



**SCIENTIFIC COMMITTEE  
17<sup>TH</sup> REGULAR SESSION**

Online  
11-19 August 2021

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

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**WCPFC-SC17-2021/RP-PTTP-02**

PTTP Steering Committee

## 1. Preliminaries

The 15th meeting of the PTTP Steering Committee was held via video conference on **3<sup>rd</sup> August 2021** in preparation for the online 17th Regular Meeting of the WCPFC Scientific Committee. The meeting was chaired by Simon Nicol, and presented by Joe Scutt Phillips and Bruno Leroy.

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

### *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 (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*

The provisional agenda was adopted and is provided in Annex 1

## 2. PTTP Progress Report

SPC provided a presentation of PTTP Activities as described in SC17-RP-PTTP-02. The presentation followed the draft agenda sub-headers. A summary of their presentation is as follows.

Since SC16, PTTP activities have included one Central Pacific voyage, CP14, in the waters of Kiribati and the surrounding high seas, survival, electronic tagging and biological sample collection aboard a commercial longliner, continued implementation and refinement of tag recovery processes, and associated tagging data analyses. Research voyage CP15 preparations began in early 2021, and the charter vessel departed Honolulu, Hawaii, 15<sup>th</sup> July 2020.

### *2.1 Tagging Activities*

#### *2020 CP14 Cruise*

The 49-days cruise was implemented (15 Aug to 2 Oct) during the FAD fishing closure period to benefit from drifting FAD positions provided by purse seine fishing industry. 6395 fish were tagged including 64 archival tags. The cruise achieved all expectations including a high number and wide distribution of tag releases and the biological sampling of 530 for the Tuna Tissue Bank. This cruise was a modification of the originally planned 55 day cruise that was to focus tagging activities in the Tuvalu and nearby high-seas areas. The modification was due to Covid19 pandemic restrictions which prevented air travel by PTTP personnel and port stops by the vessel. The cruise plan was modified to focus on the Kiribati EEZ and nearby high seas areas.

### *2020 Hawai'ian longline trip*

A second cruise was conducted to utilise the 6 unused days that were budgeted for the CP14 charter. These additional days were added to a commercial longline fishing trip by the FV Gutsy Lady4 in the Hawaii EEZ and neighbouring high seas (18 Nov to 12 Dec). With the addition of the 6 days of charter the total duration of the cruise was 25 days, with the purpose of deploying 32 pop-up satellite (survival) tags (sPATs) to test the feasibility of complementing existing PTTTP activities using commercial longliners to tag larger size classes of bigeye and yellowfin tuna. Tagging data for large size classes has been identified as a data gap by WCPFC stock assessment scientists. 26 and 6 sPATs were deployed on large size bigeye and yellowfin respectively to assess their post-release mortality. An additional 182 fish were also biologically sampled to contribute to the holding of the Tuna Tissue Bank.

## *2.2 Tag recovery*

As at June 2021, a total of 82,183 tagged tuna had been recaptured and the data reported to SPC.

The reduction in bigeye conventional tag recovery rate from CP9 onwards continues. These changes from ~30+% up to voyage CP8, fall to 14% for CP9, between 3 to 16% for CP10 to CP13, when release began to be focussed on drifting FADs. The rate for the CP14 cruise carried out last year currently rests at 1.6%.

The current return rate for skipjack tuna targeted during WP5 remains low after almost two years. However, it is important to note that WP5 was chiefly focussed in the oceanic waters north of the areas targeted during other recent WP research cruises, where fish are likely to experience very different drivers of movement and fishing-induced probability of recapture. Releases in these areas have, in general, been associated with lower recaptures. Twenty-three white tag fish injected with strontium chloride have been recaptured and reported since WP5.

New Tag Recovery Officers (TROs) have now been appointed under contract in Honiara, Noro, Madang, Rabaul, Pohnpei, and Majuro. Five contracts for other TROs were renewed, and new collaboration has been established with industries to collect directly tags onboard fishing vessel or in port and provide reward when necessary (Coastal shipping, RD fishing, Kiribati & Sajo Fisheries, Starkist).

Visits in countries, as well as meetings held at SPC were not possible due to the regional Covid-19 travel restriction measures but constant contacts with the existing network were maintained. In addition, an increased effort in producing videos, TV and Radios interviews, facebook and twitter messages to raise awareness on the tagging program prior to, and at the end of research voyages were part of the awareness program during the pandemic.

