NATIONAL MARINE FISHERIES RESEARCH INSTITUTE, GDYNIA, POLAND

# Regulation (EU) 2017/1004 of the European Parliament and of the Council of 17 May 2017

on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy and repealing Council Regulation (EC) No 199/2008 (recast).

# Commission Delegated Decision (EU) 2021/1167 of 16 July 2021

establishing the multiannual Union programme for the collection and management of biological, environmental, technical and socioeconomic data in the fisheries and aquaculture sectors from 2022

# Commission Implementing Decision (EU) 2021/1168 of 16 July 2021

establishing the list of mandatory research surveys at sea and thresholds as part of the multiannual Union programme for the collection and management of data in the fisheries and aquaculture sectors from 2022

# Commission Implementing Decision (EU) 2021/…

laying down rules on the format for the submission of work plans and annual reports for data collection in the fisheries and aquaculture sectors

# POLAND

# Work Plan for data collection in the fisheries and aquaculture sectors

2022 – 2024

Version 1.0

Gdynia, 15.10.2021

# CONTENTS

SECTION 1: GENERAL INFORMATION

## Data collection framework at national level

*General comment: Use this text box to describe how data collection is organised in your Member State (institutions involved, contact information) and in which regional coordination groups (RCG) your Member State participates.*

Outline the general framework of the national data collection programme in relation to the relevant sections of the EU MAP. If applicable, indicate major methodological changes in approach compared to previous year(s), and to which section(s) they apply.

Based on the DCF Regulation, the Polish Fisheries Act includes a statutory delegation for the minister in charge of fisheries to designate the institution responsible for implementation of the EU multi-annual program for fisheries data collection. In the regulation issued on the basis of this statutory delegation, the minister responsible for fisheries appointed the National Marine Fisheries Research Institute (NMFRI) to implement the DCF program.

Give full name, acronym and contact details of all institutes that contribute to the data collection activities, and describe briefly their role in the work plan.

1. **The Fishery Department of the Ministry of Agriculture and Rural Development (MRiRW)**.

Address:
Wspólna 30
00-930 Warszawa, Poland

Contact
Secretariat: tel. +48 22 583 89 00; fax: +48 22 583 89 01; e-mail: sekretariat.dr@minrol.gov.pl

Role
Comprehensive supervision of the implementation of the fisheries policy with regard to marine and freshwater fisheries and aquaculture.

2. **National Marine Fisheries Research Institute (NMFRI)**

Address:
Kołłataja 1
81-332 Gdynia, Poland

Contact
Secretariat: tel. +48 58 73 56 232; fax: +48 58 73 56 110; e-mail: sekretariat@mir.gdynia.pl

Role
Implementation of the EU multi-annual program for fisheries data collection since 2005.

**National Correspondent**:
Ireneusz Wójcik (NMFRI); tel. +48 58 73 56 232; e-mail: iwojcik@mir.gdynia.pl

Provide a link to the national data collection website, if there is one.

https://dcf.mir.gdynia.pl/

*(max. 1000 words)*

## Text Box 1b: Other data collection activities

*General comment: This text box applies to the work plan and the annual report. Use this text box to provide information on other data collection activities that relate to your EMFAF operational programme and need to be included in the work plan and the annual report. Describe activities that are funded by the DCF but fulfil objectives under other EMFAF priorities, like marine knowledge, or activities funded by the DCF, but without a direct link to the EU MAP specific requirements or WP template tables, like freshwater fisheries. You can also include one-off specific studies for a particular end-user need that do not enter the regular data collection.*

1. Aim of the data collection activity

Developing mechanisms to support the planning and execution of administrative tasks and the branding and online visibility of the RCGs, with the aim to establish a long term supportive structure.

Activity done under Project SecWeb (Mare 2020-08).

2. Duration of the data collection activity

01/01/2021 – 31/12/2022

3. Methodology and expected outcomes of the data collection activity

The Regional Coordination Groups (RCGs) are the main hub for regional coordination and cooperation between member states within the different regions. The RCGs should in accordance with Council regulation (EU) 2017/1004 aim at developing and implementing procedures, methods, quality assurance and quality control for collecting and processing data with a view to enabling the reliability of scientific advice to be further improved. The RCGs may further prepare draft regional workplan, complementing or replacing the national workplan MS submit to the Commission on a regular basis. The RCGs have further a key role to interact with end-users of scientific data (EU) 2017/1004 and to, after end-user consultation, coordinate and agree on details in data to be collected and managed on the regional level ((EU) 2021/1167).

All the above is of interest to all member states, active in one or more regions.

This project on developing the supporting tools is currently funded by the Commission. For the long term development of the tools to support the work of the RCGs, and as such support the different MS, suggestions were presented and discussed at the RCGs (NA NS&EA and Baltic) technical meetings in June 2020 & 2021 and presented to the NCs during the Decision meeting in September 2020&2021. In principal, the MS agrees, but the NCs requested more time to take this into account, and requested a better insight in what would be provided before a national contribution for the funding decided. Therefore, within this project, the different business scenarios are further developed and will be presented to all member states.

*Objectives of this activity is to:*

1. Develop a framework and setup a secretariat in support of fluent administrative procedures of the RCGs and establish a suitable long-term financial script for that;
2. Promote good practices in communication within and among the RCGs and engaging with all the MS, and other stakeholders;
3. Develop and setup a website linked with existing (relevant) websites and SharePoint, and to improve the overall capacity to reach out to the member states and to a wider audience about past and present RCG work;
4. Identify tools to increase the visibility of the work and outputs of the RCGs

*Methodology*

WP 1: Setting up the secretariat in support to RCGs and ISSGs,

The tasks of the RCG secretariat are defined in coordination with RCGchairs. This includes the support to organize RCG meetings, reporting and communication tasks, as well as the follow up of the intersessional work. As a case study, a secretariat is set up to support the RCG NA NSEA & RCG Baltic .

WP2: Developing and operating a website

Based on a process of consultation with the RCG, MS and end-users are contacted to collect input for the website.
Within the website, a repository for documents need to be available where confidential information can be stored. This information is of high value for the members states and will be reachable by the MS..

WP3.Ensuring future operation and funding:

This WP takes into account the output from WP1& and WP2. Through the activities in this WP different business models for long term funding will be developed and presented.

*Expected outcomes:*

1. The provision of dedicated Secretariat support for the RCGs to ensure the efficient use of RCG MS resource allocation.

2. A website developed by the end of 2021 with following features:

- ✓ Integration – synchronization with third-party applications.
- ✓ Responsive – to serve content across multiple screens and platforms.

- ✓ User experience- maintain a consistently good user experience.
- ✓ Accessibility – All levels of society and end-users need to be able to access in a friendly used way .
- ✓ Retention- keep visitors coming back
- ✓ Links to protected part outside the website as repository for confidential documents

3. Visual identity for RCGs

4. Stakeholders database

5. Internal communication protocol

6. Integration of the results of the Mare2020/08 Annex I project

7. A business scenario acceptable for all MS in the different regions and COM to ensure the long-term existence of a secretariat and the RCG website

A detailed description of the secretariat functions, the implementation of the secretariat, the content of the website, the building blocks of the website and the business model for the provision of Secretariat role and website continuation (updating& maintenance) will be provided.

Future progress in continued support for regional coordination depends on the project's outcomes and the selected route to proceed and fund the required work. As regional coordination is the cornerstone of the collective approach to data collection, the continuation of the work may be embedded in a regional work plan in the future based on national input and support.

*(max 900 words per activity)*

SECTION 2: BIOLOGICAL DATA

## Text Box 2.3: Diadromous species data collection in freshwater

*General comment: This Textbox fulfils Article 5(2)(a), Article 6 (3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II, point 2.1(b) and point 2.3 of the EU MAP Delegated Decision annex. Use this text box to give an overview of the methodology used for the data collected from freshwater commercial fisheries for salmon, sea trout and eel, and from research surveys on salmon and sea trout in freshwater, and on eel in any relevant habitat including coastal waters.*

**European eel**

Already since 2010 WGEEL has been indicating the need of an assessment of biomass and mortality indicators in management as well as scientific reference points to ultimately result in a scientific advice framework that works in line with the ICES precautionary approach. The sampling design will provide relevant data for biomass assessment to WGEEL to perform the approach for international stock assessment.

**As required by DECISION (EU) 2021/1167** data collection for two Polish EMU`s (Oder and Vistula) will consist of:

- catch quantities derived from inland commercial and recreational fisheries

In order to collect relevant data, special questionnaires will be developed and sent to a representative group of fishing operators. These will be mainly fishing companies and districts of the Polish Angling Association (PAA), as well as individual natural persons (individual fishermen), national parks, fishing associations and other entities. Based on expert knowledge, the collected sample will represent the most important entities operating in the fisheries sector in Poland. Catch estimates are provided each year following the data call of ICES Working Group on Eels (WGEEL). Quality of the data provided are discussed and verified during the group meetings.

- biological variables

Samples will come from fishing from lakes and rivers in northern Poland. It is planned to collect a total of 500 eel individuals and determine variables such as age, length, weight, sex and life stage.

- the abundance of recruits – catch data obtained from eel ladder in Slupia river, data on stocking from statistical questionnaires and resellers.

Based on the research from 2016-2020, the natural recruitment of eels to Polish waters is negligible. It was decided to use one eel ladder on the border of Vistula and Oder EMU. Recruitment rates will be mainly derived from data on restocking with ongrown eels.

- the abundance of the standing stock – calculated by mathematical modelling, supplemented by data from scientific non selective fyke nets set in lagoons and lakes.
- the number of emigrating silver eels will be calculated by mathematical modelling.
- the stock dynamics of eel for both EMU's is estimated using a version of CAGEAN model (Deriso et al., 1985), described in the Polish Eel Management Plan. Data will be delivered to WGEEL annually.

**Salmon and sea trout**

Data about volume of commercial catches will be obtained from special questionnaires. Stock related variables will be collected during monitoring of commercial catches and landings. Biological data are stored on the protocols and in the excel file. Digitized data are cross checked to avoid errors. It is planned to collect 100 samples of sea trout. Salmon catches are incidental and there is no fishery targeting these species.

Fishing for sea trout and salmon parr will be carried out using the electrofishing method. On their basis, the density of salmon and sea trout fry in individual age classes will be estimated. The research fishery will be carried out in 11 rivers of northern Poland, in at least 41 positions located in the areas of the spawning grounds of sea trout and salmon. The result of the work should be a set of data required by the WGBAST working group.

Number of ascending individuals of sea trout and salmon will be recorded by automatic counters. Currently, it is planned to collect data from counters located on 3 main salmonid rivers – Slupia, Drawa, Rega, Parsęta. The device is recording among others time data, water temperature, fish direction, fish length and short video sequence of particular fish. The compatibility of recorded data are additionally verified by visual checking and any false signals are removed from the database.

**Recreational catches of salmon and sea trout inland waters**

Sea trout is an important angling goal in the coastal rivers. The majority of rivers of this area are located within the Polish Angling Assosiation (PAA) usage range. Currently, the only source of information on the level of angling catches is catch registers maintained by individual PAA districts. However, the data obtained from the records are incomplete. This is due to the different level of recovered records in individual districts, the lack of information on catches of visiting anglers and the problem of reliability of data entered into registers. The aim of the monitoring is to implement a set of actions enabling gathering and development of reliable data on angling catches of sea trout and salmon in the selected rivers of the northern Poland.

The survey covers all year execept closed season (October-December).

Three rivers of different size have been selected for a monitoring, i.e. Słupia, Rega, Łeba, Parsęta which are the Pomeranian rivers (SD 25), and the Ina river that belongs to the Oder catchment area (SD 24). They are all mixed sea trout rivers, where sea trout is also the main object of angling activity. The protection period for sea trout lasts from 1 October to 31 December. The sea trout angling in Poland is focused mainly on catching kelts (January–March). Apart from this period, the months of increased pressure are September and the turn of June and July.
The methodology of estimating the angling catches will be based on the following elements:

- Analysis of catch records from the PAA districts of the analyzed rivers. Since the access to data is shifted in time, the time of processing results falls for the next year. The analysis of the registers must provide such information as: number of registers issued, number of registers returned, share of full and partial licenses, reported number of sea trout and salmon.
- Confrontation of angling data with information obtained from automated meters (Słupia, Parsęta and Ina - Riverwatcher) and data from the catch points (Rega and Słupia).

Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the WGBAST meeting.

*(max 250 words per species and area)*

## Text Box 2.4: Recreational Fisheries

*General comment: This text box fulfils Article 5(2)(a), Article 6 (3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II, point 2.2 of the EU MAP Delegated Decision annex. Use this text box to give an overview of the methodology used for the data collected on marine and freshwater recreational catches.*

Description of the sampling scheme/survey according to Table 2.4.

**Recreational fisheries for diadromous species**

The aim of the monitoring is a development of a current map of the Polish Exclusive Economic Zone with spatial and temporal distribution of salmon, seatrout and eel recreational fisheries by species and fishing techniques. Depending on the target species and fishing techniques used, the monitoring should cover time period from late autumn to late spring in order to determine areas and time with highest recreational fisheries activities and to provide a reliable monitoring data for estimates of fishing effort as well as catch volume and composition for recreational fisheries for salmon and seatrout.

One module is dedicated to monitoring of recreational fisheries of salmon and seatrout conducted at sea with the use of trolling technique (trolling boats – salmon and sea trout).

There are two basic categories of trolling boats active in this fisheries:
Commercial boats, for which the recreational fishery is an official commercial activity. Such boats take on board up to 4-6 recreational fishermen who are fishing under the interim or full-year permit/license purchased by the boats' owners and other boats, taking occasionally on board recreational fishermen holding individual fishing permits.

Five main methods will be applied to monitor the composition of the fleet engaged in the recreational fishery and fishing effort:

- remote CCTV cameras installed in ports identified as the most important for salmon and seatrout recreational fishery (Hel, Gdańsk - Górki Zachodnie). The cameras record boat movements between 04:00 and 18:00 each day. A high image frame rate; Full HD format (25 images per second) is set to ensure full coverage of the activity at each monitored marina and correct identification of trolling boats. Taking into account the capacity of cameras hard drives, data from them should be downloaded to the NMFRI server at three-month intervals;
- monthly on-site questionnaire interviews. Trolling boats are randomly sampled from both groups; commercial recreational boats and private fishing boats. The number of interviewed boats is selected randomly. The App dedicated to the survey is used by the observers. The refusal rate is recorded. The number of anglers on boat and fishing rods are recorded in the protocol. In addition, sociological data are collected;
- annual off-site questionnaire interviews. An annual off-site survey is targeting in general sea recreational fishing in Polish Maritime Waters with a particular emphasis of diadromous fish species.;
- onboard observations – observers' participation in trolling cruises (one trip per month). The biological samples (length, weight, sex, age, maturity stage) and catch composition are collected. Scales samples are collected from each fish and stored in the paper envelopes. The GPS position is recorded three times during the trip (start, middle and end of fishing). In addition, number of anglers on boat and fishing rods are recorded in the protocol. Directly, after each trip, collected data are digitized in the excle file. In addtion, paper protocols are stored;
- annual fishing logbooks for trolling boats skippers/owners. A fishing loogbooks, containing cruise data as well as biological data of fish caught are distributed among the trolling boats' skippers/owners to fill-in on a voluntary basis.

The use of remote CCTV cameras for monitoring of recreational salmon trolling fishery effort revealed that remote cameras proved to be a cost-efficient method providing accurate fishing effort estimates helping to reduce bias in recreational catch estimates. On-site as well as off-site questionnaire interviews appear to be method delivering data of high quality. Onboard observations at sea, on-site interviews and data collected through the CCTV cameras will serve to verify the reliability/accuracy of the catch volumes estimates based on the off-site questionnaire interviews and annual fishing logbooks for trolling boats filled by skippers/owners.

Other module - the monitoring of coastal recreational fisheries of seatrout and eel from the shore with the use of fishing rods will be conducted with the use of method listed below. The duration time cover the period from late autumn to late spring (sea trout) and from late summer to early autumn (eel).

- Sea trout and eel - off-site questionnaire interviews. An annual off-site survey is targeting in general sea recreational fishing in Polish Maritime Waters with a particular emphasis of diadromous fish species;
- Sea trout and eel – on-site questionnaire interviews covering the period from late autumn to late spring (sea trout) and from late summer to early autumn (eel). Remark: In case of eel, pilot study conducted revealed that on-site questionnaire interviews meet the difficulty/impossibility of distingushing anglers targeting eel from total number of anglers interwieved.

Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST) and ICES Working Group on Eels (WGEEL) for sea trout and eel respectively. Quality of the data provided are discussed and verified during the group meetings.

**Cod recreational fishery**

In Poland there is a dedicated fleet segment of private boats and registered charter boats adapted to cod recreational fishery – angling with fishing rods (LHP). For the purpose of sampling this segment under DCF, the Primary Sampling Unit is vessel/trip and the target population was defined as the total number of recreational sea-going trips targetting cod. The size of this target population varies between years with decreasing trend over the last years. Each year, a 24 randomly sampled fishing trips were monitored.

The recreational fishery for cod (*Gadus morhua)* in Poland is monitored using effort information (number of angling trips in sampling frames - ICES Subdivision and quarter) provided by Harbour Master Offices and mean weight of cod per trip in the given sampling frame calculated from on-board observed trips.

Four types of data were collected in order to monitor the development of *Gadus morhua* recreational fisheries and to estimate the catch level.

1. Data on the number of recreational sea-going trips and the number of anglers participating at those trips were collected from Harbour Master Offices' registers.
2. Data on total weight of fish caught and biological data (length, weight, sex, maturity and age) were collected and processed from angling trips with observers on-board.
3. Daily reports of recreational catch delivered until 2018 to regional inspectorates of marine fisheries and from 2019 to General Inspectorate of Marine Fisheries by owners of charter boats (mandatory catch reporting since March of 2015).
4. Interviews with anglers (questionnaires' survey) during on-board observer trips.

Data on number of recreational sea-going trips and the number of anglers participating at those trips collected from Harbour Master Offices' registers are the comprehensive data source on marine recreational fisheries status. Each angling vessel's departure, including number of anglers on-board, is recorded in Harbour Master Offices' documents. Data on number of recreational fishing trips in the given year ("N") can be collected from Harbour Master Offices during the following year ("N+1").

Main purpose of on-board observed trips is to measure the length and weight of each fish caught in order to determine catch composition and the whole catch of fish during given trip (the catch is also sampled for other biological data - sex and age). This allows for estimating the total catch applying raising method by number of trips recorded by Harbour Master Offices. In order to obtain uniform coverage of biological data sampling over the year and by ICES Subdivision, the number of planned observed sea-going trips in 2022-2024 is 6 observed trips in each quarter (2 observed trips per month). Selection of trips to observe is not random but is based on the availability of space onboard with the purpose of having uniform coverage of ICES SDs.

*(max 900 words per region)*

## Text Box 2.5: Sampling plan description for biological data

*General comment: This text box fulfils Article 5 (2)(a) and (b), Article 6 (3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter 2, point 2.1(a) and 4.1 of the EU MAP Delegated Decision annex. This text box complements Table 2.5.*

Additional information on sampling schemes

Baltic at sea, Baltic on shore

At sea sampling is considered to be the most reliable data source on all catch fractions including landings, discards and BMS, as well as bycatch of PETS. In the period covered by the previous work plan, which is from 2020 to 2021, a combined sampling scheme for at sea and on shore sampling was implemented. Sampling at sea was assumed to have a higher priority over sampling on shore, which was only conducted when there was no possibility to have a scientific observer on board. Following the recommendations from STECF EWG 21-09, separate sampling schemes for at sea and on shore sampling are defined in the work plan for the period 2022-2024. The analysis of the number of trips per observation type from the last few year was performed in order to determine the planned number of trips for both sampling schemes. Figure 1 shows the percentage shares of the number of sampled trips by vessel length categories and observation types from the period 2017-2020.

