mt)	**2 627**	**2 452**	**2 581**	**2 382**	**2 828**
Albacore	1 583	1 747	1 734	1 752	1 965
Bigeye	63	74	48	46	37
Black marlin	35	30	65	28	29
Blue marlin	21	15	34	13	11
Pacific bluefin tuna	0	0	1	1	1
Skipjack	6	27	41	15	11
Striped marlin	58	69	77	52	84
Swordfish	9	8	22	8	8
Yellowfin	852	482	559	467	664

Table 1bis: Historical catch estimates by primary species from New Caledonian longliners in the WCPFC area

Catch estimates (mt)	2015		2016		2017		2018		2019	
	Retained	Discarded	Retained	Discarded	Retained	Discarded	Retained	Discarded	Retained	Discarded
Albacore	1567	56	1738	82	1567	56	1 664	88	1848	116
Bigeye	59	1	58	1	59	1	44	2	36	1
Pacific bluefin tuna	0	0	1	0	0	0	1	0	1	0
Skipjack	41	5	81	6	41	5	10	5	9	2
Yellowfin	814	25	705	17	814	25	441	26	629	35
Black marlin	33	1	35	0	33	1	27	1	28	0
Blue marlin	21	0	41	0	21	0	13	0	12	0
Striped marlin	55	5	48	0	55	5	52	0	83	0
Swordfish	9	0	12	1	9	0	8	0	8	0

Table 1ter: Estimated catch for shark species of interest by New Caledonian longliners in the WCPFC area

Catch estimates (mt)	2015	2016	2017	2018	2019
	Discarded	Discarded	Discarded	Discarded	Discarded
Blue shark	14	16	7	6	8
Silky shark	2	10	10	2	2
Hammerhead shark	0	0	0	1	0
Short finned mako shark	0	1	7	24	5
Oceanic white-tip shark	2	1	3	3	2
Porbeable shark	0	0	0	0	0
Whale shark	0	0	0	0	0
Thresher shark	0	0	0	1	0

