WCPFC PACIFIC MARINE SPECIMEN BANK
STEERING COMMITTEE

ELECTRONIC MEETING
1st August 2023 (from 10:00-11:00 hours Pohnpei time (UTC+11 hours))

Report of the Pacific Marine Specimen Bank Steering Committee

WCPFC-SC19-2023/RP-P35b-02

15 August 2023

PMSB Steering Committee

1. PRELIMINARIES

The 5th meeting of the Pacific Marine Specimen Bank Steering Committee was held via video conference through Microsoft Teams at 10-11 am, Noumea time, on 1st August 2023, in preparation for the 19th Regular Session of the WCPFC Scientific Committee (SC19).

A list of meeting participants is provided in Annex 1 of this report.

Background

The WCPFC Pacific Marine Specimen Bank (hereafter, PMSB) is a repository of biological samples from marine specimens collected from across the WCPO, and its ongoing operation is now funded by WCPFC through Project 35b. WCPFC established its PMSB so that national and international fisheries research institutes could access the collections needed to advance our understanding of the dynamics of tuna and related species in the WCPFC region (including analyses to estimate spatially- and temporally-explicit age, growth and reproductive parameters, and to investigate stock structure, for consideration within future stock assessments). In a broader ecosystem context, the collections are also used for trophic analyses, including diet studies, measurement of stable isotopes, mercury and other biochemical elements for exploring trophic structure and movement, in addition to taxonomic studies. The dedicated website of the PMSB is accessible at: https://www.spc.int/ofp/PacificSpecimenBank.

The objective of Project 35b is to maintain the PMSB, with particular emphasis on WCPO bigeye, yellowfin, albacore and skipjack tunas and swordfish, and, to facilitate transmission of samples to specified researchers with due cognizance of the WCPFC PMSB Access Protocols. SPC as the Scientific Services Provider (SSP) is tasked with maintaining and developing the PMSB, and through the biological sampling programme, expanding the inventory of samples held.

In 2018, it was agreed to run the process of PMSB reporting in a similar manner to the PTTP (Project 42) at SC15, with a brief report of the PMSB Steering Committee presented to the SC Plenary by its chair (i.e. this report). This serves to expedite the work of the Scientific Committee whilst giving adequate time to discuss details of the PMSB activities during the Steering Committee meeting.

1.1: Review and adoption of agenda

The provisional agenda for the PMSB Steering Committee meeting was adopted and is provided in Annex 2.

2. PMSB PROGRESS REPORT

Prior to the PMSB Steering Committee meeting, a progress report to SC19 on PMSB activities during 2022-23 (SC19-RP-35b-01) was finalised, posted on the SC19 website at https://meetings.wcpfc.int/index.php/node/19406 and made available to meeting participants. A presentation summarising the progress report was given at the meeting and the presentation file is posted on the SC19 website at https://meetings.wcpfc.int/node/19951. Below we outline the key information presented to participants under Agenda item 2.

2.1: PMSB activities – Between 1 July 2022 and 30 June 2023, 44,286 new biological samples, taken from 9,052 fish, were added to PMSB holdings. The PMSB now houses 184,249 biological samples taken from 58,842 individual animal specimens.

2.2: Observer-based sampling – The increasing trend observed since 2019 is continuing. While the number of observer trips in 2023 is low, SPC and the Fisheries Authorities in countries have been working on the writing of LOAs to restart the biological sampling programme. Moreover, 13 PIRFO

trainers from 10 PICTs attended a trainer training course in Nouméa in March 2023, providing them the capacity to train and support new samplers across the region. The objective for 2023 is to maintain the increasing trend.

2.3: Port sampling – Since 2020-21, port sampling effort has been increased to compensate for the uncertainty around at-sea sample collection (Covid 19 restrictions). Since then, the number of fish sampled at port increased exponentially to reach 7,117 fish sampled in 2022 (about 60% increase compared to 2021).

