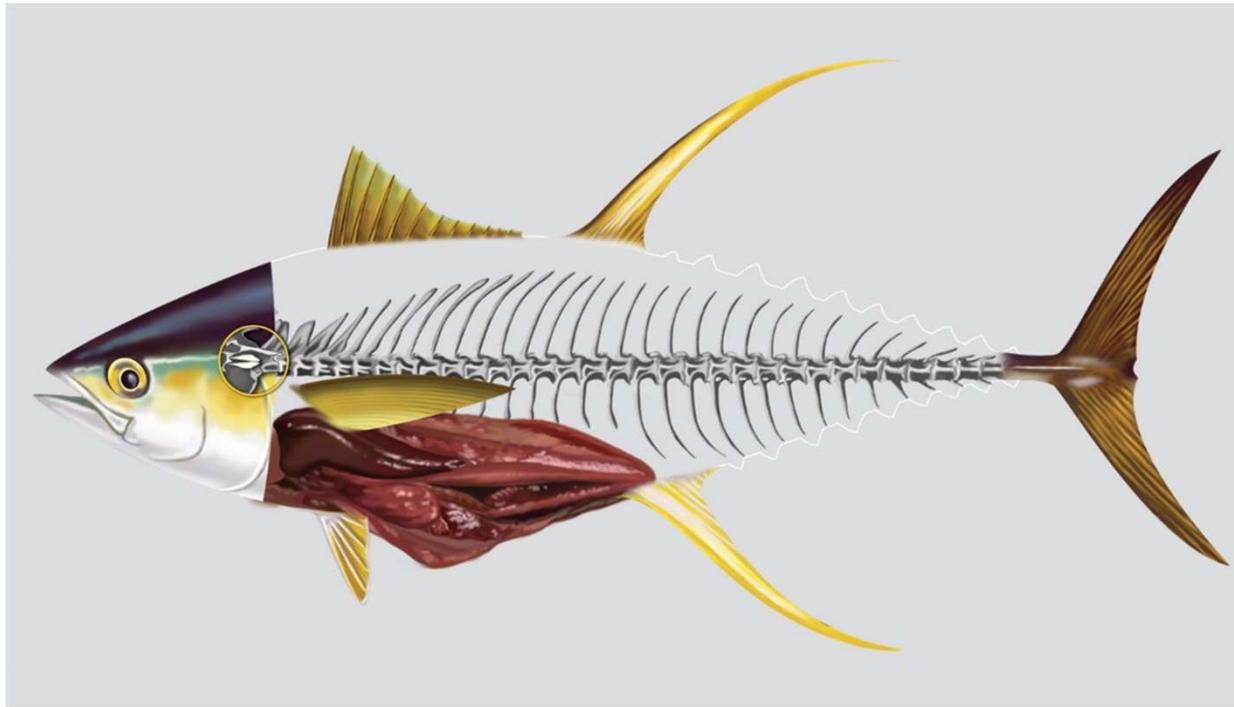


Pacific Marine Specimen Bank Steering Committee



Electronic meeting
1st August 2024

Oceanic Fisheries
Programme, SPC
Nouméa, New Caledonia



1. Agenda

Agenda

1. PRELIMINARIES

1.1 Review and adoption of agenda

2. PMSB PROGRESS REPORT

2.1 PMSB Activities (WCPFC-SC20-2024/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 2023-2024 highlights

3. WORK PLAN 2024-25

3.1 General work plan

3.2 Other initiatives

