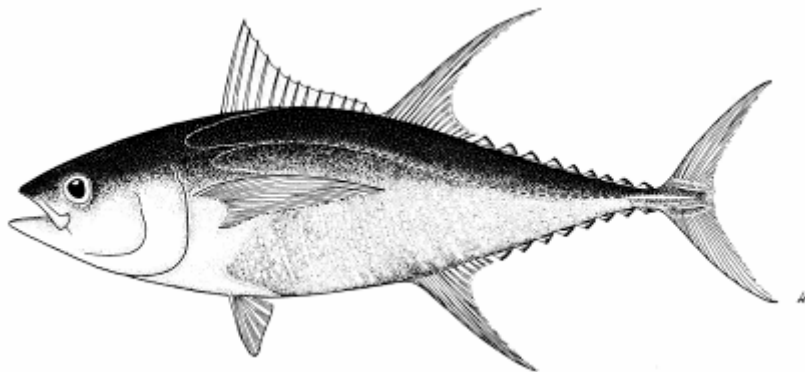




Samoa Tuna Fisheries Report 2005



Roseti Imo, Atonio Mulipola, Savali Time and Ueta Faasili Jr.

**Samoa Fisheries Division.
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1. Background

Fisheries play an extremely important role within Samoa's economy. The tuna longline fishery in recent times has been the major export earner in the country. (Watt & Imo 2003). The tuna longline fleet in Samoa is primarily a domestic fleet. Foreign fishing vessels according to the current plan are not permitted to fish in Samoan waters. The tuna fishery has been the mainstay of the economy ever since the introduction of longlining to the industry in the early 1990's. It continued to do so until the persistent low catches that has spanned more than three years to date.

The EEZ of Samoa is the smallest in the Pacific at 120,000km². This spatial constraint has resulted in efforts to delimit Samoa's EEZ with its neighbours. If successful this would provide more fishing areas for fishermen from Samoa and avoid possible run-ins with the surveillance and enforcement vessels of its neighbours.

The main species targeted by the tuna fleet in Samoa is albacore, while large (>20 kg) yellowfin and bigeye tunas also make up a major component of catches from the tuna fleet. Various pelagic species (by-catch) are also caught in Samoa's EEZ however, they are of lesser importance to the export markets relative to bigeye, albacore and yellowfin.

2. Fleet Structure

The fleet structure of the Samoan fleet fluctuated in recent years mainly due to the changes in the alia fleet. These are due to the versatility of the alia design that can enable it to change from longline to bottomfish gear in a few hours. This ability to change gear gives the alia design an advantage over its other class categories.

Retrospectively, it is always difficult to calculate a reliable estimate of the vessels active in each class category in the earlier years of the fishery (from 1990 – 1999). The total number of vessels in the fleet as reported by Su'a and Watt (2000) to SCTB14 from 1994-2000 is the best estimate to date of the earlier years of the fishery (see Table 1).

The Tuna Management Plan in 2000 categorized the fleet initially into four length categories, and in 2002 introduced another category to cater for the introduction of larger vessels.

The annual variations in effort within each category is calculated from the results of boat counts that are conducted daily. Conducting daily boatcounts in the Apia area is justified, as previous studies have shown that up to 97% of effort is deployed by vessels based in this area (Imo, 2003).

Table 1. Active domestic longline vessels from 2000-2004 in each class category.

Year	Class A (>11m)	Class B (>11-12.5m)	Class C (>12.5-15m)	Class D and E (>15m)
2000	119	20	9	6
2001	116	14	8	11
2002	31	15	8	14
2003	6	4	5	9
2004	2	1	5	9
2005	10	3	3	11

Note: Active Vessel count - August 2005.

From 2000-2004 there was a decline in the number of vessels actively fishing especially in the alia category. This was seen as a direct result of the low catch rates that prevailed from 2002 onwards where vessels have found fishing uneconomical.

3. Annual catch estimates by the domestic fleet

3.1 Annual catch estimates for 1999–2004

Table 2. Annual catch estimates (metric tons) for the main species by the domestic fleet, 1999–2004 (based on port sampling and other sources).

