SCTB9 BP3

Summary of the FSM Tuna Fishery for SCTB9

Total Catch

The catch figures are as yet preliminary as the amount of catch return forms not yet included are unknown. Estimation of changes in accuracy of reporting is also not quantified.

The preliminary estimate of the 1995 total catch of tuna reported in the FSM EEZ was 229,841 metric tonnes (MT), this represents a 9% increase on the 1994 catch. The contributions to tuna catch by gear-type was 85% purse seine and about 8% each for both longline and pole and line.

The total annual catch of tuna of 1995 is 9% more than that of 1994, which is also 49% more than the average of the past 6 years reported catch. All gear types had a greater catch than the previous year; purse seine 4%, long line 10% and pole and line 288%. The pole and line fleet not only had the largest proportional increase in catch, it also had the largest actual increase in tonnage, an increase from 1994's catch of over 11,000 metric tonnes.

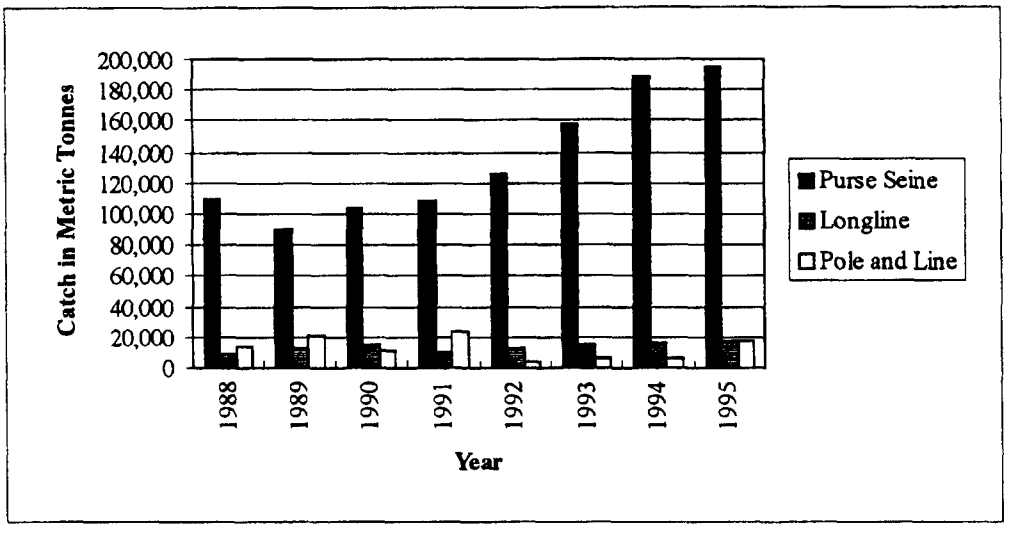
Table 1. Catches of Tuna by Gear Type in the FSM EEZ from 1989 - 1995.

Source: Vessel Catch reports

Year	Purse Seine Catch (MT)	Longline Catch (MT)	Pole and Line Catch (MT)	Total Catch (MT)
1989	90,667	12,093	20,466	123,226
1990	103,163	14,820	10,507	128,490
1991	108,268	9,956	23,379	141,603
1992	125,520	12,645	3,119	141,284
1993	157,514	14,842	6,549	178,905
1994	188,377	15,674	6,041	210,092
Average	**128,918**	**13,338**	**11,677**	**153,933**
1995	**195,183**	**17,255**	**17,408**	**229,846**

Figure 1. FSM EEZ Total Catch by Gear Type for the period 1988 - 1994.

