

PACIFIC TUNA TAGGING PROJECT WP 3

CRUISE REPORT No. 1

13th to 29th July 2009

INTRODUCTION

This report summarizes activities of the first cruise of the Pacific Tuna Tagging Project (PTTP) Phase 2 WP3 during a 17 day period following a delayed departure from Noro, fishing north-east to Nauru waters, then north-west through FSM waters to Pohnpei and down the 156° E meridian to the Equator before heading to Kavieng, PNG

Scientific personnel onboard the Soltai 105 during Cruise 5 are listed in Table 1.

Table 1. SPC and In-Country personal onboard during Cruise 1

Name	Title	Affiliation	Period
Bruno Leroy	Cruise leader	SPC	13/07/09 – 29/07/09
Tony Lewis	Cruise leader	SPC contractor	13/07/09 – 29/07/09
Hearty Matamaru	Tagging tech	SPC contractor	13/07/09 – 29/07/09
Sylvain Caillot	IT specialist	SPC	13/07/09 – 23/07/09
Seon Jae Hwang	Scientist	NFRDI Republic of Korea	13/07/09 – 23/07/09

GENERAL DESCRIPTION OF SEARCHING and FISHING ACTIVITY

The vessel departed Noro almost two days late, on the evening July 14th, and spent all or part of two nights baiting, to almost fill the bait tanks, before heading north-east towards the Nauru EEZ, crossing Solomons, PNG and international waters on the way. Nothing was seen on the way, the three TAO buoys in Nauru waters, along the 165°E line, yielded few fish and virtually no surface activity was seen in the Nauru EEZ. Similarly, very little was seen on the traverse to Pohnpei until close to the island when nearly 600 skipjack were tagged in an afternoon's fishing with bait carried from Solomon Islands. The vessel departed Pohnpei to fish down the 156° E line, with full tanks but containing much larger bait with high mortality. The TAO buoys at 5°N, 2°N and at the Equator provided reasonable fishing in often difficult weather conditions, with around 1500 fish tagged. With the bait almost finished, the vessel headed for Kavieng but good signs of fish were seen all that afternoon, in contrast to the very poor signs of the previous week. The final day was spent steaming to Kavieng without bait

The track of the cruise in Tuvalu EEZ, based on school and 1800 positions, is found below as **Figure 1** and a summary of general movements and tag releases follows as **Table 2**.

A compilation of the daily log extracts, detailing daily activities, is provided as **Appendix 2**.

