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

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**WCPFC-SC8-AR/CCM-04**

**COOK ISLANDS**

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

**Annual Report to the Commission**

**Part 1 - Information on Fisheries, Research and Statistics**

**COOK ISLANDS**



**Ministry of Marine Resources**  
GOVERNMENT OF THE COOK ISLANDS

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 2012	<b>YES</b>
If no, please indicate the reason(s) and intended actions:	

## Abstract

In zone effort increased in 2011 in comparison to previous years, all fishing activity was carried out within the WCP-CA and south of the equator. Catch within the WCP-CA was 8,489mt, with 7.8mt caught beyond national jurisdiction. Catch of albacore within the entire WCP-CA was 4,787mt with 4,793mt of this taken within the CKEEZ. Albacore accounts for 56.4% of total catches within the Convention Area. Yellowfin tuna catches totalled 2,052mt and bigeye catch totalled 960mt. Wahoo and mahimahi are the most dominant of the bycatch species with wahoo catch of 181mt and mahimahi catch of 26mt. The majority of fishing activity is concentrated in the northern Cook Islands waters, in the area north of 15° south latitude.

No vessels carried out marlin specific targeting, and all catches were taken as bycatch in the albacore fishery. Blue marlin, striped marlin and black marlin catches totalled 140mt, 21.5mt and 56mt, respectively. Spearfish and sail fish catches totalled 10mt.

Total shark catch was 1.9mt however no species specific shark data was recorded. The latest regional (SPC/FFA) logsheets were adopted and implemented at the beginning of the year. This latest revision requires fishing vessels to record shark catch by species. Noting this development, it is expected that better species catch information will be available next year.

No bird and turtle interactions were reported for 2011 and aside from depredation no other interactions with cetaceans were recorded.

Twenty Cook Islands flagged vessels were active and authorised to fish within the Convention Area, and a total of thirty-nine non-Cook Islands vessels were authorised to fish within the Cook Islands EEZ during 2011.

# Information on Fisheries, Research and Statistics

## ANNUAL FISHERIES INFORMATION

### Introduction

Cook Islands tuna fisheries currently consist solely of longline fishing vessels targeting tuna and billfish, with some artisanal catches and historical troll catch. The majority of the activity is concentrated in the northern Cook Islands waters, the area north of 15° south latitude.

Albacore is the main target species for vessels operating out of Pago Pago, American Samoa, that unloading catches to the canneries. This fishery is referred to as the northern fishery. Vessels based out of Rarotonga are locally owned vessels whose operations target a range of species to cater for the domestic market. Some of the northern based vessels will occasionally unload bycatch to Rarotonga for the domestic market, or export.

Purse seine fishing remains prohibited in Cook Islands waters, except for those licensed under the US Multi-Lateral Treaty.

**Table 1. Annual unraised catch and effort estimates for the National longline fleet, for tuna and billfish for the Pacific Ocean, 2007-2011.**

Pacific Ocean	2007	2008	2009	2010	2011
<b>Effort (hhk)</b>	80,298	84,533	146,095	133,095	157,924
albacore	3,385.1	2,878.1	5,495.5	4,213.7	3,799.1
bigeye	269.0	374.0	566.8	384.2	663.5
yellowfin	326.2	300.3	574.9	636.0	1,368.4
skipjack	47.5	65.8	119.0	68.0	73.2
Pacific bluefin tuna	0.2	-	-	0.2	-
blue marlin	52.9	36.5	49.5	83.1	122.7
striped marlin	18.9	11.4	12.7	10.8	10.4
black marlin	24.1	18.9	13.5	15.6	12.5
swordfish	44.7	22.6	25.9	38.7	31.1
Others	119.8	90.2	121.5	124.0	129.7
<b>Total (mt)</b>	4,288.3	3,797.7	6,979.3	5,574.1	6,210.6

**Table 2. Raised reported catch estimates for tuna and billfish, within the Cook Islands EEZ, and Cook Islands vessels beyond national jurisdiction, 2011. Catches were raised using VMS data.**

