

PNG TUNA TAGGING PROJECT (PNGTP-3)

CRUISE REPORT No. 1

Eastern EEZ and Solomon Sea

7th April - 26th April 2013

INTRODUCTION

This report summarizes activities of the first cruise of the third annual charter of the Papua New Guinea Tagging Project (PNGTP) during a twenty day period in April 2013. After entry into PNG waters on 8th April, the vessel initially fished in waters east and north east of Buka, Bougainville AR, before moving to the Solomon Sea on April 17th and entering the port of Lae at cruise end. Scientific personnel involved in the cruise are listed below in Table 1.

Table 1. SPC and NFA personnel onboard during Cruise 1

Name	Title	Affiliation	
Bruno Leroy	Cruise leader	SPC	07/04 – 27/04/2013
Thomas Usu	Scientist	NFA	07/04 – 09/04/2013
Simon Nicol	Scientist	SPC	07/04 – 15/04/2013
Sylvain Caillot	IT Engineer	SPC	07/04 – 15/04/2013
Jeff Dubosc	BS Technician	SPC	09/04 – 27/04/2013
Benthly Sabub	Tagging Technician	NFA	09/04 – 27/04/2013
Brian Kumasi	Scientist	NFA	15/04 – 27/04/2013
Anthony Nagul	Tagging Technician	NFA	15/04 – 27/04/2013

GENERAL DESCRIPTION OF SEARCHING and FISHING ACTIVITY

The vessel left Solomons with 96 buckets of bait which was sufficient for one day fishing en route to Buka where formal clearance in PNG was undertaken. The vessel then focused activity on Area 3 with the cruise track heading east of Bougainville to the TAO buoy at 5°S and 156°E, then north westerly to Nissan Island, followed by a northwards course to Nuguria Island before heading south and returning to Buka for a crew change. Overall, the fishing was poor. In general, there was a large amount of natural bait in the water and plenty of schools were encountered and chummed with little success. The schools were mainly a mix of medium size yellowfin and large skipjack. Fishing on the TAO buoy again proved successful with over 400 fish tagged (approx 50% bigeye and skipjack with a small number of yellowfin). Baiting at Taiof Is, Carteret Is, and Nissan Islands was not to the high standards of previous years but nonetheless satisfactory. The baiting at Nuguria Is was good.

The vessel moved into Area 4 on the 17th April and, as it is usually the case in this area, found some large free school of mixed skipjack and yellowfin about 20 to 30 nautical miles offshore in front of Lindenhaven and Gasmata baitgrounds. The large baits provided by these locations proved to be efficient on the medium to large size skipjack and yellowfin that constituted the schools and more than 1,100 fish were tagged per day on average.

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-3 Cruise 1

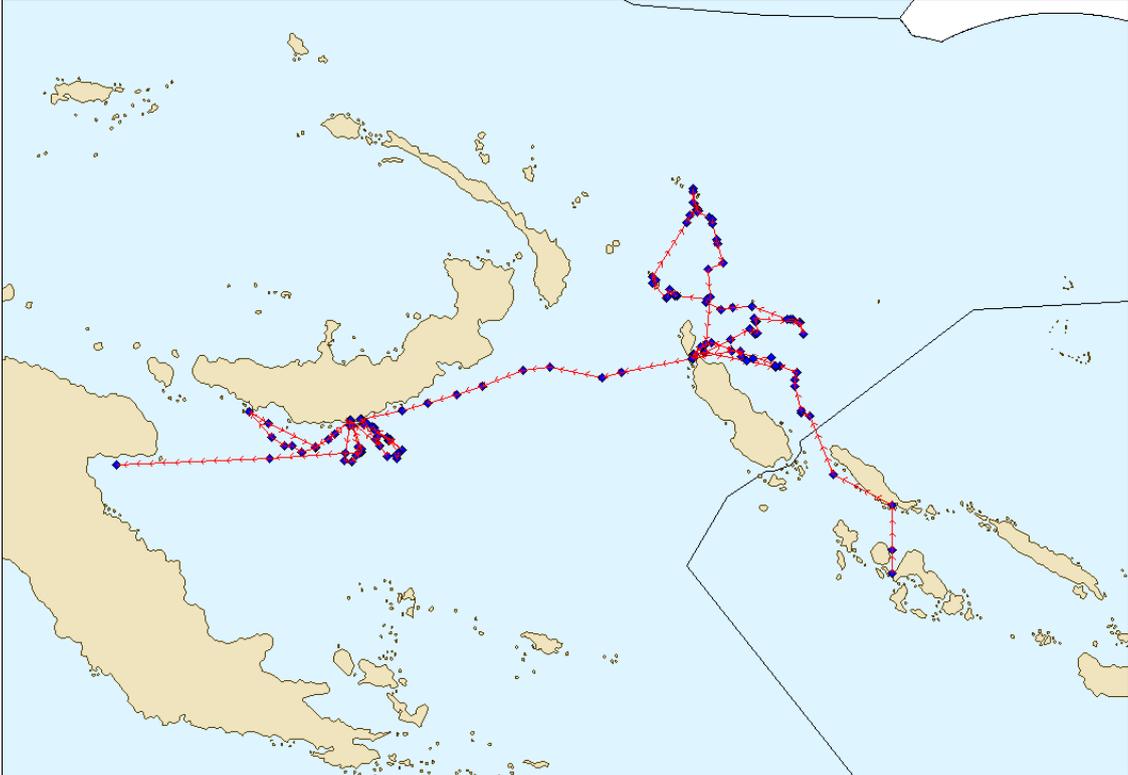


Table 2: Summary of PNGTP- 3 Cruise 1 activity, with the number of conventional and archival tag releases per day

