

# PACIFIC TUNA TAGGING PROJECT WP 3

## CRUISE REPORT No. 2

29<sup>th</sup> July – 17<sup>th</sup> August 2009

### INTRODUCTION

This report summarizes activities of the second cruise of the Pacific Tuna Tagging Project (PTTP) Phase 2 WP3 during a twenty day period in PNG waters following arrival in Kavieng from FSM on July 28th. Fishing initially centred on areas north of Manus and eastern and central parts of the Bismarck Sea. Earlier plans to fish the High Seas Pocket (HSP) en route to Indonesia were modified in view of the poor fish availability, with a new commitment to a further episode of Bismarck Sea tagging in an El Nino year following the protracted La Nina event of 2006-2008.

Scientific personnel onboard the Soltai 105 during Cruise 2 are listed in Table 1.

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

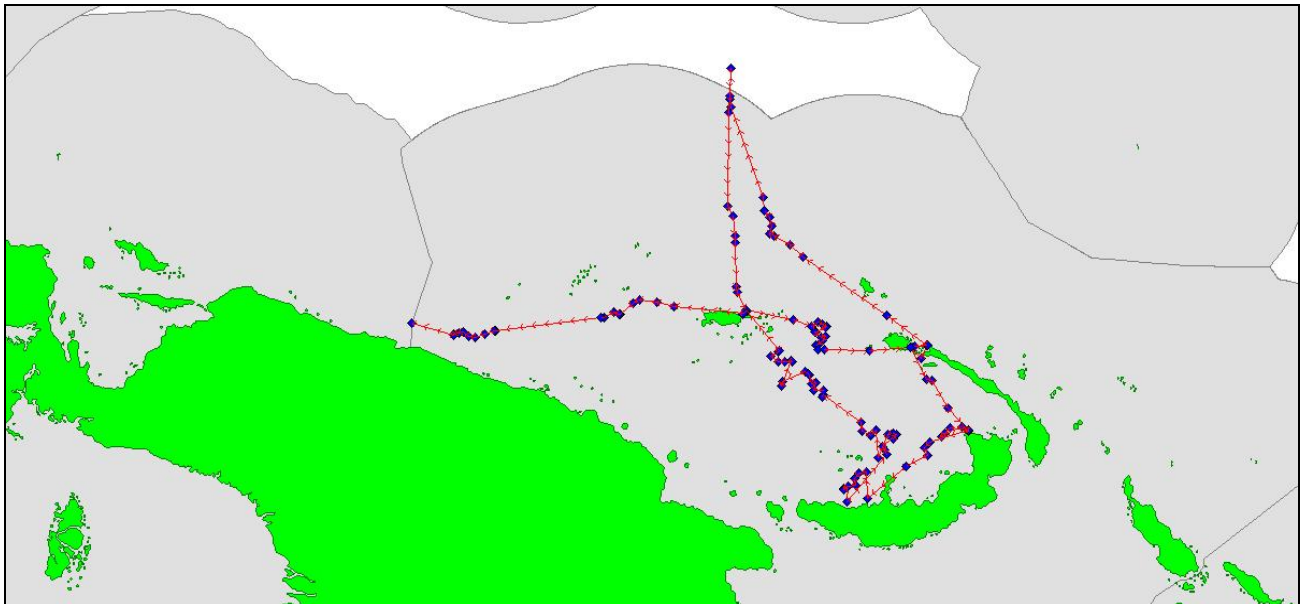
Name	Title	Affiliation	Period
Bruno Leroy	Cruise leader	SPC	29/07/09 – 06/08/09
Tony Lewis	Cruise leader	SPC contractor	29/07/09 – 17/08/09
Hearty Matamaru	Tagging tech	SPC contractor	29/07/09 – 06/08/09
Brian Kumasi	Tagging tech	SPC Tag Recovery Officer	06/08/09 - 17/08/09
Tau Morove	Observer	Wildlife Conserv Society	29/07/09 – 06/08/09
John Mukekit	Observer	National Fisheries College	29/07/09 – 06/08/09

