



**SCIENTIFIC COMMITTEE  
FIFTH REGULAR SESSION**

10-21 August 2009  
Port Vila, Vanuatu

---

**PTTP WORK PLAN 2009-10**

---

**WCPFC-SC5-2009/ GN-IP-15**

**S. Nicol<sup>1</sup>, J. Hampton<sup>1</sup>, B. Leroy<sup>1</sup>, B. Kumasi<sup>1</sup>, A. Lewis<sup>1</sup>, D. Itano<sup>2</sup>**

---

<sup>1</sup> Oceanic Fisheries Programme, Secretariat of the Pacific Community, BP D5, 98848 Noumea CEDEX, New Caledonia

<sup>2</sup> Pelagic Fisheries Research Program, University of Hawaii, 1000 Pope Road, MSB 312, Honolulu, Hawaii 96822, USA

## **Executive Summary**

The Pacific Tuna Tagging Project (PTTP) is a WPCFC endorsed project being implemented by SPC. The document details the proposed work plan for the period 2009-2010. These include:

- Western Pacific Cruise 3, a three month cruise commencing July 2009 that will concentrate tagging operations in the high seas pocket bordered by the EEZs of Micronesia, Papua New Guinea, Indonesia, and Palau. Additional tagging will be undertaken in these EEZs and the Solomon Islands taking advantage of the FAD closure during the cruise period.
- Central Pacific Cruise 3, a 6 week cruise that will undertake tagging operations on NOAA TAO Oceanographic Buoys south of Hawaii between 140°W - 155°W longitude, commencing October 2009. The area is geographically suited to examine movement rates between the jurisdictional boundaries of the WCPFC and IATTC. The cruise will be a joint initiative between PTTP and the IATTC.
- The location for tag seeding experiments in 2009 and 2010
- Data analysis planned for 2009 and 2010.

## Table of Contents

Executive Summary .....	i
1 Background .....	3
2 Field Activities 2009-2010.....	4
3 Cruise Plans.....	5
3.1 WP3: PNG – Micronesia – Indonesia .....	5
3.2 CP3 – NOAA TAO Oceanographic Buoys between 140°W - 155°W longitude. ....	6
4 Tag Recovery and Seeding 2009-2010 .....	7
5 Data Analysis 2009-2010.....	8
6 Budget .....	9

# 1 Background

The Conference of the Pacific Community held in Palau in 2005 strongly endorsed a new regional tuna tagging programme as a high regional priority to improve the scientific information based supporting management of the tuna fishery in the western and central Pacific Ocean (WCPO). As a result, the SPC Oceanic Fisheries Programme (SPC-OFP) began discussions with key member countries to implement a Phase 1 activity, which it was hoped would make a strong initial contribution to the new regional programme as well as stimulate donor interest in extending the programme to other regions of the WCPO). Phase 1 was initially targeted at PNG, and subsequently at Solomon Islands, both important fishing areas with strong domestic tuna fishing operations. Funding for Phase 1 in the vicinity of USD 2 million was provided by a number of agencies, including the Australian Centre for International Agricultural Research (ACIAR), the European Community (through the PROCFISH project), the French Pacific Fund, the Global Environment Facility (through the Pacific Islands Oceanic Fisheries Management Project), The New Zealand Agency for International Development (NZAID), the PNG National Fisheries Authority (NFA) and the Government of Taiwan.

The Phase 1 work was an outstanding success with more than 60,000 tuna tagged in PNG and 40,000 in Solomon Islands, greatly exceeding the initial project targets.

The SPC-OFP began planning for the Phase 2 extension of the programme in mid-2007. A detailed project document describing the concept of a Pacific Tuna Tagging Programme (PTTP) was developed and presented the 3<sup>rd</sup> session of the Western and Central Pacific Fisheries Commission (WCPFC) Scientific Committee in August 2007. The Project Document<sup>3</sup> outlined the general design of the PTTP as consisting of:

- Phase 1: Pole-and-line based conventional, archival and acoustic tagging in PNG in 2006 and 2007, and subsequently in Solomon Islands in late 2007 and 2008.
- Phase 2:
  - (i) Pole-and-line based conventional, archival and acoustic tagging throughout the equatorial western Pacific, focusing on the area 10°N–10°S, 120°W–180°;
  - (ii) Handline-based conventional and archival tagging in the equatorial central Pacific (10°N–10°S, east of 180°); and
  - (iii) Affiliated national or sub-regional projects that might be coordinated with the PTTP but funded and implemented by national fisheries agencies or international organizations.

