



**SCIENTIFIC COMMITTEE  
NINETEENTH REGULAR SESSION**

Koror, Palau  
16-24 August 2023

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**REPORT OF THE PACIFIC TUNA TAGGING PROGRAMME  
STEERING COMMITTEE  
(PROJECT 42)**

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**WCPFC-SC19-2023/RP-PTTP-02**

PTTP Steering Committee

## 1. Preliminaries

The 17<sup>th</sup> meeting of the PTTP Steering Committee was held via [video conference](#) on **1<sup>st</sup> August 2023** in preparation for the Nineteenth Regular Session of the WCPFC Scientific Committee held in Koror, Palau. Jed Macdonald (SPC) chaired the meeting.

### *Background*

The goal of the Pacific Tuna Tagging Programme is to provide data and knowledge for stock assessment and management of skipjack, yellowfin and bigeye tuna in the Pacific Ocean. The objectives of the PTTP, originally specified in [WCPFC-SC6-2010/GN-IP-04](#), and revised in 2016 ([SC12-RP-PTTP-01: PTTP Steering Committee, 2016](#)), are:

1. To obtain data that will contribute to, and reduce uncertainty in, WCPO tuna stock assessments including estimation of overall and local exploitation rates, extent of mixing and appropriate spatial strata for use in assessments.
2. To obtain information to better understand the interactions between tropical tuna species and major fishing gears to support development of mitigation measures (where appropriate) and better interpret fisheries data (e.g., CPUE).

Under these objectives, information collected includes age-specific rates of movement and mixing, movement between assessment regions and other adjacent regions of the Pacific basin, species-specific vertical habitat utilisation by tunas, and the impacts of FADs on their behaviour.

The PTTP Steering Committee was established by SC2 to provide guidance and oversight in the development of firstly the project document (WCPFC Regional Tagging Project Steering Committee, 2006) and subsequently of operational plans, implementation and analytical work. The current donors to the project are the WCPFC, the Republic of Korea, the Pacific Community (SPC) and the European Union.

### *Review and adoption of agenda*

An additional item was added to the provisional agenda, being a summary of regional tagging from the EPO provided by the IATTC.

This updated provisional agenda was adopted and is provided in **Annex 1**.

A list of participants is provided in **Annex 2** of this report.

## 2. PTTP Progress Report

SPC provided a presentation of PTTP Activities as described in [SC19-RP-PTTP-01](#). The presentation followed the draft agenda sub-headers. A summary of the presentation is as follows.

Since SC18, PTTP activities have included one Western Pacific voyage, WP6, in the waters of the Solomon Islands. Bruno Leroy (SPC) gave an overview of the tagging cruise and Joe Scutt Phillips (SPC) gave an overview of tag recovery and analyses during the last reporting period.

### *2.1 2022 WP6 Cruise*

The 24-day cruise was implemented onboard the Soltai 105 within the Solomon Islands Exclusive Economic Zone, between the 14<sup>th</sup> of September and 7<sup>th</sup> of October. Seven scientific crew, including two Solomon Islands nationals (Dr Lindon Havimana and Patteson Omi). In total, 16,977 fish were tagged with conventional, plastic dart tags. The cruise achieved all expectations including high numbers of biological samples for the Pacific Marine Specimen Bank. 98% of all fish tagged were the target species of skipjack tuna, which were caught in an unusually high proportion of free schools, with an associated larger mean length of around 55cm. 334 yellowfin tuna were tagged, and only 2 bigeye tuna. A large

effort was made to release fish marked with strontium chloride injections to aid growth studies with 630 fish tagged and released, and almost half of these included a live biopsy to aid genetic work.

## 2.2 Tag recovery

The 2022 WP6 cruise has the highest recovery rate of any western Pacific cruise since the inception of the PTPP (34%), with around 5% of tags having been reported during their first month at liberty. Some concerns with the quality of recapture data during this large influx of recoveries were noted from the tag recovery coordination team.

