Institute of Food Safety, Animal Health and Environment BIOR

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 27 April 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 27 April 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) 2022/39 of 12 January 2022

laying down rules on the format and timetables for the submission of national work plans and annual reports for data collection in the fisheries and aquaculture sectors, and repealing Implementing Decisions (EU) 2016/1701 and (EU) 2018/1283

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

2026-2027

Version 4

Riga, Latvia - 15 October 2025

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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.

Latvia is participating in the following RCGs:

- RCG Baltic
- RCG NANSEA
- RCG LDF
- RCG ECON

It is not planned of any major methodological changes in approach for data collection in comparison with the previous years. The main changes are as follows:

- It is planned to collect samples at the lower level in the SB-1 segment as in previous years. After the herring stock benchmark in 2023 (WKBALTPEL), data from this segment are not used as a tuning series in the stock assessment. Landings from this segment have also decreased, therefore it is planned to reduce sampling in this segment and increase sampling in the GOR PEL-1 segment.
- To support ecosystem and food web analysis, three new national research surveys are planned: ICHTHYO (Ichthyoplankton survey), NEKTOBENTHOS (Nektobenthos survey), ZOOPLANKTON (Zooplankton survey). Additional zoobenthos sampling is added to GORDEM survey.
- Latvia is fully aware of the anticipated needs of the Marine Action Plan to assess the impact of fisheries on the seabed but plans to discontinue additional studies on the impact of fisheries on marine habitats (Textbox 4.3 is excluded from the WP). As a result of the ban on direct cod fishing in the Eastern Baltic, the Latvian demersal fleet was decommissioned and no longer exists. The activity of the one remaining trawler is close to zero. In addition, the results of the previous pilot study showed a limited impact of bottom trawling on benthic habitats.
- Latvia is fully aware of the expected requirements of the Marine Action Plan regarding by-catches of sensitive species and would like to emphasize that the sampling scheme identifier 'BAL_PEL_CET' covers approximately 10% of all fishing trips in the Baltic Sea and the Gulf of Riga per year for pelagic trawlers (GOR PEL-1 and OSF PEL-1). By-catch information from the coastal segments (SB-1 and SB-2) is recorded by fishermen in the electronic coastal logbook. In 2025 it was planned to observe the segment SB-2 within the LIFE REEF project with higher sampling intensity to define the statistically sound sampling design. The study was started in February 2025 and will end in January 2026. While the study is not yet finished and the data has not yet been fully analysed in 2026 it is planned to continue to observe the SB-2 segment using the LIFE REEF project methodology, with the aim to cover 1% of the average number of PSUs during the reference period.

The following institution will be involved in implementation of Latvian Work Plan for data collection in the fisheries and aquaculture sectors:

Institute of Food Safety, Animal Health and Environment “BIOR”, Lejupes str. 3, LV-1076, Riga, Latvia: phone: +371 26366098, e-mail: bior@bior.lv, website: www.bior.lv

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Maksims Kovsars, Head of Information and Data division, Fish Resources Research department, Institute of Food Safety, Animal Health and Environment “BIOR”, Lejupes str. 3, LV-1076, Riga, Latvia, e-mail: Maksims.Kovsars@bior.lv

The collateral contact person:

Ivars Putnis, Head of Fish Resources Research department, Institute of Food Safety, Animal Health and Environment “BIOR”, Lejupes str. 3, LV-1076, Riga, Latvia, e-mail: Ivars.Putnis@bior.lv

The information on Latvian National Program for Collection of Fisheries Data can be found on the website of the BIOR: https://bior.lv/en/functions/national-fisheries-and-aquaculture-data-collection-work-plan/

The main information on the implementation of DCP will be published there. Actual versions of all necessary documents, manuals, protocols and guidelines to perform data collection from scientific surveys, observer

trips or collection of the samples could be found in the same place.
Like in previous years DCP will be executed by one institution. There will be at least one national coordination meeting in Latvia during the year. The first meeting will take place in the beginning of the year and is confined with arrangement of organizational issues for the execution of the national program:

1) designation of the responsible persons for procurement procedures for the rent of vessels for scientific surveys.
2) designation of the responsible persons for preparation of the list of active commercial vessels operating in the Baltic Sea and Gulf of Riga outside the coastal area with assigned quota per species and area to define the fleet segments for the random sampling during the year.
3) drafting of the list of eligible meetings where the participation of Latvia is important for the implementation of DCP and designation of persons who will participate in these meetings.
4) setting of dates, responsible persons and deadlines for the preparation of data for the ICES assessment working groups and for the Annual Report of the implementation of DCP in the previous year.
5) designation of the responsible persons and setting of dates for preparation the amendments of Latvian Work Plan for data collection in the fisheries and aquaculture sectors for the next year if it is necessary.
6) submission of annual Latvian National Program for Collection of Fisheries Data to Rural Support Service to be run under European Maritime Fisheries and Aquaculture Fund (EMFAF).

Besides, quarterly reporting on progress in implementation of data collection program to the Ministry of Agriculture and to the Rural Support Service which supervises the financial implementation of DCP will be send.

(max. 1000 words)

Text Box 1a: Test studies description

Region: Baltic

Test study: Genetics

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex.

Genetics

RWP BAL 2025-2027

One genetics test study will be performed: Methodology for genetic analysis of salmon in Latvia.

(max 250 words per study)

Test study: Diadromous species data collection

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex.

Diadromous species data collection

RWP BAL 2025-2027

Three different test studies will be performed in relation to the diadromous species data collection:

1. Assessment of salmon and sea trout spawning migration behaviour in Salaca river catchment.
2. Assessment of European eel natural recruitment extent to Latvian inland waters.
3. Assessment of silver eel mortality rate during descent migration.

(max 250 words per study)

Test study: Regionally coordinated stomach sampling program

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex.

Regionally coordinated stomach sampling program

RWP BAL 2025-2027

According to the outcome of ISSG Stomach Sampling recommendation, additionally stomach samplings of turbot will be collected during BITS_Q1 and BITS_Q4 scientific surveys.

(max 250 words per study)

Test study: Assessment of salmon and sea trout spawning migration behaviour in Salaca river catchment

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex.

Assessment of salmon and sea trout spawning migration behaviour in Salaca river catchment

1. Aim of the test study
To assess adult salmon and sea trout spawning migration behaviour, available and newly restored spawning habitat use, survival during the spawning migration and after spawning. Improve knowledge about factors determining salmon and sea trout stock size in Salaca river catchment. Also, to assess how catch‑and‑release (C&R) angling affects the post release behaviour and survival of salmon and sea trout upstream migration success.

2. Duration of the test study
One to three years.

3. Methodology and expected outcomes of the test study
From September to October ascending salmon and sea trout (up to 50 specimens from the species, half being control group) will be tagged by surgically implanting radio transmitters (procedure described by Huusko et. al. 2020 https://jukuri.luke.fi/handle/10024/546418). Specimens for the control group will be caught with fyke net in the river mouth of Salaca River. C&R group will be caught with angling method in the lower reaches of the river. Tagged spawner movement will be monitored with stationary and mobile receivers.
Expected outcomes of the test study is new information on sea trout spawner migration behaviour and survival after spawning as well as confirmation of some of the findings of a previous study (https://dspace-dev.lu.lv/server/api/core/bitstreams/3c7585f0-4183-4de0-b186-930719f90521/content#page=16) regarding salmon spawner behavioural patterns and C&R effect on the behaviour as well as upstream migration success. It should also provide data on use of available and newly restored spawning habitats in Salaca river and its tributaries and improve knowledge about factors determining salmon and sea trout stock size in the Salaca river catchment.

(max 900 words per study)

Test study: Assessment of European eel natural recruitment extent to Latvian inland waters

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex.

Assessment of European eel natural recruitment extent to Latvian inland waters

1. Aim of the test study
As natural recruitment data series are the best indicator of the status of the eel stock but currently Latvia is lacking such data, the aim of this test study is to assess European eel natural recruitment extent to Latvian inland waters.

2. Duration of the test study

One to three years.

3. Methodology and expected outcomes of the test study
To provide such data during the spring months "Flottang" elver traps will be used in several river inlets according to method developed by the Cellule Migrateurs Charente Seudre – described in https://bretagne-environnement.fr/sites/default/files/imports/2018_FD35_ANG_FLOTTANG_Marais_Dol.pdf, which allows detection of glass eels and elvers.
Expected outcome of this test study is assessed extent of natural recruitment of eel elvers, identified rivers with greatest significance for recruitment and establishment of permanent network of recruitment monitoring stations if natural recruitment is detected.

(max 900 words per study)

Test study: Assessment of silver eel mortality rate during descent migration

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex.

Assessment of silver eel mortality rate during descent migration

1. Aim of the test study
Aim of this test study is to assess silver eel mortality rate during descent migration to the sea from eel-farming lakes in obstructed rivers to provide important stock indicator required for assessing silver eel biomass that escapes to the sea and contributes to the spawning stock. Anthropogenically induced eel mortality rates outside fishery is one of the reporting requirements of the Eel Regulation (Council Regulation (EC) No 1100/2007 – Article 9).