Noting that the tag reward fee had not increased since the start of the program in 2006, the fee for tag finders was increased to USD20 for conventional tags. To encourage observers at sea to support tag finders and the tagging program during the suspension of the 100% coverage onboard fishing vessels, the observers are now rewarded USD20 to report tags directly and immediately to SPC with a picture of the tagged fish as well as accurate length measurement.

## *2.3 Tag Data Analyses*

In anticipation of the apparent recent reduction in tag recaptures from central Pacific research cruises, the potential for new software tools to more efficiently target fleets, ports and canneries is being explored. An early version of a 'Maxitag' system has been put in place in preparation for returns from the upcoming CP15 cruise. This tool integrates VMS data along with historical and real-time tag recovery information to identify fishing vessels with a potentially greater probability of having recaptured tags that have not yet been identified.

Developing a similar approach to a full network analysis of tuna product flow from catch to sale is also now in its early stages.

From February 2007 to July 2021, a total of 584 tag seeding kits (consisting of seeding tags, applicators, guide books and data forms) for a total of 14,635 tags have been given to observer coordinators and TROs in Tonga, Ecuador, PNG, Solomon Islands, Fiji, FSM, Marshall Islands, Kiribati, New Zealand and American Samoa for deployment on purse seine vessels by senior observers.

Since June 2020, five kits have been deployed and distributed, using a total of 120 tags. This is the lowest annual deployment of seeded tags since the beginning of the PTP, and far below the 32 experiments per year (1200 tags) that was recommended to capture any temporal changes in reporting rate (Peatman et al. 2019 WCPFC-SC15-2019/SA-IP-06). Since 2017, the number of seed tags deployed has remained lower than at any other time during the PTP.

The results of the survival electronic tagging experiment during the 2020 commercial longline research trip have shown very high mortality in large yellowfin and bigeye tuna, tagged and released during normal longline operations. These results are currently under review for peer-reviewed publication in a manuscript *Estimating post-release mortality of long-line caught tropical tunas in the Pacific Ocean*. The analyses demonstrates that tagging large sizes classes of bigeye and yellowfin during commercial longline operations is unlikely to be a cost-effective and feasible method for conventionally tagging the necessary quantity of individuals (in these size classes) for the information to be meaningful for stock assessment purposes.

### **3. WORK PLAN 2021-2024**

The proposed 2021-24 workplan for the PTP is provided in Annex 3 of this Steering Committee report. The Steering Committee was reminded that the work-plan recognises the decisions of SC in 2016 to normalise the tagging programme (WCPFC SC, 2017), and the decisions of SC in 2017 where this rolling medium-term research work-plan was endorsed (WCPFC-SC 2017). However, restrictions imposed by the ongoing Covid-19 pandemic have severely restricted the programme's ability to follow all of these planning measures.

#### **3.1 Tagging Activities**

An informal PTP Planning Advisory Committee was established during SC16 to assist with PTP cruise planning. The advisory committee has convened three times since SC16 and assisted with the preparation of cruise plans for 2021. A pole and line cruise in the western pacific (WP6) was scheduled for 2021 with a focus on skipjack tagging. The continuation of travel restriction in the region due to the Covid19 pandemic and national measures that have been implemented to avoid Covid19 transmission to rural communities however has meant that WP6 could not be implemented. SPC and the Advisory Committee noted that delaying WP6 to 2022 and bringing forward CP15 from 2022 to 2021 would not disrupt the scheduling of tagging activity for the WCPFC stock assessments (i.e. a skipjack focused WP6 in 2022 would provide tags for the 2025 scheduled skipjack stock assessment). Planning for implementation of CP15 in 2021 was subsequently initiated.

##### **2021 CP15 Cruise**

Due to Covid19 travel restriction, planning for CP15 was restricted to cruise plans that did not include mid-cruise port visits for reprovisioning of the vessel. This restricted CP15 to a similar cruise plan to CP14 (Honolulu departure with tagging focussed on the Kiribati EEZ and neighbouring high seas). The FV Gutsy Lady4 was chartered to implement CP15. The 40-day cruise departed Honolulu port on the 15<sup>th</sup> July with a limited scientific crew consisting of 4 US citizens with Hawaii residency. Thanks to the large number of drifting FAD positions shared by 11 purse seiners, 4,000 fish (79% of bigeye) have already been tagged, including 94 archival tags, at the date of 02 August. Biological sampling was undertaken on the FV Gutsy Lady4 during its transfer in June from San Diego to Honolulu.