Figure 1: Historical annual catch or primary species by the New Caledonian longliners
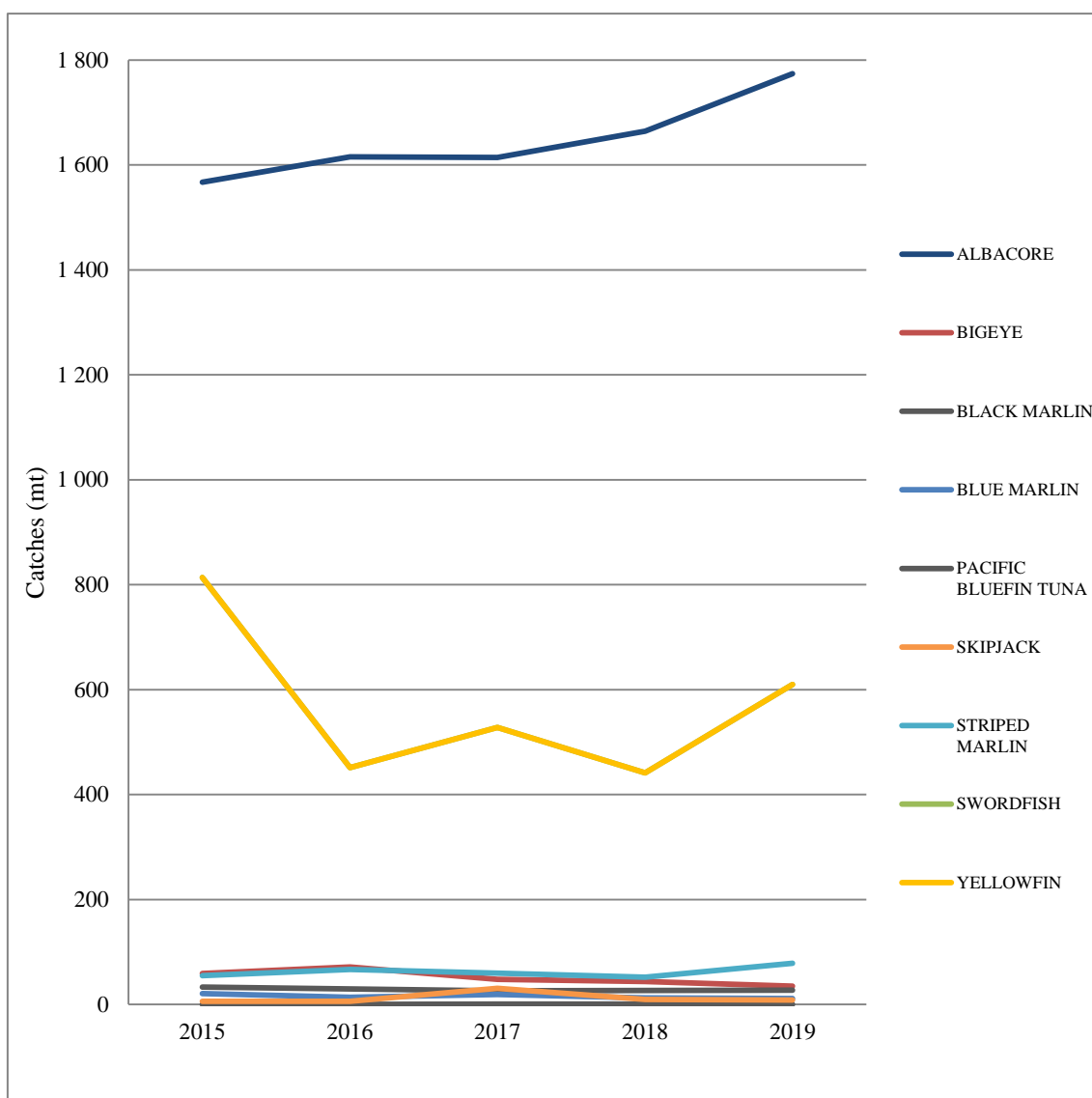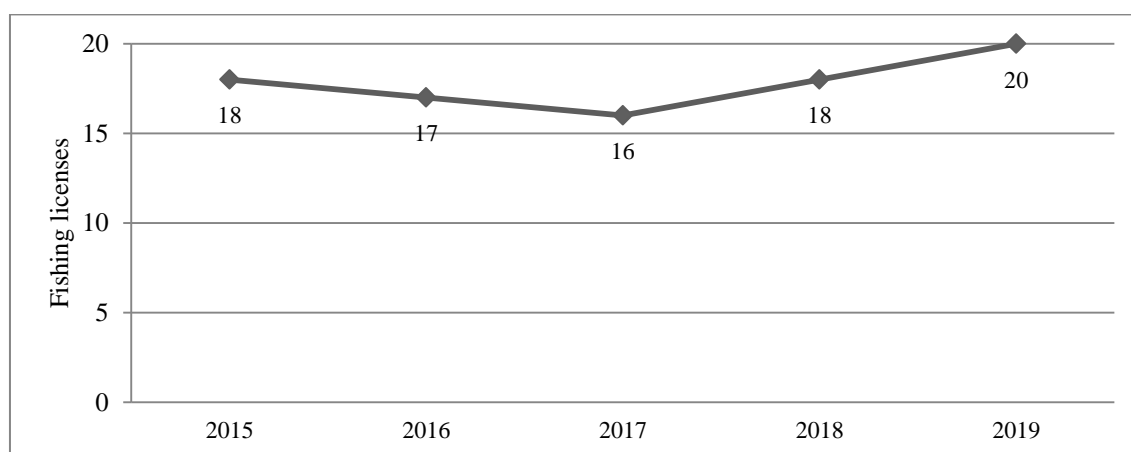
Table 2: Historical number of domestic active longliners by GRT class in New Caledonia

