Sampling plan description for biological data

Mainland At Sea ICES 1,2

MS: PRT

Region: Eastern Artic (ICES areas I and II)

Sampling scheme identifier: Trawlers for demersal fish: At-sea; Midwater otter trawlers for demersal fish: At-sea

Sampling scheme type: At sea

Time period of validity: 2021-2024

Short description:

Sampling schemes aiming at sampling catch (discards + landings) composition, volume, length of selected species and biological variables (age, weight, sex, maturity of selected species) captured by Portuguese vessels operating in ICES 27.1 and 27.2. Sampling includes species 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).

Description of the population

Population targeted:

Population and population targeted: lengths of selected species and biological variables (age, weight, sex, maturity of selected species) captured by Portuguese vessels operating in ICES 27.1 and 27.2.

Population studied: lengths of selected species and biological variables (age, weight, sex, maturity of selected species captured by a subset of Portuguese vessels operating in ICES 27.1 and 27.2 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

Population sampled:

Population sampled / not sampled per metier and sampling scheme:

-Metier OTB_DEF:
Population sampled: All vessels
Stratum ID code: PTS28 - OTB_DEF

-Metier OTM_DEF:
Population sampled: All vessels
Stratum ID code: PTS29 - OTM_DEF

Metiers are sampled in alternate years, since only one trip is sampled per year in ICES 27.1 and 27.2.

Stratification: Stratification is used to improve spatial sampling coverage (by ICES Division).

Sampling design and protocols

Sampling design description:

At sea sampling schemes sample Catches (All fractions).

a) The Portuguese fleet is stratified by fleet (~metier), area and quarter. Two trawl metiers operate in ICES 27.1 and 27.2: OTM_DEF and OTB_DEF. Annual sampling effort (number of planned PSUs = fishing trips) is fixed and only 1 trip is allocated to either metier OTB_DEF or OTM_DEF.

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

c) Haul selection is random. For each haul selected for sampling, and before the catch is sorted by the crew, the scientific observer randomly selects a sample of two selected species (Work Plan – Table 2.1), usually one target species and one bycatch species. Each sample is weighed and individuals are sampled for length, and a sub sample is selected for sampling of other biological variables (age, weight, sex, maturity of selected species).

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 in samples of the catch taken following the protocol described in topics a-c; and additionally in the opening of the net.

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

Regional coordination: N.

Link to sampling design documentation: Documentation will be developed in 2022-2024.

Compliance with international recommendations: Y. Sampling design in line with international recommendations, e.g. from ICES WGCATCH (Working Group on Commercial Catches).

Link to sampling protocol documentation: Documentation will be developed in 2022-2024.

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: NA. One fishing trip is sampled per year.

Data capture

Means of data capture: Biological data is collected with measuring board/tape/calliper (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).

Quality checks documentation: Quality of data capture is checked yearly before response to data calls (e.g. unexpected species in a given metier/area, unexpected age for a given species length, unexpected maturity stage for a given species length, unexpected biological variable for a given species). This includes automatic and semi-automatic data quality checks procedures, at different stages (during and after data entry in the national database).

Data storage

National database: http://nautilus.ipma.pt/.

International database: RDB/RDBES

Quality checks and data validation documentation: Quality of data storage is checked yearly before response to data calls (e.g. if all data captured is stored in the national database, including different levels of data such as level of fishing trip, haul, sample, individual, etc.). This includes automatic and semi-automatic data quality checks procedures, at different stages (during and after data entry in the national database).

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:

Sample analysis follows national and international protocols (e.g. from WG and benchmark reports) for age reading, maturity stage, histology.

Data processing

Evaluation of data accuracy (bias and precision): Data accuracy is evaluated by experts / stock assessors during preparation and analysis of data for expert / assessment working groups.

Editing and imputation methods: Editing and imputation methods are developed by experts / stock assessors during preparation and analysis of data for expert / assessment working groups.

Quality document associated to a dataset: Quality of datasets is documented in upload logs of data submitted to data calls and in expert / assessment working groups / regional coordination groups reports.

Validation of the final dataset: Final datasets are validated by experts / stock assessors during expert / assessment working groups / regional coordination groups.