##### **2022 Cruise options**

Planning has commenced to organize WP6 in 2022. Many uncertainties remain on the feasibility of chartering NFD owned and operated vessels based in the Solomon Islands (as has been the arrangement

for previous western Pacific cruises), linked to the possibility to travel to Solomons, FSM or PNG, and bait ground access. One option for consideration is the potential for enhancing collaborations with Japan using one of their long-distance pole and line vessels. Those large boats carrying live bait from Japan bypass the need to access country bait grounds. This could take the form of participation on tagging cruises in the equatorial western Pacific as part of Japan's national tagging program or direct or shared charter of such a vessel. SPC and the Advisory Committee will explore this option further in consultation with the Fisheries Agency of Japan. This would be assisted by endorsement from SC17 as an alternate option for consideration.

### *3.2 Tag Recovery Network*

The current push for increased engagement with industry will be continued, further promoting new reward schemes and examining where there is potential for increasing the recovery of tags at the point of capture. This will include some first trials using the Maxitag tools for the upcoming recaptures of tags released during CP15, and validation experiments on data from past campaigns.

### *3.3 Data Management*

The current PTTP database, Tagdager, will be migrated to the TUFMAN2 platform, which is already used for observer data. This will permit a variety of improvements, such as streamlining of the tools used by analyses and TROs, and web-based access. It will also support the integration of future improvements and tools such as AI-based tag data validation, and improved effort targeting systems such as Maxitag.

### *3.4 Tag Data Analyses*

In preparation for the upcoming 2022 Skipjack tuna stock assessment, several planned analyses of skipjack tagging data will be undertaken. This will include updating the tagging and condition effects on recapture rate analysis, and a planned suite of Ikamoana tagging simulations to examine variability in mixing rates across individual tagging events.

Continued analysis and publication of the library of electronic tagging data, in the context of habitat-use and FAD interactions, is also planned.

### **Steering Committee Comments**

The 15<sup>th</sup> PTTP Steering Committee supported and encouraged the option of developing enhanced collaborations with Japan to implement WP6 using a Japanese flagged long-distance pole and line vessel (either as part of Japan's existing national activities or as a separate collaborative arrangement).

## **4. RELATED TAG ACTIVITIES**

### **Regional Research Vessel Project**

The project was presented at the last SPC Heads of Fisheries meeting, and the continuation of the project was endorsed by SPC's membership. A brochure has been designed and a detailed document is being put together for donors to consider supporting construction, fitting out and initial operations.

Discussion has been initiated with the French Oceanographic Fleet to assess potential partnership to share vessel usage. Several other uses outside of a tagging platform - e.g. bathymetric surveys, deep sea sampling have to be envisaged. The high level of interest expressed to SPC by third parties for vessel usage (in addition to the PTTP) has indicated a need to establish a consultative group to identify the potential regional usages for the vessel and the processes for its scheduling.

## 5. OTHER REGIONAL OR SUB-REGIONAL TAGGING

### Japanese FRA equatorial tagging

Japanese colleagues from the National Research Institute of Far Seas Fisheries provided an update on their recent and planned tagging activities, which was briefly presented by SPC on their behalf.

The FRA has been conducting skipjack tagging research to investigate migration patterns to the fishing grounds off Japan.

In 2020, there were research cruises in tropical and temperate areas using two, full chartered pole-and-line vessels for tagging. In the tropical areas, which included the EEZ of the Federated States of Micronesia, 7,300 conventional and 330 archival tags were released in the period from 25 December 2020 to 2 February 2021. In the temperate areas around the northern part of Japan, 2,774 conventional and 160 archival tags were released from 12 to 19 October 2020.

Two skipjack tagging cruises are planned for the following 12-month period.

1. Oct. 2021
  - The North-Eastern area of Japan (40N and 150E) (same area as last year)
  - 2,000 conventional tags with 100 Archival tags
2. Jan.-Feb. 2022
  - Around the North Mariana Is. and Micronesia. (Sub-tropical and tropical area)
  - 5,000 conventional tags with 150 Archival tags.

### Steering Committee Comments

Japan noted that they would be happy to continue to discuss collaboration with SPC and the PTPP, including the placement of scientists to deploy PTPP tags in the upcoming equatorial tagging cruise, Covid-19 restrictions permitting

## 6. ADMINISTRATIVE MATTERS

### Planning Advisory Committee

A reminder was made regarding invitation to the quarterly PTPP Planning Advisory Committee, an informal and voluntary meeting which provides a forum for discussion on the logistics of cruise and other practical aspects of the PTPP. The next meeting will be during October 2021.

