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Our Ref: H.4/NH/LW/LS/ck   25 February 2022

Subject: Data call: VMS/Log book data for fishing activities in the North East Atlantic and Baltic Sea for the provision of ICES advice on the spatial distribution and impact of fisheries 2009 to 2021.

Dear Reader,

Please find enclosed a document describing the rationale, scope and technical details of this data call, as well as the secure use of data.

ICES advises on the environmental impacts of fishing and the use of space in the North East Atlantic and Baltic Sea. VMS data from vessels, coupled with log book data, is currently the most practical and cost-effective way to describe the spatial dynamics of fishing activities. This call reconciles the need for a rational approach to the cost of extracting and submitting the data by the states across the two regions. Please note that VMS and logbook data from 2009 to 2021 is requested this year and the deadline for submission is 15 April 2022.

National data specialists are encouraged to consider attending ICES's working group of spatial fisheries data (WGSFD). In case of questions please contact the ICES Secretariat (data.call@ices.dk) for clarification.

Remote support sessions will be organized to assist data submitters with data preparation and submission. Invitations will follow shortly.

Sincerely,

Lotte Worsøe Clausen

Head of Advice Department, ICES

CC: Patrik Jonsson (co-chair of WGSFD), Neil Campbell (co-chair of WGSFD), Darius Campbell (NEAFC), Kirill V. Kolonchin (VNIRO), Oleg A. Bulatov (Russian delegate to ICES), DG-MARE (EC).

Data Call Table of Contents

25 February 2022

Data call: VMS/Log book data for fishing activities in the North East Atlantic and Baltic Sea for the provision of ICES management advice on the spatial distribution and impact of fisheries 2009 to 2021.

1. Rationale of the Data call

The rationale for the call is that ICES advises on the environmental impacts of fishing and the use of space in the North East Atlantic and Baltic Sea. This call reconciles the need for a rational approach to the cost of extracting and submitting the data by the states across the two regions.

2. Scope of the Data call

VMS in combination with Logbook data is currently the most practical and cost-effective way to describe the spatial dynamics of fishing activities. The scope of the Data call is aggregated VMS data from vessels, coupled with corresponding log book data on fishing activities from 2009 to 2021 of fleets in the ICES area.

3. Legal framework

Generically, all the governments and intergovernmental commissions requesting and receiving advice from ICES have signed international agreements under UNCLOS 1995 Fish Stocks agreement article 5 and 6 to incorporate fisheries impacts on other components of marine ecosystems and WSSD 2002 article 30 to implement an ecosystem approach in relation to oceans policy including fisheries. These agreements include an obligation to collect and share data on, inter alia, vessel position (UNCLOS FSA art 5) and to support assessment of the impacts of fisheries on non-target species and the environment (UNCLOS FSA art 6).

Specifically, ICES has a standing request from the European Commission to advise and inform on the impacts of fisheries on the ecosystem including marine mammals, seabirds and habitats impacts. This should include information on the location of habitats sensitive to particular fishing activities.

For EU Member States, this data call is under the DCF regulation ((EC) No 2017/1004 and Commission Implementing Decision 2019/909/EU) and in particular, Article 17(3) of regulation (EC) No 2017/1004 which states "..*requests made by end-users of scientific data in order to serve as a basis* for *advice to fisheries management, Member States shall ensure that relevant detailed and aggregated data are updated and made available to the relevant end-users of scientific data within the deadlines set in the request,..*"

ICES is thus mandated to request VMS and logbook information to provide this advice. This mandate is supported by international agreements and the current EU data collection framework (DCF).

This Data call follows the principles of personal data protection, as referred to in paragraph (9) of the preamble in Council Regulation (EC) No 2017/1004.

4. Usage of requested data

ICES will use submitted VMS/Log book data to address the development of ICES advice addressing requests to describe fisheries activities and to evaluate the spatial and temporal effects of fishing, for example to describe fisheries activities in, and around, sensitive habitats (i.e. Vulnerable Marine Ecosystems, VMEs) and to map the aggregated distribution of fishing by different gear types.

5. Deadlines

The data should be submitted by 15 April 2022.

6. Data to report

6.1 Geographic and temporal scope

VMS anonymized data on fishing activities (all gears) from 2009 to 2021 of fleets in the ICES statistical areas (see link) is requested this year. Please note that this request covers all fishing gears, including but not restricted to demersal, pelagic and static gears. http://gis.ices.dk/geonetwork/srv/eng/catalog.search#/metadata/c784a0a3-752f-4b50-b02f-f225f6c815eb

6.2 Data format

The data call asks for VMS and coupled logbook data that are anonymized and monthly aggregated in a grid of concise spatial query and representation system of 0.05 x 0.05 degree grid using the approach of C-square reference XXXX:XXX:XXX:X (see Rees, 2003)

6.3 Data preparation

The ICES Working Group on Spatial Fisheries Data (WGSFD) and the ICES Secretariat have developed a workflow to prepare the data for submission. The workflow is divided into 3 blocks:

1. **1_eflalo_tacsat_preprocessing.R**: https://github.com/ices-eg/ICES-VMS-and-Logbook-Data-Call/blob/main/1_eflalo_tacsat_preprocessing.R

2. **2_ eflalo_tacsat_analysis.R**: https://github.com/ices-eg/ICES-VMS-and-Logbook-Data-Call/blob/main/2_eflalo_tacsat_analysis.R

3. **3_data_submission.R**: https://github.com/ices-eg/ICES-VMS-and-Logbook-Data-Call/blob/main/3_data_submission.R

The first two blocks are intended as a guide for submitters to prepare the data and their use is optional.