Source: Catch Return forms, Tuna Database



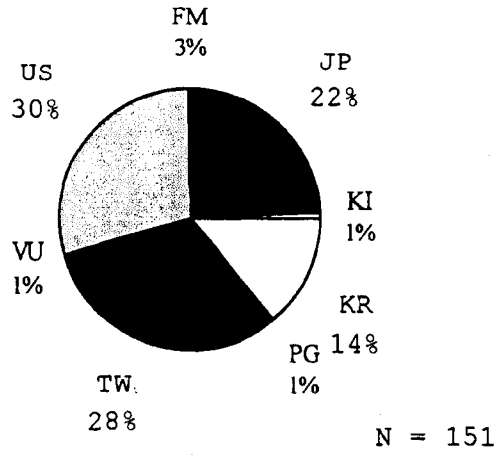
Fleet Structure

The estimation of fleet sizes was done by examining the numbers of vessels fished during the calendar year. During 1995, 638 vessels fished in FSM waters. The composition of the fleet was 444 Longline vessels 151 single Purse seiners (plus 4 Korean seiner carriers) and 39 pole and line vessels.

Purse Seine

The most common flag of the 151 purse seiners fishing in the FSM EEZ, was the US fleet (30% of vessels). The U.S. fleet concentrated their efforts in the FSM EEZ more than in previous years. This was reflected in a much higher catch than in previous years by the U.S. fleet. The Taiwanese comprised 28% of the purse seiners; the Japanese vessels 22%; and the Korean vessels 14%. The rest of the rest of the purse seiners were made up of the FSM domestic fleet, Vanuatuan, Kiribati and Papua New Guinean vessels. An additional 4 Korean seiner carrier vessels received permits to tranship at FSM ports.

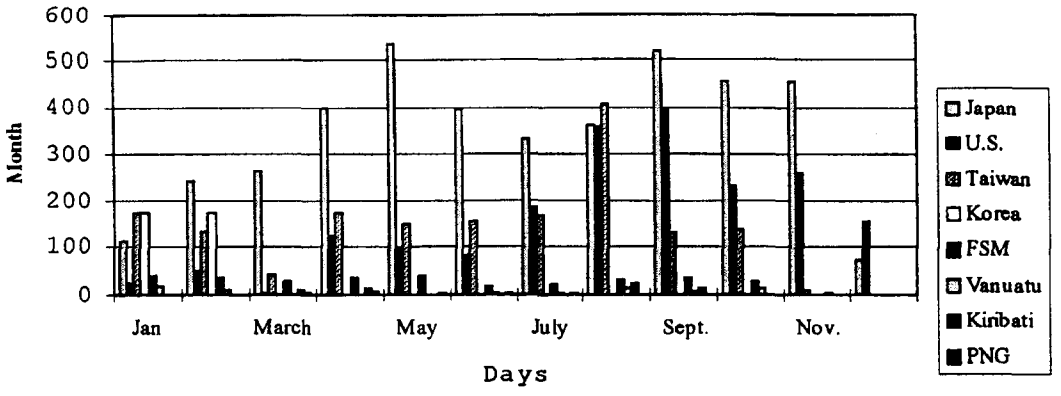
Figure 2. 1995 Composition by flag of purse seine vessels fishing in FSM EEZ



The activity or effort (days) through time of the different fleets was determined by the number of days recorded each month on the submitted catch return forms. The most effort was recorded by the Japanese, U.S. and Taiwanese vessels respectively. The U.S. fleet showed a greater presence in the FSM EEZ than in previous years, this was also reflected in their catches.

Not all the purse seine fleets were active for the entire year. The Korean association, one of the larger fleets, was unable to come to an agreement with the MMA to renew their Agreement in 1995 and hence only fished for the first 2 months of 1995.

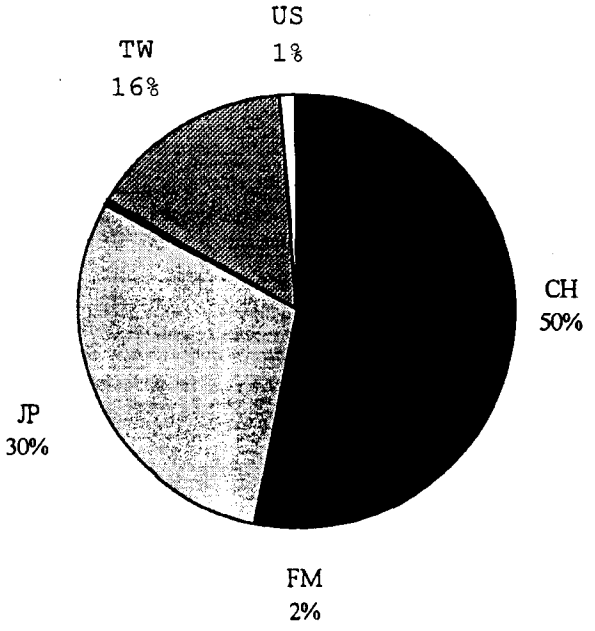
Figure 3. Purse seine activity (effort per month) among fleets fishing in FSM EEZ