Date	Apr Activity	Conventional releases			Archival releases			Total releases
		SJ	YF	BE	SJ	YF	BE	
7 th April	Departed Noro for baiting at Ropa, Choiseul							
8 th April	PNG waters, fishing en route to Buka	295						295
9 th April	Clearance into PNG, Buka; baiting Taiof Is							
10 th April	Fishing and searching towards TAO Bouy 5S	199						199
11 th April	Fishing and searching, baiting Carteret Is	268	51	237				556
12 th April	Fishing and searching, baiting Nissan Is	22						22
13 th April	Fishing and searching, baiting Nuguria Is	55	571					626
14 th April	Fishing and searching, return Buka	107						107
15 th April	Tagging crew change, provisioning Buka							
16 th April	Fishing east Cape Laverdy, baiting Taiof Is	53		2				55
17 th April	Fishing toward Lindenhaven	562	237	15		3		817
18 th April	Fishing toward Lindenhaven	178	161			7		346
19 th April	Fishing South Lindenhaven	1913	93	2		8		2016
20 th April	Fishing South Lindenhaven	314	92	38		13		757
21 st April	Fishing South Lindenhaven	1160	340	43				1543
22 nd April	Fishing toward Arawe	229	2					231
23 rd April	Fishing toward Gasmata	796	288					1084
24 th April	Fishing South Gasmata	1360	24					1384
25 th April	Fishing toward Lae	1767	430	21				2218
26 th April	Clearance in Lae							
TOTAL		9278	2589	358		31		12256

TAG RELEASES

Conventional tags:

Of the 20 days of the cruise, all or part of two days were spent in port with one day steaming from Noro to Buka. A total of 12,225 fish was tagged and released with conventional tags during the cruise, comprising 9,278 skipjack (76%), 2,589 yellowfin (21%) and 358 bigeye (3%).

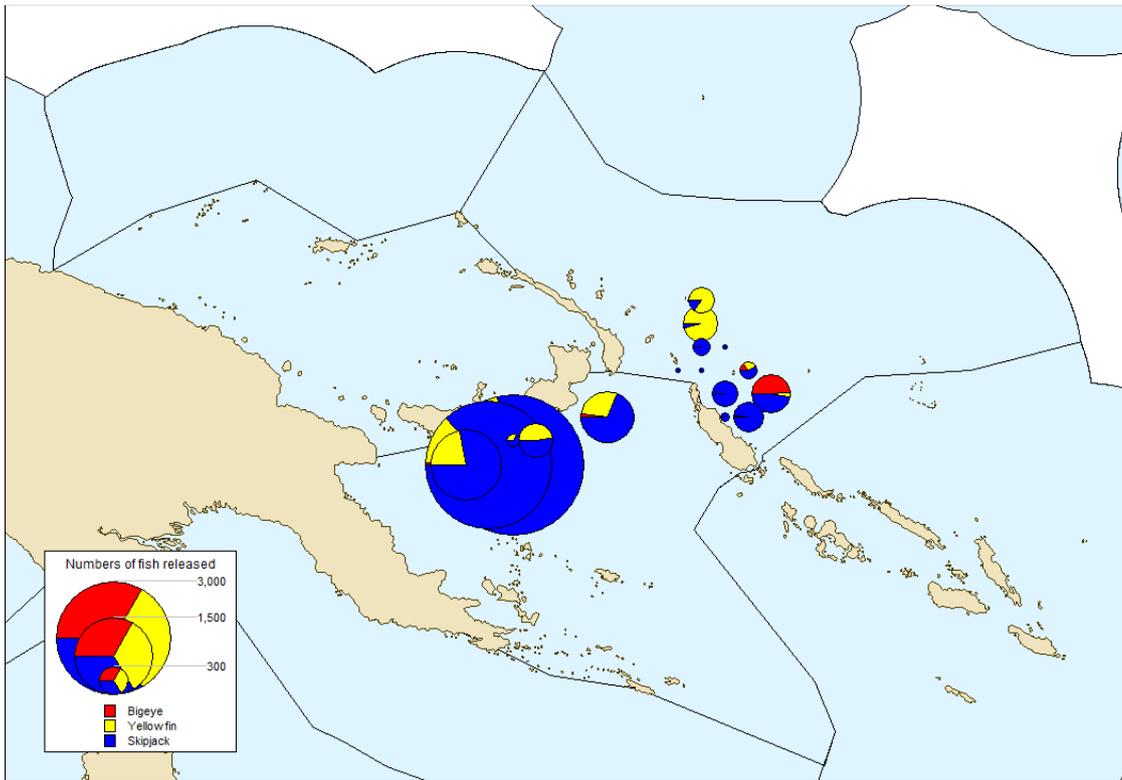
Additionally, 31 archival tags were deployed on yellowfin during the cruise, making a total of **12,256 releases** for the cruise.

1,860 fish were tagged in waters east and north-east of Buka in seven days fishing, with 999 skipjack, 622 yellowfin and 239 bigeye (Area 3 of the four designated release areas).

