

## Sampling plan description for biological data

### Mainland At Sea ICCAT

<b>MS:</b> PRT
<b>Region:</b> Other regions - ICCAT
<b>Sampling scheme name:</b> Longline for swordfish: At-sea
<b>Sampling scheme type:</b> At sea
<b>Time period of validity:</b> 2021-2024
<b>Short description (max 100 words):</b>  Sampling scheme aiming at sampling catch (discards + landings) composition, volume, length of species and biological variables (age, weight, sex, maturity of selected species) captured by Portuguese vessels operating in ICCAT. All species sampled are listed in Table 1 of the EU MAP Delegated Decision annex. Observation of PETS (Protected Endangered and Threatened Species) is also covered within the sampling scheme (along with quantification of PETS observation effort).
<b>Description of the population</b>
<b>Population targeted:</b>  Population: lengths of species and biological variables (age, weight, sex, maturity of selected species) captured by Portuguese vessels operating in ICCAT.  Population targeted: lengths of species and biological variables (age, weight, sex, maturity of selected species) captured by Portuguese vessels operating in ICCAT.  Population studied: lengths of species and biological variables (age, weight, sex, maturity of selected species) captured by a subset of Portuguese vessels operating in ICCAT from a fleet segment (~metier), based on a combination of gear licenses and the main species landed in previous year.  Primary Sampling Unit (PSU): fishing trip
<b>Population sampled:</b>  Population sampled / not sampled per metier and sampling scheme:  -Metier LLD_LPF Population sampled: All vessels Stratum ID code: PTS24 - LLD_LPF
<b>Stratification:</b> No stratification.
<b>Sampling design and protocols</b>
<b>Sampling design description:</b>  At sea sampling schemes sample Catches (All fractions).

a) The Portuguese fleet is stratified by fleet (~metier), area and quarter. In this region \* RFMO/RFO/IO \* Sampling scheme the metier considered is LLD\_LPF. Annual sampling effort (number of planned PSUs = fishing trips) is fixed.

b) Vessel is selected by SRSWR and fishing trip (= PSU) is selected by SRSWOR.

c) Sampling is done per gear and gear segment during hauling. Number and length of species are recorded, as well as biological variables (age, weight, sex, maturity) of selected species (Work Plan – Table 2.2).

d) Observation of PETS (Protected Endangered and Threatened Species) is also covered within the sampling scheme (along with quantification of PETS observation effort).

PETS observation effort is the same as for other species - i.e. it is done during hauling of the gear following the protocol described in topics a-c.

**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. Sampling design in line with international recommendations (e.g. ICCAT Manual)

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

#### **Sampling implementation**

**Recording of refusal rate:** N. Recording of refusal rates will be developed in 2022-2024.

**Monitoring of sampling progress within the sampling year:** One fishing trip is sampled per year.

#### **Data capture**

**Means of data capture:** Biological data is collected with measuring board/tape (variable length) and scale (variable weight).

**Data capture documentation:** Documentation on data capture is disclosed to all scientific observers and under constant improvement (e.g. species identification guides, age reading protocols, maturity stage guides, biological sampling protocols).

Specificities for ICCAT data capture can be found in

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

**Quality checks documentation:**

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

#### **Data storage**

**National database:** <http://nautilus.ipma.pt/>

**International database:** [www.iccat.org/en/accesingdb.htm](http://www.iccat.org/en/accesingdb.htm)

**Quality checks and data validation documentation:**

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

**Sample storage**

**Storage description:**

Biological samples are stored at IPMA and a record of samples per species/stock by geographic sub-area is kept.

Hard tissues (otoliths and hard tissues for age reading) are stored until and after processing/analysis.  
Soft tissues (stomachs, gonads) are stored until processing/analysis.

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

**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/submitSTAT.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.