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**NOTES ON THE ALBACORE INDUSTRY AS IT AFFECTS THE COOK ISLANDS**

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# NOTES ON THE ALBACORE INDUSTRY AS IT AFFECTS THE COOK ISLANDS

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## BACKGROUND

The Cook Islands comprises a total of fifteen islands which fall naturally into the northern and southern groups. The current population of just over 18,000 occupies a land area of approximately 240 sq km. The islands throughout the group are widely scattered with Penrhyn situated 9 and Mangaia 22 south of the equator. The South Pacific Commission (SPC) estimates the country's Exclusive Economic Zone (EEZ) encompasses approximately 1,830,000 sq km of ocean, the sixth largest in the SPC region (Chapman and Cusack, 1986). The northern islands are low lying atolls, with the southern group islands being volcanic in origin, surrounded by fringing and barrier reefs.

The fishing industry is generally divided into three sectors. These are:

The industrial/commercial fishery which operates on a large scale. Vessel within this category are usually licensed foreign longliners.

Aquaculture is presently receiving increased attention in the Cook Islands fisheries development. At present it is gradually moving out into experimental and commercial stages.

The subsistence and artisanal operations. This fishery involves catches for self consumption, and supplying the local market needs, pelagic fish species in this category include skipjack, yellowfin and albacore tuna. It is a significant source of fish supply and employment.

Albacore (Thunnus alalunga) are never caught at the surface in the Cook Islands however incidental catches have been made during vertical longline and drop line operations around FADs, by local fishermen. The albacore, ranging up to 28 kg and averaging over 18 kg in weight, are generally caught at depths of 100 fathoms or more. Other tuna's such as skipjack and yellowfin are usually caught at shallower depths.

A government owned 29 foot mini horizontal long-line vessel ("Ton 7") has been in operation since 1989. The fishing area is predominantly along the coast of Rarotonga (159.46'W and 21.S). In 1991, 22 fishing trips were made with an average catch rate for albacore of 19.45 kg per 100 hooks (approximately 1 fish per 100 hooks). However in 1992, the average catch rate for albacore decreased to 10.56 kg per 100 hooks. Ton 7's albacore catch range from 15 to 28 kg fish and averaging over 19 kg in weight.

## SUMMARY OF LICENSED FISHING ACTIVITY (1990 - 93)

All commercial fishing activity within the Cook Islands EEZ is carried out by licensed foreign vessels. These include Taiwanese and Korean longliners, a Tahitian owned longliner has been operating on a trial basis during 1991. These foreign fishing vessel are not licensed to fish inside the Territorial Seas.

Peak periods of fishing activity by foreign vessels are from January through to March and July to September. This is based on data from catch logsheets received from Korean longline fishing vessels during 1991. Figure 1 illustrates the monthly catch for Korean longliners from 1985 - 1990. optimum catch periods for albacore are during January, February and July, August. Fishing areas for Korean and Taiwanese longliners are predominately within the northern group (lat. 9 - 15 S. long. 155 - 167 W). However occasionally these vessels have been reported to be operating in the southern group (lat. 5 - 22 S, long. 155 - 165 W.).

At present, there is one longline fishery in this area, involving 50 licensed Taiwanese longliners. These vessels unload in Pago pago, receiving approximately US\$2,000 per ton, with fish averaging 18-24 kg.

Albacore was the primary target species of a Tahitian-owned longliner, the "Noella K", which was issued a three month Test Fishing license by the Cook Islands Government. The license permitted the vessel to operate within the 12 mile territorial waters. It was hoped that the vessel could provide the government with data which would assist with the assessment of tuna stocks present in the Cook Islands waters.

Listed below is a summary of the data obtained from "Noella K" during the three months (September - November 1991) of operation within the Cook Islands EEZ.

Fishing area	8.25,S to 21.48,S Latitude 158.20,W to 161.31,W Longitude
Total catch (Wt.)	13 tons
Total Albacore catch (wt)	5.9 tons
Average size (Albacore)	20.89 kg
Average catch rates	
kg/100 hooks	39.67 kg (all species)
No/100 hooks	1.6 ( " " )
kg of albacore/100 hooks	16.4 kg
No of albacore/100 hooks	00.83

The caudal fork length of 75 albacore was measured and the frequency of length classes were graphed (Figure 2). The graph shows that the average size fish caught by "Noella K", ranges from 98 to 109 cm.

Several US albacore troll vessels working the subtropical albacore grounds often call in port in Rarotonga for short periods either for supplies, repair or on leave. They are however extremely unlikely to be seen fishing in Cook Islands waters since albacore are never found on the surface in Cook Islands latitudes.

There has been some discussions in the past about transshipping or processing the catch from the subtropical convergence zone in Rarotonga, but so far nothing has developed.

At present the government is negotiating with foreign investors who have shown interest in exploiting the pelagic species within

the Cook Islands EEZ. A Tahitian- owned company is particularly interested in targeting albacore. However little data on catch rates for albacore are available. A New Zealand fishing company is also interested in exploiting pelagic fish and setting up a processing plant (cannery) in the Cook Islands. Local fishermen have also expressed their interest in fishing the subtropical fishing grounds for albacore.