2. Duration of the test study
One to three years.

3. Methodology and expected outcomes of the test study
In this study up to 50 silver eels descending from one eel-farming lake above migration barrier will be tagged with telemetry tags (method described by Barry et al. (2016) DOI: https://doi.org/10.1111/jfb.12865), their maturation stage and sex will be determined according to Durif et al. (2005). Network of receiving antennas will be deployed in the river sections below the barrier, allowing to assess both – survival and mortality rates of the eel.
Expected outcome of this test study is more accurate eel stock indicators for Latvian EMU and the scientific basis for reducing European eel anthropogenic mortalities to achieve the objectives of the Eel Regulation.

(max 900 words per study)

Test study: Methodology for genetic analysis of salmon in Latvia

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex.

Methodology for genetic analysis of salmon in Latvia

1. Aim of the test study
The pilot study for genetic analysis of salmon in Latvia conducted during the previous data collection period highlighted the need for additional preparatory work in order to achieve objectives stated there. Therefore, it has been restructured in form of new pilot study at the same time also revising the aims:

1. To establish a systematic and reliable methodology for collecting, processing, and analysing salmon genetic samples in Latvia.
2. To understand how mutually different or close the salmon populations in Latvian salmon rivers are and how much the gene pool of wild salmon populations in mixed salmon rivers is affected by salmon released by the hatcheries.
3. To find out the quality of salmon in state fish farms from a genetic point of view and understand how they affect wild populations.
4. To determine the genetic affiliation and regional origin of salmon caught in the bycatch by Latvian fishermen.

2. Duration of the test study
Annually from 2025 to 2027.

3. Methodology and expected outcomes of the test study
Studying the genetic diversity of salmon is crucial to ensure that salmon resources can be adequately protected and sustainably managed in the future. This requires understanding how different or close the salmon populations are in natural salmon rivers.
At least 30 samples from each AU5 river will be collected in Latvia every year, both from wild and mixed rivers. As salmon populations in most wild rivers are likely to be small and, in some years, it may be challenging to collect the full sample size, efforts will focus on gathering as many samples as possible every year from each river to ensure robust data. Tissue samples from caudal fin will be taken from each salmon and placed in 96% ethanol until further analysis. Genetic and biological sample collection might be organised by special research surveys if necessary. Various molecular biology techniques will be used to analyse the genetic diversity of salmon in Latvian rivers. This includes mastering the use of GeneMapper software to accurately identify alleles and ensure error-free genetic data analysis. The results will be compared with data from international laboratories to validate and ensure that findings are in line with global standards and assess the reliability of Latvian data in a broader context.
In addition, salmon samples from bycatch in coastal fishery will be analysed to identify affiliation to certain river population in the Baltic Sea region.
Expected Outcomes:
Through this test study it is expected to get a clear genetic profile of salmon populations in Latvian rivers – both wild and mixed rivers. It is expected that in smaller salmon rivers were successful spawning does not occur every year, salmon populations could be closely related to neighbouring bigger salmon rivers. Test study results will allow the development of appropriate measures for the conservation and management of individual salmon populations. This study will develop a systematic and reliable methodology for collecting, processing, and analysing salmon samples in Latvia. It will also give insight into the genetic quality of farmed salmon and its impact on natural populations.

(max 900 words per study)

Region: North Sea and Eastern Arctic

Test study: Genetics

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex.

Genetics

RWP NANSEA 2025-2027

No genetics test study is planned in the North Sea and Eastern Arctic.

(max 250 words per study)

Test study: Diadromous species data collection

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex.

Diadromous species data collection

RWP NANSEA 2025-2027

There are no plans for a test study to collect data on diadromous species in the North Sea and the Eastern Arctic.

(max 250 words per study)

Test study: North Sea bass (Dicentrarchus labrax) stock marine recreational fisheries sampling

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex.

North Sea bass (Dicentrarchus labrax) stock marine recreational fisheries sampling

RWP NANSEA 2025-2027

No activity is expected as Latvia doesn't have a recreational fishery in the North Sea.

(max 250 words per study)

Text Box 1b: Other data collection activities

Region: Baltic, North Sea and Eastern Arctic, Other regions

Activity: RCGs Secretariat

General comment: Describe either activities that are funded by the DCF without a direct link to the EU MAP specific requirements or WP template tables, like marine knowledge, or activities funded by other financial instruments and/or programmes that relate to EU MAP requirements, like actions under the marine action plan. You can also include one-off specific studies for a particular end-user need that will not enter the regular data collection.

RCGs Secretariat

RWP BAL 2025-2027
RWP NANSEA 2025-207
RWP LDF 2025-2027
RWP ECON 2025-2027

(max 250 words per study)

Activity: Regional data base and estimation System (RDBES)

General comment: Describe either activities that are funded by the DCF without a direct link to the EU MAP specific requirements or WP template tables, like marine knowledge, or activities funded by other financial instruments and/or programmes that relate to EU MAP requirements, like actions under the marine action plan. You can also include one-off specific studies for a particular end-user need that will not enter the regular data collection.

Regional data base and estimation System (RDBES)

RWP BAL 2025-2027
RWP NANSEA 2025-207
RWP LDF 2025-2027

(max 250 words per study)

Activity: Regional Coordination taking place in ISSGs and pan regional cooperation between RCGs

General comment: Describe either activities that are funded by the DCF without a direct link to the EU MAP specific requirements or WP template tables, like marine knowledge, or activities funded by other financial instruments and/or programmes that relate to EU MAP requirements, like actions under the marine action plan. You can also include one-off specific studies for a particular end-user need that will not enter the regular data collection.

Regional Coordination taking place in ISSGs and pan regional cooperation between RCGs

RWP BAL 2025-2027
RWP NANSEA 2025-207
RWP LDF 2025-2027
RWP ECON 2025-2027

(max 250 words per study)

Activity: Smart Dots

General comment: Describe either activities that are funded by the DCF without a direct link to the EU MAP specific requirements or WP template tables, like marine knowledge, or activities funded by other financial instruments and/or programmes that relate to EU MAP requirements, like actions under the marine action plan. You can also include one-off specific studies for a particular end-user need that will not enter the regular data collection.

Smart Dots

RWP BAL 2025-2027
RWP NANSEA 2025-207
RWP LDF 2025-2027

(max 250 words per study)

Activity: Catch, effort and sampling overviews for RCG Technical Meeting

General comment: Describe either activities that are funded by the DCF without a direct link to the EU MAP specific requirements or WP template tables, like marine knowledge, or activities funded by other financial instruments and/or programmes that relate to EU MAP requirements, like actions under the marine action plan. You can also include one-off specific studies for a particular end-user need that will not enter the regular data collection.

Catch, effort and sampling overviews for RCG Technical Meeting

RWP BAL 2025-2027
RWP NANSEA 2025-207
RWP LDF 2025-2027

(max 250 words per study)

Region: Baltic

Activity: The evaluation of the status of the river lamprey population

General comment: Describe either activities that are funded by the DCF without a direct link to the EU MAP specific requirements or WP template tables, like marine knowledge, or activities funded by other financial instruments and/or programmes that relate to EU MAP requirements, like actions under the marine action plan. You can also include one-off specific studies for a particular end-user need that will not enter the regular data collection.

The evaluation of the status of the river lamprey population

1. Aim of the data collection activity
The aim of the data collection activity is to collect data for the evaluation of the status and exploitation of the population of the European river lamprey *Lampetra fluviatilis* in Latvia. This includes both monitoring of reproduction success by monitoring of the density of lamprey larvae and mark-recapture survey of upstream migrating adults to assess the exploitation rate of this species. The river lamprey is an important target species in Latvian inland fisheries with high commercial and cultural heritage value. At the same time, river

lamprey is listed in Annexes II and V of the Habitats Directive (92/43/EEC), which requires Member States to monitor the conservation status of this species and, if necessary, take measures to ensure that commercial fisheries are compatible with the favourable conservation status of this species. The information collected through this activity will be used to monitor changes in river lamprey population size and to ensure that the exploitation rate of this species remains within safe limits.

2. Duration of the data collection activity
Monitoring of reproductive success (larval density) - annually from end of July to mid of September.
Mark-recapture survey for assessment of exploitation rate – one time in period, from early August to late April next year.

