

PNG TUNA TAGGING PROJECT (PNGTP-2)

CRUISE REPORT No. 2

Bismarck Sea and northern EEZ

9th – 29th February 2012

INTRODUCTION

This report summarizes activities of the second cruise of the second annual charter of the Papua New Guinea Tagging Project (PNGTP) during a twenty-one day period in February 2012. After leaving Lae on the first full moon break, the vessel fished in the south-east and north-east Bismarck Sea, then across to the northern EEZ, north of Manus, before fishing down through the Hermits and Western Isles to Madang via the Ramu coast.

Scientific personnel involved in the cruise are listed below in Table 1.

Table 1. SPC and NFA personnel onboard during Cruise 2

Name	Title	Affiliation	
Thomas Usu	Cruise leader	NFA	9/2 – 29/2/2012
Antony Lewis	Cruise leader	SPC contractor	9/2 – 17/2/2012
Sharmaine Siaguru	Tagging Technician	NFA	9/2 – 17/2/2012
Anthony Nagul	Tagging Technician	NFA	9/2 – 29/2/2012
Benthly Sabub	Tagging Technician	NFA	18/2 – 29/2/2012
Chris Molai	Trainee	NFA	18/2 – 29/2/2012

GENERAL DESCRIPTION OF SEARCHING and FISHING ACTIVITY

The vessel left Lae after the full moon break and fished in West New Britain for several days, where the biting response was poor in discoloured water and with an abundance of natural bait. Patchy fishing was then encountered near Kavieng (Djaul ridge, Tench Island) before heading to Manus for the main part of the cruise and fishing in areas 1 and 2.

The cruise experienced good fishing on FADs north of Manus. Very good aggregations were also found on the weather buoy on the equator ($147^{\circ}E$). Skipjack free schools north of the Western Islands of Manus also produced good fishing. Baiting was exceptional on baitgrounds on the north shore of Manus, although there were issues with local resource owners which decreased fishing time by 1.5 days. Thus, less time was spent on the FAD array and the 48m seamount between Hermits and Manam Islands than expected. FADs north of Madang were generally less productive at the time, but some fishing on yellowfin free schools occurred near Karkar Island before heading to Madang.

The track of the cruise in the PNG EEZ, based on school, 0600, 1800 and 2400 hrs 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 PNGTP-2 Cruise 2

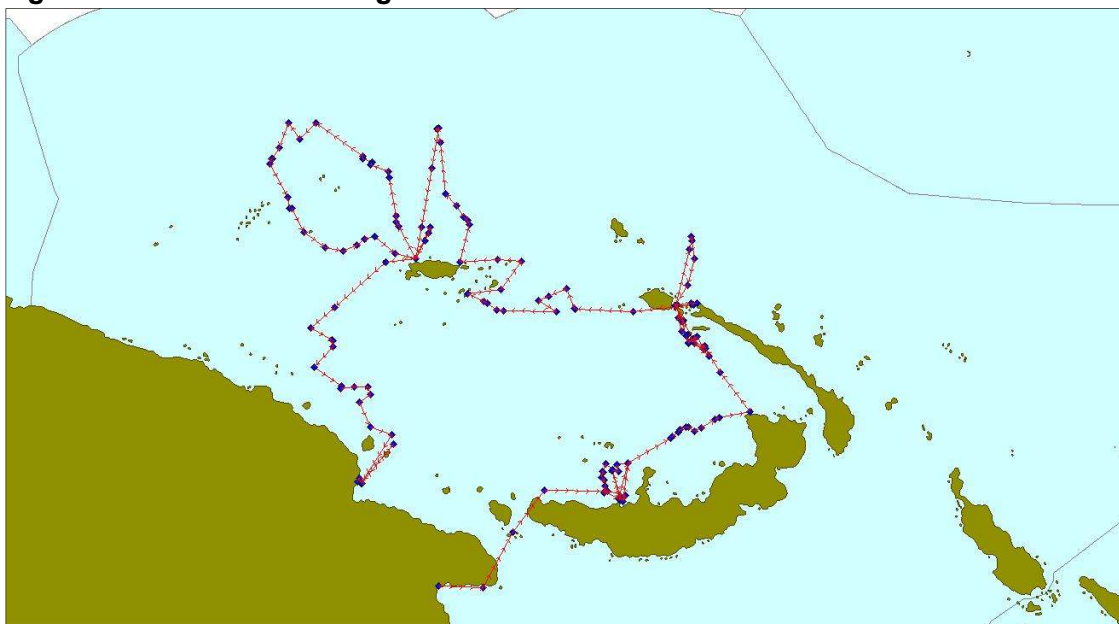


Table 2 Summary of PNGTP- 2 Cruise 2 activity, with the number of conventional and archival tag releases per day

Date	Jan Activity Jan	Conventional releases			Archival releases			Total releases
		SJ	YF	BE	SJ	YF	BE	
Feb 9 th	Departed Lae for north coast New Britain							
Feb 10 th	Steaming w/out bait then baiting Emeline Bay							
Feb 11 th	Fishing west of Willaumez Peninsula	46	31					77
Feb 12 th	Fishing west of Willaumez Peninsula	7	107					114
Feb 13 th	Fishing north of Kimbe Bay	167	48	1				216
Feb 14 th	Fishing Djaul Ridge and into New Hanover	751	379	1				1131
Feb 15 th	Fishing Tench Is	21	50					71
Feb 16 th	Fishing Djaul Ridge	92	211					303
Feb 17 th	In port Kavieng							
Feb 18 th	Fishing towards Manus – NE Bismarck Sea	366	44					410
Feb 19 th	Fishing east of Manus then baiting Seeadler	148	24					172
Feb 20 th	Fishing north of Manus towards the equator	1807	291	79				2177
Feb 21 st	Fishing equator(147E) then baiting Nares Hbr	1685	40	274				1999
Feb 22 nd	Fishing north-west of Manus towards	868						868
Feb 23 rd	Fishing north of Western Islands of Manus	1368	82					1458
Feb 24 th	Fishing south-east Hermits then baiting Nares	802	60					870
Feb 25 th	Fishing north of Nares then baiting Nares	33	6	1				40
Feb 26 th	Anchored Nares – baiting issues with locals							
Feb 27 th	Fishing north of Manam	35	57					92
Feb 28 th	Fishing north of Karkar	28	39					67
Feb 29 th	In port Madang							
	CRUISE 2 TOTAL	8225	1477	364				10066