Vessel by GRT	0-50	51-200
2015	1	16
2016	1	16
2017	1	15
2018	1	17
2019	1	19

Figure 2: Historical New Caledonian longline licensed vessels

Table 3: Number of fish caught per month in 2019

Nb of fish	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Albacore	8 875	5 179	4 937	3 806	6 448	6 939	11 689	10 090	7 146	8 583	8 376	8 857	**90 925**
Bigeye	46	55	66	114	130	119	80	78	44	89	32	24	**877**
Yellowfin	1 205	1 138	1 539	2 213	3 429	1 955	2 790	1 601	2 199	1 420	566	540	**20 595**
Black marlin	64	17	34	30	22	22	19	6	7	35	32	12	**300**
Blue marlin	9	13	25	33	7	10	12	12	10	16	8	25	**180**
Striped marlin	34	23	32	31	64	66	71	105	114	164	212	143	**1 059**
Swordfish	43	3	8	6	8	3	3	5	9	5	14	10	**117**
Others	990	687	760	620	750	780	1 228	730	984	1 405	824	794	**10 552**
Total	**11 266**	**7 115**	**7 401**	**6 853**	**10 858**	**9 894**	**15 892**	**12 627**	**10 513**	**11 717**	**10 064**	**10 405**	**124 605**

Table 3bis: Average weight (kg) per month in 2019

Average weight	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Albacore	20	20	21	21	19	19	19	18	19	20	20	20
Bigeye	36	39	51	41	38	38	39	38	42	36	41	43
Yellowfin	47	111	104	86	121	105	116	134	66	101	100	92
Black marlin	28	68	69	75	55	53	66	59	66	73	68	54
Blue marlin	64	64	83	71	73	69	68	61	73	85	79	76
Striped marlin	16	95	74	45	59	108	46	149	60	85	148	71
Swordfish	29	28	29	30	27	27	32	29	30	33	34	34

Figure 3: Annual average weight of interest species (kg)
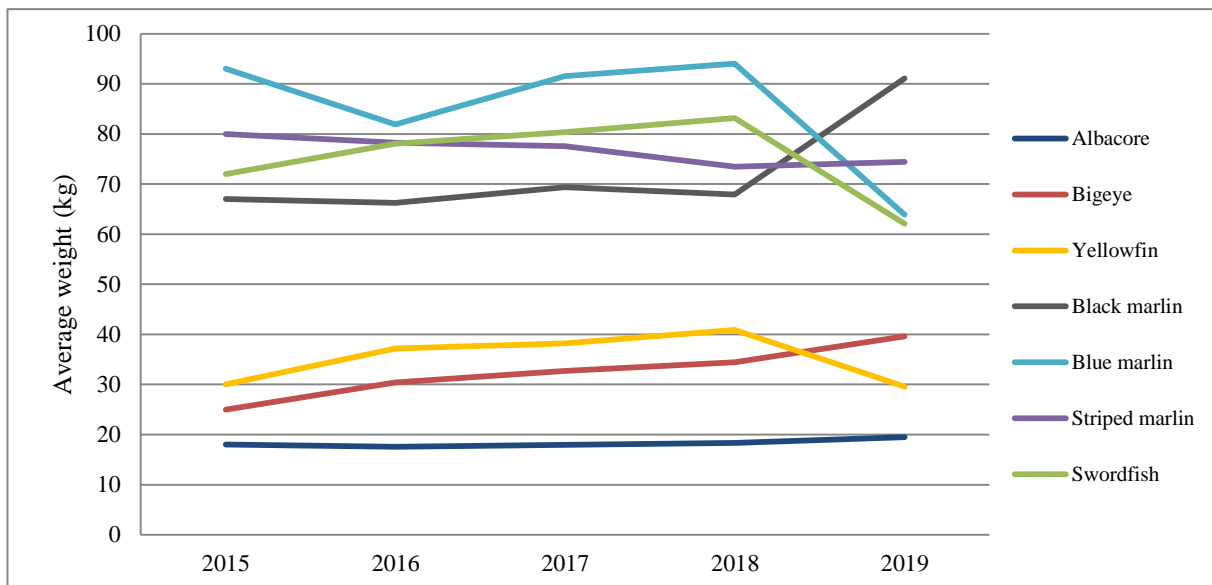
Table 4: Number and proportion of observed species in 2019

