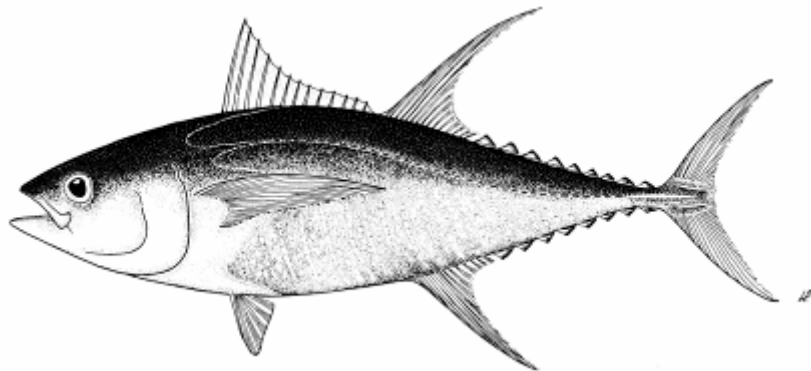




## **New Caledonia – Annual Report on Tuna fishing and related activities**



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## WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION

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NEW CALEDONIA - ANNUAL REPORT

Tuna fishing and related activities

Except in the early 1980s, the New Caledonian tuna fleet has always been composed of longliners.

This fleet increased sharply from 2000 to 2003 and is now stabilized. In 2004, it comprised 29 tuna longliners managed by 8 fishing companies.

Global catches were slightly better in 2004 compared to 2003 (+6%), mainly because of higher levels of albacore catch (+32%). However, fewer yellowfin (-16%) and bigeye (36%) were caught last year.

Seasonality remains an important feature of the catch in relation with fluctuations of environmental conditions. A study is currently being carried out in collaboration with SPC to better identify tuna habitats. Some experimental fishing trips were also conducted last year on the vertical distribution of tuna in the vicinity of New Caledonia, using hook-timers and pressure-temperature sensors.

As stated in previous reports to the Standing Committee on Tuna and Billfish, following a decision by the New Caledonian Government, a vessel monitoring system (VMS) was set up in early 2005 and is currently under evaluation.

### A. Fishing activity

In 2004, 29 domestic tuna longliners were licensed to fish in the EEZ of which 27 were active. Their mean length is 20 metres.

11 of them have a gross registered tonnage of less than 50 tons: they are all so-called fresh sashimi boats without any processing facilities on-board.

The remaining vessels are larger boats capable of staying at sea for longer periods. However, none of the fishing trips made lasted more than 15 days: 12 days on average compared to 8 days by the smaller vessels.

In terms of fishing effort, 2004 was similar to 2003 with 6,000,000 hooks fished and 500 fishing trips in total.

Two vessels were classified as factory vessels with loining facilities on-board. They were EC-approved for export. So were two processing plants (one in Noumea and one in Koumac).

Approximately 300 people were employed by the fishing companies. Almost 200 of them were employed as crew members.

Since early 2001, no foreign vessels have been licensed to fish in the New Caledonian EEZ.

### B. Catch statistics

**Table 1: breakdown of catch (whole weights) by species from New Caledonian longliners in the WCPFC area and in the EEZ only**

M. tonnes of	2000		2001		2002		2003		2004	
	WCPFC	ZEE	WCPFC	ZEE	WCPFC	ZEE	WCPFC	ZEE	WCPFC	ZEE
Yellowfin	250	248	570	569	572	569	754	748	631	611
Bigeye	517	515	128	127	189	187	142	141	90	87
Albacore	895	880	1,020	1,018	1,165	1,154	1,111	1,092	1,468	1,372
Sharks	31	31	36	36	20	20	38	38	34	32
Others	294	288	310	309	265	263	421	412	393	382
<b>TOTAL</b>	<b>1,987</b>	<b>1,962</b>	<b>2,064</b>	<b>2,059</b>	<b>2,211</b>	<b>2,193</b>	<b>2,466</b>	<b>2,431</b>	<b>2,616</b>	<b>2,484</b>

The catch statistics provided in table 1 are mainly compiled from landings and logsheets data. The South Pacific regional longline logsheet is now implemented by all fishing companies to report catches by their vessels.

Since the establishment of the socio-economic tuna observatory in mid-2003, sales forms routinely collected from the companies make it possible to verify the data provided on the logsheets.

As shown in table 2 below, seasonality is an important feature of tuna fishing in the EEZ of New Caledonia, particularly regarding albacore: much lower catches of this species were reported from March to May last year.

