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PROJECT 35B: WCPFC PACIFIC MARINE SPECIMEN BANK

WCPFC-SC22-2026-RP-P35b01_Rev01
31 July 2026

Submitted by SPC-OFP[1]

Rev01:

- **Correction of the number of fish sampled during 2024 port sampling events (49,414 instead of 49,914), section 2.1.3 *Port sampling***

[1] Oceanic Fisheries Programme of the Pacific Community

EXECUTIVE SUMMARY

The WCPFC Pacific Marine Specimen Bank (hereafter PMSB) operations are supported by the WCPFC through Project 35b, as well as other donors. Under Project 35b, the Scientific Services Provider (SPC) is tasked with maintaining, developing and expanding the PMSB. This paper updates SC22 on Project 35b activities undertaken in 2025. A work plan and budget for 2026-2027, and indicative budgets for 2028 and 2029 are provided for this ongoing project. Key topics covered include:

Biological sampling and PMSB progress during the period 1 January 2025 to 12 December 2025

i. 79,821 new biological samples, taken from 57,081 fish, were added to PMSB holdings. SPC now houses 367,680 biological samples taken from 238,722 individual animal specimens.
ii. Training for observers, debriefers, and observer trainers continued. 144 staff undertook training in biological sample collection and biological sampling debriefing this year.
iii. Tagging cruises continue to be an important source of biological material. The 2025 Central Pacific cruise contributed 2,442 new biological samples.
iv. The biological sampling feature in the *OnShore* app is now being used in 16 Pacific Islands Countries and Territories (PICTs). The same biological sampling feature was developed in the *OLLO* app and is currently in use in 5 PICTs. Fibi, the new E-Reporting application, is currently being tested. Its purpose is to fill the data recording gaps when OnShore and Ollo cannot be used (tagging cruises, sampling on ships of opportunity and even for purse seine observers).

PMSB Access and Use during the period 1 January 2025 to 12 December 2025

In 2025, ten new projects, accessing samples from the PMSB, led by SPC and/or other national and international organisations, were initiated. Eight Information Papers or Research Papers linked to the PMSB were submitted to SC21 in 2025. Nine other books, peer-reviewed articles, conference papers or popular articles associated with PMSB work were published.

The following recommendations arise from this report. We invite SC22 to:

- Continue to support initiatives to increase rates of biological sampling, especially by fisheries observers at sea, noting that this contribution is essential to the ongoing success of the WCPFC's work.
- Incorporate the identified budget into the WCPFC 2027 budget and the 2028-29 indicative budgets, as development of the WCPFC PMSB is intended to be ongoing and is considered essential.
- Endorse that the work plan in Section 5 of this report be pursued by the Scientific Services Provider, in addition to standard duties associated with maintenance and operation of the WCPFC PMSB.

1. INTRODUCTION

The WCPFC Pacific Marine Specimen Bank (PMSB) is a repository of biological samples from marine specimens collected from across the western and central Pacific Ocean (WCPO). The PMSB is focussed primarily on samples from bigeye, yellowfin, albacore and skipjack tunas, but also houses biological material from other pelagic species (e.g. swordfish, mahi mahi). The PMSB also contains a broad diversity of marine samples from micronekton, seabirds, deep-water benthic and coastal fishes, among other taxa. The PMSB web portal is accessible at www.spc.int/ofp/PacificSpecimenBank.

The PMSB was officially established in 2015 (SPC-OFP 2017, 2019), though samples have been systematically collected since 2001. Through the PMSB's creation, the WCPFC aimed to provide research institutions access to the biological samples needed to advance our understanding of the dynamics of tunas and related species in the WCPFC region. The initiative has proved highly successful, the PMSB and its associated Biological Data System (BioDaSys) database fostering inter-agency collaboration and strengthening research capacity across the region, as evidenced through ongoing and productive research partnerships involving PMSB samples (see ANNEX 1, Table A3 for examples).

PMSB operations are currently funded by the WCPFC through Project 35b (supported by projects such as Project 42) and by multiple other donors (Pacific Community, New Zealand, Australia, France, GEF, GCF, European Union). Under this project, SPC, as the Scientific Services Provider, is tasked with maintaining and developing the PMSB and with expanding the bank of samples held through national and regional biological sampling programmes.

At SC21, the PMSB Steering Committee acknowledged that ongoing contributions to the PMSB was critical to the success of WCPFC's work, and recommended that financial support be continued to implement the work plan, as set out in the 2025 Report of the PMSB Steering Committee (PMSB Steering Committee 2025). SC21 endorsed the work plan, as well as the proposed budget.

Previous papers to the SC (SPC-OFP 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025) detail the history, developments and key objectives of Project 35b, as well as background on sample collection protocols, associated observer training standards, and the key features of the BioDaSys database. The present paper aims to update SC22 on Project 35b activities over 2025 (1 January 2025 to 12 December 2025), as they relate to the agreed work plan, and outlines planned actions for the next phase of work.

2. BIOLOGICAL SAMPLING AND PMSB PROGRESS (2025)

This section summarises progress between 1 January 2025 to 12 December 2025 on:

1) sampling activities, and PMSB holdings as at December 31, 2025;
2) training for biological sampling activities;
3) the current status of the PMSB equipment and sample storage facilities;
4) recent developments regarding the BioDaSys database.

2.1 SAMPLING ACTIVITIES AND PMSB HOLDINGS

2.1.1 Overview

In 2025, 79,821 new biological samples were collected from 57,081 fish (compared to 49,128 fish in 2024). The main species collected were, in decreasing order, albacore then yellowfin, skipjack and bigeye. Table 1 provides species-level breakdowns of the 2025 additions (Table 1a), together with total fish sample holdings as at 31 December 2025 (Table 1b). When all samples (e.g. seabirds, micronekton) are included, the PMSB now houses 367,680 biological samples taken from 238,722 individual animal specimens.

Table 1a. Additions of routine set of samples and fatmeter to the PMSB between 1 January 2025 and 31 December 2025. Note that the number of samples may sometimes exceed the number of specimens (e.g. muscle samples for albacore tuna), this occurs when multiple samples of the same tissue are taken from one specimen. Other sample types may also have been collected but are not included in this table (refer to Table 1b for more details).

Species	**No. of specimens**	**No. of samples**	**Hard parts**		**Reproduction**	**Multi-purpose**				**Diet**
			Otolith	Spine	Gonad	Blood	Muscle	Liver	Fin	Stomach
Albacore	28975	32177	422	75	765	459	29324	548	37	547
Yellowfin	18050	27123	1737	1172	2569	158	18301	1597	1	1588
Skipjack	5864	13715	1537	1408	1402	140	6064	1582	5	1577
Bigeye	3891	6021	396	240	278	36	4265	413	0	393
Unspecified	129	0	0	0	0	0	0	0	0	0
Wahoo	48	258	29	20	44	17	54	43	8	43
Swordfish	42	77	4	5	9	0	41	9	0	9
Mahi mahi	25	114	5	0	27	3	29	25	0	25
Kawakawa	14	92	14	11	25	0	14	14	0	14
Blue Marlin	12	97	9	9	18	9	20	18	1	13
Striped marlin	8	56	3	13	8	5	10	8	1	8
Short-billed spearfish	6	39	2	4	6	4	9	6	2	6
Black marlin	3	19	2	0	3	3	5	3	0	3
Fanfish	3	2	0	0	0	0	2	0	0	0
Moonfish	3	11	0	0	2	2	3	2	0	2
Crimson jobfish	2	4	2	0	0	0	2	0	0	0
Golden eye jobfish	2	4	2	0	0	0	2	0	0	0
Rainbow runner	2	9	1	0	2	0	2	2	0	2
Atlantic pomfresh	1	1	0	0	0	0	1	0	0	0
Goldbanded jobfish	1	2	1	0	0	0	1	0	0	0
Total	**57081**	**79821**	**4166**	**2957**	**5158**	**836**	**58149**	**4270**	**55**	**4230**

Table 1b. Samples available in the PMSB (from the beginning of the sampling progamme up to 31 December 2025).