Area	ALB	BET	YFT	SKJ	PBF	BLM	BUM	MLS	SWO	Totals
CKEEZ	4786.9	959.1	2050.9	163.9	0.0	55.9	140.1	21.5	61.6	<b>8240.0</b>
Beyond CKEEZ	5.678	0.79	0.88	0.211	0.0	0.0	0.0	0.0	0.04	<b>7.6</b>

### Catch and effort trends

In zone effort increased in 2011 in comparison to previous years (see table 1), all fishing activity was carried out within the WCP-CA<sup>1</sup>, south of the equator. Approximately 15.8million<sup>2</sup> hooks were deployed. Catch within the Cook Islands EEZ was 8,489mt, and 7.8mt caught beyond national jurisdiction. Raised catch estimates for tuna and billfish species are listed in table 2. See table 4 for unraised sub-area catch estimates for the last five years.

<sup>1</sup> Western and Central Pacific Convention Area

<sup>2</sup> Unraised estimate

Catch of albacore within the entire WCP-CA is 4,787mt with 4,793mt of this from the CKEEZ. Albacore accounts for 56.4% of total catches within the Convention Area. Yellowfin tuna catches totalled 2,052mt and bigeye catch totalled 960mt. Wahoo and mahimahi are the most dominant of the bycatch species with wahoo catch of 181mt and mahimahi catch of 26mt.

No vessels carried out marlin specific targeting, and all catches were taken as bycatch in the albacore fishery. Blue marlin, striped marlin and black marlin catches totalled 140mt, 21.5mt and 56mt, respectively. Spearfish and sail fish catches totalled 10mt. See table 3 for bycatch totals by area.

**Table 3. Raised reported catch estimates for bycatch and shark species, within the Cook Islands EEZ, and Cook Islands vessels beyond national jurisdiction, 2011. Catches were raised using VMS data.**

Area	SSP	SFA	GBA	DOL	LAG	OIL	WAH	BSH	FAL	OCS	MAK	LMA	SHK	OTH	Totals
CKEEZ	6.4	3.8	0.3	25.9	7.2	0.3	181.2	0.0	0.0	0.0	0.0	0.0	1.9	21.6	248.5
Beyond CKEEZ	0.0	0.0	0.0	0.0	0.0	0.0	0.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2

Total raised shark catch was 1.9mt however no species specific shark data was recorded. The latest regional (SPC/FFA) logsheets were adopted and implemented at the beginning of the year. This latest revision requires fishing vessels to record shark catch by species. Noting this development, it is expected that better species catch information will be available next year.

No bird and turtle interactions were reported for 2011 and aside from depredation no other interactions with cetaceans were recorded.

In zone catch distributions in recent years demonstrate an increase in catch taken from the north-east quadrant of the EEZ. For vessels fishing in the northern Cooks, an overall shift in effort, two degrees south latitude was experienced in 2011. This effort was concentrated in a belt between 13°South and 16°South in the last year, normally seen between 12°south and 15°south latitudes, which has increased the catches usually attributed to the southern fishery (delineated by 15°south latitude). See figure 1 for 5°x5° catch distribution for the national fleet within the WCP-CA, for the last five years.

Effort from the domestic fleet based out of Rarotonga decreased significantly after 2007, as economic viability was hindered due to the strong seasonal variability in catch rates and the high operation costs. However three vessels have maintained fishing operations out of Rarotonga.

