SCIENTIFIC COMMITTEE
SEVENTH REGULAR SESSION

9-17 August 2011
Pohnpei, Federated States of Micronesia

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

WCPFC-SC7-AR/CCM-14

NEW CALEDONIA

WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION

7th Scientific Committee Meeting
9th – 17th August 2011
Pohnpei, Federated States of Micronesia

NEW CALEDONIA - ANNUAL REPORT 2010
Part 1

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).

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

In 2010, 20 domestic longliners fished in the New Caledonian ZEE. No licenses have been issued to foreign vessels since early 2001.

A 12% increase in the catch was reported last year. The annual catch of 2860 mt was mainly composed of albacore which is the target species of all the vessels and accounts for 68% of the total (1939 mt). Yellowfin was second with 505 mt (18%). Striped marlin and swordfish remain by-catch of this fishery (65 mt and 8 tonnes respectively).

Catches of sharks have been decreasing since 2006, due to an increasing use of monofilament branchlines.

In 2010, port sampling and observer activities carried out under the SciFish project reached respectively 52% and 9% coverage of the longline sets. The objectives of these activities are to collect information to be checked with the other sources of data, and to provide accurate data to the stock assessments.

Through the ZoNéCo program New Caledonia also continues to participate in the regional efforts to improve the knowledge of the tuna behaviour, in particular the South Pacific albacore as the species of major interest for its fishery.

Catch statistics

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

In accordance with the provision of scientific data to the Commission all the logsheets data are made available to the SPC/OFP on an annual basis. For year 2010 these data were provided on the 19th April, 2011.

Effort and catch statistics in table 1 (see annex) are extracted from these logsheets.

The total catch of 2859 mt in 2010 represents a 12% increase from the 2009 level and the highest catch recorded 2004.

As the target species of the New Caledonian tuna fisheries, the South Pacific albacore is the predominant species in the catch with 1939 mt (68%). Yellowfin is the second (505 mt and 18%).

In 2010, the average weight of albacore was 16.9 kg, which is the lightest weight recorded over the last five years. With regard to yellowfin, 29.3 kg has been the highest average weight since 2006.

No New Caledonian vessel targets bigeye, sharks, marlins or swordfish. Therefore, all the catch reported for these species are bycatch. In particular, only 65 mt of striped marlin and 8 tonnes of swordfish were landed in 2010.

The shortfin mako is the only shark retained and sold for meat consumption in New Caledonia, totaling 10 mt in 2009 and 2010 as well. A new fishery regulation banning shark-fining in the EEZ will be proposed to the government in the forthcoming months.

Many species show seasonal patterns in their abundance around New Caledonia which induce similar fluctuations in the catch levels reported (see table 3 and figure 3 in annex).

Fleet structure and fishing activity

In 2010, 20 domestic tuna longliners were licensed to fish but only 17 of them had been active. Similarly to past years there were no foreign vessels authorized to operate in the New Caledonian EEZ.

Table 2 shows that 3 active vessels in 2010 are less than 50 tons. These vessels have limited cruising range. Although the larger longliners can stay at sea for two or more weeks the average trip length for the whole fleet is only 10 days of which 6 or 7 are fished.

Globally, 366 fishing trips were reported in 2010, totalling almost 3,740 days at sea and 2,540 days fished with 4.7 millions hooks used.

Monitoring activities

Port sampling and observer activities have been carried out in New Caledonia for more than 20 years. However, they have benefited from dedicated funding only for a few years under the ProcFish and SciFish programs.

Observer activity

In 2010, 30 trips were observed by 2 observers onboard the vessels of 3 domestic companies, representing 363 days at sea and almost 4,800 fish observed. Over this period of time the observer activity covered about 9% of all the longline sets. The detailed data are provided in table 4 in annex.

Shark species, except the shortfin mako, are usually released at sea if they are captured alive.

During trips observed in 2010, no turtle interaction was observed. 4 birds, 2 of which were petrels, were incidentally captured.

Port sampling activity

In 2010, 189 samplings were carried out in the ports of New Caledonia totalling almost 58,430 fish which makes up a total of 379,283 fish sampled since early 2002 (see table 5).

Vessel Monitoring System

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

All licensed vessels must have a transmitter 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.

A daily monitoring is carried out by the New Caledonia fisheries department, which helps:

a. check the VMS data with the number of logsheets provided by the fishing companies
b. the French Navy to survey the EEZ.

In 2010, the Vessel Monitoring System was improved by implementing a new software Metafishery) which manages the various data automatically.

Scientific and technical research

The local and regional circulation in the EEZ has been studied for many years. Studies carried out have allowed to better understand the hydrological characteristics as well as the interannual variability. In addition, considerable headways have been obtained in the understanding of the spatial structure (in particular vertical) of the primary production. All those studies, led by IRD (Institut de Recherche pour le Développement) and the SPC within the framework of the ZoNéCo programme, aim at better capturing the relations between the climatic signals and the dynamics of the tuna stocks in the New Caledonia EEZ.