4. ADMINISTRATIVE MATTERS

4.1 Budget

4.2 Recommendations to SC20

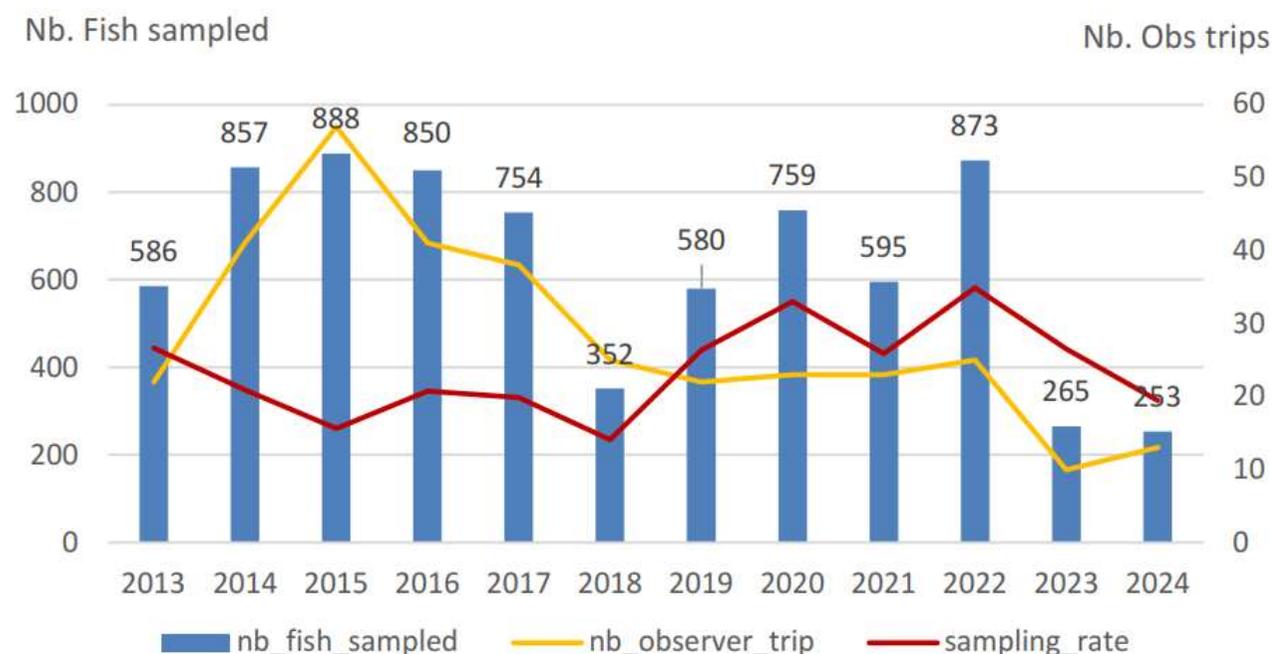
5. ADOPTION OF REPORT

2. PMSB progress report

2.1. PMSB activities (2023-24)

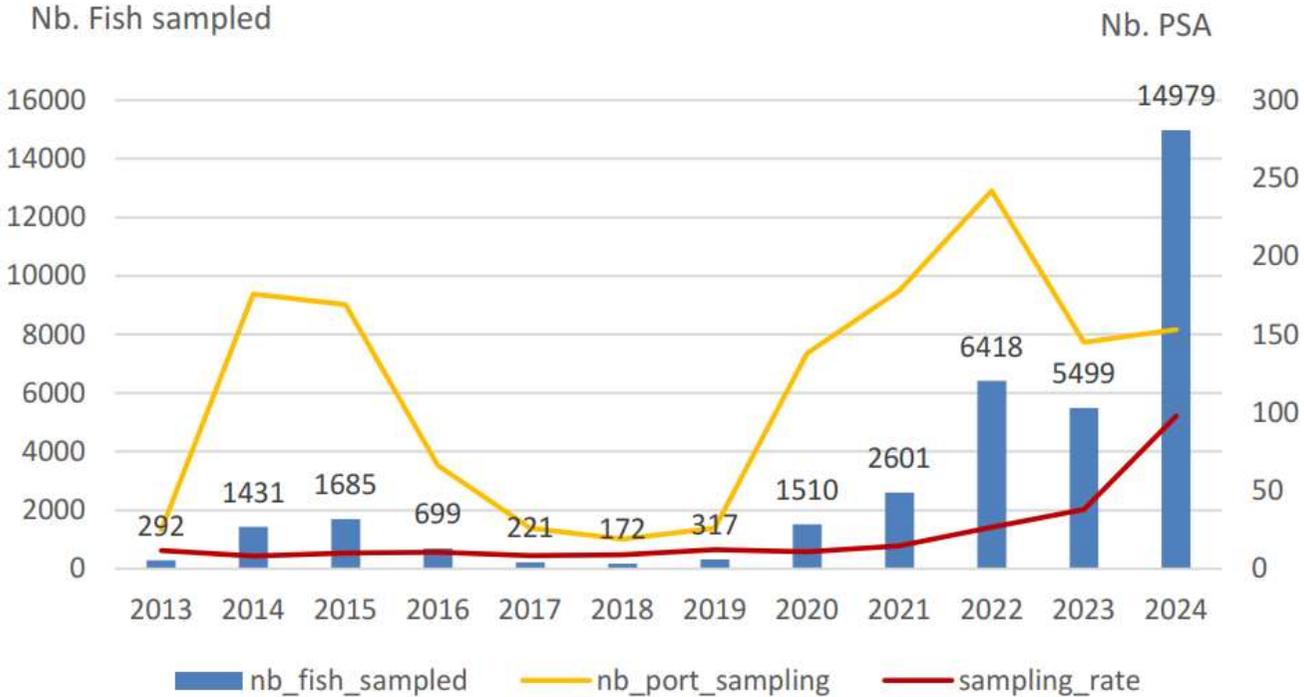
- ❖ ~48,000 biological samples collected from ~16,700 fish in 2023-24 (8% increase compared to 2022-23).
- ❖ ~273,100 biological samples (in total) in the repository, taken from ~101,000 individual animal specimens.