A trip to Noro was undertaken by SPC technicians in January 2023 to collect samples from all strontium chloride marked individuals that had been recovered and placed into cold storage, resulting in samples from around 170 fish.

Tag recoveries from the previous two central Pacific cruises, CP14 and CP15, have also continued to be returned. In particular, CP15 now has the highest recapture rate since a shift from targeting aggregations of bigeye tuna on TAO buoys to those on industry-shared drifting FADs in 2014 (at 18.5%).

*Mike Batty from Tuvalu asked if these recent increases in recapture rates were due to the shift in releasing fish on drifting FADs, which are more likely to be subsequently targeted by purse seiners operating in the region.*

*Joe Scutt Phillips replied that in actual fact the reverse pattern was seen initially, that recapture rate decreased dramatically following the shift in releases on drifting FADs. The highest recapture rates for bigeye tuna during the PTPP still occurred during the period where TAO buoy releases were more common.*

*Bruno Leroy added that in early TAO oriented CP cruises those mooring were heavily harvested by some PS vessels. Also during a single cruise, tagged fish were often coming only from one or 2 of those associated schools; if one tagged school was caught the number of recoveries was quite high. The tagged fish are much more dispersed on numerous schools on dFAD oriented CP experiments. In early FAD oriented CP cruises, the number of available dFADs was quite low, decreasing the chances of releasing lots of tags.*

*Simon Nicol commented that as releases occur during the FAD-closure period, the increased return rate was likely due to increased efforts on tag recovery, including the recent increase in tag rewards and reward schemes.*

## 2.3 Tag Data Analyses

A summary of tag data analyses during the previous 12-month period was given. Tag recapture densities had been calculated as part of an examination of mixing periods for the upcoming WCPO bigeye and yellowfin tuna stock assessments, and these can be found in SC19-SA-WP-03. In addition, updated tagging and condition effects (SC19-SA-IP-08) and tag reporting rate (SC19-SA-IP-07) analyses have been undertaken.

A new, SEADPODYM reference model for Pacific bigeye tuna, which integrates tag recapture data, has been developed (SC19-EB-IP-01). A peer-reviewed manuscript describing the model has also been submitted for review.

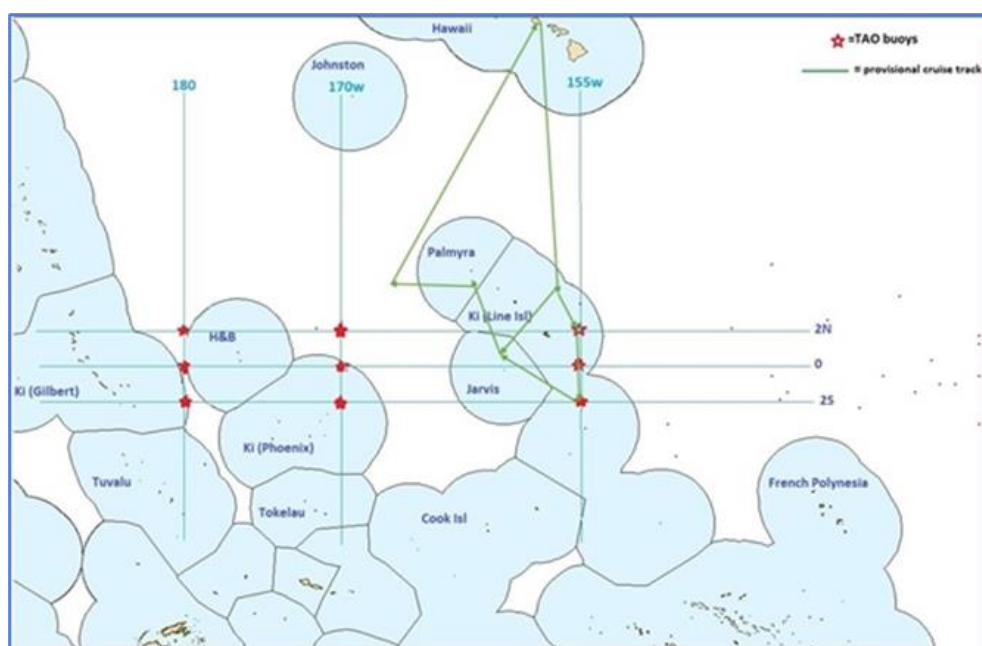
Bigeye and yellowfin tuna archival data and geolocation estimates were shared with the IATTC and SWFSC as part of a species distribution modelling project on tuna and other pelagics. In addition, relevant archival data were also shared with colleagues at Japan FRA to support the development of dynamic energy budget models for yellowfin and bigeye tuna.

