

INTER-AMERICAN TROPICAL TUNA COMMISSION

SCIENTIFIC ADVISORY COMMITTEE

17TH MEETING

La Jolla, California (USA)

8-12 June 2026

DOCUMENT SAC-17-04

DEVELOPMENT AND IMPLEMENTATION OF THE INTEGRATED PORT SAMPLING PROGRAM: UPDATE

CONTENTS

Summary 1

1. Background 1

2. Data collected by the IPSP 2

3. Database 3

4. Scientific research supported by the IPSP 4

5. Additional support to the Commission provided by the IPSP 4

6. Acknowledgments 5

SUMMARY

This document presents an update on the Integrated Port Sampling Program (IPSP), implemented in 2026 to replace and improve the Traditional Port-Sampling Program (TPS). The IPSP collects biological data from purse-seine tropical tuna catches to support stock assessments and fisheries management.

Major improvements in the sampling protocol for fleet-level species catch estimation include randomized sampling (trips, wells, fish) to reduce bias and improve statistical reliability. The protocol allows greater flexibility and more within-well coverage for catch from floating object sets. A second protocol gathers morphometric data to update length-weight relationships for tuna and bycatch species. The port-sampling data collected flows through a structured system (upload → validation → database), with potential use of AI transcription tools.

The IPSP supports key outputs like catch composition estimates, indices of abundance, the IATTC Fisheries Status Report, and Stock Assessments. It also contributes to trip-level bigeye tuna estimates in support of the Individual Vessel Threshold management measure and expands collaboration with stakeholders (e.g., training, workshops).

1. BACKGROUND

Since 2000, IATTC port-sampling data collection has played a central role in the methodology used to estimate the purse-seine fleet-level species and size composition of the total catch of tropical tunas (sum of catches of yellowfin (YFT), bigeye (BET) and skipjack (SKJ) tunas) by area, month of fishing, purse-seine set type and IATTC vessel size class category. In recent years, port-sampling data collection was expanded to cover other scientific research purposes, such as trip-level BET catch estimation in support of the

Individual Vessel Threshold (IVT) management measure and the update of the morphometric relationships (length-weight) of the three tropical tuna species and prioritized bycatch species.

Scientific analyses related to the development of the sampling protocol for trip-level estimates of BET, identified several potential areas of improvement to the sampling protocol for fleet-level species catch estimation ([SAC-16 INF-J](#)). The new fleet-level sampling protocol that resulted from these analyses includes key features such as random selection of trips, wells and fish within the well.

Starting in 2026, all purse-seine port- sampling data collection activities, including the updated sampling protocol for fleet-level catch composition estimation, are being implemented by the IATTC Integrated Port Sampling Program (IPSP), proposed by the staff in document [SAC-16-05](#) and approved by the Commission in [Resolution C-25-01](#). The IPSP serves as the IATTC operational platform that implements the collection of port-sampling data, maintaining rigorous data collection aligned with scientific research and management needs, while adapting to changes in data requirements over time (Figure 1).

This document provides an update on the implementation of the IPSP since its implementation in January 2026.

2. DATA COLLECTED BY THE IPSP

Starting January 2026, the IPSP is being implemented in Manta and Playas, Ecuador, and Mazatlán and Manzanillo, Mexico. Thirteen sampling technicians, along with field office staff, collect biological data during the unloading of Class-6 purse-seine vessels through the implementation of two sampling protocols, one for data to estimate fleet-level catch composition and the other for data to update morphometric relationships of the three tropical tuna species.

2.1. Species and size composition sampling protocol

Samples of fish for weight, or length, and species ID, obtained during the unloading of the purse-seine fleet catch, are the basic source of data used for estimating the species and age compositions of the catch of tropical tunas. These data are necessary to obtain age-structured estimates of the populations for various purposes, primarily the integrated modeling that the staff uses to assess the status of the stocks (see [Stock Assessment Reports](#)).

Based on simulation analysis made with data collected by the Enhanced Monitoring Program (EMP) (2023-2025) and by Project [C.1.b](#) (2024), that evaluated the sampling design for the best scientific estimate of tropical tuna catch composition, improvements were made to the sampling protocol for fleet-level species and size composition of the purse-seine tropical tuna catch, previously known as Traditional Port-Sampling (TPS).

The following is a description of the three major improvements made to the TPS protocol with a description of key aspects related to the implementation of those improvements by the IPSP.

1. Minimizes the potential for bias by eliminating opportunistic data collection practices through the random selection of trips, wells and fish within the well.
 - For the IPSP protocol, trips and wells are randomly selected based on information obtained from the observer at-sea reports, which are submitted by vessels on a weekly basis.
 - Additional collaboration was requested, with a positive response from the fleet, for a last at-sea report to be sent when the vessel has made its last set and is on route to port, providing the latest information for the random selection of wells, based on information on the sets placed in each well.