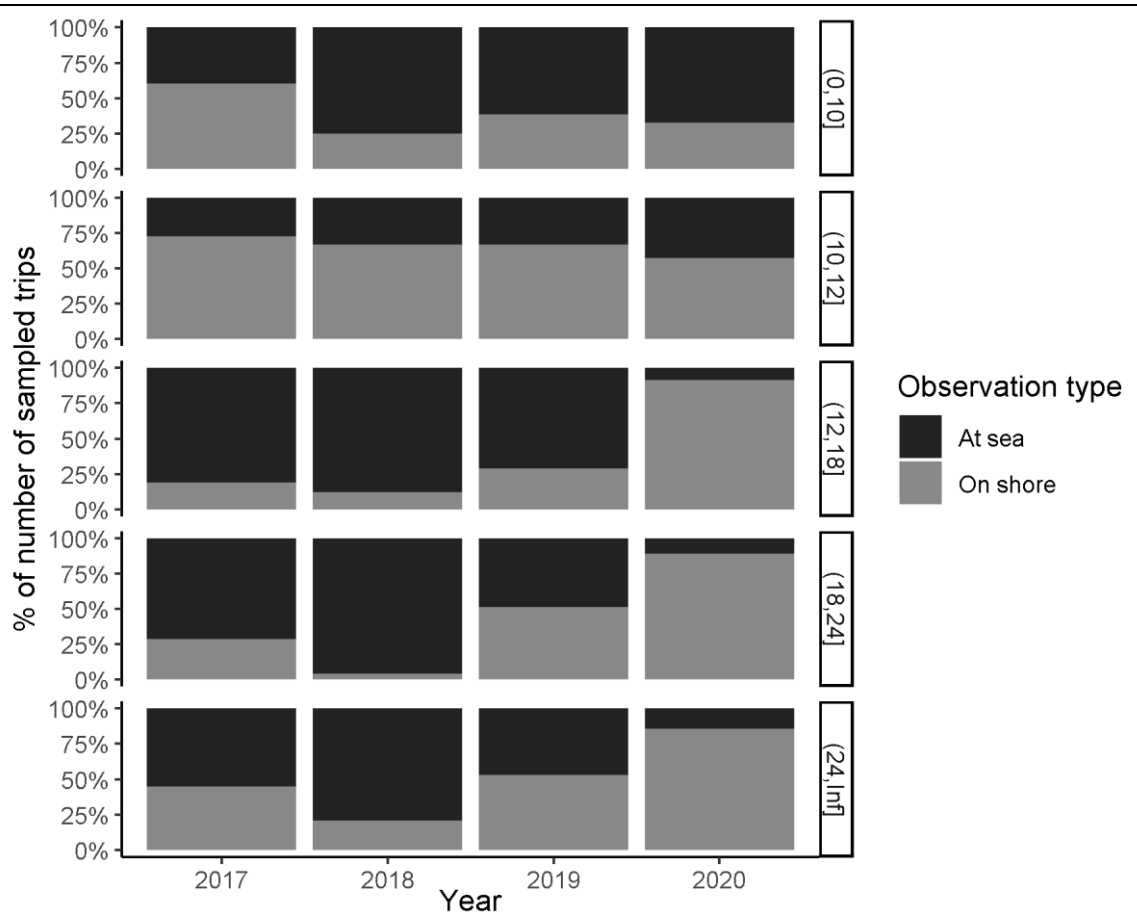



Figure 1. Sampled trips by vessel length categories.

In many cases the number of sampled trips per observation type is not stable over the years (in the last two years mainly because of the covid-19 pandemic). Therefore, it was decided to divide the total number of planned sampled trips equally between at sea and on shore schemes. Once the results from the first implementation year are available, it will be decided if the share of the number of sampled trips by observation type needs to be adjusted.

The primary sampling unit applied in the sampling program is vessel*trip. The list of vessels is used as a proxy to select a trip, because the list of trips is not known in advance. An important element related to the stratification of primary sampling units is to avoid PSU being included in many groups. Therefore, vessel length categories were selected to define stratification groups. Such approach was found to be very flexible in case of sudden changes in the fisheries caused by e.g. change in a legislation, natural causes. Moreover, the vessel length categories defined in the sampling plan are related to different types of fisheries, which can be seen on the figure 2.

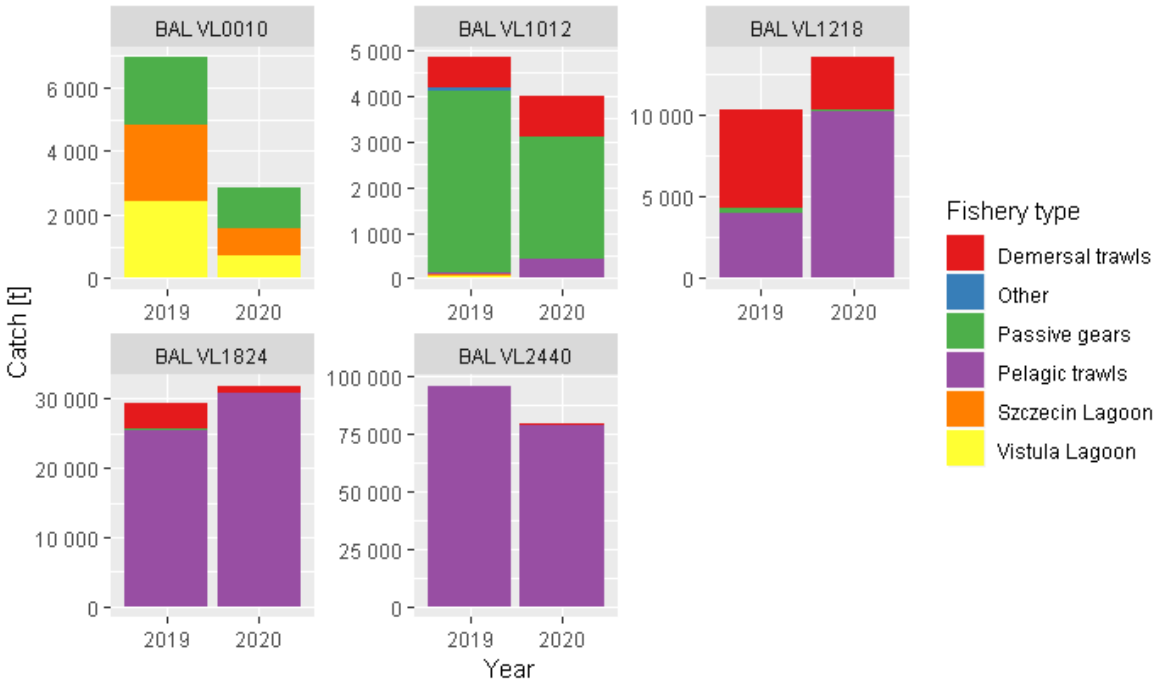



Figure 2. Catches by vessel length categories and fishery types in the Baltic Sea

For each group of PSUs, an average annual catch in kg and an average annual number of trips were calculated using official catch statistics from the period 2018-2020. These values were used as factors to allocate the planned number of sampled trips between groups of PSUs and quarters. Groups related to small scale fisheries have relatively high number of trips and low catch weight, unlike larger vessels. Therefore, both effort and catches are used to cover all PSU groups with a sufficient number of planned sampled trips.

The total number of planned sampled trips were split across all groups and quarters. 50% of the total number of planned sampled trips were allocated to groups and quarters proportionally to the average annual number of fishing trips from the period 2018-2020. The remaining 50% of the total number of planned sampled trips were allocated to groups and quarters proportionally to the average annual catches from the period 2018-2020. The numbers of planned sampled trips per groups of vessels and quarters is presented in the figure 3.

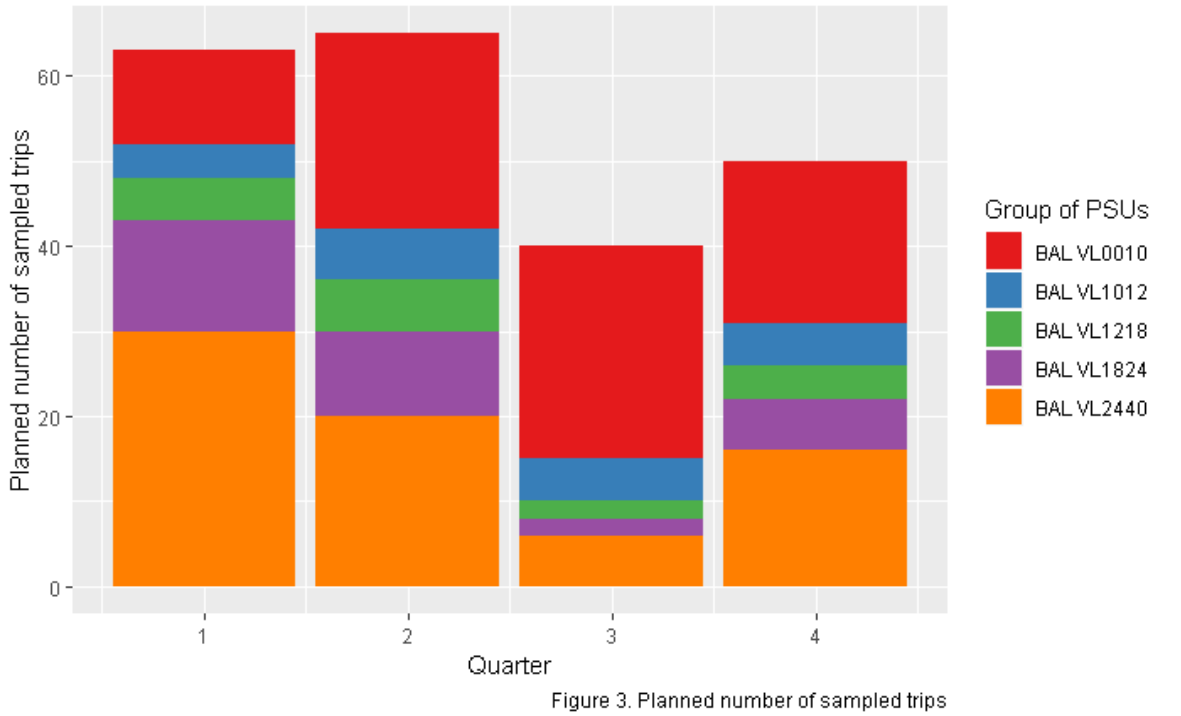



Figure 3. Planned number of sampled trips

Based on the designed sampling plan, a simulated selection of vessels and trips was conducted using the data from 2019. It was decided not to use data from 2020 for the simulation because data from that year may not be representative enough due to covid-19 pandemic as well as fisheries closures related to the condition of Baltic cod. The list of PSUs consists of all vessels active in 2019. Unequal probability sampling with replacement was applied to draw vessels from the list. The probability of a vessel being selected is determined by an average annual catches from the period 2018-2020. In the second step, trips were selected using simple random sampling without replacement. Major fishery types were identified. The results of the simulated selection of PSUs are shown in the figure 4.

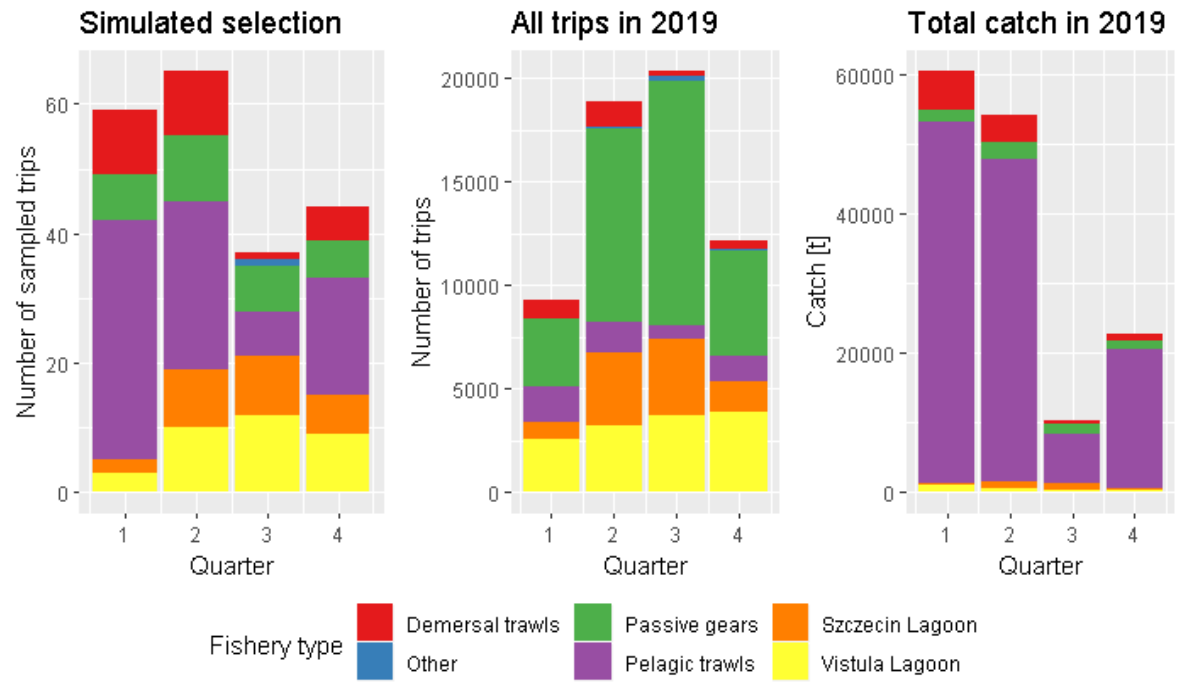



Figure 4.Results of the simulated selection of trips by the types of fisheries

The results of the simulation allow to assume that the selection of PSU based on the designed sampling plan will sufficiently cover major types of fisheries.

Self-sampling of small pelagic's in the Baltic

The sampling scheme is described in the Annex 1.1. The frequency of sampling results from the methodology agreed on the RCG ISSG "Case study of fisheries for small pelagic's in the Baltic". The sampling is planned on a monthly basis and is limited to the first quarter only. In 2022 this sampling scheme will continue as part of the Baltic small pelagic Regional Sampling Plan (RSP), as decided by NC at the 2021 RCG Decision Meeting.

North Sea and Eastern Arctic at sea

The sampling scheme is described in the Annex 1.1. Sampling design and sampling protocol are described I document " *DCF-Sampling-Design-and-Plan-description-Demersal-NSEA*" (https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/DCF-Sampling-Design-and-Plan-description-Demersal-NSEA.pdf)

CECAF at sea sampling

The sampling scheme is described in the Annex 1.1.

Data collection is coordinated and executed by POL and data provision executed by NLD under joint sampling programme based on *"Multi-lateral agreement between Germany, Latvia, Lithuania, The Netherlands and Poland for biological data collection of pelagic fisheries in CECAF waters 2018-2020 (extension 2021-2023)"* (https://dcf.mir.gdynia.pl/?page_id=365). Data collected in CECAF are transferred to NLD for processing, further quality checks and transmission to CECAF WG.

SPRFMO at sea sampling

The sampling scheme is described in the Annex 1.1.

Data collection is coordinated and executed by POL under joint sampling programme based on *"Multi-lateral agreement for 2017 and 2018 between Germany, Lithuania, The Netherlands and Poland for biological data collection of pelagic fisheries in SPRFMO waters (extension 2021-2023)"* (https://dcf.mir.gdynia.pl/?page_id=365).

Data collected in SPRFMO area are processed by POL and transmitted to SPRFMO Secretariat and to SPRFMO Scientific Committee.

Additional description of sampling frames

BAL VL0010 - Baltic vessels under 10 meters in length.

The largest group, which consists of small boats using passive gears, fishing mainly in lagoons and coastal waters.

BAL VL1012 - Baltic vessels between 10 and 12 meters in length.

The group consists of small vessels using mainly passive gears and, to a lesser extent, bottom trawls.

BAL VL1218 - Baltic vessels between 12 and 18 meters in length.

The group consists of vessels using mainly active gears, targeting both pelagic and demersal species.

BAL VL1824 - Baltic vessels between 18 and 24 meters in length.

The group consist of vessels fishing mainly with pelagic trawls and, to a lesser extent, bottom trawls.

BAL VL2440 - Baltic vessels between 24 and 40 meters in length.

The group consists of the largest pelagic trawlers having the highest catches.

Pelagics pilot - Baltic vessels fishing for small pelagic's

The group consists of vessels which were active at least once in the period February-April 2020, were using OTM, had total landings 10t minimum, were targeting sprat or herring (over 95%) and have length above 17.5m.

NSEA - Freezer trawler targeting cod in NS&EA

Usually only one fishing vessel operating in this fishery.

CECAF at sea - Pelagic trawlers fishing in CECAF

This fishery is conducted by EU fishing vessels.

SPRFMO at sea - Pelagic trawlers fishing in SPRFMO

This fishery is conducted by EU fishing vessels.

*(One text box of max. 1 000 words per region/RFMO/RFO/IO)*

## Text Box 2.6: Research surveys at sea

*General Comment: This Text box fulfils Article 5 (1)(b), Article 6 (3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapters I and II of the EU MAP Implementing Decision. It is intended to specify which research surveys at sea set out in Table 2 of the EU MAP Implementing Decision will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU-MAP Implementing Decision or whether it is an additional survey.*

*(Use one text box per survey)*

**Baltic International Trawl Surveys – BITS_Q1**

1. Objectives of the survey

The aim of the BITS surveys is to provide fishery-independent fish stocks size indices for the stock assessment, mainly of cod (*Gadus morhua*), flounder (*Platichthys flesus*) and to some extent to sprat (*Sprattus sprattus*) and herring (*Clupea harengus*). In addition, the recorded distribution of less abundant species in the Baltic benthic zone is reflecting the temporal-spatial changes in fish biodiversity. Moreover, materials collected during the BITS surveys are used as the input data for analysis fluctuation of Baltic fish year-classes abundance, including recruits. Hydrographical parameters like seawater temperature, salinity and oxygen content are sampled to analyse the relation between fish temporal distribution and density and current hydrological conditions.
Additionally, following data are collected during BITS surveys:

- *Gadus morhua* stomachs are sampled to analyse the food components,
- Data on marine litter per haul,
- Presence of PETS.

National parts of the BITS_Q1 surveys should be carried out in the first quarter, between 1 February and 31 March (winter/spring survey).

2. Description of the survey design and methods used in the survey for each type of data collection as listed in Table 2.6 for this specific survey.

Description of the survey design and methods used in the survey can be found in the *"ICES. 2017. Manual for the Baltic International Trawl Surveys (BITS). Series of ICES Survey Protocols SISP 7 - BITS. 95 pp. http://doi.org/10.17895/ices.pub.2883"*

3. For internationally coordinated surveys, describe the participating Member States/vessels.

BITS surveys are coordinated by the ICES Working Group on Baltic International Fish Survey (WGBIFS). MS participating in BITS_Q1 surveys: DEU; DNK; LTU; LVA; SWE

4. Where applicable, provide more details on the type of participation and/or threshold agreement applied.

NA – no other MS participate in surveys conducted by POL

*(max 450 words per survey)*

*(Use one text box per survey)*

**Baltic International Trawl Surveys – BITS_Q4**

1. Objectives of the survey

The aim of the BITS surveys is to provide fishery-independent fish stocks size indices for the stock assessment, mainly of cod (*Gadus morhua*), flounder (*Platichthys flesus*) and to some extent of sprat (*Sprattus sprattus*) and herring (*Clupea harengus*). In addition, the recorded distribution of less abundant species in the Baltic benthic zone is reflecting the temporal-spatial changes in fish biodiversity. Moreover, materials collected during the BITS surveys are used as the input data for analysis fluctuation of Baltic fish year-classes abundance, including recruits. Hydrographical parameters like seawater temperature, salinity and oxygen content are sampled to analyse the relation between fish temporal distribution and density and current hydrological conditions.
Additionally, following data are collected during BITS surveys:

- *Gadus morhua* stomachs are sampled to analyse the food components,
- Data on marine litter per haul,
- Presence of PETS.

National parts of the BITS_Q4 surveys should be carried out in the fourth quarter, between 1 and 30 November (autumn survey).

2. Description of the survey design and methods used in the survey for each type of data collection as listed in Table 2.6 for this specific survey.