10,396 fish were tagged in the Solomon Sea south New Britain coast, in nine days fishing with 8277 skipjack, 1998 yellowfin and 119 bigeye. (area 4),

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

Figure 2: Distribution of tag releases by species during PNGTP 3 Cruise 1



The average number of fish tagged per day's fishing was close to **817**.

The majority of releases involved fishing free schools (56%), with 26.5% on drifting objects (mainly drifting FADs) and 17.5 % on anchored FAD and island associated schools.

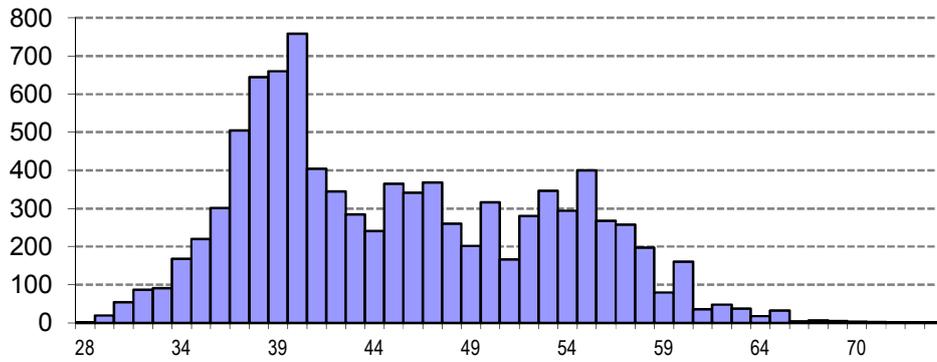
A large majority of the releases, 9,970 (81.5%) were the larger P tags (generally fish > 38 cm), in comparison to 2,255 (18.5%) of the 11cm Z tags.

The Cruise 1 releases are summarized by school, location, school type day and area in **Appendix Table 1**.

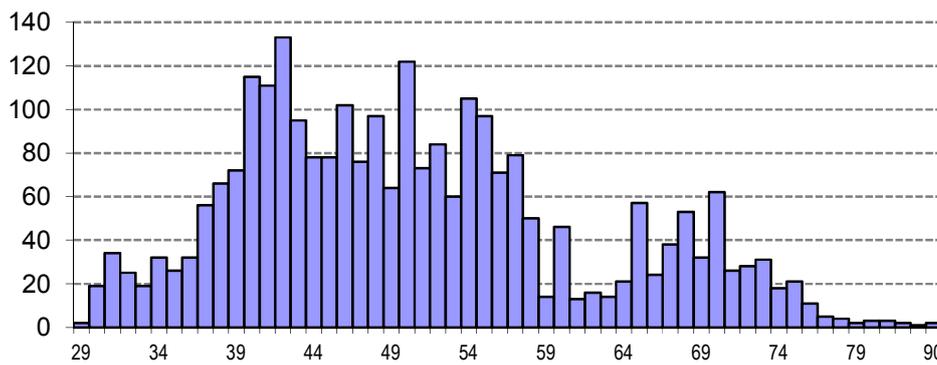
SIZE DISTRIBUTION OF TAGGED FISH

Figure 3 below shows the overall size distribution of fish tagged during Cruise 1.

Skipjack : n=9277



Yellowfin: n= 2620



Bigeye : n=358

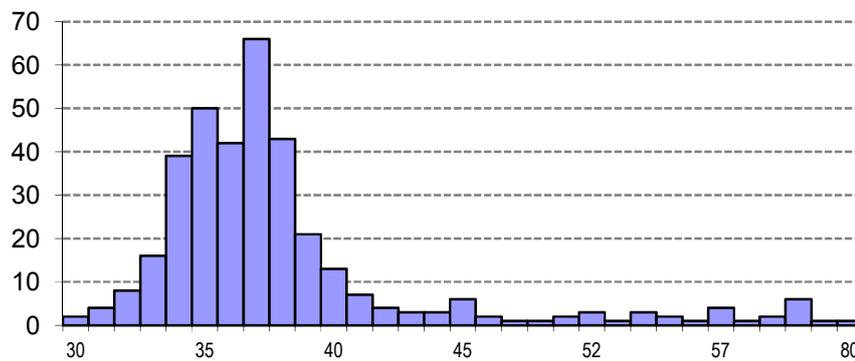


Figure 3: Size distribution of fish tagged during PNGTP 3-Cruise 1

The skipjack size distribution (9277 fish) shows 3 modes centered on 39, 47 and 56 cm, while the juvenile yellowfin sizes (2620 fish) show a multi-mode distribution with possibly a period of low historical recruitments causing low frequencies in the size intervals around 60 cm. The small number of bigeye tagged (358 fish) show a cohort of small fish centered on 36-38 cm and few fish up to 80 cm.