### GENERAL DESCRIPTION OF SEARCHING AND FISHING ACTIVITY

The vessel departed Kavieng following inwards clearance to PNG, then fished towards the high seas pocket (HSP) north of 2<sup>0</sup>N; reasonable fishing was experienced on FADs on the way, but no fish encountered north of the Equator other than in association with the TAO buoy at 2<sup>0</sup>N 147<sup>0</sup> E then again on the TAO buoy at the Equator 147<sup>0</sup> E; after baiting in Manus (Seeadler Harbour), the vessel fished FADs south-east of Manus with some success before returning to Kavieng for the full moon break. Good fishing before and after the break was found on the Albatross FAD and the Dyaul ridge but little on FADs close to Cape Lambert where poor bait catches just after full moon limited operations. Better catches were then made on FADs west of the Willaumez Peninsula, before working across the central Bismarck and eventually to Manus for outwards clearance. The vessel continued to fish across the western Bismarck amongst the large number of FADs and domestic vessels before exiting PNG waters on August 17<sup>th</sup>, stowing gear and steaming to Biak, Indonesia.

The track of the cruise in PNG EEZ and HSP, 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 2**



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

Date	Activity	Conventional releases			Archival releases			Total releases
		SJ	YF	BE	SJ	YF	BE	
July 29 <sup>th</sup>	Depart Kavieng; bait New Hanover	-	-	-	-	-	-	-
July 30 <sup>th</sup>	Return Kavieng; fish towards HSP	0	0	0	0	0	0	-
July 31 <sup>st</sup>	Fish FADs NE of Manus	569	97	8	4	1	0	<b>679</b>
Aug 1 <sup>st</sup>	Fish TAO 2 <sup>0</sup> N 147 <sup>0</sup> E and HSP	252	70	0	0	0	0	<b>322</b>
Aug 2 <sup>nd</sup>	Fish TAO Eq 147 <sup>0</sup> E; bait Manus	767	45	<b>0</b>	4	1	0	<b>817</b>
Aug 3 <sup>rd</sup>	Fish FADs SE of Manus	207	328	3	0	0	0	<b>538</b>
Aug 4 <sup>th</sup>	Fish towards Kavieng; bait New Hanover	392	185	2	0	1	0	<b>580</b>
Aug 5 <sup>th</sup>	Fish Albatross Channel ; steam to Kavieng	1596	99	0	0	5	0	<b>1700</b>
Aug 6 <sup>th</sup>	In port for full moon break	-	-	-	-	-	-	-
Aug 7 <sup>th</sup>	In port for full moon break; bait New Hanover	-	-	-	-	-	-	-
Aug 8 <sup>th</sup>	Fish south of Djaul; bait Cape Lambert	1237	73	0	4	0	0	<b>1314</b>
Aug 9 <sup>th</sup>	Fish Cape Lambert and return to bait	0	0	0	0	0	0	<b>0</b>
Aug 10 <sup>th</sup>	Fish Cape Lambert then bait Emmeline Bay	77	1	0	0	0	0	<b>78</b>
Aug 11 <sup>th</sup>	Fish WNB FADs then bait Iboki	584	409	0	2	0	0	<b>995</b>
Aug 12 <sup>th</sup>	Fish central Bismarck FADs; steam NW	843	65	3	3	0	1	<b>915</b>
Aug 13 <sup>th</sup>	Fish FADs SSE of Manus; bait Shelburne Reef	38	13	0	0	0	0	<b>51</b>
Aug 14 <sup>th</sup>	Fish towards Manus; bait Seeadler Harbour	353	76	0	6	0	0	<b>435</b>
Aug 15 <sup>th</sup>	Outwards clearance Manus; bait Seeadler Hbr	-	-	-	-	-	-	-
Aug 16 <sup>th</sup>	Fish -> S of Ninigo	456	5	0	0	0	0	<b>461</b>
Aug 17 <sup>th</sup>	Fish -> PNG border; steaming to Indonesia	139	15	0	4	0	0	<b>154</b>
	<b>CRUISE TOTAL</b>	<b>7511</b>	<b>1485</b>	<b>16</b>	<b>27</b>	<b>8</b>	<b>1</b>	<b>9048</b>