The concept of the PTTP was strongly endorsed by the WCPFC Scientific Committee at its August 2007 meeting, and subsequently by the WCPFC Annual Session in December 2007. The project document included a budget of approximately USD 9.8 million to fund the Phase 2 tag release and recovery operations and subsequent analytical work.

At around the same time, additional regional support for the programme was obtained by its inclusion as a key regional priority in the Pacific Plan, coordinated by the Pacific

---

<sup>3</sup> [http://www.wcpfc.int/sc3/pdf/SC3\\_GN\\_WP\\_10%20\(tagging%20proposal\).pdf](http://www.wcpfc.int/sc3/pdf/SC3_GN_WP_10%20(tagging%20proposal).pdf)

Islands Forum Secretariat. At the 2007 Forum Leaders meeting in Tonga, The Prime Minister of New Zealand announced that New Zealand would contribute NZD 5 million to the project. Additional funding support has been obtained through a new European Community funded project (SCIFISH), further support from the PNG NFA as well as in-kind support from the SPC-OFP. Recently, the Government of Korea has committed to providing funding of 1 billion Korean Won (approximately USD800,000 at current exchange rates). Thus far, approximately USD 7 (exclusive of SPC management costs) of the USD 9.8 million original Phase 2 budget has been secured.

The purpose of this document is to outline the work plan for 2009 and 2010.

## 2 Field Activities 2009-2010

The current field schedule for the project is reflected in Table 1.

**Table 1.** Schedule for PTPP field work to be undertaken during 2009-2010.

Milestone	Date	Description
F1	13 July 2009	3 <sup>rd</sup> Equatorial Western Pacific pole-and-line tagging cruise (WP3) commenced.
F2	15 Sep 2009	3 <sup>rd</sup> Central Pacific handline tagging cruise (CP3) planning completed, including charter vessel selection and contracting
F3	13 Oct 2009	3 <sup>rd</sup> Equatorial Western Pacific pole-and-line tagging cruise (WP3) completed.
F4	8 Oct -19 Nov 2009	3 <sup>rd</sup> Central Pacific handline tagging cruise (CP3) undertaken
F5	31 Jan 2010	PTPP review
F6	28 Feb 2010	*4 <sup>th</sup> Equatorial Western Pacific pole-and-line tagging cruise (WP4) cruise planning completed
F7	28 Feb 2010	*4 <sup>th</sup> Central Pacific handline tagging cruise (CP4) cruise planning completed
F8	April 2010	*4 <sup>th</sup> Equatorial Western Pacific pole-and-line tagging cruise (WP4) commenced
F9	May 2010	*4 <sup>th</sup> Central Pacific handline tagging cruise (CP4) commenced