6.4 Electronic submission

ICES **strongly encourages** data submitters to use the third block of the workflow (3_data_submision.R) provided in GitHub (https://github.com/ices-eg/ICES-VMS-and-Logbook-Data-Call/blob/main/3_data_submission.R) to submit the data to ICES.

The data can be submitted using the R packages:

- icesVMS (https://github.com/ices-tools-prod/icesVMS),
- icesConnect (https://cran.r-project.org/web/packages/icesConnect/index.html)
- icesVocab (https://CRAN.R-project.org/package=icesVocab)

using your personal ICES login credentials.

Also available but not included in the workflow are icesDatsu (https://cran.r-project.org/package=icesDatsu) and icesDatsuQC (https://cran.r-project.org/package=icesDatsuQC) packages, mentioned here for completeness.

Additional information and support on how to prepare data is provided in a guidance document developed by WGSFD and ICES Secretariat available as a markdown file in Github: https://github.com/ices-eg/ICES-VMS-and-Logbook-Data-Call/blob/main/Data%20preparation%20and%20submission.md

Users who prepare the data independently of the workflow described above, must follow the format specified in ICES DATSU (http://datsu.ices.dk/web/selRep.aspx?Dataset=145), screen the data using either the web API service: https://data.ices.dk/vms/webAPI/ScreenVMSFile (for guidance on how to use the VMS WebAPI please read: https://data.ices.dk/vms/webservices and/or upload in ICES VMS Data portal (https://data.ices.dk/vms/manage/fileUpload) using your personal ICES login credentials.
Please note that there are two formats (VE-VMS Data and LE-Logbook data)

The submission will not progress if the format used does not conform to the required format and the submitter will be asked to fix the errors in order to proceed (DATSU check).

Upon successful submission (using workflow or not), ICES Secretariat will provide a quality report (QC). The report is based on standardized R-scripts, including calculation of summaries for the most important variables as well as maps to compare recent values with data submitted in previous years (https://github.com/ices-eg/ICES-VMS-and-Logbook-Data-Call/blob/main/report-QC_format2022.Rmd).

The QC report will be reviewed by the chairs of WGSFD and will provide feedback to the data submitter on potential data quality issues found in the QC report via the ICES Data Centre. Data submitters will be asked to respond and/or resubmit data. The period for feedback and/or resubmission will be from 15 April 2022 until 3 June 2022.

An audit trail of the data quality is tabulated and will be produced as an Annex to the WGSFD report 2022.
Please contact accessions@ices.dk or data.call@ices.dk for assistance with submission of VMS and logbook data.

6.5 Electronic Advice outputs

All advice outputs based on data held by ICES will also be provided as electronic outputs. This means: in addition to the graphical images found in the advice, underlying information on aggregated (all countries) spatial distribution of fishing effort will be presented in a form that will enable its use in spatial analysis to facilitate use of the advice. Maps can be communicated to the advice recipient as pdf files, tables or shapefiles, where the aggregated data values are presented as one value/range of values per c-square per gear grouping per year. This information is provided as an integral part of the advice. The underlying data themselves will not be made available to other parties. To ensure vessel anonymity, aggregated international effort and landings values of any c-squares containing 2 vessels or less will, in general, not be published. To do this, a text string of anonymized vessel identifiers shall be included (see 6.2 Format and submission procedures) by data submitters to allow for detection of c-squares with 2 vessels or less when data are aggregated (all countries).

Data can be considered sensitive if the activities of individual vessels can be inferred from the data (ICES, 2019a). Some data values (e.g. swept area ratios, SAR) are not sensitive and can be published even if there are less than 3 vessels within the aggregation. For sensitive data (e.g. fishing hours, total value, or average kW), values from c-squares with 2 vessels or less will be classified into ranges that are wide enough so that individual vessels cannot be identified. These new implementations reflect ongoing work by the ICES Working Group on Spatial Fisheries Data (WGSFD) to develop new procedures to preserve anonymity that started in 2019 (ICES, 2019).

The ICES Working Group on Spatial Fisheries Data Governance (WGSFDGOV) will review the data outputs and if deemed necessary ask the data providers to review and flag issues prior to the release of the requested data output.

6. Secure usage of data

Regarding the transmission, storage and handling of data, we inform that ICES will provide a secure database for data submitters (to upload their data to). The data will only be accessible by the technical staff in the Secretariat for the purposes of providing the data to the specific processes/working groups as named in the call.

In addition, ICES has an agreed VMS/logbook access and use policy for data resulting from this type of data call, which governs the process of who is given access and what they can do with the data. (ICES, 2022)

7. Contact information

For support concerning submission issues, please contact accessions@ices.dk or data.call@ices.dk or the chairs of WGSFD (neil.campbell@gov.scot and Patrik.jonsson@slu.se)

8. References

ICES. 2019. Working Group on Spatial Fisheries Data (WGSFD). ICES Scientific Reports. 1:52. 144 pp. http://doi.org/10.17895/ices.pub.5648

ICES.2022: Data use license for VMS and logbook data managed by ICES. https://doi.org/10.17895/ices.pub.10058

Rees, T. 2003. "C-square s", a new spatial indexing system and its applicability to the description of oceanographic datasets. Oceanography, 16(1), 11–19.