Description of the survey design and methods used in the survey can be found in the *"ICES. 2017. Manual for the Baltic International Trawl Surveys (BITS). Series of ICES Survey Protocols SISP 7 - BITS. 95 pp. http://doi.org/10.17895/ices.pub.2883"*

3. For internationally coordinated surveys, describe the participating Member States/vessels.

BITS surveys are coordinated by the ICES Working Group on Baltic International Fish Survey (WGBIFS). MS participating in BITS_Q4 surveys: DEU; DNK; EST; LTU; LVA; SWE

4. Where applicable, provide more details on the type of participation and/or threshold agreement applied.

NA – no other MS participate in surveys conducted by POL

*(max 450 words per survey)*

*(Use one text box per survey)*

**Sprat Acoustic Surveys – SPRAS**

1. Objectives of the survey

The main aim of the SPRAS surveys is an estimation of the abundance indices of *Sprattus sprattus* in May, with the use of standardized survey design, acoustic measurements, fishing method and data analysis for stock assessment purposes. Hydrographical parameters like seawater temperature, salinity and oxygen content are sampled to analyse the relation between fish temporal distribution and density and current hydrological conditions. Additionally, observation of presence of PETS is conducted.

2. Description of the survey design and methods used in the survey for each type of data collection as listed in Table 2.6 for this specific survey.

Description of the survey design and methods used in the survey can be found in the *"ICES. 2017. Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 - IBAS. 47 pp. http://doi.org/10.17895/ices.pub.3368"*

3. For internationally coordinated surveys, describe the participating Member States/vessels.

SPRAS surveys are coordinated by the ICES Working Group on Baltic International Fish Survey (WGBIFS). MS participating in SPRAS surveys: DEU; EST; LTU; LVA.

4. Where applicable, provide more details on the type of participation and/or threshold agreement applied.

NA – no other MS participate in surveys conducted by POL

*(max 450 words per survey)*

*(Use one text box per survey)*

**Baltic International Acoustic Surveys – BIAS**

1. Objectives of the survey

The aim of the BIAS surveys is an estimation of *Clupea harengus*, *Sprattus sprattus* and, to some extent, *Gadus morhua* stocks resources (biomass and abundance) and analysis of their spatial distribution in the pelagic zone of the southern Baltic during autumn season, with the use of standardized survey design, acoustic measurements, fishing method and data analysis for stock assessment purposes. Hydrographical parameters like seawater temperature, salinity and oxygen content are sampled to analyse the relation between fish temporal distribution and density and current hydrological conditions. Additionally, observation of presence of PETS is conducted.
BIAS surveys are carried out annually in September/October.

2. Description of the survey design and methods used in the survey for each type of data collection as listed in Table 2.6 for this specific survey.

Description of the survey design and methods used in the survey can be found in the *"ICES. 2017. Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 - IBAS. 47 pp. http://doi.org/10.17895/ices.pub.3368"*

3. For internationally coordinated surveys, describe the participating Member States/vessels.

BIAS surveys are coordinated by the ICES Working Group on Baltic International Fish Survey (WGBIFS). MS participating in BIAS surveys: DEU; DNK; EST; FIN; LTU; LVA; SWE.

4. Where applicable, provide more details on the type of participation and/or threshold agreement applied.

NA – no other MS participate in surveys conducted by POL

*(max 450 words per survey)*

*(Use one text box per survey)*

**Baltic Ichthyoplankton Survey**

1. Objectives of the survey

The main aim of the Baltic Ichthyoplankton Surveys is monitoring of the spatial distribution and abundance of fish eggs and larvae. Several individual survey cruises are conducted each year in close collaboration between several institutes around the Baltic Sea. The surveys are conducted between March and November, aiming to cover the entire spawning season of the target species, Baltic cod. However, depending on the time of sampling, eggs and larvae of other species are caught as well, such as e.g. sprat, herring and flounder as well as several non-commercial species. As spawning of Baltic cod is presently mainly restricted to the Bornholm Basin due to the ambient hydrographic conditions, the main survey area is located in ICES SD 25, but some cruises also cover adjacent areas to account for potential spatial extension of spawning activity. In addition to the ichthyoplankton sampling, a number of trawl hauls are conducted to obtain information on the adult cod, in particular on their fecundity and sex ratios. Furthermore, hydrological parameters are recorded throughout the survey area via CTD casts, and their vertical and horizontal variations are taken into account during analysis and interpretation of survey results. The data resulting from these surveys are utilized to produce a fishery independent SSB estimate as well as a larval index, which are used in the stock assessment of Baltic cod.

As mentioned, several institutes are contributing to these surveys to cover the spawning season of Baltic cod from March to November. National Marine Fisheries Research Institute is conducting a survey in June onboard on polish RV Baltica, which is a joint survey with the DTU Aqua, Denmark. In addition, one survey is conducted in August only by NMFRI, also on RV Baltica.

2. Description of the survey design and methods used in the survey for each type of data collection as listed in Table 2.6 for this specific survey.

Ichthyoplankton is sampled on a regularly spaced station grid consisting of 60 stations in the main Basin. The sampling gear is a Bongo net with an opening diameter of 60 cm and nets of 320 cm length, one net with 500 µm and one net with 335 µm mesh size. The gear is deployed at 3 knots ship speed in a double-oblique haul from the surface to 5 m above the sea floor. In addition, on each sampling station profiles of the ambient hydrographic conditions are obtained by CTD casts. Adult fish are sampled by different types of otter trawls, depending on the institute conducting the individual cruises.

3. For internationally coordinated surveys, describe the participating Member States/vessels.

a. DTU Aqua – National Institute of Aquatic Resources, Denmark, RV DANA & RV BALTICA (charter)
b. NMFRI – National Marine Fisheries Research Institute, Poland, RV BALTICA
c. GEOMAR – Helmholtz Centre for Ocean Research Kiel, Germany, RV ALKOR
d. IMF – Institute of Marine Ecosystem and Fishery Science, Hamburg University, Germany, RV ALKOR
e. TI-OSF – Thünen Institute of Baltic Sea Fisheries, Germany, RV CLUPEA

4. Where applicable, provide more details on the type of participation and/or threshold agreement applied.

NA

*(max 450 words per survey)*

## Text Box 3.2: Fishing activity variables data collection strategy (for inland eel commercial fisheries)

*General comment: This text box fulfils Article 5(2)(c), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II point 3.2 of the EU MAP Delegated Decision annex. It is intended to describe the methods and data sources used to estimate fishing capacity, effort and landings data.*

The determination of the size of commercial catches of eel in inland waters is based on data from 52 fishery operators covering a total area of 220 526.55 ha and, as part of these waters are rivers and dam reservoirs, this represents 93.44% of the total area of waters included in the Eel Management Plan for Poland (EMP), amounting to 235,995 ha.

The calculations assumed, in accordance with the EMP, that the total lake area for the Odra basin is 82 285 ha and for the Vistula basin 153 710 ha. The areas mentioned cover only larger lakes, situated in larger clusters or constituting compact lakelands, connected by watercourses allowing, in theory, the free migration of eels and therefore making it possible to manage and protect the population of this species in accordance with the EMP guidelines. On this basis, the catches of eel in the two distinguished river basins can be calculated.

The list of fishery users is available in the databases of 11 Regional Water Management Boards and, if necessary, data will be obtained from these resources.

The Act of 12 April 2018 on the registration of yachts and other vessels up to 24 m in length made the registration of fishing boats mandatory. The central register is now being gradually completed and data is being systematically collected there on:

- the name of the vessel

- home port of the vessel in the territory of the Republic of Poland

- type of propulsion of the vessel and, in case of mechanical propulsion, also its power

- make and model or type of vessel

- basic dimensions and parameters of the vessel

- the main material of the hull of the vessel

- year of construction and vessel manufacturer

- the call sign

- maximum authorised number of persons

- maximum authorised wind strength and significant wave height

For inland fisheries regulations, there is no requirement to record fishing days or other indicators of the fishing effort. It is planned to carry out a 3-year programme in which the two largest fishery operators in the Mazurian region will be obliged to record each fishing operation, including: type of gear, day of deployment, day of retrieval, size of catch, location of catch. Special forms will be developed and introduced to the main eel fishing users in the following years.

*(max. 900 words)*

## Text Box 4.2: Incidental catches of sensitive species

*General comment: This text box fulfils Article 5(2)(a) and (b), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter 2 point 4.1 of the EU-MAP Delegated Decision annex. This text box complements Table 2.5.*

From legal perspective, it is compulsory for fishermen to report all bycatch, including bycatch of protected species, in the logbook.

Under the DCF the absence or presence of incidental bycatches, including all protected species (including fish, birds, mammals), are routinely recorded on each at-sea-observer trip. Observers are specifically instructed and requested to:

- Check each observed catch for the presence of protected species, irrespective of the fishing gear used;
- Observe hauling process during observed fishing operations;
- Record details of the bycatch of protected species, with length and weight measurements where possible (including photo documentation);
- Record parameters of the fishing gear (such as the number of units, their heights and lengths and the amount of the observed hauling process in case of passive gears;

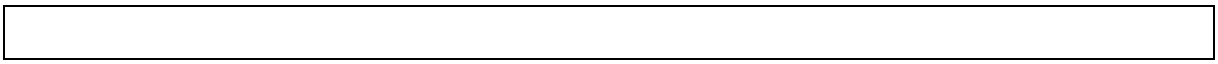
Particular attention for presence of protected species is paid during observations of fishing trips with the use of passive gears and in case of coastal or small scale fisheries as those gears and fleet segments are regarded as presenting higher risk of bycatch of protected species.

Data on bycatch are annually submitted to the ICES WGBYC data call and will be included in the future submission of RDBES data when respective tables and parameters are in place.

The requirements to observe and record all bycatch of protected species applies not only to Baltic Sea region but also to fishing trips observed in other regions: North Sea and Eastern Arctic, CECAF area and SPRFMO area.

In 2019 a free mobile application (for smartphones, tablets) was developed at the National Marine Fisheries Institute (NMFRI), dedicated to monitor, record and document the bycatch of protected species. The application is named "*MIR przyłowy*" (in direct translation: "*NMFRI bycatch*") and from 2019 until now is tested and further developed in cooperation with fisherman and fisheries organisation along the whole Polish coast in the Baltic. This application *i.a.* automatically records the time and position of the vessel with graphical presentation on the map and has functionalities activated by fisherman (or person using it) enabling recording the details of the fishing operations: fishing vessel official number, name of ports for fishing trip start and end, fishing gear used and its main parameters (length, height, mesh size number of hooks *etc*.), sea and weather condition, start of shooting or hauling in the fishing gear, depth, target and bycatch species data (weight or number), taking photos on the spot of the bycaught protected species (for species identification). All data recorded by application during the fishing operations are stored in the device memory and, once within the range of mobile network, can be sent directly to the server in NMFRI. Software developed on the server side enables generating the trip reports with all details of the fishing trip and catch. The application tests to-date have shown that it is a very practical and effective tool for monitoring the catch, bycatch and fishing effort.

The implementation of this application on a large scale requires cooperation and general acceptance of the fishing community and at the present stage it is very difficult to apply. Currently, the app is tested on a voluntary basis. However, this app has great potential as an effective tool for monitoring the by-catch of protected species.



## Text Box 5.2: Economic and social variables for fisheries data collection

*General comment: This Text box fulfils Article 5(2)(d), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004, and Chapter II point 5 of the EU MAP Delegated Decision annex. It is intended to specify data to be collected under Tables 7, 8 and 9 of the EU MAP Delegated Decision annex.*

1. Description of clustering

Due to low number of vessels belonging to several segments it is expected that three clusters will be necessary to create. In the cluster (A) Drift and/or fixed netters 12-< 18 m* two segments was merged the "Drift and/or fixed netters 12-< 18 m" (12 vessels) and Vessels using hooks 12-< 18 m (4 vessels). Two segments Demersal trawlers and/or demersal seiners 12-<18 m (20 vessels) and Vessels using active and passive gears 12-< 18 m (4 vessels) were merged into the second cluster (B) Demersal trawlers and/or demersal seiners 12-< 18 m*. The third cluster (C) Demersal trawlers and/or demersal seiners 18-< 24 m* consists of three fleet segments Demersal trawlers and/or demersal seiners 18-< 24 m (8 vessels), Drift and/or fixed netters 18-< 24 m (4 vessels) and Demersal trawlers and/or demersal seiners 24-< 40 m (1 vessel). Technical parameters (length and engine power) as well as species composition of catches and type of gears used were taken into account when clustering. Segments belonged to each cluster are considered of similar to other segments with no distinct characteristic or importance.

Table 5.2.1 Clusters/segments - basic technical parameters.

| Clusters | | Segments | | vessels # | mean GT | mean kW | mean length |
|---|---|---|---|---|---|---|---|
| | | fishing tech | length class | | | | |
| A | **Drift and/or fixed netters 12-< 18 m*** | Drift and/or fixed netters | 12-< 18 m | 12 | 25.6 | 102.0 | 14.5 |
| | | Vessels using hooks | 12-< 18 m | 4 | 32.3 | 138.5 | 16.1 |
| | | **number/average** | | **16** | **27.3** | **111.1** | **14.9** |
| B | **Demersal trawlers and/or demersal seiners 12-< 18 m*** | Demersal trawlers and/or demersal seiners | 12-< 18 m | 20 | 31.5 | 144.6 | 14.9 |
| | | Vessels using active and passive gears | 12-< 18 m | 4 | 30.8 | 121.0 | 16.7 |
| | | **number/average** | | **24** | **31.4** | **140.7** | **15.2** |
| C | **Demersal trawlers and/or demersal seiners 18-< 24 m*** | Drift and/or fixed netters | 18-< 24 m | 4 | 43.5 | 174.3 | 19.1 |
| | | Demersal trawlers and/or demersal seiners | 18-< 24 m | 8 | 60.6 | 198.4 | 19.7 |
| | | Demersal trawlers and/or demersal seiners | 24-< 40 m | 1 | 100.0 | 258.0 | 25.6 |
| | | **number/average** | | **13** | **58.3** | **195.6** | **20.0** |

A) Cluster **Drift and/or fixed netters 12-< 18 m***

The cluster consist of 16 vessels with dominant contribution of Drift and/or fixed netters 12-< 18 m (12 vessels), the second minor group (4 units) are vessels using hooks (dominant gear) and fixed nets. Figures showing comparison of number of days, volume and value of catches and species composition of catches for segments belonging to the cluster are presented below.

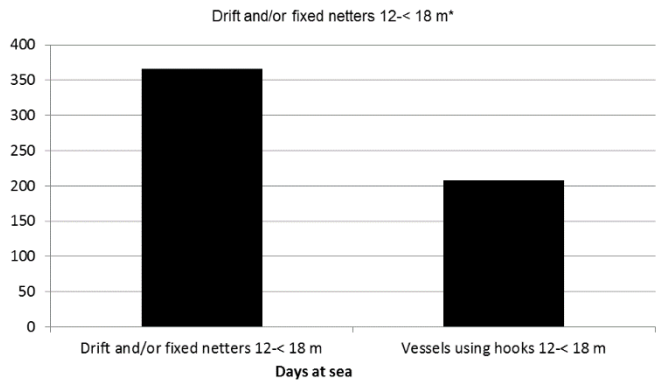



Fig. 5.2.1 Comparison of number of days at sea for segments belonging to cluster Drift and/or fixed netters 12-< 18 m*

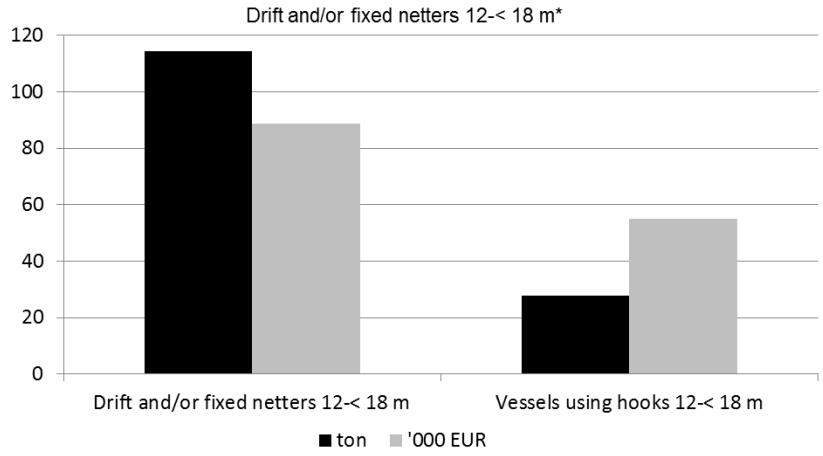



Fig. 5.2.2 Comparison of value and volume of catches for segments belonging to cluster Drift and/or fixed netters 12-< 18 m*

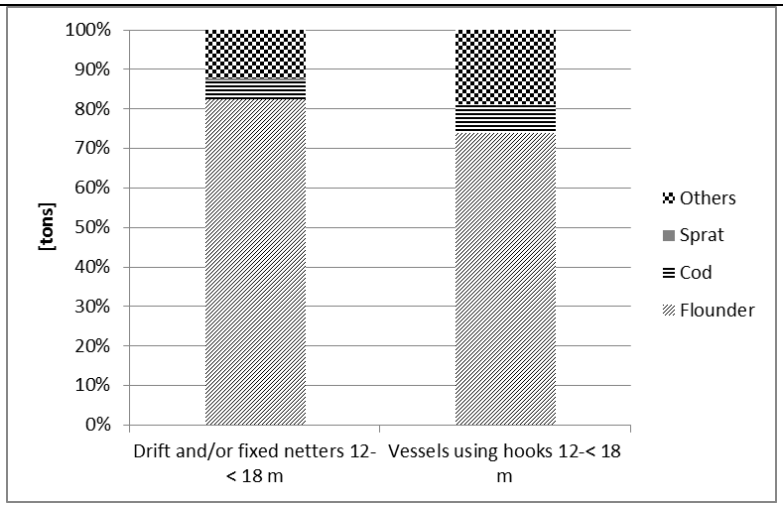



Fig. 5.2.3 Species composition of catches for segments belonging to cluster Drift and/or fixed netters 12-< 18 m*

B) Cluster **Demersal trawlers and/or demersal seiners 12-< 18 m***

The cluster consist of 24 vessels with dominant contribution of Demersal trawlers and/or demersal seiners 12-< 18 m (20 vessels), the second minor group (4 units) are vessels using active (demersal trawl) and passive (gill nets and hooks) gears.. Figures showing comparison of number of days, volume and value of catches and species composition of catches for segments belonging to the cluster are presented below.