Figure 1: Cruise track during WP3 Cruise 1

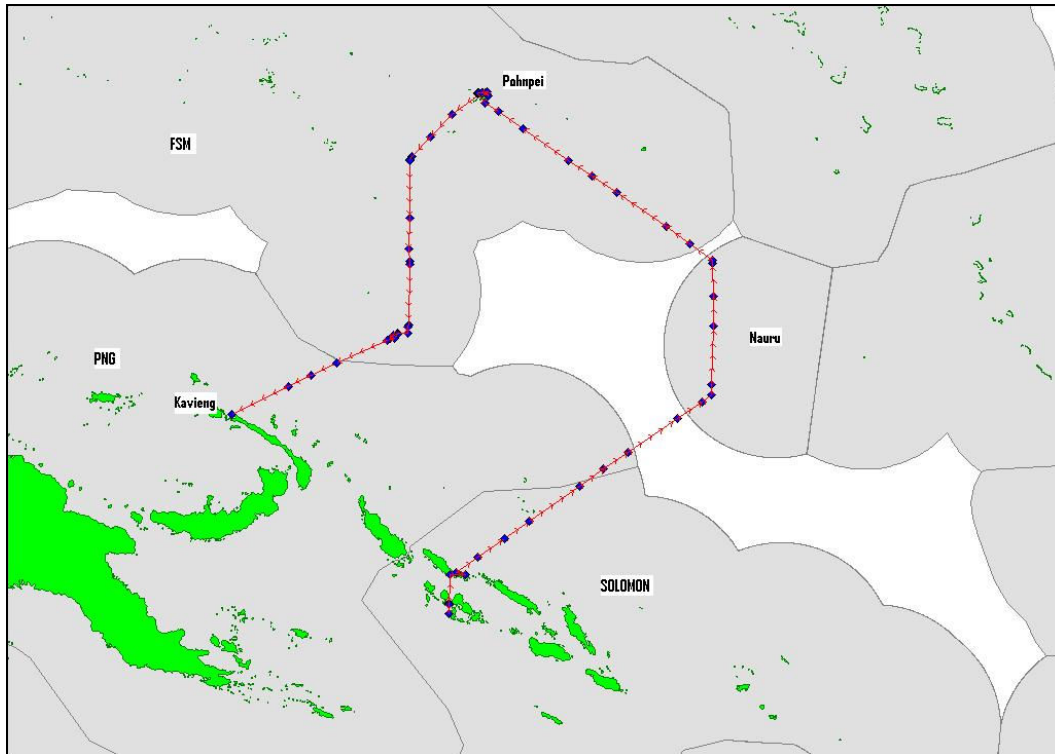


Table 2. Summary of Cruise 1 activity, with the number of conventional tag releases per day

Date	Activity	Conventional releases			Total releases
		SJ	YF	BE	
	SOLOMON ISLANDS				
July 13 th	In port Noro; baiting Munda	-	-	-	-
July 14 th	In port Noro; depart on charter evening	-	-	-	-
July 15 th	Baiting Posarae; steaming to Suri; baiting				-
July 16 th	Steaming, no fishing				-
	PAPUA NEW GUINEA				
July 17 th	Searching and fishing	0	0	0	0
	NAURU				
July 18 th	Searching and fishing – TAO 2S 165E	0	0	0	0
July 19 th	Searching and fishing – TAO Eq 165E	64	19	2	85
July 20 th	Searching and fishing – TAO 2N 165E	65	9	7	81
	FSM				(166)
July 21 st	Searching and fishing towards Pohnpei	0	0	0	0
July 22 nd	Fishing towards Pohnpei; baiting o/harbour	580	1		581