**Table 2: Number of fish caught by month (2004)**

Month	01	02	03	04	05	06	07	08	09	10	11	12
Yellowfin	1,918	2,800	2,021	1,773	2,063	1,797	2,764	5,071	1,212	2,326	2,809	1,925
Bigeye	187	233	202	427	433	407	266	236	116	80	110	45
Albacore	6,385	7,576	2,886	2,864	3,050	6,615	8,918	10,823	6,112	5,735	6,915	9,471
Others	1,898	1,433	1,021	913	1,302	1,226	1,056	1,058	1,009	1,200	1,623	1,508
TOTAL	10,388	12,042	6,130	5,977	6,848	10,045	13,004	17,188	8,449	9,341	11,457	12,949

### **C. Research and monitoring activities**

In April 2004, the New Caledonian government decided that a VMS would become compulsory for every fishing vessel operating in its EEZ. As there are no foreign vessels authorised to fish in this zone, this decision has principally concerned local boats enabling authorities to track their activity in the EEZ. This system is currently being tested: when it is totally implemented, it will represent a source of information to help identify unregulated fishing in the EEZ.

Within the ZoNéCo programme a project is currently being carried out to address the question of seasonality. It aims at analyzing the variability of certain environmental and biological parameters of the tuna habitats in New Caledonia's EEZ, in order to better understand and predict tuna movements. Some preliminary results may be given:

- in the most northern part of the EEZ (North of 20°S), at depths of 100 to 400 metres, the albacore CPUE seems to be correlated with the sea temperature. With regard to yellowfin, in the surface layer (0-100 metres), CPUE appears to be driven by variations of temperature;
- in all regions, yellowfin CPUE may increase with temperature in the surface layer but CPUE of albacore and bigeye seem less correlated with this parameter;
- primary production appears to be stronger in the southern part of the EEZ.

Under ZoNéCo experimental fishing trips totalling 8,100 hooks fished were also carried out from November 2003 to October 2004, using hook-timers and pressure-temperature sensors to provide more information about the vertical distribution of tuna. Two different fishing strategies were tested during these campaigns:

- "shallow" (targeted depths 250-300 metres);
- "deep" (targeted depths 400-500 metres).

The gear shapes induce different distributions of hooks in depth which are summarized in table 3 below:

**Table 3: estimated distribution of hooks vs depth**

	0-100 m	100-200 m	200-300 m	300-400 m	400-500 m
Shallow	16%	58%	26%		
Deep		16%	16%	40%	28%

Breakdown of catch appears to be quite different from that of the domestic fleet with 32% of yellowfin, 7% of bigeye and 4% of albacore. These results may be due to experimental fishing being carried out during the daytime in areas close to the barrier reef along the west coast. Regarding by-species, opah represented 29% of the total catch.

For these species, the main vertical distribution features are shown in table 4. Yellowfin, marlins and sharks are mainly caught when the temperature is above 20 °C, bigeye and opah when the temperature is under 20 °C.

**Table 4: vertical distribution features**

	Minimum depth / temp.	Maximum depth / temp.	80% depth range
Yellowfin	25 m / 28 °C	408 m / 14 °C	50-250 m
Bigeye	200 m / 21 °C	390 m / 17 °C	250-380 m
Albacore	95 m / 23 °C	411 m / 14 °C	100-410 m
Opah	212 m / 20 °C	515 m / 11 °C	210-430 m

Provision of other biological data is also achieved through observer and port sampling activities carried out under an EU-funded project.

In 2004 the port samplers in Noumea and Koumac undertook 375 samplings of off-loadings - that is 75% of all the fishing trips. It represents 47,030 fish measured with the following breakdown of commercial species:

- albacore = 71%;
- yellowfin = 19%;
- bigeye = 1%;
- marlins = 1%;
- other commercial species = 8%.

11 observer trips were conducted last year. Since the beginning of the project in early 2002, 222 longline sets have been observed totalling 433,180 hooks. For all these trips, the species reported are listed in table 5 next page.

#### **D. The markets**

All data regarding markets have not yet been submitted to the socio-economic observatory. However, some trends could be pointed out:

- general decrease of exports to the Japanese sashimi market;
- increase of sales for canning.

### **E. The future**

The New Caledonian tuna fleet has really developed in the early 2000s and is now considered as mature. It is unlikely that the number of vessels will increase sharply in the near future.

Fishing strategies may however change with more vessels targeting albacore since loining facilities are now in operation in New Caledonia.

**Table 5: species observed (2002-2004)**

	Number of fish	Percentage observed
Yellowfin	1,776	19.1
Bigeye	303	3.3
Albacore	3,870	41.6
Blue marlin	42	0.5
Black marlin	21	0.2
Striped marlin	72	0.8
Sailfish	28	0.3
Swordfish	39	0.4
Shortbill spearfish	81	0.9
Wahoo	225	2.4
Opah	247	2.7
Mahi mahi	592	6.4
Pomfret	38	0.4
Longfin mako shark	10	0.1
Shortfin mako shark	65	0.7
Blue shark	383	4.1
Silky shark	34	0.4
Oceanic white-tip shark	44	0.5
Thresher shark	9	0.1
Other sharks	53	0.6
Stingray	46	0.5
Skipjack	365	3.9
Lancetfish	674	7.2
Escolar	52	0.6
Barracuda	144	1.5
Others	89	1.0
<b>TOTAL</b>	<b>9,302</b>	