### 3. WORK PLAN 2023-2026

The proposed 2023-2026 workplan for the PTPP is provided in the annual report SC19-RP-PTTP-01 and **Annex 3** of this Steering Committee report. Bruno Leroy gave details for the upcoming, planned central Pacific 16 cruise and possibilities for the scheduled 2024 skipjack-focused cruise. Joe Scutt Phillips gave an overview of the planned data management and analysis activities in the work-plan.

#### 3.1 2023 CP16 Cruise

Following a call for tender to assess the availability of possible central Pacific tagging platforms, the Gutsy Lady 4 was once again determined to be the most suitable vessel for CP16. A 40-to-45-day cruise will depart from Honolulu, USA, with a provisional departure date of the 15<sup>th</sup> of August 2023 until the 23<sup>rd</sup> to 28<sup>th</sup> September. The vessel will target DFAD associated schools of bigeye and yellowfin in international waters, the Kiribati Line Islands, and Palmyra and Jarvis US territories.



*Provisional cruise track for CP16*

A target of 4,000 conventionally tagged bigeye tuna has been set. An acoustic experiment, led by an IRD scientist, will be implemented to evaluate the possibility to provide an independent index of abundance of fish. An ambitious biological sampling project is planned on all captured tuna and bycatch species that are too injured to be tagged and released. This will include genetic biopsy and fatmeter measurements. It is also scheduled to inject a proportion of the tagged fish with SrCl solution for tuna growth rate validation. The success of the cruise will entirely be dependant of the number of dFADs that are shared with the tagging vessel during the experiment. Four purse seine companies and associations support the PTPP through the sharing of real-time data during the experiments, and their fishing vessels contributing to the project will be part of a special reward scheme that proved to be successful in the last CP cruise. This year, two additional groups have been added to the buoy sharing programme, bringing the total to four:

- [Cape Fleet Fisheries](#)
- [The US Tuna Group FIP](#)
- [Bolton & Trimarine Group](#)
- [Oakcity Tuna Fishing Corporation](#)

### *3.2 2024 Cruise Options*

Serious concerns on the feasibility of the planned 2024, skipjack-focused western Pacific cruise were highlighted, given the condition of the current tagging platform, the commercial pole & line vessel Soltai 105. It was noted that engineering team of the vessel owner NFD had done an excellent job at maintaining the working condition of the vessel, but that there was no longer the capacity to work outside of Solomon waters given the mechanical issues experienced during WP6.

Without the possibility of a serious refurbishment of the vessel, it appears no other options are available at present to carry out the scheduled cruise.

### *3.3 Tag Recovery Network*

A visit to Korea was made by SPC and the WCPFC secretariat to further engage in tag recovery by industry and government. Meetings at the Korean Overseas Fisheries Association and National Institute for Fisheries Science were held, in which presentations on tag recovery and how tagging data support tuna science were carried out.

Following successful visits to canneries in Korea and the Solomon Islands, tag awareness materials were distributed to key contacts to help maintain the tag recovery network. Similarly, a new agreement has been put in place to allow SPC to support the tag recovery network in Ecuador and Mexico, which have been responsible for significant proportion of recaptures of PTTP tags released during central Pacific cruises.

The recent increase in tag seeding deployments in 2022 was noted, thanks to efforts from the Papua New Guinea observer programme, and efforts will be made to build on this momentum during the following 12-month period given its critical importance to estimating reporting rates within stock assessments.