Table 4. Annual unraised catch estimates for the National longline fleet, for tuna and billfish by broad ocean area. Blank spaces indicate no

Area	Year	alb	bet	yft	skj	pbf	bum	blm	mls	swo
WCPO	2007	3,330.82	268.83	326.12	47.48	0.15	52.76	24.11	18.91	44.70
WCPO	2008	2,878.11	373.96	300.28	65.78		36.50	18.87	11.43	22.58
WCPO	2009	5,495.46	566.82	574.95	119.01		49.46	13.51	12.71	25.91
WCPO	2010	4,213.67	384.23	635.95	68.01	0.15	83.12	15.59	10.76	38.65
WCPO	2011	3,799.11	663.46	1,368.39	73.19		122.68	12.48	10.43	31.14
EPO	2007	54.26	0.16	0.06	0.02		0.09			
EPO	2008									
EPO	2009									
EPO	2010									
EPO	2011									
WCPF-CA	2007	3,330.82	268.83	326.12	47.48	0.15	52.76	24.11	18.91	44.70
WCPF-CA	2008	2,878.11	373.96	300.28	65.78		36.50	18.87	11.43	22.58
WCPF-CA	2009	5,495.46	566.82	574.95	119.01		49.46	13.51	12.71	25.91
WCPF-CA	2010	4,213.67	384.23	635.95	68.01	0.15	83.12	15.59	10.76	38.65
WCPF-CA	2011	3,799.11	663.46	1,368.39	73.19		122.68	12.48	10.43	31.14
WCPF-CA north of equator	2007	37.96	3.18	2.45	0.91		0.61	0.97	0.30	0.75
WCPF-CA north of equator	2008		5.11	2.91			0.94		0.13	0.06
WCPF-CA north of equator	2009									
WCPF-CA north of equator	2010									
WCPF-CA north of equator	2011									
WCPF-CA south of equator	2007	3,292.86	265.65	323.67	46.58	0.15	52.15	23.13	18.61	43.95
WCPF-CA south of equator	2008	2,878.11	368.86	297.37	65.78		35.56	18.87	11.30	22.52
WCPF-CA south of equator	2009	5,495.46	566.82	574.95	119.01		49.46	13.51	12.71	25.91
WCPF-CA south of equator	2010	4,213.67	384.23	635.95	68.01	0.15	83.12	15.59	10.76	38.65
WCPF-CA south of equator	2011	3,799.11	663.46	1,368.39	73.19		122.68	12.48	10.43	31.14
North Pacific Ocean	2007	37.96	3.18	2.45	0.91		0.61	0.97	0.30	0.75
North Pacific Ocean	2008		5.11	2.91			0.94		0.13	0.06
North Pacific Ocean	2009									
North Pacific Ocean	2010									
North Pacific Ocean	2011									
South Pacific Ocean	2007	3,347.12	265.81	323.72	46.59	0.15	52.25	23.13	18.61	43.95
South Pacific Ocean	2008	2,878.11	368.86	297.37	65.78		35.56	18.87	11.30	22.52
South Pacific Ocean	2009	5,495.46	566.82	574.95	119.01		49.46	13.51	12.71	25.91
South Pacific Ocean	2010	4,213.67	384.23	635.95	68.01	0.15	83.12	15.59	10.76	38.65
South Pacific Ocean	2011	3,799.11	663.46	1,368.39	73.19		122.68	12.48	10.43	31.14