Based on the results of the recent studies led by the ZoNéCo Programme, it seems that tuna preys (micronekton, species constitution, biomass and spatial distribution which partially determine the behavior of the tunas) is the major knowledge gap on the functioning of the ecosystem in the EEZ.

Whereas information exists on the distribution of hydrodynamics variables and of the surface chlorophyll in the EEZ, we comparatively have no information about the nature and the distribution of the tuna preys. Besides the relations which this group maintains with tunas, the micronekton, is a central point of the functionning of the marine ecosystem which is also going to force the distribution of the other pelagic species.

Better understanding the micronekton functioning, its influence and its importance in the ecosystem is the objective of this study combining observations and modeling, conducted by the IRD and the SPC within the framework of the ZoNéco programme.

This study, which will allow to better understand the migratory status of the albacore tuna in the EEZ of New Caledonia started early 2010 and is still in progress.

It proposes to:

- analyze a 12 years acoustic data set and conduct 2 new acoustic campaigns to determine the spatial distribution of the zooplankton and micronekton in the New Caledonia EEZ;
- complete and increase the stomach content analysis of the albacore caught in the EEZ to identify the preferential preys of the albacore tuna;
- set up a sampling strategy of the zooplankton and micronekton, based on the validation of acoustic data, in order to estimate a zooplankton-micronekton biomass;
- use all the data collected to upgrade the micronekton model used in the previous ZoNéCo studies;
- support the existing tagging program in the EEZ, in order to improve the knowledge on the albacore tuna migrations;
- combine the results of the ROM'S/PISCES/SEAPODYM models and the new migration data set, to better understand the determinism and the average distribution, both seasonal and interannual, of albacore in the New Caledonia EEZ.

The tagging operations and the stomach sampling are finalized. The stomach contents and the acoustics data analysis are in progress.

The oceanographic campaign will start in august 2011 with final results expected in 2012.

TABLES AND FIGURES **ANNEX**

Table 1: estimates of days fished and catch by species from New Caledonian longliners in the WCPFC area

Metric tonnes of	2005	2006	2007	2008	2009	2010 *
South Pacific Albacore	1590	1 358	1 324	1 506	1 649	1 939
Yellowfin	448	414	393	424	487	505
Bigeye	76	35	53	62	51	44
Striped Marlin	74	54	63	103	71	65
Black Marlin	28	24	35	39	34	42
Blue Marlin	21	13	12	8	9	10
Swordfish	12	10	19	15	7	8
Mako shark	26	14	13	14	10	10
Others	197	187	210	216	228	236
TOTAL	**2472**	**2 109**	**2 122**	**2 387**	**2 546**	**2 859**
Days fished	2836	2 134	2 531	2 751	2 674	2 541

*: preliminary data

Figure 1: historical annual catch by the New Caledonia longliners (from logsheets / CES) in the WCPFC area

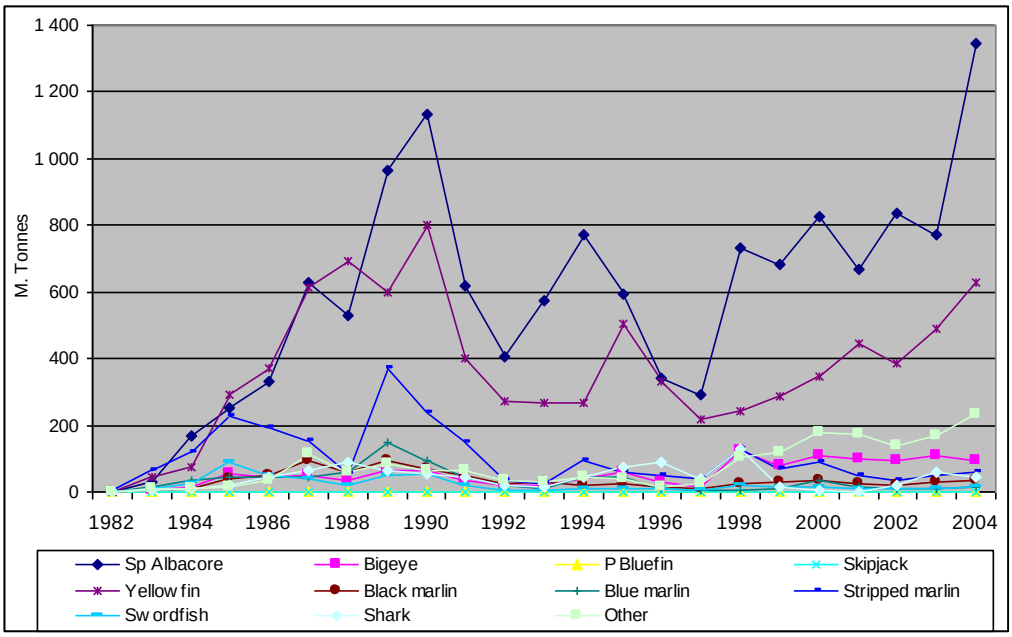

Table 2: number of domestic longliners active by GRT class

	0-50	51-100	100+
2005	8	15	0
2006	8	9	4
2007	8	11	4
2008	7	11	5
2009	6	10	5
2010	3	9	5