Key-coded security tags have now been fully rolled out, improving tag recovery and reducing errors in data entry.

A planned hand over of tag recovery officer duties in Thailand, which has historically been responsible for large numbers of tags found in canneries, is also planned.

### *3.4 Data Management and Analyses*

An overview of recent and planned tagging data management activities was given. This included the recent migration of the tagging database to the TUFMAN2 platform, which is also used for catch, observer and cannery data in the WCPO. A planned migration of the data entry software for tag releases was also highlighted.

Developments on describing the flow of tuna products using network analyses was mentioned, which will support more accurate and objective validation of tag recoveries, as well as indicate areas in which reporting may be unexpectedly low.

Finally, the development of a new SEAPODYM reference model for yellowfin tuna, incorporating tagging data to estimate movement and environmental-preference parameters is planned over the next year.

## **4. TAGGING PLATFORM UPDATE**

Following concern raised under agenda item 3.2, Bruno Leroy highlighted the necessity to refurbish pole and line vessel Soltai 105 to continue the collection of skipjack tagging data to support their stock assessment. A business case analysis has been initiated to support potential regional donor justification for funding the project.

The Regional Fisheries RV project is progressing with the recruitment of a Naval Architect to undertake a functionality study and a detailed design for the vessel. This technical assistance will also be part of

the shipyard selection process that should start in the following month. The vessel should be flagged in the RMI. If all goes well its construction should start after mid-2024 and with a targeted delivery in the first half of 2026.

## 5. OTHER REGIONAL OR SUB-REGIONAL TAGGING

### 5.1 Japanese FRA tagging programme

Ueda Yuya gave an overview of the recent Japanese Tagging Programme (JPTP) activities, which included a coastal Japanese cruise targeting large skipjack in 2022, and a final tropical/subtropical cruise targeting smaller skipjack.

These latter cruises have experienced extremely low recapture rates for the Japanese tagging programme, and Ueda-san gave a summary showing that typical recapture rate was less than 1%. SPC recently compiled and returned a number of JPTP tags that had been returned through the SPC tag recovery network, and this has improved the recapture rate of some years to almost 2% in some cases. However, until the low recapture rates have been explained for these cruises, the tropical/sub-tropical tagging of the JPTP has been suspended.

Finally, a coastal Japanese tagging cruise is planned for October 2023.

*Joe Scutt Phillips commented that the recapture rates are not hugely dissimilar to those of the PTPP for skipjack tagged in free schools in oceanic areas. However, given that they are still lower, finding an explanation for this is something that SPC would like to assist Japan in doing. Japanese tag releases in the equatorial zone are a valuable input for the stock assessment of WCPO skipjack tuna.*

### 5.2 EPO-IATTC tagging programme

Dan Fuller presented a quick summary result for the 2019-2023 tuna tagging programme that was sponsored by EU and IATTC. The project objectives were:

- Conventionally tag (CT) 15,000 skipjack, 2,500 yellowfin and 2,500 bigeye tuna
- Deploy archival tags in 600 skipjack, 150 yellowfin and 150 bigeye.
- Deploy seeded tags within the PS fleets.
- Set-up a dedicated tagging data base

The results are:

- 6,181 SKJ tagged with CT and a current recovery rate of 27.4 %
- 1,679 YFT tagged with CT and a current recovery rate of 16.5 %
- 265 BET tagged with CT and a current recovery rate of 39.6 %

In the same respective species, 250, 472 and 57 archival tags were deployed with a current recovery rate of 24, 18.7 and 38.6 %

## 6. ADMINISTRATIVE MATTERS AND RECOMMENDATIONS

### 6.1 Administrative matters.

Joe Scutt Phillips raised the fact that CP16 cruise research permit in Kiribati waters was still pending, but that it should be delivered soon.

The contract between SPC and MRAG has been renewed this year, which includes tag recovery activities under the terms of reference.