\* Subject to Budget and vessel availability

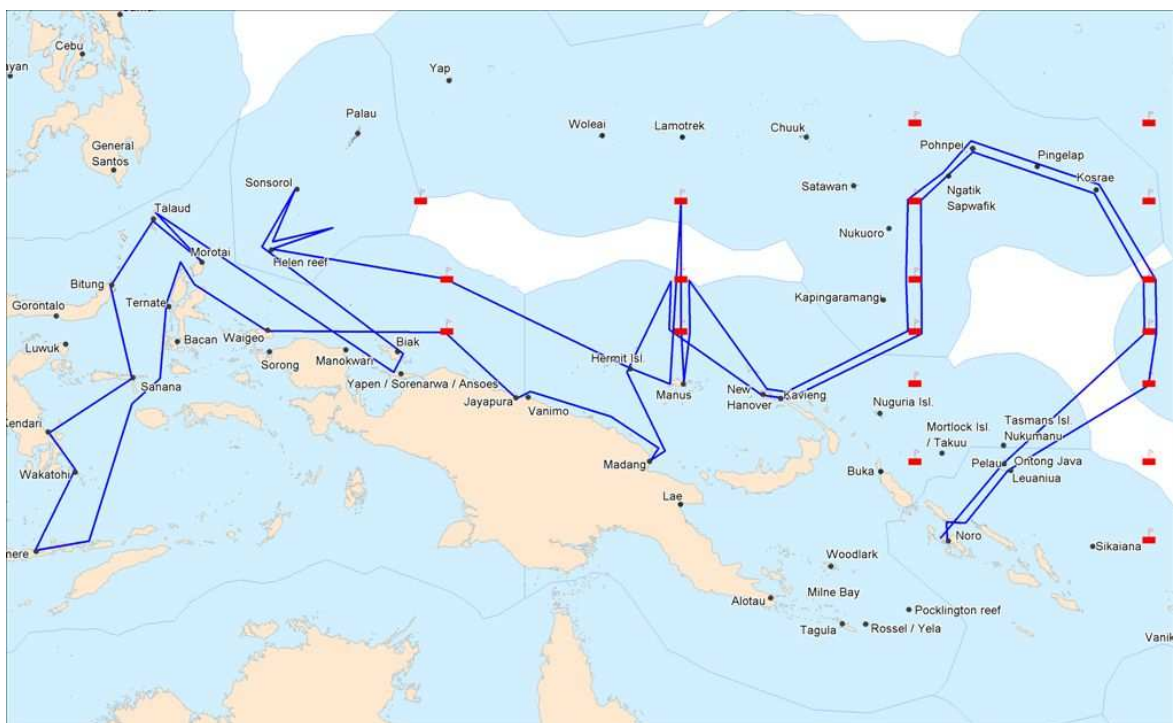
### 3 Cruise Plans

#### 3.1 WP3: PNG – Micronesia – Indonesia

**Cruise Plan:** Departure from Solomon Islands to the northeast with the intent of tagging in the EEZs of Nauru, FSM, Papua New Guinea, Indonesia and adjacent high seas. The cruise period will encompass the 1 Aug – 30 Sep 2009 FAD closure. A detailed cruise plan is outlined in Table 2 and indicative cruise map in Figure 1.

**Table 2.** Cruise plan for tagging cruise WP3. Operational cruise targets are the deployment of 20,000 conventional and 107 archival tags on skipjack, yellowfin and bigeye tuna, attempting to maximize release numbers for the latter two species wherever possible.

Time	Fishing Areas	Targets		
			Conventional	Archival
13 Jul – 19 Jul	Solomon Is – Nauru – FSM, targeting free schools, FADs and TAO buoys (165°E, 2°S, Equator & 2°N)	BET	175	15
		YFT	350	5
		SKJ	1225	7
19-27 Jul	FSM – High Seas - PNG targeting free schools, FADs and TAO buoys (156° E, 5°N, 2°N & Equator)	BET	200	5
		YFT	400	5
		SKJ	1400	7
27 Jul – 1 Aug	PNG – High Seas – PNG targeting free schools, FADs and TAO buoys (147°E, 2°N & Equator)	BET	125	5
		YFT	250	5
		SKJ	875	8
1 -7 Aug	PNG – High Seas – PNG targeting free schools, FADs and TAO buoys (147°E, 2°N & Equator)	BET	150	5
		YFT	300	4
		SKJ	1050	7
8-12 Aug	PNG – High Seas – Palau targeting free schools, FADs and TAO buoys (138°E, 2°N)	BET	125	
		YFT	250	
		SKJ	875	
12-17 Aug	Palau targeting FADs and free schools	BET	125	
		YFT	250	
		SKJ	875	
19 Aug -14 Sep	Indonesia targeting FADs and free schools in Molucca Sea and Banda Sea	BET	675	
		YFT	1350	
		SKJ	4725	25
15 -24 Sep	PNG – High Seas – FSM targeting free schools, FADs and TAO buoys (147°E, 2°N & Equator)	BET	250	
		YFT	500	
		SKJ	1750	
24 Sep – 1 Oct	FSM – High Seas – SI targeting free schools, FADs and TAO buoys (165°E, 2°N & Equator)	BET	175	
		YFT	350	
		SKJ	1225	
2 -13 Oct	TBD			



**Figure 1.** Indicative cruise track for tagging cruise WP3. Red symbols indicate TAO buoy locations.

### 3.2 CP3 – NOAA TAO Oceanographic Buoys between 140°W - 155°W longitude.

**Cruise Plan:** Undertake tagging operations on TAO oceanographic buoys at 5°N - 5°S on the 140°W and 155°W meridians, commencing early October 2009. The area is geographically suited to examine movement rates between the jurisdictional boundaries of the WCPFC and IATTC. The cruise will be a joint initiative between PTPP and the IATTC, and will supplement tagging undertaken in this area during CP1 and CP2. A tentative cruise plan is outlined in Table 3. The cruise is contingent on the availability of a suitable vessel for charter. Calls for expressions of interest have been made (see [http://www.spc.int/oceanfish/Html/jobs/pdf/CP3\\_tagging\\_cruise\\_Invitation\\_to\\_Bid.pdf](http://www.spc.int/oceanfish/Html/jobs/pdf/CP3_tagging_cruise_Invitation_to_Bid.pdf)).