Species	No. of specimens	No. of samples	Hard parts		Reproduction	Multi-purpose				Diet	Other sample *
			Otolith	Spine	Gonad	Blood	Muscle	Liver	Fin	Stomach	
Albacore	80229	63617	6694	3777	8257	564	39416	2639	125	2099	46
Yellowfin	66117	121041	15198	9837	21069	484	49199	13814	263	10969	208
Skipjack	27503	94773	14060	12879	13598	252	22905	16447	496	13032	1104
Bigeye	14198	33114	6928	2631	5613	160	11185	3723	116	2615	143
Mahi mahi	720	1591	201	28	182	15	597	363	0	204	1
Wahoo	552	1462	181	56	178	19	429	393	8	185	13
Rainbow runner	426	799	24	1	59	0	308	304	0	90	13
Swordfish	241	431	26	21	53	9	114	113	24	59	12
Striped marlin	192	492	30	43	75	34	141	115	3	41	10
Other#	48544	50360	1057	150	3478	74	2241	1043	985	263	41069
Total	**238722**	**367680**	**44399**	**29423**	**52562**	**1611**	**126535**	**38954**	**2020**	**29557**	**42619**

 # Other species includes: 153 species from 60 different families (Acanthuridae, Alepisauridae, Alopiidae, Anoplogastridae, Apogonidae, Balistidae, Berycidae, Blenniidae, Bramidae, Carangidae, Carcharhinidae, Caristiidae, Chiasmodontidae, Dactylopteridae, Dalatiidae, Dasyatidae, Diodontidae, Echeneidae, Emmelichthyidae, Engraulidae, Ephippidae, Exocoetidae, Fistulariidae, Fregatidae, Gempylidae, Holocentridae, Istiophoridae, Kyphosidae, Lamnidae, Lampridae, Lethrinidae, Lobotidae, Lophotidae, Lutjanidae, Malacanthidae, Mobulidae, Molidae, Monacanthidae, Myliobatidae, Nemichthyidae, Nomeidae, Octopodidae, Ommastrephidae, Ostraciidae, Paralepididae, Pomacentridae, Procellariidae, Pseudocarchariidae, Scombridae, Scombrolabracidae, Scopelarchidae, Serranidae, Sphyraenidae, Sphyrnidae, Sulidae, Syngnathidae, Tetraodontidae, Trachipteridae, Trichiuridae) as well as forage/micronekton and zooplankton samples

*** Other samples includes**: Blood red cells, Beak, Blood plasma, Brain, Bird regurgitate, Eye, Feather, Gill, Gut lining, Guano, Heart, Stomach prey juice, Jaw, Kidney, Stomach muco-juice, Stomach mucus, Stomach mixed content, Otolith asteriscus, Otolith lapillus, Prey community, Pleopod, Skeleton, Skin, Vertebra, Whole community, Whole specimen, Whole community partial, Whole specimen partial

2.1.2 Observer-based sampling

Annual figures on the total number of fish sampled by observers, of the number of observer trips on which biological sampling occurred, and of changes in mean sampling rate per trip compiled over the past ten years, are shown in Figure 1.

Since 2023, significant efforts were made by the SPC and the Fisheries Authorities in countries to revitalize the biological sampling programme by Fisheries observers. In particular, the development of new Letters of Agreement (LOAs) with national agencies and a strong focus on capacity building have already contributed to tangible improvements. It is important to note that sampling by observers at sea allows access to species that are subsequently discarded and that are not therefore disembarked and cannot be sampled at port. Observers also have access to freshly-caught specimens and can hence access samples that cannot be collected from fish preserved on ice or frozen such as blood.

The objective for 2025 was to maintain the increasing trend in biological sample collections and exceed 2024 collection levels. This objective was successfully achieved, with the number of fish sampled approximately tripling compared with 2024. Efforts will continue in 2026 and 2027 to further increase sample collection by observers at sea.

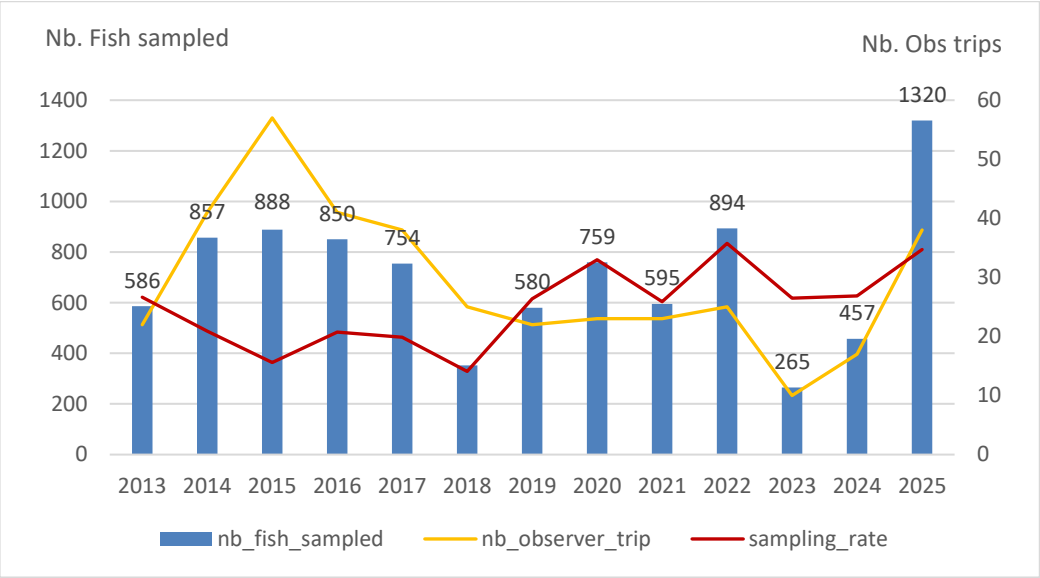

Figure 1. Total number of fish sampled by **observers** (blue histogram and numbers above), the number of observer trips during which biological samples were collected (orange line), and the mean sampling rate per trip (i.e. mean number of fish sampled/trip) (red line) calculated annually between 2013 and 2025. Note that the number of observer trips and sampling rate relate to the secondary y-axis.

2.1.3 Port sampling

Data on the number of port sampling events and samples collected are provided in Figure 2. As mentioned in previous Scientific Committee reports, SPC's plan was to increase efforts on biological sampling at port to compensate for the uncertainty around at-sea sample collection, particularly in the COVID-context and to support the growing demand for samples from the Close-Kin Mark-Recapture project. As a result of these efforts, the number of fish sampled increased substantially over recent years, reaching 49,414 specimens in 2024. In 2025, sampling teams across the region further improved on this result, collecting samples from 54,606 fish. These achievements were possible thanks to our partnerships with NIWA, MRAG Asia Pacific Pty, Soltuna Cannery in the Solomon Islands, DR Fishing Ltd in Papua New Guinea, SOCSKARGEN Federation of Fisheries and Allied Industry Inc. / Bureau of Fisheries and Aquatic Resources (SFFAII/BFAR) in the Philippines, Westport Seafood in the USA and Territory Seafood in Canada.

Note that the increasing sampling rate (i.e. mean number of fish sampled per event) and increasing number of fish sampled since 2022, is mostly due to the implementation of the CKMR sampling procedure (SC21-SA-WP-09). Indeed, for this project, only a muscle biopsy is required. That allows the sampling of many fish in a short time.