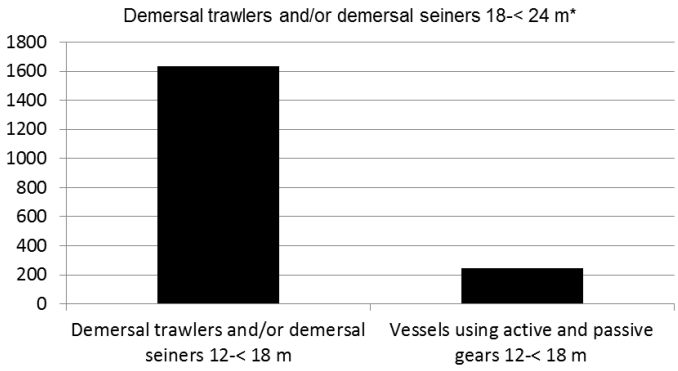



Fig. 5.2.4 Comparison of number of days at sea for segments belonging to cluster Demersal trawlers and/or demersal seiners 12-< 18 m*

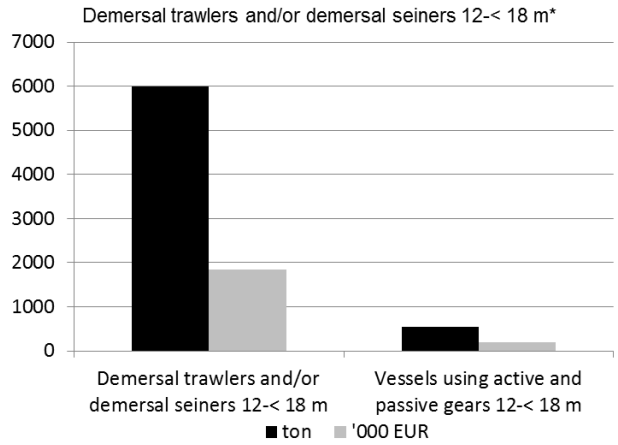



Fig. 5.2.5 Comparison of value and volume of catches for segments belonging to cluster Demersal trawlers and/or demersal seiners 12-< 18 m*

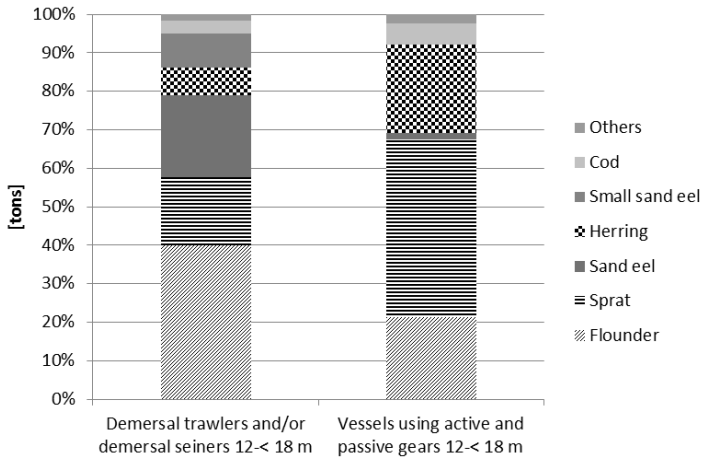



Fig. 5.2.6 Species composition of catches for segments belonging to cluster Demersal trawlers and/or demersal seiners 12-< 18 m*

C) Cluster **Demersal trawlers and/or demersal seiners 18-< 24 m*** The cluster consist of 13 vessels with dominant contribution of Demersal trawlers and/or demersal seiners 18-< 24 m (8 vessels), the second minor group (4 units) are vessels using passive gears and demersal trawls. There is also one vessels of 25.5 m length fishing with demersal trawl in the cluster. Figures showing comparison of number of days, volume and value of catches and species composition of catches for segments belonging to the cluster are presented below.

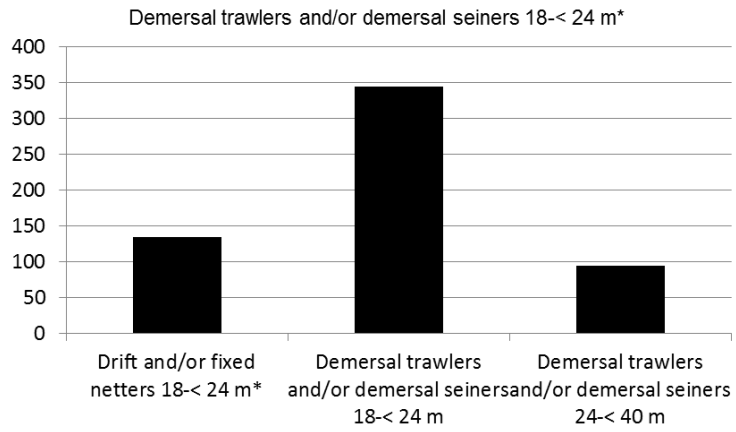



Fig. 5.2.7 Comparison of number of days at sea for segments belonging to cluster Demersal trawlers and/or demersal seiners 18-< 24 m*

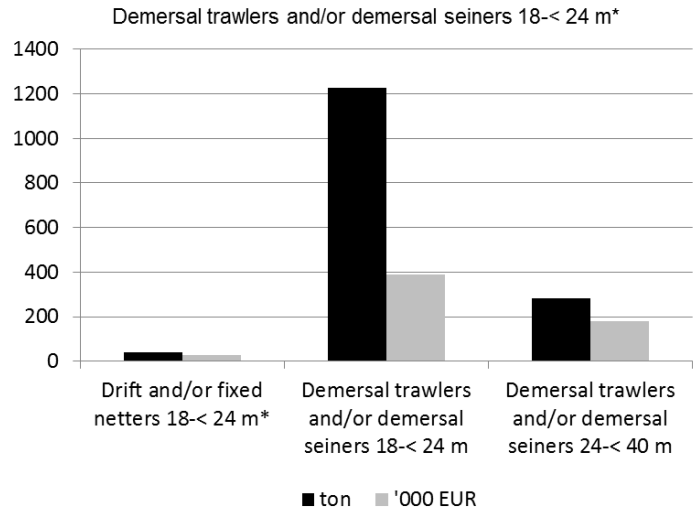



Fig. 5.2.8 Comparison of value and volume of catches for segments belonging to cluster Demersal trawlers and/or demersal seiners 18-< 24 m*

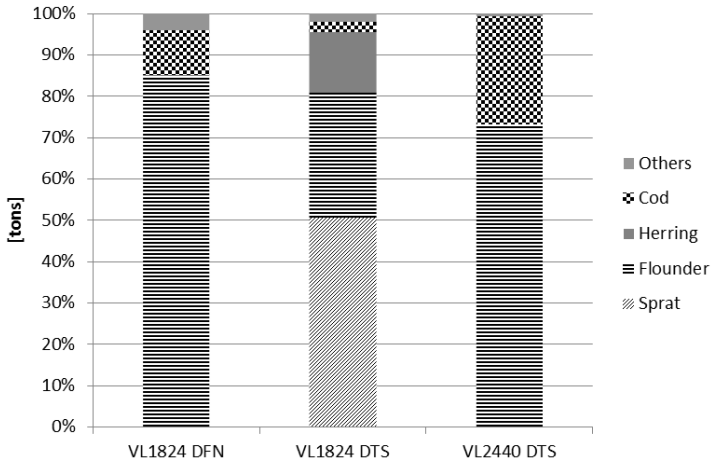



Fig. 5.2.9 Species composition of catches for segments belonging to cluster Demersal trawlers and/or demersal seiners 18-< 24 m*

2. Description of activity indicator

Activity indicator is not used.

3. Deviation from the RCG ECON (ex. PGECON) definitions

Using of PIM method in calculation of invested capital is conditioned by availability of the input data. In case of data shortage the scraping premium values will be used as a second method. No other deviation is foreseen.

*(max. 900 words)*

## Text Box 6.1: Economic and social variables for aquaculture data collection

*General comment: This Box fulfils Article 5(2)(e), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004, and Chapter II point 6 of the EU MAP Delegated Decision annex. It is intended to specify data to be collected under Tables 10 and 11 of the EU MAP Delegated Decision annex.*

1. Description of the threshold application

According to Eurostat data, the total Polish aquaculture production (excluding hatcheries and nurseries) in 2019 amounted to 39,730 tonnes. Compared to the EU production in 2019 (1,114,378.97 tonnes), it was 3.57% of the total production of the EU-28. The data of the UK production in 2019 was not included.

In terms of value, Eurostat did not sum up the total production of 28 countries (confidential reason). In the case of Poland, the value of aquaculture production in 2019 amounted to EUR 104.19 million. If we take into account the total value of UE-28 aquaculture production -excluding Denmark and Slovenia (EUR 3,478,757,685), the share of the value of Polish aquaculture production is 3%.

2. Deviation from RCG ECON (ex. PGECON) definitions

No deviations planned

*(max. 900 words)*

## Text Box 7.1: Economic and social variables for fish processing data collection

*General comment: This text box fulfils Article 5(2)(f), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004, and Chapter II point 7 of the EU MAP Delegated Decision annex. MS should provide justification for complementary data collection for fish processing.*

Data collection for fish processing is necessary for further analysis of the industry in economic and financial terms. Poland is a one of the largest participants in fish processing industry, especially salmon, and is an important link in the supply chain and distribution channel of fish in Europe.
The collected data make it possible to know the flows referred to above and are crucial to make key economic decisions concerning management and development of the fish processing industry, project planning and public debate including stakeholder participation in policy development. The collected data are necessary for scientific research and publications. Research outcomes contribute to sustainable industry development, process and product innovations. This might be shared with companies and their management, who can take key economic decisions on its basis concerning future development.
Analysis of the fish processing industry is also linked to state policy on modern technologies and environmental protection (e.g. waste management), education and employment in the fish processing industry. The collected data give us essential knowledge on the destination of domestic aquaculture products and the directions of fish imports and exports, including species caught in the Polish economic zone on the Baltic Sea not available from other sources.
Fish processing industry is labour intensive, energy consuming and harmful to the environment therefore needs to be kept under constant review, as made possible by the knowledge gained from data collection.

*(max. 900 words)*

## ANNEX 1.1 - QUALITY REPORT FOR BIOLOGICAL DATA SAMPLING SCHEME

*The quality report fulfils Article 6(3)(d) of Regulation (EU) 2017/1004. This document is intended to specify data to be collected under Chapter II, point 2 of the EU MAP Delegated Decision annex: Biological data on exploited biological resources caught by Union commercial and recreational fisheries. Use this document to state whether documentation in the data collection process (design, sampling implementation, data capture, data storage, sample storage and data processing) exists and identify where this documentation can be found. Names of sampling schemes and strata shall be identical to those in Tables 2.2, 2.3, 2.4, 2.5, 2.6 and 4.1 of the WP/AR. In case of quality information on scientific surveys, use the survey acronym as a sampling scheme identifier. For mandatory surveys, refer to Table 1 of the EU MAP Implementing Decision annex, see also MasterCodeList 'Mandatory survey at sea'.*

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: BITS_Q1 and BITS_Q4**

**Sampling scheme type: Research survey at sea**

**Observation type: SciObsAtSea**

**Time period of validity: 2022-2024**

Short description (max 100 words):

The main aim of the Baltic International Trawl Surveys (BITS) is to determine the year-class strength of the commercially important demersal fish species in the Baltic Sea. The target data are abundances, weight and length distributions of all fishes and length-weight-age-sex-maturity data of target species as well as hydrographic data (temperature, salinity and oxygen). In addition, marine litter and various biological samples (e.g. stomachs from target species) are sampled for national and international studies. Observation of presence of PETS is also conducted.

**Description of the population**

**Population targeted:**

The target species are mainly Baltic cod *(Gadus morhua*), flounder (*Platichthys flesus*), plaice (*Pleuronectes platessa*) and to some extent sprat (*Sprattus sprattus*) and herring (*Clupea harengus*) and other the flatfish species in ICES SD 25-26 and 28.

**Population sampled:**

Demersal fish species.

**Stratification:**

The international trawl surveys are carried out in form of a stratified random survey. The ICES subdivisions and depth layers within eight ICES subdivisions (SD21-SD28) are used as strata. Six layers between 10 to 120 m (10 – 39 m, 20 – 39 m, 40 – 59 m, 60 – 79 m, 80 – 99 m and 100 – 120 m) depending on ICES subdivision are covered by the surveys in aggregated areas in $nm^2$ by 10-m depth layers and ICES rectangles. The temporal stratification covers 1$^{st}$ and 4$^{th}$ quarter of the year

**Sampling design and protocols**

**Sampling design description:**

The numbers of planned stations of all participating countries are summarized for the western Baltic area (ICES Subdivisions 22–24) and for the eastern Baltic area (ICES Subdivisions 25–28). Then the total number of planned trawl stations is allocated to subdivisions according to the area and the 5 years running mean of the cpue derived from the BITS surveys for each region. The number of planned stations of each the ICES Subdivision is then allocated to the depth layers. Hydrographic measurements are recorded with a CTD probe on predetermined stations and after each catch-station, and recorded at least in 1-m intervals. Link to surveys manual:
https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133

**Is the sampling design compliant with the 4S principle?:**

NA

**Regional coordination:**

The BITS Survey sampling design is a regional agreement developed by the ICES Working Group on Baltic International Fish Survey (WGBIFS) with the participation of Denmark, Estonia, Germany, Latvia, Lithuania, Poland, Sweden and Russia.

**Link to sampling design documentation:**
https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133

**Compliance with international recommendations:**
Y

**Link to sampling protocol documentation:**
https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133

**Compliance with international recommendations:**
Y

**Sampling implementation**

**Recording of refusal rate:**
NA

**Monitoring of sampling progress within the sampling year:**
NA

**Data capture**

**Means of data capture:**
Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols, CTD probe with data processing software. Biological data (length, weight, sex, maturity etc.) are recorded at sea in the dedicated desktop application called MorskiDATRAS.

**Data capture documentation:**
https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133

**Quality checks documentation:**
Y
https://dcf.mir.gdynia.pl/?page_id=367

**Data storage**

**National database:**
*npzdr.pl* (national programme for fisheries data collection) – not accessible through a website, access limited to authorized personnel.

**International database:**
ICES trawl surveys database DATRAS.
https://www.ices.dk/data/data-portals/Pages/DATRAS.aspx

**Quality checks and data validation documentation:**
Quality checks for data validation run when the data is uploaded from the national server to ICES-DATRAS.

https://www.ices.dk/data/data-portals/Pages/DATRAS.aspx

**Sample storage**

Storage description:

Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:
Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx and ICES WGBIFS https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133

**Data processing**

**Evaluation of data accuracy (bias and precision):**
**Y**

**Editing and imputation methods:**
**N** – not performed at national level but at end-user level (ICES).
ICES Data validation is performed upon data submissions and produces data quality reports with quality flagged data for the submitter to verify if the data need any correction.
https://www.ices.dk/data/tools/Pages/data-validation.aspx

**Quality document associated to a dataset:** Is there a publication digital object identifier (DOI) created? Is there a document summarising the estimation process followed?

Data quality control checks are performed by ICES data officers before data are uploaded to the thematic portals and are documented in the Quality Control Database (QC DB).

**Validation of the final dataset:**
Final data set is screened automatically by DATRAS when submitted to this ICES database.
Survey indices are produced by ICES Data Centre.
https://www.ices.dk/data/Documents/DATRAS/Indices_Calculation_Steps_BITS.pdf

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: SPRAS**

**Sampling scheme type: Research survey at sea**

**Observation type: SciObsAtSea**

**Time period of validity: 2022-2024**

Short description (max 100 words):

The main aim of the SPRAS surveys is an estimation of the abundance indices of *Sprattus sprattus* in May, with the use of standardized survey design, acoustic measurements, fishing method and data analysis for stock assessment purposes. Hydrographical parameters like seawater temperature, salinity and oxygen content are sampled to analyse the relation between fish temporal distribution and density and current hydrological conditions. Additionally, observation of presence of PETS is conducted. SPRAS is internationally co-ordinated by the ICES Baltic International Fish Survey Working Group (WGBIFS) where timing, surveyed area and the methods of investigation are agreed.

**Description of the population**

**Population targeted:**

Target species is sprat (*Sprattus sprattus*) in the Baltic in ICES Subdivisions 25-26.

**Population sampled:**

Pelagic fish species.

**Stratification:**

The acoustic and ichthyological sampling stratification is based on ICES statistical rectangles (0.5 degree in latitude and 1 degree in longitude).

**Sampling design and protocols**

**Sampling design description:**

The objective is to survey distance of about 60 nautical miles per area of 1000 $nm^2$ in statistical rectangle. In general, each ICES-rectangle is covered with parallel transects spaced by a maximum of 15 nm whenever possible.

Fishing is conducted with a pelagic trawl according to hydroacoustic indications (with intention of minimum two hauls per the ICES statistical rectangle) and subsequent biological measurement of catches (species, length composition, sex, maturity and age) are taken. Hydrographic measurements are recorded with a CTD probe before or after each catch-station, and recorded at least in 1-m intervals.

Link to surveys manual:

http://doi.org/10.17895/ices.pub.3368

**Is the sampling design compliant with the 4S principle?:**

NA

**Regional coordination:**

SPRAS is internationally co-ordinated by the ICES Baltic International Fish Survey Working Group (WGBIFS) with the participation of Estonia, Germany, Latvia, Lithuania, Poland and Sweden.

**Link to sampling design documentation:**

http://doi.org/10.17895/ices.pub.3368

**Compliance with international recommendations:**
Y

**Link to sampling protocol documentation:**
http://doi.org/10.17895/ices.pub.3368

**Compliance with international recommendations:**
Y

**Sampling implementation**

**Recording of refusal rate:**
NA

**Monitoring of sampling progress within the sampling year:**
NA

**Data capture**

**Means of data capture:**
Hydroacoustic measurements with an echosounder Simrad EK60 at frequency 38kHz , , measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols, CTD probe with data processing software. Biological data (length, weight, sex, maturity etc.) are recorded at sea in the dedicated desktop application called MorskaAkustyka.

**Data capture documentation:**
See survey manual: http://doi.org/10.17895/ices.pub.3368

**Quality checks documentation:**
Y
https://dcf.mir.gdynia.pl/?page_id=367

**Data storage**

**National database:**
*npzdr.pl* (national programme for fisheries data collection) – not accessible through a website, access limited to authorized personnel. The database module for biological data collected in acoustic surveys has been developed in 2021.
Acoustic data are stored in Internal Files Repository.

**International database:**
ICES Acoustic Trawl Survey DB.
https://www.ices.dk/data/data-portals/Pages/acoustic.aspx

**Quality checks and data validation documentation:**
https://www.ices.dk/data/tools/Pages/data-validation.aspx
https://acoustic.ices.dk/validationrules

**Sample storage**

Storage description:

Otoliths from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:
Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx and ICES WGBIFS http://doi.org/10.17895/ices.pub.3368

**Data processing**

**Evaluation of data accuracy (bias and precision):** Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. Provide a link to a webpage where the documentation can be found. If no link is available, but documentation exists, provide a literature reference (author(s), year and type of publication - e.g. internal report). If no documentation on the evaluation of data accuracy exists, provide some details in the textbox.
**Y**
**for acoustic measurements through calibration, see survey manual: http://doi.org/10.17895/ices.pub.3368**

**Editing and imputation methods:** Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. Provide a link to a webpage where the documentation can be found. If no link is available, but documentation exists, provide a literature reference (author(s), year and type of publication - e.g. internal report). If no documentation on the editing and imputation methods exists, provide some details in the textbox.
**N** – not performed at national level but at end-user level (ICES).
ICES Data validation is performed upon data submissions and produces data quality reports with quality flagged data for the submitter to verify if the data need any correction.
https://www.ices.dk/data/tools/Pages/data-validation.aspx

**Quality document associated to a dataset:** Is there a publication digital object identifier (DOI) created? Is there a document summarising the estimation process followed?

Data quality control checks are performed by ICES data officers before data are uploaded to the thematic portals are documented in the Quality Control Database (QC DB).
https://www.ices.dk/data/tools/Pages/data-validation.aspx
https://acoustic.ices.dk/validationrules

**Validation of the final dataset:** How are datasets validated (quality checked) before providing to end-user?
Quality check by scientist before upload and validated by ICES during and after uploading to database

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: BIAS**

**Sampling scheme type: Research survey at sea**

**Observation type: SciObsAtSea**

**Time period of validity: 2022-2024**

Short description (max 100 words):

The aim of the BIAS surveys is an estimation of *Clupea harengus*, *Sprattus sprattus* and, to some extent, *Gadus morhua* stocks resources (biomass and abundance) and analysis of their spatial distribution in the pelagic zone of the southern Baltic during autumn season, with the use of standardized survey design, acoustic measurements, fishing method and data analysis for stock assessment purposes. Hydrographical parameters like seawater temperature, salinity and oxygen content are sampled to analyse the relation between fish temporal distribution and density and current hydrological conditions. Additionally, observation of presence of PETS is also conducted..
BIAS surveys are carried out annually in September/October. BIAS is internationally co-ordinated by the ICES Baltic International Fish Survey Working Group (WGBIFS) where timing, surveyed area and the methods of investigation are agreed.

**Description of the population**

**Population targeted:**
Target species is herring (*Clupea harengus*) and sprat (*Sprattus sprattus*) in the Baltic in ICES Subdivisions 25-26.

**Population sampled:**
Pelagic fish species.

**Stratification:**
The acoustic and ichthyological sampling stratification is based on ICES statistical rectangles (0.5 degree in latitude and 1 degree in longitude).