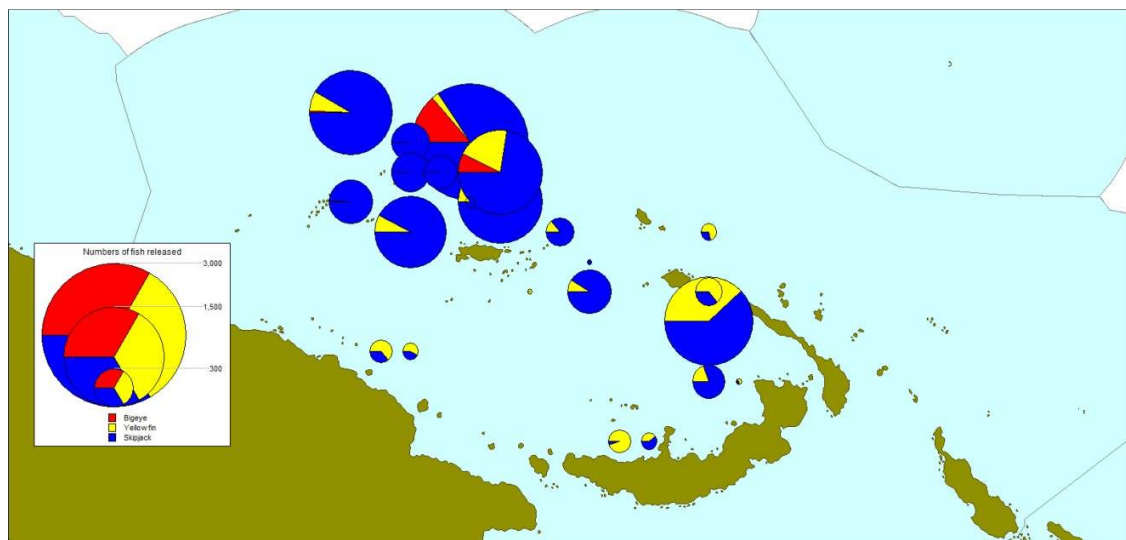
TAG RELEASES

Of the 21 days of the cruise, all or part of two days were spent in port, with one and half day at anchor in baitground resolving baiting issues with resource owners (no fishing). A total of **10,066** fish was tagged and released with conventional tags during the cruise, comprising 8,225 skipjack (57%), 1447 yellowfin (37%) and 364 bigeye (6%). No archival tags were deployed on this cruise.

2323 fish were tagged in waters north of New Britain, west and north of New Ireland including the run towards Manus in seven fishing days with 1451 skipjack, 870 yellowfin and only 2 bigeye (Area 2 of the four designated release areas). **7584** fish were then tagged during seven days of fishing areas north of Manus with 6711 skipjack, 511 yellowfin and 362 bigeye tuna. Four out of the seven fishing days in all or part saw most of these tags (**5066**) released in Area 1 (above latitude 01° S), including the majority of bigeye tag releases (362) for this cruise, 4361 skipjack and 345 yellowfin. The remaining two fishing days was spent in waters north of Madang (Area 2). **159** fish were tagged – 63 skipjack and 96 yellowfin.

The figure below shows the distribution of tag releases by species during the cruise.

Figure 2: Distribution of tag releases by species during Cruise 2



The average number of fish tagged per day's fishing was just over 600, and in excess of this during the very productive fishing and baiting in northern areas of Manus.

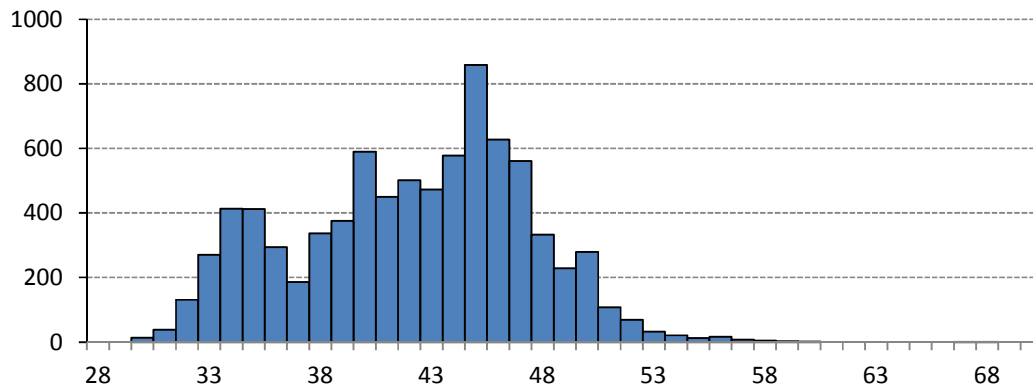
The majority of releases involved fishing anchored FADs (62%), with 16% on free schools, 12% on seamounts, 9% on logs and very small numbers on marine mammal-associated fish.

Majority of the releases (7,899 – 78%) were the larger P tags (generally fish > 38 cm), with only 22% of releases the 11cm Z tags (2167). The Cruise 2 releases are summarized by school, location, school type day and area in **Appendix Table 1**.