3. Methodology and expected outcomes of the data collection activity
The first results from the test study carried out from 2022 until 2024 (from August to April annually) suggest that the current methodology deriving from INTERREG project "Cross-boundary evaluation and management of Lamprey stocks in Lithuania and Latvia (LLI-310 LAMPREY) must be adjusted in order to reach the aim of the study more efficiently. The full version of a detailed description of the new methodology can be found via the link here: https://bior.lv/wp-content/uploads/2025/03/River_Lamprey_Monitoring.pdf
Monitoring of lamprey larval density should be carried out by bottom sampling using a metal box (dimensions 30 x 40 x 55 cm) as described by *Lasne* 2010. At each sampling site, 12 samples should be taken with the box and the total length of all captured lamprey larvae should be measured to the nearest mm. Taking into account the variation in length of the captured larvae, they should be divided into three age groups - 0+, 1+ and >1+. At least 80 sampling sites should be sampled annually. The sampling procedure (position of samples within the sampling site, information to be recorded, handling of larvae, etc.) as well as the location of the sampling sites should follow the instructions published on the homepage of the BIOR Institute. The expected outcome of the lamprey larval density monitoring is information on the number of lamprey larvae of each age group in each of the 80 sampling sites.
Mark-recapture survey of upstream migrating lamprey spawners should be carried out in cooperation with commercial fishermen. During the fishing season, live and viable upstream-migrating lamprey spawners must be purchased from commercial fishermen. Lamprey spawners should be marked with external tags (preferably streamer tags), released back into the sea and information on the recapture of tagged lampreys should be collected. For each tagged specimen, the tag number, river and time of capture, and location and time of release should be recorded. For each recaptured specimen, the river and time of recapture should be recorded. A minimum of 6208 migrating lampreys should be tagged and released in at least 8 sites. The procedure of tagging (handling of lamprey spawners during tagging, transport and release, communication with fishermen, etc.) as well as the location of release sites of tagged lampreys should follow the instructions published on the homepage of the BIOR Institute. The expected result of the mark-recapture survey of upstream migrating lamprey spawners is the tagging and release of 6208 migrating lampreys and the collection of information on all recaptured specimens.

(max 900 words per activity)

SECTION 2: BIOLOGICAL DATA

Text Box 2.3: Diadromous species data collection in freshwater

Region: Baltic

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 2.1(b) and point 2.3 of the EU MAP Delegated Decision annex. Use this text box to give an overview of the methodology used to collect data from freshwater and inland commercial and recreational fisheries for salmon, sea trout and eel. Also include overview of data to be collected from research surveys on salmon, sea trout and eel in freshwater, and on eel in any relevant habitat including coastal waters.

Method selected for collecting data.
Small scale reared salmon commercial fishery exists only in Daugava River up to Rīgas HPP dam and in Daugava River connection with Lielupe River. In other rivers commercial fishing on salmon and sea trout is prohibited. Due to the large number of grey seals in the Daugava River mouth, landings in this fishery are very low which currently prevents the collection of samples.

Research surveys on salmon and sea trout in freshwater cover all life stages.

Population density of 0+ and >0+ salmon and sea trout parr
To assess population density of wild 0+ and >0+ salmon and sea trout parr, electrofishing is carried out in permanent monitoring sites annually (July to September 51 sites for salmon and 64 for sea trout), covering all rivers important for these two species. All caught parr are measured and divided into age classes. Electrofishing is carried out regarding standard LVS EN 14011:2003 established based on CEN standard.

Salmon and sea trout smolt-run
The River Salaca is Latvian salmon index river in the Baltic Sea salmon Assessment Unit 5 (AU5). The wild salmon and sea trout smolt-run in the River Salaca has been monitored since 1964 using smolt trapping with fyke net. Smolt trap in the River Salaca is operated annually from the April till June. Considering that the ICES WGBAST has highlighted in its 2025 report the need for additional smolt count data as medium-term, important issue planned to be dealt with in the next 2–3 years to be able to include AU 5 stocks in the full life-history model, in 2026 it is planned to start 'rolling' sampling programme that collects smolt abundance data from salmon rivers with limited data. Each year, attempt will be made to conduct smolt counts in one of the salmon rivers (wild Vitrupe, Pēterupe, Irbe, Užava, Saka and potential salmon river Aģe) where data on smolt numbers is lacking. During smolt trapping all caught smolts will be measured. The mark/recapture method will be used for smolt-run (smolt production) estimation - subsample of smolts will be tagged with Streamer or visible implant elastomer (VIE) tags and released upstream from the trap to assess trap efficiency.

Salmon and sea trout spawning-run
Starting from 2020 in Salaca River ascending salmon and sea trout spawners are annually (June to the end of November) counted using VAKI Riverwatcher CS fish counter installed into the vertical stake weir, covering the entire width of the river. In late October, early November, in the Salaca and under suitable hydrological conditions also in other salmon and seatrout rivers, spawning redds are counted from a boat or by wading in stream reaches with spawning gravel and pebble substrate. Spawning redd counts provide additional information on the volume of spawning fish in the river and the use of available spawning grounds.

Data collection from salmon and sea trout recreational fishery
Licensed angling of salmon kelts is organized in river Salaca and its tributaries Jaunupe and Svētupe. Bag limit is one salmon or seatrout per day per one license following size restrictions. There is also licensed angling for sea trout kelt in the rivers Venta, Gauja and Brasla – bag limit is one seatrout per day per one license following size restrictions. Anglers must report each fish to the organizers of licensed angling. At the end of the year, organizers of licensed angling are reporting to institute BIOR angling data by fish species.

Biological sampling to assess eel population structure
Eel samples are collected in coastal commercial fisheries and in freshwater using fisheries independent methods.

Yellow eel standing stock assessment
For yellow eel standing stock assessment electrofishing is performed in lakes and rivers from June to September in at least 27 sites annually. Electrofishing is carried out regarding standard LVS EN 14011:2003 established based on CEN standard. Fished area, time in electrofishing and number of eel caught are registered. Subsample of two eels from a size group are collected for sex, age and *Anguillicola crassus* prevalence analyses.

Monitoring of silver eel-run
Silver eel-run (escapement) is annually monitored in two sites – 0.5 km upstream from the Daugava River mouth and lake Lilaste outlet (Lilaste River). The set of 4 small mesh size (8 – 10 mm from knot to knot) fyke-nets used in the lower part of Daugava River. Trap net with side arms closing the lake Lilaste outlet (mesh sizes 20-14 mm) used to catch silver eel migrating from the lake Lilaste to the Gulf of Riga providing absolute numbers of the run. Number of days in operation and number of eels caught is registered in the logbook. All caught eel from river Daugava and lake Lilaste outlet are held alive in net – cage until sampling procedure. All caught eels from this gear are analysed at harbour (length, weight, maturity (silvering index) according to Durif et al. 2009) and tagged with T-bar tags prior to releasing to estimate mortality in bycatch by different types of fisheries.

Eel data collection from fishery

Eel recreational fishery in Latvia consists of three parts: self-consumption fishery in coastal waters, self-consumption fishery in inland waters, eel angling and underwater hunting in inland waters.
In self-consumption fishery in Latvia, after every fishing activity, fishermen are obliged to report landings in the logbooks. Therefore, all available information (including by-catch) from this segment is officially documented and available for Data collection purposes. The same regulation is for commercial fishery in inland waters, therefore all landings are recorded and will be available for Data collection purposes. Biological data from commercial eel fisheries are collected opportunistically as landings are low and it is not possible to plan the amount of samples. Total length, weight, length of pectoral fin, eye diameter is registered, to determine the silvering stage according to *Durif et al. 2009*. Also, sex and presence of *Anguillicola crassus* in swimming bladder is registered. For age determination otolith samples are collected.
In licensed angling and underwater hunting after every angling activity, anglers are obliged to report to organizers each fish. At the end of the year, organizers of licensed anglings are reporting to Institute BIOR angling data by fish species. No data are available from waters where licensed angling is not established.

(max 250 words per species and area)

Text Box 2.4: Recreational Fisheries

Region: Baltic

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 to collect data on marine and freshwater recreational catches. For freshwater diadromous species, use Table and Text Box 2.3.

RWP BAL 2025-2027

(max 250 words per sampling scheme)

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 to collect data on marine and freshwater recreational catches. For freshwater diadromous species, use Table and Text Box 2.3.

The sampling scheme and survey design was developed and reported in "Relative share of catches of recreational fisheries compared to commercial fisheries Pilot study results" submitted to Commission on 2021. Latvia will continue to collect data from marine recreational fishery of salmon and sea trout. Sampling schemes for freshwater diadromous species fisheries were given in Text Box 2.3. According to Pilot Study results, no specific survey data will be collected for eel and cod recreational fishery.

Salmon recreational fishery in Latvia consists of three parts: self-consumption fishery, licensed angling in several rivers, and salmon trolling in the open sea. Data of recreational fishery of salmon will be reported every year ICES WGBAST and WGRFS. In this Text Box surveys from marine recreational fisheries are presented.

A self-consumption fishery in Latvia is conducted in coastal marine waters (up to 20 m depth or 2 nautical miles from the coast), where fishermen could use a limited number of fishing gears. After every fishing activity, fishermen are obliged to report landings in the logbooks. Therefore, all available information (including by-catch) from this segment is officially documented and available for Data collection purposes according to national legislations.

Trolling of salmon in Latvia is relatively new and limited. According to available information, only 5-10 Latvian boats are catching salmon in the open part of the Baltic Sea. Most of the boats are located in Liepaja and is represented by NGO. Institute is planning to contract NGO for data collection purposes. Special seminar with representatives from NGO will be organised where detailed information about sampling design will be explain to participants. At the end of the year, anglers will provide detailed sampled information (catch, by-catch, biological data) to institute BIOR. Annual meetings in the end of fishing season with anglers will organized in Liepaja, where anglers are interviewed for additional information. Salmon trolling in Latvia is

still very limited and locally focused, therefore contracted anglers were able to provide additional information about other anglers (number of boats and their effort), outside of their NGO.

