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

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**WCPFC-SC5-AR/CCM-07**

**FIJI**

**ANNUAL REPORT TO THE WESTERN AND CENTRAL  
PACIFIC FISHERIES COMMISSION**

**PART 1: INFORMATION ON FISHERIES, RESEARCH  
AND STATISTICS 2008**

**Fiji**

**JONE AMOE  
FISHERIES DEPARTMENT.  
MINISTRY OF PRIMARY INDUSTRIES.**

**August 2009  
Port Vila, Vanuatu**

Scientific data was provided to the Commission in accordance with the decision relating to the provision of scientific data to the Commission by 30 <sup>th</sup> April 2009.	<b>Yes</b>

## **Abstract**

In the early 1990s, when fishing activity was relatively low, Albacore accounted for about 50% of the tuna catch but then increased to around 70% - 80% from 1995 onwards. Trends of Yellowfin catch throughout the years have remained at 15-25% of total tuna catch with the highest recorded in 2004. The percentage composition of Bigeye has been at the 8% levels. The 2008 catches of these 3 tuna species totaled 11,024mt.

Blue shark is the most common non-target species catch. The total non-target catches have decreased since 2006 from 4,660mt to 3,050mt in 2008.

Fiji continues to collect scientific information from its longline fleet through its observer program. The team comprises of 10 fully-fledged observers who are continually placed on Fiji licensed longline vessels fishing principally within Fiji national waters and occasionally in adjacent high seas pockets. Fiji observers are also placed on US-Treaty purse seine vessels licensed under the Forum Fisheries Agency (FFA), to which Fiji is a party.

In 2008, there were a number of collaborative studies undertaken with a number of fisheries agencies. This year, in collaboration with WWF South Pacific, the Fisheries Department will be undertaking a project on the levels of by-catch of Species of Special Interest by longline vessels.

## 1.0 Background

Fishing activity in Fiji waters has been occurring since the early 1950s. Local participation in the commercial tuna fishing picked up in the mid 1970s, then mainly focusing on pole-and-line fishing. Since the setting up of the Taiwanese and Korean longline activity in the 1980s, longlining has become the predominant fishing method, with few artisanal trolling fishers targeting FADs for the local market.

## 2.0 Annual Fisheries Information

### 2.1 Tuna and Billfish Catches

For the last decade, longlining has been the preferred method of tuna fishing in Fiji. Table 1 below shows the catches by Fiji's Longline fleet in EEZ, High Seas and in neighbouring EEZs where some of the vessels are also licensed to.

**Table 1. Annual Catches for the Fiji Domestic Longline Fleet, 2004 - 2008.**

Species	Total Catch (mt)				
	2004	2005	2006	2007	2008
<b>Albacore</b>	11,040	8,816	11,689	7,076	7,609
<b>Bigeye</b>	1,226	419	764	551	667
<b>Yellowfin</b>	4,072	1,970	2,210	1,704	2,748
<b>Swordfish</b>	255	175	221	104	195
<b>Blue Marlin</b>	288	197	215	108	214
<b>Black Marlin</b>	100	68	16	19	7
<b>Striped Marlin</b>	179	123	122	56	65
<b>Other</b>	4,633	3,579	5,273	2,679	2,569
<b>Total</b>	<b>21,793</b>	<b>15,348</b>	<b>20,508</b>	<b>12,298</b>	<b>14,238</b>

Note: Catch estimates do not include those taken in Fiji's Territorial seas and Archipelagic waters.

The highest recorded total catch in the 5 year period was in 2004 (21,793mt) due to the relatively high catches of Albacore and Yellowfin. The total catch by the domestic longline fleet (catches inside and outside Fiji EEZ) for 2008 was 14,238mt (11,024mt for the tuna species).

In the early 1990s, when fishing activity was relatively low, Albacore accounted for about 50% of the tuna catch but then increased to around 70% - 80% from 1995 onwards. Trends of Yellowfin catch throughout the years have remained at 15-25% of total tuna catch with the highest recorded in 2004. The percentage composition of Bigeye has been at the 8% levels.

## 2.2 Fleet Structure

The Fiji domestic longline fleet is composed of the licensed longline vessels (inclusive of chartered vessels) plus other unlicensed Fiji-Flagged longline vessels operating outside Fiji waters.

Over the five-year period, majority of the longline vessels (~ 80%) operating out of Fiji are of the 21-30m size category. Trip lengths for these vessels are usually around 14 days. The smaller vessels (<20m) are those that operate around Fiji waters with an average trip length of 9 days, fishing mainly around known seamount 'hotspots'.