July 23 rd	In port Pohnpei; baiting Nan Madol	-	-	-	-
July 24 th	In port Pohnpei; baiting o/harbour; steaming	-	-	-	-
July 25 th	Fish TAO 5N	30	129	1	160
July 26 th	Fish TAO 2N	702	171	4	877

July 27 th	Fish TAO Eq	173	219	6	398
	PAPUA NEW GUINEA				(2516)
July 28 th	Steaming towards Kavieng (no bait)	--	-	-	
July 29 th	In port Kavieng				
	CRUISE TOTAL	1614	548	20	2182

TAG RELEASES

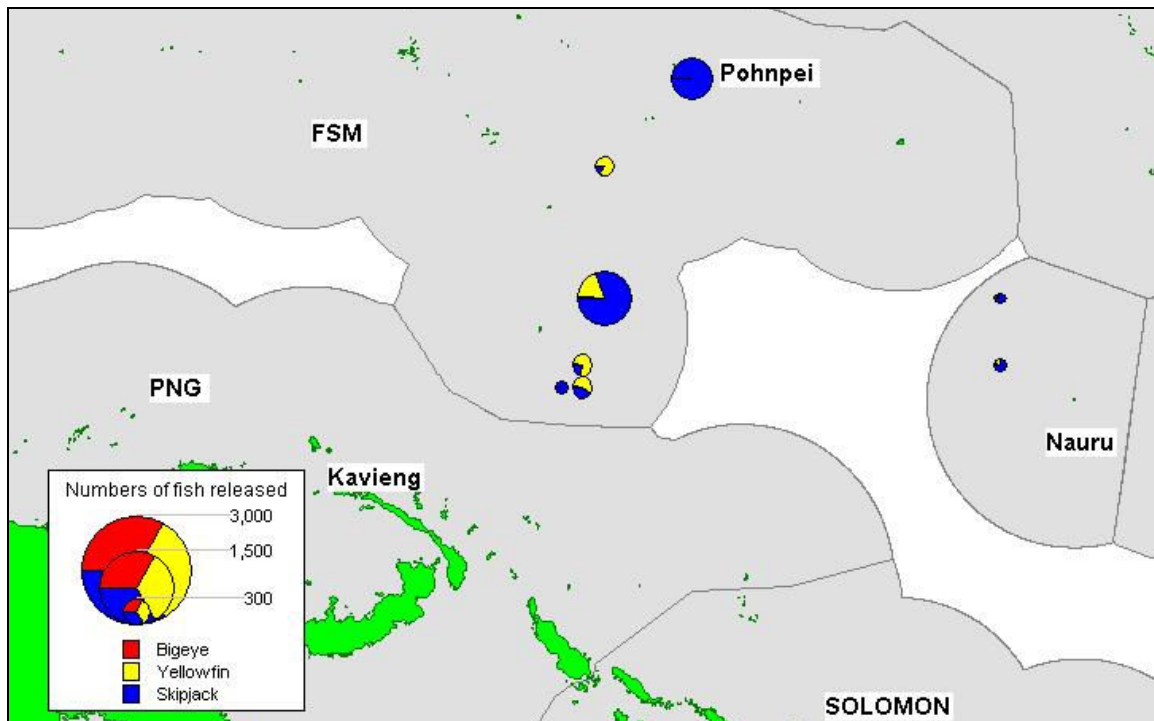
Of the 17 days of the cruise, 4 were spent in Solomon Islands (1 fishing), 3 in the Nauru EEZ (all fishing), 7 in the FSM EEZ (5 fishing) and 3 in the PNG EEZ (one fishing). Two high seas zones were transited, mostly at night. In total, 9 days were spent searching and fishing, 5 days in port, much due to delays in Noro, and three days steaming with no bait or steaming between bait grounds.