Sea trout recreational fishery in Latvia, like salmon, consists of three parts: self-consumption fishery, licensed angling in several rivers, and salmon trolling in the open sea. Data will be reported every year ICES WGBAST and WGRFS. The same sampling design, like for salmon, will be applied to collect data from sea-trout recreational fishery.

Latvia will continue to collect data from flounder recreational fishery, as it is the most popular marine recreational fishery in Latvia. Flounder recreational fishery data (including by-catch) will be collected from coastline from Kolka to Liepaja, where most active flounder recreational fishery is realised. It is planned to collect data performing interviews on angling locations from September till May.

(max 900 words per region)

Text Box 2.5: Sampling plan description for biological data

Region: Baltic

Sampling scheme name: Small Pelagics in the Baltic

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

Sampling plan: Small Pelagics in the Baltic

RWP BAL 2025

Data will be collected according to RWP with a country-specific exception - a specific number of individuals from the length class will be taken for age reading.

(max 250 words per sampling scheme)

Sampling scheme name: OSF DEM-1 Baltic Sea demersal trawlers

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

OSF DEM-1

Additional information on sampling schemes

Biological sampling will be carried out in two ways: self-sampling by fishermen and sampling by scientific observers on board when this segment is active. Due to the critical state of cod stocks in the Baltic Sea, the specialized cod fishery is forbidden from 2020 and it's not clear when it will be allowed again. Cod could be kept in the catch only if it is an unavoidable by-catch in other fish fisheries (Baltic herring, sprat, and flounder).

During the reference period 2021-2023, the average number of trips per year is only 3. In 2023, only 1 trip.

Due to the very low by-catch quota available for cod and the limited market opportunities, the flounder fishery is almost closed.

Historically, discards have been collected in the demersal fisheries. As most of the demersal fleet has been decommissioned, the collection of information on cod and flounder discards has become very problematic.

Additional description of sampling frames

The activity of this fleet segment will be monitored and if it is active, the effort to collect biological information will be increased.

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

Sampling scheme name: OSF PEL-1 Baltic Sea pelagic trawlers

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

OSF PEL-1

Additional information on sampling schemes

Biological sampling will be carried out in two ways: self-sampling by fishermen and sampling by scientific observers on board. This sampling scheme aims to collect biological samples of target species (sprat and herring) from commercial catches in the pelagic fishery. Herring is usually caught as a by-catch in the sprat fishery in the central Baltic Sea. Due to the variability of herring by-catch, the total amount of herring sampled may differ from the original plan.

Additional description of sampling frames

Additional samples of flounder by-catch shall be taken in OSF PEL-1 when segment OSF DEM-1 (demersal fishery) is inactive.

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

Sampling scheme name: GOR PEL-1 Gulf of Riga Pelagic trawlers

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

GOR PEL-1

Additional information on sampling schemes

Biological sampling will be carried out in two ways: self-sampling by fishermen and sampling by scientific observers on board.
The target species in the pelagic fishery in the Gulf of Riga is herring.
There may be some deviations from the original monthly sampling plan due to low pelagic trawl activity during the summer months.

Additional description of sampling frames

Due to reduced sampling in the SB-1 segment, the sampling intensity will be increased in the GOR PEL-1 segment. Sampling will be planned on a weekly basis. There may be some deviations from the original weekly sampling plan due to low pelagic trawl activity during the summer months (June, July).

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

Sampling scheme name: SB-1 Active vessels from coastal fishery < 12 m employing herring trap-nets

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

SB-1

Additional information on sampling schemes

Biological sampling will be carried out by the fishermen as self-sampling in Gulf of Riga. If the trap-net fishery season is shortened or the herring fishery is closed in a geographical area, the total number of samples collected may not reach the original plan.

Additional description of sampling frames

It is planned to collect samples at the lower level as in previous years. After the herring stock benchmark in 2023 (WKBALTPEL), data from this segment will not be used as a tuning series in the stock assessment. Landings from this segment have also decreased, therefore it is planned to reduce sampling in this segment

and increase sampling in the GOR PEL-1 segment.

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

Sampling scheme name: SB-2 Active vessels from coastal fishery < 12 m employing static gears, except herring trap nets (SB-1)

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

SB-2

Additional information on sampling schemes
Biological sampling will be carried out in two ways: self-sampling by fishermen and sampling by scientific observers on board. Due to the salmon fishery ban, samples of salmon will only be taken from by-catch in commercial fisheries.

Additional description of sampling frames
NA

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

Sampling scheme name: BAL_PEL_CET Monitoring of cetaceans by-catch

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

BAL_PEL_CET

Additional information on sampling schemes
The target is to cover up to 10% of all trips in the pelagic fleet segments (OSF PEL-1 and GOR PEL-1) each year.

Additional description of sampling frames
Monitoring will be carried out by the observer in the Gulf of Riga and the Central Baltic Sea by self-sampling. Information on all by-catch species and all occurrences of Endangered, Threatened and Protected Species (ETPS) will be recorded.

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

Sampling scheme name: SAL_LLD Specialized scientific salmon fishery with longlines

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

SAL_LLD

Additional information on sampling schemes
Annually 150 samples of Atlantic salmon biological data are collected by contract fisherman in the open sea – ICES subdivisions 26 and 28 according to Article 25 of Regulation (EU) 2019/1241. Longlines are used for salmon sample collection. Scale samples for age determination and biological data are collected in the scale books. Data about all fishing trips are registered in fishing logbooks. Length, gutted weight (1.1 conversion factor used for full weight), sex and origin (adipose fin clipped or fish with adipose fin) is registered. Tissue samples from caudal fin stored in Eppendorf tubes with 96% ethanol for genetic analyses.

Additional description of sampling frames
These data are collected to assess the composition of Atlantic salmon populations in open sea fisheries

landings and to understand what part of the landings is made up of AU5 weak salmon populations. Such long-term data will allow better planning for further management and protection actions and could be used in ICES Advice.

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

Region: Other regions (Eastern Central Atlantic (FAO area 34))

Sampling scheme name: CECAF at sea sampling

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

Regional coordination for sampling small pelagics fisheries in CECAF waters

RWP LDF 2025-2027

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

Region: North Sea and Eastern Arctic

Sampling scheme name: HSF-1 Shrimp trawler fishery in the North Atlantic

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

HSF-1

Additional information on sampling schemes
The length sampling will be carried out through self-sampling by the fishermen.

Additional description of sampling frames
NA

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

Text Box 2.6: Research surveys at sea

Region: Baltic

Research survey: Baltic International Trawl Surveys - BITS_Q1

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

Baltic International Trawl Surveys – BITS_Q1

RWP 2025-2027

Additional sampling activities are described in table 2.6.

(max 450 words per survey)

Research survey: Baltic International Trawl Surveys - BITS_Q4

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.
Baltic International Trawl Surveys – BITS_Q4 RWP 2025-2027 Additional sampling activities are described in table 2.6. *(max 450 words per survey)*

Research survey: Baltic International Acoustic Surveys - BIAS

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.
Baltic International Acoustic Surveys – BIAS RWP 2025-2027 Additional sampling activities are described in table 2.6. *(max 450 words per survey)*

Research survey: Sprat Acoustic Surveys - SPRAS

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.
Sprat Acoustic Surveys – SPRAS RWP 2025-2027 Additional sampling activities are described in table 2.6. *(max 450 words per survey)*

Research survey: Gulf of Riga Acoustic Herring Survey (GRAHS)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.
Gulf of Riga Acoustic Herring Survey (GRAHS) RWP 2025-2027 Additional sampling activities are described in table 2.6. *(max 450 words per survey)*

Research survey: LFJS (Latvian Flatfishes Juvenile Survey)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

LFJS

1. Objectives of the survey

The main aim of the survey is to estimate the abundance of juvenile flatfish (flounder and turbot). The survey is conducted from May to August in the coastal zone of the Baltic Sea. The results of the survey are used to monitor recruitment of flatfish and for the management of Latvian coastal fisheries and the development of the national MSP.

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

This is not an internationally coordinated survey. The data will be collected with a beach seine (mesh size in the codend 8 mm) from the coast in the surf zone of the Baltic Sea in the main nursery area for flatfish. The sampling area is approximately 4000 m2 and the distance from the shore is approximately 130 m. In each sampling area (Kolka - Gulf of Riga, Kolka - Irbe Strait, Lielirbe, Jurmalciems, Pape - Baltic Sea, Eastern part of the Gulf of Riga, Southern part of the Gulf of Riga, Western part of the Gulf of Riga) 5 samples will be collected. The surveys will be carried out twice in each area in the period from May to August. Additionally, in two coastal locations (Kolka - Irbe Strait, Pape - Baltic Sea) data will be collected with a flounder juvenile seine (once per year). The parameters of the fishing gear are as follows: horizontal opening - 12 m, vertical opening - 1.5 m, mesh twine eye size - 5 mm, mesh wing twine eye size - 8 mm, length of towing ropes - 15 meters, and diameter - 10 mm. The area covered by a single gear haul is approximately 300 m2. Other species (fish and nectobenthos) will also be intensively studied to support the ecosystem analyses. Basic hydrological parameters (temperature, salinity and oxygen) will be measured during the survey.