## TAG RELEASES

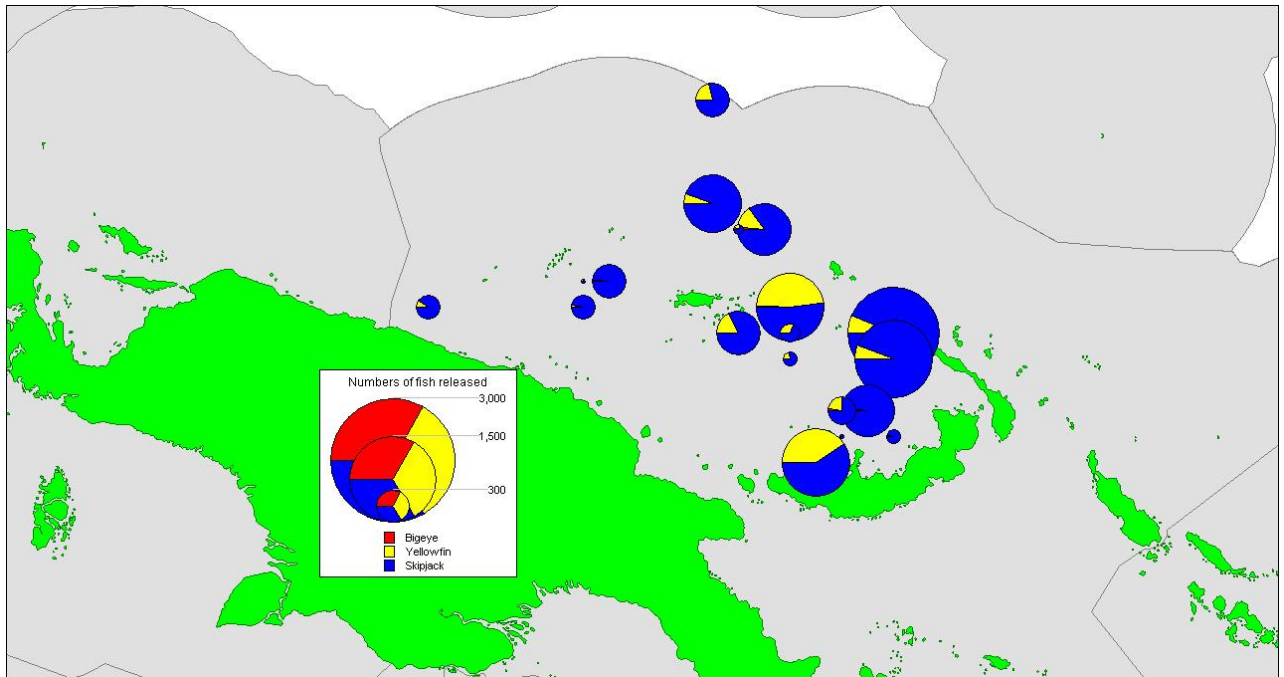
All 20 days of the cruise were spent in the PNG EEZ, with exception of a brief incursion into the high seas pocket. Fifteen days were spent fishing, with five days in port during the cruise. Most fish were tagged in the north-eastern and south-eastern Bismarck Sea

A total of 9012 fish was tagged and released with conventional tags during the cruise, at an average of 600 fish per day, and including two days where over 1000 fish were tagged and two days with over 900 fish tagged (**Table 2**). The releases comprised 7511 skipjack, 1485 yellowfin and 16 bigeye. The species composition in total was 83.3% skipjack, 16.5% yellowfin and 0.2 % bigeye.