Figure 2: New Caledonia licensed longline vessels

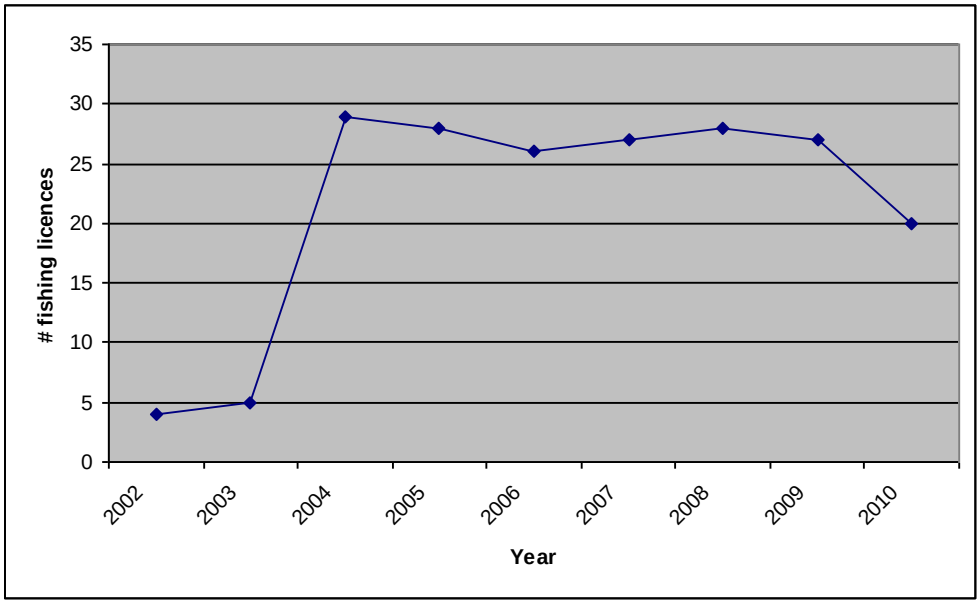

Table 3: number of fish caught per month in 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SP Albacore	5 943	4 385	5 646	6 835	11 870	8 556	11 333	16 518	11 574	10 817	9 423	11 715
Yellowfin	2 002	442	1 773	1 461	1 333	1 888	2 548	1 444	1 150	709	737	1 730
Bigeye	148	50	100	182	194	185	175	115	24	20	46	65
Striped marlin	68	11	11	29	26	28	15	35	49	181	307	191
Others marlin	49	51	33	27	18	7	21	15	33	39	60	85
Makos	12	5	5	14	14	12	13	41	48	42	32	29
Others	3 042	1 213	1 126	948	1 174	1 907	1 721	2 664	1 372	1 111	1 225	2 115
Total	**11 264**	**6 157**	**8 694**	**9 496**	**14 629**	**12 583**	**15 826**	**20 832**	**14 250**	**12 919**	**11 830**	**15 930**