(max 450 words per survey)

Research survey: GORDEM (Gulf Of Riga Demersal Fish Survey)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

GORDEM

1. Objectives of the survey

The survey is conducted three times a year - in May, August and October - on a rented commercial fishing trawler in the Gulf of Riga (Subdivision 27.3.d.28.1). The main purpose of the survey is to estimate the abundance of benthic fish species and to collect hydrological (temperature, salinity, oxygen), zooplankton and zoobenthos samples during the survey. In August, 5 additional zooplankton and hydrological stations are collected during the survey in the Subdivisions 27.3.d.26 and 27.3.d.28.2. Observations from the survey provide data on changes in biodiversity in the Gulf of Riga.

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

This is not an internationally coordinated survey. The data will be collected according to the "Manual for the Baltic International Trawl Surveys (BITS). Version 2.0" (WGBIFS, 2017, https://doi.org/10.17895/ices.pub.2883).
Trawling is carried out during the day and at night. The trawling stations cover the area in the Gulf of Riga from the 8 m coastal zone to a depth of 56 m, at selected locations on the seabed suitable for benthic trawling. Trawling is carried out with a special bottom trawl, 18 m wide and 1.5 m high when in operation, with a mesh

size of 17 mm - 6 mm. The speed during trawling is 3.0 knots and the duration of the hauls is 30 minutes, except in areas with very dense shoals of fish, where the hauls are reduced to 15 minutes. All benthic fish and invertebrates in the catch are separated and analysed. Total number and weight are recorded for all species. Length distributions are recorded for all benthic species from each trawl station. Basic hydrological parameters (temperature, salinity, oxygen), zoobenthos and zooplankton samples are also collected during the survey. The data collected are stored in the local BIODATA database.

(max 450 words per survey)

Research survey: CFM (Coastal Fish Monitoring)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

CFM

1. Objectives of the survey

The aim of the survey is to monitor changes in the fish communities in relation to the impact of eutrophication, habitat alteration, climate change, toxic substances, invasive alien species and fishery. The survey monitors changes over time (years) at fixed stations and allows to follow the relative abundance of different segments of the coastal fish community in each area. The results of the survey are used for the management of fishery in the Latvian coastal zone.

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

This is not an internationally coordinated survey. Data are collected in Latvian coastal areas at 3-5 m depth using Nordic coastal multi-mesh gillnets (Guidelines for Coastal Fish Monitoring of HELCOM, 2020: https://helcom.fi/wp-content/uploads/2020/01/HELCOM-Guidelines-for-coastal-fish-monitoring-2019.pdf) These nets are 45 m long and consist of 9 parts with different mesh sizes (from 10 to 60 mm). The monitoring is carried out once (Jurkalne, Daugavgriva) and twice (Pape) per year, in the other areas twice per month, all year round. The intensity of sampling depends on weather conditions. The length and weight of all fish are measured and other information such as weather conditions, depth, water temperature, salinity and Secchi depth are recorded.

(max 450 words per survey)

Research survey: STS (Specialized Turbot Survey)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

STS

1. Objectives of the survey

The aim of the survey is to estimate the spawning stock biomass of turbot in the Latvian EEZ. The results of the surveys, together with BITS Q1 and Q4 data, are used for the national coastal fishery regulation, which determines the number of special turbot gillnets allowed.

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

This is not an internationally coordinated survey. Data are collected in the Latvian coastal zone at 2-20 m depth using special turbot gillnets. These nets are 60 m long and have a mesh size of 240 mm. The surveys are conducted in the open part of the coastal zone (excluding the Gulf of Riga) to cover the main distribution

and spawning areas of turbot in the Latvian EEZ. The survey period is set to cover the turbot spawning season - 10 days in June and 10 days in July. Biological data are collected from turbot (length, weight, sex, gonad development stages, otoliths for age estimation). The presence of fish in the stomachs of turbot are recorded. Length and total weight are recorded for all by-catch species.

(max 450 words per survey)

Research survey: ICHTHYO (Ichthyoplankton survey)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

ICHTHYO

1. Objectives of the survey

The survey is conducted in the Latvian EEZ in the open part of the Baltic Sea (Subdivisions 26 and 28.1) in June using a rented commercial fishing trawler. The main purpose of the survey is to collect ichthyoplankton samples. The collection of ichthyoplankton provides data on abundance and composition of pelagic fish eggs and larvae in Latvian EEZ.

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

This is not an internationally coordinated survey. Samples are taken at 36 standard stations in Latvian EEZ. Samples are collected with IKS-80 ring-net (mesh size 500 microns, diameter of the ring 80 cm) in two ways at the same station. First, it is lowered to the required depth and then pulled vertically to the surface. Second, this net is towed on the water surface at a speed of ca. 2 knots for 10 minutes.

(max 450 words per survey)

Research survey: NEKTOBENTHOS (Nektobenthos survey)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

NEKTOBENTHOS

1. Objectives of the survey

The survey is conducted in October-November in the Baltic Sea (Subdivision 28.2), in the Latvian EEZ using a rented commercial fishing trawler. The main purpose of the survey is to collect nektobenthos samples, which provide data on their abundance and biomass changes in the Baltic Sea, Latvian EEZ.

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

This is not an internationally coordinated survey. Samples are taken at 12 depth dependent stations in the Baltic Sea, 4 at each of the three geographic sections – Ventspils, Pavilosta and Liepaja using Isaacs-Kidd midwater trawl (IKMT) 10 feet model (mesh size in codend 500 µm, cross-section of the trawl mouth 6 sqm). Samples are taken over 25, 50, 70 and 90 m of sea depth, at each station – in the full water column by step-like trawling method from 1-2 m over the bottom to the surface. The IKMT is towed 1 minute at each preselected 5-15 m horizon of water column. The net is rinsed, and the sample components are poured into a container. The resulting sample is filtered through a sieve (mesh size 500 µm) to remove water, fixed in 90% ethanol or 4% formaldehyde solution and poured into the storage jars. The information on the samples and data collected is stored in the local BIODATA database.

(max 450 words per survey)

Research survey: ZOOPLANKTON (Zooplankton survey)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

ZOOPLANKTON

1. Objectives of the survey

The survey is conducted in June in the Gulf of Riga (subdivision 28.1) using a rented trawler or other vessel. The main purpose of the survey is to collect zooplankton samples. The collection of zooplankton provides data on their abundance and biomass changes in the Gulf of Riga.

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

This is not an internationally coordinated survey. Samples are taken at 8 standard stations in the Gulf of Riga using Juday net (mesh size 160 µm, diameter of the upper ring 36 cm). Two samples are taken at each station - in the full water column (0-bottom) and in the upper water layer (0-20m). The Juday net is first lowered to the required depth and then pulled vertically to the surface. The net is rinsed, and the sample components poured into a beaker. The resulting sample is filtered through a sieve (mesh size 100 µm) to remove water, fixed in 90% ethanol and poured into the storage bottles. The information on the samples and data collected is stored in the local BIODATA database.

(max 450 words per survey)

SECTION 3: FISHING ACTIVITY DATA

Text Box 3.1: Fishing activity variables data collection strategy

Region: Baltic

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 3.1 of the EU MAP Delegated Decision annex. It is intended to describe the method used to derive estimates on representative samples where data are not to be recorded under the Control Regulation (EC) No 1224/2009 or where data collected under Regulation (EC) No 1224/2009 are not at the right aggregation level for the intended scientific use. Text Box 3.1 should be filled only in case complementary data collection is planned
RWP BAL 2025-2027 *(max 450 words)*

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

Region: Baltic

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.
Data on inland eel commercial fisheries landings (in weight) and effort are collected from electronic fishing logbooks, that fishermen are obliged to report to the Latvian Fisheries Integrated Control and Information System (LZIKIS). The fishing method used is fyke nets. Average yearly landings are up to 5 t. *(max. 900 words)*

Text Box 4.2: Incidental catches of sensitive species

Region: Baltic

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.

RWP BAL 2025-2027

(max 250 words per activity)

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.

Additional information on sampling schemes:

It should be highlighted that in the Baltic Sea most of the metier perform rather clean fishery and the by-catch of non-target species is low or could be absent at all.

According to the observer manuals for collecting biological samples from commercial trips all catch fractions and additionally all by-catch species and observations of EPTS must be recorded in the observer protocol for each haul.

All fleet segments are observed by scientific observers and self-sampling except SB-1 and SAL_LLD where self-sampling only is applied. Additionally, information about PETS is collected during the monitoring of cetaceans by-catch (BAL_PEL_CET) in the pelagic fishery (OSF PEL-1 and GOR PEL-1). Scientific observer has full access to the all fishing operations and possibility to investigate trawl cod-end. In the last 10 years no EPTS species or any cetaceans were not observed in the pelagic fishery, which is the main fishery in Latvia.

In the last year's by-catch of seals were observed only in the SB-2 segment. Information about observation of seals, it damages to the fishing gears and catches is possible to include in the monthly coastal logbooks. Most of the data about possible PETS bycatch will be collected in close cooperation with small scale fishermen in the coastal zone (SB-2). Based on signed agreement with fishermen (SB-2) which have a long-term collaboration with institute in biological sampling and coastal fishing monitoring activities information about EPTS species by-catch from every fishing activity are collected from every municipality in the coastal zone of Latvia.

Additional description on sampling frames

NA

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

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.