2.4: Training – Over the past 12 months, 18 observers, port samplers and fisheries officers undertook training in biological sample collection, with a total of 745 samplers trained to date.

A series of 19 video tutorials documenting how to identify, extract and collect biological samples from tunas, mahi mahi, wahoo and billfish, are now online.

Biological sampling forms used at sea and at port and debriefing forms have been updated to include fields for genetic analyses. Instructions and procedures to collect biological samples have been updated and a revised biological sampling manual has been published entitled 'Biological Sampling Manual – Guide for samplers at sea and at port' (Sanchez et al. 2023). All revised material is also available on the PIRFO website.

Training for observers has been entirely revised and includes now 17 PowerPoint presentations with quizzes, scenarios, tutorials videos as well as informative videos and 9 practical sessions including up to date sampling techniques. An observer training course is now hosted on the Moodle platform allowing access to training material online and remotely. Assessment results are now automatically generated by the platform and curated online.

2.5: *OnShore* and *OLLO* apps – During 2022-23, the ER application *OnShore* was used by port samplers to collect data at landing sites. Also, during 2022-23, the ER application *OLLO* was used by longline fisheries observers to collect data during at sea missions. *OnShore* and *OLLO* allow the collection of data on species and length as well as details about the biological samples collected for each specimen sampled.

In 2023, data for 85% of the fish sampled at port were entered using OnShore. SPC will continue to generalise the use of biological sampling ER by developing a new application that allows data collection on fish sampled on purse seiners and during scientific cruises. The objective in the next few years is to have data for all biological samples collected entered through these applications.

2.6: PMSB access and outputs – Several informal enquiries were registered from university-based researchers around sample availability and access rights in the context of future collaborative projects.

At present, 28 projects are classified as 'pending' in accessing samples from the PMSB for WCPFC-related work, led by SPC and/or other national and international organisations. 32 projects using PMSB samples are 'completed' as at 30 June 2023.

Two additional papers, linked either directly or indirectly to the PMSB, will be submitted to SC19 this year as Information Papers or Research Papers. A total of five other books, peer-reviewed journal articles, conference papers or popular articles associated with PMSB work were published during the 2022-23 reporting period (see SC19-RP-35b-01 for details). Three additional research papers utilising PMSB samples have been either recently submitted or are in the final stages of preparation for submission to scientific journals (i.e. Anderson et al. In review; Andrews et al. Submitted; Dahl et al. In preparation).

2.7: Some 2022-2023 highlights

- Close-Kin Mark-Recapture (CKMR) project - CKMR uses modern genetic methods to identify pairs of close relatives (or kin) of the same species among large collections of tissue samples. When applied to fisheries, it can be embedded into a population dynamics model and used to

estimate important demographic parameters for stock assessments, such as absolute adult abundance, mortality rates, and connectivity. For south Pacific albacore, the inclusion of CKMR data has the potential to substantially improve the robustness of the stock assessment process. Tissue sampling for the south Pacific albacore CKMR project commenced in early February 2023 in Westport on New Zealand's South Island. The team, comprising SPC, CSIRO and NIWA staff tested different protocols and validated the best sampling process. They successfully sampled over 1200 fish using the Widget gene tagging tool developed by CSIRO. A further 1500 tissue samples were collected by NIWA staff in Westport and Greymouth over the following two weeks. The sampling protocols will now be applied more broadly across the south Pacific.

- Laboratory construction in SPC Nouméa - As mentioned previously, the laboratory infrastructure in Nouméa is under redevelopment, with funding support from Aotearoa New Zealand. The dry lab extension is completed and the wet lab construction will start in the next few months, with an expected completion date in early 2024.
  The redevelopment builds SPC's capacity as a cutting-edge research and training facility in the region for technical work in fisheries genetics and genomics, otolith ageing and microchemistry and histology. The labs are now fitted out with new instruments and equipment which will allow SPC scientists, and researchers, fisheries professionals and students from across the region to come together and learn new skills, undertake analyses in-house, and contribute to collaborative projects and inter-lab comparisons with outside agencies.