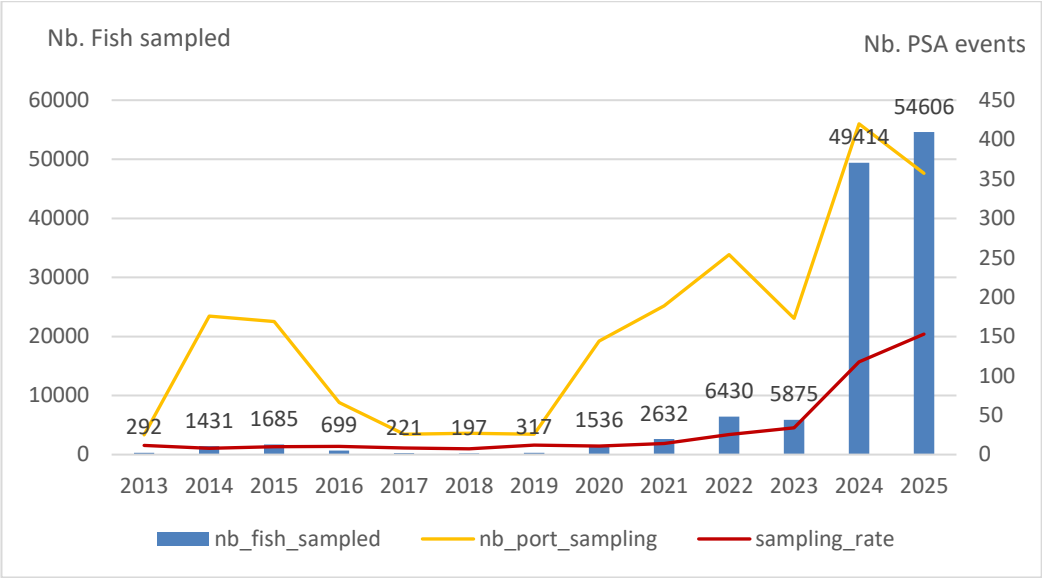

Figure 2. Total number of fish sampled by **port samplers** (blue histogram and numbers above), the number of port sampling events (PSA) during which biological samples were collected (orange line), and the mean sampling rate per event (i.e. mean number fish sampled/event) (red line) calculated annually between 2013 and 2025. Note that the number of port sampling events and sampling rate relate to the secondary y-axis.

2.1.4 Tagging cruises

Tagging cruises continue to be an important source of biological samples for PMSB holdings, contributing 49,854 samples to date. As at December 31, 2025, a total of 14,714 fish have been sampled during various SPC-led cruises, from which 14,599 samples (29% of samples collected) have been analysed (ANNEX 1, Table A1). For the PMSB as a whole, SPC's tuna tagging cruises conducted through the Pacific Tuna Tagging Programme (PTTP) (see WCPFC-SC22-2026-RP-PTTP01 for the latest update on the PTTP progress under WCPFC Project 42) have supplied about 10% of the total fish specimens sampled and 5.6% of the total samples collected, with 27% of the analyses conducted for biological or ecological applications to date making use of tagging cruise-related samples.

This contribution of biological samples adds considerable value to the tagging cruises. For example, the 2025 Central Pacific cruise (CP17) added 2,442 new biological samples to the PMSB (collected on 301 fish). 2,236 of these samples were taken from tunas (265 individuals), incorporating a range of sample types (e.g. muscle, gonad, liver, otolith, stomach, dorsal spines) that have various downstream scientific applications (ANNEX 1, Table A1).

During CP17, five special projects were conducted in addition to standard PMSB biological sampling.

- 63 yellowfin tuna (54-145cm FL) were sampled for a total of 189 samples for P120 project (YFT reproductive biology).
- 50 bigeye tuna (30-110cm FL) were sampled for a total of 300 muscles collected for a "Tissues-specific Epigenetic Calibration" project.
- 18 fish (6 bigeye tuna, 6 yellowfin tuna and 6 skipjack) were sampled for a total of 54 samples for a "Genetic Material Quality Comparison Collect" project.
- 94 fish (26 skipjack, 30 bigeye tuna, 29 yellowfin tuna, and 7 billfishes) were sampled for a total of 213 samples for a "Mercury and Selenium Monitoring" project.
- 4 fish (3 marlins and 1 dolphinfish) were sampled for a "Stomach subsampling" project.

2.2 TRAINING OBSERVERS, DEBRIEFERS, TRAINERS AND OTHER SAMPLERS

In 2025, 97 observers, port samplers, fisheries officers and fishermen undertook training in biological sample collection. Training courses were run in Papua New Guinea, Solomon Islands, Republic of the Marshall Islands, Federated States of Micronesia and New Caledonia. In addition, 31 debriefers from Papua New Guinea were updated on debriefing procedures for biological sampling and 8 debriefers (Republic of the Marshall Islands, New Caledonia, Papua New Guinea, Tonga) were mentored remotely in debriefing observers for biological sampling. To deliver these training in the region, in addition to SPC staff, 8 trainers were mentored and supervised remotely or on site.

PIRFO biological sampling training material for observers is now hosted on Moodle and each country has a platform that they administer. Training materials were updated and new scenarios for biological sampling data collection using E-Reporting applications Onshore and OLLO were added to the training material. Updated biological sampling form and sampling instructions, quizzes and assessments have been translated in French.

A manual for collecting biological samples by the crew onboard New Caledonian longline vessels was developed and training certificate are now delivered to the crew.

2.3 SAMPLE STORAGE INFRASTRUCTURE AND EQUIPMENT

The PMSB is curated at SPC Headquarters in Nouméa, New Caledonia, at CSIRO in Brisbane and in Hobart, Australia (Portal et al. 2020).

Collectively, the PMSB and associated laboratories are equipped with:

- For taxonomy and general biology: 1 microscope, 4 stereomicroscopes, 2 Leica camera for stereomicroscope 1 X-ray machine and associated computer for fish examination, 2 fume hoods to manipulate solvents, 1 chemical cabinet, 1 high-precision scale, 2 low-precision weighing scales, 1 photographic system, 2 fatmeters, 1 freeze-dryer, 1 label printer with QR code generator + QR code scanner, 1 graphic tablet, 1 micropipette 5 mL (all in Nouméa)
- For sclerochronology: 2 low-speed, diamond-blade cutting saw to section otoliths; 1 fume hood to manipulate solvents; 1 high-precision micro-balance weighing scale; 1 MicroMill, 1 compound and 1 dissecting microscope fitted with a camera for interpreting otolith sections and image analyses, 1 low-speed grinder-polisher for otolith preparation (all in Nouméa)
- For genetics: 1 fume hood to manipulate solvents; 1 autoclave, 1 centrifuge, 1 fluorometer, 1 spectrophotometer, 1 gel documentation system, 1 ultrapure water system, 2 thermal cycler, 1 Automated microfluidic capillary electrophoresis separation system, 2 Liquid Handling Robots for DNA extraction and Sequencing Library Preparations; 1 MinION Hi-throughput Sequencing Platform for short and long read sequencing; 1 Drying Oven / Incubator; 1 Flake Ice Maker; two -30°C Laboratory Freezers; 4 Adjustable electronic multichannel pipettes; 1 Thermal Block Mixer, 1 Illumina Sequencer MiSeq, 1 Centrifuge Vortex for PCR Plate (all in Nouméa)
- For sample storage:
    - 4 solvent cabinets (2 in Nouméa, 2 in Hobart);
    - 5 dry cabinets for otolith storage (4 in Nouméa and 1 in Hobart);
    - 2 compactus storage for collection specimens in ethanol and otoliths, dorsal spines and gonads slides samples storage (both in Nouméa):
    - 2 dry cabinets to store gonads in paraffin and gonads and otoliths mounted on slides (1 in Nouméa, 1 in Hobart);
    - 1 dry cabinet to store dorsal spines (1 in Hobart);
    - 2 ultra-cold -80°C freezers to guarantee long-term quality of samples for genetic analyses (~1m^3 in Nouméa);
    - ~125m^3 of -20°C cold-storage facilities at SPC and CSIRO (103m^3 in Nouméa, 2m^3 in Hobart, 20m^3 in Brisbane); and

- numerous short-term/staging -20°C storage facilities in the key ports of the WCPO (ANNEX 1, Table A2).