### Steering Committee Comments

The WCPFC Secretariat requested that an Annex be added to this report that summarises the completion of activities as per the WCPFC Services Contract to the Science Services Provider for PTPP activities in 2021. This summary will make the administrative processes of SC17 more efficient. They also requested a summary of the milestones and budget for 2022 activities to be included in this Annex.

This request has been provided as Annex 4 to this report

## 7. Recommendations for SC17

The Steering Committee noted that:

- Ongoing Covid-19 restrictions may impact the implementation of WP6 in 2022 using the NFD (Solomon Islands) owned pole and line vessels. Options to meet WP6 objectives through enhanced collaboration with Japan's national tuna tagging activities was encouraged as an alternate approach should Covid19 restriction prevent WP6 implementation.

- **Endorsed the recommendations of the PTTTP report to SC17 (SC17-RP-PTTP-01). Noting that these were as follows:**
  - Note the successful 2020 CP14 tagging voyage, despite the unfolding Covid19 pandemic.
  - Note the critical importance of effective tag seeding to informing stock assessment, and support an urgent increase (when feasible) in deployment, fleet coverage of tag seeding experiments 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 tag reporting;
  - Support the 2022 tagging programme, and associated budget;
  - Support the 2023-2024 tagging programme, and associated indicative budget; and
  - Consider and support the PTTTP work-plan for 2021-2024.

## **8. ACKNOWLEDGEMENTS**

Since its commencement in 2006, funding support for the PTTTP has been provided by the

- PNG National Fisheries Authority;
- New Zealand Aid Agency;
- the Government of the Republic of Korea;
- Australian Centre for International Agricultural Research;
- European Community 8th European Development Fund;
- European Community 9th European Development Fund;
- European Community 10th European Development Fund;
- the French Pacific Fund;
- the Republic of China;
- Heinz Australia;
- the Global Environment Facility;
- the International Seafood Sustainability Foundation;
- the European Union (through voluntary contributions to WCPFC);
- and the WCPFC itself.

We acknowledge the support of national fisheries administrations, observer programmes and the tuna fishing industry in assisting with the project, in particular the recovery of recaptured tags. The contribution of both vessel and scientific crew to the successful implementation of the PTTTP is gratefully acknowledged. Particular thanks to Jeff Muir for logistics and implementation of the upcoming CP15 tagging voyage operating out of Hawaii.

## **9. ADOPTION OF REPORT**

A draft report of the 15<sup>th</sup> Steering Committee of the PTTTP was provided to members on 4<sup>th</sup> August via email. Attendees to the steering committee were invited to make comment until, and provide endorsement by, the 11<sup>th</sup> August. These comments were collated into the final report, which was posted to the 17<sup>th</sup> Scientific Committee website on the 12<sup>th</sup> August 2021.

**PACIFIC TUNA TAGGING PROJECT  
STEERING COMMITTEE**

Electronic Meeting

**03 August 2021 (from 14:00-15:00 hours Pohnpei time (UTC+11 hours))**

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**ADOPTED AGENDA**

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WCPFC-SC17-2021/xx

- 1. PRELIMINARIES**
  - 1.1 Review and adoption of agenda**
  
- 2. PTTTP PROGRESS REPORT**
  - 2.1 Tagging**
    - 2.1.1 2020 CP14 Cruise**
    - 2.1.2 2020 Longline Tagging**
  - 2.2 Tag recovery**
  - 2.3 Tag data analyses**
  
- 3. WORK PLAN 2021-2022**
  - 3.1 Tagging**
    - 3.1.1 2021 CP15 Cruise**
    - 3.1.2 2022 Cruise Options**
  - 3.2 Tag recovery network**
  - 3.3 Data management**
  - 3.4 Data Analyses**
  
- 4. RELATED TAG ACTIVITIES**
  - 4.1 EEZ permits and country requirements**
  
- 5. OTHER REGIONAL OR SUB-REGIONAL TAGGING**
  - 5.1 Japanese FRA tagging programme**
  