RWP ECON 2025-2027

1. Description of clustering

The clustering of two Latvian fishing segments is necessary for the design of the sampling plan and the reporting of economic variables:

- Pelagic trawlers 12-< 18 m* - pelagic trawlers operating in the Gulf of Riga 12-< 18 m* (7 vessels) and 18-< 24 m* (1 vessel).
- Inactive vessels 24-< 40 m* - inactive vessels 24-< 40 m* (6), 12-< 18 m* (1) and 18-< 24 m* (1).

2. Description of activity indicator

The activity indicator is not applied.

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

Deviation related to data transmission, but not to data collection, concerning the population of the Small-Scale Fleet (SSF) allocated to segments VL0008 and LV0812 listed in the EU Fishing Fleet Register. Their activity could be divided into two types: commercial and recreational fishery in the coastal zone.

According to Latvian national legislation, both types of fisheries require a special coastal fishing permit (licence). The monthly electronic coastal logbook must be filled daily, describing each fishing operation (vessels and gear used, effort data).

The commercial licence entitles the holder to fish, tranship and sell the catch, while the recreational licence entitles the holder to fish only for "self-consumption".

For commercial fishery, it is compulsory to use vessels registered in the EU Fishing Fleet Register. The reason for the inclusion of recreational vessels in the register is the obligation to obtain a licence and to register their activities in coastal logbooks. For more information on self-consumption fishery, see the following link: https://likumi.lv/ta/en/en/id/34871

The "self-consumption fishery" licence has the following restrictions:

- The catch cannot be sold.
- Only one type of fishing gear may be used during the fishing activity: hooks (HOK) or fixed gillnets (GNH) or fish nets (NET) or Eelpout trap nets (FYK).

Licences are obtained from the Marine and Inland Waters Administration of the State Environmental Service. The same SSF vessels from the EU Fishing Fleet Register could be used for both activities - commercial and recreational. Only 3 vessels were reported in 2023. For data reporting and analysis, the capacity data of these vessels are attributed to the commercial fishing data. Capacity data for vessels engaged only in recreational fisheries are not reported to the end user, as commercial activity in this type of fishery is prohibited.

The economic and social data for the recreational fishery are not collected, but some parameters such as the value of landings, fuel costs, repair and maintenance costs could be calculated based on the economic data collected for the commercial enterprises. The share of recreational fisheries in the Baltic Sea in 2023 was 0.02% in terms of weight of landings and 0.1% in terms of value of landings. These values are negligible and cannot influence the economic situation in Latvia.

The Perpetual Inventory Method (PIM) is used to estimate capital values and costs for each of the fleet segment. Additional fiscal information (historical value of the vessel, annual depreciation costs and current value of the vessel) is collected through questionnaires. The information provided in the questionnaires is based on the accounting data. Estimates for the calculation of the current value of the vessels are based on the information available in the company records. The values from the survey could be used for cross-checking with the results received by PIM.

The shares of total investment and depreciation rates used are those recommended by the OECD. Share in total investment:

- Hull - 46%,

- Engine - 25%,
- Electronics -2%,
- Other equipment 27%.

Linear depreciation rates:

- Hull - 4%,
- Engine - 10%,
- Electronics - 20%,
- Other equipment - 16%,
- Residual value of hull - 2.5%.

Age schedules:

- Hull - 25,
- Engine - 10,
- Electronics -5,
- Other equipment 7.

(max. 900 words)

SECTION 6: ECONOMIC AND SOCIAL DATA IN AQUACULTURE

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

General comment: This text 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.

RWP ECON 2025-2027

1. Description of the threshold application

Latvia has only freshwater aquaculture. The total volume and value of freshwater aquaculture production in Latvia is less than 1% between 2018 and 2022 and was on average around 0.1% each of the total available Union production reported to EUROSTAT. It is planned to collect economic and social variables, although this data collection on freshwater aquaculture is not mandatory. No thresholds are applied.

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

It is planned to report the collected data as segment 8.5 (Other freshwater fish, Other methods) due to the small number of enterprises in Latvia and for confidentiality reasons

(max. 900 words)

SECTION 7: ECONOMIC AND SOCIAL DATA IN FISH PROCESSING

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

Small Pelagics in the Baltic

MS: DNK, DEU, EST, FIN, LVA, LTU, POL, SWE
Region: Baltic
Sampling scheme identifier: Baltic SPF regional
Sampling scheme type: Commercial fishing trip
Observation type: Not coordinated
Time period of validity: 2025 fully implemented
Short description (max 100 words): RWP BAL 2025
Description of the population
Population targeted: **Population sampled:** **Stratification:**
Sampling design and protocols
Sampling design description: **Is the sampling design compliant with the 4S principle?:** **Regional coordination:** **Link to sampling design documentation:** **Design follows international recommendations:** **Link to sampling protocol documentation:** **Protocol follows international recommendations:**
Sampling implementation
Recording of refusal rate: **Monitoring of sampling progress within the sampling year:**
Data capture
Means of data capture: **Data capture documentation:** **Quality checks documentation:**
Data storage
National database: **International database:** **Quality checks and data validation documentation:**
Sample storage
Storage description: **Sample analysis:**
Data processing
Evaluation of data accuracy (bias and precision): **Editing and imputation methods:** **Quality document associated to a dataset:** **Validation of the final dataset:**

CECAF at sea sampling

MS: DEU, LVA, LTU, NLD, POL
Region: CECAF
Sampling scheme identifier: CECAF at sea sampling

Sampling scheme type: Commercial fishing trip
Observation type: SciObsAtSea
Time period of validity: 2025-2027
Short description (max 100 words): RWP LDF 2025-2027
Description of the population
Population targeted: **Population sampled:** **Stratification:**
Sampling design and protocols
Sampling design description: **Is the sampling design compliant with the 4S principle?:** **Regional coordination:** **Link to sampling design documentation:** **Design follows international recommendations:** **Link to sampling protocol documentation:** **Protocol follows international recommendations:**
Sampling implementation
Recording of refusal rate: **Monitoring of sampling progress within the sampling year:**
Data capture
Means of data capture: **Data capture documentation:** **Quality checks documentation:**
Data storage
National database: **International database:** **Quality checks and data validation documentation:**
Sample storage
Storage description: **Sample analysis:**
Data processing
Evaluation of data accuracy (bias and precision): **Editing and imputation methods:** **Quality document associated to a dataset:** **Validation of the final dataset:**

Related to Table 2.6, 2.2 and Text Box 2.6 (biological specific data collection)

Sampling scheme identifier: BITS_Q1

MS: LVA
Region: Baltic
Sampling scheme identifier: BITS_Q1
Sampling scheme type: Mandatory surveys at sea
Observation type: SciObsAtSea
Time period of validity: 01.01.2025 - 31.12.2027
Short description (max 100 words): The survey will be conducted in February-March on the rented research vessel. The primary objective of the survey is to provide abundance estimates and recruitment indices for cod and flounder in the Eastern Baltic (Subdivisions 25-32), which are necessary for tuning series and predicting of the recruitment. Other species are also intensively investigated to support ecosystem analyses.
Description of the population
Population targeted: Primary sampling unit for this survey is fishing haul. The main target species from a survey perspective are Cod and Flounder. Main survey area is Latvian EEZ (ICES Subdivision 26 and 28). **Population sampled:**

Biological sampling procedure and length measurements are performed for cod and flounder. Length distribution should be recorded for all other species from every trawl station, but with less intensity. For all species the total number and weight is recorded. Sampling level for all species is stratified on the ICES Subdivision level.

Stratification:
The international trawl surveys use a random stratified design with catch-stations selected from a set of known trawlable sites. Trawl stations positions and depths layers for each survey are received from administrator of Tow-Database.

Sampling design and protocols

Sampling design description:
The available haul positions are heterogeneously distributed in many depth layers. Fishing positions are randomly selected from Tow-Database by the database administrator according to the Manual for the Baltic International Trawl Surveys (BITS) and distributed to all MS participating in the survey.

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

Regional coordination:
The survey is conducted in collaboration with national institutes from Denmark, Germany, Poland, Lithuania and Sweden within the framework of ICES. Survey is a part of the Baltic International Trawl Surveys (BITS), which is coordinated by the ICES Baltic International Fish Survey Working Group [WGBIFS]. The sampling design and protocols are described in Manual for the Baltic International Trawl Surveys (BITS) Version 2.0.

Link to sampling design documentation:
Sampling design documentation could be found in Manual for the Baltic International Trawl Surveys (BITS) Version 2.0: https://doi.org/10.17895/ices.pub.2883

Design follows international recommendations: Y

Link to sampling protocol documentation:
Sampling protocol documentation could be found in Manual for the Baltic International Trawl Surveys (BITS) Version 2.0: https://doi.org/10.17895/ices.pub.2883

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Data are collected according to the survey plan and submitted to the relevant databases according to the deadlines.

Data capture

Means of data capture:
For data capture on board measuring board, scales, knife and tweezers to collet otoliths are used. Plankton nets, hydrology probe and echo sounder are used to collect environmental information. Cod stomach and liver samples are stored in separate plastic bags for further analyses. Information about litter is collected from each haul.