A total of 2182 fish was tagged and released during the cruise, at a low average of 240 fish per day. 166 fish were tagged in Nauru waters and 2016 in the FSM EEZ (**Table 2**). The Nauru releases comprised 129 skipjack, 28 yellowfin and 9 bigeye, and the FSM releases 1485 skipjack, 520 yellowfin and 11 bigeye. The species composition in total was 74% skipjack, 25% yellowfin and 1 % bigeye.

56% of the releases were the larger P tags, with a considerable number of smaller Z tags. 70% of releases were in association with anchored FADs, mostly TAO buoys. The free school releases (644) were all skipjack except one.

The Cruise 5 releases are summarized by school, location, school type day and area in **Appendix 1**, whereas **Figure 2** shows the distribution of releases during the cruise

Figure 2 Distribution of tag releases by species during Cruise 3

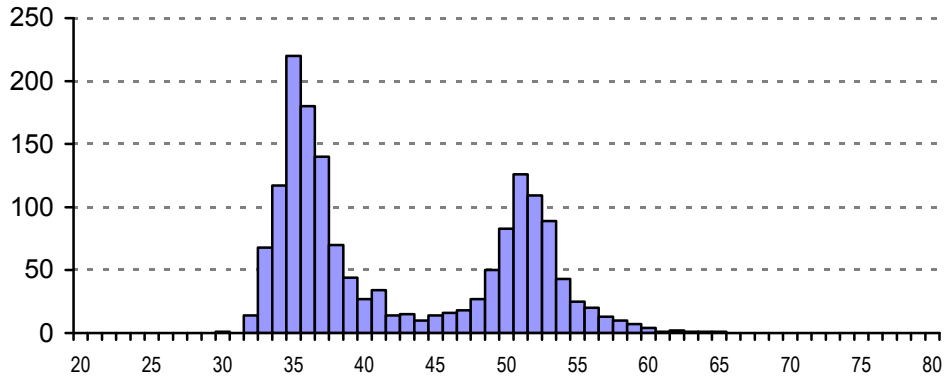


SIZE DISTRIBUTION OF TAGGED FISH

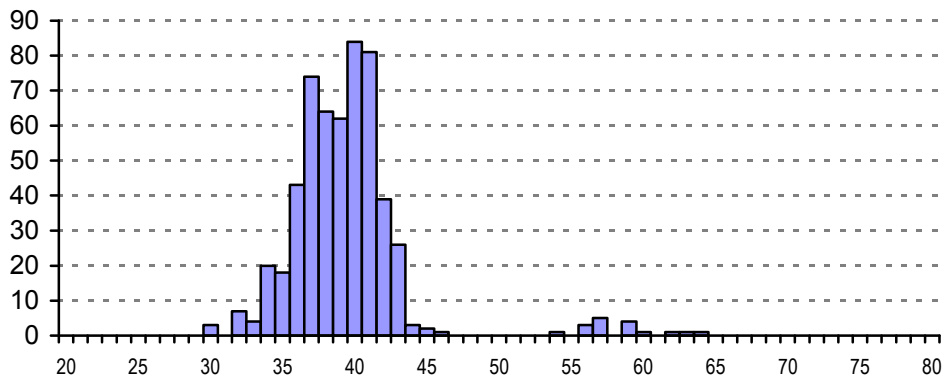
Figure 3 shows the size distribution of fish tagged during Cruise 5. The skipjack size distribution was bimodal (35 and 51 cm), whereas the yellowfin were mostly smaller fish (36-43 cm), with a small tail of larger fish. The few bigeye were mostly < 40cm.

Figure 3. Size distribution of fish tagged during Cruise 1

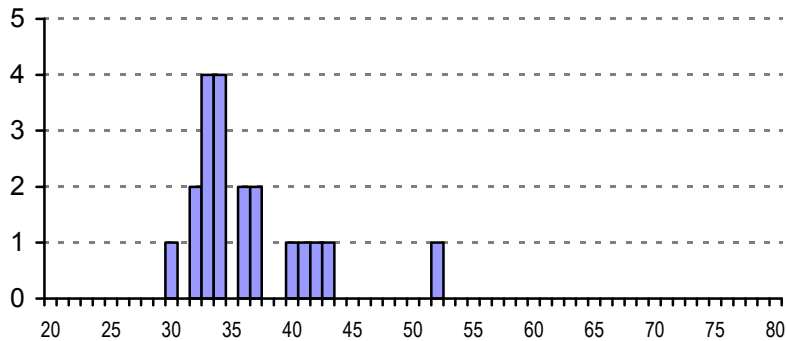
Skipjack n = 1614



Yellowfin n = 548



Bigeye n = 20



ARCHIVAL TAG SUMMARY

No archival tags were released during the cruise.

BAITING

With the late and inconvenient timing of the departure from Noro, it was not possible to fully load the vessel with the expected good bait from Posarae (Choiseul) for the long run to the Nauru EEZ, as previously. However, 150 bkts had been loaded before departure from baiting at Munda and with 120 bkts loaded in the single set at Posarae, it was possible to top up with another evening of baiting at Suri and leave for the long traverse with around 275 bkts alive onboard, including some large species. With low fish availability, bait was used only slowly and much survived with low mortality (< 15%) for over a week; some of the Munda bait was still alive after 2 weeks.

Baiting in Pohnpei was plagued by the abundance of larger fish (*Decapterus maccarellus*, *Selar crumenophthalmus*, some *Rastrelliger kanagurta*) at both sites. Attempts were made to scoop out large fish before or during loading, and emptying some tanks of larger fish in the hope of better bait. Despite this, the vessel left Pohnpei with full tanks, though ongoing mortality of the larger fish was a problem. Gold spot herring were the mainstay of the bait used but produced only a modest biting response on most occasions.

Table 4 Summary of bait fishing activity during WP3 Cruise 1

Date	Location	Catch (bkts loaded, hauls)	Species
	SOLOMON ISLANDS		347 (5)
July 13 th	Munda	150 (2)	Anchovy
July 14 th	Posarae	120 (1)	Anchovy, sprat
July 15 th	Suri	77 (2)	Sardine, anchovy, Hq
	FSM		502 (6)
July 22 nd	Pohnpei OH	212 (2)	Decapterus, Selar, Rk, Hq
July 23 rd	Nan Madol	110 (1)	Hq, Decap, Selar
July 24 th	Pohnpei OH	180 (3)	Hq, Decap, Selar
Total		850 (11)	

CONCLUSIONS

A disappointing cruise, both in terms of the low fish availability on the eastern leg, especially in Nauru waters, and the difficulty of getting good quality bait in Pohnpei at this time. Additionally, no large fish were secured for archival tagging. One of the lowest cruise totals during the PTTP but again moderate numbers of fish tagged along the 156^oE meridian.