- 6. ADMINISTRATIVE MATTERS**
  - 6.1 Administrative matters**
  
- 7. ADOPTION OF REPORT**

## Annex 2. Registered participation list of the 2021 PTPP Steering Committee

Name	Delegation
Anne-Marie Trinh	French Polynesia
Aurelien Panizza	Pacific Community
Beau Bigler	Marshall Islands
Berry Muller	Marshall Islands
Bradley Moore	New Zealand
Bruno Leroy	Pacific Community
Caroline Sanchez	Pacific Community
David Itano	Fisheries Consultant, Hawaii TRO
Elaine Garvilles	WCPFC Secretariat
Eidre Sharp	WCPFC Secretariat
Francois Rouspard	Pacific Community
Graham Pilling	Pacific Community
Isidro Tanangonan	Philippines
Jale Wea	Fiji
James Larcombe	Australia
Jed MacDonald	Pacific Community
Jessica Farley	CSIRO
Joe Scutt Phillips	Pacific Community
Johann Bell	Conservation International
John Annala	New Zealand
Joshua Fielding	Australia
John Hampton	Pacific Community
Jude Piruku	Forum Fisheries Agency
Kali Kramer-Andrike	PNA Secretariat
Karen Evans	Australia
Kathy Sisor	Palau
Lara Manarangi-Trott	WCPFC Secretariat
Lauriane Escalle	Pacific Community
Mark Fitchett	United States of America
Marlo Demo-os	Philippines
Michael Batty	Tuvalu
Nakamura Yasushi	Japan
Neville Smith	Pacific Community
Noa Sainz	European Union
Ren-Fen Wu	Chinese Taipei
Shane Griffiths	IATTC Secretariat
Simon Nicol	Pacific Community
SungKwon Soh	WCPFC Secretariat
Te Aomihia Walker	New Zealand
Tsuda Yuichi	Japan
Valerie Post	United States of America

### Annex 3: Proposed PTTP work-plan for the period 2020-2023.

Activity	2021	2022	2023	2024
<b>Tagging</b>				
Pole and line tagging research cruise <ul style="list-style-type: none"> <li>▪ Skipjack-focussed</li> <li>▪ Yellowfin secondary</li> </ul>	Continue to evaluate options for a potential regional research vessel	WP6 cruise in time for inclusion of data in 2025 skipjack tuna assessment		Continued skipjack-focussed research cruise
Dangler trolling/rod & reel tagging research cruise <ul style="list-style-type: none"> <li>▪ Bigeye-focussed</li> <li>▪ Yellowfin secondary</li> </ul>	Contingency CP15 bigeye-focussed cruise departing Hawaii mid-July, in light of ongoing Covid19		CP16 bigeye-focussed cruise with increased electronic tagging	
Tag Seeding <ul style="list-style-type: none"> <li>▪ Deployment of seeding kits via regional observer programmes</li> </ul>	Suspension of observer programme causing disruption to seeding kit deployment	Ongoing deployment of tag seeding experiments		
<b>Tag Recovery</b>				
Support and development of tag recovery network <ul style="list-style-type: none"> <li>▪ Establishment of new TRO positions</li> <li>▪ Development of tools to increase tag recovery efficacy</li> </ul>	Initial integration of Tagdager and VMS data for targeted tag recovery effort using Maxitag  TRO positions subcontracted through MRAG	Continued Maxitag development  Exploration of tuna product flow using network analysis		
Implementation and revision of tag reward schemes	Development of new tag reward schemes for fleets collaborating in buoy-sharing	Further revision of tag reward schemes		
<b>Data management</b>				
Tagging data validation using VMS, logbook, and cannery data				
Maintain and develop PTTP databases and related tools	Preliminary work on update of PTTP to TUFMAN platform	Development of updated PTTP database		
<b>Data Analyses</b>				
Provide tagging data for inclusion in stock assessment		Provision of skipjack tagging data for stock assessment	Provision of yellowfin and bigeye tagging data for stock assessments	
Reduce uncertainty in WCPO stock assessments	Analysis of longline caught bigeye and yellowfin electronic tagging data for post-release mortality estimates	Skipjack tagging simulation for alternative mixing scenarios used in stock assessment and MSE		
Increase understanding of tuna-fishing gear interactions and interpretation of fisheries data	Analysis of acoustic tagging array trial experiment during CP14			