Data capture documentation:
Data capture documentation could be found in Manual for the Baltic International Trawl Surveys (BITS) Version 2.0: https://doi.org/10.17895/ices.pub.2883

Quality checks documentation: Y
Data quality is checked by ICES during the data upload process to the DATRAS (The Database of Trawl Surveys) database as well the local database "BIODATA".

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database:
All collected information is submitted to the International Council for the Exploration of the Sea (ICES) database DATRAS (https://datras.ices.dk/Data_products/Download/Download_Data_public.aspx).

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Collected otoliths are processed and stored in paper envelopes for each individual specimen. Otoliths are grouped by years, trips and fish species and stored in specific otoliths archive permanently. Plankton, stomach and liver samples are utilised after analyses and data is saved in database.

Sample analysis:
Biological samples are collected and processed by following the next manuals:
Baltic cod otolith harvesting protocol and age determination method: https://bior.lv/wp-content/uploads/2025/03/Baltic_Cod_Otolith_gathering_protocol_and_age_determination_method.pdf

Age reading of flounder is performed according to the Annex 6 of the Report of the 2nd Workshop on Age Reading of Flounder (WKARFLO): https://doi.org/10.17895/ices.pub.19280393.v1

Collection and processing of ichthyoplankton samples: https://bior.lv/wp-content/uploads/2025/03/Methodology_of_Ichthyoplankton_collection.pdf

Methods of collection and processing of oceanographic and meteorological data: https://bior.lv/wp-content/uploads/2025/03/Oceanographic_methodology_0.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
Evaluation of data accuracy (bias and precision) are described in cod sampling manual (is also applicable for other fish species): https://bior.lv/wp-content/uploads/2025/03/Collection-of-biological-material-from-cod-during-commercial-fishing-trips_0.pdf

Editing and imputation methods:
During the data entry length, weight and age data are checked and constrained for minimal and maximal values. Excel data validation tool is used. Once the data for the respective trip has been entered, the length & weight relationship are analysed. A linear regression model is developed by determining the trend line and forecast confidence intervals. Those records that are outside confidence intervals are marked as erroneous and re-checked and if necessary, corrected. Excel macro is used for this checking. As a result, a graph with visual info and a table with problematic fish weights are obtained.
During the data entry process the Fulton's coefficient is used to check the length-weight relationship. Excel conditional formatting option is used to check data quality. After entering the weight that does not match the settings (Fulton's coefficient is > 2 or < 0.5), cell is coloured in red and additional data checking is performed. Clark's coefficient is used to check the length-weight gutted relationship during the data entry. Excel conditional formatting option is used to check data quality. After entering the weight that does not match the settings (Clark's coefficient is > 1.5 or < 0.4), cell is coloured in red and additional data checking is performed.
During the otolith preparation for age reading additional data quality check is performed, if necessary, corrections are made. If data errors are found, original data and outputs including all relevant databases are corrected.

Quality document associated to a dataset: N

Validation of the final dataset:
Survey data are available in national database format and in DATRAS (Database of Trawl Surveys) format. DATRAS and BIODATA have a built-in quality check utility. All data must pass a comprehensive quality check before being entered into the database.

Sampling scheme identifier: BITS_Q4

MS: LVA

Region: Baltic

Sampling scheme identifier: BITS_Q4

Sampling scheme type: Mandatory surveys at sea

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
The survey will be conducted in November-December on the rented research vessel. The primary objective of the survey is to provide abundance estimates and recruitment indices for cod and flounder in the Eastern Baltic (Subdivisions 25-32), which are necessary for tuning series and predicting of the recruitment. Other species are also intensively investigated to support ecosystem analyses.

Description of the population

Population targeted:
Primary sampling unit for this survey is fishing haul. The main target species from a survey perspective are Cod and Flounder. Main survey area is Latvian EEZ (ICES Subdivision 26 and 28).

Population sampled:
Biological sampling procedure and length measurements are performed for cod and flounder. Length distribution should be recorded for all other species from every trawl station, but with less intensity. For all species the total number and weight is recorded. Sampling level for all species is stratified on the ICES Subdivision level.

Stratification:
The international trawl surveys use a random stratified design with catch-stations selected from a set of known trawlable sites. Trawl stations positions and depths layers for each survey are received from administrator of Tow-Database.

Sampling design and protocols

Sampling design description:
The available haul positions are heterogeneously distributed in many depth layers. Fishing positions are randomly selected from Tow-Database by the database administrator according to the Manual for the Baltic International Trawl Surveys (BITS) and distributed to all MS participating in the survey.

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

Regional coordination:
The survey is conducted in collaboration with national institutes from Denmark, Germany, Poland, Lithuania, Estonia and Sweden within the framework of ICES. Survey is a part of the Baltic International Trawl Surveys (BITS), which is coordinated by the ICES Baltic International Fish Survey Working Group [WGBIFS]. The sampling design and protocols are described in Manual for the Baltic International Trawl Surveys (BITS) Version 2.0.

Link to sampling design documentation:
Sampling design documentation could be found in Manual for the Baltic International Trawl Surveys (BITS) Version 2.0: https://doi.org/10.17895/ices.pub.2883

Design follows international recommendations: Y

Link to sampling protocol documentation:
Sampling protocol documentation could be found in Manual for the Baltic International Trawl Surveys (BITS) Version 2.0: https://doi.org/10.17895/ices.pub.2883

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Data are collected according to the survey plan and submitted to the relevant databases according to the deadlines.

Data capture

Means of data capture:

For data capture on board measuring board, scales, knife and tweezers to collet otoliths are used. Hydrology probe and echo sounder are used to collect environmental information. Cod stomach and liver samples are stored in separate plastic bags for further analyses. Information about litter is collected from each haul.

Data capture documentation:
Data capture documentation could be found in Manual for the Baltic International Trawl Surveys (BITS) Version 2.0: https://doi.org/10.17895/ices.pub.2883

Quality checks documentation: Y
Data quality is checked by ICES during the data upload process to the DATRAS (The Database of Trawl Surveys) database as well the local database "BIODATA".

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database:
All collected information is submitted to the International Council for the Exploration of the Sea (ICES) database DATRAS (https://datras.ices.dk/Data_products/Download/Download_Data_public.aspx).

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Collected otoliths are processed and stored in paper envelopes for each individual specimen. Otoliths are grouped by years, trips and fish species and stored in specific otoliths archive permanently. Stomach and liver samples are utilised after analyses and data is saved in database.

Sample analysis:
Biological samples are collected and processed by following the next manuals:
Baltic cod otolith harvesting protocol and age determination method: https://bior.lv/wp-content/uploads/2025/03/Baltic_Cod_Otolith_gathering_protocol_and_age_determination_method.pdf

Age reading of flounder is performed according to the Annex 6 of the Report of the 2nd Workshop on Age Reading of Flounder (WKARFLO): https://doi.org/10.17895/ices.pub.19280393.v1

Methods of collection and processing of oceanographic and meteorological data:
https://bior.lv/wp-content/uploads/2025/03/Oceanographic_methodology_0.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
Evaluation of data accuracy (bias and precision) are described in cod sampling manual (is also applicable for other fish species): https://bior.lv/wp-content/uploads/2025/03/Collection-of-biological-material-from-cod-during-commercial-fishing-trips_0.pdf

Editing and imputation methods:
During the data entry length, weight and age data are checked and constrained for minimal and maximal values. Excel data validation tool is used. Once the data for the respective trip has been entered, the length & weight relationship are analysed. A linear regression model is developed by determining the trend line and forecast confidence intervals. Those records that are outside confidence intervals are marked as erroneous and re-checked and if necessary, corrected. Excel macro is used for this checking. As a result, a graph with visual info and a table with problematic fish weights are obtained.
During the data entry process the Fulton's coefficient is used to check the length-weight relationship. Excel conditional formatting option is used to check data quality. After entering the weight that does not match the settings (Fulton's coefficient is > 2 or < 0.5), cell is coloured in red and additional data checking is performed. Clark's coefficient is used to check the length-weight gutted relationship during the data entry. Excel conditional formatting option is used to check data quality. After entering the weight that does not match the settings (Clark's coefficient is > 1.5 or < 0.4), cell is coloured in red and additional data checking is performed.
During the otolith preparation for age reading additional data quality check is performed, if necessary,

corrections are made. If data errors are found, original data and outputs including all relevant databases are corrected.

Quality document associated to a dataset: N

Validation of the final dataset:
Survey data are available in national database format and in DATRAS (Database of Trawl Surveys) format. DATRAS and BIODATA have a built-in quality check utility. All data must pass a comprehensive quality check before being entered into the database.

Sampling scheme identifier: BIAS

MS: LVA

Region: Baltic

Sampling scheme identifier: BIAS

Sampling scheme type: Mandatory surveys at sea

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
The survey will be conducted in October on the rented research vessel. The primary purpose of the survey is to produce abundance estimates and indices of recruitment for herring and sprat in the Eastern Baltic (Sub-divisions 25-32) which are needed to produce tuning series for the assessment models and to predict recruitment. Other species are also intensively investigated to support ecosystem analyses.

Description of the population

Population targeted:
Primary sampling unit for this survey is acoustic record and fishing haul to decode acoustic records. The main target species from a survey perspective are herring and sprat. Main survey area is ICES subdivisions 26 and 28.

