

A REVIEW OF SOUTHERN ALBACORE CATCH DATA FROM THE  
SOUTH PACIFIC COMMISSION REGION

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Introduction

Stocks of southern albacore in the South Pacific Commission (SPC) region are targets of the longline fleets of several states including Taiwan, Korea and Tonga. A significant harvest also occurs as incidental catch by longliners targetting on other species of tuna (southern bluefin, bigeye) or marlin. They are also taken in surface fisheries to a much smaller extent by the Japanese gill net fishery and the New Zealand troll fishery. Therefore data on southern albacore fisheries are widely dispersed. Only rough estimates of overall catch are available and detailed statistics are not readily assembled. Although preliminary stock assessments have been attempted with existing data, finer analyses partitioning effort by gear type spatial distribution are not possible.

One of the tasks of the Tuna and Billfish Assessment Programme of the SPC is to assemble data on all tuna fisheries operating in and around the waters of SPC member states. This paper reviews the data holdings of the SPC pertinent to southern albacore stocks and attempts to evaluate their coverage. The order of presentation is in order of decreasing aggregation over time and area.

Total Annual Catch

The most highly aggregated statistics are those published for FAO statistical areas 61, 67, 71, 77, 81 and 87. Annual catch of southern albacore can be estimated by subtracting the total catch declared for northern albacore (Kume and Bartoo 1984) from the FAO figure for the entire Pacific albacore catch. Table 1 summarizes these data and compares the estimated catches with those calculated by Wetherall and Yong (1984) from the totals for individual countries. These figures give an idea of the magnitude of the fishery and also provide a reference point for evaluating the coverage of data holdings.

Table 1. Annual catch of South Pacific albacore 1971-1981

Year	FAO	North Pacific	South Pacific	South Pacific*
1971	126000	92548	33452	40605
1972	141100	105903	35197	40753
1973	147500	107073	40427	49275
1974	140660	114858	25802	34911
1975	112091	86326	25765	25798
1976	148752	123765	24989	34097
1977	103880	62140	41740	38632
1978	136513	97778	38740	38279
1979	106031	70050	36251	35181
1980	108598	74355	34243	33780
1981	112938	79724	33214	33019

\* Estimates from Wetherall and Yong 1984.

#### Published Historical Summaries: 1962-1980

Summary statistics, aggregated by month and five-degree geographic square, are published by several countries beginning in the early 1960s. Summaries are published with varying degree of lags from the time of fishing and some countries have altogether ceased the practice of publishing fishery statistics. Table 2 summarizes the extent of these publications and indicates how much of the estimated total catch in Table 1 they represent (estimates of total catch prior to 1971 were taken from Wetherall and Yong 1984).

Table 2. Historical catch statistics, percent of total catch

Year	Japan	Taiwan	Korea	TOTAL
1962	98			
1963	94			
1964	86			
1965	70			
1966	57			
1967	37			
1968	24			
1969	22			
1970	21			
1971	13			
1972	8	63		71
1973	6	66		72
1974	7	75		82
1975	4	54	24	83
1976	8	75	42	>100
1977	3	60	19	82
1978	4	48	17	69
1979	7	34	20	61
1980	8	53	19	80
1981	-	44	27	71

Prior to 1980, Taiwanese data for total catch do not discriminate between North and South Pacific albacore which is the reason why the overall total exceeds 100% in 1976.

Logbook data: 1978-to date.

Since 1978, most island states of the SPC have required that logs of daily fishing activity be produced as part of the terms of access to their 200-nmi Exclusive Economic Zones (EEZs). Coverage from this source overlaps to some extent data in published summaries. Table 3 summarizes SPC data holdings on South Pacific albacore in logbook form since 1978 for the area between 0-45°S and 150°E-130°W. Although the coverage has been increasing, it is less than about 10 per cent of the total estimated catch shown in Table 1. Major gaps are due to non-reporting of catches in high seas areas and lack of access to statistics from Taiwanese and Korean longliners unloading in Pago Pago.