2.2. Observer-based sampling



- ❖ Effort in 2023 to restart bio sampling.
- ❖ In early 2024, already the same number as 2023.

2.3. Port sampling

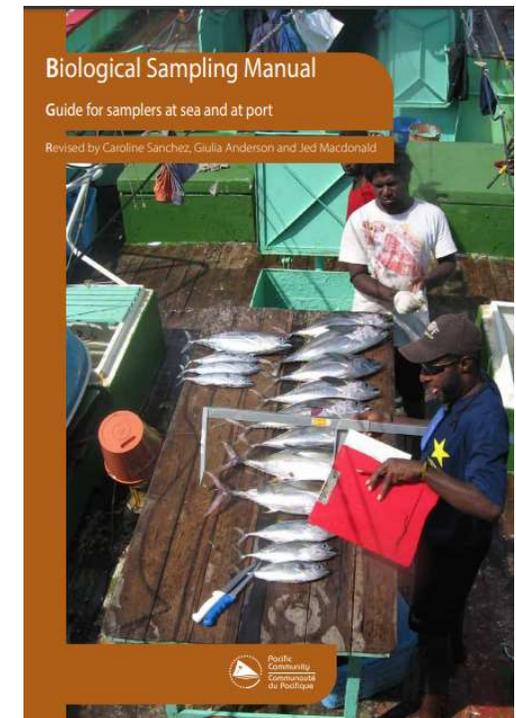


❖ Partnerships allowed to increase number of samples

❖ Implementation of CKMR project in 2024 boosted the number of samples

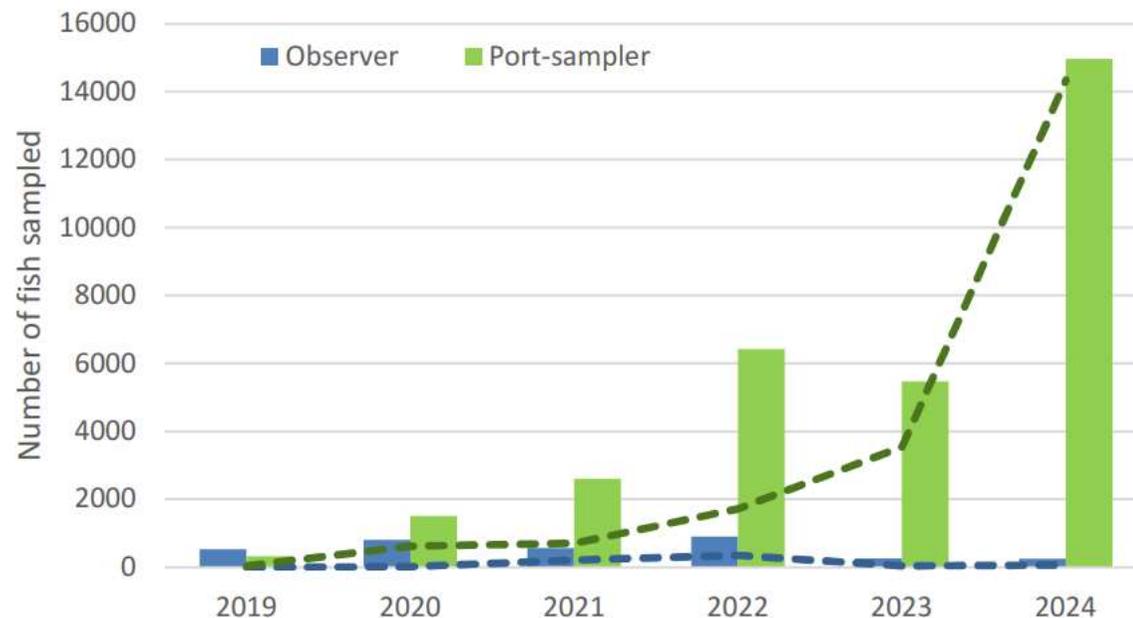
2.4. Training

- Training courses conducted in three countries.
- 55 people were trained in biological sampling.
- Observer training course hosted on the moodle platform, accessible online.



2.5. Electronic Reporting (ER)

- ❖ *OnShore* and *OLLO* are currently in use in 14 countries.



2.6. PMSB access and outputs

- ❖ 42 PMSB-related projects are ‘ongoing’, 34 ‘completed’.
- ❖ 9 PMSB-related articles were published in 2023-24.

Tunas show us that we need to do more to reduce mercury pollution
Anais Médieu^{1*}, Anne Lorrain¹, David Point¹ and Valérie Allain¹

Our study shows that since 1971, mercury concentrations in tunas have been stable worldwide, suggesting that massive reductions in mercury emissions are needed to meet human health objectives.

Whether it is wild as sushi, or comes to steak or fillet form in a tin, tuna is one of the most widely eaten marine fish in the world (FAO 2022). Yet, it is known to contain methylmercury, the most toxic chemical form of mercury. Methylmercury can cause neurodevelopmental disorders in fetuses during pregnancy and in children, and cardiovascular risks in adults (Pardoll et al. 2007; Grandjean et al. 2017). Environmental policy under the United Nations Minamata Convention aims to protect human health by reducing mercury emissions from human activities. However, while such policies have led to an overall reduction in atmospheric mercury, the impact on methylmercury levels in the oceans and in marine