**Annex 4 Summarised PTTP activities and achievements for 2021 and indicative milestones and budget for 2022.**

2021 SCOPE OF WORK	ACHIEVEMENT	REFERENCE
Subject to the decision by the PTTP Advisory Committee meeting on 16 February 2021, support for the agreed tag-release cruise(s) for conventional and archival tagging and biological sampling in the western and central equatorial Pacific during 2021, targeting the agreed tropical tuna species	CP15 planned and implementation currently occurring.  Tagging Vessel Biological Sampling arrangements implemented  Scheduling for WP6 (originally 2021) and CP15 switched to maximise tagging opportunities in 2021 while Covid19 restrictions in place.	See Section 2.3 SC17-RP-PTTP-01  See section 3.1 SC17-RP-PTTP-02
Maintain and enhance as appropriate the tag recovery network and pay tag rewards including via cash or t-shirt	Tag Recovery network has been maintained and new tag recovery incentive schemes implemented to encourage tag recovery	See Section 3.3 SC17-RP-PTTP-01  See section 2.2 SC17-RP-PTTP-02
Conduct PTTP data verification with VMS and Logbook, and cannery data;	Tag Validation continued and new methods for validation developed including network analyses to quantify uncertainties.	See Section 3 SC17-RP-PTTP-01  See section 2.3 SC17-RP-PTTP-02
Continue consolidation of the PTTP Information System to the TUFMAN2 Platform	Migration of PTTP information systems to TUFMAN2 platform commenced to allow for web-based data entry and access by registered users	See section 3.3 SC17-RP-PTTP-02
Conduct data analyses on tag reporting and seeding, fishing and natural mortality, tagging mortality, movement and tag simulation	PTTP data included in analyses of natural mortality ( <i>Fisheries Research</i> ).  PTTP data included in evaluation of tag mixing assumptions ( <i>Journal of Applied Ecology</i> )  Tag reporting and seeding analyses updated	See section 3.4 SC17-RP-PTTP-01
Facilitate conduct of quarterly PTTP Cruise Planning Advisory Committee meetings in 2021	Three Advisory Committee meetings held	See Annex A SC17-RP-PTTP-01
Support for the development and implementation of a work plan for 2022 tagging activities as outlined in the 2020 PTTP report to SC16	2022 Workplan and awaiting SC17 approval	See SC17-RP-PTTP-01 See Section 3 SC17-RP-PTTP-02
Preparation of PTTP Steering Committee meeting in conjunction with SC17 and production of the PTTP Progress Report and the 2021 Steering Committee Report.	PTTP Steering Committee held electronically on 3 August 2021 <a href="https://meetings.wcpfc.int/meetings/sc17-2021">https://meetings.wcpfc.int/meetings/sc17-2021</a>	See SC17-RP-PTTP-01 See SC17-RP-PTTP-02
<b>OUTPUTS AND SCHEDULE</b>		
Undertake the agreed tagging cruise(s) aboard a chartered multipurpose fishing vessel	CP14 Completed and reported upon	See Section 2.3 SC17-RP-PTTP-01 See section 3.1 SC17-RP-PTTP-02
A PTTP progress report for 2021 with a PTTP work plan for 2022	<a href="https://meetings.wcpfc.int/node/12616">https://meetings.wcpfc.int/node/12616</a>	See SC17-RP-PTTP-01
Convene the 2021 PTTP Steering Committee meeting in conjunction with the SC17	<a href="https://meetings.wcpfc.int/meetings/sc17-2021">https://meetings.wcpfc.int/meetings/sc17-2021</a>	See SC17-RP-PTTP-02
Submission of a Steering Committee report to the WCPFC Secretariat	<a href="https://meetings.wcpfc.int/node/12617">https://meetings.wcpfc.int/node/12617</a>	See SC17-RP-PTTP-02

Submission of a final project report for 2021 PTTP to the WCPFC Secretariat	Due December 2021	
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2022 SCOPE OF WORK	Indicative WCPFC Budget (USD)	SPC Third Party* contributions (USD)
Administration Services, Project Management (including quarterly PTTP Cruise Planning Advisory Committee meetings)	134,000	50,000
Implement agreed tag-release cruise(s) for conventional and archival tagging and biological sampling in the western and central equatorial Pacific during 2022, targeting the agreed tropical tuna species	500,000	300,000
Deployment of seeding kits via regional observer programmes	12,000	
Support and development of tag recovery network	50,000	150,000
Develop tools to increase tag recovery efficacy	25,000	
Undertake tag recovery validation		60,000
Exploration of tuna product flow using network analysis to assist tag validation	50,000	
Implementation and revision of tag reward schemes	75,000	25,000
Maintain and develop PTTP databases and related tools	50,000	150,000
Prepare skipjack tagging data and related parameter estimates for stock assessment		100,000
Undertake skipjack tagging simulation for alternative mixing scenarios used in stock assessment and MSE		50,000

\*Third-party contributions include SPC programme funds provided by Australia and New Zealand and those of the European Union's Pacific-European-Union-Marine-Partnership project