Sampling scheme identifier: **AZ_OFF_EM_LicenseSyst_ICCAT**

MS:
PRT

Region:
North-East Atlantic

Sampling scheme identifier:
AZ_OFF_EM_ LicenseSyst_ICCAT

Sampling scheme type:
Recreational (off site surveys)

Observation type:
EMOnShore

Time period of validity:
2025-2027

Short description (max 100 words):
AZ_OFF_EM_LicenseSyst_ICCAT aiming to collect catch data (and effort) from licensed recreational fishing modes (spearfishing and recreational boat fishing) for species (highly migratory ICCAT species) as indicated in Table 4 of the EU MAP Delegated Decision annex.

Description of the population

Population targeted:

The target population is recreational fishing boats and spearfishing. The offsite methodology presents a direct frame with direct access to the individual elements of the target population. Each sampling unit within the frame corresponds to each respective license holder.

Population sampled:

The licensed recreational fishing boat owners, spearfishers and touristic fishing companies are the population aim to sample. Shore angling and hand collecting were not covered since do not catch the target species, thus are outside the scope of the survey.

Stratification:
For the AZ_OFF_EM_LicenseSyst_ICCAT, the frame population (license holders) was stratified into subpopulations strata (fishing mode, island, year).

Sampling design and protocols

Sampling design description:

In Azores the recreational fishing multispecies survey will focus on the catch estimation for the species (highly migratory ICCAT species) indicated in Table 4 of the EU MAP Delegated Decision annex performed by two recreational fishing modes (boat fishing and spearfishing). The AZ_OFF_EM_LicenseSyst_ICCAT survey is embedded in the recreational fishing license system. AZ_OFF_EM_LicenseSyst_ICCAT presents a direct frame with direct access to the individual elements of the target population. Each sampling unit within the frame corresponds to each respective license holder. This 12-month recall survey will take place at the time the recreational boat angler or spearfisher is applying for a recreational fishing license in an informatics platform that allows the data collection on fishing effort, mean catch per trip and main captured species. In addition, it was considered potential elements of the target population that could be excluded from the frame, and a nested survey (within AZ_OFF_EM_LicenseSyst_ICCAT) was implemented to assess the reasons behind refusals and to access non-response cases. The nested survey explicitly aimed at collecting data on tourist fishers (within AZ_OFF_EM_LicenseSyst_ICCAT) and the first license cases and re-evaluation of refusals.

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

Regional coordination:
N.

Link to sampling design documentation:
https://www.dgrm.mm.gov.pt/documents/20143/124668/17_Azores_ICES_RecreationalSamp.pdf/7863f6bf-23ee-e6de-0425-d68403671742

Design follows international recommendations:
Y.

Link to sampling protocol documentation:
https://www.dgrm.mm.gov.pt/documents/20143/124668/17_Azores_ICES_RecreationalSamp.pdf/7863f6bf-23ee-e6de-0425-d68403671742https://pescador.azores.gov.pt/

https://pescaludica.azores.gov.pt/licencas.aspx (Access to the license system where is allocated the protocol documentation in Portuguese language, and a print screen is available in Figure 1).

Protocol follows international recommendations:
Y.

Sampling implementation

Recording of refusal rate:
Y.

Monitoring of sampling progress within the sampling year:
Follow-up mechanisms with license issue entities by e-mail and phone are establish. The daily monitoring system drive to detection of unusual level of refusals, informatics problems (i.e., Survey at License System) which trigger processes to analyse and find resolution.

Data capture

Means of data capture:
Dedicated software was design to collect data, particularly a Survey embedded in the informatics platform of license system – all the recreational fishers (spearfishers and boat fishing owners) that apply for a license need to fill a 12-month recall survey.