fish. This paper provides the longest time series of tuna mercury concentrations ever compiled at a global scale, and shows that these concentrations have remained stable since 1971, even in the northeast Pacific, where they increased significantly in the late 1990s (Médieu et al. 2024). The stability is thought to be linked to the

stability is thought to be linked to oceanic inertia and the accumulation of mercury released over even centuries ago, which continues to flow in oceanic waters where tunas live in.

This study is part of the French National I-MERCOX project¹, which revealed mercury in tuna between regions, and different biogeochemical processes and different depths (Houlland et al. 2019; Lorrain et al. 2022–2023) by crucial in the context of mercury (Hg) in the fish consumed by the French Institute of Research for the help of the Pacific Community and assisted by access to several controlled nearly 5000 mercury or other tuna species in the Pacific from 1971 to 2022 (Fig. 1).² expected tuna species yellowfin (giant tuna (*Thunnus albaculus*)), skipjack (*Katsuwonus pelamis*), the most commonly consumed (FAO 2022).

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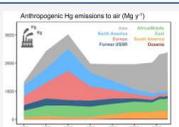
ENVIRONMENTAL Science & Technology LETTERS

Stable Tuna Mercury Concentrations since 19th Century and the Need for Strong Emission Reductions under the Minamata Convention

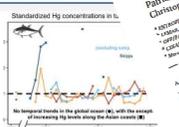
Anais Médieu^{1*}, David Point, Jeroen E. Sonke, Hélène Angot, Valérie Allain, Douglas H. Adams, Anders Bignert, David G. Streets, Pearse B. Rochford, Lars-Eric Hembinger-Bowditch, Heidi Pechybridge, David P. Gilkin, I. Takaaki Itai, Pao Bustamante, Zahrah Dharmea, Bridget E. Ferris, I. Jérémie Habaque, Anouk Verheyden, Jean-Marie Munaron, Laure Laif and Anne Lorrain