2.4 DEVELOPMENTS IN BioDaSys

2.4.1 Overview and access

A central feature of the PMSB repository is BioDaSys – a relational database that catalogues samples and their associated metadata, and records when changes in sample status occur, thus ensuring traceability of the work conducted. The key features of the database are reported in SPC-OFP (2019), including information and rules around access via the standalone web portal (www.spc.int/ofp/PacificSpecimenBank).

The website, which incorporates searching tools and interactive maps, is publicly accessible, including to WCPFC members and scientists, providing an interface for the BioDaSys database (see Fig. 7 in SPC-OFP 2019 for an example).

In agreement with WCPFC data access rules, certain information on each sample is unavailable to researchers outside of SPC-OFP, and they must apply for a login (directly from SPC) to gain access. Even with a login, only those data fields necessary for designing research projects are accessible to authenticated users. Moreover, any specific requests for samples still require approval via the access protocol outlined in Section 3.1 (below) and detailed in SPC-OFP 2019.

2.4.2 Electronic Reporting (ER) links to BioDaSys

The ER applications *OnShore* and *OLLO* are respectively used by port samplers to collect data at landing sites and by longline fisheries observers to collect data during at-sea missions. Data collected were initially limited to fish species, length and weight, but as of 2019, new features added to both *OnShore* and *OLLO* now allow users to record data about the biological samples collected for each specimen sampled.

Sixteen countries are currently using *OnShore* or *OLLO* on a regular basis for species/length data collection, fourteen are using the biological sampling feature in *OnShore*, five in *OLLO* (Table 2). Note that *OnShore* was also used in the United States of America and in Canada by SPC teams collecting biological samples for the Close-Kin Mark Recapture project.

To facilitate the data management and improve data quality control, SPC is increasingly encouraging the collection of biological sampling data through ER (Figure 3). In 2025, 99% of the fish sampled by port-samplers were entered using *OnShore* and 40% of the fish sampled by observers at sea on longline vessels were entered using *Ollo.* SPC continue to generalise the use of biological sampling ER. The objective in the next few years is to have data for all biological samples that are collected entered through these applications.

A new ER application is currently being tested: *Fibi*. This tool has been designed to fully respond to the standard of biological sampling data that is used within the Pacific Marine Specimen Bank data systems. Its purpose is to fill the gaps when *OnShore* and *Ollo* cannot be used, such as tagging cruises, sampling on ships of opportunity and even for purse seine observers. So far, data for more than 5800 samples were collected using *Fibi* including during the CP17 tagging cruise conducted in 2025.

Finally, a biological sampling debriefing report was developed in Tufman 2 (T2) to facilitate the extraction of biological sampling data, and Standard Operating Procedures were established for the electronic debriefing of biological sampling activities at sea and at port.

Table 2. *OnShore* and *OLLO* E-reporting applications usage per country

Country	Use *OnShore*?	Use the biological sampling feature in *OnShore*?	Use *OLLO*?	Use the biological sampling feature in *OLLO*?
American Samoa	Yes	Yes	No	No
Cook Islands	Yes	Yes	Yes	Yes
Fiji	Yes	Yes	Yes	Yes
Fed. States of Micronesia	Yes	Yes	No	No
Kiribati	Yes	Yes	No	No
Marshall Islands	Yes	Yes	No	No
New Caledonia	Yes	Yes	Yes	Yes
New Zealand	Yes	Yes	No	No
French Polynesia	Yes	Yes	Yes	Yes
Papua New Guinea	Yes	Yes	Yes	No
Philippines	Yes	Yes	No	No
Palau	Yes	No	No	No
Solomon Islands	Yes	Yes	Yes	No
Tonga	Yes	Yes	Yes	Yes
Vanuatu	Yes	No	No	No
Samoa	Yes	Yes	Yes	No

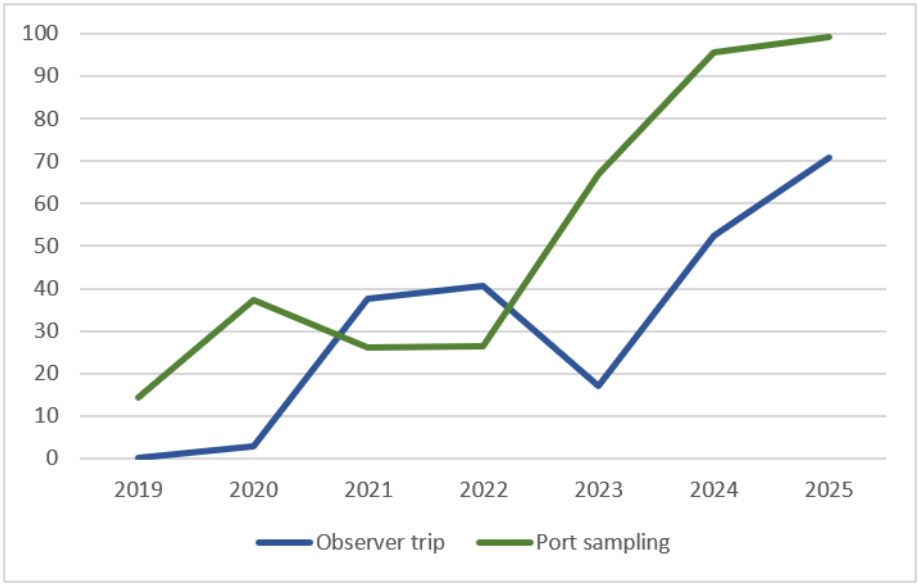

Figure 3. Percentage of data entry through *Onshore* for port sampling (green line) and *OLLO* for observer at sea on longliners (blue line).

3. PMSB ACCESS AND USE

3.1 ACCESS PROTOCOLS

A protocol for accessing the PMSB for laboratory and data analyses by third party organisations was endorsed by the Commission in 2016 (Anon. 2016, SPC-OFP 2019).

A page dedicated to sample requests has been created to clarify the workflow and provide more details to future applicants, details of which are available here: https://www.spc.int/ofp/PacificSpecimenBank/Home/RequestSamples.

3.2 USE OF PMSB AND PMSB SAMPLES

In 2025, 10 new projects, accessing samples from the PMSB for WCPFC-related work, led by SPC and/or other national and international organisations, were initiated (Table 3). Altogether, in addition to the new 2025 projects, 82 projects utilising PMSB samples are either 'completed' or 'pending' (i.e. work in progress) (ANNEX 1, Table A3).

Table 3. New projects accessing the PMSB in 2025.

Leading organization	Project	Project category	WCPFC project
SPC - Noumea	Stomach subsampling for better preservation	Protocol development	
SPC - Noumea	Epigenetic calibration for different muscle tissues_v2	Age and growth	
SPC - Noumea	Improving spatial representation in tuna genomes	Taxonomy / species description, Genetics	
CSIRO - Hobart	Skipjack sex marker assay	Validation of sex genetic sex assay	
SPC - Noumea	Nascent methods for tuna aging	Age and growth	P100c
SPC - Noumea	PARTICUL	Ecosystem monitoring	
Woods Hole Oceanographic Institution	Expansion of Bramidae Mitogenome Resources	Ecosystem monitoring / Taxonomy	
CSIRO - Hobart	Kawakawa sex marker assay	Validation of sex genetic sex assay	
CSIRO - Hobart	CKMR contamination	Protocol development / Stock structure	
Woods Hole Oceanographic Institution	Mesopelagic fish population genomics	Population structure and connectivity	

Historically, SPC conducted numerous stomach content analyses for dietary studies, focusing particularly on morphological taxonomy, alongside age and growth research based on otolith examination. More recently, morphological taxonomy has also been used to identify micronekton samples (tuna prey) collected during research voyages. While these two types of analysis still account for approximately a quarter of all analyses, the expansion of genetic and genomic projects has made genetics the primary use of biological samples collected through the PMSB (Figure 4). This shift is expected to continue, driven by the implementation of Close-Kin Mark-Recapture, the launch of other genetics projects and the development of SPC's new genetics laboratory.