Table 3. SPC logsheet data holdings by country 1978-1985 (in metric tonnes)

	1978	1979	1980	1981	1982	1983	1984	1985
Japan	8.5	48.4	419.6	1366.1	1152.3	1072.8	763.5	515.2
Taiwan			21.1	184.4	1007.9	609.7	2965.8	1800.6
Korea				72.2	258.7	237.8	182.8	33.7
Tonga					58.5	95	60.7	
TOTAL	8.5	48.4	440.7	1622.7	2477.4	2015.3	3972.8	2349.5
Percent coverage	>0.1	0.1	1.3	4.9	7.1*	5.7*	11.4*	6.7*

\* Percentages for 1982-85 based on an assumed catch of 35,000 tonnes.

Summary of Current Conditions

The above data sources have been merged into a single data base system at the SPC which can be used to give an indication, albeit far from complete, of current conditions in the fishery. Figure 1 shows the distribution of longline catch of southern albacore reported to the SPC for the years 1982-85. Note the prominent areas of missing data. Figures 2 to 4 show historical trends in fishing effort, catch, and hooking rate for the area between 5°S and 30°S latitude and 145°E and 180°E longitude. Figure 5 indicates something of the relationship between catch and effort. The incompleteness of the data should caution against basing biological conclusions on these figures.

### Conclusions

The highly dispersed location of catch data make assembling a suitable data base very difficult. It is difficult to accommodate various sources of data with any certainty of avoiding double reporting. The SPC has an official policy, and the international legal basis to support it, of maintaining confidentiality of data. Therefore the SPC is in a position to act as an impartial custodian of regional fisheries data for southern albacore.

## References

- Kume, S. and N. Bartoo. 1984. Report of the Eighth North Pacific Albacore Workshop. Southwest Fisheries Center, National Marine Fisheries Service Administrative Report LJ-84-04, La Jolla, California.
- Wetherall, J.A. and M.Y.Y. Yong. 1984. Assessment of the South Pacific albacore stock based on changes in catch rates of Taiwanese longliners and estimates of total annual yield from 1964 through 1982. Southwest Fisheries Center Honolulu Laboratory, National Marine Fisheries Service Administrative Report H-84-11, Honolulu, Hawaii.