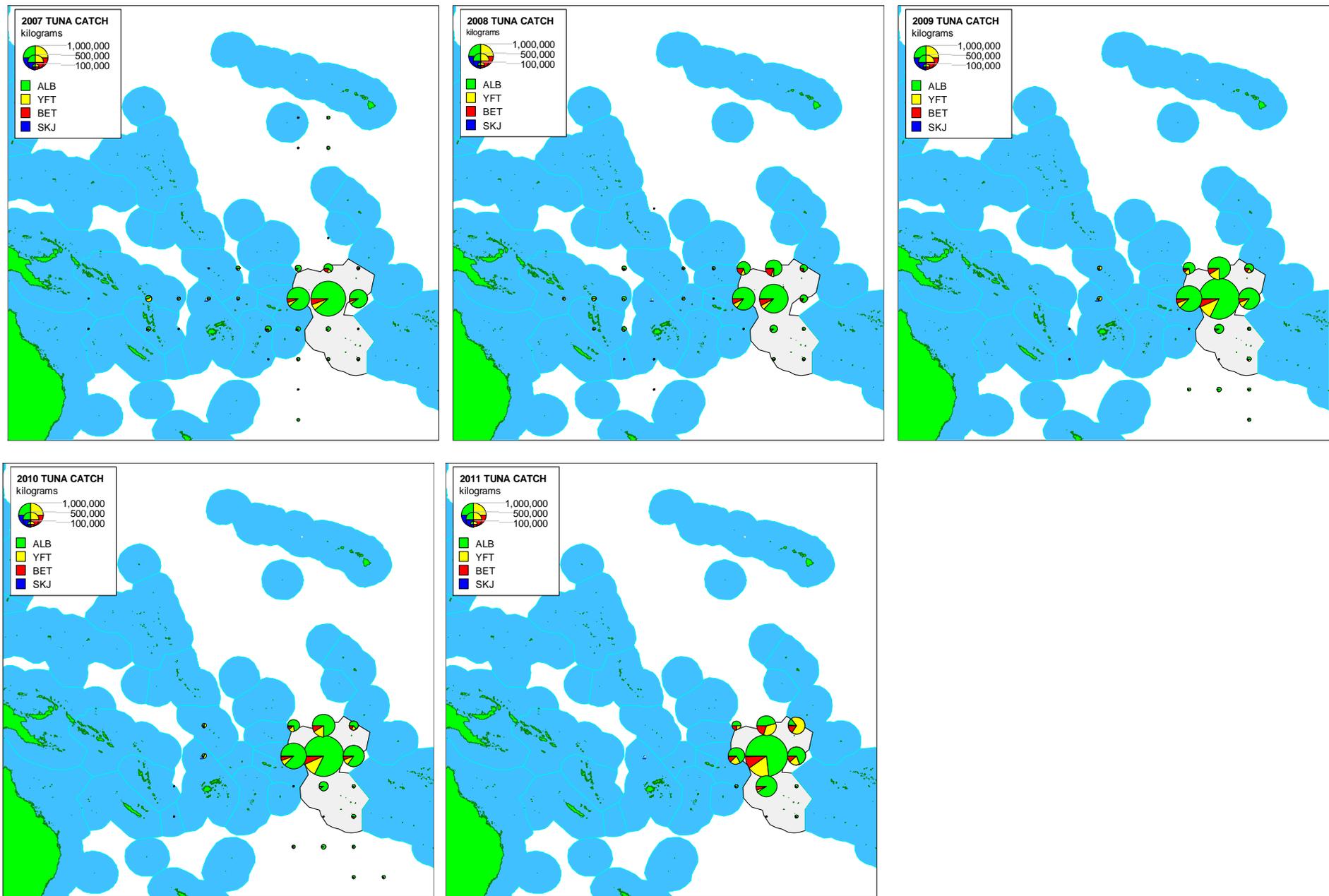


Figure 1. Tuna catch distribution within the WCPF-CA, for national longline fleet, 2007-2011.

## Licensing

Twenty Cook Islands flagged vessels were active and authorised to fish within the Convention Area in 2011. Table 5 shows the number of active Cook Islands longline fishing vessels by size, and authorised area of operation.

Of these three vessels were authorised to fish beyond national jurisdiction on the high seas, and within other national jurisdictions if authorised to do so.

Fourteen vessels were issued licences to fish within the WCPO and the high seas, although these vessels rarely fished beyond the Cook Islands EEZ. The remaining three vessels fished solely within the EEZ and were based out of Port Avatiu.

**Table 5. Number of active Cook Island flagged longline vessels by size, by authorised area, within the Convention Area for 2011.**

GRT range	CKEEZ only	CKEEZ and WCPO HS	WCPO HS only	Total
0-10				0
10-50	3			3
50-200		12	2	14
200-500		2	1	3
500+				0
<b>Total</b>	<b>3</b>	<b>14</b>	<b>3</b>	<b>20</b>

A total of thirty-nine non-Cook Islands vessels were authorised to fish within the Cook Islands EEZ during 2011. However, sixteen vessels were licensed in late December, under the new exploratory fisheries plans for swordfish and bigeye, however only four of these were actively fishing. Total vessel numbers by size can be seen below in Table 6.