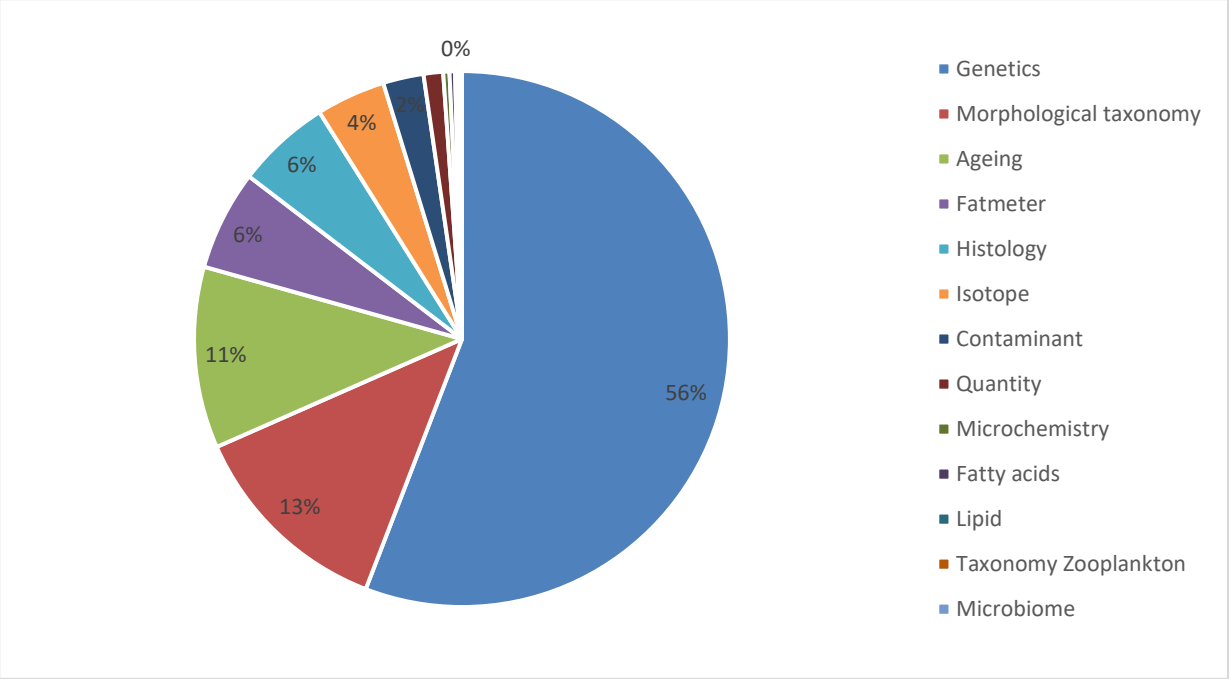

Figure 4. Distribution of samples sent for analysis, by analysis type (from the beginning of the sampling progamme up to 31 December 2025).

3.3 ACCESS AND BENEFIT-SHARING COMPLIANCE FOR GENETIC RESEARCH

The Nagoya Protocol, or equivalent national legislation, typically governs access to biological material intended for genetic analysis, requiring prior authorization. Given the increasing use of PMSB samples in genetic and genomic research, a due diligence exercise was undertaken to ensure that the PMSB activities remain consistent with national expectations regarding access to genetic resources and associated data.

In 2025, all Pacific Island Countries and Territories National Focal Points identified under the Nagoya Protocol, as well as relevant authorities in non-Party jurisdictions, were contacted and informed of the PMSB activities. The information provided described the collection, storage, distribution and scientific use of biological samples held by the PMSB, including their potential use in genetic analyses and research projects.

This outreach was conducted as part of a due diligence approach. In the context of access and benefit-sharing (ABS), due diligence refers to taking reasonable steps to identify and comply with applicable national requirements relating to genetic resources and to ensure that competent authorities are informed of relevant activities. The objective was not to seek project-by-project approval but rather to provide transparency regarding the PMSB operations and to allow countries and territories the opportunity to raise concerns, request additional information or specify any national requirements that should be considered.

Responses were received from Australia and the United States of America requesting additional information, which was subsequently provided. No country or territory expressed objections to the PMSB activities or requested modifications to current practices. This exercise provided a documented basis demonstrating that reasonable efforts have been made to ensure transparency and compliance with applicable access and benefit-sharing principles.

3.4 OUTPUTS ASSOCIATED WITH THE PMSB

Eight papers, linked either directly or indirectly to the PMSB, were submitted to SC21 in 2025 as Information Papers or Research Papers, on CKMR project (SC21-SA-WP-09, SC21-SA-WP-10, SC21-SA-WP-14), development of biological sampling plans for tuna and billfish (SC21-SA-WP-15), stock connectivity scoping study (SC21-SA-WP-13), yellowfin tuna reproductive biology (SC21-SA-IP-10), sampling during tagging voyages (SC21-RP-PTTP-01) and the paper on the PMSB (SC21-RP-P35b-01). A total of nine other books, peer-reviewed journal articles, conference papers or popular articles associated with PMSB work were published in 2025. These are Chang et al. (2025), Farley and al. (2025), Médieu and al. (2025), Peter Soni (2025), Roupsard and al. (2025), Smith et al. (2025), Widdrington and al. (2025a; 2025b) and Zhou et al. (2025); complete references are provided in section 9 of the present report.

4. SOME HIGHLIGHTS OF 2025

4.1 Reproductive biology of WCPO yellowfin tuna – WCPFC project P120

Reproductive parameters for yellowfin tuna (*Thunnus albacares*) in the Western and Central Pacific Ocean (WCPO) are a critical input for stock assessment models, yet the most recent WCPO-wide estimates dated back nearly 30 years. Addressing this long-standing gap required a sustained, large-scale sampling effort that would not have been possible without the infrastructure and coordination capacity of the PMSB.

Between 2005 and 2025, the PMSB coordinated the collection of gonad tissue samples across 21 EEZs, representing one of the most geographically and temporally extensive reproductive biology datasets ever assembled for this species in the WCPO. This achievement reflects two decades of sustained investment in at-sea and at port sampling, sampler training, infrastructure development, and cross-EEZ logistical coordination.

The entire logistics around the production and management of histological slides were handled through BioDaSys, the PMSB's central database platform, ensuring traceability and standardisation across samples collected over two decades and across the region. The histological slides and their interpretations are now permanently hosted within the PMSB, representing a valuable long-term resource for future reproductive biology investigations in the WCPO.

The results of this study will be presented in an information paper during SC22 (WCPFC-SC22-2026-SA-IP17). These include updated length at maturity ogives at both the WCPO-wide and sub-regional levels, analyses of spawning seasonality, age at maturity estimates, and a methodological comparison of frozen and formalin tissue preservation for histology.