Species	1999	2000	2001	2002	2003	2004	Grand Total
ALBACORE	4027	4067	2977.3	4222.9	2253.0	1232.5	18779.6
YELLOWFIN TUNA	681	1120	402.7	369.0	292.6	444.2	3309.4
BIGEYE TUNA	283	177	102.4	137.0	110.0	103.5	912.9
SKIPJACK TUNA			86.6	114.4	69.4	38.7	309.1
DOLPHINFISH			89.5	92.0	52.7	29.1	263.3
WAHOO			50.9	78.5	41.1	48.7	219.2
BLUE MARLIN			23.5	25.3	9.5	9.0	67.3
GREAT BARRACUDA			7.4	10.5	13.4	9.7	41.0
BROADBILL SWORDFISH			10.4	13.4	1.4	3.9	29.2
SAILFISH			6.1	13.9	0.2	2.1	22.3
BLACK MARLIN			7.9	10.5	0.0	2.2	20.6
SHORTBILL SPEARFISH			9.9	1.6		3.4	15.0
STRIPED MARLIN			3.6		0.8	5.2	9.6
SUNFISH			5.5		1.7	0.1	7.4
BIGEYE BARACUDA			2.4	0.3	0.1	0.0	2.8
SHARK						1.8	1.8
DOGTUOTH TUNA				1.4			1.4
Unclassified tuna (sheathed)						0.5	0.5
SILKY SHARK				0.5			0.5
BLUE SHARK			0.3				0.3
RAINBOW RUNNER			0.2	0.0		0.1	0.3
GREY REEF SHARK			0.3				0.3
SOUTHERN BLUEFIN TUNA				0.2		0.0	0.2
BIGEYE THRESHER SHARK				0.2			0.2
BLACKTIP REEF SHARK						0.0	0.0
TOPSAIL DRUMMER				0.0			0.0
ESCOLAR						0.1	0.1
Grand Total	4991	5364	3786.9	5091.6	2846.1	1934.7	24014.3

Source: 1999 – 2000 data was from Sua and Watt (2000). Mulipola quoted the value of the catches for 2001 to SPC in March 2002. Data from 2002-2004 were obtained from the Samoa Fisheries database summarising port sampling data.

Large quantities of albacore were harvested in the early years of the fishery. Although there has been a decline in albacore landings in recent months, the other pelagic species have also declined proportionately from 2002-2004.

3.3. 2004 domestic longline catch by vessel class

Table 3. Composition of catches by the Samoan tuna fleet in 2004.

SPECIES	A	B	C	DE	Grand Total
ALBACORE	55.209	43.019	325.363	808.874	1232.465
YELLOWFIN TUNA	22.977	22.093	128.893	270.266	444.229
BIGEYE TUNA	4.044	4.339	23.802	71.328	103.513
WAHOO	4.313	2.451	13.939	28.008	48.711
SKIPJACK TUNA	6.894	4.22	13.533	14.042	38.689
DOLPHINFISH	3.782	2.367	9.857	13.054	29.06
GREAT BARRACUDA	1.241	0.638	3.561	4.233	9.673
BLUE MARLIN	0.344	0.759	2.584	5.355	9.042
POMFRET	0.21	0.629	2.02	3.652	6.511
STRIPED MARLIN	0.096	0.475	1.889	2.761	5.221
SHORTBILL SPEARFISH			0.545	2.839	3.384
BROADBILL SWORDFISH	0.243	0.251	1.092	2.276	3.862
BLACK MARLIN		0.366	0.777	1.102	2.245
SAILFISH		0.052	0.457	1.55	2.059
SHARK	0.13	0.849	0.646	0.221	1.846
MARLIN		0.075	0.689	0.851	1.615
Other species < 1 metric ton	0.069	0.1	0.47	1.006	1.645
Grand Total	99.552	82.683	530.119	1231.418	1943.772