Longline

The Chinese vessels made up the bulk of the Longline fleet (50%). These vessels plus the Japanese (30%) and the Taiwanese (16%) comprised almost all the fleet. The other 3% was composed of vessels from the US (Guam) and the domestic FSM fleet.

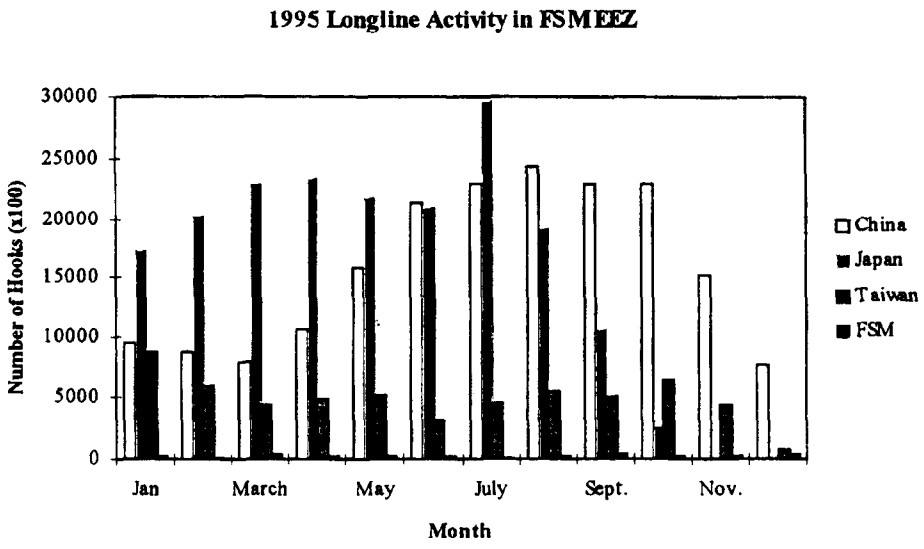
Figure 4. 1995 Composition by flag of purse seine vessels fishing in FSM EEZ



The Chinese flagged longliners also had the most trips in FSM waters, 3,408 followed by the Taiwanese fleet, 582; the Japanese vessels, 560; then the domestic fleet, 102; Guam based US fleet, 54 and the Koreans, 2.

The activity of the fleets was not uniform throughout the year. The Japanese effort was concentrated earlier than the Chinese. This may be a consequence to the Chinese observing their Chinese New Year period. Although, this pattern is not evident in the Taiwanese fleet.

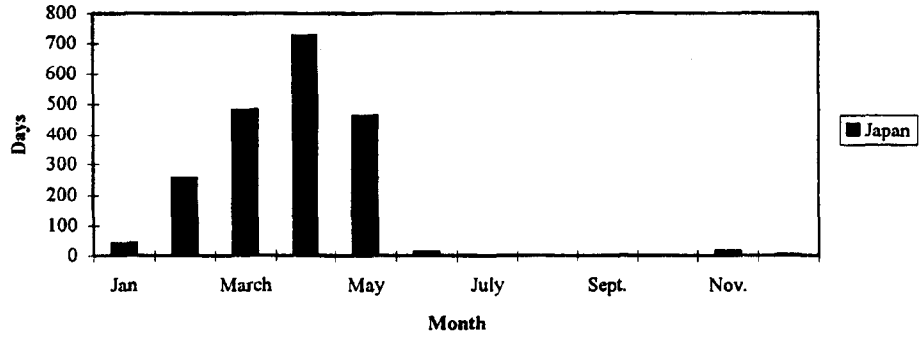
Figure 3. Longline activity (effort per month) among fleets fishing in FSM EEZ



Pole and Line

The 41 Pole and line vessels with permits to fish in FSM waters last year were all Japanese. The activity of the vessels was principally in the first half of 1995.