Archival tags:

All archival tags have been deployed in four days fishing south of Lindenhaven, in 30 yellowfin and one bigeye tuna. All tags were the Lat 2810 from Lotek and 30 of them were provided by CSIRO Marine Division of Hobart, to hopefully provide information on links between the Soomon Sea and the Australian east Coast fishery. The size distribution of the tagged yellowfin is displayed in the figure 4 below

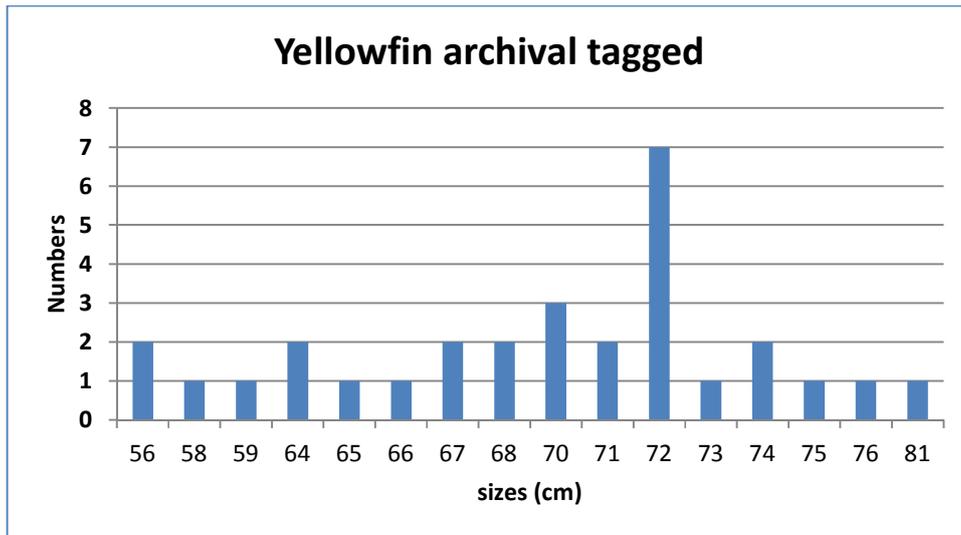


Figure 4: Size distribution of fish tagged with archival tags

BAITING

Bait supply was generally good, as summarized in Table 4 below. The initial catch was taken in Solomon waters (Ropa) on the inward run to Buka. The Taiof Island baiting area near Buka did not supply the usual reliable catches of anchovy while baiting at the offshore atolls of Nuguria, Nissan and Carteret was just satisfactory.

Lindenhaven and Gasmata provided the bait needed on a daily basis to fish the New Britain south coast, while an attempt to bait at Arawe was unsuccessful.

Overall we had to deal with a large percentage of big species (*Dussumieria*, *Sardinella*) in the bait catches and this made difficult to attract some schools of small skipjack. On another hand, it proved to be quite efficient to catch the medium size yellowfin that were inserted with archival tags.

Table 4: Summary of bait fishing activity during PNGTP 3 Cruise 1

Date	Location	Catch (bkts loaded, hauls)	Species
Apr 7 th	Ropa	96 (1)	Anchovy (dev), sprat (lew)
Apr 9 th	Taiof Is	299 (3)	Mixed (anchovy (dev, bae), sprat (lew), fusiliers, sardines (Pellona))
Apr 11 th	Carteret Is	225 (2)	Sprats (grac), large sardine (sifted & not kept)
Apr 12 th	Nissan Is	77 (2)	Mixed (sprat (del), small atherines, reef, sardinella, scad (not kept))
Apr 13 th	Nuguria Is	143(1)	Sprat (grac)
Apr 16 th	Taiof Is	240 (2)	Mixed (anchovy (dev, bae), fusiliers, sardines (rainbow), hq)
April 18 th	Lindenhaven	195 (2)	Mixed (anchovy (), sprat (delic), sardines (sirm, dussum), Hq)
April 19 th	Lindenhaven	256 (2)	Mostly S.sim, Hq, mixed bag
April 20 th	Lindenhaven	150 (2)	Mostly S.sim, Hq, mixed bag
April 21 st	Gasmata	183 (2)	Dussumieria, S. indicus, hh, S delicat.
April 22 nd	Arawe	10(1)	Barracuda, squids, hh
April 23 rd	Gasmata	183 (2)	Dussumieria, S. devisi, hh,
April 24 th	Gasmata	98 (3)	Dussumieria, S. devisi, sardinella, pony

BIOLOGICAL SAMPLING

A fairly strong effort on biological sampling has been achieved during this cruise due to additional requests coming from different projects. On top of the usual sampling for pieces of muscle, liver and stomach (along with Fat-meter measurements) for the SPC food chain ecosystem study, some otoliths, gonads and muscle of the main tuna species were taken for a growth and reproductive biology study commanded by the WCPFC. Also some muscle for DNA analysis on YFT and BET caught in Area 3 were taken for a CSIRO project.

The respective protocols for the above mentioned projects were:

SPC SAMPLING

Every other day, sample 10 specimens of tuna species and 5 specimen of bycatch species by school, if possible one in the morning and one during afternoon. By specimen, take species, size, sex, fat-meter measurement, one piece of muscle, one piece of liver and the stomach.

WCPFC SAMPLING

Sample 1 specimen by size class of each tuna species by school, no more than 5 fish by size class for the cruise. By specimen, take species, size and sex, one big piece of muscle, gonads and otoliths.

CSIRO SAMPLING

Sample in Eastern PNG EEZ (Area 3) 10 specimens of YFT and BET by school, no more than 100 fish for the cruise. By specimen, take species, size, sex, one small piece of muscle for future DNA analysis.

Baits used for each schools sampled were collected to compare with stomach contents (main baits and miscellaneous species).

In total, 18 different schools on 39 were sampled (50%).