Species Group	Species Name	Number	Species Composition
BIL	Black marlin	27	0,20%
BIL	Blue marlin	24	0,17%
BIL	Striped marlin	99	0,72%
BIL	Indo-Pacific sailfish	33	0,24%
BIL	Shortbill spearfish	98	0,71%
BIL	Swordfish	13	0,09%
BRD	Wedge-tailed shearwater	1	0,01%
BRD	Petrels and shearwaters nei	2	0,01%
MAM	Indo-Pacif. bottlenose dolphin	1	0,01%
MAM	Short-finned pilot whale	1	0,01%
OTH	Short snouted lancetfish	5	0,04%
OTH	Long snouted lancetfish	1014	7,34%
OTH	Razorback scabbardfish	1	0,01%
OTH	Pomfrets, ocean breams nei	5	0,04%
OTH	Common dolphinfish	328	2,38%
OTH	Brilliant pomfret	2	0,01%
OTH	Great barracuda	193	1,40%
OTH	Silver gemfish	3	0,02%
OTH	Snake mackerel	12	0,09%
OTH	Opah	150	1,09%
OTH	Escolar	74	0,54%
OTH	Oceanic puffer	51	0,37%
OTH	Unicornfish	2	0,01%
OTH	Black gemfish	2	0,01%
OTH	Oilfish	4	0,03%
OTH	Omosudid	2	0,01%
OTH	Atlantic pomfret	2	0,01%
OTH	Common squids nei	1	0,01%
OTH	Longfin escolar	1	0,01%
OTH	Sickle pomfret	1	0,01%
OTH	Wahoo	116	0,84%
RAY	Pelagic stingray	100	0,72%
RAY	Giant manta	1	0,01%
SHK	Grey reef shark	5	0,04%
SHK	Copper shark	3	0,02%
SHK	Blue shark	536	3,88%
SHK	Bigeye thresher	9	0,07%
SHK	Bignose shark	1	0,01%
SHK	Bull shark	3	0,02%
SHK	Blacktip shark	2	0,01%
SHK	Sandbar shark	1	0,01%
SHK	Silky shark	33	0,24%
SHK	Longfin mako	24	0,17%
SHK	Oceanic whitetip shark	40	0,29%
SHK	Pelagic thresher	14	0,10%
SHK	Various sharks nei	173	1,25%
SHK	Shortfin mako	34	0,25%
SHK	Great hammerhead	2	0,01%
SHK	Smooth hammerhead	1	0,01%
SHK	Tiger shark	7	0,05%
TTX	Olive ridley turtle	1	0,01%
TUN	Albacore	8403	60,86%
TUN	Bigeye tuna	80	0,58%
TUN	Skipjack tuna	364	2,64%
TUN	Yellowfin tuna	1702	12,33%

