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PART 1: INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS

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ANNUAL SCIENTIFIC REPORT TO THE WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION

PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISTICS 2010

Fiji

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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 2010 catches of these 3 tuna species totaled 9,955mt.

The nominal CPUE for Albacore increased steadily from 1.03 in 2003 to 1.93 in 2006 before dropping down to 1.47 in 2010. Bigeye nominal CPUE appears relatively stable over the time series. Yellowfin nominal CPUE remained consistent at and around the 0.2 levels in 2005 and 2006 before increasing to an average of 0.33 fish per 100 hooks in recent years.

The national observer records for the interaction rates of Species of Special Interest showed a higher level of interaction in 2009 compared to the previous years. This is attributed to the improved reporting by the national observer programme. In 2010 there were 5 loggerhead sea turtles, 3 Hawksbill, and 6 Leatherback Turtles.

1.0 Background

Fishing activity in Fiji waters has been occurring since the early 1950s. Local participation in the commercial tuna fishing began in the mid 1970s, then mainly focusing on pole-and-line fishing. Since the introduction 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 Catches

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

Table 1. Annual Tuna Catches for the Fiji Domestic Longline Fleet, 2006 – 2010.

	Total Catch (mt)				
Species	**2006**	**2007**	**2008**	**2009**	**2010**
Albacore	11,689	7,076	7,609	7,166	7,279
Bigeye	764	551	667	689	532
Yellowfin	2,210	1,704	2,748	2,564	2144
Other	5,845	2,967	3,214	3,430	4,441
Total	**20,508**	**12,298**	**14,238**	**13,849**	**14,396**

Note:

1. **Catch estimates do not include those taken in Fiji's Archipelagic waters.**

The highest recorded total catch in the 5 year period was recorded in 2006 (20,508mt) due to the relatively high catches of Albacore. The total catch by the domestic longline fleet (catches inside and outside Fiji EEZ) for 2010 was recorded at 14,396mt.

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% levels with the percentage composition of Bigeye at the 8% levels.

Trends in nominal CPUE are sometimes used as an indicator of abundance, but must be considered in association with other direct (e.g. targeting strategy, patterns of effort, size composition of the catch, recruitment, etc.) and indirect (e.g. environmental) factors affecting the fishery.

Figure 1 shows the trends in tuna nominal CPUE for the Fiji longline fleet. The nominal CPUE for albacore increased steadily from 1.03 in 2003 to 1.93 in 2006 before dropping down to 1.47 in 2010. Bigeye nominal CPUE appears relatively stable over the time series. Yellowfin nominal CPUE remained consistent at and around the 0.2 levels in 2005 and 2006 before increasing to an average of 0.33 fish per 100 hooks in recent years.