It represents 202 fishes sampled (1.6% of total tagged fish) included 108 SKJ (1.2% of total tagged), 75 YFT (2.9%), 13 BET (3.6%) and 6 KAW. The results are summarized in the Table 5 below.

Table 5: Summary of PNGTP-3 Cruise 1 biological sampling

School #	Date	Start	Sampled SKJ	Sampled YFT	Sampled BET	Sampled KAW	SPC	WCPFC	CSIRO	FatMeter	Baitground
2	08/04/2013	16:12	10				Y				Ropa
4	10/04/2013	09:21	3							Y	Taiof
6	10/04/2013	11:32	10				Y			Y	Taiof
8	11/04/2013	05:25	10	7	10		Y		Y	Y	Taiof
12	12/04/2013	14:18	1					Y			Carteret
13	13/04/2013	14:37		10		5	Y		Y	Y	Carteret + Nissan
16	14/04/2013	13:40	2					Y			Nuguria
17	14/04/2013	16:20	2					Y			Nuguria
18	16/04/2013	05:40			1			Y			Nuguria
21	17/04/2013	13:56	10	10			Y	Y	Y	Y	Taiof
22	18/04/2013	08:30	10	10			Y	Y	Y		Taiof
28	20/04/2013	15:02		8			Y	Y		Y	Lindenhaven
30	21/04/2013	06:41	10	10	2	1	Y	Y		Y	Lindenhaven
31	22/04/2013	08:23	10				Y	Y		Y	Gasmata
33	23/04/2013	09:59		10			Y	Y			Gasmata + Arawe
36	24/04/2013	12:18	10				Y	Y		Y	Gasmata
38	25/04/2013	08:39	10				Y	Y		Y	Gasmata
39	25/04/2013	09:27	10	10			Y	Y		Y	Gasmata
			108	75	13	6					

SUMMARY

After a delayed start to the 2 month charter in 2013, the first cruise has provided a satisfactory start to PNGTP-3. 1860 fish were tagged and released in Area 3 and 10,396 fish in Area 4. Activity will now move to Areas 1 and 2. The table below summarizes the releases by area.

Area	Dates	Catch	Notes
Area 3 (East Buka)	8 to 16 April	1860 : 999 skipjack, 622 yellowfin and 239 bigeye	Average 266 fish tagged / day
Area 4 (south New Britain)	17 to 25 April	10396 : 8277 skipjack, 1998 yellowfin and 119 bigeye.	Average 1155 fish tagged / day

The vessel crew contained new faces and they have been quickly trained by those (17/30) who were present on previous tagging adventures. In overall, everyone performed well and no doubt will contribute to the success of this last PNG tagging campaign.

APPENDIX TABLE 1

Releases of tagged fish by date, location, school type and species during Cruise 1

Tagged sch no.	Date	Lat	Lon	Sch type	Ass	FAD no	Start	Stop	TAG TOTALS				NOTES
									Y	B	S	TOT	
39	25-Apr-2013	0641	15025E	3	1		0927	1056	369	19	1335	1723	
38	25-Apr-2013	0641	15025E	4	1		0839	0912	61	2	432	495	
37	24-Apr-2013	0638	15027E	3	1		1319	1348	0	0	400	400	
36	24-Apr-2013	0641	15026E	4	1		1218	1304	0	0	728	728	
35	24-Apr-2013	0648	15019E	4	1		1113	1118	0	0	50	50	
34	24-Apr-2013	0647	15014E	3	1		1016	1036	24	0	182	206	
33	23-Apr-2013	0637	14952E	3	3		0959	1055	288	0	796	1084	Rd Fad
32	22-Apr-2013	0636	14933E	1	2		1110	1117	1	0	4	5	palm tree as log
31	22-Apr-2013	0637	14952E	3	3		0823	0839	1	0	225	226	RD Fad not on the list
30	21-Apr-2013	0635	15041E	3	4		0641	0838	340	43	1160	1543	lost fad, we towed at the end of the school
29	20-Apr-2013	0644	15046E	3	4		1600	1610	1	10	71	82	small fish only
28	20-Apr-2013	0643	15053E	4	1		1502	1530	74	5	39	118	
27	20-Apr-2013	0641	15055E	4	5		1100	1147	308	10	203	521	
26	20-Apr-2013	0632	15048E	1	4		0917	0926	1	0	1	2	Dfad with GPS buoy looked not recently deployed
25	20-Apr-2013	0631	15047E	1	2		0839	0902	21	13	0	34	Y and B
24	19-Apr-2013	0631	15049E	4	1		0903	1209	77	2	1865	1944	
23	19-Apr-2013	0629	15046E	4	1		0824	0840	24	0	48	72	
22	18-Apr-2013	0603	15118E	4	1		0830	0953	168	0	178	346	
21	17-Apr-2013	0538	15230E	1	4		1356	1452	240	15	562	817	
20	16-Apr-2013	0531	15520E	4	1		0917	0933	0	0	39	39	large sj
19	16-Apr-2013	0529	15525E	1	1		0837	0845	0	0	13	13	
18	16-Apr-2013	0536	15543E	1	4		0540	0555	0	2	1	3	small Bet only ?
17	14-Apr-2013	0421	15451E	4	1		1620	1640	0	0	92	92	
16	14-Apr-2013	0416	15502E	1	1		1340	1352	0	0	15	15	sj and yf
15	13-Apr-2013	0329	15440E	2	7		1632	1703	195	0	36	231	
14	13-Apr-2013	0330	15441E	2	9		1612	1625	209	0	12	221	
13	13-Apr-2013	0334	15443E	1	9		1437	1450	167	0	7	174	mostly YF, few sj and kaw
12	12-Apr-2013	0442	15420E	3	1		1418	1434	0	0	16	16	
11	12-Apr-2013	0444	15451E	3	1		0904	0912	0	0	6	6	
10	11-Apr-2013	0459	15552E	3	1		0741	0807	31	15	66	112	
9	11-Apr-2013	0459	15554E	3	2		0713	0730	3	2	5	10	
8	11-Apr-2013	0502	15601E	4	3		0525	0618	17	220	197	434	TAO 5S/15
7	10-Apr-2013	0502	15601E	4	3		1748	1800	0	0	12	12	
6	10-Apr-2013	0500	15527E	3	1		1132	1141	0	0	69	69	
5	10-Apr-2013	0501	15528E	3	1		1113	1128	0	0	72	72	