**Table 6. Number of Non-cook Islands longline vessels by size, authorised to fish in the Cook Islands EEZ, 2011.**

GRT range	Total
0-10	0
10-50	0
50-200	21
200-500	5
500+	13
<b>Total</b>	<b>39</b>

The Cook Islands troll fleet diminished in the mid 2000's, with the last vessel active in 2008. One vessel was authorised to carry out dual fishing methods in 2011, longline and troll, however no troll fishing was carried out. See table 7 below for numbers of active troll vessels by size class for the last five years.

**Table 7. Number of active Cook Island flagged troll vessels by size, 2007-2011**

GRT range	2007	2008	2009	2010	2011
<b>0-10</b>	-	-	-	-	-
<b>10-50</b>	-	-	-	-	-
<b>50-200</b>	-	-	-	-	-
<b>200-500</b>	1	1	-	-	-
<b>500+</b>	-	-	-	-	-
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>

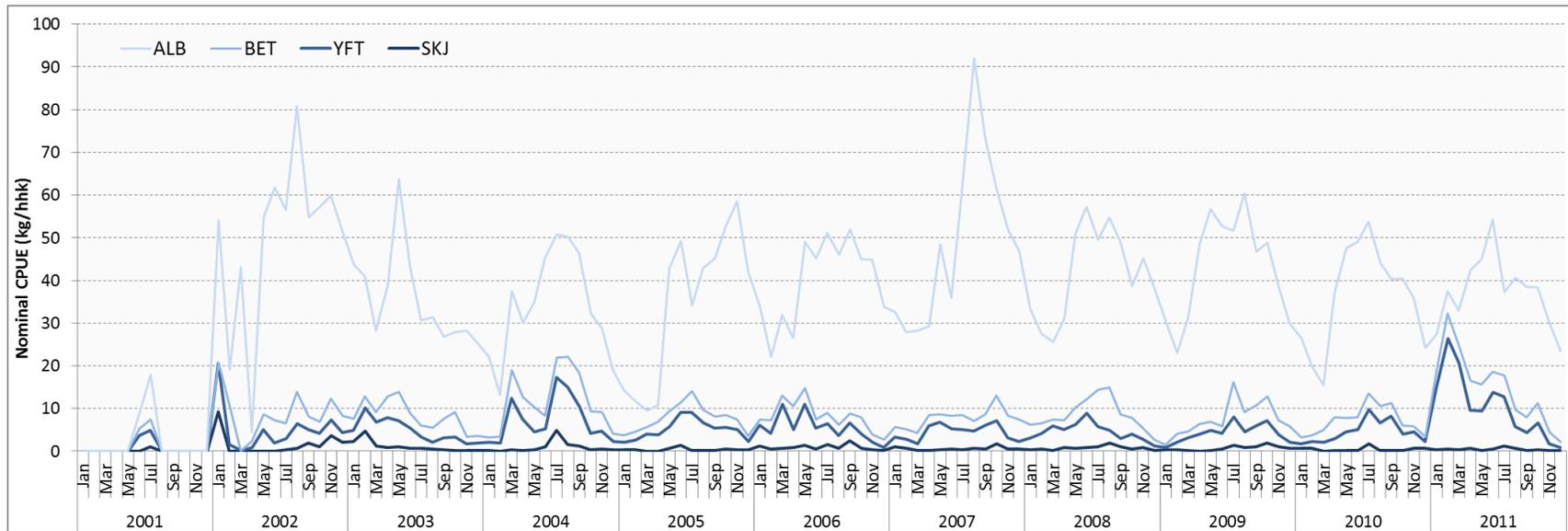


Figure 2. Nominal CPUE (kg/hhk) for the national longline fleet, for tuna species, 2001-2011.

