FACTSHEET: Sampling pelagic fisheries through self-sampling (PEL2)

Version: [v1, 01/03/2023]

Sampling protocol: PEL2

Sampling objective(s): data collection of commercial catches of a selection of pelagic species

Start of sampling: <1970

Sampling ongoing: yes

Data use

Data collected, i.e. length frequency and biological data, from commercial catches of a selection of pelagic species on request available for relevant end-users such as ICES and STECF.

Sampling design and method

A reference fleet, consisting of approximately 1/3 of the fleet, of the pelagic freezer trawler fleet with protocol-instructed fishers collects unsorted catch samples. Participating vessels are selected based on the presumed continued presence in EU waters.

At the beginning of each year Wageningen Marine Research (WMR) provides the participating vessels with a species list and trains the crew. During each trip the crew collects samples of the species included in the species list every week*ICES division. The collected samples are landed by the vessel at port where they are collected by WMR and returned back to the laboratory for further analysis.

Sampling protocol and data capture

In the field

Throughout the span of a trip the crew collects samples by species, week and ICES division. When sampling, a haul is selected, and a box of fish of approximately 23kg is collected at the pre-sorting stage. The sample is only sorted by species to separate non-target species from the sample. No length sorting is done. The sample is frozen and stored in a carton box onboard the vessel. The crew is instructed to write down the vessel, date and catch position on the box, while at the bridge a datasheet is completed holding more specific information on a haul-by-haul basis. This list is used from cross checking the information of the boxes. Once back at port, catch samples are collected by WMR staff and taken back to the laboratory for further processing.

In the lab

Samples are temporarily stored in the freezer until processing occurs. The day before processing, the samples are taken out of the freezer and laid out to thaw. Once thawed, the sample is weighed and all fish in the sample are measured 'to the cm below' (herring and sprat 'to the 0.5 cm below'). The fish are then stratified by length and an age sample, consisting of 25 individuals representative for the length distribution, is taken. From these samples individual length measurements 'to the mm below' are taken using an analogue measuring board. Individual wet weights are taken to the gram using electronic, calibrated scales. The otoliths are collected, and sex and maturity is determined by opening the body cavity. All measurements and the information noted down by the crew on the carton box are written down on specific measurement lists or directly entered in Billie Turf, the standard in-house data management software. The otoliths are embedded in resin and sliced. Images are taken from the otolith coupes. Age reading takes place from those images using the institute's (in-house further developed) version of SmartDots.

Once the age is determined, the information collected for age reading is automatically added to the Billie file belonging to the concerning sample.

Data quality

Quality assurance procedure

Collected data are stored as plain text files following a dedicated, database-ready format at a centralised location for which daily version control routine are in place. Once all samples have been completed during the year and all ages have been read (usually early Q1 of the following year), checks for outliers take place. These checks are conducted prior to uploading the data to the database, using standardised scripts (R, SAS) and involve outlier checks for numerical values, consistency checks for text variables, relational checks such as length-weight, length-age relationships, and maps with the sampling positions. Once uploaded to the database, files undergo a second round of data validation to ensure data integrity and completeness. Measurement lists of collected data are archived at WMR and inputted data are stored as plain text files at a centralised location for which daily back-up routine is in place.

Data storage

National database: After quality control, the data are stored in one of the centralised databases, FRISBE. The relevant aspects of this database are described in Proc_databases.

International database: ICES RDB(ES) https://www.ices.dk/data/data-portals/Pages/RDB-FishFrame.aspx

Data availability

Institutional availability: data is available to people with access rights to the shared location. Read and write rights can be assigned separately. In general, once granted access to the managed database, scientists extract the data from the database Frisbe for further analysis and providing the data to end users.

Public availability: data is available anonymously on aggregated level upon request.

Reference to full documentation:

National manual: Verver, S., 2022. CVO Handboek Marktbemonstering zeevisserij. Versie 2. CVO rapport 22.013 (in Dutch)

Review frequency full documentation: national manual is annually reviewed. This process is embedded in the institute's certified ISO Quality manual.

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Factsheet latest update: 01/03/2023

Factsheet latest review: 01/03/2023