

Sampling plan description for biological data

Madeira At market ICCAT

MS: PRT
Region: Other regions - ICCAT
Sampling scheme name: Large Pelagic species on-shore
Sampling scheme type: At market
Time period of validity: 2021-2024
Short description: <p>The objective of this sampling scheme is to collect length-frequency distributions of commercial fish species landed at Madeira ports by Madeira vessels operating in ICCAT (FAO 34.1.2), for species listed in Table 1 of the EU MAP Delegated Decision annex (2021/1167/EU). Observation of PETS (Protected Endangered and Threatened Species) is also covered within the sampling scheme (along with quantification of PETS observation effort) but occurrences are not expected in this sampling scheme.</p>
Description of the population
Population targeted: <p>The primary sampling scheme design is set to measure fish lengths from commercial species landed at Madeira auction (=port) by Madeiran vessels operating in ICCAT (FAO 34.1.2). The sampling frame includes a list of port*day for each fleet segment. Furthermore, within each métier, sampling effort distribution in space and time is proportional to landings in each port*month. Finally, the primary sampling unit (PSU) considered for this sampling scheme is vessel*trip.</p>
Population sampled: <p>Main Madeira ports of this metier: FUNCHAL and CANIÇAL</p> <p>Landed fish lengths are obtained from sampling a subset harvested by Madeiran active vessels operating in ICCAT (FAO 34.1.2). This subset includes several fleet segments selected based on the species landed at auction. The list of vessels by segment is updated annually based on gear type licenses and on the main species landed in the previous year.</p> <p>The sampled population includes fish lengths collected per trip by vessels operating pole-and-line targeting tuna species (Stratum ID code LPF1_M3).</p> <p>The two main ports in Madeira Island are considered for the above-mentioned sampling design and around 10% of the total annual fishing trips are predicted to be sampled.</p>
Stratification: Sampling scheme stratification is none. As such, all vessels landing in each of the selected sampling ports are susceptible to being sampled.
Sampling design and protocols

Sampling design description:

The sampling design is a stratified multistage scheme, with vessel*trip as the Primary Sampling Unit (PSU):

- a. The Madeiran fleet is stratified by segment and métier, and by trip and month. According to EU Map requirements [EU Commission Delegated Decision (2021/1167/EU)], sampling effort is established as number of trips. Additionally, annual sampling effort is fixed by the National Work Plan for Data Collection, which sets the number of trips expected to be sampled by métier.
- b. In each vessel_sale_event, observers aim to individually measure each specimen for every commercial species and commercial category.
- c. Within each commercial category, observers select 50 individuals haphazardly. Nonetheless, there are usually less than 50 individuals from a certain commercial category in 1 box, therefore observers sample several different boxes in order to reach the minimum sampling size required.
- d. Observation of PETS (Protected Endangered and Threatened Species) is also covered within the sampling scheme (along with quantification of PETS observation effort) but occurrences are not expected in this sampling scheme.

Is the sampling design compliant with the 4S principle?: Y

Regional coordination: N

Link to sampling design documentation: <https://www.iccat.int/en/iccatmanual.html>

Compliance with international recommendations: Y

Link to sampling protocol documentation: <https://www.iccat.int/en/iccatmanual.html>

Sampling implementation

Recording of refusal rate: Y

Monitoring of sampling progress within the sampling year: Sampling design is monitored and adjusted throughout the year in order to reach the minimum number of samples required.

Data capture

Means of data capture: Commercial species length data is obtained through measurements, using either a big measuring board or a measuring tape, depending on the size of the individuals sampled. Observations are noted down on appropriate sampling sheets. Sampling is executed by two observers, one of which is responsible for measuring and the other for taking note of data. A posteriori, a sampling ID number is allocated for a specific landing/sampling event and observations are verified and logged into a computer data base.

Data capture documentation: <https://www.iccat.int/en/iccatmanual.html>

Quality checks documentation:

Y. Quality control is carried out before data is submitted to ICCAT to meet the organisation's requirements. The Microsoft Excel © local database includes information by trip (vessel information, date, fishing location(s), landed weight by species) and statistical sampling information (species, sample weight, number of sampled specimens and length observations).

Quality checks and validation procedures are implemented:

1. All samples are checked by the coordinator before the data is inputted into the local database;
2. After all data is introduced into the local database it is subsequently checked for errors and outliers;
3. A random check of 10% of the data is executed by inspecting the registered data for logical errors;
4. Length distribution and effort information is then connected with vessel logbooks for future cross examinations;
5. All data is made public in ICCAT Secretariat and respective website.

Data storage

National database: Local Database

International database: <https://iccat.int/en/accesingdb.html>

Quality checks and data validation documentation: Stocks of the main ICCAT species are assessed regularly by the Scientific Committee for Research and Statistics (SCRS) of ICCAT. The methods are defined and applied according to the SCRS work. The frequency of the stock assessments is predefined according to the SCRS schedule of assessments and requests from the ICCAT Commission.

Sample storage

Storage description: NA

Sample analysis: NA

Data processing

Evaluation of data accuracy (bias and precision):

<https://www.iccat.int/en/iccatmanual.html>

<https://www.iccat.int/en/submitSTAT.html>

Editing and imputation methods: <https://www.iccat.int/en/iccatmanual.html>

Quality document associated to a dataset: <https://www.iccat.int/en/iccatmanual.html>

Validation of the final dataset:

Data is submitted to quality check to meet ICCAT requirements and is validated by ICCAT.

Final datasets are validated by experts / stock assessors during expert / assessment working groups /

regional coordination groups.