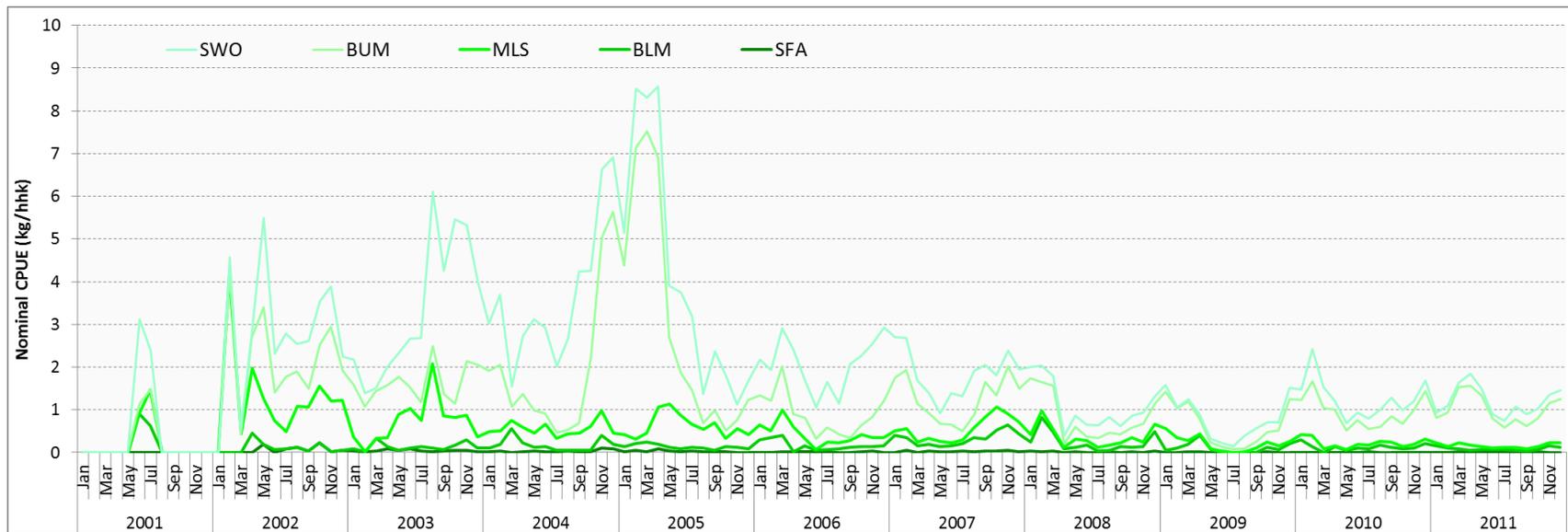


Figure 3. Nominal CPUE (kg/hhk) for the national longline fleet, for billfish, 2001-2011.