**Table 3.** Cruise plan for CP3. The order of TAO buoy visitation will depend on the departure port for the selected vessel.

<b>Date 2009</b>	<b>Fishing Areas</b>	<b>Target</b>
October	TAO 8N 155W	BET 3,000 Conventional Tags
	TAO 5N 155W	YFT and SKJ not targeted
	TAO 2N 155W	BET & YFT 90 Archival Tags
	TAO Equator 155W	SKJ not targeted
	TAO 2S 155W	
November	TAO 2S 140W	
	TAO Equator 140W	
	TAO 2N 140W	
	TAO 5N 140W	
	TAO 8N 140W	

## 4 Tag Recovery and Seeding 2009-2010

The current tag recovery and seeding schedule for the project for 2009-2010 is shown in Table 4.

**Table 4.** Tag recovery schedule for 2009-2010.

<b>Milestone</b>	<b>Date</b>	<b>Description</b>
R1	29 Jun -3 Jul 2009	Tag recovery visit (Korea)
R2	13-18 Jul 2009	Tag recovery visit (Taiwan)
R3	29-31 Jul 2009	Tag recovery visit & lottery (Japan)
R4	26 Aug	Tag recovery visit & lottery (Indonesia)
R5	28 Aug	Tag recovery visit & lottery (Philippines)
R6	Mid-Sep	Tag recovery visit (China)
R7	15-31 Oct 2009	Senior observer tag seeding training (Fiji)

The proposed schedule of tag seeding is outlined in Table 5. The overall design is for observers to deploy 25 tags during the course of an observer trip. Ideally, a wide range of unloading destinations would be covered, including unloading at transshipment ports and direct to cannery facilities. As much of the transshipped fish goes to the canneries in Thailand and Philippines, coverage of these locations would be included implicitly.

**Table 5. Schedule for tag seeding experiments in 2009-2010.**

<b>Target (unloading port/cannery)</b>	<b>No. observer trips</b>
Ponhpei transshipment	5
Majuro transshipment	5
Tarawa transshipment	5
Wewak cannery	5
Rabaul transshipment	5
Honiara transshipment	5
Pago Pago canneries	5
Korean canneries	5
China canneries	5
Ecuador canneries	5

## **5 Data Analysis 2009-2010**

The current data analysis schedule for the project is reflected in the following milestones table.

<b>Milestone</b>	<b>Date</b>	<b>Description</b>
D1	Aug 2009 – Dec 2010	Data quality screening and estimation of missing recapture positions
D2	Dec 2009	Detailed analysis of recovery rate patterns to indicate relative reporting rates among fleet components
D3	Dec 2009	Estimation of individual tagger and fish condition effects on tag return probabilities
D4	Dec 2009	Preparation of tag recovery data for inclusion in 2010 stock assessments, incorporating corrections for individual tagger and fish condition effects
D5	Dec 2009	Analysis of comparative tuna purse seine vulnerability from archival & conventional tag returns
D6	Feb 2010	Tagging simulation – experimental design for annual tagging campaign
D7	Jul 2010	Estimates of geolocation and movement parameters obtained from archival tag returns
D8	Jul 2010	Preliminary tag-based estimates of mortality rates (natural and fishing) of skipjack, yellowfin and bigeye tuna
D8	Dec 2010	Influence of FADs on tuna movement and catchability in PNG and Solomon Is - - archival & conventional
D9	Dec 2010	Incorporation of conventional tagging data into parameterized SEAPODYM models

## 6 Budget

Cost USD		
	2009	2010
Tagging Vessel Operations		
<i>Central Pacific</i>	210,000	67,500
<i>Western Pacific</i>	975,400	
Staff Costs	431,076	409,897
Travel	108,000	35,000
Equipment	297,500	55,000
Tag Recovery	132,525	72,100
Miscellaneous	16,000	
<b>Total</b>	<b>2170501</b>	<b>639497</b>