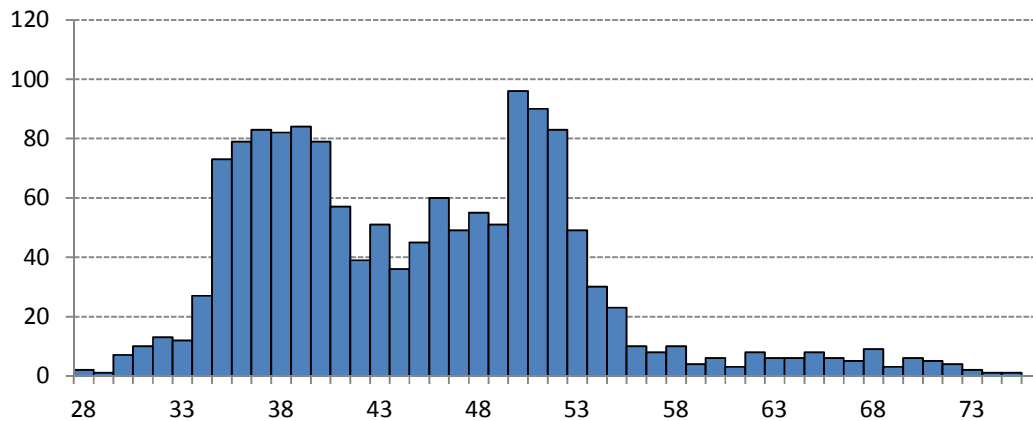
SIZE DISTRIBUTION OF TAGGED FISH

Figure 3 below shows the overall size distribution of fish tagged during Cruise 2.

Skipjack **n = 8255**



Yellowfin **n = 1477**



Bigeye **n = 346**

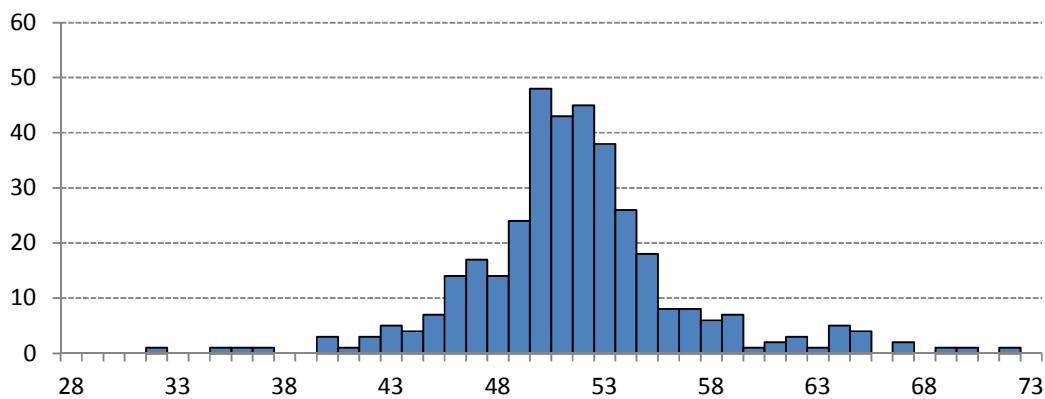


Figure 3: Size distribution of fish tagged during Cruise 2.

The skipjack size distribution (8255 fish) is broad and polymodal, with most fish between 35 and 55 cm. There are distinct modes on 34-35 cm, 40 cm and a larger mode on 45cm. The yellowfin size distribution (1477 fish), also broad, shows two primary modes

centred on 37cm and 48cm respectively while the small number of bigeye tagged (346 fish) was centred on 50 cm.

Most of the small fish that were less than 38 cm tagged in the Bismarck were on anchored FADs and log school while most skipjack 39 - 55cm and yellowfin 48 - 75cm were tagged on a seamount (Djaul Ridge). Sizes of tagged fish on anchored FADs in northern areas of Manus ranged from 30-60cm for skipjack, 38-65cm for yellowfin and 37-72cm for the small number of bigeye.

The equator TAO buoy (147⁰E) produced larger skipjack (primary mode = 47cm, range = 42-60cm), yellowfin (primary mode = 46 cm, range = 41-64cm) and most bigeye (primary mode=52, range = 42-72cm). Large skipjack 43-57cm were also tagged on free schools north east of Manus.

BAITING

Baiting plans and catches were affected by the weather and moon phase (just after full moon) on the north coast of New Britain. Emeline Bay did not yield to its expectations and Iboki bay was not sheltered from the strong north-west winds at the time. However, good baiting was experienced in the very sheltered Eleonora Bay and Cape Lambert but these sites provided mainly weaker bait. New Hanover (Nusandaula Island) supplied good sets of mixed bait species, to enable another Trench Island expedition and support longer range fishing towards Manus.

Excellent baiting was experienced on the north coast of Manus. This time, adequate quantity of mixed anchovies (mainly *E. punctifer*) was taken at Seeadler Harbour that highly influenced fishing productivity on the northern areas during this cruise. Nares Harbour also provided good catches of high quality bait again on two out of three occasions. Hermit Islands presented good catches of small bait contrast to last year's catches of big sardines in the same area. Summary of bait fishing activity is presented in Table 4 below.

