Sampling plan description for biological data

Azores At Sea ICCAT

MS: PRT
Region: Other regions - ICCAT
Sampling scheme names: Pole and line for tuna at Sea; Drifting Longline at Sea
Sampling scheme type: At Sea
Time period of validity: 2021-2024
Short description: Sampling schemes aiming at sampling all catch fractions specific composition (including discards), both in number and volume, lengths, and biological variables (sex - only for elasmobranchs and crustaceans) of species captured by Azorean vessels operating in ICES 10.a.2. All captured species are sampled, including species listed in Table 1 of the EU-MAP Delegated Decision annex. Observation of PETS (Protected Endangered and Threatened Species) although not specifically designed, is also covered within the sampling scheme (along with quantification of PETS observation effort).
Description of the population

Population targeted: Lengths and biological variables of species captured by Azorean vessels operating in ICES 10.a.2 and licensed for the use of different fishing techniques, except for handliners targeting tuna (pole and line).
 	
Primary Sampling Unit (PSU): vessel*trip
 	
Population sampled: Lengths and biological variables of species captured by a subset of Azorean vessels operating in ICES 10.a.2 from a list of cooperative vessels for each fleet segment/gear/species assemblage that are willing and have logistics conditions (space and safety equipment) to take scientific observers onboard and registered at the main Azorean ports. The list of vessels for each fleet segment/metier is updated annually based on a combination of the results from the analysis through the algorithm developed and applied for previous year landings.
 	
Population sampled/not sampled per metier and sampling scheme:
 	
-Metier LLD_LPF
    Population sampled: List of active vessels using drifting longline targeting swordfish from the main (PDL - Ponta Delgada)
      Stratum ID code: AZS31 - LLD_LPF
    Population not sampled: Other drifting longlines targeting large pelagic fish operating from minor ports
      Stratum ID code: AZ32 - LLD_LPF_out of frame
 	
-Metier LHP_LPF
    Population not sampled: Handliners using pole and line targeting tuna species
      Stratum ID code: AZ35 - LHP_LPF_>12m and AZ36 – LHP_LPF_out of frame
 	
Stratification: In order to improve sampling coverage through the year (by quarter) and in the most important auctions (main ports) to be sampled within each fleet segment/gear/species

assemblage combination allocated by quarter proportionally to previous sampling year.

Sampling design and protocols

Sampling design description: Scientific observers at sea attempt to sample a predefined number of fishing trips on board vessels selected from a set of cooperative vessels within each fleet segment/gear/species assemblage combination. These sampling schemes collect, on a haul-by-haul basis, comprehensive data on species composition (including incidental by-catch), length composition of all retained and discarded components of the catch, sex for elasmobranchs and crustaceans, reason for discarding and vitality of discarded specimens. Scientific observers on shore attempt to sample landings of vessels with a scientific observer on board.
 	
At sea sampling schemes sample Catches (All fractions):
 	
    a. The Azorean fleet is stratified by fleet segment, metier and time. Sampling effort is established as number of trips expected to be sampled in each fleet (~ metier) and allocated to different metiers and quarters proportionally to last year's effort and/or landings;
    b. Scientific observers sort the sample into catch fractions according to the crew's criteria;
    c. All hauls are sampled following established sampling priority levels (SPL):
        SPL 1 – all discarded species lengths and retained species composition in volume;
        SPL 2 – sub sample of retained target species lengths;
        SPL 3 – sub sample of retained by-catch species lengths;
    d. Observation of PETS (Protected Endangered and Threatened Species) although not specifically designed, is also covered within the sampling scheme (along with quantification of PETS observation effort). PETS observation effort is conducted during the hauling fishing operation;
    e. Refusal rates are recorded.
 	
Is the sampling design compliant with the 4S principle?: N.
 	
Regional coordination: Not applicable.
 	
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: Y. **Monitoring of sampling progress within the sampling year**: The executed 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 limitations) is rescheduled.

Data capture

Means of data capture: Depending on the species, lengths are collected using measuring board/tape or callipers. **Data capture documentation**: https://www.iccat.int/en/iccatmanual.html **Quality checks documentation**: Y. https://www.iccat.int/en/iccatmanual.html - Data Base and Manual.

Data storage
National database: NA. **International database**: https://www.iccat.int/en/iccatmanual.html - Data Base. **Quality checks and data validation documentation**: Y. https://www.iccat.int/en/iccatmanual.html - Data Base and Manual.

Sample storage
Storage description: Age structures are mostly kept in *eppendorfs*, which are placed in PCR tube storage racks, at the laboratory and for indefinite period. Access to samples is organised by species and sampling date. Samples are not stored under the auspices/responsibility of any international organization. Quantities of sampled stored by species/stock, geographic sub-area and by year can be found at https://datacollection.jrc.ec.europa.eu/ars. **Sample analysis:** https://www.iccat.int/en/iccatmanual.html

Data processing
Evaluation of data accuracy (bias and precision): Y. https://www.iccat.int/en/submitSTAT.html (Submitting Stat Data) **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.