

## &lt;&lt;NATIONAL REPORTS&gt;&gt;

## TAIWANESE TUNA FISHERIES IN THE SOUTH PACIFIC OCEAN

by

Chien-Hsiung WANG

Institute of Oceanography,  
National Taiwan University  
Taipei, Taiwan, Republic of China  
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## 1. Fishery activities

We have three types of far seas tuna fisheries operating in the Pacific Ocean; tuna longliner, large purse seiner and large gill netter. Up to the end of 1988, almost all of them are of tuna longliners and they are target on south Pacific albacore only.

Table 1 shows the monthly variations of fishing efforts of tuna longliner in 1986-1988. The number of longline vessels shows a stately increasing trend month by month. Only 42 appeared on January 1986, and it increases to 70 on December 1988. On the other hand, the number of sets (days of operation) seems having a decreasing trend. Compared the monthly values of set/vessel, it is 13.738 S/V on January 1986 and decrease to 5.257 S/V on December 1988.

Catch statistics of Taiwanese tuna longline landings by species and by oceans are shown in Table 2. It reveals a significantly trend that the target species of Taiwanese tuna longliners is albacore.

Recently, large purse seiners and large gill netters also reveal a rapidly development. But, only a few vessels enter the south Pacific Ocean before the end of 1988. Table 3 shows the catch statistics of Taiwanese tuna fisheries operating in the Pacific Ocean. Almost all of the catch of purse seiners and gill netters are caught from the North Pacific Ocean. During the fishing seasons of gill netters in 1988, only 7 vessels entered in the south Pacific Ocean to exploit the south Pacific albacore. The total catch of south Pacific albacore by Taiwanese gill netters is about 1000 metric tons in 1988. A few vessels of large purse seiners are operating in the south Pacific Ocean. They are target on skipjack.

## 2. Statistics

Tuna Research Center, Institute of Oceanography, National Taiwan University, has been in charge of the responsibility on

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the processing the catch statistics and scientific research. Basic data including the number of fishing vessel's registration and collection of catch data by logbook and landings are collected by Taiwan Fishery Bureau. "Annual Catch Statistics of Taiwanese Tuna Longline Fishery" by species and by 5-degree square are published.

Up to now, we haven't published any annual reports of the catch statistics of large purse seiners and gill netters. Now, We are trying to improve the data collection systems of these two important tuna fisheries. We also try to collect length composition data of all species of tuna-like fishes caught by tuna longline fishery since 1982. The quantity has been over one million specimens, but the quality is not so appreciable. All of the data are now rechecked by Tuna Research Center. If possible, we also try to collect the biological data of large purse seiners and gill netters.

### 3. Research Work

The detail analysis of Taiwanese albacore tuna longliners during 1971-1985 are discussed in the including three papers. The first one discussed the seasonal movement of south Pacific albacore based on catch data of Taiwanese tuna longliners in 1971-1985. The next one estimated the maximum sustainable yield of south Pacific albacore based on the catch data of tuna longliners of Japan, Korea and Taiwan (Republic of China) by surplus production model. The third one is an unpublished papaer. This paper try to discuss the Taiwanese longline data collection system and to compare the difference of total catches based on different raising methods.

In future, we try to do following researches if the manpower is enough and budget is supported.

<1> Research on growth of south Pacific albacore based on length composition data and/or age-determination method.

<2> Estimation of the recruitment, population size and fishing mortality of south Pacific albacore based on the Multi-Cohort Analysis suggested by Wang and Tanaka (1988).

<3> If the basic data of surface fisheries, like as purse seiner, gill net, and many other local fisheries, are available and enough to support a detail analysis, we also try to discuss the influence of the rapid development of surface fisheries on the stock structure of the south Pacific albacore. And, we also try to develop a new method to standardize the fishing efforts of both surface fishery and deep sea fishery, and then combine both data to assess the south Pacific albacore stock.

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Table 1. The number of vessels operating in the south Pacific Ocean in the recent three years (1986-1988).

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	1986			1987			1988		
month	V	S	S/V	V	S	S/V	V	S	S/V
January	42	577	13.738	50	562	11.240	56	505	9.018
February	44	472	10.727	49	540	11.020	54	379	7.019
March	44	555	12.614	51	344	6.745	58	459	7.914
April	43	493	11.465	51	665	13.039	61	441	7.230
May	45	672	14.933	51	824	16.157	61	630	10.328
June	51	718	14.078	50	803	16.060	63	593	9.413
July	49	697	14.224	52	742	14.269	62	615	9.919
August	49	544	11.102	52	624	12.000	63	493	7.825
September	50	293	5.860	53	553	10.434	68	447	6.574
October	51	480	9.412	55	575	10.455	67	397	5.925
November	51	802	15.725	57	634	11.123	70	417	5.957
December	51	747	14.647	60	642	10.700	70	368	5.257
mean	47	587	12.368	53	626	11.899	63	479	7.628
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Data: adopted from TFB

Table 2. Catch statistics of landings of Taiwanese Pacific tuna longline fishery, 1980-1988.

	unit MT								
species	1980	1981	1982	1983	1984	1985	1986	1987	1988
albacore	18180	14595	12680	12083	11155	9601	11913	15009	17120
bigeye	2539	1478	969	768	919	672	648	766	793
yellowfin	5603	2031	1015	862	1430	1210	1213	1017	3054
bluefin	2	0	0	1	0	0	0	0	6
young tuna	31	20	20	12	43	22	10	0	0
swordfish	267	216	175	128	130	113	94	112	100
stripped m.	252	208	183	97	141	101	60	81	114
blue m.	448	255	236	171	267	179	232	238	368
black m.	101	77	8	18	61	8	12	7	10
sailfish	53	47	46	29	67	24	30	32	33
skipjack	220	129	82	90	102	72	174	114	128
sharks	152	178	174	95	91	56	51	103	88
others	244	215	238	202	364	299	146	257	218
total	28092	19449	15826	14556	14770	12357	14583	17736	22032

1980-1986 data : adopted from "Annual Catch Statistics of Taiwanese Tuna Longline Fishery" p.36-48, 1986.

1987-1988 data : provided by Taiwan Fishery Bureau.

Table 3. catch statistics of Taiwanese tuna fisheries  
operating in Pacific Ocean 1988.\*

	longliner	purse seiner**	gill netter***	
	south	total	north	south
catch	22029.5 MT	32811.9 MT	32818.3 MT	1000 MT
cruise	259	116	?	?
vessel	70	32	162	7

\* provided by Miss Tung (Taiwan Fishery Bureau)

\*\* including those vessels target on horse mackerel and skipjack

\*\*\* provisional estimates