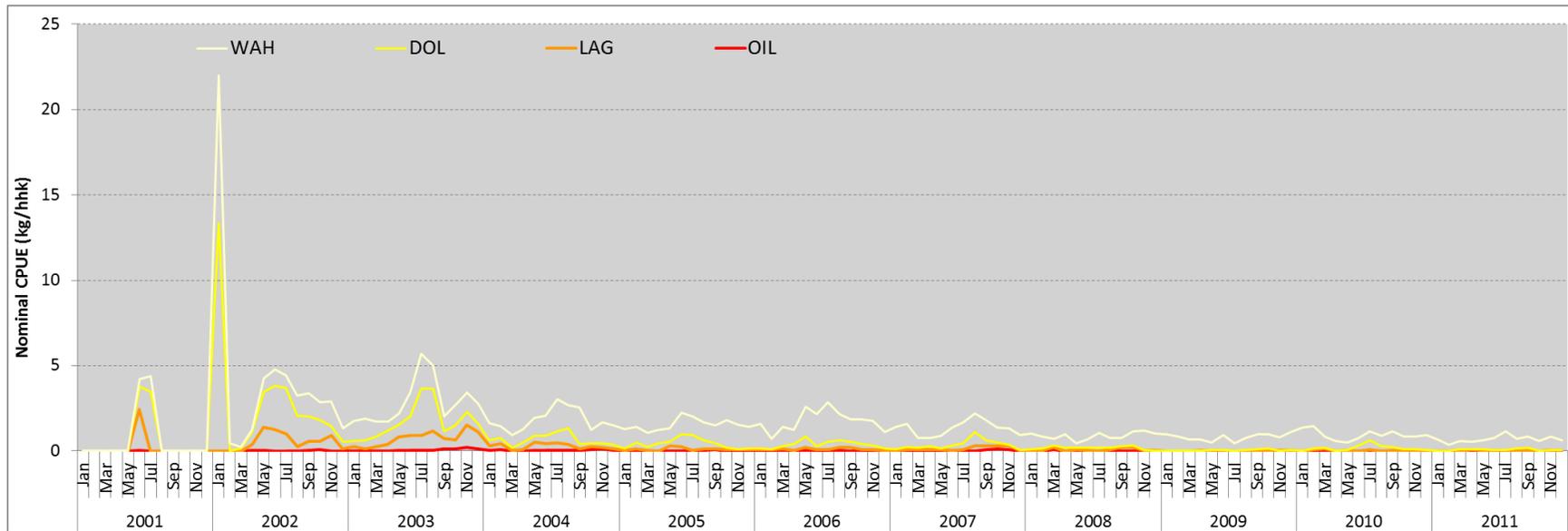


Figure 4. Nominal CPUE (kg/hhk) for the national longline fleet, for tuna species, 2001-2011.

Nominal catch rate trends over time (figure 2) demonstrate the fisheries seasonal variability. Albacore has maintained relatively stable cpue over time, however the annual average catch rate fell below 1.5kg/hhk in 2003 and 2004, the same for 2011. The highest catch rates for yellowfin and bigeye were experienced in the first quarter of 2011, which may be due to the shift in targeting between bigeye and albacore by some vessels.

Swordfish and blue marlin catch rates have followed similar trends each other over time (figure 3), with significant reductions in CPUE after 2005. This decrease is due to the removal of swordfish targeting boats from the fleet that were based in Rarotonga in the early 2000's. Swordfish targeting practices were introduced by Australian fishermen in 2002, however the seasonal variability in overall catches and high operating costs out of Rarotonga, resulted in vessels leaving the fleet, or concentrating their efforts in the northern Cooks.

Relatively high catch rates for bycatch species wahoo and mahimahi (figure 4) were experienced early on in the fishery, which couples with the shallow set practices by fishers between 2002 and 2005 in the swordfish fishery, and the rapid increase of effort by the number of vessel in the fleet. Since then the number of vessels setting for swordfish has diminished significantly and vessels employ deep set practices to target the main tuna species.

### **Observer Program**

In February 2011 five Samoans were trained and recruited to the Cook Islands National Observer Program. Another three Cook Island Nationals have been trained since then.

Observer debriefer's were sought from the experienced senior observer pool that demonstrated consistent high standards of quality data and reports. In 2011 the Cook Islands had its first FFA/SPC qualified debriefer trained and a second just completed training in July 2012.

The Cook Islands achieved of 32 trips, totalling 901 sea days. 187 fishing trips of which 15 Observer placements were conducted.

A total of 187 fishing trips were undertaken by the vessels in the northern fishery, resulting in an overall coverage by trip of 8%. Of the observer trips, nine were debriefed.

The three domestic based vessels that fished during this period undertook 75 fishing trips of which 6 observer placements were made on two of these vessels, equating to 8% coverage. No observer debriefing was carried out for these trips as they were carried out by two experienced senior observers who are also debriefer's.

2011 observer data has been provided to, and is being processed by SPC.

The national program was audited in August 2011, and advised that accreditation for full ROP authorisation was granted in January 2012.