An MOU should be signed with Japan-FRA to facilitate data-sharing and research cruise collaboration. The floor was also reminded that PTPP advisory committee meetings are also held throughout the year.

Finally, an indicative budget was presented, highlighting the fact that the SSP's co-financing contribution to the PTPP had increased considerably over recent years to more than 35%. This is due to increased costs involved in travel, consultancy fees and tag rewards. To maintain a sustainable level of co-financing, it was recommended that the WCPFC contributions been incrementally increased over the next three years to bring the relative contribution of the SSP to around 25%.

Budget (USD)	2020	2021	2022	2023	2024	2025	2026
<b>Total</b>	1,279,878.00	1,433,875.00	1,402,880.00	1,450,000.00	1,450,000.00	1,475,000.00	1,475,000.00
<b>WCPFC</b>	730,000.00	730,000.00	730,000.00	730,000.00	800,000.00	875,000.00	950,000.00
<b>Republic of Korea</b>	166,000.00	166,000.00	166,000.00	166,000.00	166,000.00	166,000.00	166,000.00
<b>SSP</b>	383,878.00	537,875.00	506,880.00	554,000.00	484,000.00	434,000.00	359,000.00
<b>SSP %</b>	30%	38%	36%	38%	33%	29%	24%

The Steering Committee endorsed the recommendations of the PTPP report to SC19 (SC19-RP-PTTP-01) as follows:

- **Note the successful 2022 WP6 tagging voyage**, despite the **mechanical issues** arising from the ageing charter vessel;
- **Note the urgent need for refurbishment** of the current pole & line tagging platform in time for the scheduled 2024 skipjack-focused tagging cruise;
- **Note the critical importance of effective tag seeding** to informing stock assessment, support further increasing recent improvements in deployment number and fleet, and assist with developing alternative approaches to understand the flow of tags through tuna product networks;
- **Note the need for continued member participation and support in cruise permitting**, tag reporting, and industry support of the tagging programme (e.g. through the sharing of drifting FAD buoy data);
- **Consider and support the 2024 tagging programme**, work-plan and associated budget (**Noting a recommended increase in the WCPFC contribution to USD 800,000**);
- **Consider and support the 2025-2026 tagging programme**, work-plan, and indicative budget (**Noting further incremental increases in the WCPFC contribution for a more balanced co-financing of 25% from the SSP**);

## 7. ADOPTION OF REPORT

A draft report of the Steering Committee of the PTPP was provided to members on the 4th August through email. Steering Committee members were invited to make comment until, and provide endorsement by, the 15<sup>th</sup> of August. These comments were collated into the final report, which was posted to the 19<sup>th</sup> Scientific Committee website at XXXX.

### In Memory: Dr Tony Lewis

To finish, Bruno Leroy gave a few words to note the passing of Dr Antony Lewis in 2022. Dr Antony David Lewis, alternatively and affectionately known as Dr Fish, Yoda, ADL or simply Tony, passed away on 23 September 2022. Tony was a fisheries legend of the Pacific, and his passing is deeply felt by the region. Tony played a key role as PTPP Project Consultant/Coordinator, bringing his vast experience to assist planning and provide overall coordination over the period 2006-2018. During this time, he also achieved a significant milestone of personally tagging his 100,000th tuna, a record that is never likely to be broken. His influence on the Pacific Tuna Tagging Project remains profound, and he will be missed greatly.



May 2007. Talking stories onboard FV Soltai 6



**PACIFIC TUNA TAGGING PROJECT  
STEERING COMMITTEE**

Electronic Meeting  
**1 August 2023 (from 11:00-12:00 hours Pohnpei time (UTC+11 hours))**

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**ADOPTED AGENDA**

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**WCPFC-SC19-2023**

**1. PRELIMINARIES**

- 1.1 Review and Adoption of Agenda

**2. PTPP PROGRESS REPORT**

- 2.1 2022 WP6 Cruise
- 2.2 2022-2023 Tag Recovery
- 2.3 Tag Data Analyses

**3. WORK PLAN 2023-2026**

- 3.1 2023 CP16 Cruise
- 3.2 2024 Cruise Options
- 3.3 Tag Recovery Network
- 3.4 Data Management and Analyses