## Captions for Figures

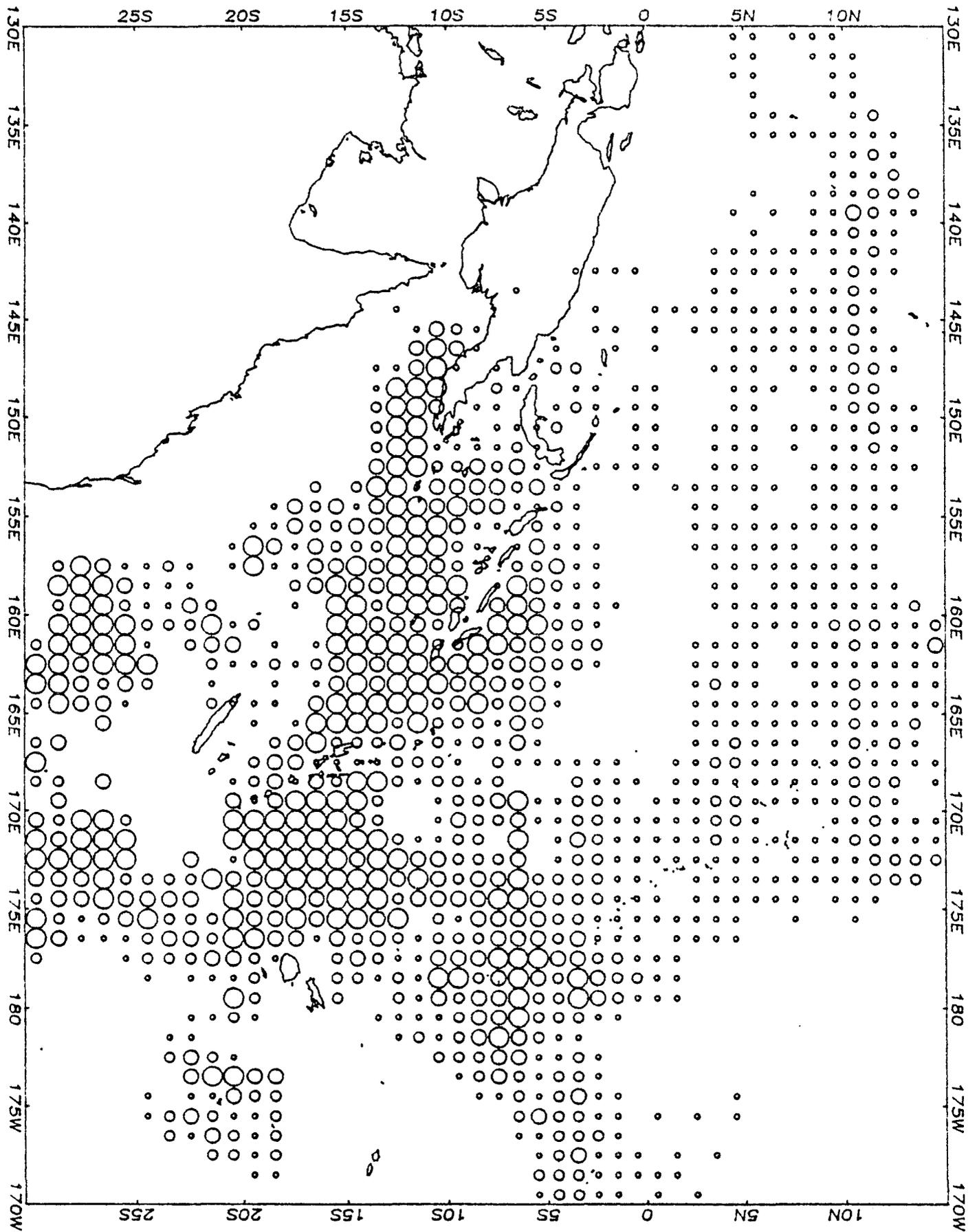
Figure 1. Distribution of longline southern albacore catch for the years 1982 through 1985.

Figure 2. Trends in longline fishing effort in the area between 0500°S and 3000°S and 14500°E and 18000°E. Individual symbols represent average over year.

Figure 3. Trends in longline southern albacore catch in the area between 0500°S and 3000°S and 14500°E and 18000°E. Individual symbols represent average over year.

Figure 4. Trends in catch per unit of effort for southern albacore by longline vessels in the area between 0500°S and 3000°S and 14500°E and 18000°E. Individual symbols represent average over year.

Figure 5. Relationship between southern albacore catch and longline effort in the area between 0500°S and 3000°S and 14500°E and 18000°E.