**Sampling design and protocols**

**Sampling design description:**
The objective is to survey distance of about 60 nautical miles per area of 1000 $nm^2$ in statistical rectangle. In general, each ICES-rectangle is covered with parallel transects spaced by a maximum of 15nm whenever possible.
Fishing is conducted with a pelagic trawl according to hydroacoustic indications indications (with intention of minimum two hauls per the ICES statistical rectangle) and subsequent biological measurement of catches (species, length composition, sex, maturity and age) are taken. Hydrographic measurements are recorded with a CTD probe before or after each catch-station, and recorded at least in 1-m intervals. Link to surveys manual:
http://doi.org/10.17895/ices.pub.3368

**Is the sampling design compliant with the 4S principle?:**
NA

**Regional coordination:**

BIAS is internationally co-ordinated by the ICES Baltic International Fish Survey Working Group (WGBIFS) with the participation of Finland**,** Estonia, Germany, Latvia, Lithuania, Poland Russia and Sweden.

**Link to sampling design documentation:**
http://doi.org/10.17895/ices.pub.3368

**Compliance with international recommendations:**
Y

**Link to sampling protocol documentation:**
http://doi.org/10.17895/ices.pub.3368

**Compliance with international recommendations:**
Y

**Sampling implementation**

**Recording of refusal rate:**
NA

**Monitoring of sampling progress within the sampling year:**
NA

**Data capture**

**Means of data capture:**
Hydroacoustic measurements with an echosounder Simrad EK60 at frequency 38kHz , , measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols, CTD probe with data processing software. Biological data (length, weight, sex, maturity etc.) are recorded at sea in the dedicated desktop application called MorskaAkustyka.

**Data capture documentation:**
See survey manual: http://doi.org/10.17895/ices.pub.3368

**Quality checks documentation:**
Y
https://dcf.mir.gdynia.pl/?page_id=367

**Data storage**

**National database:**
*npzdr.pl* (national programme for fisheries data collection) – not accessible through a website, access limited to authorized personnel. The database module for biological data collected in acoustic surveys has been developed in 2021.
Acoustic data are stored in Internal Files Repository.

**International database:**
ICES Acoustic Trawl Survey DB.

https://www.ices.dk/data/data-portals/Pages/acoustic.aspx

**Quality checks and data validation documentation:**
https://www.ices.dk/data/tools/Pages/data-validation.aspx
https://acoustic.ices.dk/validationrules

**Sample storage**

Storage description:

Otoliths from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:
Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx and ICES WGBIFS http://doi.org/10.17895/ices.pub.3368

**Data processing**

**Evaluation of data accuracy (bias and precision):** Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. Provide a link to a webpage where the documentation can be found. If no link is available, but documentation exists, provide a literature reference (author(s), year and type of publication - e.g. internal report). If no documentation on the evaluation of data accuracy exists, provide some details in the textbox.

**Y**

**for acoustic measurements through calibration, see survey manual: http://doi.org/10.17895/ices.pub.3368**

**Editing and imputation methods:** Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. Provide a link to a webpage where the documentation can be found. If no link is available, but documentation exists, provide a literature reference (author(s), year and type of publication - e.g. internal report). If no documentation on the editing and imputation methods exists, provide some details in the textbox.

**N** – not performed at national level but at end-user level (ICES).
ICES Data validation is performed upon data submissions and produces data quality reports with quality flagged data for the submitter to verify if the data need any correction.
https://www.ices.dk/data/tools/Pages/data-validation.aspx

**Quality document associated to a dataset:** Is there a publication digital object identifier (DOI) created? Is there a document summarising the estimation process followed?

Data quality control checks are performed by ICES data officers before data are uploaded to the thematic portals are documented in the Quality Control Database (QC DB).
https://www.ices.dk/data/tools/Pages/data-validation.aspx
https://acoustic.ices.dk/validationrules

**Validation of the final dataset:** How are datasets validated (quality checked) before providing to end-user?
Quality check by scientist before upload and validated by ICES during and after uploading to database

**MS : DNK**

**Region: Baltic Sea (Area 3)**

**Sampling scheme identifier: Baltic Ichthyoplankton Survey**

**Sampling scheme type: Research survey at sea**

**Observation type:**

**Time period of validity:** 2022-2024

Short description (max 100 words):

The main aim of the Baltic Ichthyoplankton Surveys is monitoring of the spatial distribution and abundance of fish eggs and larvae, with Baltic cod as the main target species. In addition to the ichthyoplankton sampling, a number of trawl hauls are conducted to obtain information on the adult cod, in particular on their fecundity and sex ratios. Furthermore, hydrological parameters are recorded throughout the survey area via CTD casts. The data resulting from these surveys are utilized to produce a fishery independent SSB estimate as well as a larval index, which are used in the stock assessment of Baltic cod.

**Description of the population**

**Population targeted:**

The main target species is Baltic cod *(Gadus morhua*). However, depending on the time of sampling, eggs and larvae of other species are caught as well, such as e.g. sprat (*Sprattus sprattus*), herring (*Clupea harengus*) and flounder (*Platichthys flesus*) as well as several non-commercial species.

**Population sampled:**

Same as described above under "Population targeted".

**Stratification:**

The surveys are carried out on a regularly spaced station grid in the main spawning areas of Baltic cod.

**Sampling design and protocols**

**Sampling design description:**

Several individual survey cruises are conducted each year in close collaboration between several institutes around the Baltic Sea. The surveys are conducted between March and November, aiming to cover the entire spawning season of the target species, Baltic cod. As spawning of Baltic cod is presently mainly restricted to the Bornholm Basin in ICES SD 25 due to the ambient hydrographic conditions, this area is also the main survey area which is covered by a standard station grid consisting of 45 stations. In addition, some cruises also cover adjacent areas (15 stations) to account for potential spatial extension of spawning activity.

**Is the sampling design compliant with the 4S principle?:**

A fixed station allocation is used in the design

**Regional coordination:**

The Baltic Ichthyoplankton Surveys consist of several individual survey cruises, which are conducted each year in close collaboration between several institutes around the Baltic Sea. Participating nations are Denmark, Germany and Poland.

**Link to sampling design documentation:**
The Baltic Ichthyoplankton Surveys and the applied sampling design and sampling procedures as well as sample and data analyses have been reviewed and evaluated by ICES WGALES (Working Group on Atlantic Fish Larvae and Eggs Surveys):

ICES. 2018. Report of the Working Group on Atlantic Fish Larvae and Eggs Surveys (WGALES). 22-26 October. Lyngby, Denmark. ICES CM 2018/EOSG:04. 56 pp.

https://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/EOSG/2018/WGALES/WGALES%20report%202018.pdf

**Compliance with international recommendations:**
Y

**Link to sampling protocol documentation:**
NA

**Compliance with international recommendations:**
NA

**Sampling implementation**

**Recording of refusal rate:**
NA

**Monitoring of sampling progress within the sampling year:**
NA

**Data capture**

**Means of data capture:**
Sorting equipment, stereo microscopes, different sampling protocols, CTD probe with data processing software.

**Data capture documentation:**
NA

**Quality checks documentation:**
NA

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: Baltic at sea**

**Sampling scheme type: Commercial fishing trip**

**Observation type: SciObsAtSea**

**Time period of validity:** 2022-2024

Short description (max 100 words):

Determination of the sampling scheme was based on fishing areas and type of sampling. The following sampling scheme is aiming to collect length and biological samples from commercial catches at sea for all species listed in Table 1 of the EU MAP Delegated Decision annex. Additionally, observation of presence of PETS is conducted. The scheme covers the Baltic Sea.

**Description of the population**

**Population targeted:**

The target population consists of all vessels that were active in 2018-2020. The primary sampling unit applied in the sampling program is vessel*trip. The list of vessels is used as a proxy to select a trip, because the list of trips is not known in advance.

**Population sampled:**

The coverage of target population equals 100%.

**Stratification:**

Population is stratified based on the vessel's length category. The following strata were defined:

- BAL VL0010 – Baltic vessels under 10 meters in length (list of 537 vessels)
- BAL VL1012 – Baltic vessels between 10 and 12 meters in length (list of 131 vessels)
- BAL VL1218 – Baltic vessels between 12 and 18 meters in length (list of 59 vessels)
- BAL VL1824 – Baltic vessels between 18 and 24 meters in length (list of 61 vessels)
- BAL VL2440 – Baltic vessels between 24 and 40 meters in length (list of 51 vessels)

The main advantage of stratifying the population by vessel length categories is that every vessel belongs to exactly one group. Additionally, such approach was found to be very flexible in case of sudden changes in the fisheries caused by e.g. change in a legislation, natural causes. Moreover, the sampling scheme is also stratified by quarters, with various sampling intensities assigned to each quarter calculated based on the historical data. The list of primary sampling units is drawn separately for each quarter.

**Sampling design and protocols**

**Sampling design description:**

All vessels that were active (at least one fishing trip) in 2018-2020 make a list that is proxy for selecting the PSUs. This methodology is in line with the WKPICS 2013.

In order to maintain the continuity of the sampling intensity compared to the previous years, the annual number of samples to be collected during 2022-2024 period is at similar level as during the previous multiannual programs (2014-2021). Sampling is based on a quarterly basis. For each group of PSUs and quarters, an average annual catch in kg and an average annual number of trips were calculated using official catch statistics from the period 2018-2020. To define the sampling intensity per each stratum per quarter, the half of the total annual number of samples was distributed proportionally to the quarterly distribution of landings and the second half of the total number of samples was distributed proportionally to the total number of trips. It was decided to include both parameters in order

to distribute the sampling effort reflecting the different segments of the fishing fleet. So to take into consideration vessels that have the bigger share in total catches (i.e. larger vessels) as well as vessels that have much more fishing trips but small catches (i.e. smaller vessels, active mainly in a coastal fishery).
Regarding the sample selection, for each quarter and for each stratum a list of vessels will be randomly selected with replacement with unequal probability from a sampling frame. The number of vessels selected will be overrated, to take into account potential refusals and to avoid additional draws. In case, the selected number of vessels will not be enough (more refusals than expected, e.g. lack of contact with the vessel, refusal to take observer on board or provide landed fish for sampling on shore), the non-probabilistic (based on expert knowledge) vessel selection will be carried out to maintain the desired number of vessels trips to sample. The complementary trip will be chosen depending on the observer availability. In the next step the concurrent hauls and species sampling will be carried out on board. Catch fraction which is used is 'Catch'. List of vessels selected for sampling will be recorded in a register. This register will contain information on date of selection, date the vessel was contacted to arrange sampling, information if contact with the vessel was successful or not, vessel's owner acceptance or refusal to be sampled, as well as reasons in case of refusal.

**Is the sampling design compliant with the 4S principle?:**
Y

**Regional coordination:**
N

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/10/DCF-Sampling-Design-2022-2024.pdf

**Compliance with international recommendations:**
Y

**Link to sampling protocol documentation:**
No standalone sampling protocol was created so far for Baltic at sea. When conducting the sampling, we are following the ICES BITS and BIAS manual.

**Compliance with international recommendations:**
Y

**Sampling implementation**

**Recording of refusal rate:**
Y

**Monitoring of sampling progress within the sampling year:**
There is a set of tools created to monitor the sampling progress:
MIRlottery is the system which stores the information about vessels drawn and their status (e.g. done, refused, cancelled). It is possible to display some basic statistics there with the summary of the implementation rate per stratum per quarter.
The other tool is the 'Sampling plan achievement monitoring application'. This application was created in 2020 as a manager tool with the purpose of supplying an easy way to monitor the achievement of the

sampling plan. What is already developed is the set of analysis displaying number of trips, samples, specimens measured for age and length for a species and year selected by a user.
Additionally, a set of R scripts was also created, which summarizes the progress made.
All the tools above, are used on a daily basis but especially during the quarterly team meetings, where the sampling plan fulfilment is analysed. Basing on the tools, the managers are making decisions whether there should be some extra sampling carried out – not probabilistic, basing on the expert knowledge, to supply the sufficient number of samples. There is also analysis of refusals carried out, and a trial made to lower the refusal rate. This whole effort is being made to make sure that the best quality of sampling is carried out.

**Data capture**

**Means of data capture:**
Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols.

**Data capture documentation:**
No standalone sampling protocol was created so far for Baltic at sea. When conducting the sampling, we are following the ICES BITS and BIAS manual.
Data is captured on paper and transcribed to a centralised database system through a dedicated web application as soon as possible. Data is entered to the database in a two-stage process. Newly entered data are attributed with a status indicating that they are waiting for approval. Then, another person verifies the data and approves it.

**Quality checks documentation:**
Y,
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Data storage**

**National database:**
NPZDR, database is only accessible from the intranet

**International database:**
RDB-FishFrame (ICES) - https://www.rdb-fishframe.org/ices ,
RDBES (ICES) - https://sboxrdbes.ices.dk/
Intercatch(ICES)- https://intercatch.ices.dk/,
STECF Fisheries Dependent Information Database (JRC) -https://datacollection.jrc.ec.europa.eu/dc/fdi

**Quality checks and data validation documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Sample storage**

Storage description:

Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:

Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx and ICES WGBIFS
https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133

**Data processing**

**Evaluation of data accuracy (bias and precision):**
Y, https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Editing and imputation methods:**
N,
In case of any gaps in the sampling strata, imputation is not performed at national level but at Stock Data Coordination level. Data are provided to end user "as-is" (as collected, validated and recorded in national database). In case of gaps in ALK or WLK, average values are used if available.

**Quality document associated to a dataset:**
N

**Validation of the final dataset:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: Baltic on shore**

**Sampling scheme type: Commercial fishing trip**

**Observation type: SciObsOnShore**

**Time period of validity:** 2022-2024

Short description (max 100 words):
Determination of the sampling scheme was based on fishing areas and type of sampling. The sampling scheme is aiming to collect length and biological samples from commercial catches on shore for main commercial species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers the Baltic Sea.

**Description of the population**

**Population targeted:**
The target population consists of all vessels that were active in 2018-2020. The primary sampling unit applied in the sampling program is vessel*trip. The list of vessels is used as a proxy to select a trip, because the list of trips is not known in advance.

**Population sampled:**
The coverage of target population equals 100%.

**Stratification:**

Population is stratified based on the vessel's length category. The following strata were defined:

- BAL VL0010 – Baltic vessels under 10 meters in length (list of 537 vessels)
- BAL VL1012 – Baltic vessels between 10 and 12 meters in length (list of 131 vessels)
- BAL VL1218 – Baltic vessels between 12 and 18 meters in length (list of 59 vessels)
- BAL VL1824 – Baltic vessels between 18 and 24 meters in length (list of 61 vessels)
- BAL VL2440 – Baltic vessels between 24 and 40 meters in length (list of 51 vessels)

The main advantage of stratifying the population by vessel length categories is that every vessel belongs to exactly one group. Additionally, such approach was found to be very flexible in case of sudden changes in the fisheries caused by e.g. change in a legislation, natural causes. Moreover, the sampling scheme is also stratified by quarters, with various sampling intensities assigned to each quarter calculated based on the historical data. The list of primary sampling units is drawn separately for each quarter.

**Sampling design and protocols**

**Sampling design description:**

All vessels that were active (at least one fishing trip) in 2018-2020 make a list that is proxy for selecting the PSUs. This methodology is in line with the WKPICS 2013.

In order to maintain the continuity of the sampling intensity compared to the previous years, the annual number of samples to be collected during 2022-2024 period is at similar level as during the previous multiannual programs (2014-2021). Sampling is based on a quarterly basis. For each group of PSUs and quarters, an average annual catch in kg and an average annual number of trips were calculated using official catch statistics from the period 2018-2020. To define the sampling intensity per each stratum per quarter, the half of the total annual number of samples was distributed proportionally to the quarterly distribution of landings and the second half of the total number of samples was distributed proportionally to the total number of trips. It was decided to include both parameters in order to distribute the sampling effort reflecting the different segments of the fishing fleet. So to take into consideration vessels that have the bigger share in total catches (i.e. larger vessels) as well as vessels that have much more fishing trips but small catches (i.e. smaller vessels, active mainly in a coastal fishery).

Regarding the sample selection, for each quarter and for each stratum a list of vessels will be randomly selected with replacement with unequal probability from a sampling frame. The number of vessels selected will be overrated, to take into account potential refusals and to avoid additional draws. In case, the selected number of vessels will not be enough (more refusals than expected, e.g. lack of contact with the vessel, refusal to take observer on board or provide landed fish for sampling on shore), the non-probabilistic (based on expert knowledge) vessel selection will be carried out to maintain the desired number of vessels trips to sample. The complementary trip will be chosen depending on the observer availability. In the next step the sample from the last hauls will be taken and species sampling will be carried out on board. Catch fraction used is 'Lan'. List of vessels selected for sampling will be recorded in a register. This register will contain information on date of selection, date the vessel was contacted to arrange sampling, information if contact with the vessel was successful or not, vessel's owner acceptance or refusal to be sampled, as well as reasons in case of refusal.

**Is the sampling design compliant with the 4S principle?:**

Y

**Regional coordination:**
N

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/10/DCF-Sampling-Design-2022-2024.pdf

**Compliance with international recommendations:**
Y

**Link to sampling protocol documentation:**
No standalone sampling protocol was created so far for Baltic on shore. When conducting the sampling, we are following the ICES BITS and BIAS manual.

**Compliance with international recommendations:**
Y

**Sampling implementation**

**Recording of refusal rate:**
Y

**Monitoring of sampling progress within the sampling year:**
There is a set of tools created to monitor the sampling progress:
MIRlottery is the system which stores the information about vessels drawn and their status (e.g. done, refused, cancelled). It is possible to display some basic statistics there with the summary of the implementation rate per stratum per quarter.
The other tool is the 'Sampling plan achievement monitoring application'. This application was created in 2020 as a manager tool with the purpose of supplying an easy way to monitor the achievement of the sampling plan. What is already developed is the set of analysis displaying number of trips, samples, specimens measured for age and length for a species and year selected by a user.
Additionally, a set of R scripts was also created, which summarizes the progress made.
All the tools above, are used on a daily basis but especially during the quarterly team meetings, where the sampling plan fulfilment is analysed. Basing on the tools, the managers are making decisions whether there should be some extra sampling carried out – not probabilistic, basing on the expert knowledge, to supply the sufficient number of samples. There is also analysis of refusals carried out, and a trial made to lower the refusal rate. This whole effort is being made to make sure that the best quality of sampling is carried out.

**Data capture**

**Means of data capture:**
Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols.

**Data capture documentation:**
No standalone sampling protocol was created so far for Baltic on shore. When conducting the sampling, we are following the ICES BITS and BIAS manual.
Data is captured on paper and transcribed to a centralised database system through a dedicated web application as soon as possible. Data is entered to the database in a two-stage process. Newly entered data are attributed with a status indicating that they are waiting for approval. Then, another person verifies the data and approves it.

**Quality checks documentation:**
Y,
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Data storage**

**National database:**
NPZDR, database is only accessible from the intranet

**International database:**
RDB-FishFrame (ICES) - https://www.rdb-fishframe.org/ices ,
RDBES (ICES) - https://sboxrdbes.ices.dk/
Intercatch(ICES)- https://intercatch.ices.dk/,
STECF Fisheries Dependent Information Database (JRC) -https://datacollection.jrc.ec.europa.eu/dc/fdi

**Quality checks and data validation documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Sample storage**

Storage description:

Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:
Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx and ICES WGBIFS
https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133

**Data processing**

**Evaluation of data accuracy (bias and precision):**
Y, https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Editing and imputation methods:**
N,
In case of any gaps in the sampling strata, imputation is not performed at national level but at Stock Data Coordination level. Data are provided to end user "as-is" (as collected, validated and recorded in national database). In case of gaps in ALK or WLK, average values are used if available.

**Quality document associated to a dataset:**
N

**Validation of the final dataset:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**MS : POL**

**Region: North Sea and Eastern Arctic**

**Sampling scheme identifier: North sea and Eastern Arctic at sea**

**Sampling scheme type: Commercial fishing trip**

**Observation type: SciObsAtSea**

**Time period of validity:** 2022-2024

Short description (max 100 words):
Under the EU Data Collection Framework, based on the activity of the commercial fishing vessels, Poland has selected for sampling the long distance fishery targeting demersal species, i.e. Cod (*Gadus morhua*) in the region of North Atlantic and Eastern Arctic. Saithe (*Pollachius virens*) and Haddock (*Melanogrammus aeglefinus*) are also selected for biological sampling if caught as a bycatch. Additionally, observation of presence of PETS is conducted.

