Sampling plan description for biological data

Mainland At market (concurrent sampling) - ICES

MS: PRT

Region: Southern Western waters (ICES zones VIII, IX) - IX

Sampling scheme names: Pots and traps for octopuses: At-market; Gill and trammel nets for demersal fish: At-market; Longline for demersal fish: At-market; Longline for black scabbardfish: At-market; Trawlers for demersal fish: At-market; Trawlers for crustaceans: At-market; Purse seiners for sardine and other small pelagic fish: At-market; Beam trawl for shrimps: At-market

Sampling scheme type: At market (concurrent)

Time period of validity: 2021-2024

Short description:

Sampling schemes aiming at sampling length of species and biological variables (sex, maturity of selected species) landed at ports by Portuguese vessels operating in ICES 27.9.a. All landed species (except *Trachurus trachurus*) are sampled, including 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) but occurrences are not expected in this sampling scheme since in on shore sampling of commercial fishing trips only the "Landings" fractions are sampled.

Description of the population

Population targeted: lengths of species and biological variables (sex, maturity of selected species) landed at port by Portuguese vessels operating in ICES 27.9.a.

Population studied: lengths of species and biological variables (sex, maturity of selected species) landed at port by a subset of Portuguese vessels operating in ICES 27.9.a from a fleet segment (~metier), based on a combination of gear licences and the main species landed in previous year.

Primary Sampling Unit (PSU): port*day

Population sampled:

Population sampled / not sampled per metier and sampling scheme:

-Metier FPO_MOL:
  Population sampled:
    Main mainland national ports of this metier: VIANA DO CASTELO, POVOA DO VARZIM, MATOSINHOS, AVEIRO, NAZARE, PENICHE, COSTA DA CAPARICA, SESIMBRA, SETUBAL, SINES, SAGRES, LAGOS, PORTIMAO, QUARTEIRA, OLHAO, SANTA LUZIA
    Stratum ID code: PTM1 - FPO_MOL _ Main ports _ ICES 27.9.a
  Population not sampled:
    Minor mainland national ports of this metier.
    Stratum ID code: PTM2 - FPO_MOL _ Minor ports _ ICES 27.9.a
-Metier GNS_GTR:

Population sampled:

Main mainland national ports of this metier: VIANA DO CASTELO, POVOA DO VARZIM, MATOSINHOS, AVEIRO, FIGUEIRA DA FOZ, NAZARE, PENICHE, COSTA DA CAPARICA, SESIMBRA, SETUBAL, SINES, SAGRES, LAGOS, PORTIMAO, QUARTEIRA, OLHAO, VRSA

Stratum ID code: PTM5 - GNS_GTR_DEF _ Main ports _ ICES 27.9.a

Population not sampled:

Minor mainland national ports of this metier.

Stratum ID code: PTM6 - GNS_GTR_DEF _ Minor ports _ ICES 27.9.a

-Metier LLS_DEF:

Population sampled:

Main mainland national ports of this metier: NAZARE, PENICHE, COSTA DA CAPARICA, SESIMBRA, SETUBAL, SINES, SAGRES, LAGOS, PORTIMAO, QUARTEIRA, OLHAO

Stratum ID code: PTM7 - LLS_DEF _ Main ports _ ICES 27.9.a

Population not sampled:

Minor mainland national ports of this metier.

Stratum ID code: PTM8 - LLS_DEF _ Minor ports _ ICES 27.9.a

-Metier LLS_DWS:

Population sampled:

Single main mainland national port of this metier: SESIMBRA.

Stratum ID code: PTM11 - LLS_DWS _ Single main port _ ICES 27.9.a

-Metier OTB_DEF:

Population sampled:

Main mainland national ports of this metier: MATOSINHOS, AVEIRO, FIGUEIRA DA FOZ, NAZARE, PENICHE, SESIMBRA, SINES, PORTIMAO, OLHAO

Stratum ID code: PTM14 - OTB_DEF _ Main ports _ ICES 27.9.a

-Metier OTB_CRU:

Population sampled:

Single main mainland national port of this metier: VRSA

Stratum ID code: PTM17 - OTB_CRU _ Single main port _ ICES FU 28-29

-Metier PS_SPF:

Population sampled:

Main mainland national ports of this metier: VIANA DO CASTELO, POVOA DO VARZIM, MATOSINHOS, AVEIRO, FIGUEIRA DA FOZ, NAZARE, PENICHE, SESIMBRA, SETUBAL, SINES, SAGRES, LAGOS, PORTIMAO, QUARTEIRA, OLHAO

Stratum ID code: PTM20 - PS_SPF _ Main ports _ ICES 27.9.a

-Metier TBB_CRU:

Population sampled:

Main mainland national ports of this metier: MATOSINHOS, AVEIRO, FIGUEIRA DA FOZ

Stratum ID code: PTM22 - TBB_MCD _ Main ports _ ICES 27.9.a

Population not sampled:

Minor mainland national ports of this metier.

Stratum ID code: PTM23 - TBB_MCD _ Minor ports _ ICES 27.9.a

Stratification: Stratification is used to improve sampling coverage through the year (by quarter) and along the Portuguese coast (by port).

Sampling design and protocols

Sampling design description:

On shore sampling schemes sample Landings (All fractions).

a) The Portuguese fleet is stratified by fleet (~metier), auction and quarter. Following the DCF requirements, less significant fleets (~metiers) are not sampled (e.g. dredges, beach-seines). Annual sampling effort (number of planned PSUs = port*days = onshore events) is fixed and is allocated to the different fleets (~metiers) based on landings from previous reference years (weight/value criteria).

b) For each fleet (~metier), sampling effort (number of port*day = onshore events = PSUs) is allocated to ports and quarters based on landings from previous reference years. For each fleet (~metier), each onshore event (port*day = PSU) is selected by UPSWOR.

c) In every port*day (=onshore event = PSUs), observers attempt to sample a predefined number of landing events (~fishing trips), that are randomly selected (by SRSWOR) from a list of all landing events awaiting auction. This list includes the name of each vessel and the commercial species, commercial size category and weight of each of its boxes. Each landing event generally corresponds to the landings of one fishing trip. A minor proportion of landing events may not be present in the selection list at selection time when sampling starts.

d) In each landing event (~fishing trip), the observers aim to sample every combination of commercial species and commercial size category (by Census).

e) Within each combination of commercial species * commercial size category, the observers select 1 box haphazardly for length sampling of species. When there are very few fish from a species in the box, observers take more boxes until the length composition of the species is well defined.

f) When different species are present within a box, observers select them all for length sampling.

g) For selected species biological variables are sampled in situ.

h) 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 since in on shore sampling of commercial fishing trips only the "Landings" fractions are sampled. Within a sampled commercial fishing trip, PETS observation effort is done in all boxes sampled for other species (protocol described in topics a-g).

During 2022, fish length measurements will be also recorded in some auctions, using on an experimental basis an electronic system composed by a local unit for automatic image acquisition of fish boxes and a remote database to record the processed images (Fishmetrics), which allows to conclude fish length measurements at a later stage with an automated process.

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

Regional coordination: N.

Link to sampling design documentation:

www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2014/WKRDB/

01%20WKRDB%202014-1%20Report%20FINAL.pdf

Documentation will be updated 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: The number of PSU per trimester per sampling scheme executed versus planned is monitored monthly. When necessary and possible, the number of PSU planned but not executed (due to operational/logistical constraints) is rescheduled.

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.