Figure 4: Distribution of shark and ray species recorded by observers in 2019
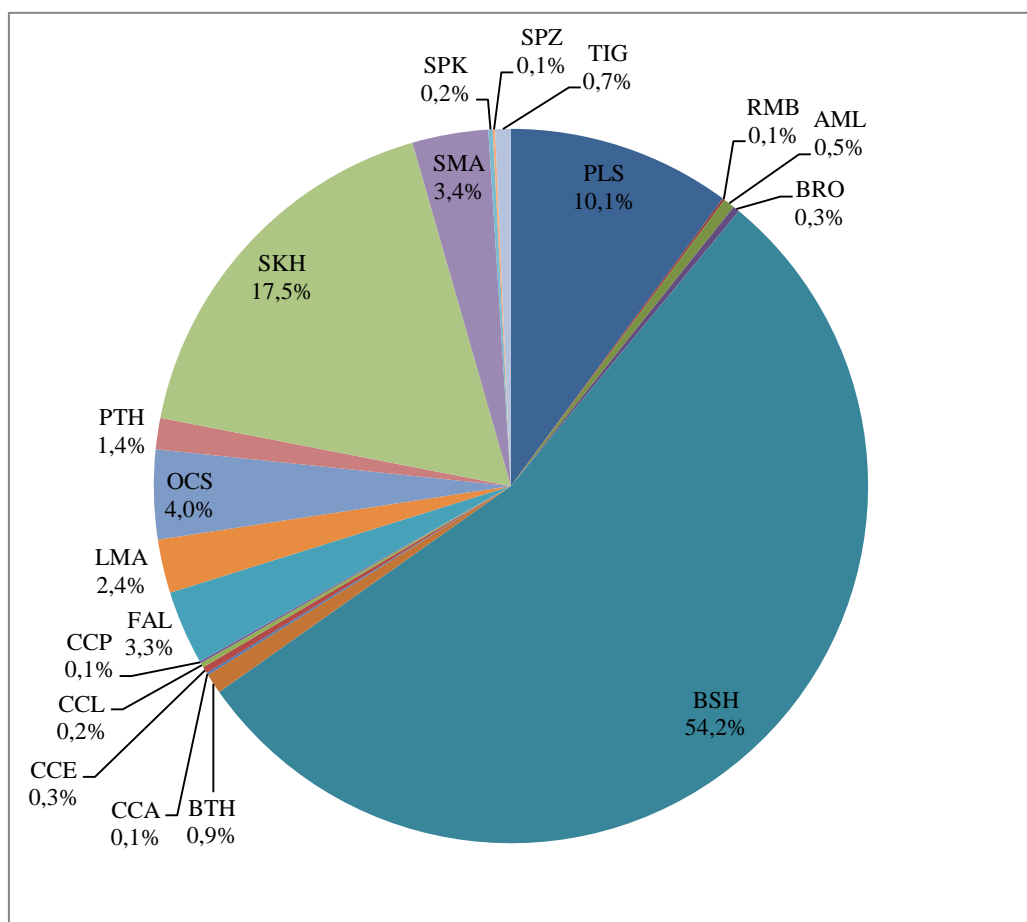
Table 5: Commercial fish species observed in 2019

Tuna			
Species	**ALB**	**BET**	**SKJ**	**YFT**
Nb	8 403	80	364	1702

Billfishes					
Species	**BLM**	**BUM**	**SFA**	**SSP**	**MLS**	**SWO**
Nb	27	24	33	98	99	13

Other commercial species		
Species	**DOL**	**LAG**	**WAH**
Nb	328	150	116

Table 6: Historical longline observer coverage of the New Caledonian fleet

Year	Hooks observed	Hooks fished	Rate %
2009	405 844	4 920 450	8.2
2010	424 327	4 677 009	9.1
2011	316 337	4 768 281	6.6
2012	316 755	4 938 562	6.4
2013	298 344	4 560 826	6.5
2014	271 208	4 312 484	6.3
2015	147 337	4 359 200	3.4
2016	281 370	4 715 600	6.0
2017	406 000	4 811 540	8.4
2018	523 332	5 121 700	10.2
2019	**460 218**	**5 158 200**	**8.9**

Table 7: Historical effort, observed and estimated seabird accidental captures by New Caledonian vessels

Year	Fishing effort				Observed seabird captures 23°N - 30°S	
	Active vessels	Number of hooks	Observed hooks	% hooks observed	Number	Rate (per thousand hooks)
2009	27	4 920 450	405 844	8.2	0	0
2010	20	4 677 009	424 327	9.1	5	0.01
2011	19	4 768 281	316 337	6.6	5	0.02
2012	19	4 938 562	316 755	6.4	1	0.003
2013	17	4 560 826	298 344	6.5	3	0.01
2014	17	4 312 484	271 208	6.3	2	0.01
2015	17	4 359 200	147 337	3.4	0	0
2016	17	4 715 600	281 370	6.0	1	0.004
2017	16	4 811 540	406 000	8.4	1	0.002
2018	18	5 121 700	523 332	10.2	9	0.017
2019	**18**	**5 158 200**	**460 218**	**8.9**	**3**	**0.007**

Table 7bis: Number of observed seabird captures in the New Caledonia longline fishery in 2019, by species and area.