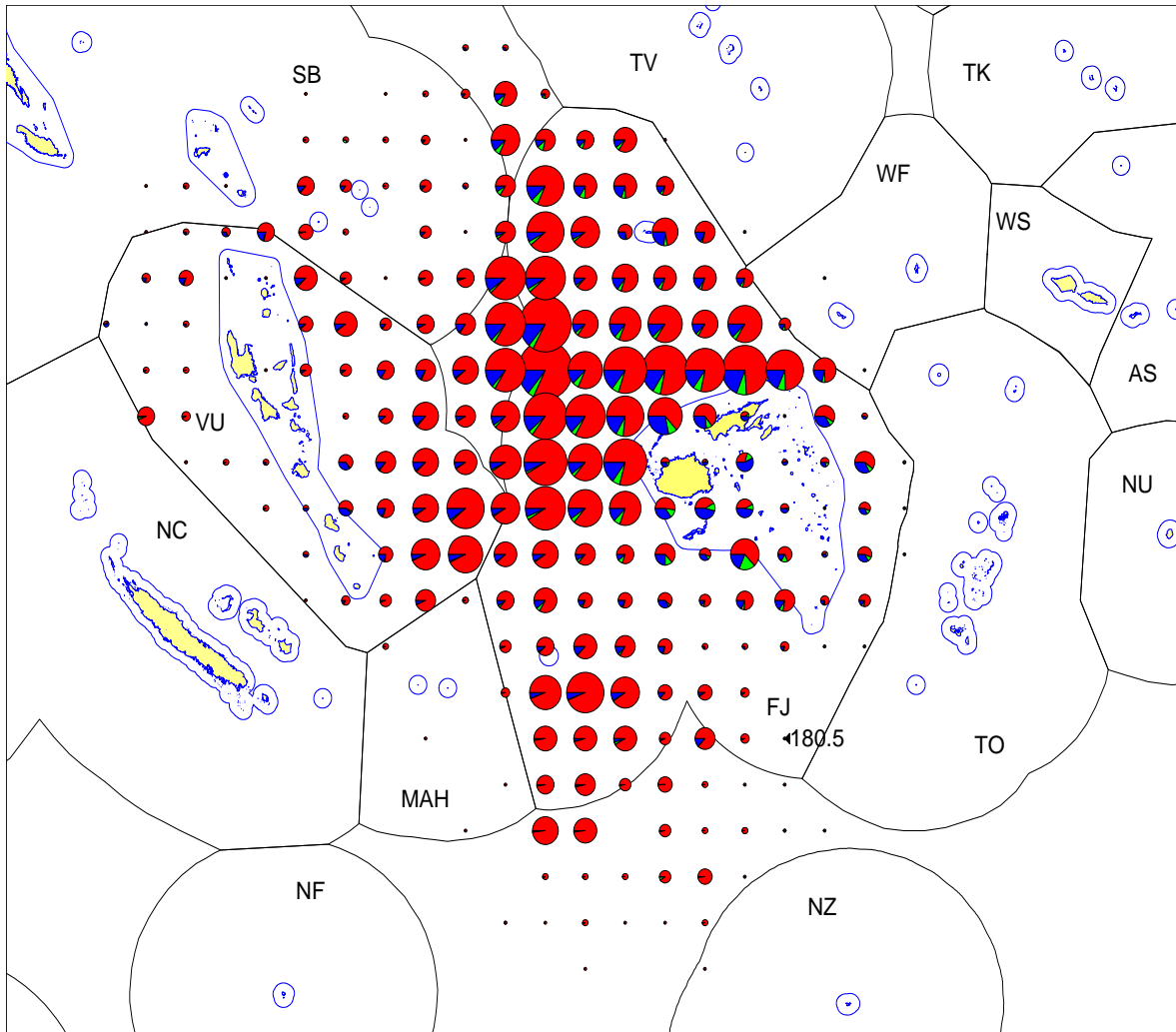
**Table 2. Vessel Size Categories of the Fiji Domestic Longline Fleet, 2004 -2008.**

Length (m)	2004	2005	2006	2007	2008
<20m	5	9	8	8	5
21m-30m	98	80	59	95	83
>31m	15	14	13	7	8

## 2.3 Fishing Patterns

Figure 1 shows the distribution of tuna catch by the Fiji domestic fleet. Majority of the catch was within the Fiji waters with some activity in the high seas and in the neighbouring EEZs where several vessels are licensed to fish.