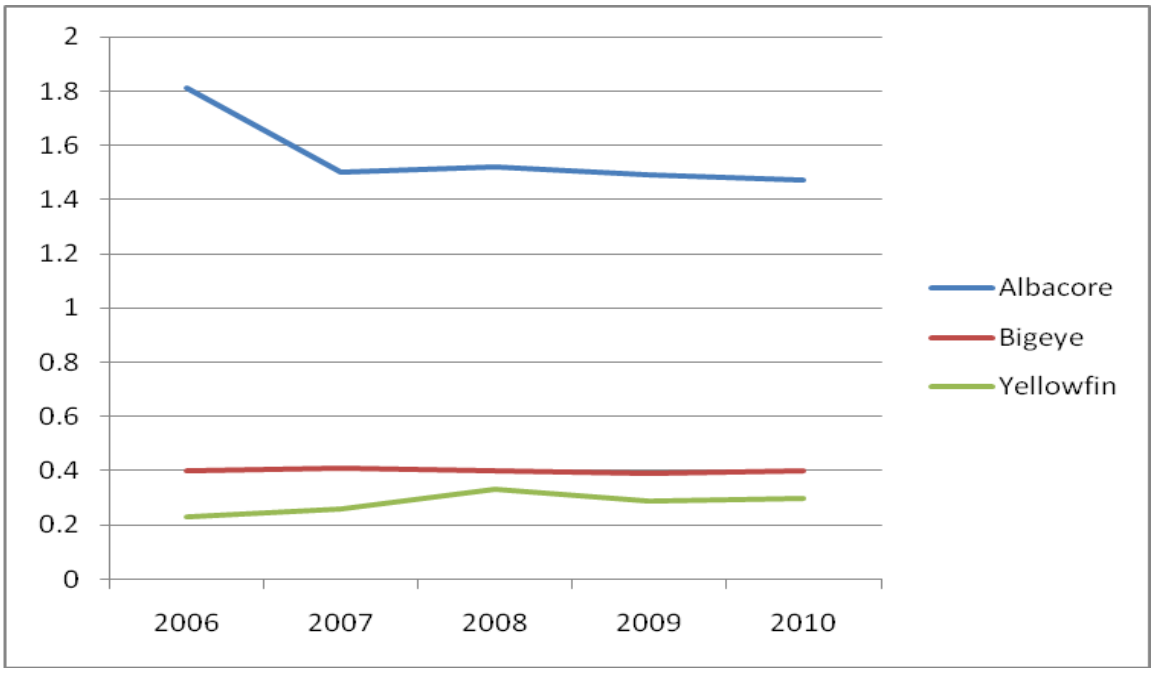

Figure 1. Annual trends in Albacore, Bigeye and Yellowfin nominal CPUE (number per 100 hooks) for the Fiji Domestic longline fleet, 2006 – 2010.

2.2 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 5,845mt to 4,441mt in 2010.The catches of sharks and rays have been the most recorded compared to the Billfish and other finfish.

Table 2. Annual Estimated Catches of Non-Target, Associated and Dependent Species, 2010.

Billfish	Blue marlin	40
	Black marlin	3
	Striped marlin	20
	Swordfish	141
	Spearfish	95
Sharks and Rays	Blue shark	199
	Mako sharks	123
	Oceanic whitetip shark	38
	Silky shark	145
	Thresher Sharks	12
	Pelagic Stingray	229
	Other sharks and rays	107
Other finfish	Wahoo	338
	Mahi mahi	1830
	Barracudas	602
	Escolars	236
	Opah	167
	Other	116

2.3 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 that operate principally outside of Fiji waters.

In recent years, majority of the longline vessels operating out of Fiji are above the 21 m size. Trip lengths for these vessels are usually 20 days. The smaller vessels (<20m) are those that operate inside Fiji archipelagic waters with average trip lengths of 9 days.

Table 3. Vessel Size Categories of the Fiji Domestic Longline Fleet, 2009 –2010.

Length (m)	2009	2010
<20m	7	8
21m-30m	43	46
>31m	42	45
Total	**92**	**99**

2.4 Fishing Patterns

Figure 2 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.