4	10-Apr-2013	0510	15529E	4	1	0921	0928	0	0	39	39	
3	10-Apr-2013	0506	15523E	2	1	0759	0813	0	0	7	7	large fish hard to catch
2	08-Apr-2013	0539	15559E	4	1	1612	1642	0	0	285	285	
1	08-Apr-2013	0545	15557E	4	1	1522	1530	0	0	10	10	
						TOTALS	2620	358	9278	12256		

APPENDIX 2

DAILY LOG EXTRACTS – PNGTP-3 Cruise 1

Log date	Activity_Desc	Notes
7/04/2013	Departure from Noro, baiting Ropa	After long days of boat preparations and –non- decision about the final crew list, the usual list of delays and deceptions, all the ducks miraculously aligned for custom and immigration clearance to be done at 15:30. Cast the last rope under heavy Solomon rain at 16:05; 5h to Ropa bait ground, thanks for S101 super speed! Arrived at 21:20 after an easy ride in calm weather and drop the anchor in 40 meters at the usual position (0721300S/15712 E). Grey didn't want to deploy the light boat in fear that same thing happen as last year when locals cut the dinghy anchor rope...baits quickly came but have to wait for current to decrease. First and last set at 1130 for 96 bkts; enough for less than one day fishing...up anchor at 0:45
8/04/2013	fishing toward Buka	Left Ropa baitground at 0:45 in calm weather conditions; at 6:30 we entered Bougainville Strait; crossed the border and entered in PNG waters at about 10:30; adjusted to PNG time...Met some elusive free schools, probably pure YF at about 10:45 and tried to chum one but no success; run toward a few schools after noon but the presence of pilot whales pods disturbed the fish. Seems a lot of baits in the area. Chummed a log school at 14:30 with some large YF , small sj but too much natural bait in the water for our bait to be attractive. Finally got between 3 and 5 pm a couple a pure sj schools, large size, that delivered 10 and 287 released not without spent all our baits...These nice fish were most welcome and procured good fun and training for the new crew members. Start steaming toward Buka at 16:45. ETA about 02 am tomorrow, planning to drift at the entrance before going alongside at 7 am...
9/04/2013	Clearance in PNG, baiting Taiof	start to drift 15 nm from Buka passage entrance at 01:30. Arrived inside at 6:30, alongside at 0700. Jeff and Benthley arrived no longer after that. Custom and immigration people supposed to arrive at 8h didn't show-up before 10. Then we discovered that the boat health certificate was missing from Noro. Have to call John Teri and ask for the paper to be send to us. Finally cleared at 11:30.. Managed to do shopping at Jomik and market before 01pm...Left at 15:50 for Taiof baitground after farewell for Thomas. Lights in the water at 18h, first set at 08h for 89 bkts of a mixed bag. Not of the usual Taiof standard unfortunately. Second set at the light boat for 50 bkts. Last set at 01 (10/04) for 160 bkts
10/04/2013	fishing	Last bait net at 01 am provided 160 bkts of a good different