**Description of the population**

**Population targeted:**
The Polish fishery in that area is targeting mainly cod, with *Pollachius virens* and *Melanogrammus aeglefinus* being usually the by-catch. This fishery is conducted usually by single Polish fishing vessel. The PSU is vessel-trip.

**Population sampled:**
Freezer trawler targetting cod in NS&EA

**Stratification:**
Freezer trawler targetting cod in NS&EA

**Sampling design and protocols**

**Sampling design description:**
As there is usually only one fishing vessel operating in this fishery, at-sea biological sampling is not randomized but based on the availability of space for observer on board the vessels. Over the period 2018-2020 on average seven fishing trips (PSU) were recorded annually for that fishery. Sampling of one fishing trip per year is sufficient to obtain representative collection of biological variables.

**Is the sampling design compliant with the 4S principle?:**
N

**Regional coordination:**
N

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/DCF-Sampling-Design-and-Plan-description-Demersal-NSEA.pdf

**Compliance with international recommendations:**
Y

**Link to sampling protocol documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/DCF-Sampling-Design-and-Plan-description-Demersal-NSEA.pdf

**Compliance with international recommendations:**
Y

**Sampling implementation**

**Recording of refusal rate:**
NA

**Monitoring of sampling progress within the sampling year:**
NA

**Data capture**

**Means of data capture:**
Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols.

**Data capture documentation:**
No standalone sampling protocol was created so far for NSEA. When conducting the sampling, the ICES BITS manual is followed.

**Quality checks documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Data storage**

**National database:**
NPZDR, database is only accessible from the intranet

**International database:**
RDB-FishFrame (ICES) - https://www.rdb-fishframe.org/ices ,
RDBES (ICES) - https://sboxrdbes.ices.dk/
Intercatch(ICES)- https://intercatch.ices.dk/,
STECF Fisheries Dependent Information Database (JRC) -https://datacollection.jrc.ec.europa.eu/dc/fdi

**Quality checks and data validation documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Sample storage**

Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:
Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx and ICES WGBIFS
https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133

| Data processing |
|---|
| **Evaluation of data accuracy (bias and precision):**<br>Y, https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf<br><br>**Editing and imputation methods:**<br>N,<br>In case of any gaps in the sampling strata, imputation is not performed at national level but at Stock Data Coordination level. Data are provided to end user "as-is" (as collected, validated and recorded in national database). In case of gaps in ALK or WLK, average values are used if available.<br><br>**Quality document associated to a dataset:**<br>N<br><br>**Validation of the final dataset:**<br>https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf |

| MS : POL |
|---|
| **Region: CECAF** |
| **Sampling scheme identifier: CECAF at sea sampling** |
| **Sampling scheme type: Commercial fishing trip** |
| **Observation type: SciObsAtSea** |
| **Time period of validity:** 2022-2024 |
| Short description (max 100 words):<br>Under the EU Data Collection Framework, based on the activity of the commercial fishing vessels, the long distance fishery targeting small pelagic species in the CECAF area were selected for sampling. According to the multi-lateral agreement, the National Marine Fisheries Research Institute (NMFRI) from Poland coordinates the execution of biological data collection from the EU fisheries for small pelagics by freezer trawlers in the CECAF area and the Wageningen Marine Research (WMR) from The Netherlands will cooperate with NMFRI in data validation, data processing and data delivery to the relevant end-users. The observation of presence of PETS is included in the sampling scheme. |
| **Description of the population** |
| **Population targeted:**<br>The Polish fishery in that area is targeting small pelagic species. This fishery is conducted usually by single Polish fishing vessel. However, under the multi-lateral agreement (https://dcf.mir.gdynia.pl/?page_id=365) Poland is coordinating data collection from whole EU fishing fleet targeting small pelagic species in the CECAF area. The PSU is vessel-trip.<br><br>**Population sampled:**<br>EU Pelagic freezer trawlers operating in the CECAF<br><br>**Stratification:**<br>EU pelagic freezer trawler operating by main CECAF fishing areas (34.1.3 and 34.3.1) by quarter |

**Sampling design and protocols**

**Sampling design description:**
At-sea biological sampling is not randomized but based on the availability of space for observer on board the vessels. Two observer trips per quarter and per fishing area are planned.

**Is the sampling design compliant with the 4S principle?:**
N

**Regional coordination:**
Y
Multilateral agreement on CECAF sampling (https://dcf.mir.gdynia.pl/?page_id=365),
Member states: DEU - LVA - LTU - NLD - POL

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2018/05/Manual-for-scientific-observers-on-EU-pelagic-trawlers-in-CECAF.pdf

**Compliance with international recommendations:**
Y

**Link to sampling protocol documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2018/05/Manual-for-scientific-observers-on-EU-pelagic-trawlers-in-CECAF.pdf

**Compliance with international recommendations:**
Y

**Sampling implementation**

**Recording of refusal rate:**
NA

**Monitoring of sampling progress within the sampling year:**
NA

**Data capture**

**Means of data capture:**
Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols.

**Data capture documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2018/05/Manual-for-scientific-observers-on-EU-pelagic-trawlers-in-CECAF.pdf

**Quality checks documentation:**
Collected data are validated during recording in a dedicated desktop application called Billie, provided by NLD. No documentation available.

**Data storage**

**National database:**

The data files from the desktop application Billie are stored in the internal files repository. Data collection coordinated and executed by POL and data provision executed by NLD under joint sampling programme based on multilateral agreement. Data collected in CECAF are transferred to NLD for processing, further quality checks and transmission to CECAF WG.

**International database:**
NA

**Quality checks and data validation documentation:**
Data collected in CECAF areas are recorded in a dedicated desktop application called Billie, which was provided by NLD. The application performs basic validation of the input data. Advanced data checks are applied after the data is transferred to the database in NLD, where data quality check report is produced.

**Sample storage**

Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:
Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx and ICES WGBIFS
https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133

**Data processing**

**Evaluation of data accuracy (bias and precision):**
N, Data collected in CECAF are transferred to NLD for processing, further quality checks and transmission to CECAF WG.

**Editing and imputation methods:**
N,
Data collected in CECAF are transferred to NLD for processing, further quality checks and transmission to CECAF WG.

**Quality document associated to a dataset:**
N

**Validation of the final dataset:**
Data collected in CECAF are transferred to NLD for processing, further quality checks and transmission to CECAF WG.

**MS : POL**

**Region: SPRFMO**

**Sampling scheme identifier: SPRFMO at sea sampling**

**Sampling scheme type: Commercial fishing trip**

**Observation type: SciObsAtSea**

**Time period of validity:** 2022-2024

Short description (max 100 words):
On the basis of a multilateral agreement between Germany, Lithuania, Netherlands and Poland, since 2017 Poland has been coordinating a joint sampling programme for the collection of biological data from pelagic fisheries in SPRFMO waters. Sampling is carried out on EU vessels active in pelagic fisheries in the South Pacific. Scientific observers from the National Marine Fisheries Research Institute (NMFRI) from Poland collect data from catch sampling, length distribution and biological parameters of fish in accordance to the requirements of the SPRFMO. The observation of presence of PETS is included in the sampling scheme.

**Description of the population**

**Population targeted:**
EU vessels which conduct pelagic fisheries in the South Pacific. The PSU is vessel-trip.

**Population sampled:**
Pelagic trawlers operating in the SPRFMO

**Stratification:**
Pelagic trawlers operating in the SPRFMO

**Sampling design and protocols**

**Sampling design description:**
At-sea biological sampling is not randomized but based on the availability of space for observer on board the vessels. According to the SPRFMO requirements *("CMM 01-2021; Conservation and Management Measure for Trachurus Murphyi"* – updated annually), a minimum of 10% of all fishing trips shall be observed/sampled (https://www.sprfmo.int/measures/)
Data are collected and transmitted to the SPRFMO according to the SPRFMO *"CMM 02-2021; Conservation and Management Measure on Standards for the Collection, Reporting, Verification and Exchange of Data"* – updated annually (https://www.sprfmo.int/measures/)

**Is the sampling design compliant with the 4S principle?:**
N

**Regional coordination:**
Y
Multilateral agreement on SPRFMO sampling (https://dcf.mir.gdynia.pl/?page_id=365),
Member states: DEU - LTU - NLD - POL

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2016/10/CMR-2015-01-Observer-manual-Pacific-v6.pdf

**Compliance with international recommendations:**
Y

**Link to sampling protocol documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2016/10/CMR-2015-01-Observer-manual-Pacific-v6.pdf

**Compliance with international recommendations:**
Y

**Sampling implementation**

**Recording of refusal rate:**
NA

**Monitoring of sampling progress within the sampling year:**
NA

**Data capture**

**Means of data capture:**
Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols.

**Data capture documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2016/10/CMR-2015-01-Observer-manual-Pacific-v6.pdf

**Quality checks documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/SPRFMO_data_quality_assurance.pdf

**Data storage**

**National database:**
Temporary database in Excel

**International database:**
Internal SPRFMO database

**Quality checks and data validation documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/SPRFMO_data_quality_assurance.pdf

**Sample storage**

Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:
Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx and

ICES WGBIFS
https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133

**Data processing**

**Evaluation of data accuracy (bias and precision):**
Y, https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/SPRFMO_data_quality_assurance.pdf

**Editing and imputation methods:**
N - In case of any gaps, imputation is not performed at national level but at Stock Data Coordination level in the SPRFMO. Data are provided to end user "as-is" (as collected, validated and recorded in national database). In case of gaps in ALK or WLK, average values are used if available.

**Quality document associated to a dataset:**
N

**Validation of the final dataset:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/SPRFMO_data_quality_assurance.pdf

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: Baltic small pelagic RSP**

**Sampling scheme type: Commercial fishing trip**

**Observation type: SelfAtSea**

**Time period of validity:** 2022-2024

Short description (max 100 words):
The samples are collected according to the rules agreed at the Intersessional Subgroup 'Case study of fisheries for small pelagic's in the Baltic'. The sampling scheme is aiming to collect sprat and herring to estimate length-composition, numbers at age, and mean weight at age of commercial catches.

**Description of the population**

**Population targeted:**
The target population consists of vessels which were active at least once in the period February-April in 2020, were using OTM, had total landings 10t minimum, were targeting sprat or herring (over 95%) and have length above 17.5m.

The primary sampling unit applied in the sampling program is vessel*trip. The list of vessels is used as a proxy to select a trip, because the list of trips is not known in advance.

**Population sampled:** The coverage of target population equals 100%.

**Stratification:**
Total number of vessels: 56 (using Random Sampling application)
In total 30 vessels will be selected for 3 months case study
(10 per 1 month).

**Sampling design and protocols**

**Sampling design description:**

All vessels that were active in the period February-April in 2019, were using OTM, had total landings 10t minimum, were targeting sprat or herring (over 95%) and have length above 17.5m. This vessels' list is a proxy for selecting the PSUs.

A coordinator calls to the contact persons from the 10 selected vessels during the first 3 working days of the month (to check if the boat is willing to cooperate). During this time a coordinator can ask for the sample from first 1-2 boats from the list which was willing to cooperate if they go for fishing in the next couple of days.

In the next days of the month, a coordinator calls to the contact person from the selected vessel, maximum five times per week. The calls are be made when the weather forecast is good, and when the staff is available to pick up the sample from the harbour.

All contacts are recorded including refusals. The boat which is definitely not willing to cooperate is blacklisted for a period of 1 year.

A coordinator askes for a sample from the next trip. The sample should be taken from unsorted catch from the first haul.

**Is the sampling design compliant with the 4S principle?:**

Y

**Regional coordination:**

Y, there is no formal agreement. This regional sampling of small pelagic is conducted on the basis of the NC Baltic decision. In 2022 this sampling scheme will be conducted as part of the Baltic small pelagic Regional Sampling Plan (RSP), as decided by NC at the 2021 RCG Decision Meeting.

**Link to sampling design documentation:**

https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/Small-Pelagic-Pilot-Plan2020.pdf

**Compliance with international recommendations:**

Y

**Link to sampling protocol documentation:**

No standalone sampling protocol was created so far for Small Pelagics Pilot. When conducting the sampling, we are following the ICES BITS and BIAS manual.

**Compliance with international recommendations:**

Y

**Sampling implementation**

**Recording of refusal rate:**

Y

**Monitoring of sampling progress within the sampling year:**

There is a set of tools created to monitor the sampling progress:

MIRlottery is the system which stores the information about vessels drawn and their status (e.g. done, refused, cancelled). It is possible to display some basic statistics there with the summary of the implementation rate per stratum per quarter.

The other tool is the 'Sampling plan achievement monitoring application'. This application was created in 2020 as a manager tool with the purpose of supplying an easy way to monitor the achievement of the

sampling plan. What is already developed is the set of analysis displaying number of trips, samples, specimens measured for age and length for a species and year selected by a user.
Additionally, a set of R scripts was also created, which summarizes the progress made.
All the tools above, are used on a daily basis but especially during the quarterly team meetings, where the sampling plan fulfilment is analysed. There is also analysis of refusals carried out, and a trial made to lower the refusal rate. This whole effort is being made to make sure that the best quality of sampling is carried out.

**Data capture**

**Means of data capture:**
Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols.

**Data capture documentation:**
No standalone sampling protocol was created so far for Small Pelagic Pilot. When conducting the sampling, we are following the ICES BITS and BIAS manual.
Data is captured on paper and transcribed to a centralised database system through a dedicated web application as soon as possible. Data is entered to the database in a two-stage process. Newly entered data are attributed with a status indicating that they are waiting for approval. Then, another person verifies the data and approves it.

**Quality checks documentation:**
Y,
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Data storage**

**National database:**
NPZDR, database is only accessible from the intranet

**International database:**
RDB-FishFrame (ICES) - https://www.rdb-fishframe.org/ices ,
RDBES (ICES) - https://sboxrdbes.ices.dk/
Intercatch(ICES)- https://intercatch.ices.dk/,

**Quality checks and data validation documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Sample storage**

Storage description:

Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:
Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx and ICES WGBIFS
https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133

**Data processing**

**Evaluation of data accuracy (bias and precision):**
Y, https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Editing and imputation methods:**
N,
In case of any gaps in the sampling strata, imputation is not performed at national level but at Stock Data Coordination level. Data are provided to end user "as-is" (as collected, validated and recorded in national database). In case of gaps in ALK or WLK, average values are used if available.

**Quality document associated to a dataset:**
N

**Validation of the final dataset:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: diad_troll_offshore**

**Sampling scheme type: recreational (on site surveys)**

**Observation type: SciObsAtSea**

**Time period of validity: 2022-2024**

Short description (max 100 words):
Sampling scheme aiming at collecting biological samples (length, weight, sex, age, maturity stage), numbers and catch composition from recreational trolling on-shore catches conducted in Polish Marine Areas. The sampling scheme concerns direct on-board observations.

**Description of the population**

**Population targeted:**
The target species are Atlantic salmon *Salmo salar* and sea trout *Salmo trutta* in ICES SD 24-26.

**Population sampled:**
Baltic Salmon and sea trout

**Stratification:**
Polish trolling fisheries operates in the Main Basin of the Baltic Sea (Polish Marine Areas SD 24-26) where the mixed-stock fisheries of salmon occur (ICES SD 22-31). The temporal stratification covers 1$^{st}$ , 2$^{nd}$ and 4$^{th}$ quarter of the year (covering whole fishing season). The applied unit is a fishing boat-day/trip.

**Sampling design and protocols**

**Sampling design description:**

The sampling design takes into account one trip per month. The number of planned on-board observations is 7 per year. Because of the formal procedures the trolling boats are randomly sampled only from the group of commercial recreational boats (taking on board up to 4-6 recreational fishermen who are fishing under the interim or full-year permit/license purchased by the boats' owners). The GPS position is recorded three times during the trip (start, middle and end of fishing). In addition, number of anglers on boat and fishing rods are recorded in the protocol.

https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Is the sampling design compliant with the 4S principle?:**
NA

**Regional coordination:**
N

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Compliance with international recommendations:**
N

**Link to sampling protocol documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Compliance with international recommendations:**
N

**Sampling implementation**

**Recording of refusal rate:**
Y

**Monitoring of sampling progress within the sampling year:**
The sample stratification and digitization process is monitored on an on-going basis.

**Data capture**

**Means of data capture:**
Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols, GPS. Biological data (length, weight, sex, maturity etc.) are recorded at sea and stored in the excel file.

**Data capture documentation:**
N
Details are provided in this textbox.

**Quality checks documentation:**
N
Details are provided in this textbox.

**Data storage**

**National database:**
NA

**International database:**
NA

**Quality checks and data validation documentation:**
N
Details are provided in this textbox.

**Sample storage**

Storage description:
Scales from sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. Scale samples are dried and stored in the paper envelopes with a biological information about each specimen.

Sample analysis:
Biological analysis follows the guidelines established by ICES WKADS and associated workshops: https://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2011/WKADS/WKADS%202011.pdf

**Data processing**

**Evaluation of data accuracy (bias and precision):**
N
Details are provided in this textbox

**Editing and imputation methods:**
N
Details are provided in this textbox

**Quality document associated to a dataset:**
There is no a document summarising the estimation process followed.

**Validation of the final dataset:**
Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the WGBAST meeting.

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: diad_troll_harb**

**Sampling scheme type: recreational (on site surveys)**

**Observation type: SciObsOnShore**

**Time period of validity: 2022-2024**

Short description (max 100 words):
Sampling scheme aiming at collecting biological samples (length, weight), numbers and catch composition from recreational trolling on-shore catches conducted in Polish Marine Areas. The sampling scheme concerns direct on-site observations in the harbors.

**Description of the population**

**Population targeted:**
The target species are Atlantic salmon *Salmo salar* and sea trout *Salmo trutta* in ICES SD 24-26.

**Population sampled:**
Baltic Salmon and sea trout

**Stratification:**
Polish trolling fisheries operates in the Main Basin of the Baltic Sea (Polish Marine Areas SD 24-26) where the mixed-stock fisheries of salmon occur (ICES SD 22-31). The temporal stratification covers 1$^{st}$ , 2$^{nd}$ and 4$^{th}$ quarter of the year (covering whole fishing season). The applied unit is a fishing boat-day/trip.

**Sampling design and protocols**

**Sampling design description:**
The sampling design takes into account monthly on-site creel survey questionnaire interviews in harbors having high importance for salmon trolling fishing. Trolling boats are randomly sampled from both groups; commercial recreational boats and private fishing boats. The number of interviewed boats is selected randomly. The App dedicated to the survey is used by the observers. The refusal rate is recorded. The number of anglers on boat and fishing rods are recorded in the protocol. In addition, sociological data are collected.

The use of remote CCTV cameras for monitoring of recreational salmon trolling fishery effort proved to be a cost-efficient method providing accurate fishing effort estimates helping to reduce bias in recreational catch estimates. Remote CCTV cameras have been installed in two harbors i.e., Hel and Gdańsk Górki Zachodnie which were defined during the Pilot Studies as the most important for salmon and sea trout recreational fishery and were also chosen because of availability of technical infrastructure. The cameras record boat movements between 04:00 and 18:00 each day. A high image frame rate; Full HD format (25 images per second) is set to ensure full coverage of the activity at each monitored marina and correct identification of trolling boats. Taking into account the capacity of cameras hard drives, data from them should be downloaded to the NMFRI server at three-month intervals.