Figure 4. Activity of pole and line fleet in the FSM EEZ



Catch by Species/Gear

Table 2. Total Catch of all species by gear and flag for FSM EEZ

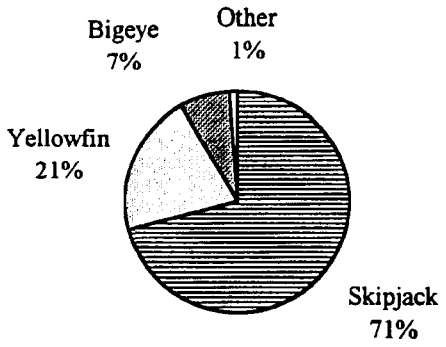
Source: Catch Return Forms; Tuna Database

Flag	Purse Seine	No. of	No. of	Longline	No. of	No. of	Pole & Line	No. of	No. of	Total
	Catch	Vessels	Trips	Catch	Vessels	Trips	Catch	Vessels	Trips	Catch
Japan	100,968	33	203	8,813	134	560	17,408	39	86	127,189
US	44,165	45	187		5	54				44,165
Taiwan	28,090	43	277	2,166	69	582				30,256
Korea	16,250	21	53		1	2				16,250
FSM	3,467	4	11	143	11	102				3,610
Vanuatu	1,135	2	7							1,135
Kiribati	1,038	1	2							1,038
PNG	70		9							70
China				6,133	224	3408				6,133
Total	195,183	149	749	17,255	444	4708	17,408	39	86	229,846

Species Composition

The submitted catch return reports indicate the FSM pelagic fishery comprised 71% skipjack, 25% yellowfin, 3% bigeye and 1% other species. However, catches of bigeye tuna were not reported by the purse seiners. Observer reports indicate that about 20% of the reported yellowfin catch is actually bigeye. Thus this would estimate the correct the purse seine bigeye tuna catch to have been 9,791 MT tuna and 39,163 MT of yellowfin. This correction would then make the total FSM EEZ catch for these species as estimated at 47,723 MT (21%) yellowfin and 16,592 MT (7%) bigeye.

Figure 5. Corrected species composition of the reported FSM tuna fishery catch by weight.



N = 229,846 MT

Purse Seine

The catch among fleets for 1995 varied from 70 MT to about 100,000 MT of tuna. The order of catches corresponded to the order of effort for the fleets; from 18 to 4,150 days engaged in fishing in the FSM EEZ.

There was a considerable range in overall CPUE among fleets from 3.9 MT/day for the PNG vessels to 46.7 MT/day for the Koreans. However, both these fleets spent relatively little time fishing in the FSM EEZ thus they are probably not representative of catch rates. The fleets that invested the most effort in the FSM EEZ (Japan, U.S. and Taiwan) were closer to an average of about 20 MT/day.

Observer reports indicate the reported low purse seine catches of 'Other' species reflects the poor recording of bycatch species.

Table 3. 1995 Catch by Species of the purse seine fishery in FSM EEZ

Flag	Days	Skipjack		Yellowfin		Other		Total	
		MT	CPUE	MT	CPUE	MT	CPUE	MT	CPUE
Japan	4,150	73,672	17.8	27,128	6.5	168	0	100,968	24.3
US	1,975	31,504	16	12,582	6.4	80	0	44,165	22.4
Taiwan	1,681	22,074	13.1	6,016	3.6	0	0	28,090	16.7
Korea	348	14,510	41.7	1,740	5	0	0	16,250	46.7
FSM	319	2,368	7.4	1,099	3.4	0	0	3,467	10.9
Vanuatu	71	895	12.6	240	3.4	0	0	1,135	16
Kiribati	66	886	13.4	149	2.3	3	0	1,038	15.7
PNG	18	70	3.9	0	0	0	0	70	3.9
Total	8,628	145,979	16.92	48,954	5.67	251	0.03	195,183	22.62

Longline

The longline catches of target tuna by flag ranged from 123 MT to 5,388 MT. The effort range was from about 4,000 hooks by the domestic fleet to over 190,000 hooks set by the Chinese.