Records show that the catch of the Fiji fleet in waters outside the EEZ increased considerably for the years 2001 - 2004 from 10% to 55%. Contrasting patterns were observed in recent years where the catch of the domestic fleet from waters outside the EEZ was reduced to 20% levels.



**Figure 1. Annual Distribution of Tuna Catch.**

#### **2.4 Observed Interactions of Species of Special interest.**

Table 3. shows the observed encounters of sea turtles, marine mammals and seabirds recorded by Fiji observers on board Fiji longline vessels. In 2006 and 2007 there were 2 loggerhead sea turtles, 1 dolphin and 6 seabird interactions. No encounters were recorded in 2008.

The national observer programme is currently seeking SPC's assistance in seabird identification as this has been an area that is lacking and needs immediate improvement. There has also been some indication from Birdlife International to also assist Fiji Observers in seabird identification.

As it is, seabirds have not yet been grouped into species type in observer reporting.

**Table 3. Observed Annual Estimated Catches of Species of Special Interest.**

		Individuals encountered					
		2006		2007		2008	
Category	Species	No.	Dead	No.	Dead	No.	Dead
<b>Marine Turtles</b>	Green Turtle	0	0	0	0	0	0
	Loggerhead Turtle	1	0	1	1	0	0
	Hawksbill turtle	0	0	0	0	0	0
	Leatherback turtle	0	0	0	0	0	0
	Olive Ridley Turtle	0	0	0	0	0	0
	Turtles (unidentified)	0	0	0	0	0	0
<b>Marine Mammals</b>	Dolphins and Porpoises	1	0	0	0	0	0
	Toothed Whales	0	0	0	0	0	0
	Non-toothed Whales	0	0	0	0	0	0
	Marine Mammals (unident.)	0	0	0	0	0	0
<b>Whale Shark</b>	Whale Shark	0	0	0	0	0	0
<b>Birds</b>	Birds	6	5	0	0	0	0
Total Turtles		1	0	1	1	0	0
Total Marine Mammals		1	0	0	0	0	0

## 2.5 Catches of Non-target, Associated and Dependent Species.

The catches of the non-target species was observed to be low in previous years suggesting a degree of under-reporting. This has prompted the Department to target observer coverage levels in order to use observer data to best estimate the non-target species catch.

The total non-target catches have decreased since 2006 from 4,660mt to 3,050mt in 2008. The catches of sharks and rays have been the most recorded compared to the Billfish and other finfish. This is mainly due to the relatively high catches of Blue Shark. In the catches of Billfish, the Black Marlin and Swordfish make around 50% of the total Billfish catch.

**Table 4. Annual Estimated Catches of Non-Target, Associated and Dependent Species, 2006 - 2008.**

	Species	2006	2007	2008
<b>Billfish</b>	<b>Blue marlin</b>	202	517	214
	<b>Black marlin</b>	30	95	7
	<b>Striped marlin</b>	71	386	65
	<b>Swordfish</b>	174	96	195
	<b>Other Billfish</b>	364	227	124
<b>Sharks and Rays</b>	<b>Blue shark</b>	705	240	597
	<b>Mako sharks</b>	157	43	177
	<b>Oceanic whitetip shark</b>	169	164	54
	<b>Silky shark</b>	152	95	64
	<b>Other sharks and rays</b>	73	39	92
<b>Other finfish</b>	<b>Bullet/Frigate tunas</b>	0	0	6
	<b>Kawakawa</b>	0	35	0
	<b>Rainbow Runner</b>	1	1	1
	<b>Wahoo</b>	515	449	201
	<b>Common dolphinfish</b>	303	141	294
	<b>Triggerfish</b>	0	0	0
	<b>Barracudas</b>	69	147	66
	<b>Escolars</b>	278	213	250
	<b>Lancetfishes</b>	44	22	46
	<b>Ocean sunfish</b>	18	0	17
	<b>Oilfish</b>	3	0	4
	<b>Opah</b>	653	631	287
	<b>Pomfrets</b>	16	18	24
	<b>Small baitfish</b>	0	0	0
<b>Other fish</b>	665	212	266	
	<b>Total Non-target</b>	<b>4,660</b>	<b>3,774</b>	<b>3,050</b>

### 3.0 Marketing of Catches

In 2008, Fiji exported 51% of sashimi grade tuna to Japan and America. The remaining 49% was exported to other countries, namely China, Australia, New Zealand, Germany, Reunion Island, Canada and Taiwan. Fiji's billfish are also exported mainly to the US, buying close to 43% of the total billfish exports. Besides the US, the non-target species are also exported to Canada, China, Thailand, New Zealand and Japan.