	towards TAO 5S/156E	species mixed and full tanks; start to steam at 02 am towards TAO 5S/156E; at 6 am we were about 30 nm from Buka. First school at 8am provided only 7 large SJ, and then met a couple of other large fish schools without trying to catch them before releasing 39 SJ at 09:21. Seems we were crossing an area with many schools of big fish , alas hard to catch and very demanding on bait to come and stay at the boat...one full tank for less than 50 fish tagged...Decided to go closer to Carteret and found some small fish school about 9 miles from the south point. About 140 fish tagged in 2 short schools, still not very cooperative due to the abundant presence of natural baits in the water. Start heading to TAO at 12:45 to be there before dark.
11/04/2013	Fishing TAO 5S/156E and toward Carteret.	After drifting all nite, start fishing at 05:25 and tagged 434 fish in a bit less than one hour, using 2 tanks of bait. Fish are not biting well, the bait are a bit too big on average. Started fishing toward Carteret at 06:30 and released 122 fish from 2 schools. Lots of fish in the area but still hard to catch, mainly a mix of medium size YF and large SJ feeding on small natural baits. Arrived closed to Carteret with about half a tank left and in heavy rain. Entered by the south passage at 11:25 and dropped the anchor in 45 m of water at 12am. Short visit from a couple of local who go away happy with a basket of fish..First set at 20:30 that provided a nice 160 bkts of almost pure small silver sprat. Second set on light boat at 09:30 only gave 65 bkts with more than half being big sardines (scuped out). Plan is to leave baitground at about 04 am.
12/04/2013	Fish toward Nissan Island	Came out Carteret pass at 04:30 and steamed West in flat calm seas. Met the first school at 7h closed to the 1220m seamount but only YF that were not interested by our baits. Another school at 08:30 chummed with no success. Tagged only 6 SJ at 9 past on a large breezer. Same thing at 1145, fish actively feeding (large SJ) and not attracted by our bait. The scenario didn't change all afternoon with 5 other schools chummed for 16 fish tagged. Total for this disappointing day : 22 SJ.Came inside Nissan narrow pass at 17:00 and drop the anchor about 20 min late. First set at 22h15 but mainly made of Decapturus that were scupped out and given to the local canoes; only kept 7 bkts of small atherines, blue sprat and various reef fish.. FM decided to move the boat a bit South for the second set that was done at 0415 that gave 70 bkts of sardinella
13/04/2013	Fisihing between Nissan and Nuguria	After the second net set we left Nissan at 05:20 and headed NNE towards Nuguria with a gentle swell against us. No fish to be seen till Sable Island; chummed there a couple of feeding bird flocks but no success. The first school tagged happened at 14:30 and, with 2 other schools, brought 626 releases with 91% YF. Entered in Nuguria lagoon at 17h45. Many locals arrived soon after we

		anchored and some discussions were engaged with Benthley about permission for baiting...the usual "NFA didn't ask to the right person for this particular area"... Finally permission granted and we did the first set at 20:15 that delivered 143 bkts of mainly silver sprat with a bit of cardinals and hardy heads; enough for tomorrow fishing
14/04/2013	Fishing from Nuguria toward Buka	Left Nuguria anchorage at 0540 with local people (5 adults and 3 kids) onboard who wanted to go to Buka. Tried to chum on bird flocks in the area we tagged the YF yesterday but no success. Tagged 15 large SJ just before 2pm but at heavy cost on the baits...Only few small schools sighted and most of them vanished when boat was approaching; with hard work we managed to tag 92 40-50 cm SJ after 4pm. Total for the day: 107 SJ. At 6pm we were only 40 nm from Buka. Plan is to drift in front of entrance and come inside to be alongside at 6 am tomorrow.
15/04/2013	In port Buka, personal change , getting water, refueling, provisioning	Started the engine and steamed to Buka at 04:30; alongside at 0545, wait for Buka to awake...Kevin came at 8h with a car to pick-up Sylvain and Simon to airport and came back with Brian and Antony. Water truck (only 1500 l...) came 12 times...! to fill water tanks; provisioning and market went well; only problem was the fuel because the local supplier finally said they had not enough fuel to supply the ordered 12 tons...as the cheque from Pom was already issue, it was too difficult to change the amount of fuel to be delivered...no other choice but to cancel the thing...we had enough fuel anyway to fish to Lae....Left Buka at 16:50, heading towards the east of Cape Laverdy. No need to go baiting with the 4 tank left from Nuguria...Plan is to steam 70 nm during the night and fish back tomorrow...
16/04/2013	fish from east of Cape Laverdy back to Buka	Start engine at 0530 about 36 miles east of Cape Laverdy and immediately found a drifting fad! Alas, the fish (seemed to be mainly small bigeyes) were not biting. Only 3 fish tagged..very disappointing. Chummed a couple of evasive schools for nothing; tagged 13 large SJ just before 9am, once again couldn't keep them at the boat. Same scenario a bit later with 39 tagged. Last school chummed at 11:15 spent all remaining bait for nothing, again on large SJ; start steaming back to Buka at 11:20; arrived in front of town at 15:30 and dropped Brian in a taxi boat to check for customs to do clearance out. No one home; might have to come back tomorrow morning unless some arrangement possible with Luanah connections...Anchored at Taiof bait ground at 16:30. Finally received confirmation we could leave without clearance...First set at 22h provided 170 bkts of a mixed bag (devisi, little p, fusilier, Hq), second set on light boat of much the same, 70 buckets in all. Up anchor at 12:15am, heading out western end of Buka passage for the Solomon Sea.