Steering Committee discussion on Agenda item 2

The Steering Committee asked about the reasons of the low number of observer trips conducted in 2023. SPC explained that SPC and the Fisheries Authorities in countries have been working since early 2023 on the re-initiation of the observer-based sampling across the Pacific. That involves the writing of LOAs (Samoa, Cooks, Tonga, Marshall Islands, etc) and the training of biological sampling trainers to provide the capacity to train and support new samplers.

The Steering Committee noted the interest in having more information on what analyses are carried out on the PMSB biological samples. SPC clarified that the use of the PMSB samples as well as the projects using these samples were described in the progress report to SC19 on PMSB activities (SC19-RP-35b-01). In addition, the search tool on the PMSB website can also provide a list of samples already analysed (and the type of analyss conducted).

3. WORK PLAN 2023-24

3.1 : General work plan

The PMSB work plan for the coming year was presented. Actions planned for 2023-24, continuing from previous years, include:

- Completion of a document on standard operating procedures for the PMSB.
- Provision of training to members interested in using *OnShore* and *OLLO* for biological sampling.
- Continue to update and improve training materials for biological sampling.
- Continue the development and enhancement of ER apps.
- Continue the development of a WCPO-wide sampler network for the collection of tuna genetics samples.
- Continue the development of our procedures to meet international standards.

- Development of the PMSB website to better highlight the use of the PMSB samples and associated outputs.

New actions planned for 2023-24 include:

- Construction of the wet laboratory extension in Nouméa.
- Establish guidelines for general use and maintenance of the redeveloped dry and wet laboratory facilities in Nouméa.
- Improve the coverage of the sample collections now that most Covid 19 restrictions are lifted.
- Integration of micronekton data into BioDaSys.
- Encourage the use of ER for biological sampling data collection.

4. ADMINISTRATIVE MATTERS

4.1: Budget – The annual cost of supporting the PMSB is USD 97,200 baselined in 2018, with an annual inflation adjustment agreed by the Commission in 2018 for out-years.

The Steering Committee was reminded that the approved budget for 2023 was USD 105,269 with indicative annual budgets for 2024 and 2025 are USD 107,374 and USD 109,522 respectively. This comprises 60% for PMSB coordination, information management and training for samplers, 23% for sampling fees and freight, and 17% for the additional storage facility in Brisbane.

The summary of the completion of activities (as per the WCPFC agreement with the SSP for Project 35b activities) and the summary of the milestones and budget for 2024 activities are provided as Annex 3 to this report.

4.2: Recommendations to SC19 – The PMSB Steering Committee endorsed the SC19 recommendations specified in SC19-RP-P35b-01:

- Continue to support initiatives to increase rates of observer biological sampling, noting that this contribution is essential to the ongoing success of the WCPFC's work.
- Incorporate the identified budget into the 2024 budget and the 2025-26 indicative budgets, as development of the WCPFC PMSB is intended to be ongoing, and is considered essential.
- Support efforts to obtain further super-cold storage capacity to ensure longevity of PMSB samples.
- Endorse that the work plan in Section 5 of this report should be pursued by the Scientific Services Provider, in addition to standard duties associated with maintenance and operation of the WCPFC PMSB in 2023-24.

5. ADOPTION OF REPORT

This draft report was sent to meeting participants 2 weeks prior to the 5th PMSB Steering Committee meeting. Comments were invited from registered participants up until 17:00 Pohnpei time (UTC 6:00) on 15 August 2023, following which a final endorsed version was posted on the SC19 website (i.e. this report). Please direct any comments and suggestions to Francois Roupsard (francoisr@spc.int) and Jed Macdonald (jedm@spc.int) at SPC.

