FACTSHEET: Auction sampling commercial demersal fish (AUCTION_DEM)

Version: [v1, 01/03/2023]

Sampling protocol: AUCTION_DEM

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

Start of sampling: 1950's

Sampling ongoing: yes

Data use

Data collected, i.e. age composition, length frequency and biological data, from commercial catches of a selection of demersal species on request available for relevant end-users such as ICES and STECF. Generally, the data is provided to the end-user as data raised to the fleet level.

Sampling design and method

On-shore sampling, i.e. collection of length and biological information, in the major Dutch auctions (>80% of annual landings) for a selection of demersal species landed by both Dutch and foreign-flagged active demersal vessels targeting specific demersal species.

At the beginning of each year, a sampling scheme is created by species. The species list and corresponding sampling effort by species are based on the guidelines provided by the Data Collection Framework (DCF), in line with end-user need and quality requirements. The sampling scheme follows a quarterly stratification by auction*days, where the sampling effort by quarter is based on expert knowledge regarding the fleet. In each stratum (quarter) a predetermined number of auction days is selected. During an auction day, samples are collected for several species (based on the predefined sampling scheme). Samples are partly processed at the auction and partly in the laboratory once the samples are purchased at the auction.

Sampling protocol and data capture

In the field

Samples are collected at the auction according to a predefined annual sampling scheme which follows a quarterly stratification by auction*days. The collected samples are further stratified by the size categories of the respective species if any. The number of individuals in a sample*size category is defined beforehand and constant over time.

During an auction day, a scientific observer visits the auction and selects a fraction of the vessels containing the species' landings in the sampling scheme for that particular auction day. The selected vessels are requested to cooperate in sampling. If positive, standard information (i.e. vessel, catch date, gear) is registered, and sampling is conducted. If negative, the vessel non-response is recorded. In a few cases, when it is not logistically feasible for the observer to visit the auction (distance from the research institute, time constraints) an external person is contracted and instructed based on the sampling protocol to collect samples for the research institute for the selected auction day and vessel. These samples are then sent to the laboratory and processed there.

<u>Sampling demersal fish and ray species</u>

In general, the sampling protocol is equal across the various species. However, some procedure details may differ. A sample is purchased from the selected vessel sorted by size category. The observer records the sample's total weight and each size category's weight. The sample is taken back to the lab for further analysis. Cod, turbot and brill form an exception, as these samples are directly processed in the auction. Most species are directly sampled for age and length. For some species (*Eutrigla gurnardus*, *Trigla lucerna*, *Mullus surmuletus*), only length samples are collected, and for *Gadus morhua*, stratified length

samples are taken next to age samples to ensure sufficient coverage of the length range. All fish in these length samples are measured 'to the cm below'.
Some species are landed gutted, preventing the collection of additional data such as sex and maturity. For rays, age is not routinely collected. For Norway lobster; age determination is not possible.

In the lab

Sampling demersal fish and ray species

All fish in the age sample are measured 'to the mm below' using an analogue measuring board. Individual wet weights are taken to the gram using electronic, calibrated scales. The otoliths (and in addition, scales for seabass) are collected, and sex and maturity are determined by opening the body cavity. An exception is the ray species of which no otoliths are collected, and the sex and maturity (males only) are determined based on external characteristics.

Sampling Norway lobster

All individuals are measured 'to the mm below', i.e. carapace length for intact individuals and the width of the 5th abdominal segment for the tails, using either a digital calliper or an analogue measuring board Sex and maturity (females only) are determined.

Data

All collected data is inserted in Billie Turf, the standard in-house data management software. The standard collected meta information (i.e. vessel, catch date, gear) is also entered in Billie Turf. 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, this data 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 routines 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 before 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.

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 Frisbe for further analysis and provide 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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