ACCESS! Metrics & More Article Recommendations

Antropogenic Hg emissions to air (Mg yr⁻¹)



Standardized Hg concentration in fish



ABSTRACT: Humans are exposed to toxic methylmercury mainly by consuming marine fish. While reducing its emissions aims to protect human health, it is unclear how this affects methylmercury concentrations in seawater and in marine biota. We compiled existing and newly acquired mercury concentrations in tropical tunas from the global ocean to explore mercury variability between 1971 and 2023. We show the direct interannual variability of tuna mercury concentrations.

ARTICLE INFO

Keywords: Mercury, Tuna, Ocean, Environment, Health, Policy, Minamata Convention, Mercury Emissions, Mercury Concentrations, Mercury Speciation, Mercury Cycling, Mercury Bioaccumulation, Mercury Toxicity, Mercury Remediation, Mercury Monitoring, Mercury Assessment, Mercury Management, Mercury Mitigation, Mercury Reduction, Mercury Elimination, Mercury Control, Mercury Regulation, Mercury Legislation, Mercury Enforcement, Mercury Compliance, Mercury Reporting, Mercury Transparency, Mercury Accountability, Mercury Governance, Mercury Leadership, Mercury Innovation, Mercury Collaboration, Mercury Partnership, Mercury Cooperation, Mercury Coordination, Mercury Harmonization, Mercury Alignment, Mercury Integration, Mercury Inclusion, Mercury Empowerment, Mercury Enablement, Mercury Activation, Mercury Enhancement, Mercury Amplification, Mercury Acceleration, Mercury Aggravation, Mercury Exacerbation, Mercury Escalation, Mercury Aggravation, Mercury Exacerbation, Mercury Escalation.

<https://www.spc.int/ofp/PacificSpecimenBank>

2.7. Some 2023-24 highlights

- ❖ Development of a **Quality Management System** to ensure high quality of samples and data in the context of higher level of activity of the PMSB : procedures and standards to comply with ISO9001 standard started early 2024

- ❖ **Genetics laboratory:** Hi-throughput and automated instrumentation allowing the analyses of hundreds of samples
 - Analyses of Tuna Stomach samples for prey identification
 - Quality control of DNA samples; species identification and sex identification



3. Work plan 2024-2025

3.1. General work plan

Actions planned for 2024-25, continuing from previous years, include:

- Completion of a document on standard operating procedures for the PMSB.
- 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 of the PMSB.
- Development of the PMSB website to better highlight the use of the PMSB samples and associated outputs.
- Completion of the construction of the wet laboratory extension and renovation of the taxonomy laboratory in Nouméa.

3.1. General work plan

New actions planned for 2024-25 include:

- Transfer of BioDaSys to a web-based technology
- Quality Management System implementation based on ISO9001 standard.
- Improve the reporting of PMSB activities through PMSB website.
- Encourage the use of ER for biological sampling data collection.

3.2. Other initiatives

Nothing to report under this item

4. Administrative matters

4.1. Budget

- ❖ Annual cost of supporting the PMSB is USD 97,200 baselined in 2018, with an annual inflation adjustment agreed by the Commission.
- ❖ Proposed budget for 2024: USD 107,373
- ❖ Indicative budgets for 2025 and 2026: USD 109,520 and USD 111,711, respectively.

4.2. Recommendations to SC20:

The following recommendations arise from this report. We invite SC20 to:

- 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 2025 budget and the 2026-27 indicative budgets, as development of the WCPFC PMSB is intended to be ongoing and is considered essential.
- Endorse change for Project 35b to report on the 12 months of the civil year (Jan-Dec) preceding SC instead of reporting on the 12 months before SC (July-June) which would allow the provision of better quality data in the SC report.
- Endorse that the work plan in Section 4 of this report be pursued by the Scientific Services Provider, in addition to standard duties associated with maintenance and operation of the WCPFC PMSB in 2024-25.

5. Adoption of report