Albacore and skipjack are either processed at the local cannery (PAFCO) or exported to Pago Pago. The Pacific Fishing Company (PAFCO) receives its raw materials directly from the domestic and foreign vessels unloading at the Levuka port or indirectly through Freezer Containers from the local fishing companies. The raw fish material supplied to PAFCO is exported as three products i.e. as canned fish, packed tuna loins, and as fishmeal. The canned tuna is mainly exported to the American, Canadian and Japanese markets. The tuna loins are exported to America for further processing whereas the fishmeal is shipped out mainly to the Philippines and Japan.

The remainder of the non-target catch and other damaged fish are sold locally at supermarkets, restaurants or directly to consumers.

## **4.0 Research and Statistics**

### **4.1 Data Coverage**

Catch logsheets are completed by vessels and provided to the Fiji Fisheries Department as a condition of fishing license. Unfortunately, logsheets do not provide full coverage of activities at this stage and it has been necessary to adjust the logsheet catch totals to account for missing data. Estimates of the target species for 2008 were determined by raising the available logsheet data to account for **months** where vessels were known to be active, but did not provide logsheets. (The Fisheries Department maintains a table showing months where licensed vessels were active/inactive and where logsheets have been submitted). The 2008 logsheets coverage for the Fiji domestic fleet was maintained at almost 100% levels, see table 5.

The non-target species were assumed to have been under-reported in logsheets and with more observer data now being collected, estimates of the non-target species were determined using the proportion of observers' non-target species composition to the target species percentage composition.

Unlike most distant-water longline fisheries, the Fiji domestic fishery lands and markets a number of non-tuna species, although shark trunks and other species are not commercially viable (e.g. lancet fish) are typically discarded. It should be noted that the estimation of total catch at this stage does not take into account the non-target species (e.g. shark trunks) discarded at sea.

**Table 5. Estimated Annual Coverage, 2005 – 2008.**

	Percentage Coverage (%)			
	2005	2006	2007	2008
<b>Catch &amp; Effort</b>	99	99	99	99
<b>Observer</b>	2.6	2.2	2.5	3.1
<b>Port Sampling</b>	24.5	6.3	8.3	7.1

Fiji continues to collect scientific information from its longline fleet through its observer program. Headed by a national observer coordinator, the team continues to strive to achieve its long-term goal of 20% coverage.

Since its inception in 2002, the 10-fully fledged observers are continually placed on Fiji licensed longline vessels fishing principally within Fiji national waters and occasionally in adjacent high seas pockets. Fiji observers are also placed on US-Treaty purse seine vessels licensed under the Forum Fisheries Agency (FFA), to which Fiji is a party.

A total of 46 placement trips and 844 sea days were covered by the Observer Program during the year 2008. From this total, 4 trips were covered under the US Treaty trips on purse seine vessels. Given the limited resources, placement coverage increased in 2008 to 3.1% from the 2.5% level in 2007.

When not on observer placement trips, the observers compliment the 2 full-time port samplers by carrying out port sampling duties at landing sites in Suva. In 2008, the coverage level was at 7.1% a decrease from the 8.3% achieved in 2007.

## **4.2 Collaborative Projects**

In 2008, there were a number of collaborative studies undertaken with a number of fisheries agencies. Most were for the collection of biological samples by the Observers whilst on placement trips. One such study was for the collection of biological samples for Stripe Marlin. This was for a study done by a research fellow of Charles Stuart University, Australia in collaboration with SPC.

### **4.2.1 Turtle Mitigation Awareness**

The Sea Turtle Conservation, Management, Mitigation Outreach Project was funded by the Pacific Islands Regional Office, NOAA Fisheries, Honolulu, Hawaii. It was an awareness program targeting observers, captains, crews and owners of longline fishing vessels. The participants were introduced and trained on sea turtle mitigation and safe handling. Part of the project was the distribution

of equipment like line cutters, de-hookers and scoop/dip nets to observers and domestic long line vessels.

#### **4.2.2 Cetacean Interaction with Longline Vessels**

Through the request from the industry to FFA and SPC, Fiji Observers are working in collaboration with a USP Post Graduate student to study cetacean interaction with longline vessels.

#### **4.2.3 Species of Special Interest By-catch.**

This year, in collaboration with WWF South Pacific, the Fisheries Department will be undertaking a project on the levels of by-catch of Species of Special Interest by longline vessels. The findings of the assessment will be used to determine relevant and cost effective mitigative actions that can be employed in order to minimize any negative impacts of longline fishing on these species of special interest.