Table 4 Summary of bait fishing activity during PNGTP Cruise 2

Date	Location	Catch (bkts loaded, hauls)	Species
Feb 10 th	Emeline Bay	95 (3)	S devisi, much Pellona, Rk
Feb 11 th	Emeline Bay	111 (2)	S devisi, some Pellona, Rk
Feb 12 th	Eleonora Bay	330 (1)*	S devisi, some Da, Sard brachy, Rk
Feb 13 th	Cape Lambert	260 (1)	S. devis, D.acuta, Gymno g, Pp
Feb 14 th	Nusandaula Is,NH	280 (2)*	Sardine (As), Hq, fusiliers (Gg, Pp)
Feb 15 th	Nusandaula Is,NH	145 (1)*	Sardine (As),fusiliers, few Hq
Feb 16 th	Nusandaula Is,NH	315 (1)	Sardine (As), Hq, fusiliers
Feb 18 th	St Andrews	0 (1)	
Feb 19 th	Seeadler Hbr	300 (1)*	E.puntifer, S.devisi, dusumieria spp.
Feb 22 nd	Nares Hbr	350 (1)*	S.devisi, heterolobus, S.gracilis, delicatus
Feb 23 th	Hermits Is	302 (1)	Small S.delicatus, gracilis, hardy heads
Feb 24 th	Nares Hbr	80 (2)	S. delicatus and squid
Feb 25 th	Nares Hbr	202 (1)*	Anchovies, sprats, some hardy heads

* partial loading only

SUMMARY

Despite a slow start on the north coast of New Britain and several baiting issues, the cruise was successful overall with productive fishing occurring in the northern areas of Manus. A total of 10,066 (8225 *SKJ*, 1477 *YFT* and 364 *BET*) fish was tagged and released bringing the total releases for PNGTP 2 to 24,671 (16,614 *SKJ*, 6849 *YFT* and 1208 *BET*). Almost 50% tags were deployed in each area 1 (5066) and area 2 (5000) of the four designated release areas of the project.

Although most fishing was on anchored FADs, seamount and logs also provided useful numbers of tagged fish. Almost 40% of the fish tagged in Area 1 (above latitude 01° S) were on the equator TAO buoy (147° E) with 99% of all bigeye for this cruise and will be visited again in the next cruise (3). This hopefully stresses the importance of prohibiting purse seiners setting on TAO buoys and which could prove to be the bigeye hideout in such highly fished areas.

Baiting access is becoming more complicated with locals as experienced in Nares Harbour that cost us a loss of 1.5 fishing days. Therefore, the need for thorough consultation and awareness in key baiting areas is necessary now before 2013 cruise.

APPENDIX TABLE 1

Releases of tagged fish by date, location, school type and species during Cruise 2

Project		PNGTP - Papua New Guinea # 2		Cruise		2 To		2		Vessel		Soltai 105	
Event no	Tagged sch no.	Date	Lat	Lon	Sch type	Assoc.	Start	Stop	YFT	TAG TOTALS			TOTAL
										BET	SKJ	OTH	
3	1	11-Feb-2012	0503.702S	14938.253E	2	3	0814	0835	31	0	46	0	77
7	2	12-Feb-2012	0504.064S	14924.562E	2	2	0808	0830	107	0	7	0	114
18	3	13-Feb-2012	0424.203S	15039.673E	1	3	1328	1352	40	0	164	0	204
21	4	13-Feb-2012	0418.039S	15103.294E	1	3	1718	1732	8	1	3	0	12
22	5	14-Feb-2012	0315.659S	15054.685E	2	8	0845	0923	172	0	708	0	880
23	6	14-Feb-2012	0313.245S	15054.534E	2	2	0945	0957	13	1	9	0	23
24	7	14-Feb-2012	0315.118S	15052.550E	2	8	1018	1027	22	0	12	0	34
25	8	14-Feb-2012	0311.128S	15045.590E	2	2	1117	1127	11	0	0	0	11
26	9	14-Feb-2012	0303.087S	15039.250E	5	1	1315	1340	109	0	17	0	126
27	10	14-Feb-2012	0300.542S	15034.188E	4	1	1428	1440	43	0	1	0	44
28	11	14-Feb-2012	0248.586S	15031.189E	1	1	1603	1632	9	0	5	0	14
29	12	15-Feb-2012	0140.318S	15042.873E	1	1	0705	0725	50	0	17	0	67
30	13	15-Feb-2012	0136.869S	15042.179E	1	1	0802	0806	0	0	4	0	4
32	14	16-Feb-2012	0314.387S	15052.922E	2	8	0728	0750	105	0	33	0	138
34	15	16-Feb-2012	0307.158S	15044.252E	4	1	1035	1045	6	0	0	0	6
36	16	16-Feb-2012	0304.325S	15037.644E	5	1	1245	1255	0	0	3	0	3
38	17	16-Feb-2012	0250.921S	15035.545E	4	1	1450	1545	100	0	56	0	156
39	18	18-Feb-2012	0240.479S	14859.553E	1	3	0558	0625	33	0	358	0	391
41	19	18-Feb-2012	0229.336S	14836.798E	1	3	1051	1106	0	0	4	0	4
42	20	18-Feb-2012	0242.707S	14843.704E	4	5	1434	1448	3	0	4	0	7
43	21	18-Feb-2012	0242.681S	14756.756E	1	3	1530	1542	8	0	0	0	8
46	22	19-Feb-2012	0158.709S	14812.844E	4	8	0933	1009	24	0	148	0	172
48	23	20-Feb-2012	0119.952S	14721.175E	2	3	0721	0823	68	0	1015	0	1083
50	24	20-Feb-2012	0059.132S	14705.234E	3	3	1154	1255	223	79	792	0	1094
51	25	21-Feb-2012	0001.569S	14659.476E	1	3	0545	0752	40	274	1685	0	1999
54	26	22-Feb-2012	0039.839S	14615.485E	3	1	1239	1251	0	0	147	0	147
55	27	22-Feb-2012	0033.538S	14559.110E	2	1	1517	1600	0	0	293	0	293
56	28	22-Feb-2012	0031.198S	14601.157E	2	1	1648	1701	0	0	97	0	97
57	29	22-Feb-2012	0025.972S	14552.900E	5	1	1819	1842	0	0	331	0	331
58	30	23-Feb-2012	0003.206N	14447.421E	3	3	0710	0830	82	7	1016	0	1105
63	31	23-Feb-2012	0112.186S	14448.196E	4	1	1724	1735	0	1	165	0	166
64	32	23-Feb-2012	0112.411S	14450.002E	4	1	1746	1805	0	0	187	0	187
65	33	24-Feb-2012	0149.907S	14535.016E	2	2	0835	0948	39	0	662	0	701
66	34	24-Feb-2012	0139.362S	14554.049E	1	3	1313	1358	29	0	140	0	169
68	35	25-Feb-2012	0128.983S	14651.772E	3	3	1000	1033	6	1	33	0	40
70	36	27-Feb-2012	0257.215S	14506.506E	3	8	0855	0912	0	0	2	0	2
73	37	27-Feb-2012	0332.216S	14509.855E	1	2	1728	1811	57	0	33	0	90
74	38	28-Feb-2012	0349.094S	14544.724E	1	3	0751	0814	39	0	28	0	67
CRUISE 2 TOTALS									1477	364	8225	0	10066
PROJECT TOTALS									1477	364	8225	0	10066