The number of hooks set by the Chinese and Japanese fleets were relatively similar, despite the Chinese having almost twice as many vessels and having made nearly seven times the number of trips. This shows the difference between the two fleets in effort per vessel. The Japanese set more hooks per set and have trips of longer duration. The difference in the CPUE demonstrates also the difference in the fishing efficiency of the different gears. The Japanese had the highest overall CPUE as well as the highest CPUE for the target tunas.

Table 4. 1995 Catch by Species of the longline fishery in FSM EEZ

Flag	'100's of hooks	Yellowfin		Bigeye		Other	Total	
		MT	CPUE	MT	CPUE	MT	MT	CPUE
China	190,303	2,941	0.51	2,427	0.30	745	6,133	0.92
Japan	189,045	4,565	0.95	3,502	0.47	746	8,813	1.51
Taiwan	59,924	756	0.38	843	0.31	575	2,166	0.98
FSM	3,898	94	0.94	29	0.19	20	143	1.29
Total	443,170	8,356	0.02	6,801	0.02	2,086	17,255	0.04

Pole and Line

The Japanese pole and line fleet tended to focus on the FSM EEZ in 1995. This is shown in the relatively high catches and effort compared to prior years.

Table 5. Species Composition of the pole and line catch in FSM EEZ.

Flag	Days	Skipjack		Yellowfin		Others	Total	
		MT	CPUE	MT	CPUE	MT	MT	CPUE
Japan	2,006	17,119	8.5	204	0.1	86	17,408	8.7

Disposal of Catch

Longline

The total amount of fish that was offloaded (transhipped and reject) was 19% less for 1995 compared with that of 1994. The yellowfin offloaded was 34% greater than 1994 but bigeye offloadings were down 37% and billfish down 18%.

The transhipped fish are immediately flown via Guam to markets in Japan and the reject fish are frozen and taken by Ting Hong on ships to Taiwan or are sold to the domestic processors.

