
Tunge Survey

A Data Management Plan created using DMPonline

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Tunge Survey

Data collection - 1

The goal of the Kattegat sole survey is to estimate the abundance, biomass and distribution of cod and to establish a fisheries independent time series of catch and effort series. Furthermore, a recruitment index will be established. The results should be used, together with commercial catch and effort data to strengthen the scientific advice on the sole stock in Kattegat.

SQL database format

- 0-5 GB

Otoliths are stored in storage room in a DTU lab.

Genetics are stored as tissue samples in a freezer in DTU Silkeborg.

Paper versions of logbooks are stored in a DTU lab.

Data collection - 2

The survey is conducted in accordance with the sole survey manual, found at Q:\scientific_projects\tunge-survey

The survey has been conducted by a number of different trawlers throughout the time series but they have all been in the same size class.

Time

The survey is conducted each year in November.

Survey area

The traditional survey area is restricted by a line 10 mile west of Hirtshals, northwards by the 100 m depth contour line and a line at 58°N, south-eastwards by a line between Gilleleje and Kullen and south-westwards by a line between Gniben og Hassensør on Djursland. Further, the area is restricted by the 10 m depth contour line. In 2016 and 2017 stations were also placed in Jammerbugt and northern part of Storebælt.

Distribution of hauls

The survey was originally designed in order to establish fisheries independent CPUE indices by means of annual fishing at 120 fixed stations, 60 stations were placed by the fishermen and 60 by DTU-Aqua. In 2010 Stations 30, 48, 49 and 50 in the northern area were excluded from the survey and the total number of stations reduced to 116. In 2011 the survey was reduced further to 80 stations, all included in the originally set up. In 2016 and 2017 further 20 stations were placed in Jammerbugt and 6 stations in the northern part of Storebælt but they are not included in the estimation of the CPUE etc.

The reduction in stations in 2011 has decreased the overall number (and kg) of sole caught per hour, but the trend in the CPUE series has not changed. (It is the trend in the CPUE series, not the actual values that is used in the assessment of sole).

The estimated trawlable biomass and abundance is based on the 80 stations. Hence no stations were deeper than 90 m the biomass and abundance has been estimated for depths between 10 and 90 m. The survey area has been stratified in ICES squares and the area between 10 and 90 m has been estimated.

There is at least 5 mile between each station in order to spread out the stations (there are a few stations with lesser distance between, but then there is great difference in the depth).

Trawl and trawling procedure

Both vessels used the same trawl (twin trawl + 1 spare trawl) provided by DTU AQUA. The trawls are checked yearly by a net maker. The fishermen provide the otter boards.

Trawl: Twin "Icelandic-sole-trawl" with 140 mm mesh and rockhopper type ground gear with 150 mm rubber discs.

Mesh size in the cod end: 55 mm stretch mesh

Otter boards: 66" "Thyborøn".

Warp: 13 mm.

The otter boards are mounted directly on the tips of the wings without bridles.

Wing spread (otter board spread) is app. 44 m.

Trawl procedure:

Towing time: Traditionally towing time has been 60 min (towing time down to 20 min is accepted).

In 2016 towing time was reduced to 30 min on 25% of the traditional stations and in 2017 the rowingtime was reduced to 30 on 50% of the stations. Towing time was 30 min on all new stations in Jammerbugt and Storebælt.

Towing speed: 2.5 kn. over the seabed.

Hauls start: when the trawl is considered going stable on the bottom.

Haul end: when hauling starts.

Warp length: The depth varies from station to station and so does the warp length. The warp length was recorded at each station in 2004 and this warp length is used at the station in 2005 and onwards.

Each station is fished in the same direction each year if wind and current allows.

Fishing takes place during night time from app. 5 pm to 7 am.

Handling of the catch

After each haul the catch is sorted by species and weighed to nearest 0.1 kg and the number of specimens recorded. Most fish species are measured as total length (TL) to 1.0 cm below. Norway lobster is measured in mm carapace length.

Main folder

- Data
- Data_Documentations
- Data-Management_Plan

As described in local procedures and guidelines - DTU Aqua

[https://www.inside.dtu.dk/-/media/DTU-Inside/Institutter-og-centre/Aqua/Forskning/Research-data-procedures-and-guidelines-DTUAqua.ashx?](https://www.inside.dtu.dk/-/media/DTU-Inside/Institutter-og-centre/Aqua/Forskning/Research-data-procedures-and-guidelines-DTUAqua.ashx?la=da&hash=5CA3FDF83ADCDD335C389D81F3FDBB2EEFD0A456)

[la=da&hash=5CA3FDF83ADCDD335C389D81F3FDBB2EEFD0A456](https://www.inside.dtu.dk/-/media/DTU-Inside/Institutter-og-centre/Aqua/Forskning/Research-data-procedures-and-guidelines-DTUAqua.ashx?la=da&hash=5CA3FDF83ADCDD335C389D81F3FDBB2EEFD0A456)

An annual survey report and survey manual is developed and stored in the data folder.

Otoliths readings are calibrated on a triannual basis.

A quality control protocol for all processes should be developed in the future.

Documentation and Metadata

An annual report is developed and stored in the project folder containing relevant metadata for the data.

The report is written as part of the annual survey. Presently, data can be downloaded via markdown reporting in a standardized format that are similar to the data format in the ICES database.

Question not answered.

The annual report.

All data is uploaded and stored in our own winSQL database, and a report explaining the data available.

Ethics and legal compliance

Data is not sensitive, but access is presently restricted to relevant parties.

he data belong to DTU aqua, and we are in charge of data sharing.

No sensitive data

No sensitive data

No copyright.

To be resolved.

No third-party involved

No

Storage, backup and security

Q:\scientific-projects\Tunge-Survey

Data is also stored in the SQL database "FiskeLine"

We have enough data storage for the time being

DTU is backing the data up on a regular basis

DTU

DTU procedures

Database is only accessible through logging in with a password provided by DTU aqua security administrators.

No sensitive data

Password

Data is sent by email, as per request.

Standard procedure for digitalization of logbooks and samples

Selection, preservation and sharing

All data present in the database as well as annual reports

All data can be retained

No data

All input and output data for the survey are to be stored

The data is the main source for data management and stock assessment for soles in Kattegat / Skagerrak, however data are made available for scientists and can be used for scientific purposes such as closed areas, MPAs fish distribution etc.

FiskeLine database

For all eternity

Its part of the monitoring standard routines

Timeseries

- Yes

Presently data has to be requested at DTU aqua, but in the future data is uploaded in a standard data format which can be downloaded via ICES database

When uploaded to datras it will be free for use. Until then on a case by case decision

datras database

Only people known to us will gain access before it is public available.

Presently not, to be resolved

Within a two year period

datras is a well know database to relevant parties

- Yes (If yes, please continue)

DTU AQUA needs to be informed before data is used.

1 year

No

Responsibilities and Resources

Henrik Degel / Ole Jørgensen

Henrik Degel

Question not answered.

No

No

No

- Yes (If charges are applied, how you are going to cover for the costs?)

In case of special request, there will be a charge in accordance with handling time.