4.2 CKMR project – WCPFC Project P100d

Project 100d, applying Close-Kin Mark Recapture to South Pacific albacore, continues to progress on track towards the goal of producing an initial abundance estimate in time for SC23. The sampling design produced in 2024 estimated the study would require a sample size of 30,000-84,000 samples from 2024-2026, preferably evenly distributed between juveniles and adults, and across longitudes and years. Over 70,000 samples have been collected as of 1st June 2026. The total number of samples exceeds the expected number to achieve 84,000 samples by December 2026, assuming sampling continues at a consistent rate. However, the samples are disproportionally collected in western EEZs, and with greater numbers of adults than juveniles. This will ultimately increase the coefficient of variation (akin to widening the confidence interval) in the abundance estimate provided to SC23, even if the goal number of samples is achieved. Sampling teams from ports in under-sampled EEZs have already been alerted to the need to increase sampling efforts for the remainder of 2026, and plans for additional support are established where appropriate.

Of the collected samples, over 24.000 have been processed and analysed for the presence of kin pairs. Four parent-offspring pairs and 27 half-sibling pairs have been identified.

Additional activities are also on target, although without significant outputs expected in 2026. The population structure analysis has expanded with a set of samples from the Eastern Pacific, as recommended by SC21 and provided by Shangai Ocean University. The analysis will be ready for and incorporated into the CKMR models to be reported to SC23. There is no significant update on epigenetic aging of albacore tuna but multiple projects are already addressing the related difficulties experienced by Project 100c. An alternative aging option will hopefully be available in time to be useful in this CKMR analysis.

It should be noted that the abundance estimate provided to SC23 will be reported independently and in parallel to the 2027 albacore stock assessment. Full model integration will take additional time and collaboration, assuming the CKMR assessment of albacore is continued.

For a more complete description of activities conducted under Project 100d, please refer to the report presented during SC22 (WCPFC-SC22-2026-SA-WP11).

5. PMSB WORK PLAN

Actions planned for 2026-2007 include:

- Noting the increasing and evolving role of the PMSB within the Commission's work, start the development of a PMSB business case to review challenges and opportunities, and to analyse costs, benefits and risks for presentation to the PMSB steering committee and SC23 in 2027.
- Investigate methods to modernise/digitalise the PMSB (e.g. usage of QR codes to identify samples)
- Investigate and implement options to increase storage capacity in Nouméa.
- Development of the PMSB website to better highlight the use of the PMSB samples and associated outputs.
- Continue to update and improve training materials for biological sampling.
- Continue the development and enhancement of electronic recording ER apps and associated trainings.
- Continue the development of a WCPO-wide sampler network for the collection of tuna genetics samples.
- Continue the development of our Quality Management System to meet international standards.

6. BUDGET

The annual cost of supporting the WCPFC PMSB is USD 97,200 baselined in 2018, with an annual inflation adjustment agreed by the Commission in 2018 for outyears. The approved WCPFC budget for 2026 was USD 111,711 and the proposed WCPFC budget for 2027 is USD 113,945. The indicative WCPFC annual budgets for 2028 and 2029 are presented in Table 4. 60% of the budget is allocated to the PMSB coordination, information management and training for samplers, 23% to sampling fees and freight, and 17% to the additional storage facility in Brisbane.

Table 4. WCPFC Pacific Marine Specimen Bank budget for 2026–2029

	Budget approved	Budget proposed	Indicative future budgets

Year	2026	2027	2028	2029
Amount (USD)	111,711	113,945	116,224	118,549

7. RECOMMENDATIONS

The following recommendations arise from this report on the activities of the PMSB. We invite SC22 to:

- Continue to support initiatives to increase rates of biological sampling, especially by fisheries observers at sea, noting that this contribution is essential to the ongoing success of the WCPFC's work.
- Incorporate the identified budget into the WCPFC 2027 budget and the 2028-29 indicative budgets, as development of the WCPFC PMSB is intended to be ongoing and is considered essential.
- 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.

8. ACKNOWLEDGEMENTS

Generative AI tools [Microsoft Copilot] were used to assist with editing some text in this document. All analytical choices, interpretations, and conclusions are those of the authors, who reviewed and verified all AI-assisted output. The methodology and the scientific conclusions are the responsibility of the authors.

The PMSB is funded by WCPFC through Project 35b with additional support provided by the Pacific Community, New Zealand, Australia, France, GEF, GCF and the European Union. Support is also provided through the provision of storage facilities and coordination services by the agencies identified in this report.

The PMSB is reliant on the observers, port samplers, debriefers, observer trainers and observer managers across the region. Support is also received from fishing companies across the region, and from research institutes for providing access to fish and support for observer-based biological sampling.

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9. REFERENCES

Chang, C.-T., Madigan, D.J., Carlisle, A.B., Wallsgrove, N., Nakamura, I., Nyegaard, M., Allain, V., Drazen, J.C., Chiang, W.-C. and Popp, B.N. 2025. Integrating isoscapes and amino acid δ15N analyses to reveal migration patterns and habitat use of molids in the western Pacific Ocean. Progress in Oceanography, 235: 103492. https://doi.org/10.1016/j.pocean.2025.103492

Farley, J.H., Eveson, J.P., Krusic-Golub, K., Clear, N.P., Sanchez, C. and Nicol, S.J. 2025. Jesstimation: A novel approach for estimating more accurate fish ages from otolith zone counts and measurements. Fisheries Research, 288: 107463. https://doi.org/10.1016/j.fishres.2025.107463

Médieu, A., Point, D., Allain, V., Bodin, N., Lemire, M., Ayotte, P., Dhurmeea, Z., Waeles, M., Laffont, L., Le Gohalen, A., Roupsard, F. and Lorrain, A. 2025. Species-specific mercury speciation in billfishes and its implications for food safety monitoring and dietary advice. Environment International, 195: 109252. https://doi.org/10.1016/j.envint.2025.109252

Peter, S. 2025. Proximate factors of “Mushy Tuna Syndrome” in skipjack tuna and an amelioration plan for South Pacific fishers and processors. MSc Thesis, University of Queensland, Brisbane, Australia. https://doi.org/10.14264/f729b1b

Roupsard, F., Gardner, B. and Bell, L. 2025. Grid-based sampling strategy to strengthen biological samples collection on purse-seine vessels in the WCPO. SPC Fisheries Newsletter, 177: 29–32.

Smith, L.M., Williams, S.M., Lopes da Silva Ferrette, B., Holmes, B.J., Kadagi, N.I., Lu, C.-P., Ortega-Garcia, S., Pepperell, J.G., Tibbetts, I.R., Wambiji, N., Wambua, S. and Dudgeon, C.L. 2025. Global analyses of sailfish (Istiophorus platypterus) using next-generation sequencing reveal multiple populations. ICES Journal of Marine Science, 82(12): fsaf232. https://doi.org/10.1093/icesjms/fsaf232

SPC-OFP 2017. Project 35: Bigeye biology, and Project 35b: WCPFC tuna tissue bank. WCPFC-SC13 2017/RP-P35-01 presented to the Thirteenth Regular Session of the Scientific Committee of the Western and Central Pacific Fisheries Commission, Rarotonga, Cook Islands, 9-17 August 2017.

SPC-OFP 2018. Project 35b: WCPFC Tuna Tissue Bank. WCPFC-SC14-2018/RP-P35b-01 presented to the Fourteenth Regular Session of the Scientific Committee of the Western and Central Pacific Fisheries Commission, Busan, Republic of Korea, 8-16 August 2018.

SPC-OFP 2019. Project 35b: WCPFC Tuna Tissue Bank. WCPFC-SC15-2019/RP-P35b-01 Rev. 1 presented to the Fifteenth Regular Session of the Scientific Committee of the Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia, 12-20 August 2019.

SPC-OFP 2020. Project 35b: WCPFC Tuna Tissue Bank. WCPFC-SC16-2020/RP-P35b-01 presented to the Sixteenth Regular Session of the Scientific Committee of the Western and Central Pacific Fisheries Commission, online meeting, 11-20 August 2020.

SPC-OFP 2021. Project 35b: WCPFC Tuna Tissue Bank. WCPFC-SC17-2021/RP-P35b-01 presented to the Seventeenth Regular Session of the Scientific Committee of the Western and Central Pacific Fisheries Commission, online meeting, 11-19 August 2021.