APPENDIX 1

DAILY LOG EXTRACTS – PNGTP-2 Cruise 1

February 9th

Another busy morning in port - fuel 3 hrs late (35.86 KI), engine oil issues, shopping, clearance; cast off 1400 hrs with another interesting outwards pilotage and finally clear of the madhouse soon after; set sail for West New Britain with ETA Iboki hopefully 1500 hrs Friday 10th; calm conditions in Huon Gulf then northerly wind picked up in Dampier Straits

February 10th

WNW wind with moderate swell for traverse along north coast of New Britain; wind mostly from rain squalls and abated somewhat as rain eased; chose to divert to Emeline Bay as possibly too rough for baiting in Iboki anchorage; many MT schools with birds and logs on the way; anchored 1415 hrs in Emeline Bay 36m; THU sorted long term access with landowners (food goods as advance payment) then interactive market later in the afternoon; light boat set, first haul at boat 2030 hrs for 79 bkts, mostly devisi; second at light boat 2120 hrs for 11 bkts.

February 11th

Third haul 0100 hrs under bright moon for 5 bkts; up anchor and headed for FADs 0145 hrs; arrived RD 8514 0520 hrs and waited until dawn; a few fish jumping and some signs but no bite; RD 8492 at 0730 hrs - few signs, no response; RD 8474 at 0810 hrs - 77 tagged (31 YF) in a slow reluctant bite; RD 8525a with probably the most fish and jumping YF but no bite; bait finished and headed back to Emeline Bay in rain, anchoring 1230 hrs; just 77 for the day, mostly Z tags; invaded for most of the afternoon from nearby villages, with theft of various items, mostly footwear; bait slow to gather under cloudy skies and rain; first haul 2130 hrs but many predators - 3 baskets of carangids (~ 100 kgs) removed before scooping 61 bkts of damaged bait; moved to lightboat 2230 hrs with good cloud cover; 51 bkts of much better bait, almost pure devisi.

February 12th

Checked bait 0230 hrs but moon bright and few signs, so did not haul - 111 bkts total; headed for FAD 8525a 0300 hrs, arriving in vicinity 0530 hrs; large area of jumping/rippling fish, mostly YF, but not interested in bait for second day running; headed towards one of last year's FADs but not there; one large log with some signs but no bite; nice log near an unlisted FAD produced a moderate bite with ~ 100 fish tagged, mostly YF; two mahi poled; no bite on the nearby FAD; good log 0930 hrs but no bite - plenty of natural bait in the water, as has been the case all morning, with flotsam; bait ball of YF 1000 hrs but no bite; 2 more schools before bait ran out as a fierce squall approaching; headed for Iboki anchorage 1145 hrs; 8 schools fished for the day for just 114 fish total (107 YF); Iboki judged not enough shelter with WNW wind so headed for Eleonora Bay(4 hrs additional steam) when almost in Iboki; anchored Eleonora Bay 1845 hrs in 35m; one barracuda trolled on way in; bait gathered very quickly and hauled 2115 hrs for about 500 bkts, of which 330 loaded;lightboat not needed.

February 13th

Up anchor and away 0240 hrs headed for RD 8514; plenty of fish jumping but no bite - ca continue ! Heading NE to FADs off Kimbe Bay; RD 8283, 8328 missing; some desultory jumpers chased and one log checked; oily calm and very hot; strong current line 1215 hrs with logs and flotsam - abundant bait and mahi; more logs, more jumpers, then finally some fish on a TPJ FAD - took two tanks of bait, and slow bite, but 204 tagged (mostly small SJ and 40 YF), to bring up exactly 15,000 and the 11th bonus; several RD FADs missing (8334, 8450) the last hurrah on RD 8545 to use up a half tank, with 12 tagged including one BE; now need to bait - just two tanks left and maybe 80 bkts; heading in to Cape Lambert and will be a vey late arrival, but might be able to scratch a tank of bait before heading for Kavieng; anchored close inshore Cape Lambert 0940 hrs in 36m, with lightboat also; bait quick to gather near bottom;