Table 6. - Summary for Longline Transhipment for Year 1995

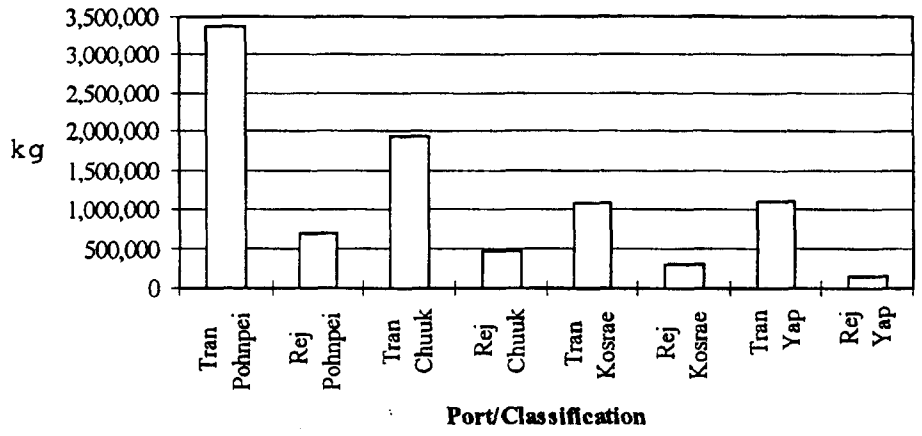
Source: Port Sampling Data

Port	No. of Trans.			YFT	BET	MAR	OTH	TOTAL
Pohnpei	2107	Tran	No	46,374	37,334	171	12	83,891
			Wt*	1,638,710	1,746,018	8,704	691	3,394,123
		Rej	No	17,174	3,561	1,953	1,964	24,652
			Wt	544,549	140,912	98,733	74,402	858,596
Chuuk	825	Tran	No	33,550	18,909	768	0	53,227
			Wt	1,051,323	874,307	36,910	0	1,962,540
		Rej	No	13,441	1,522	4,845	3,930	23,738
			Wt	392,342	63,089	229,878	79,714	765,023
Kosrae	779	Tran	No	17,927	10,353	0	0	28,280
			Wt	617,246	469,673	0	0	1,086,919
		Rej	No	7,558	1,024	3,043	3,458	15,083
			Wt	247,751	44,096	198,062	91,827	581,736
Yap	414	Tran	No	11,320	13,017	108	5	24,450
			Wt	426,119	666,170	7,347	152	1,099,788
		Rej	No	2,741	864	699	1,106	5,410
			Wt	96,741	41,506	37,471	38,224	213,942
Total Weight				5,014,781	4,045,771	617,105	210,608	8,862,994

** All weights are in Kilograms (kg).*

In 1995 Pohnpei had the greatest amount of longline caught tuna offloaded, followed by Chuuk. In 1994 Chuuk had had the premier position among ports. However, problems with the states' utilities and safety concerns caused the vessels to prefer Pohnpei for transhipment.

Figure 6. Transhipped and Rejected Longline Target Tuna by Port



Purse Seine

There were 32% fewer purse seine transhipments in 1995 compared to 1994. Correspondingly there was a 33% decrease in the volume transhipped. The Korean purse seiners were without an agreement and did not fish for most of the year. There was also only 4 transhipments made after October in the port.

Table 7- 1995 Purse Seine Transhipment Summary

Source: MMA Cargo Manifest Form

Month	SKJ	YFT	Mix	Total	No. of Deliveries
Jan	18,977	2,126	1,000	22,103	AU(3), KR(15), TW(35)
Feb	22,833	4,102	0	26,935	AU(1), KR(24), TW(42), VU(1)
Mar	12,373	2,605	0	14,978	AU(1), FM(1), PG(2), TW(30)
Apr	8,463	257	0	8,720	AU(1), PG(2), TW(11), VU(1)
May	11,415	472	680	12,567	AU(1), TW(23)
Jun	14,402	1,738	0	16,140	AU(1), FM(1), PG(1), TW(32)
Jul	4,378	1,450	1,580	7,408	AU(3), TW(15), US(2), VU(1)
Aug	5,601	3,902	4,182	13,685	FM(2), TW(24), US(12)
Sep	7,812	4,195	4,116	16,123	PG(4), TW(31), US(8), VU(1)
Oct	6,990	5,731	1,085	13,806	AU(2), TW(24), US(6)
Nov	950	980	0	1,930	PG(1), TW(2), US(2),
Dec	0	0	0	0	NONE
Total	**114,194**	**27,558**	**12,643**	**154,395**	**369 Deliveries** **Average = 418.41 MT**