SPC-OFP 2022. Project 35b: WCPFC Pacific Marine Specimen Bank. WCPFC-SC18-2022/RP-P35b-01 presented to the Eighteenth Regular Session of the Scientific Committee of the Western and Central Pacific Fisheries Commission, online meeting, 10-18 August 2022.

SPC-OFP 2023. Project 35b: WCPFC Pacific Marine Specimen Bank. WCPFC-SC19-2023/RP-P35b-01 presented to the Nineteenth Regular Session of the Scientific Committee of the Western and Central Pacific Fisheries Commission, online meeting, 16-24 August 2023.

SPC-OFP 2024. Project 35b: WCPFC Pacific Marine Specimen Bank. WCPFC-SC20-2024/RP-P35b-01 presented to the Twentieth Regular Session of the Scientific Committee of the Western and Central Pacific Fisheries Commission, online meeting, 14-21 August 2024.

SPC-OFP 2025. Project 35b: WCPFC Pacific Marine Specimen Bank. WCPFC-SC21-2025/RP-P35b-01 presented to the Twenty first Regular Session of the Scientific Committee of the Western and Central Pacific Fisheries Commission, 13-21 August 2024.

Widdrington, J.B., Reis-Santos, P., Macdonald, J.I., Moore, B.R., Nicol, S.J., Morrongiello, J.R. and Gillanders, B.M. 2025. Local- and regional-scale climate variability drives complex patterns of growth synchrony and asynchrony in deep-sea snappers across the Indo-Pacific. Global Change Biology, 31: e70051. https://doi.org/10.1111/gcb.70051

Widdrington, J.B., Reis-Santos, P., Macdonald, J.I., Nicol, S.J. and Gillanders, B.M. 2025. Otolith-derived chemical chronologies reveal distinct patterns in physiology and environmental life histories of deep-sea snappers. Marine Environmental Research, 212: 107493. https://doi.org/10.1016/j.marenvres.2025.107493

Zhou, Y., Trujillo-González, A., Nicol, S. et al. 2025. Impact of degradation and time of sampling on gut microbiome composition in wild-caught marine fish. Scientific Reports, 15: 28947. https://doi.org/10.1038/s41598-025-14683-9

ANNEX 1.

Table A1. Total number of samples collected from scientific tagging cruises and analysed to 31 December 2025.

Predator species		Fish collected	Samples collected	Blood	Gonad	Liver	Muscle	Otolith	Spine/fin	Stomach	Samples analysed	% analysed
ALB	ALBACORE	404	1801	0	269	276	277	259	188	245	1121	60%
BET	BIGEYE	2431	9303	106	921	1211	3451	1033	723	1186	1541	16%
BLT	BULLET TUNA	3	9	0	0	2	3	0	1	3	0	0%
BSH	BLUE SHARK	1	1	0	0	0	1	0	0	0	0	0%
BUM	BLUE MARLIN	49	269	11	45	54	62	8	24	43	3	1%
CFW	POMPANO DOLPHINFISH	9	37	0	8	9	10	0	1	9	1	3%
CNT	OCEAN TRIGGERFISH (SPOTTED)	2	9	0	2	2	2	1	0	2	0	0%
DOL	MAHI MAHI / DOLPHINFISH	209	790	0	126	193	209	36	17	208	47	6%
EBS	Brilliant pomfret	2	10	0	2	2	2	0	2	2	0	0%
FAL	SILKY SHARK	87	105	0	0	4	14	0	83	4	4	4%
FRI	FRIGATE TUNA	131	462	0	36	131	131	28	4	131	96	21%
GBA	GREAT BARRACUDA	1	4	0	1	1	1	0	0	1	0	0%
KAW	KAWAKAWA	166	466	0	30	127	127	26	0	155	118	25%
LAG	MOONFISH / OPAH	2	10	0	1	2	2	1	2	2	0	0%
LEC	ESCOLAR	7	41	0	7	7	8	5	7	7	0	0%
MLS	STRIPED MARLIN	10	45	0	7	8	12	2	8	8	0	0%
MSD	MACKEREL SCAD / SABA	5	15	0	0	5	5	0	0	5	5	33%
NXI	GIANT TREVALLY	1	1	0	0	0	0	0	0	1	1	100%
OCS	OCEANIC WHITE-TIP SHARK	38	42	0	1	0	3	0	38	0	0	0%
PLS	PELAGIC STING-RAY	1	3	0	0	1	1	0	0	1	1	33%
RRU	RAINBOW RUNNER	216	736	0	59	209	215	24	1	215	125	17%
SKJ	SKIPJACK	5923	19332	19	1044	3536	4759	1161	926	3574	6716	35%
SSP	SHORT-BILLED SPEARFISH	6	31	1	5	6	8	1	3	6	0	0%
SWO	SWORDFISH	6	15	0	1	4	4	0	0	6	21	81%
TST	SICKLE POMFRET	2	13	0	2	2	3	2	2	2	0	0%
WAH	WAHOO	100	468	0	82	99	106	69	12	100	6	1%
YFT	YELLOWFIN	3843	14773	77	1199	2854	3626	988	681	2930	4779	32%
YTL	AMBERJACK	1	3	0	0	1	1	0	0	1	1	33%
OTH	Other	1059	1060	0	0	0	349	4	2	13	13	1%
Total		14715	49854	214	3848	8746	13392	3648	2725	8860	14599	29%

¤ Fatmeter is a measurement of percentage of fat not a type of sample. Fatmeter is included in the table but not counted as a sample

Table A2. Locations and cold-storage capacity in key ports for the PMSB.

Port	Country	Freezer Capacity	Comments
Aiwo	Nauru	0.15 m^3 (-18°C)	Fisheries and Marine Resources Authority
Apia	Samoa	0.5 m^3 (-18°C)	Min. Agriculture and Fisheries
Brisbane	Australia	0.3 m^3 (-18°C)	MRAG
General Santos	Philippines	0.5 m^3 (-18°C)	SOCSKSARGEN Federation of Fishing and Allied Industries, Inc
		15 m^3 Blast Freezer (-30°C)	Well-Delight Network Corporation
Honiara	Solomon Islands	0.7 m^3 (-18°C)	Min. Fisheries and Marine Resources
Honolulu	USA	4 m^3 (-18°C)	Chill Space (commercial storage)
Kavieng	Papua New Guinea	0.7 m^3 (-18°C)	National Fisheries College
Koror	Palau	0.1 m^3 (-18°C)	Natural Resources, Environment, Tourism
Lae	Papua New Guinea	0.36 m^3 (-18°C)	National Fisheries Authority
		0.5 m3 (-18°C)	Frabelle Ltd
Madang	Papua New Guinea	0.5 m^3 (-18°C)	RDF Cannery
Majuro	Marshall Islands	0.7 m^3 (-18°C)	Marshall Islands Marine Resources Authority
		15 m^3 Blast Freezer (-30°C)	Marshall Islands Fishing Venture
		15 m^3 Blast Freezer (-30°C)	Pan Pacific Foods cold storage
Noro	Solomon Islands	15 m^3 Blast freezer (-30°C)	Soltuna Cannery
		0.3 m^3 (-18°C)	NFD
Pago Pago	American Samoa	TBD	Starkist
Papeete	French Polynesia	0.7 m^3 (-18°C)	Resources marine et minières
Pohnpei	FSM	0.7 m^3 (-18°C)	National Oceanic Resources Management Authority
Port Moresby	Papua New Guinea	0.36 m^3 (-18°C)	National Fisheries Authority
Port Villa	Vanuatu	0.2 m^3 (-18°C)	Min. Agriculture, Livestock, Forestry, Fisheries Biosecurity
Rabaul	Papua New Guinea	0.3 m^3 (-18°C)	National Fisheries Authority
Suva	Fiji	0.7 m^3 (-18°C)	Min. Fisheries and Forests
Tarawa	Kiribati	15 m^3 Blast Freezer (-30°C)	Kiribati Fish Limited
Wewak	Papua New Guinea	0.7 m^3 (-18°C)	National Fisheries Authority
Yaizu	Japan	15 m^3 (-18°C)	National Research Institute of Far Seas Fisheries, Shimizu

Table A3. Projects that accessed PMSB samples up to 31 December 2025.