February 14th

First haul midnight - good showing after just two hours light and good cloud cover; 260 bkts but much *Dussumieria* which will perish, and good large *devisi* (to 7mm) and *fusiliers*; opted not to fish light boat and hit the road 0145 hrs, heading for Djaul ridge; very little seen until at the seamount when about 900 tagged in 500m on the seamount; a log school afterwards in same area did not bite so well - much YF, then another school on the seamount similar: second log school at 1130 hrs produced just a few fish so opted to drift for an hour and regroup, with still 3.5 tanks of beautiful bait left; the usual boilers south of Mait Island but smaller YF this time and did actually bite to some extent; 170 tagged from two aggregations, mostly YF; large amounts of MT in the second with ~50 poled and many more flicked off; nothing then until 7 nm off Byron Straits when 14 tagged after chasing a school all over the shop; finished in driving rain and shrieks of laughter; 1131 for the day (379 YF, one BE) and 16,143 for the charter with 12 bonuses; anchored Analaua Is in 25m 1830 hrs, with light boat set; plans to fish Tench tomorrow; one tank of good bait saved; good signs, more earlier than at time of first haul (2200 hrs) but still 176 bkts of good bait; second haul on light boat 2300 hrs for 104 bkts of sardines loaded, and about 50 bkts let go; up anchor and off for Tench with good YF bait for the morning

February 15th

Rolling passage with NE wind and swell; 8 nm south of Tench at 0600 hrs; no bird piles but some fast moving bird flocks near island; two schools fished in lumpy seas but mostly *kakakawa* and R/R; 71 fish tagged (50 YF); nothing seen except more *kakakawa* in a run around the island out wide so headed back towards New Hanover 1030 hrs; disappointing but such is the unpredictable Tench; a TPJ FAD just 20nm north but too far for a day trip; wind freshened on way south and some rain; nothing seen on the way in save one small school chummed which went down on approach; anchored in same location 1700 hrs; good showing of bait from the outset - net hauled 2000 hrs for 145 bkts to fill up, with about 20 bkts let go; will wait until 0130 hrs to steam out, as some wind.

February 16th

15 nm north of 285m seamount 0600 hrs in only fair conditions; school of good YF and some SJ on top of mount, for 133 tagged (105 YF); SJ rippling nearby but not biting; searching slightly difficult but bird radar to fall back on; chased several schools but much large YF and not biting; 6 YF from one school at 1030 hrs; wind dropped off markedly from 1100 hrs; 3 SJ from another school 1245 hrs, then chasing several large splashing/boiling areas of fish with much large YF NW of Djaul; finally persuaded one to bite near 1500 hrs, for 156 tagged (100 YF) but much fish 70cm plus and one 127 cm doubled in at bow after an epic struggle (Jeofrey and Michael Nile); heaps of *kakakawa* as well, of course; scraps of bait left but cleaned up and headed for Byron Strait, anchoring 1800 hrs in 25m; will fill up in preparation for trip to Manus (no time to bait Friday night if plan to make Lorengau in one hop); just hope bait strong and not too many large sardines; plan to be alongside Fisheries wharf 0700 hrs for a busy day, and 16,517 (43% YF and BE) for the month; also 1912 for the start of the cruise; first haul 2030 hrs for 315 bkts - light boat not needed; some large sardine but mostly good size, suitable for the trip to Manus.

February 17th

Alongside Fisheries wharf 0645 hrs; Fisheries staff arrived to collect sample fish (Kevin) - lucky only samples as all reject fish with refrigeration for at least a day; hooks and engine parts delivered by Benthly and Chris, bonus advances paid; then, with the aid of NFC vehicle, market shopping, water and fuel, plus Customs clearance; done by 1600hrs. Fairwell to Master Yoda and SHS and ropes away 17:40hrs and headed for passage. Exited Byron Strait 20:14hrs and heading for FADs NE Bismark with full tank bait. First FAD 80nm, ETA 05:00hrs tomorrow.

February 18th

Arrived position of TPJ FAD 43 at 04:55hrs but could not locate the floating device. Finally located FAD with a morning SKJ jumper an hour later and fishing started 05:58hrs. 324 fish tagged mostly SKJ (92%) between 37 - 45 cm. Bait fatality moderate and with fish around the area which might not be enough for tomorrow fishing so decided to fish towards St Andrews for

baiting tonight after checking RD 8340 and 8344 which were missing. RD8540 also missing but a brief attempt on whale school near the FAD's position was unsuccessful. Searched FADs west towards St Andrews, RD8329 missing, arrived RD8473 10:50hrs with a SKJ school but hard to get them to bite on the big sardines - 4 SKJ tagged and 3 bait tanks left. Continued west where two more FADs were missing but found another whale school at 14:48 and this time, 7 fish were tagged. We arrived at FAD RD8447 at 15:30 with another 8 releases than headed for St Andrews attempting 2 free schools along the way including but nothing. Anchor down at baitground 20:00hrs in showers and a bit of current.

February 19th

Current increased while at anchor which delayed the hauling. Net up at 01:20hrs when current slowed down for only 5 buckets of squid and very small blue sprats. Seems a second net would not be any different. Up anchor at 02:11 hrs and headed for fishing ground, NE of Nauna Is with approx. 100bkts from yesterday + 5 bkts mainly squid. Met a jumper school at 10:00hrs 13nm north-east of Nauna Is (0158.673S 14812.766E) which is within the <1000m depth contour surrounding the Admiralty Is on the chart. Tagged 172, 86% SKJ, 32-40cm and YFT >40-55cm. Big school detected on sounder but bait ran out. Heading for Seadler Harbour tonight (ETA 15:30hrs). Engineers worked on refrigerant that had some ammonia leakage. Anchored at baitground 15:59hrs, and sounder looking good by 19:00hrs and visited by locals from Ndrilou Is - Malachi's relatives. First net 22:00hrs for 300 buckets of nice mixed devisi and punctifer and few dusumieria spp. and leftover (50 buckets) into local's dinghys.