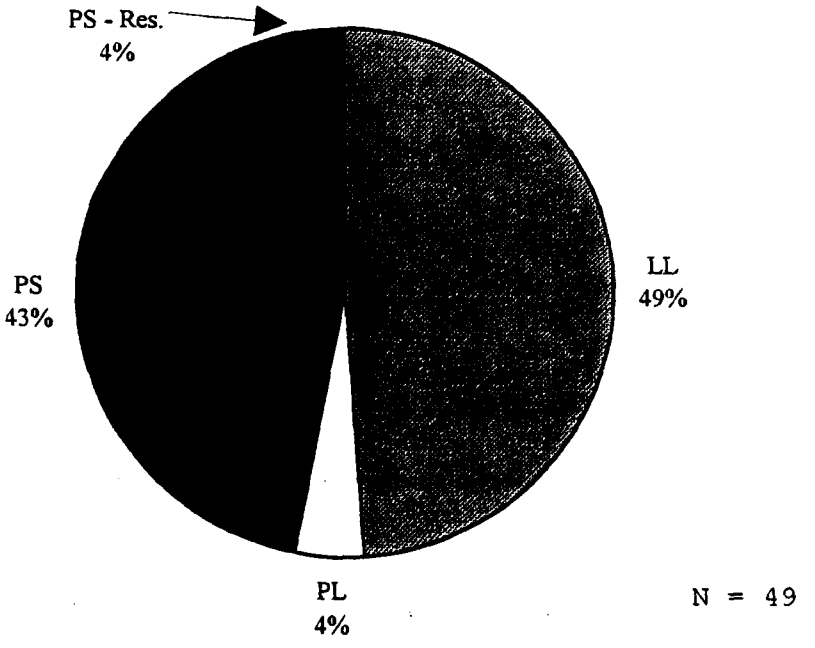
All figures are in metric tonnes (MT).

Observer Program

In total, 49 observer trips were made in 1995. This is less than 1994 (58 trips), however the program was without a biologist for about half the year.

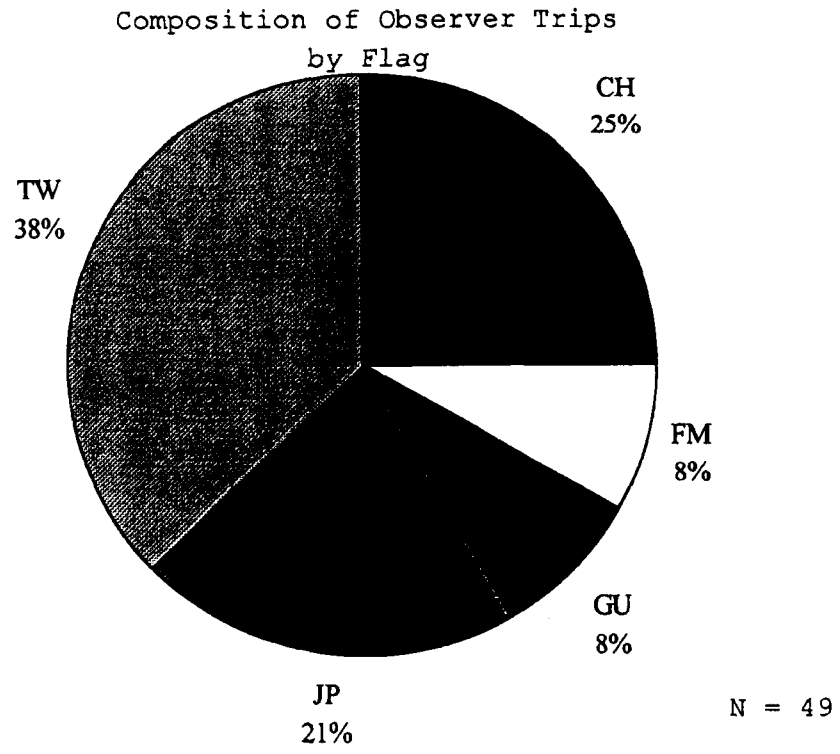
The composition of the trips was intended to cover a representative sample of the trips being made in the FSM EEZ. The breakdown of the trips by gear was 49% longline, 43% purse seine (plus 2 trips on purse seine research vessels) and 4% pole and line.

Figure 7. Composition of Observer Trips by Gear Type



The breakdown of trips by flag covered all the major fleets. The majority of trips in order were made on Taiwanese vessels followed by Chinese then Japanese. Trips were also made on US and domestic vessels

Figure 8. Composition of observer trips by Flag



Yellowfin Tuna Reproductive Study

The collection of gonads for the yellowfin tuna reproductive study was completed in April 1996. During 1995 , 934 gonads were collected form longline pole and line and purse seine vessels by observers as a part of their routine duties.

Onshore Developments

- No PS Transhipments since Nov 1995.

Future Prospects

- Korean PS reentered an agreement
- Taiwan PS to come back to the table