Figure 3: monthly weight of albacore, yellowfin and bigeye in 2010

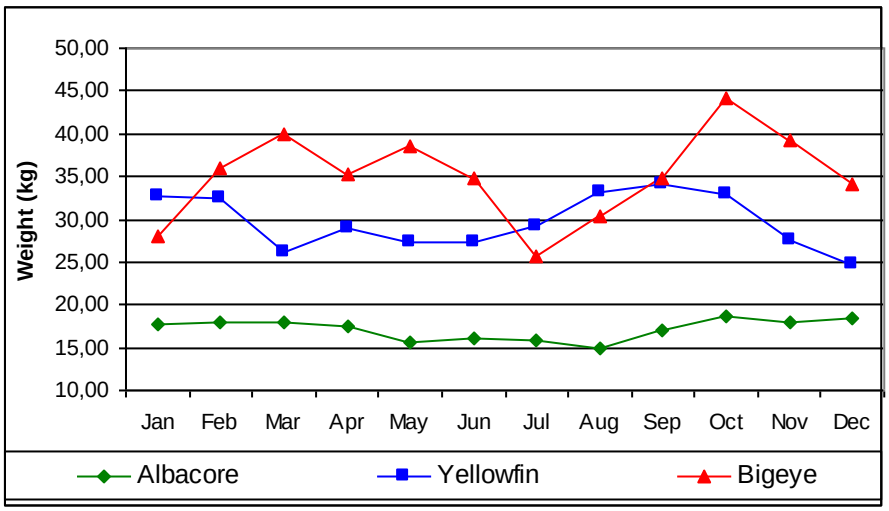

Table 4: number of observed species in 2010

Code	Species	Nb	% observed
ALB	ALBACORE	1 168	24.51%
ALS	SILVERTIP SHARK	1	0.02%
ALX	LONGSNOUTED LANCETFISH	334	7.01%
AML	GREY REEF SHARK	15	0.31%
BAB	BLACKFIN BARRACUDA	8	0.17%
BET	BIGEYE	55	1.15%
BIZ	BIRDS	2	0.04%
BLM	BLACK MARLIN	16	0.34%
BRO	COPPER SHARK	6	0.13%
BRZ	POMFRETS AND OCEAN BREAMS	3	0.06%
BSH	BLUE SHARK	185	3.88%
BUM	BLUE MARLIN	7	0.15%
CCE	BULL SHARK	1	0.02%
CCP	SANDBAR SHARK	1	0.02%
DOL	MAHI MAHI / DOLPHINFISH / DORADO	572	12.00%
EBS	BRILLIANT POMFRET	1	0.02%
FAL	SILKY SHARK	25	0.52%
-	FUGU	2	0.04%
GBA	GREAT BARRACUDA	71	1.49%
GEP	OTHER GEMFISH	1	0.02%
GES	SNAKE MACKEREL	4	0.08%
LAG	OPAH (MOONFISH)	25	0.52%
LEC	ESCOLAR	19	0.40%
MLS	STRIPED MARLIN	20	0.42%
OCS	OCEANIC WHITETIP SHARK	2	0.04%
OIL	OILFISH	1	0.02%
-	PILOT FISH	1	0.02%
PLS	PELAGIC STING-RAY	49	1.03%
PRX	PETRELS	2	0.04%
PTH	PELAGIC THRESHER	3	0.06%
SBF	SOUTHERN BLUEFIN TUNA	1	0.02%
SFA	SAILFISH (INDO-PACIFIC)	8	0.17%
SHK	SHARKS	1	0.02%
SKJ	SKIPJACK	78	1.64%
SMA	SHORT FINNED MAKO	5	0.10%
SSP	SHORT-BILLED SPEARFISH	19	0.40%
SWO	SWORDFISH	10	0.21%
TIG	TIGER SHARK	2	0.04%
WAH	WAHOO	137	2.88%
YFT	YELLOWFIN	1 904	39.96%
Total		**4 765**	**100%**

Figure 4: breakdown of shark and ray species recorded by observers in 2010

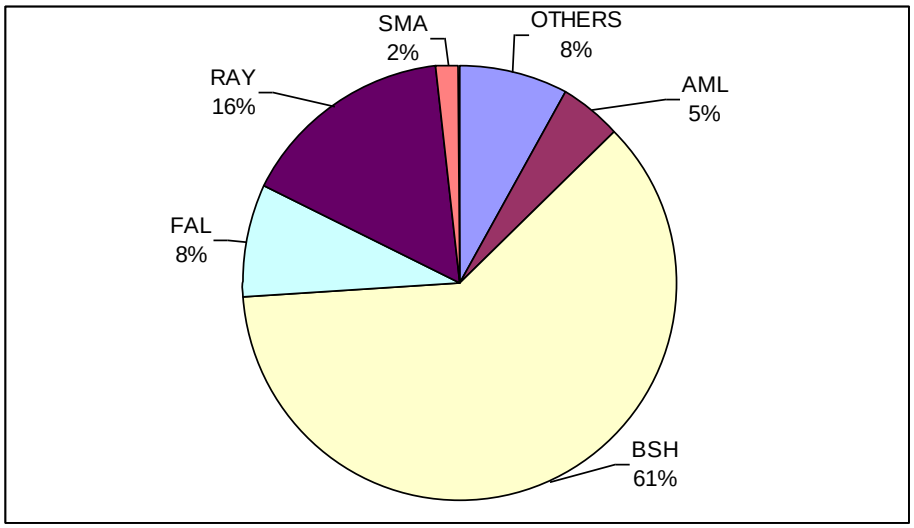

Table 5: number of fish sampled in 2010, by species

	Tuna			Billfishes					
Species	ALB	YFT	BET	MLS	SSP	BLM	BUM	SWO	SFA
Number of fish sampled	44 144	6 947	344	217	435	95	27	25	53

	Other commercial species				
Species	DOL	WAH	LAG	SMA	BRZ
Number of fish sampled	4150	1360	549	68	15

Figure 5: composition of port samples in 2010