February 20th

Departed baitground 02:00hrs for FADs N of Seadler; arrived first FAD CO2 at 06:40hrs chummed but no response so headed for TPJ 9655, 6 miles NW of CO2. Tagged 1083 fish, mostly SKJ, 94% (33-46 cm) although big YFT underneath and 1 1/2 tank of bait used. Headed W to TPJ 9654 but before arriving at FAD changed course N following bird detection on radar; a clear sunny day and wind blowing at 7-10kts ESE. Found old RD FAD 10:10hrs which had its net floating at the rear and a rotting dead turtle strangled to it. Chummed but only baby skippies so head NW to TPJ 087. Found FAD 11:54hrs 5nm NW of proposed position or could be another unknown FAD with several splashers at the vicinity. Great fishing result of 1095 tag releases, 72% SKJ, 20% YFT and 79 BETs (46-55cm). Decided to stop fishing 12:55hrs although fish still present on the sounder to save 3 tank essa for TAOeq; might come back here tomorrow if no fish at the buoy. Steamed to buoy at 9knts, weather should be ok according to forecast to drift and fish in the morning. Arrived TAO buoy 19:30hrs, sounder looks good 100-150m, maybe BET there. Punctifer surviving well compared to its bother devisi.

February 21st

Drifted almost 8 miles west of buoy during the night so steamed back 04:35hrs and fishing commenced 05:45hrs. Although current a bit strong, BET responded immediate to chum and dominated the first 10-20 minutes, 39-64cm. Then came the SKJ and fishing continued for 2hrs until all essa gone. King Neptune equator-crossing ceremony - dives into the ocean and fetching coin in pool tank for all new crew and staff. Departed TAO, 0825hrs for Nares harbour with ESE wind at 8-10kts, 114nm to entrance; ETA 19:30hrs. Biological sampling and then the long data entry continued. 1999 fish tagged (SKJ 84%, YFT 2% and BET 14%); arrived at baitground and anchor down 20:23hrs. Tomorrow fishing NW Manus to equator if baiting is good tonight.

February 22nd

First net at 00:30hrs for 350bkts of mixed achovies (heterolobus, puntifer and few big indicus) and sprats (delicatus, gracilis and some lewisi); departed baitground at 02:15hrs for TPJ FAD 9648, 60nm NW of Sori Island. Found an unknown TPJ FAD on the way 14 miles from 9648 chummed 06:30hrs but only very small SKJ. Found a free school but it quickly disappeared before Sike aka Madagasca could scoop the third hand net so continued to 9648 position 09:02hrs but missing. Head N towards TPJ 9644 Pos: 00 35.354S 146 16.714E; met another school 12:35hrs, 4nm from 9644 and tagged 147 SKJ. TPJ 9644 however, had no fish on it so headed NW again towards TPJ 135. Found a big school 15:15hrs boilers here and there, chased around for 1/2

hour and finally managed to catch a school and 293 SKJ tagged. Continued towards TPJ135 and found another SKJ school 1648hrs and 97 tagged. Day's final school found on FAD position but no FAD and another 331 SKJ tagged. Fishing stopped 1842hrs. Decided to steam further NW to FADs 00 051N 144 53E, drift and fish down towards hermits tomorrow. Only two bait tanks used today so still plenty of bait for tomorrow fishing.

February 23rd

Arrived first FAD TPJ 129 pos. 0010.865N 14458.386E 01:35hrs then drifted till morning to locate the FAD. Lights of PS probably tied up to a nearby FAD. Found FAD 129 a mile E of position 05:50hrs but nothing on the sounder so headed for TPJ 128 12nm SW. Started fishing a rippler school 07:10hrs 100m from the TPJ 128. Fished around the FAD for 1 1/2 hours and tagged 1180 fish, mostly SKJ again, including 7 BET. 2 full bait tanks left; fine weather with clear blue sky. Continued SW to TPJ 127 and found a school with whale 10:46hrs; chummed but there were too much bait already in the water so no Sakana; passed TPJ 127 position but FAD not seen so continued SW towards TPJ 9635. Came across an unknown FAD 5nm N of 9635 but nothing. Arrived TPJ 9635 12:37hrs and nothing as well so decided to search for free school NE of Ningo group of islands towards Hermits. Found first free school 16:12hrs but the chase was unsuccessful. Then fished another two free schools after 17:00hrs and essa suddenly ran out. Found out that, the water pump went out sometime during the day that caused lack of circulation and when it was turned back on created bubbles that caused half of our nice essa to perish. Hope this won't happen again. Steamed for Hermits 18:10hrs and will be there by dark; anchored at baitground 20:50 hrs.

February 24th

Net up 00:00hrs for 302 buckets of small sprats, mainly blue and silver in 1 net and around 20 bkts let go. Nice bait but too small to catch big fish at seamount. Decided to fish towards Manus today and load-up with nice punctifer if they are still there. Anchor 02:00hrs and headed towards RD8367, 30 miles SE from Hermit. Arrived FAD position 06:00hrs and searched vicinity but couldn't find it (missing); continued further SE to TPJ 24 but no FAD sighting so turned NE to RD8451. Found school on a log 08:35hrs with ps float attached and after an hour fishing 701 fish were tagged; mostly small SKJ and very few big YFT which we couldn't hold them up for long with our tiny bait. Checked another 2 FADs but missing. Found RD 8539 3nm NW from position at 13:13hrs and tagged 169 small SKJ and YFT. Last FAD at 115:04hrs chummed but nothing then headed for Nares Harbour; arrived at baitground 21:00hrs and lights down; confronted by angry local youths so CL and Chris had to go down to Sori 2 village to see leaders and elders of the village. Long conversation, toksave, Manus politics, etc... mixed reactions from village elders and arguemnets among themselves. Finally decided that we stay and waited for Manus officials but we will still continue to bait and go out fishing.