Appendix Table 1.

Releases of tagged fish by date, location, school type and species

Project: Western Pacific #3- PTPP Phase 2		Cruise 1		Vessel Soltai 105										
Event no	Tagged sch no.	Date	Lat	Lon	Sch type	Assoc.	Start	Stop	YFT	BET	TAG TOTALS			TOTAL
											BET	SKJ	OTH	
1	1	19-Jul-2009	0001.635N	16502.642E	1	3	0550	0630	19	2	64	0	0	85
2	2	20-Jul-2009	0159.995N	16500.883E	1	3	0555	0620	9	7	65	0	0	81
3	3	22-Jul-2009	0640.950N	15814.787E	4	1	1505	1515	1	0	84	0	0	85
4	4	22-Jul-2009	0657.610N	15802.633E	2	1	1734	1750	0	0	110	0	0	110
5	5	22-Jul-2009	0658.545N	15805.247E	2	1	1812	1847	0	0	386	0	0	386
6	6	25-Jul-2009	0458.314N	15601.888E	1	3	1808	1834	129	1	30	0	0	160
7	7	26-Jul-2009	0157.394N	15600.770E	2	3	1425	1535	109	4	212	0	0	325
8	8	26-Jul-2009	0157.382N	15600.723E	2	3	1644	1725	62	0	490	0	0	552
9	9	27-Jul-2009	0000.928N	15558.200E	1	3	0644	0725	106	3	31	0	0	140
10	10	27-Jul-2009	0010.058S	15558.047E	3	3	0826	0900	110	3	79	0	0	192
11	11	27-Jul-2009	1112.573S	15539.892E	3	1	1212	1222	0	0	5	0	0	5
12	12	27-Jul-2009	0019.839S	15527.378E	4	1	1502	1540	0	0	58	0	0	58
13	13	27-Jul-2009	0020.029S	15534.315E	2	2	1657	1715	3	0	0	0	0	3
										CRUISE 1 TOTALS	20	1614	0	2182

APPENDIX 1

DAILY LOG EXTRACTS

July 13th

Preparations for departure continuing (Bruno, Hearty and Sylvain in Noro since Friday, CL and SJ arrived Sunday afternoon); most things in readiness, despite some last minute problems, but vessel not yet in survey, and unable to clear out; non-arrival of marine survey personnel from Honiara, combined with earlier general lack of cooperation from SPL, meant that departure had to be delayed by at least a day; busy afternoon with tag return and banking issues, then opted to steam to Munda late afternoon for baiting and general shakedown. Bait ground quite exposed to southerly winds but bait gathered quickly and first net 2200 hrs; current distorted net but good catch with 106 bkts loaded (40 let go ?), plenty of large bait and 12 smallish tazar as bonus; second net on lightboat 2320 hrs for 44 bkts - pure anchovy; headed back to Noro midnight, and alongside 0115 hrs after a useful evening.

July 14th

Another frustrating day - marine surveyors at Gizo ~ 1000 hrs but through a series of misadventures and bungling, not at Noro until 1830 hrs; earlier, final preparations continued, immigration and customs completed by 1200 hrs, Bastille Day celebrated in a quiet way, tag returns gradually dealt with, and light boat dispatched to Munda as fall-back position at 1700 hrs; in the event, survey passed smoothly and quickly (done by 1915 hrs), surveyors well dined and watered, and finally cast off 1945 hrs after light boat called back from Munda by cellphone; the usual teary farewells but no religious content; a gamble but headed for Posarae, aiming to get good bait after anchoring at ~ 0100 hrs; seas calm after another day of intermittent heavy rain but lessened wind; the game has begun on the last cruise !!!

July 15th

Anchored Posarae 0115 hrs - no light boat because generator u/s; first and only net 0430 hrs with only modest signs and light cloud cover; 120 bkts of good sprat and anchovy loaded, for total of around 230 bkts - not enough for the long haul, so opted to steam to Suri and bait there; up anchor 0540 hrs to pass via Manning Strait to Suri; several fish trolled on route; anchored 1530 hrs in 34m; light boat generator still u/s despite best efforts; first haul 2100 hrs with limited signs - 60 bkts loaded, with some large sardine scooped from tanks; reset lights in the hope of getting more to fill tanks.