Leading organization	Project	Project category	Project framework

SPC - Noumea	Metabarcoding on tuna stomach contents	Taxonomy / other	Project
SPC - Noumea	Reproductive biology of WCPO yellowfin tuna	Age and growth / Reproductive biology	WCPFC 120
IRD Brest	Food safety and mercury toxicity	Food safety and tuna flesh characterisation	Project
SPC - Noumea	Morphological description of Bathysaurus mollis larva	Taxonomy / species description	Project
SPC - Noumea	14C SKJ age validation	Age and growth	WCPFC 98
SPC - Noumea	14C SWO age validation	Age and growth	WCPFC 98
SPC - Noumea	Genetic sampling protocol extension - biopsy punch field test	Protocol development	Project
SPC - Noumea	Simon Nicol_Close Kin Mark Recapture	Stock structure	Project
SPC - Noumea	Clearing and staining reference collection	Ecosystem monitoring / Taxonomy	Project
IRD	Role of larval dispersion	Age and growth, Movement, Taxonomy / species description	PhD
IRD	Micronekton biochemical tracers	Ecosystem monitoring, Food safety, Trophic Ecology	Postdoc
CSIRO - Hobart	ALB sex marker	Protocol development	Project
SPC - Noumea	YFT population genetic structure 2019 re-analysis	Stock structure	Project
SPC - Noumea	Albacore connectivity NC-PF	Stock structure	Project
SPC - Noumea	Tuna Microbiome	Trophic ecology	Project
Oregon State University	Genetic structure of Pacific ALB	Stock structure	MSc
Oregon State University	ALB stock structure and sex-specific distribution patterns	Stock structure	Project
Nanyang Technological University, Singapore	Status and Future of Fisheries from the Indo-Pacific Region	Stock structure	PhD
Michigan State University	Genomic and AI tools for identifying tuna species	Species identification	Project
IRD Brest	Global mercury YFT-BET	Food safety, Trophic Ecology	PhD
IRD	Rescue - Stranded marine mammals study	Trophic ecology	Project
CSIRO - Hobart	Resequencing	Stock structure	Project
CSIRO - Hobart	BET and YFT epigenetic age estimation	Epigenetic age calibration	Project
CSIRO - Crawley	DWS epigenetic	Epigenetic age calibration	Project
University of Queensland	Population structure of sailfish in the Indo-Pacific	Stock structure	PhD
University of Adelaïde	Indo-Pacific deepwater snapper	Movement	PhD
SPC - Noumea	14C YFT and BET age validation	Age and growth	WCPFC 98
SPC - NOUMEA	Testing the panmixia hypothesis in WCPO SKJ	Stock structure	Project
SPC - Noumea	CKMR albacore feasibility assessment	Protocol development	Project
SPC - Noumea	Genetic sampling protocol extension	Protocol development	Project

NOAA Honolulu	Cryptic Etelis Discrimination using FT-NIRS	Taxonomy / species description	Project
IRD	MERTOX: Unravelling the origin of methylmercury toxin in marine ecosystems	Food safety and tuna flesh characterisation	Project
CSIRO - Hobart	Striped marlin ageing/maturity project	Age and growth/Reproductive biology	WCPFC 99
University of Victoria	Diet diversity of the human predator	Trophic dynamics	Project
University of Queensland	Mushy Tuna Syndrome	Food safety and tuna flesh characterisation	PhD
University of Hawaii	Trophic dynamics of ocean sunfish	Trophic ecology	PhD
University of Bergen	Maurolicus phylogeography	Taxonomy	Project
SPC - Noumea	Genetic cross-contamination quantification and sampling protocol development	Protocol development	Project
IRD	OMEGA	Trophic dynamics/Food safety and tuna flesh characterisation	
Texas A&M University Galveston	PBT movement dynamics	Movement	Project
Oregon State University	ALB population genomic variation	Stock structure	PhD
University of Queensland	GENOJAWS	Stock structure	
SPC - Noumea	DNA/microbiome	Movement	Project
CSIRO - Hobart	Yellowfin growth curve	Age and growth	WCPFC 82
CSIRO - Hobart	Bigeye/yellowfin ageing comparison	Age and growth	Project
Thunen Institute of Fisheries Ecology	MARINEFOOD	Food safety	Project
CSIRO - Hobart	WCPO tuna stock structure	Stock structure	Project
USP Fiji	WCPO tuna stock structure and movement	Stock structure	
University of Queensland	Black marlin	Stock structure	Project
SPC - Noumea	Biopelagos	Ecosystem monitoring	
CSIRO - Hobart	Bigeye growth curve	Age and growth	WCPFC 35, 81
CSIRO - Hobart	Bigeye maturity ogives	Reproductive biology	WCPFC 35
CSIRO - Hobart	Swordfish growth curve	Age and growth	WCPFC 71
SPC - Noumea	Deepwater snapper project	Age and growth/Reproductive biology/Movement	Project
University of Bologna	Global tropical tuna stock structure	Stock structure	
SPC - Noumea	Ecosystem effects of fishing	Trophic dynamics	WCPFC 37-46
SPC - Noumea	FAD and Tuna behaviour	Trophic dynamics	WCPFC 37
Rhodes University-IsoEnvironmental	Size-based Food Web-Brian Hunt	Trophic dynamics	
University of Melbourne	South Pacific Albacore movement	Movement	Project

SPC - Noumea	Albacore	Stock structure	Project
CSIRO - Hobart	Albacore reproductive biology	Reproductive biology	WCPFC 39
CSIRO - Hobart	Albacore growth curve	Age and growth	WCPFC 39
SPC - Noumea	Tuna Diet	Trophic ecology	Project
SPC - Noumea	Pelagic ecosystem monitoring	Ecosystem monitoring	Project
CSIRO - Hobart	Blue & Mako Shark genetics	Stock structure	Project
CSIRO - Hobart	Omega-3 Project, CSIRO Food Futures Flagship	Food Safety and tuna flesh characterisation	Project
University of Washington	Selenium and mercury in yellowfin and bigeye tuna	Food safety	Project
CSIRO - Hobart	Indonesia-West Pacific tropical tuna stock structure	Stock structure	Project
SPC - Noumea	GEF-OFMP / PFRP tuna trophic & movement	Movement	Project
SPC - Noumea	Tuna condition with fatmeter	Trophic ecology	Project
SPC - Noumea	Procfish	Age and growth	Project
SPC - Noumea	SCTB 13	Age and growth	Project
SPC - Noumea	STRAMP	Age and growth	Project
SPC - Noumea	Ecopath	Trophic dynamics	Project
Oregon State University	Genetic Structure of Pacific Albacore	Stock structure	MSc
National Research Institute of Far Seas Fisheries	C14 analysis of WCPO-BET otoliths	Age and growth	WCPFC 98
Macquarie University	Blue Marlin trophic and spatial ecology	Stock structure	Project
IRD	VACOPA project	Movement/Food safety and tuna flesh characterisation	Project
IRD	Myctophidae	Taxonomy	Project
IRD	TIPTOP	Trophic dynamics/Food safety and tuna flesh characterisation	Project
CSIRO - Hobart	Albacore growth curve - extension project	Age and growth	WCPFC 100b
CSIRO - Hobart	Stock structure of tropical tunas in the Indo-Pacific	Stock structure	Project