To monitor trolling cruises frequency, catch per unit effort as well as catch species composition a self-sampling method of trolling catches has been applied. A fishing loogbooks, containing cruise data as well as biological data of fish caught are distributed among the trolling boats' skippers/owners to fill-in on a voluntary basis.

https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Is the sampling design compliant with the 4S principle?:**
NA

**Regional coordination:**
N

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Compliance with international recommendations:**
Y
Hartill B.W., Taylor S.M., Keller K., Weltersbach M.S. (2020). Digital camera monitoring of recreational fishing effort: Applications and challenges. Fish and Fisheries, 21: 204–215.
ICES (2018). Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 11–15 June 2015, Faro, Portugal. ICES CM 2018/EOSG:19. 111 pp.
McCormick J.L., Meyer K.A. 2017. Sample Size Estimation for On-Site Creel Surveys. North American Journal of Fisheries Management 37:970–980.
Weltersbach M.S. 2013. Recreational fishery on salmon and sea trout. Planned research activities in Germany. WGBAST. Tallinn, 06.04.2013.
Weltersbach M.S., Kaiser F., Strehlow H.V. 2016. Surveying 2.0 - Using remote cameras to monitor a highly specialized recreational fishery in the Baltic Sea. Oral presentation. ICES Annual Science Conference, organized in Riga (Latvia), 19-23 September 2016.

**Link to sampling protocol documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Compliance with international recommendations:**
Y

**Sampling implementation**

**Recording of refusal rate:**
Y

**Monitoring of sampling progress within the sampling year:**
The sample stratification and digitization process is monitored on an on-going basis.

**Data capture**

**Means of data capture:**
Measuring boards, scales, different sampling protocols, tablets. Biological data (length, weight) and catch composition are recorded and stored in the excel file. CCTV cameras are permanently installed in the harbors throughout the year.

**Data capture documentation:**
N
Details are provided in this textbox.

**Quality checks documentation:**
N
Details are provided in this textbox.

**Data storage**

**National database:**
NA

**International database:**
NA

**Quality checks and data validation documentation:**
N
Details are provided in this textbox.

**Sample storage**

Storage description:
Digitized questionnaires from sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. Video records from cameras are stored on hard drives.

Sample analysis:
ICES (2018). Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 11–15 June 2015, Faro, Portugal. ICES CM 2018/EOSG:19. 111 pp.
Weltersbach M.S., Kaiser F., Strehlow H.V. 2016. Surveying 2.0 - Using remote cameras to monitor a highly specialized recreational fishery in the Baltic Sea. Oral presentation. ICES Annual Science Conference, organized in Riga (Latvia), 19-23 September 2016.

**Data processing**

**Evaluation of data accuracy (bias and precision):**
N
Details are provided in this textbox

**Editing and imputation methods:**
N
Details are provided in this textbox

**Quality document associated to a dataset:**
There is no a document summarising the estimation process followed.

**Validation of the final dataset:**
Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the WGBAST meeting.

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: diad_troll_web**

**Sampling scheme type: recreational (off site surveys)**

**Observation type: SciObsOnShore**

**Time period of validity: 2022-2024**

Short description (max 100 words):
Sampling scheme aiming at collecting biological samples (length, weight), numbers and catch composition from recreational trolling on-shore catches conducted in Polish Marine Areas. The sampling scheme concerns direct off-site survey.

**Description of the population**

**Population targeted:**
The target species are Atlantic salmon *Salmo salar* and sea trout *Salmo trutta* in ICES SD 24-26.

**Population sampled:**
Baltic Salmon and sea trout

**Stratification:**
Polish trolling fisheries operates in the Main Basin of the Baltic Sea (Polish Marine Areas SD 24-26) where the mixed-stock fisheries of salmon occur (ICES SD 22-31). The temporal stratification covers 1st , 2nd and 4th quarter of the year (covering whole fishing season). The applied unit is a fishing boat-day/trip.

**Sampling design and protocols**

**Sampling design description:**
An annual off-site survey is targeting in general sea recreational fishing in Polish Maritime Waters with a particular emphasis of diadromous fish species. This survey is based on web-site questionnaire including information about the survey and describing the aim of this work with a instruction how to fill a web-based questionnaire.

Information about the survey is distributed and made available on the Internet platforms, social media and NMFRI web-site:
http://ankiety2.mir.gdynia.pl/sample-apps/Ankieta-wedkarska/
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Is the sampling design compliant with the 4S principle?:**
NA

**Regional coordination:**
N

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Compliance with international recommendations:**
N

**Link to sampling protocol documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Compliance with international recommendations:**
N

**Sampling implementation**

**Recording of refusal rate:**
NA

**Monitoring of sampling progress within the sampling year:**
The sample stratification and digitization process is monitored on an on-going basis.

**Data capture**

**Means of data capture:**
The on-line questionnaire is available throughout the each year (opened 1st of January and blocked 31st of December).

**Data capture documentation:**
N
Details are provided in this textbox.

**Quality checks documentation:**
N
Details are provided in this textbox.

**Data storage**

**National database:**
NA

**International database:**
NA

**Quality checks and data validation documentation:**
N
Details are provided in this textbox.

**Sample storage**

Storage description:
Collected data are stored on the servers of the National Marine Fisheries Research Institute in Gdynia.

Sample analysis:
Data are analyzed with the use of R script and visualized using Shiny R package.

**Data processing**

**Evaluation of data accuracy (bias and precision):**
N
Details are provided in this textbox

**Editing and imputation methods:**
N
Details are provided in this textbox

**Quality document associated to a dataset:**
There is no a document summarising the estimation process followed.

**Validation of the final dataset:**

Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the WGBAST meeting.

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: diad_coastal**

**Sampling scheme type: recreational (on site surveys)**

**Observation type: SciObsOnShore**

**Time period of validity: 2022-2024**

Short description (max 100 words):
Sampling scheme aiming at collecting biological samples (length, weight), numbers and catch composition from recreational on-shore catches conducted in Polish Marine Areas. The sampling scheme concerns direct on-site observations from the shore.

**Description of the population**

**Population targeted:**
The target species are sea trout *Salmo trutta* and eel *Anguilla anguilla* in ICES SD 24-26.

**Population sampled:**
Baltic sea trout and eel

**Stratification:**
Polish anglers fish in the Main Basin of the Baltic Sea (Polish Marine Areas SD 24-26). The temporal stratification covers 1$^{st}$ , 2$^{nd}$, 3$^{rd}$ and 4$^{th}$ quarter of the year (covering whole fishing season). The applied unit is a fishing day.

**Sampling design and protocols**

**Sampling design description:**
The sampling design takes into account monthly on-site creel survey questionnaire interviews. This method is based on a digital questionnaire installed on tablets enabling a direct interviews among anglers fishing from the shore for sea trout and eel. he refusal rate is recorded. In addition, sociological data are collected.

https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Is the sampling design compliant with the 4S principle?:**
NA

**Regional coordination:**
N

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Compliance with international recommendations:**
Y
McCormick J.L., Meyer K.A. 2017. Sample Size Estimation for On-Site Creel Surveys. North American Journal of Fisheries Management 37:970–980.
Weltersbach M.S. 2013. Recreational fishery on salmon and sea trout. Planned research activities in Germany. WGBAST. Tallinn, 06.04.2013.

**Link to sampling protocol documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Compliance with international recommendations:**
Y

**Sampling implementation**

**Recording of refusal rate:**
Y

**Monitoring of sampling progress within the sampling year:**
The sample stratification and digitization process is monitored on an on-going basis.

**Data capture**

**Means of data capture:**
Measuring boards, scales, different sampling protocols, tablets. Biological data (length, weight) and catch composition are recorded and stored in the excel file.

**Data capture documentation:**
N
Details are provided in this textbox.

**Quality checks documentation:**
N
Details are provided in this textbox.

**Data storage**

**National database:**
NA

**International database:**
NA

**Quality checks and data validation documentation:**
N
Details are provided in this textbox.

**Sample storage**

Storage description:
Digitized questionnaires from sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia.

Sample analysis:
ICES (2018). Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 11–15 June 2015, Faro, Portugal. ICES CM 2018/EOSG:19. 111 pp.

**Data processing**

**Evaluation of data accuracy (bias and precision):**
N
Details are provided in this textbox

**Editing and imputation methods:**
N
Details are provided in this textbox

**Quality document associated to a dataset:**
There is no a document summarising the estimation process followed.

**Validation of the final dataset:**
Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST) and ICES Working Group on Eels (WGEEL) for sea trout and eel respectively. Quality of the data provided are discussed and verified during the group meetings.

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: diad_coastal_web**

**Sampling scheme type: recreational (off site surveys)**

**Observation type: SciObsOnShore**

**Time period of validity: 2022-2024**

Short description (max 100 words):
Sampling scheme aiming at collecting biological samples (length, weight), numbers and catch composition from recreational trolling on-shore catches conducted in Polish Marine Areas. The sampling scheme concerns direct off-site survey.

**Description of the population**

**Population targeted:**
The target species are sea trout *Salmo trutta* and eel *Anguilla anguilla* in ICES SD 24-26.

**Population sampled:**
Baltic sea trout and eel

**Stratification:**
Polish anglers fish in the Main Basin of the Baltic Sea (Polish Marine Areas SD 24-26). The temporal stratification covers 1$^{st}$ , 2$^{nd}$, 3$^{rd}$ and 4$^{th}$ quarter of the year (covering whole fishing season). The applied unit is a fishing day.

**Sampling design and protocols**

**Sampling design description:**
An annual off-site survey is targeting in general sea recreational fishing in Polish Maritime Waters with a particular emphasis of diadromous fish species. This survey is based on web-site

questionnaire including information about the survey and describing the aim of this work with a instruction how to fill a web-based questionnaire.

Information about the survey is distributed and made available on the Internet platforms, social media and NMFRI web-site:
http://ankiety2.mir.gdynia.pl/sample-apps/Ankieta-wedkarska/
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Is the sampling design compliant with the 4S principle?:**
NA

**Regional coordination:**
N

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Compliance with international recommendations:**
N
**Link to sampling protocol documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf

https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Compliance with international recommendations:**
N

**Sampling implementation**

**Recording of refusal rate:**
NA

**Monitoring of sampling progress within the sampling year:**
The sample stratification and digitization process is monitored on an on-going basis.

**Data capture**

**Means of data capture:**
The on-line questionnaire is available throughout the each year (opened 1st of January and blocked 31st of December).

**Data capture documentation:**
N
Details are provided in this textbox.

**Quality checks documentation:**

N
Details are provided in this textbox.

**Data storage**

**National database:**
NA

**International database:**
NA

**Quality checks and data validation documentation:**
N
Details are provided in this textbox.

**Sample storage**

Storage description:
Collected data are stored on the servers of the National Marine Fisheries Research Institute in Gdynia.

Sample analysis:
Data are analyzed with the use of R script and visualized using Shiny R package.

**Data processing**

**Evaluation of data accuracy (bias and precision):**
N
Details are provided in this textbox

**Editing and imputation methods:**
N
Details are provided in this textbox

**Quality document associated to a dataset:**
There is no a document summarising the estimation process followed.

**Validation of the final dataset:**
Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST) and ICES Working Group on Eels (WGEEL) for sea trout and eel respectively. Quality of the data provided are discussed and verified during the group meetings.

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: electro_diad**

**Sampling scheme type: Diadromous (scientific)**

**Observation type: SciObs water body**

**Time period of validity: 2022-2024**

Short description (max 100 words):
Sampling scheme aiming fishing for sea trout and salmon parr will be carried out using the electrofishing method. On their basis, the density of salmon and sea trout fry in individual age classes will be estimated. The research fishery will be carried out in 11 rivers of northern Poland, in at least 41 positions (sites) located in the areas of the spawning grounds of sea trout and salmon. The result of the work should be a set of data required by the WGBAST working group.

**Description of the population**

**Population targeted:**

The target species are Atlantic salmon *Salmo salar* and sea trout *Salmo trutta* in ICES SD 24-26.

**Population sampled:**

Baltic Salmon and sea trout

**Stratification:**

The temporal stratification covers 3rd quarter of the year. The applied fishing unit is triple run of 50m long site. The parr density is expressed as a number of fish per $100m^2$.

**Sampling design and protocols**

**Sampling design description:**

An annual survey is targeting salmon and sea trout parr density is carried out in 11 rivers (Słupia, Reda, Łeba, Łupawa, Wieprza, Drwęca, Parsęta, Rega, Drawa, Ina, Zielona Struga) of northern Poland, in at least 40 sites. Electrofishing is the most widespread monitoring method for determination of young fish densities described by Bohlin et al. 1989. The temporal stratification covers 3rd quarter of the year. In Poland, each sampled section of the stream is 50 m long. Fish are sampled in the upstream direction using backpack electrofishing gear. The applied fishing unit is triple run of 50m long site. All specimens are measured and archived on the fishing protocols. Raw data are stored in the excel file.

The number of young salmon and trout is estimated for each site separately, using the Carle and Strub (1978) Maximum Weighted Likelihood method for three consecutive catches. The parr density is expressed as a number of fish per 100m2.

**Is the sampling design compliant with the 4S principle?:**

NA

**Regional coordination:**

N

**Link to sampling design documentation:**

https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf

Bohlin T., Hamrin S., Heggberget T.G., Rasmussen G., Saltveit S.J. (1989). Electrofishing — Theory and practice with special emphasis on salmonids. Hydrobiologia, 173, 9–43.

ICES. 2021. Baltic Salmon and Trout Assessment Working Group (WGBAST). ICES Scientific Reports. 3:26. 331 pp. https://doi.org/10.17895/ices.pub.7925

**Compliance with international recommendations:**

Y

**Link to sampling protocol documentation:**

https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf

**Compliance with international recommendations:**

Y

ICES. 2021. Baltic Salmon and Trout Assessment Working Group (WGBAST). ICES Scientific Reports. 3:26. 331 pp. https://doi.org/10.17895/ices.pub.7925

**Sampling implementation**

**Recording of refusal rate:**

NA

**Monitoring of sampling progress within the sampling year:**
The sample stratification and digitization process is monitored on an on-going basis.

**Data capture**

**Means of data capture:**
Measuring boards, scales, generator, dissection equipment, tubs & buckets, different sampling protocols, GPS. Biological data (e.g. length) are recorded in the field and stored in the excel file.

**Data capture documentation:**
N
Details are provided in this textbox.

**Quality checks documentation:**
N
Details are provided in this textbox.

**Data storage**

**National database:**
NA

**International database:**
NA

**Quality checks and data validation documentation:**
N
Details are provided in this textbox.

**Sample storage**

Storage description:
Collected data are stored on the servers of the National Marine Fisheries Research Institute in Gdynia.

Sample analysis:
Data are analyzed with the use of statistical tools.

**Data processing**

**Evaluation of data accuracy (bias and precision):** N(2022)

**Editing and imputation methods:** N

**Quality document associated to a dataset:**
There is no a document summarising the estimation process followed.

**Validation of the final dataset:**
Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the WGBAST meeting.

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: counter_diad**

**Sampling scheme type: Diadromous (scientific)**

**Observation type: SciObs water body**

**Time period of validity: 2022-2024**

Short description (max 100 words):

Number of ascending individuals of sea trout and salmon will be recorded by automatic counters. Currently, it is planned to collect data from counters located on 3 main salmonid rivers – Słupia, Drawa, Parsęta.

**Description of the population**

**Population targeted:**

The target species are Atlantic salmon *Salmo salar* and sea trout *Salmo trutta* in ICES SD 24-26.

**Population sampled:**

Baltic Salmon and sea trout

**Stratification:**

The temporal stratification covers whole year.

**Sampling design and protocols**

**Sampling design description:**

Number of ascending individuals of sea trout and salmon are recorded by automatic VAKI Riverwatcher fish counters installed in the fish ladders. This type of counter are used on many rivers around the Baltic Sea (ICES 2021). Currently, it is planned to collect data from counters located on 3 main salmonid rivers – Słupia, Drawa, Parsęta.

The device is recording among others time data, water temperature, fish direction, fish length and short video sequence of particular fish. Data are recorded in the field and stored in the dedicated software. Data are analyzed with the use of statistical tools.

**Is the sampling design compliant with the 4S principle?:**

NA

**Regional coordination:**

N

**Link to sampling design documentation:**

https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf

**Compliance with international recommendations:**

Y

**Link to sampling protocol documentation:**

https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf

**Compliance with international recommendations:**

Y

ICES. 2021. Baltic Salmon and Trout Assessment Working Group (WGBAST). ICES Scientific Reports. 3:26. 331 pp. https://doi.org/10.17895/ices.pub.7925

**Sampling implementation**

**Recording of refusal rate:**

NA

**Monitoring of sampling progress within the sampling year:**
The sample stratification and digitization process is monitored on an on-going basis.

**Data capture**

**Means of data capture:**
Automatic fish counter with supporting devices. Data are recorded in the field and stored in the dedicated software.

**Data capture documentation:**
N
Details are provided in this textbox.

**Quality checks documentation:**
N
Details are provided in this textbox.

**Data storage**

**National database:**
NA

**International database:**
NA

**Quality checks and data validation documentation:**
N
Details are provided in this textbox.

**Sample storage**

Storage description:
Collected data are stored on the servers of the National Marine Fisheries Research Institute in Gdynia.

Sample analysis:
Data are analyzed with the use of statistical tools.

**Data processing**

**Evaluation of data accuracy (bias and precision):**
N
Details are provided in this textbox

**Editing and imputation methods:**
N
Details are provided in this textbox

**Quality document associated to a dataset:**
There is no a document summarising the estimation process followed.

**Validation of the final dataset:**
Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the WGBAST meeting.

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: rec_diad**

**Sampling scheme type: Diadromous (recreational)**

**Observation type: Self water body**

**Time period of validity: 2022-2024**

Short description (max 100 words):
The analysis of catch reports maintained by individual Polish Angling Asociation districts.

**Description of the population**

**Population targeted:**
The target species are Atlantic salmon *Salmo salar*, sea trout *Salmo trutta* and eel *Anguilla anguilla* in ICES SD 24-26.

**Population sampled:**
Baltic Salmon, sea trout and eel.

**Stratification:**
The survey cover all year period.

**Sampling design and protocols**

**Sampling design description:**
Analysis of catch records from the Polish Angling Asociation districts of the analyzed rivers. Since the access to data is shifted in time, the time of processing results falls for the next year. The analysis of the registers must provide such information as: number of registers issued, number of registers returned, share of full and partial licenses, reported number of sea trout and salmon in Pomeranian rivers and eel in Oder and Vistula River basins.

**Is the sampling design compliant with the 4S principle?:**
NA

**Regional coordination:**
N

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Compliance with international recommendations:**
Y

**Link to sampling protocol documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf

**Compliance with international recommendations:**
Y

ICES. 2021. Baltic Salmon and Trout Assessment Working Group (WGBAST). ICES Scientific Reports. 3:26. 331 pp. https://doi.org/10.17895/ices.pub.7925
ICES. 2020. Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL). ICES Scientific Reports. 2:85. 223 pp. http://doi.org/10.17895/ices.pub.5982

**Sampling implementation**

**Recording of refusal rate:**
NA

**Monitoring of sampling progress within the sampling year:**
The sample stratification and digitization process is monitored on an on-going basis.

**Data capture**

**Means of data capture:**
Data are recorded in the field and stored in the excel file.

**Data capture documentation:**
N
Details are provided in this textbox.

**Quality checks documentation:**
N
Details are provided in this textbox.

**Data storage**

**National database:**
NA

**International database:**
NA

**Quality checks and data validation documentation:**
N
Details are provided in this textbox.

**Sample storage**

Storage description:
Collected data are stored on the servers of the National Marine Fisheries Research Institute in Gdynia.

Sample analysis:
Data are analyzed with the use of statistical tools.

**Data processing**

**Evaluation of data accuracy (bias and precision):**
N
Details are provided in this textbox

**Editing and imputation methods:**
N
Details are provided in this textbox

**Quality document associated to a dataset:**

There is no a document summarising the estimation process followed.

**Validation of the final dataset:**
Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST) and ICES Working Group on Eels (WGEEL) for salmon, sea trout and eel respectively. Quality of the data provided are discussed and verified during the group meetings.

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: commercial_diad**

**Sampling scheme type: Diadromous (commercial)**

**Observation type: Self water body**

**Time period of validity: 2022-2024**

Short description (max 100 words):
Sampling scheme aiming at collecting biological data (length, weight, sex ratio, age) from commercial catches and landings. Sampled specimens of sea trout are captured during their spawning migration and subjected to a typical controlled spawning operation. Sampling of eel is performed during fishing season from May to October.