- The automated tool developed by the staff for the random selection of trips, wells and fish to be sampled, makes practical sampling selection updates twice per week.
2. Allows greater flexibility in stock assessment modelling by removing the temporal and spatial sampling restrictions of the TPS protocol.
 - For a well to be a candidate for sampling, the only requirement is that the catch within the well be from the EPO, a single set type and the same year.
 3. Reduces the estimated variance on species composition estimates for the floating-object (OBJ) fishery by sampling the entire well catch of OBJ-set wells.
 - OBJ-set wells are being sampled systematically from beginning to end of the unloading, without affecting the normal unloading process of the fleet.
 - As a result, any large-scale patterns in species composition during unloading of the well catch are captured in the sample data, producing a more representative sample for the well.

In addition, a modification to the protocol for selection of fish from wells with catch from sets on tunas associated with dolphins (DEL-set wells), and wells with catch from sets on unassociated school of tuna (NOA-set wells) unloaded by flotation, has been implemented. Initially, as described in document [SAC-16 INF-J](#), a sample of fish was to be obtained from a randomly selected quarter of the well. However, following the results of trial sampling in November-December 2025, the IPSP protocol was modified because: 1) it was not possible to accurately estimate the start and end of a quarter of the well in all ports of unloading, potentially resulting in bias in the estimation, and; 2) the [External Review](#) of the sampling protocol recommended that the entire well catch be sampled to generate data for future studies on IPSP protocol improvements, particularly as regards estimation of yellowfin tuna length composition in DEL-set wells. Therefore, the IPSP protocol was changed from sampling a quarter of the well to sampling between about 90% to 100% of the well, depending on the port of unloading. Results of analysis of the 2026 IPSP data will be used to address sampling challenges, further improving the IPSP protocol. These results and any revisions to the protocol will be presented by the staff at the 2027 Scientific Advisory Committee (SAC) meeting.

With the improvements described above, between January and March of 2026 the IPSP has covered 75 trips of 57 vessels, with 131 wells sampled. A summary of the sampling coverage for all of 2026 will be presented at the 2027 SAC meeting.

2.2. Morphometric protocol

During 2025, the collection of morphometric measurements to refine length-weight, length-length, and weight-weight relationships for the three tropical tuna species, and for prioritized bycatch species, was implemented in Manta, Ecuador, and Mazatlán, Mexico. Analyses were carried out at the start of 2026 with the sampling protocol being updated to carry on with sampling efforts to further strengthen these relationships for both tropical tunas and prioritized bycatch species, and to provide robust insights into temporal and spatial variability.

3. DATABASE

IPSP collected data follows a strict workflow before being finally incorporated into the IATTC database in order to be made available for scientific research. Once the forms and/or audio recordings are uploaded to the designated digital storage repository, IPSP office staff review the files with the samplers to resolve any uncertainties. The data is then keypunched using a dedicated application developed specifically for the IPSP. The use of AI tools to generate transcripts of audio recordings is also considered to ease and

streamline the capture of the IPSP data into the application. Once keypunched, data quality processes are run to identify inconsistencies, issues and gaps which are verified and corrected to ensure that the data is accurate and meets required quality standards. It is then transferred to the IATTC permanent database where it is securely made available for reports and analysis.

4. SCIENTIFIC RESEARCH SUPPORTED BY THE IPSP

Starting 2026, the IPSP will support research at different levels, improving and updating biological parameters and fisheries statistics such as:

- **Fleet-level catch composition.** The IPSP data will be used to determine the species and size composition of the tropical tuna catch and therefore play a very important role in the current Best Scientific Estimate (BSE) catch estimation methodology. The methodology uses the IPSP port-sampling data to estimate the species and size composition of the total catch of tropical tunas by stratum, where strata are defined by area and month of fishing, purse-seine set type and vessel size class category. These data are critical for the tropical tuna stock assessments.
- **Morphometric measurements.** Morphometric data collected through the IPSP will be used to further refine the length-weight, length-length, and weight-weight relationships for tropical tunas, within spatiotemporal strata, improving the long-outdated relationships used for fleet-level catch composition estimation (converting sampled lengths to weights) and stock assessments. While also considering variability in time and space, the collection of these data will also provide a mechanism for monitoring changes in these relationships over time, which may occur as oceans are impacted by climate change.

On a higher level, the IPSP data will be essential to IATTC scientific research on the purse-seine fishery and the population status of tropical tunas, which is presented in two major scientific reports:

- **Fisheries status report**

Every year, during the IATTC SAC meeting, the staff presents a report providing a summary of the catches and effort in the previous year of the fishery for tunas in the eastern Pacific Ocean, for whose management the IATTC is responsible. The Fisheries Status Report is based on data available to the IATTC staff. For this report the fleet-level catch composition by size and species is estimated using port-sampling data.