July 16th

Second haul 0010 hrs, with poor signs; just 17 bkts of mixed spp; headed off 0100hrs for TAO 2N 165E some 540 nm distant; passed south of Ontong Java 1800 hrs and continued steaming overnight; nothing trolled

July 17th

Good steam overnight making slightly over 9 kts; passed two longliners; small blue marlin ~ 35 kgs trolled 0620 hrs; crossed into PNG waters ~ 0900 hrs; searching and fishing all day, for just one 200l fuel drum sighted and several patches of very small fish, probably SJ - no birds, rien; crossed into high seas ~ 1900 hrs.

July 18th

Nothing seen all morning - sea became calmer (mer d'huile) as the day went by; arrived at TAO buoy 1415 hrs after the 540 nm traverse; nothing initially so drifted for an hour; some signs on resumption at 1530 hrs, with fish at 40m but could not entice to rise above 20m; might have been successful at 1800 hrs but opted to press on, as not a lot of fish; to add insult to injury, one YF trolled as left buoy heading for TAO Eq; weather beautiful but just no fish ...

July 19th

Good steam overnight and on TAO Eq at 0515 hrs - several miles out of position to ENE; little under the buoy but circled and threw bait; some fish came up but never much - 85 tagged (64 SJ, 19 YF, 2 BE) before breaking off and heading for TAO 2N; rain most of the day but wind eased early afternoon; no sightings all day nor a fish trolled - a desert; reached TAO 2N at 1845 hrs in a slight seas but stiff wind from rain squalls, steamed upwind for an hour or so then drifted; some signs under buoy

July 20th

Started engine 0430 hrs and steamed 9 nm to buoy; only small amount of fish around buoy; brief bite for 81 fish tagged (65 SJ, 9 YF, 7 BE); no ATs; headed for Pohnpei 0630 hrs, some 512 nm distant; slight east setting current so speed around 9 kts at normal revs; more flotsam than previous few days but no fish nor any signs as of noon; nor anything in the afternoon; only action was rain squall at dusk with a nice rainbow; just 81 for the day; bait holding amazingly well, some after a week now, but very emaciated; steaming overnight into slight current; ETA south point Pohnpei 1500 hrs Wednesday;

July 21st

Good steam overnight, making ~ 9 kts; nothing sighted all day though birds seen searching; zero catch but notable event was Sylvain's birthday, celebrated in good spirit, even though "il porte la poisson".

July 22nd

Slowed down overnight with current; storm and moderate seas for two hours from midnight; nothing seen all morning, still with head current; expected ETA off SW Pohnpei 1600 hrs but some birds and fish popped up and responded at 1500 hrs - 85 tagged (1 YF); nothing then until past Ant Atoll; two schools in late afternoon for 110 (SJ) and 386 (also all SJ), for a welcome daily total of 581 fish with just one YF; meanwhile another drama was playing out, with Ports initially refusing to let us enter until 0800 hrs tomorrow morning; a well prompted agent (Curtis - CFC) intervened, allowing us to move inside after fishing and anchor to bait ~ 2000 hrs in 43m; a good final day for Seon Jae and Sylvain, who both poled and tagged fish (sort of); about 10 p/s vessels transshipping; bait quick to gather (new moon); first haul (no lightboat) at 2300 hrs for 132 bkts of mostly larger fish (Decapterus macarellus, Selar, Rastrelliger) and Hq - will see what survives; two big bags brined.

July 23rd

Second haul slightly further inshore at 0400 hrs in 53m; 80 bkts, with much of it larger fish again; waited until 0700 hrs then alongside Trinidad III/Queen Mary at CFC wharf for clearance 0745 hrs; lengthy delays due to lack of research permit and following from that, entry permit; all done finally by 1030 hrs - Ellie Sitan very helpful once she arrived; abortive attempt to check in Sylvain and Seon Jae early but eventually done by 1220 hrs, and off to ED's apartment for an excellent lunch, with nearly all WCPFC staff in attendance; Sylvain and SJ back to wharf with SK and Suzuki (safe hands); quick shop then cast off to bait at Nan Madol 1530 hrs; anchored 1845 hrs in 44m and new generator installed on light boat; large bait transferred from no. 1 tanks to the larger 2s, thus freeing up the 1s; beautiful night in Nan Madol - not dark until nearly 1900 hrs; first net 2200 hrs after useful bait gathering close to bottom; again much large fish - much scooped out before bucketing (~ 100 bkts) and more scooped off surface in tanks during bucketing (~ 20 bkts); around 100 bkts loaded, mostly Hq; second haul on light boat 2320 hrs - 30 bkts loaded, mostly large fish; ~ 50 scooped out and not loaded;