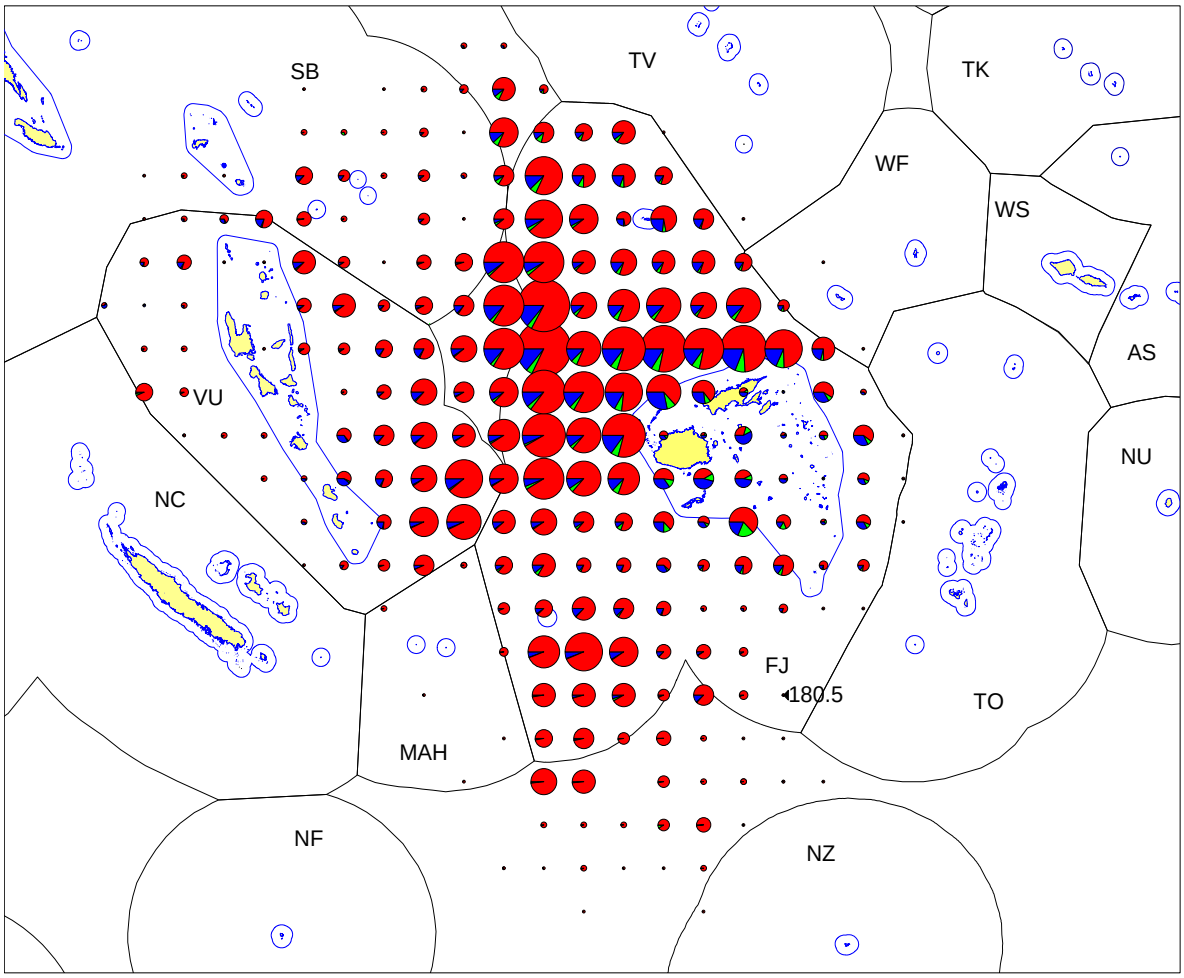

Figure 2. Annual Distribution of Tuna Catch.

2.5 Observed Interactions of Species of Special interest.

Table 4. shows the observed encounters of sea turtles, marine mammals and seabirds recorded by Fiji observers on board Fiji longline vessels. In 2010 there was a noted increase in the number of reported interactions. In total there were 5loggerhead sea turtles, 3 Hawksbill, and 6 Leatherback Turtles.

Table 4. Observed Annual Catches of Species of Special Interest.

		2008		2009		2010	
Category	**Species**	**No.**	**Dead**	**No.**	**Dead**	**No.**	**Dead**
Marine Turtles	Green Turtle	0	0	0	0	0	0
	Loggerhead Turtle	0	**1**	**2**	**2**	**3**	**2**
	Hawksbill turtle	**1**	**1**	**1**	**1**	**2**	**1**
	Leatherback turtle	0	**1**	**1**	0	**4**	**2**
	Olive Ridley Turtle	0	**1**	**2**	**2**	0	0
	Turtles (unidentified)	**1**	**1**	0	0	0	0
Marine Mammals	Dolphins and Porpoises	0	0	**2**	0	0	0
	Toothed Whales	0	0	**1**	0	0	0
	Non-toothed Whales	0	0	0	0	0	0
	Marine Mammals (unident.)	0	0	0	0	0	0
Whale Shark	Whale Shark	0	0	0	0	0	0
Birds	Birds	0	0	0	0	0	0
	Total Turtles	**2**	**4**	**6**	**5**	**9**	**5**
	Total Marine Mammals	0	0	**3**	**0**	0	0

3.0 Marketing of Catches

In 2010, Fiji exported 87% of tuna to Japan and America. The remaining 13% 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 68% 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 non-export grade 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 2010 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 2010 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, 2006 – 2010.

	Percentage Coverage (%)				
	2006	**2007**	**2008**	**2009**	**2010**
Catch & Effort	99	99	99	99	99
Observer	2.2	2.5	3.1	2.9	3.2
Port Sampling	6.3	8.3	7.1	7.7	7.8

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 58 observer placement trips were recorded in 2010.

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 2010, the coverage level was at 7.8% an increase from the 7.7% achieved in 2009.