At present the status of the albacore resource in Cook Islands EEZ is uncertain, due to the limited information gathered. However based on the information from "Noella K" and "Ton 7" there may be potential, for a sizable longline fishery based on larger albacore (> 15 kg). In the future participation of locally owned vessels in the subtropical convergence zone fishery is also possible but this will require greater commitment on the part of government in terms of training and the acquisition of capital.

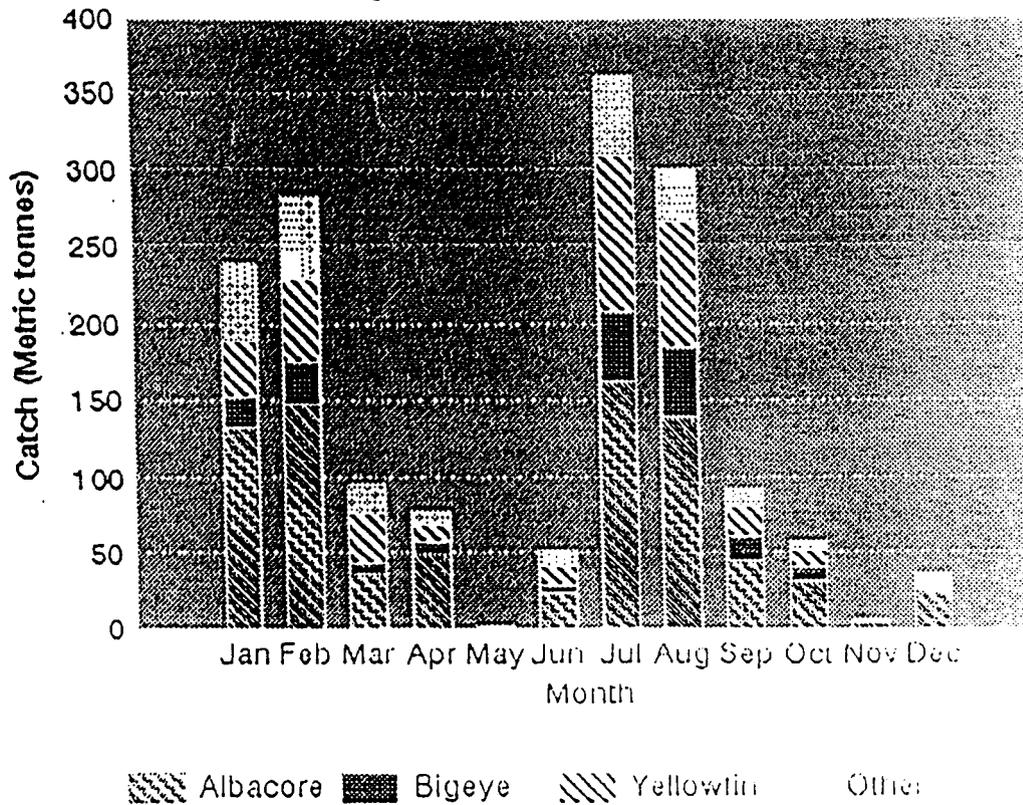


Figure 1: The monthly catch (metric tonnes) for Korean longliners from 1985 - 1990.

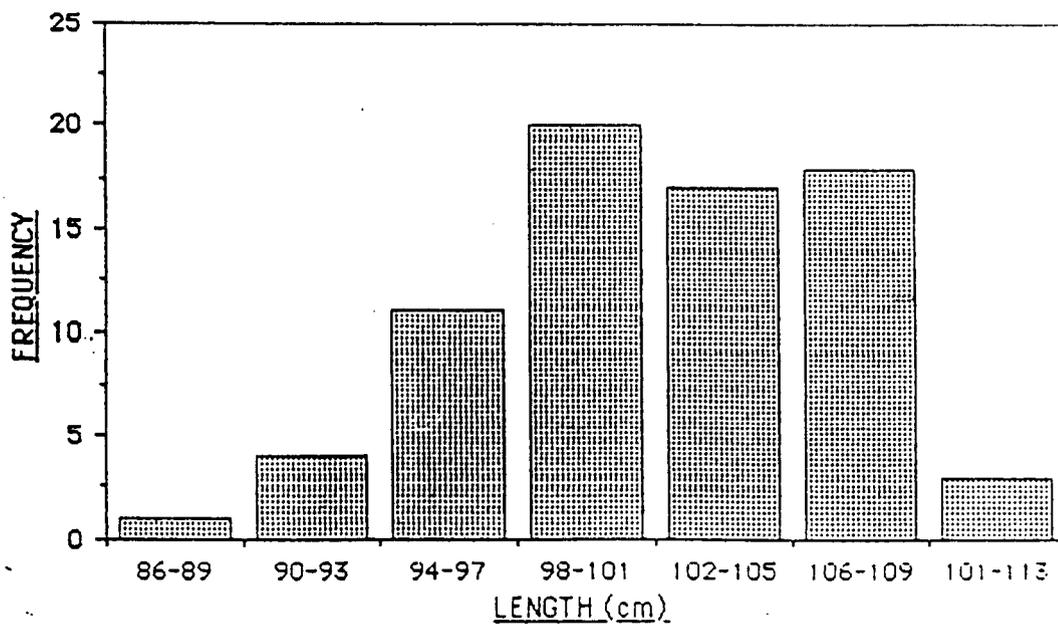


Figure 2: Length frequency for Albacore (*Thunnus alalunga*) caught by Noella K during three months of operation in Cook Islands EZZ.