February 25th

First net at 00:00hrs but current was too strong and 0 buckets taken. Next haul at 04:00hrs for 80 buckets of blue sprats and squid. Sent Bently and Chris on local boat with LLG deputy president to Lorengau town to get officials; departed baitground 05:30hrs with some locals; met whale school 15nm N of Ponam Is but hard to catch; realised that couple of binoculars went missing last night (taken from the bridge). Headed for TPJ9652 and found FAD 5nm E of position at 10:00hrs. Fished splashers with plenty bait in the water so only 40 fish tagged including one 50cm BET; searched back towards Nares to wait for party from Lorengau; met the whales again 3 or more 11:09hrs. Attempted fishing but unsuccessful so headed straight for baitground with 1 1/2 tank bait remaining; arrived back at Nares 14:14hrs to wait for Lorengau party; made a list of things missing on the boat. Nine items including more footwear, but more important stuff, were the binoculars, ice boots and troll lures. Lorengau Party arrived 16:00hrs but no town officials. They said they were coming tomorrow morning for a meeting tomorrow at Sori II village. Presented the list of missing items to LLG president and other village councillors and requested that they be returned asap and also no more visits by locals. So everybody off the boat leaving 4 security guards to prevent unwanted visitors. First net 22:00hrs for 202 buckets of mixed anchovies, 1 net half let-go. Tomorrow, meeting with villagers when Lorengau officials arrive, collect missing items

and hopefully depart early afternoon for some fishing before heading don to 48m Seamount 110nm.

February 26th

No unwanted visits last night. Lorengau officials arrived 09:30hrs a the vessel, Manus Fisheries Advisor who is currently on leave, acting Fisheries Advisor, LLG President and District manager. Briefing in the office of then waited for villagers to finish their church service; headed down to the village 12:00hrs. An hour meeting at the village with village elders, chiefs, councilors etc... claims, request for NFA assistance and more Manus politics.... ; apologies from fisheries of lack of communication regarding project activities and some assurance of assistance. Apologies from villagers of their behaviour and then returned the missing items; poles, boots, sandals/slippers, gloves and only one binocular. Waited another 3 1/2 hours while searched continued for the other binoculars and lures at nearby villages. Culprits have gone into hiding; plans to fish in the afternoon not feasible now. Couldn't wait anymore, so requested that the items be confiscated, with police if necessary and returned to Manus Fisheries office; will pick them up if we bait at Seadler next cruise; returned to vessel, meeting with officers and crew and anchors away 20:30hrs; to fish 48m seamount tomorrow morning.

February 27th

Searching started around 05:45hrs 28nm from 48m seamount. Arrived seamount area 08:46hrs and first school sighted 10 minutes later chummed but only rainbow runner. Moved around a bit but although managed to tag 2 skj, rru was everywhere eating all the bait. After 1/2 hour of trying catch anything other than rru, decided to move to FADs N of Manam. Found a log 11:38hrs chummed but again rru and kaw; continued to FAD, first FAD and second missing RD8455 and 8341. Found another log 13:58hrs, this maemae and more rru; spotted an unknown FAD 14:41hrs but nothing above or under. Last 2 FAD RD 8205 an 8375 missing. Found last log for the day 17:28hrs and again more rr but tried again, some yft and skj came up between rru ; managed to release 90 tags, 57 yft and 33 skj. Fishing stopped 18:11 hrs; still 4 tanks of nice anchovies from Nares. Decided to skip baiting at Hansa bay 41nm away and move to FADs N of Karkar to drift and fish early in the morning; arrived first FAD RD8413 position 22:06hrs. Will fish FADs N and then down towards Karkar tomorrow.

February 28th

Engine started 04:00hrs and moved to FAD position. RD8413 and 8481 was missing so headed E towards RD 8298. Arrived FAD 07:51hrs 2nm from W of given position; slow biting from nice size skj and yft; tagged 28 skj and 39 yft. Continued SE to RD8357; located FAD 09:39hrs but nothing present. Headed SW and found a log 11:00hrs on the way to RD3270; poled two small travelly at bow for Lapun's lunch. RD8270 missing then searched down towards Karkar Is. Met first free school of untaggable size skj 14:52hrs 6nm directly N of Karkar; chased big yft free school near Greig Bank 17:09hrs but unsuccessful. Another big YFT free school chase 8nm NE of Bagabag Island 18:21hrs was unsuccessful. Fishing stooped 18:42hrs. Still 2 tanks of bait left. Not sure if EU FAD still there, might check it in the morning before heading to pilot station. Otherwise, it will be end of another exciting cruise with 10,066 tag release bringing the total of PNGTP2 to 24,671.

February 29th

Arrived at pilot station 00:00hrs and drifted in cool land breeze; pilot amazingly on time at 07:00hrs and we were alongside by 07:35 hrs. Customs arrived around 8 am, clearance done; all arrangements done by an agent, Supreme Agency. Market shopping first thing by BES and Wakio and THU and ANT wholesale orders; fuel late as usual but 20,000L loaded before lunchtime as well as water 27kl of fresh water, so engineers had a free afternoon. Withdrew some money from BSP branch and paid advances. We went to get new expansion from TRO, sent by DHL from POM then collected shopping orders after lunch and everything almost done. One more cooking gas bottle and arrival of BML; a call from BML mentioning flight delay so asked agent to extend outward pilot to 18:00hrs. Picked up new cooking gas cylinder from Rookes Marines before heading for the airport just in time when passenger disembarking. Arrived back at

the boat 17:50hrs; farewell to ANT and ropes away 18:00hrs with pilot onboard. Head for Rach Pass after pilot got off; arrived 19:15hrs. BML distributed shopping from Brisbane; everyone concerned very happy. BES called village elders via mobile phone to notify them of our activity. They requested some fish for a funeral feast so BES and Chris went ashore to deliver. Essa looking good on sounder wind picking-up again might have to wait for it to slow down. One set at 2415 for 272 bkts of nice blue anchovy. Weather forecast looks ok in central Bismarck for the next 3 days with NE and E wind up to 10 kts, possibly 15 on sat;