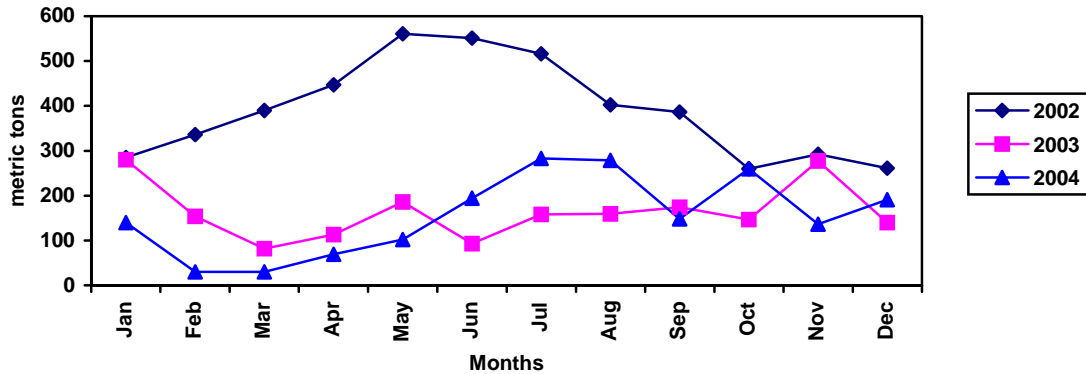
Class B vessels appeared in Table 2. to have lower total catch compared to Class A, a reflection of the higher number of vessels in Class A.

3.3 Exports

2002-2004 has been a difficult year because of low catches for many fishermen in Samoa. The albacore catch rates have declined dramatically leaving many fishermen wondering about their future.

Reports from SPC suggests that abundance (CPUE) show strong correlations to some oceanographic conditions. Langley (2004) reports that catch rates of albacore in other domestic fisheries (e.g. Fiji and Tonga) have been related to oceanographic conditions and lower catch rates have been attributed to higher sea surface temperature and lower frontal activity (currents and eddy features). Furthermore, the report states that in 2002 and 2003 seasurface temperatures in the Samoa EEZ were significantly higher during the main fishing season. Similarly altimetry data (seasurface height anomalies) indicate a lower level of frontal activity during the same period. These factors may explain the low catch rates during the same period. The time series of oceanographic data and catch effort data is too short to determine the frequency of these low catch events.

Figure 1. Monthly Exports (all species) for the domestic longline fishery, 2002–2004.



A comparison of fish exports shows that there is a sharp decline in exports in 2003 compared to the same months in 2002. This trend has continued onto 2004, a result of the decline in overall catches in Samoa.

Table 4. Species composition of longline-caught fish exported in 2004.

SPECIES	MT	Value	%
ALBACORE	1563.17	12,416,314	83.5
BIGEYE BARACUDA	0.063	832	0.0
BIGEYE TUNA	41.365	575,893	2.2
BROADBILL SWORDFISH	4.355	61,048	0.2
DOGTOOTH TUNA	1.939	27,184	0.1
DOLPHINFISH	14.769	203,641	0.8
MARLIN	1.134	15,889	0.1
MOONFISH	5.269	72,790	0.3
MOONFISH/OILFISH MIX	0.25	3,329	0.0
SHORTBILL SPEARFISH	0.054	715	0.0
TREVALLY	0.027	166	0.0
WAHOO	24.485	339,702	1.3
WAHOO/DOLPHIN/MOONFISH MIX	0.896	11,774	0.0
YELLOWFIN TUNA	175.269	2,287,888	9.4
YELLOWFIN/BIGEYE MIX	39.838	504,974	2.1
Grand Total	1872.883	16,522,139	100

Value: in Samoan Tala.

Source of data: Offshore Fisheries Database

Occasionally some of the commercially important tuna species finds its way to the local market. Such instances occur if that particular fish was rejected by an exporter.

Percentage composition of Exported Fish from longline in 2004.