81% of the releases were the larger P tags, with a relatively fewer of the smaller Z tags. 74% of releases were in association with anchored FADs, 15% in association with a seamount, and 11% from log schools. The percentage of skipjack released was slightly lower from anchored FAD-associated schools (81%).

The Cruise 2 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 2

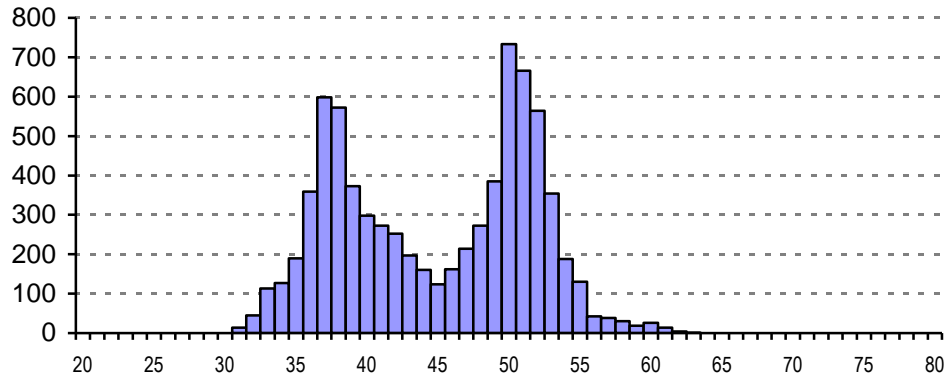


## SIZE DISTRIBUTION OF TAGGED FISH

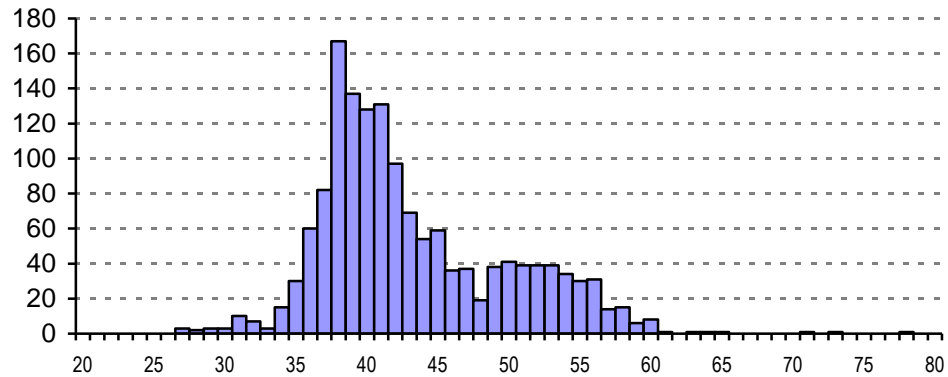
**Figure 3** shows the size distribution of fish tagged during Cruise 2. The skipjack size distribution was clearly bimodal (37 and 50 cm), with similar broader modes in yellowfin (38 and 52 cm), but mostly smaller fish. The few bigeye were between 39 and 60cm.

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

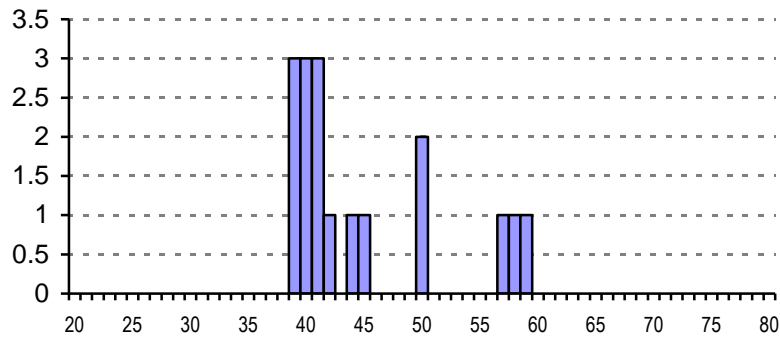
**Skipjack n = 7538**



**Yellowfin n = 1493**



**Bigeye n = 17**



**ARCHIVAL TAG SUMMARY**

Thirty six (31) archival tags were released during the cruise – 27 skipjack with the LAT2510 tags, 8 yellowfin with LTD 2310 tags and one bigeye with an MK9 tag. The skipjack were between 44 and 59 cm LCF, the yellowfin 55-64 cm and the bigeye 59cm.