**Description of the population**

**Population targeted:**
The target species is sea trout *Salmo trutta* in ICES SD 24-26 and European eel Anguilla Anguilla in Vistula and Oder Emu

**Population sampled:**
Baltic sea trout, European eel

**Stratification:**
The survey cover spawning season (October-December) of sea trout, and May-October for eels.

**Sampling design and protocols**

**Sampling design description:**
Stock related variables will be collected during monitoring of commercial catches and landings. It is planned to collect 100 samples of sea trout from three rivers in northern Poland (Parsęta, Słupia, Rega). Salmon catches are incidental and there is no fishery targeting this species.

**Is the sampling design compliant with the 4S principle?:**
NA

**Regional coordination:**
N

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf

**Compliance with international recommendations:**
Y
ICES. 2021. Baltic Salmon and Trout Assessment Working Group (WGBAST). ICES Scientific Reports. 3:26. 331 pp. https://doi.org/10.17895/ices.pub.7925

**Link to sampling protocol documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf
**Compliance with international recommendations:**
Y
ICES. 2021. Baltic Salmon and Trout Assessment Working Group (WGBAST). ICES Scientific Reports. 3:26. 331 pp. https://doi.org/10.17895/ices.pub.7925

**Sampling implementation**

**Recording of refusal rate:**
NA

**Monitoring of sampling progress within the sampling year:**
The sample stratification and digitization process is monitored on an on-going basis.

**Data capture**

**Means of data capture:**
Data are recorded in the field and stored in the excel file.

**Data capture documentation:**
N
Details are provided in this textbox.

**Quality checks documentation:**
N
Details are provided in this textbox.

**Data storage**

**National database:**
NA

**International database:**
NA

**Quality checks and data validation documentation:**
N
Details are provided in this textbox.

**Sample storage**

Storage description:
Collected data are stored on the servers of the National Marine Fisheries Research Institute in Gdynia. Scale samples are dried and stored in the paper envelopes with a biological information about each specimen.

Sample analysis:
Data are analyzed with the use of statistical tools.

**Data processing**

**Evaluation of data accuracy (bias and precision):**
N
Details are provided in this textbox

**Editing and imputation methods:**

N
Details are provided in this textbox

**Quality document associated to a dataset:**
There is no a document summarising the estimation process followed.

**Validation of the final dataset:**
Data are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the group meeting.

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: Trap_eel**

**Sampling scheme type: Diadromous (scientific)**

**Observation type: Self water body**

**Time period of validity: 2022-2024**

Short description (max 100 words):
The main goal of the survey is to obtain indicators of natural recruitment and yellow eel density.

**Description of the population**

**Population targeted:**
The target species is European eel (Anguilla anguilla) in Vistula and Oder EMU.

**Population sampled:**
Yellow eel.
**Stratification:**
Sampling takes place from April to November at fixed locations on Slupia river and lagoons.

**Sampling design and protocols**

**Sampling design description:**
The so-called trough traps are used to catch the young yellow eels. The construction scheme of this gear is based on traps used in Germany (own information), and is consistent with traps used in other countries (e.g. Legault, 1992; Solomon and Beach, 2004; Anon., 2011). It consists of an angled trough that fish climb up and a trap section that collects them. The bottom of the trough is lined with artificial substrate in the form of rows of plastic brushes. A few traps, however, of those used in the past in Smołdzino and Rejowice, were lined with plant material (branches and grass). The trap part of a trough trap is usually a barrel, which apart from the inlet opening, through which eels enter with the water, has numerous small openings allowing the constantly flowing water to flow out. The eels are lured to enter the trap area by water. This is supplied by gravity, or by a pump, through hoses to the beginning of the trough. Some of it flows down the trough where the fish climb. The rest of the water is directed to the trap section, where it enters through a funnel with a hose along with the flushed fish. Traps are set at presumed locations of aggregation or migration of eels below the dams, usually at the side of turbine outflows or at weir overflows. All fish caught are measured and weighed.
Survey fyke nets without a selection sieve were used to catch yellow eels, allowing the entire length spectrum to be captured. The location of the fyke nets has been fixed since 2016, making it possible to analyse the eel abundance trend in the Szczecin Lagoon and the Vistula Lagoon.

**Is the sampling design compliant with the 4S principle?:**
NA

**Regional coordination:**
N

**Link to sampling design documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf

**Compliance with international recommendations:**
Y

**Link to sampling protocol documentation:**
All catch is emptied from research gear for 2-3 days and then stored at low temperature. It is successively measured and weighed in the laboratory. For eels over 40 cm, ichthyologic analyses are performed The data is recorded on the measurement and analysis cards. Otoliths are placed in special tubes. Age is read from thin slices.
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf

**Compliance with international recommendations:**
Y

**Sampling implementation**

**Recording of refusal rate:**
NA

**Monitoring of sampling progress within the sampling year:**
NA

**Data capture**

**Means of data capture:**
Measuring boards, dissection equipment, tubs & buckets, different sampling protocols, processing software. Biological data (length, weight, sex,.) are recorded in the internal database, and transferred annualy during WGEEL datacall.

**Data capture documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf

**Quality checks documentation:**
N (2022)

**Data storage**

**National database:**
Data is stored in the internal database

**International database:**
ICES WGEEL database

**Quality checks and data validation documentation:**
Provide link to webpage where the documentation can be found. Otherwise, provide some details in the text box.

**Sample storage**

Storage description:
Otoliths from surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:
Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx and ICES WGBIFS
https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133

**Data processing**

**Evaluation of data accuracy (bias and precision):**
N (2022)
**Editing and imputation methods:**
N – not performed at national level but at end-user level (ICES).
ICES Data validation is performed upon data submissions and produces data quality reports with quality flagged data for the submitter to verify if the data need any correction. Quality is also assessed by WGEEL
**Quality document associated to a dataset:**
N
**Validation of the final dataset:**
The data does not need to be specifically checked for quality as it only relates to the numbers of fish caught in the research catches. The biological data passed to the end user are processed in accordance with the datacall, The data is checked and validated during the WGEEL integration procedure.

**MS :** POL

**Region:** Baltic Sea

**Sampling scheme identifier:** cod_recr_at_sea

**Sampling scheme type:** recreational (on site surveys)

**Observation type:** SciObsAtSea

**Time period of validity:** 2022-2024

Short description (max 100 words): sampling aiming at collecting at sea data on retained and discarded part of the catch (in numbers and weight) by fish species during recreational trips directed at cod; also collecting biological data on cod (individual mass, length, sex, maturity, stomach fullness, age) and biological data (length, individual mass) on by-caught fish species; number of anglers (fishing rods) also collected. The scheme covers coastal and open waters of the southern Baltic Sea.

**Description of the population**

**Population targeted:** all the recreational trips registered in Maritime Offices of the harbours located along the Polish coast.

**Population sampled:** mostly recreational trips of the charter boats will be sampled; private - small boats, will not be reached due to insufficient space on-board to accommodate observer on-board.

**Stratification:** population is stratified by three geographical units (ICES Sub-divisions) corresponding to commercial sampling schemes of the cod catches, and each area is also stratified quarterly what represents seasonal changes in distribution pattern of cod associated with biology of the fish species.

**Sampling design and protocols**

**Sampling design description:** semi-randomized drawing from the recreational vessel list stratified by area units (ICES Sub-divisions) and seasons (quarters).

**Is the sampling design compliant with the 4S principle?:** NA

**Regional coordination:** sampling design and protocols were developed on country level only, due to availability of a unique data – registry of recreational trips recorded by Maritime Offices.

**Link to sampling design documentation:**

ICES. 2014. Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 2-6 June 2014, Sukarrieta, Spain. ICES CM 2014\ACOM:37. 662 pp.

https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/Sampling-Plan-cod-recreational-POL-DCF.pdf

**Compliance with international recommendations:** Y

**Link to sampling protocol documentation:**

ICES. 2014. Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 2-6 June 2014, Sukarrieta, Spain. ICES CM 2014\ACOM:37. 662 pp.

https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/Sampling-Plan-cod-recreational-POL-DCF.pdf

**Compliance with international recommendations:** Y

**Sampling implementation**

**Recording of refusal rate:** Y

**Monitoring of sampling progress within the sampling year:** sampling allocation is adjusted following recreational fishing fleet redistribution (time and space –harbours within ICES Sub-divisions)

**Data capture**

**Means of data capture:** Data is collected using, measuring board, scales, microscopes

**Data capture documentation:** ICES. 2011. Report of the Planning Group on Recreational Fisheries (PGRFS) , 7-11 June 2010, Bergen, Norway. ICES CM 2010/ACOM:34. 168 pp.

**Quality checks documentation:** Y,
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Data storage**

**National database:** NPZDR, database is only accessible from the intranet.

**International database:** NA

**Quality checks and data validation documentation:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

**Sample storage**

Storage description: the samples (cod otoliths are stored paper envelopes in cartoons in dry dedicated for otoliths storage room. The access is limited to assigned personnel only. Time of samples storage is unlimited so far.

**Data processing**

**Evaluation of data accuracy (bias and precision):** Y, ICES. 2017. Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 6–10 June 2016, Nea Peramos, Greece. ICES CM 2016/SSGIEOM:10. 76 pp.

**Editing and imputation methods:** N

**Quality document associated to a dataset:** N

**Validation of the final dataset:**
https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf

ANNEX 1.2 - QUALITY REPORT FOR SOCIOECONOMIC DATA SAMPLING SCHEME

*The quality report fulfils Article 6 (3) (d) of the Regulation (EU) 2017/1004. This document is intended to specify data to be collected under chapter II, points 3, 5, 6, and 7 of the Delegated Decision annex: Socioeconomic data on fisheries, aquaculture and any complementary data collection of fishing activity and fish processing. Use this document to describe quality aspects of the data collection process (design, sampling implementation, data capture, data storage and data processing etc.). The annex should be filled for each sampling scheme. Where applicable, use the handbook on sampling design (Deliverable 2.1 from MARE/2016/22 SECFISH study), available on the DCF website.*

| **Survey Specifications** |
|---|
| *Sector name refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.*<br>*Sampling scheme refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling then outline sampling design.*<br>*Variables refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex. Supra region refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All Supra regions'.* |
| **Sector name(s): Fishing fleet** |
| **Sampling scheme: Census** |
| **Variables:** all fishing fleet economic and social variables |
| **Supra region(s):** Baltic Sea; North Sea; Eastern Arctic; NAFO; extended North Western waters (ICES areas 5, 6 and 7) and extended South Western waters (ICES areas 10, 12 and 14), All supra regions |
| **Survey planning** |
| Provide a short description of the population the sampling scheme applies to; e.g. '*less active vessels using passive gears*'.<br>Census, all registered fishing vessels |
| **Survey design and strategy** |

List data sources: e.g. interviews, registers, log books, sales notes, VMS, financial accounts etc. Fishing vessel register, log books, monthly catch reports (coastal log books), sales notes, questionnaires (financial accounts and social data);
Describe how the sample sizes were determined.
Census, survey addressed all registered vessels

Describe survey methods and distribution; e.g. questionnaire forms by post, by email, on website, by phone etc. access to other datasets etc.
Requests and forms (questionnaires) on economic and social variables are sent to all active vessels owners. Replies are accepted by post, designated website or e-mail. Landings, effort, fleet capacity data obtained from administrative datasets (permanent online access).

Describe the role of auxiliary information, if any, in the strategy: e.g. for validation, cross referencing, fall back data source etc.
No supportive, auxiliary information needed.

**Estimation design**

Describe method of calculating population estimate from sample.
These data are intend to be complete as they will include information from the whole population (census approach).
Describe method of calculating derived data: e.g. imputed values.
Value of physical capital will be calculated using PIM method or using scrapping premiums, depending on availability of the data.
Describe treatment of nonresponse.
In case of non-responses in census, estimation will be made based on averages for vessels that provided data and information known for a whole population for individual vessels i.e. volume of catches, fishing days, number of vessels within given segment. If there is a lack of information from the whole population (100%), the data are estimated based on the average values of the sample calculated taking into account number of fishing vessels, number of fishing days, number of personnel or catch size (variables known for a whole population).
Phone calls or physical visits to ports (to increase number of responses) are planned to address non response problem.

**Error checks**

Describe potential errors and how and where in the process these are detected, avoided or eliminated e.g., data; duplication, double counting, respondent error, upload error, processing error etc.
A two-stage data (obtained from questionnaires) registration procedure supported by a number of completeness, data type, and range checks in the database application. In the first step a user enters the data into the application forms and saves the data in temporary tables for further verification. In the second step a privileged user can
review, update and check the data (using built-in, predefined in the database scripts). A further check is performed after exporting the data to MS Access by a final user (outliers identification, inconsistency between verified data in comparison to preceding year, inconsistency between similar variables eg. fuel costs vs. fuel consumption).

**Data storage and documentation**

Describe how the data is stored.
Economic raw data collected under the DCF are entered (and stored) into the database using a dedicated web application accessible only in the institute's network. Once the data for the specific year are completed, they are transferred (exported) for further processing and validation using MS Access and MS Excel.

Provide link to webpage where additional methodological documentation can be found, if any.
https://dcf.mir.gdynia.pl/

**Revision**

Describe the frequency of the methodology review e.g., revision of; segmentation, survey method per segment, per variable etc.
No revision envisaged at national level unless common methodology remain unchanged.

**Confidentiality**

Are procedures for confidential data handling in place and documented?
https://dcf.mir.gdynia.pl/
Are protocols to enforce confidentiality between DCF partners in place and documented?
No other partners involved in economic data collection.
Are protocols to enforce confidentiality with external users in place and documented?
As above.
Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.
The questionnaires with economic data are gathered as a part of Polish statistical survey so the general statistical confidentiality regulations apply. This means that data on economic results of national economy entities cannot be made available if a given aggregation consists of less than 3 entities or the share of one entity in a given statement is less than 3/4 of the total.

**Survey Specifications**

*Sector name refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.*
*Sampling scheme refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling then outline sampling design.*
*Variables refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex. Supra region refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All Supra regions'.*

**Sector name(s): Fish processing**

**Sampling scheme: Census**

**Variables:** Socioeconomic data on the fish processing sector, Raw material data for processing industry

**Supra region(s): NA**

**Survey planning**

Provide a short description of the population the sampling scheme applies to; e.g. '*less active vessels using passive gears*'.

The data are census . The population covers enterprises whose main or additional activity is defined according to the Eurostat definition under NACE Code 10.20: 'products'.

**Survey design and strategy**

List data sources; e.g. interviews, registers, log books, sales notes, VMS, financial accounts etc.
Describe how the sample sizes were determined.

Enterprises are listed in General Veterinary Inspectorate register. The population covers enterprises whose main or additional activity is defined according to the Eurostat definition under NACE Code 10.20: 'products'.

Describe survey methods and distribution; e.g. questionnaire forms by post, by email, on website, by phone etc. access to other datasets etc.

The data are census. Questionnaire forms are sent by post, e-mails or are available to download on website. Replies are accepted by post, e-mail or electronically using dedicated web application (under construction).

Describe the role of auxiliary information, if any, in the strategy: e.g. for validation, cross referencing, fall back data source etc.
The financial data delivered on questionnaires can be verified by comparing it with the annual financial statements published in the Register of Business Enterprises (National Court Register). Price validation can be performed by analysing the prices published in EUMOFA

**Estimation design**

Describe method of calculating population estimate from sample.
All fish processing companies are expected to return the completed questionnaire forms (legal obligation).

Describe method of calculating derived data: e.g. imputed values.
Not applicable

Describe treatment of nonresponse.
In case of nonresponse reminders will be sent by e-mail or post. In case of missing data a calculation based on averages will be made using data from the questionnaire forms received.
Some financial data (if missing) can be gained from National Court Registry (if published).

**Error checks**

Describe potential errors and how and where in the process these are detected, avoided or eliminated e.g., data; duplication, double counting, respondent error, upload error, processing error etc.

Each completed questionnaire form is checked for completeness and correctness. In the event of doubt or discrepancy, the data shall be corrected after prior clarification with the person responsible for completing the form via e-mail or phone. Afterwards the data are entered into the database. The next step of validation is cross-checking them with the previous year's data.
In case data are delivered using the web application, they are verified and validated in the system. If necessary clarification is made by e-mail or phone and correction is made in the system .

**Data storage and documentation**

Describe how the data is stored.
All data are entered into the dedicated web application and stored there.

Provide link to webpage where additional methodological documentation can be found, if any.
*https://dcf.mir.gdynia.pl/*

| **Revision** |
| --- |
| Describe the frequency of the methodology review e.g., revision of; segmentation, survey method per segment, per variable etc.<br><br>Not applicable |
| **Confidentiality** |
| Are procedures for confidential data handling in place and documented?<br>https://dcf.mir.gdynia.pl/<br>Are protocols to enforce confidentiality between DCF partners in place and documented?<br>No other partners involved in economic data collection.<br>Are protocols to enforce confidentiality with external users in place and documented?<br>As above.<br>Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.<br>The questionnaires with economic data are gathered as a part of Polish statistical survey so the general statistical confidentiality regulations apply. This means that data on economic results of national economy entities cannot be made available if a given aggregation consists of less than 3 entities or the share of one entity in a given statement is less than 3/4 of the total. |

| **Survey Specifications** |
| --- |
| *Sector name refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.*<br>*Sampling scheme refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling then outline sampling design.*<br>*Variables refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex. Supra region refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All Supra regions'.* |
| **Sector name(s): Aquaculture** |
| **Sampling scheme: PSS** |
| **Variables:** Economic & Social |
| **Supra region(s): NA** |
| **Survey planning** |
| The data about two aquaculture species will be collected: carp and trout. According to Inland Fisheries Institute in Olsztyn survey the number of carp farms (2019) is 894 and trout is 102 (2019). |
| **Survey design and strategy** |

List data sources; e.g. interviews, registers, log books, sales notes, VMS, financial accounts etc.

The data source is questionnaire filled in by sampled respondents. Additionally interviews are planned.

Describe how the sample sizes were determined.

Object: farm. The sample is determined by two factors: sampling method and rate of nonresponse. Because of the first sampling time of socioeconomic data under the DCF in Poland the following assumptions were made: random sampling, confidence interval of 85% and a maximum error of 15%. Using nonresponse average rate from marine fisheries in 2018-2020 on DCF in Poland (45%) the total number of sampled farms for both species is planed of 64.

Describe survey methods and distribution; e.g. questionnaire forms by post, by email, on website, by phone etc. access to other datasets etc.

Questionnaires send by post or email or/and interviews (phone and directly).

Describe the role of auxiliary information, if any, in the strategy: e.g. for validation, cross referencing, fall back data source etc.

First period of data collection. No auxiliary information planned.

**Estimation design**

Describe method of calculating population estimate from sample.

Small population. HT estimation based on stratified population of farms.

Describe method of calculating derived data: e.g. imputed values.

Where necessary, for the missing data, the following methods of imputation will be used: mean substitution or regression.

Describe treatment of nonresponse.

No experience in nonresponse in aquaculture in Poland. Used marine fisheries nonresponse rate.

**Error checks**

Describe potential errors and how and where in the process these are detected, avoided or eliminated e.g., data; duplication, double counting, respondent error, upload error, processing error etc.

To reduce the risk of errors, standard activities will be carried out, such as: questionnaire tests; training; double-check work.
The sample is not numerous because of focus on data quality issues. Expert validation of collection processing and distribution. Data sets collected under the project H2020 SUCCESS -typical farms approach will be used as a reference and verification point (recommended by PGEcon in 2019).

**Data storage and documentation**

The data will be stored as database on server and paper forms collection.

**Revision**

The methodology will be revised twice during collection period. First revision will take place after first year of collection and the second after the last year.

**Confidentiality**

Are procedures for confidential data handling in place and documented?
Y
Are protocols to enforce confidentiality between DCF partners in place and documented?
Y
Are protocols to enforce confidentiality with external users in place and documented?
Y
Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.
Yes if the population in layer is less than 3 or when the turnover of the one farm is more than 75%.