- 1 to 100 fish
- 101 to 400 fish
- 401 to 1000 fish
- More than 1000 fish

Figure 1

Figure 2

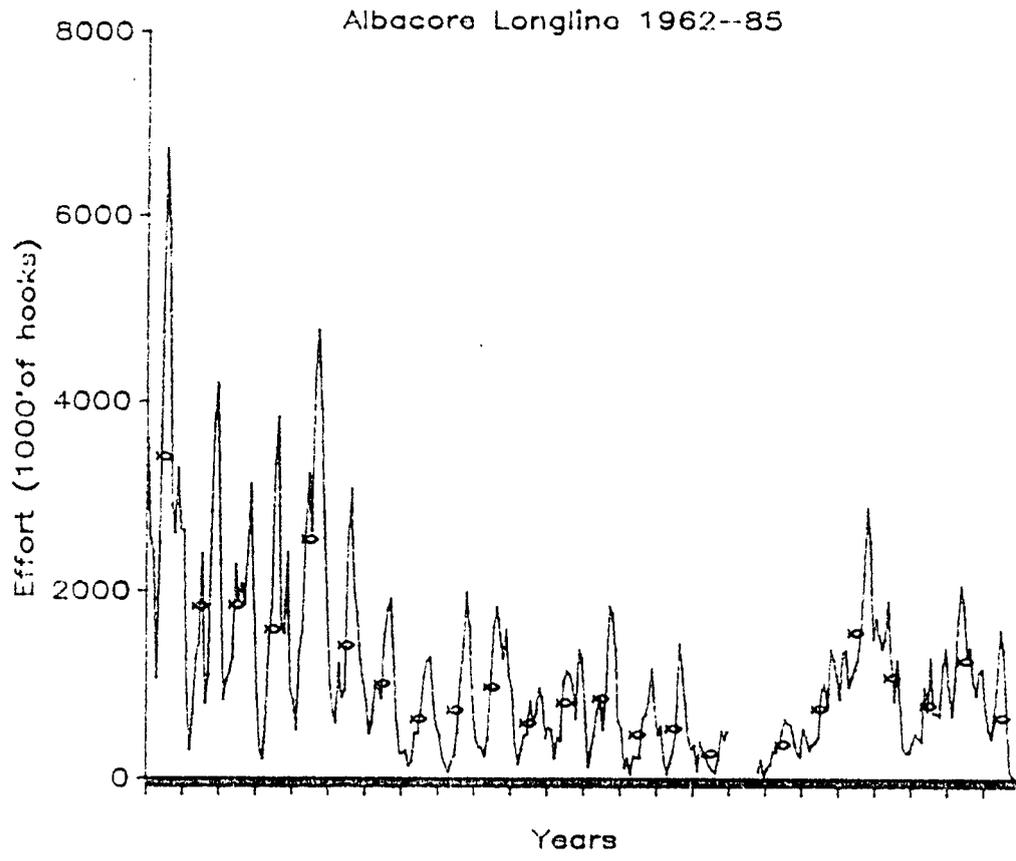