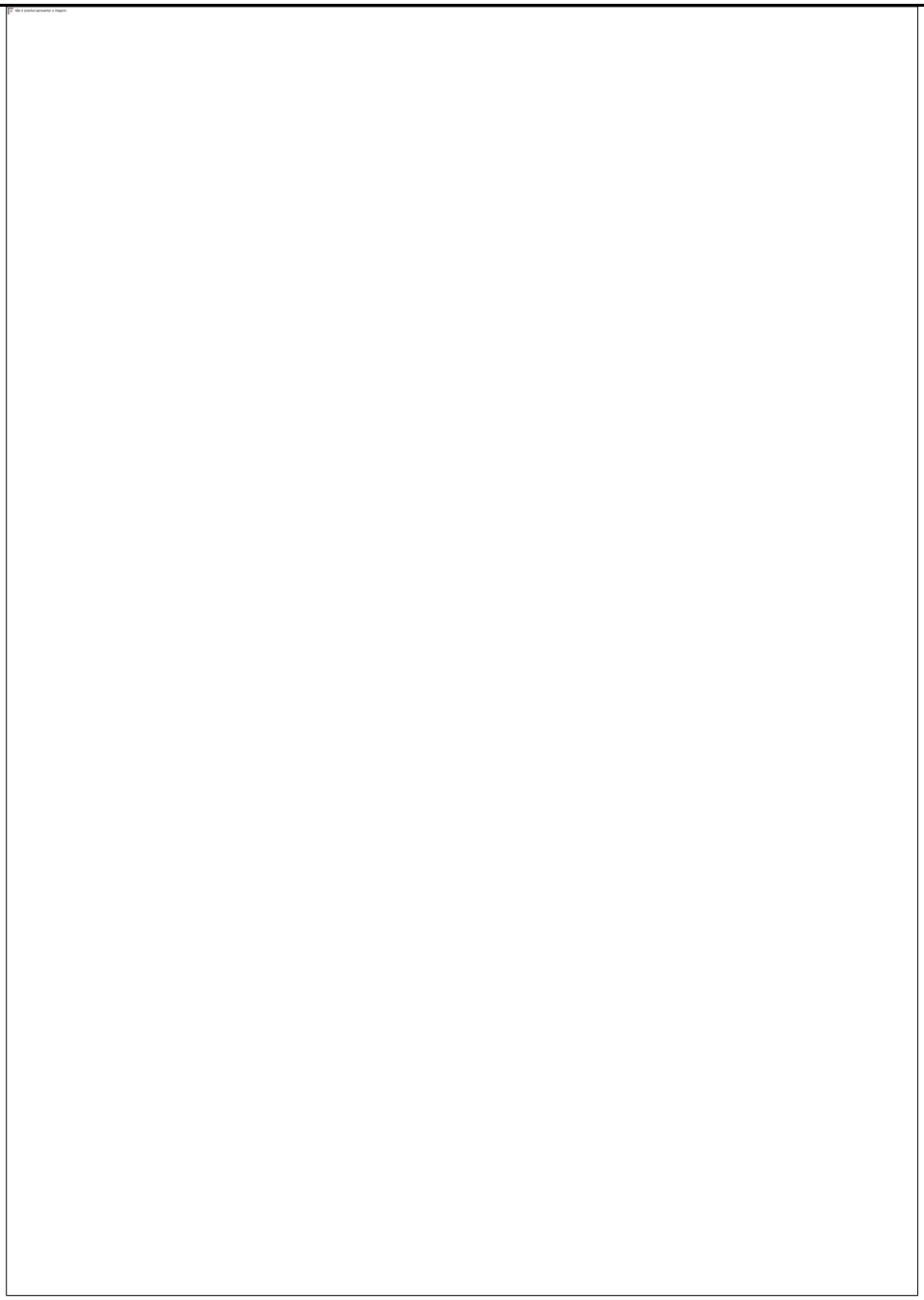

Figure 1. Survey embedded in the informatics platform of license system (in Portuguese language).

Data capture documentation:
https://www.dgrm.mm.gov.pt/documents/20143/124668/17_Azores_ICES_RecreationalSamp.pdf/7863f6bf-23ee-e6de-0425-d68403671742

https://pescaludica.azores.gov.pt/licencas.aspx (The survey is in Portuguese language, and a print screen is available in Figure 1).

Quality checks documentation:
N.
Quality checks procedures can be found in STECF report (pilot studies), however new and updated documentation will be available in 2025-2027.

Data storage

National database:
NA.

International database:
NA.

Quality checks and data validation documentation:
Recreational Fishing database will be transferred from Excel files into a database to be constructed during the sampling period covered. This is expected to contain internal routines for both basic errors detection (e.g., errors in dates, species codes) as well as implementation of checking of errors. Quality checks and validation procedures are implemented: (1) All samples are checked by a coordinator before the input of data; (2) All data introduced in database is checked for syntax errors; (3) A random check of 10% of the data is executed by inspecting the registered data for logical errors.

Sample storage

Storage description:
NA.

Sample analysis:
NA.

Data processing

Evaluation of data accuracy (bias and precision):
A complemented off-site survey it was implemented in order to account typical bias, for example, recall bias within AZ_OFF_EM_LicenseSyst_ICCAT, and weighing, such as the use of AZ_OFF_EM_Recreational_ICCAT data to correct recall/avidity bias fishing effort estimation. The precision estimators will be presented in an internal report in 2025 - 2027.

Editing and imputation methods:
N.
Editing and imputations methods are still being studied to be used in the future and will be available in an internal report in 2025-2027.

Quality document associated to a dataset:
Documentation will be developed in 2025-2027.

Validation of the final dataset:
Recreational Fishing database will be transferred from Excel files into a database to be constructed during the sampling period covered. This is expected to contain internal routines for both basic errors detection (e.g., errors in dates, species codes) as well as implementation of checking of errors. Quality checks and validation procedures are implemented: (1) All samples are checked by a coordinator before the input of data; (2) All data introduced in database is checked for syntax errors; (3) A random check of 10% of the data is executed by inspecting the registered data for logical errors.