## BAITING

Good baiting was enjoyed at Nusandaula, New Hanover, with useful catches of fusiliers (*Gymnocaesio gymnopterus*) and anchovy even just before and just after the full moon, enabling good tuna catches to be made in adjacent New Ireland waters. Similarly, three trips to Seeadler Harbour (Manus Island) produced good catches of mostly golden anchovy on each occasion.

Baiting at Cape Lambert, a previously reliable source of good bait for the vessel and a major baiting ground for the PNG pole-and-line fishery in the past, produced disappointing catches, even allowing for the timing - just after full moon under clear skies.

A new bait ground at Emmeline Bay in West New Britain yielded one huge catch (est. 1000 bkts) of small anchovy (*E. devis*), with another large catch of the same species at nearby Iboki Anchorage on the following night, enabling a two day trip across the central Bismarck to Shelburne Reef to be undertaken. Baiting at Shelburne Reef was however hampered by weather (no shelter) and the net was badly torn during a second set.

**Table 4 Summary of bait fishing activity during WP3 Cruise 2**

Date	Location	Catch (bkts loaded, hauls)	Species
July 29 <sup>th</sup>	Nusandaula	317 (4)	Fusiliers, Hq, anchovy, sardine
Aug 2 <sup>nd</sup>	Seeadler Hbr	246 (3)	Anchovy (d),
Aug 4 <sup>th</sup>	Nusandaula	77 (2)	Fusiliers, anchovy, sardine, sprat
Aug 7 <sup>th</sup>	Nusandaula	66 (3)	Sardine, fusiliers
Aug 8 <sup>th</sup>	Cape Lambert	13 (4)	Mixed
Aug 9 <sup>th</sup>	Cape Lambert	41 (3)	Fusiliers, sardines
Aug 10 <sup>th</sup>	Emmeline Bay	332 (1)	Anchovy (d), Pellona
Aug 11 <sup>th</sup>	Iboki Anchorage	232 (1)	Anchovy (d)
Aug 13 <sup>th</sup>	Shelburne Reef	16 (1)	Blue sprat
Aug 14 <sup>th</sup>	Seeadler Harbour	230 (3)	Anchovy (d, some h)
Aug 15 <sup>th</sup>	Seeadler Harbour	220 (1)	Anchovy (d, some h)
Total		<b>1790 (26)</b>	

## CONCLUSIONS

A diverse cruise, covering a lot of ground and with a major change in strategy early in the period to focus on a new episode of Bismarck Sea releases. The cruise was generally blessed with good weather. As in the past, FAD fishing in the Bismarck Sea was variable, and best catches, albeit on just two occasions, were taken in the Morgado Square. Partial coverage of the Bismarck Sea was achieved, with additional releases planned for western, southern and central areas during September.