Figure 3

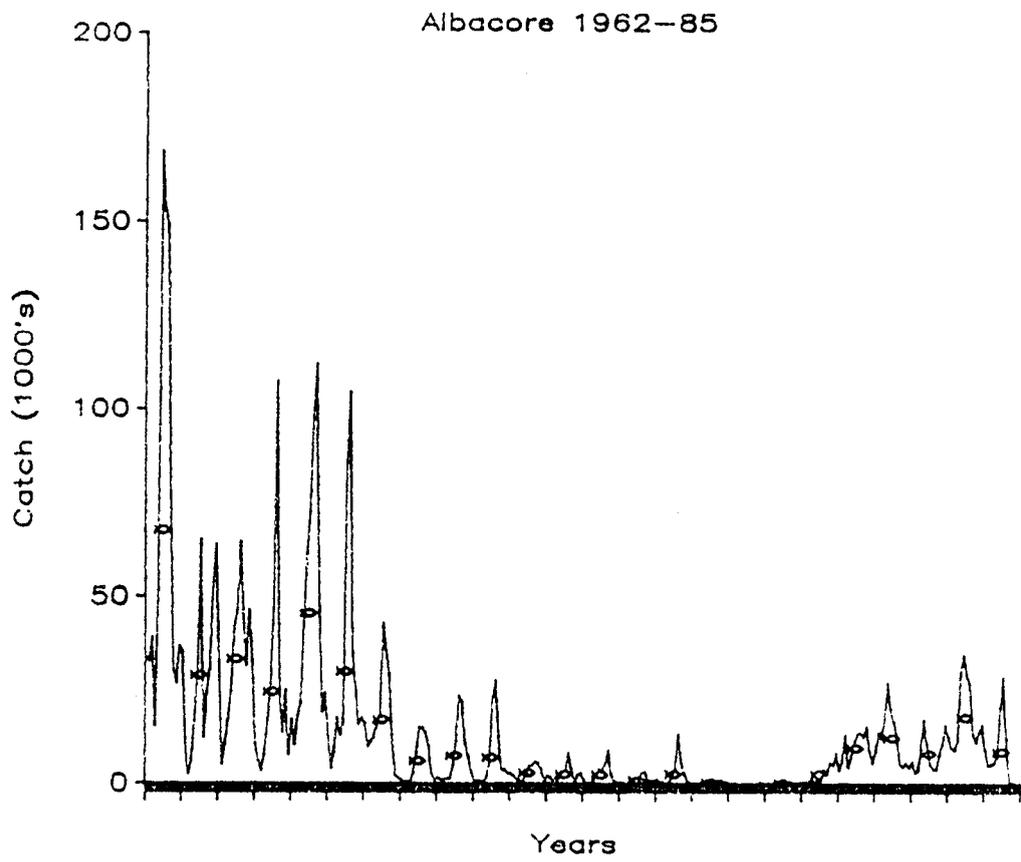


Figure 4

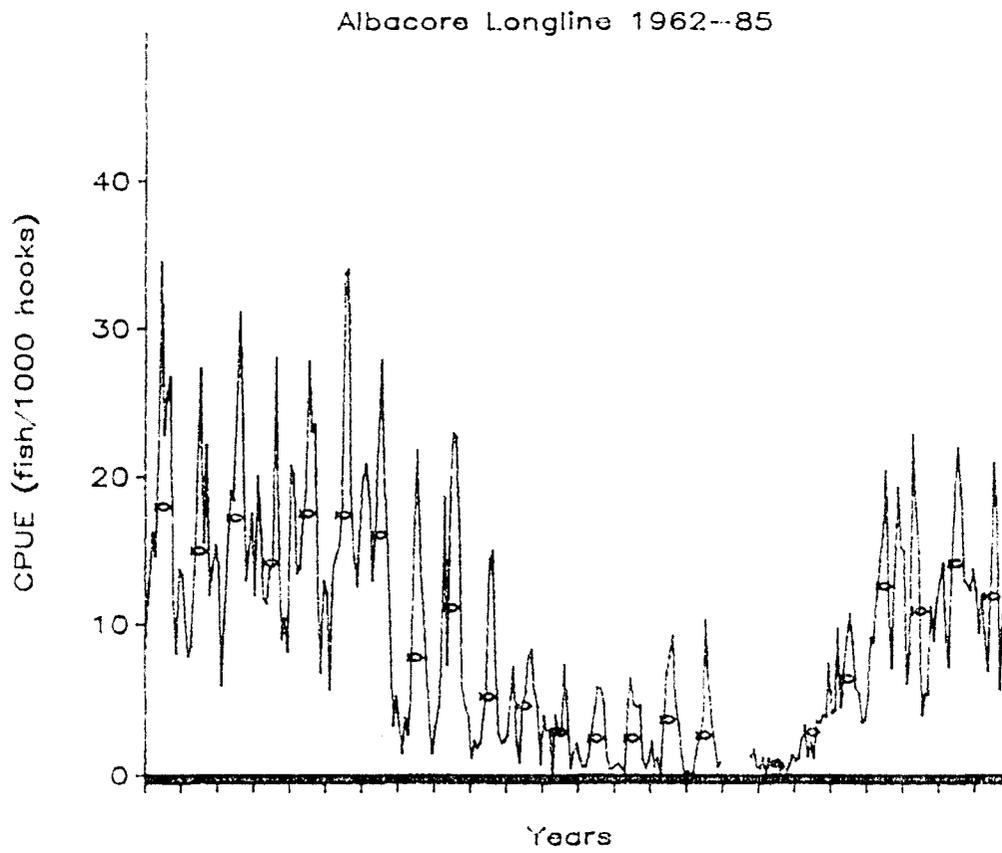


Figure 5