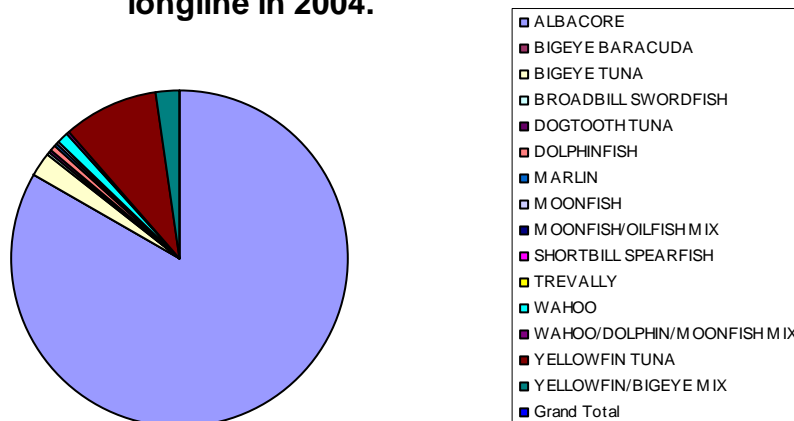


Figure 2. Species composition of exports from the longline fishery, 2004

The exported figures for 2004 suggests that more than 83% of fish exports were albacore, a majority of these would presumably be frozen albacore sent to the canneries in Am. Samoa.

4. Market Destination of catches

Most of the catches from the offshore fishery go to Los Angeles, Honolulu and NZ (freshchilled) while all the frozen catch goes to Pago pago to either the Star Kist cannery or SAMPAC. There was a shipment to Japan last year by one of the exporters where the initial returns were favorable.

The Fisheries Division with the blessing of the Government has been working towards having Samoa’s fish gain access into the lucrative EU markets. A dossier containing all the relevant documents of our new seafood safety system has been sent to EU headquarters and we are still awaiting a reply.

Since 2002, the Fisheries Act (1998) has been amended to provide legal basis for establishing Seafood safety systems. The authorities in Samoa have approved the Fish Processing and Export Regulations 2002 and Industry Agreed Standards. All of the exporters in Samoa have upgraded their quality systems to HACCP to assure trading partners that quality fish is consistently being exported from Samoa.

5. Monitoring Activities

5.1 Port Sampling

Port sampling started in Samoa in the late 1990’s this was a project sponsored by SPC (Procfish) and has provided the most reliable data to estimate total catch of the fleet. More importantly port sampling data provides the basis of data collection from Class A vessels. Logsheets provided by alia fishermen were unreliable hence they were excluded from data entry, and the practice of distributing and collecting logsheets from Class A vessels was discontinued.

5.2 Market surveys

The market surveys are conducted three days a week by the offshore section staff. These surveys are aimed at collecting data from the offshore fisheries however; these surveys do not cover pelagic fish caught by longline as unloaded fish are covered in data collected by the port samplers.

5.3 *Boat counts*

Boat counts are conducted daily by the offshore staff. This is aimed at recording effort (hooks deployed) by vessel class. Daily boatcounts are conducted in the Apia area while monthly boatcounts are conducted for rural areas of Upolu and Savaii.

5.4 *Export Data*

Sources of these data are from the Fish Processing Establishments records. This is often cross-referenced with data provided by Customs and Central Bank for accuracy of the weight of consignments exported.

5.5 *Planned Regional Observer training in Samoa*

There is a plan to conduct a Regional Observer training in Samoa at the end of August, 2005. This training will not only enhance capacity of locals in monitoring, but will enable access to the Regional sponsored Observer program. This regional program currently monitors tuna caught on purse seiners permitted to fish in the South Pacific under the US Multilateral Treaty.

6. Onshore Developments

6.1 *Tuna Management and Development plan. (TMDP)*

In July 2005, a tuna management and Development plan was launched for the Tuna fisheries and its stakeholders in Samoa. This plan contains development and management strategies for the tuna fishery. In the TMDP, various projects (in Key Projects section) have been suggested to promote and enhance current capacity regarding these two aspects for the period 2005-2009.

6.2 *JICA – sponsored projects for fisheries wharf.*

There are currently plans to extend the current Fisheries wharf to allow fishing boats to moor safely. This plan supported by the Government came about when the wharf was dangerously congested when the catches were low. These congested periods is often a result of low catches

6.3 *Other infrastructural developments*

Part of the Government's plan to revive the alia fleet was to install ice making machines and FADs on strategic locations around the island where fishers can easily access. Presently two ice machines have been installed. Four FAD's have been deployed around Upolu and one is intended for Savaii in the next financial year.

6.4 *Monitoring and management*

This aspect is also prioritized in the tuna management plan. Provisions will see the strengthening of monitoring in the next few years. An example is the implementation of an Observer program as well as the installation of VMS on board local fishing vessels.

7. References

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