- **Stock assessments**

Fisheries stock assessment uses a variety of information including fleet specific catch data, catch-per-unit-of-effort based indices of relative abundance, length composition, and biological parameters (e.g., growth, length-weight relationships, natural mortality). Most of this information comes from catch sampling and biological sampling programs. It is important that this information is reasonably accurate and precise. The biological and fishing processes may change over time. Auxiliary analyses that use more detailed information (e.g., fine spatial and temporal scales and operational-level data) are conducted to identify and adjust for potential biases. Therefore, appropriate and continuing sampling programs are needed to ensure reliable stock assessments are available to provide management advice.

5. ADDITIONAL SUPPORT TO THE COMMISSION PROVIDED BY THE IPSP

For BET trip-level BSEs in support of the Individual Vessel Threshold (IVT) management measure, the IPSP:

- Provides a sampling presence in port, with trip coverage of prioritized vessels similar to that provided by the EMP in 2025. In 2025, the EMP sampled 43 trips of 19 prioritized vessels; during the first trimester of 2026 the IPSP has sampled 23 trips of 18 prioritized vessels.
- Generates data for a model that is being used, along with EMP data from 2023 to 2025, to estimate trip-level BET catch based on the well-level relationship between port-sampling and observer data ([SAC-16 INF-I](#)).

Several initiatives have been implemented to share the knowledge and expertise of the IATTC port-sampling staff with different stakeholders, such as:

- The participation of undergraduate students in port-sampling for biological data collection, through an MOU signed with the Universidad Laica Eloy Alfaro de Manabi (ULEAM) in Manta, Ecuador.
- Workshops on species ID of frozen tropical tuna species for the government and the industry.

Finally, the logistical infrastructure developed by the IPSP allows it to serve as the platform for the implementation of other scientific research initiatives, according to the Commission's requests for management, and is aligned to the IATTC's Strategic Science Plan. The IPSP will provide a platform for collecting biological samples from tropical tunas and other prioritized species as new projects are developed over the next several years. Staff will be trained on otolith extraction (for age estimation), stomach and tissue collection (genetics and trophic ecology), and other physical sample collection strategies.

6. ACKNOWLEDGEMENTS

The IPSP is implemented thanks to the effort of the sampler technicians, Field Office staff, Data Collection and Database Unit staff, Stock Assessment scientific staff; with the collaboration of the IATTC and national observer programs; the fishing industry and national fisheries authorities.

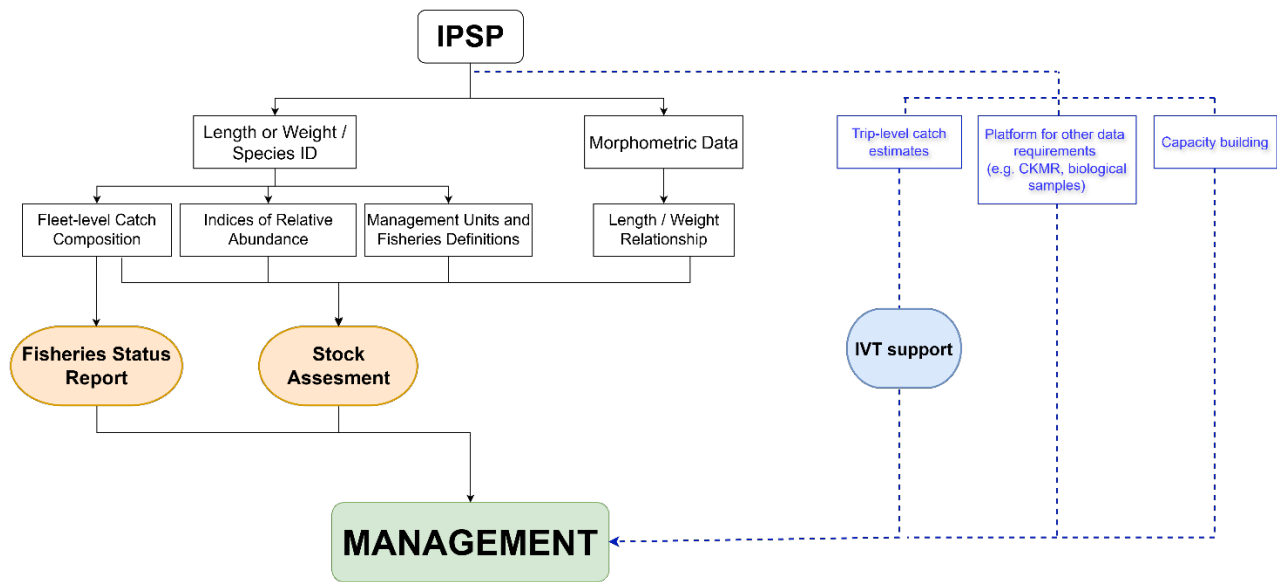


FIGURE 1. Diagram detailing the IPSP data collection - length/weight/species ID and morphometric data - and its role in scientific research at several different levels, all ultimately informing management. Additionally, the IPSP acts as a platform in support of data requirements related to specific management measures and/or analysis requested by the Commission.