17/04/2013	Fishing towards Lindenhaven and drift	Quiet passage overnight; get ready archival tagging battle station in hope some yellowfin will show-up; chummed a good looking log at 0740 but no joy. No fish to be seen until we found a drifting fad (with GPS buoy) at nearly 14h and tagged 817 (including 3 YF archival) fish in one hour. Starting to see some schools on the bird radar at 17h but too late to catch them...3 bait tanks left for tomorrow. Plan is to steam till we will be about 80 nm from Lindenhaven and stop to drift for the night.
18/04/2013	fishing toward Lindenhaven	Started the engine at 06 am and began the search going along New Britain south coast at about 20 nm from shore. First -and last- free school encountered saw 346 tag released (49% Y) between 0830 and 0953; to capture these large SJ and YF we had, once again, to spend all our bait. But this was worth the cost as it also allowed us to release 7 archival tags in 56 to 74 cm YF. Steamed to Lindenhaven and arrived at 15:20. At anchor at 15:40. Toktok save with local gvt representatives (Peter Arul) and Brian; all gud, plenty canoes came, the trade full speed, fish for green and buai...first net set at midnight for 165 bkts of a mix bag of big sardine (rainbow and sim), hq, blue sprat and anchovies? Second set at 0100 for 30 buckets of much the same.
19/04/2013	Fishing a large Lindenhaven	Headed out Lindenhaven at 05:20 in flat calm seas with 190 bkts of a mixed bag called "big fish special". Found the fish about 30 nm south and tagged 2016 (1913 S, 101 Y -incl 8 Ats-, 2 B) in 2 schools. Skipjack FL mode at 55-56 cm and YF between 48 and 80. Total for the cruise: 5039 (first bonus), with 3652 (72%) S, 1131 Y (22% and 16 Ats), 256 (5%) B local people will have to eat about a ton of nice fish...Back in Lindenhaven at 16:45, at anchor 10 min later, the trade stated immediately...the first net gave 146 bkts of mixed sardines and sprats. Second set on light boat at 0220 for another 110 bkts of mainly sardines.
20/04/2013	fishing south Lindenhaven	Left the baitground at 05:20; started chumming some log at 6:30 but large YF didn't want to play; same thing with a lost bamboo made raft at 0715. Lots of YF only in this area (10 to 15 NM from shore). Another small log at 0839 allowed us to release 21 Y (incl 3 Ats) and 13 B. A drifting Fad with GPS buoy at 0917 had a small school of YF and rare S: only 2 releases. About 2 nm from yesterday school 24 we found a whale shark school and, using 3 tanks of bait..., managed to release 521 tags including 7 Ats. Decided to stop at 1145 and drift till 2 pm to have another go at a better time. Started at 14:15 and released 200 fish in 2 schools including the remaining Ats. Total for the day: 757: 314 S, 405 Y (incl 13 Ats) and 38 B. Arrived at baitground at 20h; at anchor at 20:20. First set at 0220 am for 80 bkts, second set at 0310 on light

		boat for 70 bkts. Headed out towards the whale sharks at 04:20
21/04/2013	fishing south Lindenhaven, baiting Gasmata	Plan was to steam 30 nm to search for the mixed YF/SJ free or whale shark schools. But we found a lost (no more positioning buoy) drifting Fad on the way, about 23 nm from shore and spent there all our baits before 9am. Total tagged: 1543 (1160S, 340 Y, 43 B) After the school we cut-off the huge attached piece of PS net full of barnacles that sank immediately and tow the raft toward the shore line for 15 Nm. Entered inside Gasmata lagoon at 11:50. Drop anchor for light boat and at anchor at 12:10; Local (Steven and many others ...) arrived and had a toksave with Brian. First set at 02 am gave 113 bkts of a mixed duusseria, anchovies (ind), hh. Second set at 3 am for 70 bkts
22/04/2013	Fishing towards Arawe	Left Gasmata at 04:15am and headed WSW and W to Arawe. Found a "not on the list" RD anchored Fad at 0823 and tagged 226 fish of very small size. Found a lost canoe with a school of large YF that almost came to the bow at 10am. Different attempts on YF school didn't bring any success. Arrived in Arawe at 16:30. Total tagged for the day: 231 (229 S and 2Y) After some hectic trade, long toksave with the people from Arawe council. Brian is doing well, talking and chewing with 15 lapun listening, sitting on the bamboos at the bow. Already 2 hours (and more than 20 buai for BRK) and still going. A bit busy on the boat with probably 100 people onboard at some stage with some young fellow ready to jump on anything, Benthley lost his slippers in the battle... After things gone quiet, have to wait till 3 am for the moon to go down but no sign on echo-sounder and the set only bring 10 bucket of rubbish fish.
23/04/2013	fish back to Gasmata	The poor baiting results from Arawe and the few fish sighted yesterday lead us to come back to Gasmata. Checked at 10am the RD Fad visited yesterday and spent quite successfully the remaining Gasmata baits there, releasing 1084 tags, including 796 S and 288 Y. Back in the bait ground at 14:20, at the big relief of many crew who desperately need smoke and plan to go to local store...First set at 04am for 76 bkts of mostly dussumeria and devisi; second set at 0445 for 55 bkts
24/04/2013	Fish South Gasmata	Left baitground at 0530. Tried to find the RD 8345 Fad but no success. Found a free school at 1016 that allowed the release of 206 fish. Then another free school at 1113 released 50 fish. At 1218, 728 fish tagged in 3/4 of an hour. A last school spent the remaining baits and allows the release of 400 fish. Total for the day was: 1384, including 1360 SJ and 24 YF. Back to Gasmata at 16:20. First set at 8pm for 26 bkts, second at 04am for 17, third set on the light boat at 0445 for 55 bkts. Left Gasmata with 3 tanks of bait at 05:30

25/04/2013	Fish toward Lae	Left Gasmata with 3 tanks of bait at 05:35. At 08:30, found the same free schools as yesterday about 20 nm offshore and spent all our baits in 2 different schools in a bit more than 2 hours. We tagged 2218 fish including 1767 S, 430 Y and 21 B. First bad weather of the trip was encountered at 14h, hopefully on the PS side, giving us a peaceful ride
26/04/2013	Clearance in Lae, provisioning	After steaming all night, arriving in front of Lae at 08:30