Species	South of 30°S	North of 23°N	23°N – 30°S	Total
Petrels and Shearwaters Nei	0	0	2	**3**
Wedge-tailed shearwater	0	0	1	

Table 7ter: Historic number of observed seabird, turtle and marine mammal (species of special interest) accidental captures in the New Caledonia longline fishery

Species of special interest	Sea bird	Turtle	Marine mammal
2012	1	0	0
2013	3	0	0
2014	2	2	0
2015	0	0	1
2016	1	5	0
2017	1	4	3
2018	9	2	1
2019	**3**	**1**	**2**

ADDENDUM TO ANNUAL REPORT PART 1

CMM 2005-03: North Pacific Albacore

No vessels fished north of the equator

CMM 2006-04: South West Striped Marlin

No vessel targeted for striped marlin south of 15°S in 2019.
However, catch reported on logsheet is 79 tonnes for 19 vessels.

CMM 2009-03: Swordfish

No vessel targeted for swordfish south of 20°S in 2019.
However, catch reported on logsheet is 5.7 tonnes for 15 vessels.

CMM 2009-06: Transhipment

No NC flagged vessels transhipped in 2019.

CMM 2010-07: Sharks

Since 2014, according to the regulation, all sharks caught are discarded.

Estimated weight of discarded sharks (tonnes)	2014	2015	2016	2017	2018	2019
	Discarded	Discarded	Discarded	Discarded	Discarded	Discarded
Blue shark	17	14	16	7	6	8
Silky shark	1	2	10	10	2	2
Hammerhead shark	0	0	0	0	1	0,5
Short finned mako shark	0	0	1	7	24	5
Oceanic white-tip shark	1	2	1	3	3	2
Porbeagle shark	0	0	0	0	0	0
Whale shark	0	0	0	0	0	0
Thresher shark	0	0	0	0	1	0,1

CMM 2011-03: Impact of PS fishing on cetaceans

New-Caledonia has no flagged PS vessels.

CMM 2011-04: Oceanic whitetip sharks

All oceanic whitetip sharks caught in 2019 were released.

2019	Estimated catch (nb)	Released alive
Oceanic whitetip shark	238	220 (92.5%)

CMM 2012-04: Whale sharks

New-Caledonia does not flag purse seine vessels, so no encirclement of whale sharks occurred in 2019.

CMM 2013-08: Silky sharks

All silky sharks caught in 2019 were released.

2019	Observed catch (nb)	Released alive
Silky shark	481	408 (84.8%)

Observer coverage (WCPFC 11 decision –para 484(b)

Observer coverage is 8.9 % (number of hooks) in 2019.

CCM fleet	Fishery	N°. Of hooks		
		Total	**Observed**	**%**
New-Caledonia	Domestic	5 158 200	460 218	8.9

CMM 15-02: South pacific Albacore Para 4

Addressed through the regular provision of operational catch/effort logsheet data to SPC, who automatically include these data in the WCPFC databases, as per our authorization.

CMM 2018-03: Seabirds

Fishing activities are only in the EEZ of New-Caledonia, there is no mitigation measure in New-Caledonia.
The birds accidently caught in 2019 in the NC-EEZ were released dead.

Year	Fishing effort				Observed seabird captures 23°N – 30°S	
	Number of active vessels	Number of hooks	Observed hooks	% hooks observed	Number	Rate (per thousand hooks)
2019	19	5 158 200	460 218	8.9	3	0.007

Table z: Number of observed seabirds captures in New-Caledonia longline fisheries, 2019, by species and area.

Species	South of 30°S	North of 23°N	23°N – 30°S	Total
Petrels and Shearwaters Nei	0	0	2	3
Wedge-tailed shearwater	0	0	1	