**4. RELATED TAG ACTIVITIES**

- 4.1 Tagging Platforms Update

**5. OTHER REGIONAL OR SUB-REGIONAL TAGGING**

- 5.1 Japanese FRA Tagging Programme
- 5.2 EPO IATTC Tagging Programme

**6. ADMINISTRATIVE MATTERS**

- 6.1 Administrative Matters
- 6.2 Recommendations to SC19

**7. ADOPTION OF REPORT**

## Annex 2. Attendee list of the 2023 PTTP Steering Committee

Name	Delegation
Aoki Yoshinori	FRA Japan
Aurelie Guillou	Pacific Community
Aurélien Panizza	Pacific Community
Beau Bigler	MIMRA
Berry Muller	MIMRA
Bruno Leroy	Pacific Community
Dan Fuller	IATTC
Dave Itano	Consultant
David Byrom	MRAG Pacific Asia
Elaine G. Garvilles	WCPFC
Elton Clodumar	NFMRA
Marina Abas	FFA
Joyce Samuelu-Ah Leong	FFA
Francois Rounsard	Pacific Community
Giulia Anderson	Pacific Community
Graham Pilling	Pacific Community
Harold Vilia	MFMR
Jed Macdonald	Pacific Community
Jeff Muir	Pacific Community
Joanna Padua	SFFAI Philippines
Joe Scutt Phillips	Pacific Community
Lui Bell	Pacific Community
Marc Ghergariu	Pacific Community
Marion Boutigny	Pacific Community
Mike Batty	Tuvalu Ministry of Fisheries and Trade
Simon Nicol	Pacific Community
Valerie Allain	Pacific Community
Valerie Post	NOAA
Yuya Ueda	FRA Japan
Jacob Keju	MIMRA
Isidro Tanangonan	BFAR Philippines

**Annex 3: Proposed PTPP work-plan for the period 2023-2026.**

Activity		2023	2024	2025	2026
Tagging	Skipjack-focused Cruise		Pole & Line Western Pacific skipjack-focused cruise		Skipjack-focused cruise
	Bigeye-focused research cruise	CP16 Central Pacific bigeye-focused cruise		Bigeye-focused cruise	
	Tagging platform	Dedicated Research Vessel Functionality Study Underway	Potential construction of dedicated, regional research vessel		Potential first cruise
		Call for trolling-capable vessel charter put out to tender Evaluation of business case for P&L refurbishment	Refurbishment of current Pole & Line charter vessel		
	Tag Seeding through Regional Observer Programmes	Continue increase in tag seeding to support reporting rate estimates			
Tag Recovery	Support and development of tag recovery network	Korean industry and cannery visit	Training of new TRO for Thailand canneries. Support TROs for Americas ports		
	Increase tag recovery efficacy	Tuna product flow proof of concept completed	Trial integration of cannery data into tuna product flow network		
		Key-coded conventional tags rolled out			
	Implementation and revision of tag reward schemes	Updated tag-rewards and purse seine reward schemes			
Data management	Tagging data validation	Continue development of automatic validation tools	Ongoing		
	Maintain and develop PTPP databases and related tools	Tagging database migrated to TUFMAN2 platform	Migrate tag release data entry software to TUFMAN2		
Data Analyses	Provide tagging data for inclusion in stock assessment and related analyses	Provision of yellowfin and bigeye tagging data for stock assessments	Integration of yellowfin tagging data into SEAPODYM	Skipjack tagging data provision	Yellowfin and bigeye data provision
	Reduce uncertainty in WCPO stock assessments	Updated tagging effects and reporting rate analyses completed		Tag mixing analyses	
	Increase understanding of tuna-fishing gear interactions and interpretation of fisheries data	Acoustic array experiment to understand movement between drifting FADs (IRD collaboration)			