July 24th

Third set 0400 hrs - good anchovy mixed with Decapterus, Selar; 50 bkts loaded, the rest let go; up anchor 0445 hrs and steam to Pohnpei; alongside 0715 hrs; morning spent provisioning, visits to SPC, WCPFC; clearance at 1430 hrs and cast off 1600 hrs after disposing of the limited fish (4 baskets plus small fish); anchored in 54 m and set light boat 1700 hrs; first set 0930 hrs in stiff NE wind; 110 bkts loaded - mostly large fish mixed with some good Hq; no space for any more so collected light boat and headed out through pass for TAO 5N at increased speed (780 rpm).

July 25th

Nothing seen all morning; light SE wind initially then to SW and NW, strengthening in the afternoon; some head current, so making ~ 9.7 kts even at increased revs (780); some fish around old fridge casing but no bite; reached the TAO buoy at 1805 hrs; not much beneath - slow bite, mostly small YF, but more fish at stern; total tagged 160 (30 SJ, 129 YF, 1 BE); reduced speed and headed for TAO 2N.

July 26th

Constant task overnight of keeping bait tanks clear of dead and dying fish; nothing seen all morning, with wind gradually picking up from SW to 15 kts plus; arrived in vicinity of TAO 2N just after 1400 hrs - a few fish

jumping and 325 (212 SJ, 109 YF, 4 BE) tagged in about 5 passes - conditions difficult; one Coryphaena equiselis poled; steamed upwind and drifted for about an hour before returning to the buoy - more successful second time around, with 552 tagged (490 SJ, 62 YF); 877 for the day and now 1784 for the trip; more than 3 good tanks left for tomorrow - hope weather better, as per SeaStar prediction.

July 27th

Wind moderated overnight then swung round to SE; passed a log near the buoy then reached TAO Eq buoy 0645 hrs - large rippler of small R/R and mahi around raft, with some YF; some jumpers away from buoy; 140 (31 SJ, 106 YF, 3 BE) tagged in multiple passes but slow biting on the larger bait; returned to check the log but not found; second visit to buoy, with large ripplers of small SJ all around, yielded 192 (79 SJ, 110 YF, 3 BE); poor biting with the larger bait, so broke off and headed for Kavieng; wind eased but rain; strong head current, close to 2 kts; large SJ rippler just after noon but poor biting and just 5 tagged; quite a few sightings and another 61 fish tagged from 3 schools (one log) - not good biting with the mostly large bait; called it a day at 1730 hrs with minimal bait in the chummng tanks; 398 for the day (57% YF and BE); trolled 3 good YF just on dark (105, 87 and 64 cm), the first trolled fish for at least a week; the increased surace activity very noticeable ... cruise total 2182 (1614 SJ, 548 YF, 20 BE); speed reduced with strong current; will cross into PNG after midnight and set clocks back one hour.

July 28th

Wind around to SSW/S and stronger; no fishing and making better time (8.5 kts); blue marlin trolled 0630 hrs ~ 70 kgs; current ameliorating and making over 8.5 kts; abeam Lyra Reef 1300 hrs; current continued to lessen and making over 9 kts by late afternoon; a gentle steam in to Kavieng in better weather to end the cruise...

July 29th

Drifting off passage from 0515 hrs then alongside Fisheries wharf 0700 hrs; heavy rain which continued for most of the day; usual delay with officious Customs but Health and Quarantine OK early; finally got Joe back on the job and finished by close to 1100 hrs; quick shopping, water and fuel - 20 KI in two loads but alas too late for the 1400 hrs deadline and bet lost to Dr F Bruno.

END OF CRUISE ONE.