Annex 1 – Registered participation list of the 2023 PMSB 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 Roupsard	Pacific Community
Giulia Anderson	Pacific Community
Graham Pilling	Pacific Community
Harold Vilia	MFMR
Jed Macdonald	Pacific Community
Jeff Muir	Pacific Community
Joanna Padua	SFFAII 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 2 – Adopted agenda of the 2023 PMSB Steering Committee.

WCPFC PACIFIC MARINE SPECIMEN BANK
STEERING COMMITTEE

ELECTRONIC MEETING
1st August 2023, from 10:00-11:00 hours Pohnpei time (UTC+11 hours)

AGENDA

WCPFC-SC19-2023/RP-P35b-02

1. PRELIMINARIES

1.1 Review and adoption of agenda

2. PMSB PROGRESS REPORT

2.1 PMSB Activities (WCPFC-SC19-2023/RP-P35b-01)
2.2 Observer-based sampling
2.3 Port sampling
2.4 Training
2.5 *OnShore* and *Ollo* apps
2.6 PMSB access and outputs
2.7 Some 2022-2023 highlights

3. WORK PLAN 2023-24

3.1 General work plan
3.2 Other initiatives

4. ADMINISTRATIVE MATTERS

4.1 Budget
4.2 Recommendations to SC19

5. ADOPTION OF REPORT

Annex 3 – Summarised PMSB activities and achievements for 2023 and indicative milestones and budget for 2024.

2023 SCOPE OF WORK	ACHIEVEMENT	REFERENCE
Maintain and develop: • the public SPC webpage; • a web-accessed database holding non-public data; • a relational database that catalogues the samples to include fishery/sampling metadata; and • the Brisbane (CSIRO) storage site.	See www.spc.int/ofp/PacificSpecimenBank ER systems for observers and port samplers upgraded to include biological sampling.	Section 2.3 and 2.4 SC19-RP-P35b-01
Tissue sample utilisation and a record of outcomes/outputs will also be detailed in the relational database	See www.spc.int/ofp/PacificSpecimenBank and section 3 in SC19-RP-P35b-01	SC19-RP-P35b-01
Subject to approval by the WCPFC Executive Director: • metadata will be made available to institutions or organizations responsible for providing scientific advice in fisheries through the web-accessible component of the database, and subsequently, and • SPC-OFP will facilitate the transmission of requested samples to specified researchers/organisations, and the return of unused and/or processed samples to the relevant storage facility.	See section 3.4 and Table 4 SC19-RP-P35b-01	SC19-RP-P35b-01
As agreed at SC17RP-P35b-03, the Scientific Services Provider will: • support initiatives to increase rates of observer biological sampling; • complete the Work Plan 2022-2023 in WCPFC-SC18-2021/RP-P35b-02.	New incentive structure proved to be efficient. New LOAs with Tonga, Fiji, Marshall Islands, etc. So, after a slow start in 2023, sampling at sea is expected to reach 2022 level. Port sampling increased and reached a record year. Workplan completed.	SC19-RP-P35b-01
OUTPUTS AND SCHEDULE		
2023 progress report to the WCPFC Secretariat.	https://meetings.wcpfc.int/index.php/node/19406	SC19-RP-P35b-01
Conduct of the 2023 WCPFC PMSB Steering Committee meeting.	https://meetings.wcpfc.int/node/19407	SC19-RP-P35b-02
Steering Committee meeting report, including 2024-26 WCPFC PMSB work plan.	https://meetings.wcpfc.int/node/19407	SC19-RP-P35b-02
Submission of a 2023 project final report to the WCPFC Secretariat by 31 December 2023.	Due December 2023	

2024 SCOPE OF WORK	Indicative WCPFC Budget (USD)	SPC Third Party* contributions (USD)	CSIRO Contributions (USD)
Tuna tissue bank coordination, information management and training for samplers	64,424	60,000	
Sampling fees and freight	24,696	60,000	
Storage	18,254		

*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