**Appendix Table 1.**

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

Project		Western Pacific #3- PTTTP Phase 2		Cruise		2 To		2		Vessel		Soltai 105	
Event no	Tagged sch no.	Date	Lat	Lon	Sch type	Assoc.	Start	Stop	YFT	BET	SKJ	OTH	TOTAL
1	1	31-Jul-2009	0044.815S	14810.944E	3	2	0804	0845	92	6	557	0	655
2	2	31-Jul-2009	0034.490S	14753.400E	1	3	1059	1118	5	2	15	0	22
3	3	31-Jul-2009	0023.847S	14750.627E	1	3	1334	1352	1	0	1	0	2
7	4	01-Aug-2009	0159.975N	14702.388E	3	3	0720	0807	64	0	238	0	302
8	5	01-Aug-2009	0159.913N	14702.267E	1	3	1545	1600	6	0	14	0	20
9	6	02-Aug-2009	0001.499S	14700.588E	3	3	0600	0658	44	0	770	0	814
10	7	02-Aug-2009	0012.559S	14706.931E	2	2	0825	0845	2	0	1	0	3
14	8	03-Aug-2009	0210.120S	14842.899E	2	3	1535	1600	125	1	164	0	290
15	9	03-Aug-2009	0212.675S	14847.555E	1	3	1638	1653	135	1	40	0	176
16	10	03-Aug-2009	0215.277S	14853.169E	2	3	1737	1750	68	1	3	0	72
17	11	04-Aug-2009	0221.597S	14839.959E	1	3	0548	0625	146	2	308	0	456
18	12	04-Aug-2009	0227.157S	14846.397E	2	3	0720	0735	2	0	0	0	2
23	13	04-Aug-2009	0240.370S	14843.190E	2	3	1040	1108	38	0	84	0	122
24	14	05-Aug-2009	0249.897S	15040.732E	4	3	0750	0915	104	0	1595	0	1699
26	15	08-Aug-2009	0314.674S	15053.244E	2	8	0700	0750	73	0	1241	0	1314
32	16	10-Aug-2009	0437.799S	15048.384E	2	3	0835	0859	1	0	77	0	78
34	17	11-Aug-2009	0503.146S	14924.106E	2	3	0800	0842	72	0	218	0	290
37	18	11-Aug-2009	0515.110S	14911.846E	4	3	1146	1320	318	0	354	0	672
38	19	11-Aug-2009	0515.420S	14912.089E	1	3	1441	1500	19	0	12	0	31
39	20	11-Aug-2009	0512.598S	14917.396E	2	3	1552	1606	0	0	2	0	2
43	21	12-Aug-2009	0418.814S	15007.397E	3	3	0851	0900	0	0	66	0	66
44	22	12-Aug-2009	0420.000S	15008.644E	2	2	0914	0936	0	0	120	0	120
45	23	12-Aug-2009	0414.384S	15011.771E	2	3	1025	1055	7	0	453	0	460
46	24	12-Aug-2009	0413.855S	15008.796E	1	2	1128	1131	0	0	1	0	1
48	25	12-Aug-2009	0440.615S	14950.949E	2	3	1326	1335	0	0	20	0	20
49	26	12-Aug-2009	0409.822S	14948.700E	1	2	1353	1410	13	0	33	0	46
51	27	12-Aug-2009	0410.950S	14932.846E	1	3	1620	1650	45	4	153	0	202
57	28	13-Aug-2009	0318.623S	14835.737E	2	3	1003	1020	12	0	38	0	50
60	29	13-Aug-2009	0316.456S	14802.953E	4	9	1543	1550	1	0	0	0	1
63	30	14-Aug-2009	0253.584S	14758.288E	2	3	0805	0905	75	0	347	0	422
65	31	14-Aug-2009	0243.574S	14757.396E	2	3	1123	1145	1	0	12	0	13
67	32	16-Aug-2009	0146.041S	14519.933E	1	3	1021	1108	3	0	266	0	269
68	33	16-Aug-2009	0201.649S	14458.440E	2	1	1438	1448	0	0	16	0	16
70	34	16-Aug-2009	0159.662S	14450.857E	1	3	1547	1559	2	0	4	0	6
71	35	16-Aug-2009	0204.720S	14438.941E	1	3	1724	1738	0	0	14	0	14
72	36	16-Aug-2009	0205.328S	14436.360E	3	3	1800	1820	4	0	158	0	162
78	37	17-Aug-2009	0222.245S	14154.125E	1	2	1045	1107	14	0	25	0	39
79	38	17-Aug-2009	0223.902S	14147.727E	2	2	1140	1220	1	0	118	0	119
<b>CRUISE 2 TOTALS</b>									<b>1493</b>	<b>17</b>	<b>7538</b>	<b>0</b>	<b>9048</b>