Population sampled:
Biological sampling procedure and length measurements are performed for herring and sprat. Length distribution should be recorded for all other species from every trawl-station, but with less intensity. For all species the total number and weight is recorded. Sampling level for all species is stratified on the ICES Sub-division level.

Stratification:
The Baltic International Acoustic Surveys are performed based on Survey Assignment accepted by ICES WGBIFS. Survey tracks are standard, trawling positions are selected according to survey manual and per each covered ICES rectangle.

Sampling design and protocols

Sampling design description:
Survey tracks designed to cover all survey area uniformly, acoustic records performed along tracks. Trawling positions in ICES rectangles are selected based on acoustic records. To decode acoustic records pelagic fish species and cod are used.

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

Regional coordination:
The survey is conducted in collaboration with national institutes from Germany, Poland, Estonia, Lithuania, Finland, and Sweden within the framework of ICES. Survey is part of the Baltic International Acoustic Survey (BIAS), which is coordinated by the ICES Baltic International Fish Survey Working Group [WGBIFS].

Link to sampling design documentation:
Latest sampling design documentation could be found in “Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 – IBAS. Version 2.0” (WGBIFS, ICES, 2017, http://doi.org/10.17895/ices.pub.3368).

Design follows international recommendations: Y

Link to sampling protocol documentation:

Latest sampling protocol documentation could be found in "Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 – IBAS. Version 2.0" (WGBIFS, ICES, 2017, http://doi.org/10.17895/ices.pub.3368).

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Collection of the samples is performed according to the "Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 – IBAS. Version 2.0" (WGBIFS, ICES, 2017, http://doi.org/10.17895/ices.pub.3368).

Data capture

Means of data capture:
For data capture on board measuring board, marine scales, scalpel to collect otoliths are used. Hydrology probe and echo sounder are used to collect environmental information.

Data capture documentation:
Data capture documentation could be found in the "Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 – IBAS. Version 2.0" (WGBIFS, ICES, 2017, http://doi.org/10.17895/ices.pub.3368).

Quality checks documentation: Y
Quality checks documentation found in ICES Working Group on Baltic International Fish Survey. WGBIFS; outputs from 2024 meeting. ICES Scientific Reports. 6:55. https://doi.org/10.17895/ices.pub.25922290

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available for institute employees.

International database:
All collected information is submitted to the International Council for the Exploration of the Sea (ICES) database BAD1 and Acoustic DB. Both available only for data providers and stock coordinators.

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Only target fish specimens' otoliths are stored permanently. Plankton samples are stored until processed. Collected fish otoliths are processed and stored in paper booklets or on plastic plates for each sample separately, each individual specimen is stored in separate sheet in booklet or in separate hollows on plastic plates. Otoliths are grouped by years, trips and fish species and stored in specific otoliths archive permanently. Zooplankton samples are stored in plastic bottles and fixed with alcohol. Plankton samples are utilised after analyses and data is saved in database.

Sample analysis:
Biological samples are collected and processed by following the next manuals:
Baltic sprat age determination methodology: https://bior.lv/wp-content/uploads/2025/03/Baltic_sprat_age_reading_methodology.pdf
Manual for age determination of Baltic herring: https://bior.lv/wp-content/uploads/2025/03/Manual_for_age_determination_of_Clupea_harengus.pdf
Collection and processing of pelagic fishes' biological material: https://bior.lv/wp-content/uploads/2025/03/Collection_and_processing_of_pelagic_fish_biological_material.pdf
Methods of collection and processing of oceanographic and meteorological data: https://bior.lv/wp-content/uploads/2025/03/Oceanographic_methodology_0.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
The evaluation of data accuracy (precision levels) manual is found: https://bior.lv/wp-

content/uploads/2025/03/The-assessment-of-precision-levels-for-biological-material-collected-during-commercial-fishing-trips_0.pdf

Editing and imputation methods:
After data input into file the significant deviations from normal distribution into specific sample are checked by two scientists. If error cannot be corrected, erroneous dataset is deleted from file.

Quality document associated to a dataset: N

Validation of the final dataset:
During data upload into database the validation process is implemented according to database vocabularies.

Sampling scheme identifier: SPRAS

MS: LVA

Region: Baltic

Sampling scheme identifier: SPRAS

Sampling scheme type: Mandatory surveys at sea

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
The survey will be conducted in May on the rented research vessel. The primary purpose of the survey is to produce abundance estimates and indices of recruitment for sprat in the Eastern Baltic (Sub-divisions 25-32) which are needed to produce tuning series for the assessment models and to predict recruitment. Other species are also intensively investigated to support ecosystem analyses.

Description of the population

Population targeted:
Primary sampling unit for this survey is acoustic record and fishing haul to decode acoustic records. The main target species from a survey perspective is sprat. Main survey area is ICES subdivisions 26 and 28.

Population sampled:
Biological sampling procedure and length measurements are performed for herring and sprat. Length distribution should be recorded for all other species from every trawl-station, but with less intensity. For all species the total number and weight is recorded. Sampling level for all species is stratified on the ICES Sub-division level.

Stratification:
The Sprat Acoustic Surveys are performed based on Survey Assignment accepted by ICES WGBIFS. Survey tracks are standard, trawling positions are selected according to survey manual and per each covered ICES rectangle.

Sampling design and protocols

Sampling design description:
Survey tracks designed to cover all survey area uniformly, acoustic records performed along tracks. Trawling positions in ICES rectangles are selected based on acoustic records. To decode acoustic records pelagic fish species and cod are used.

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

Regional coordination:
The survey is conducted in collaboration with national institutes from Germany, Poland, Estonia, Lithuania, and Sweden within the framework of ICES. Survey is part of the Sprat Acoustic Survey (SPRAS) named as well as Baltic Acoustic Spring Survey (BASS), which is coordinated by the ICES Baltic International Fish Survey Working Group [WGBIFS].

Link to sampling design documentation:
Latest sampling design documentation could be found in “Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 – IBAS. Version 2.0” (WGBIFS, ICES, 2017,http://doi.org/10.17895/ices.pub.3368)

Design follows international recommendations: Y

Link to sampling protocol documentation:
Latest sampling protocol documentation could be found in "Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 – IBAS. Version 2.0" (WGBIFS, ICES, 2017, http://doi.org/10.17895/ices.pub.3368)

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Collection of the samples is performed according to the "Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 – IBAS. Version 2.0" (WGBIFS, ICES, 2017, http://doi.org/10.17895/ices.pub.3368).

Data capture

Means of data capture:
For data capture on board measuring board, marine scales, scalpel to collect otoliths are used. Hydrology probe and echo sounder are used to collect environmental information.

Data capture documentation:
Data capture documentation could be found in the "Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 – IBAS. Version 2.0" (WGBIFS, ICES, 2017, http://doi.org/10.17895/ices.pub.3368)

Quality checks documentation: Y
Quality checks documentation found in ICES Working Group on Baltic International Fish Survey. WGBIFS; outputs from 2024 meeting. ICES Scientific Reports. 6:55. https://doi.org/10.17895/ices.pub.25922290

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database:
All collected information is submitted to the International Council for the Exploration of the Sea (ICES) database BAD1 and Acoustic DB. Both available only for data providers and stock coordinators.

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Only target fish specimens' otoliths are stored permanently. Plankton samples are stored until processed. Collected fish otoliths are processed and stored in paper booklets or on plastic plates for each sample separately, each individual specimen is stored in separate sheet in booklet or in separate hollows on plastic plates. Otoliths are grouped by years, trips and fish species and stored in specific otoliths archive permanently. Ichthyoplankton samples are stored in plastic bottles and fixed with 2% formalin. Zooplankton samples are stored in plastic bottles and fixed with alcohol. Plankton samples are utilised after analyses and data is saved in database.

Sample analysis:
Biological samples are collected and processed by following the next manuals:
Baltic sprat age determination methodology: https://bior.lv/wp-content/uploads/2025/03/Baltic_sprat_age_reading_methodology.pdf
Manual for age determination of Baltic herring: https://bior.lv/wp-content/uploads/2025/03/Manual_for_age_determination_of_Clupea_harengus.pdf
Collection and processing of pelagic fishes' biological material: https://bior.lv/wp-content/uploads/2025/03/Collection_and_processing_of_pelagic_fish_biological_material.pdf
Methods of collection and processing of oceanographic and meteorological data: https://bior.lv/wp-content/uploads/2025/03/Oceanographic_methodology_0.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
The evaluation of data accuracy (precision levels) manual is found: https://bior.lv/wp-content/uploads/2025/03/The-assessment-of-precision-levels-for-biological-material-collected-during-commercial-fishing-trips_0.pdf

Editing and imputation methods:
After data input into file the significant deviations from normal distribution into specific sample are checked by two scientists. If error cannot be corrected, erroneous dataset is deleted from file.

Quality document associated to a dataset: N

Validation of the final dataset:
During data upload into database the validation process is implemented according to database vocabularies.

Sampling scheme identifier: GRAHS

MS: LVA

Region: Baltic

Sampling scheme identifier: GRAHS

Sampling scheme type: Mandatory surveys at sea

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
The survey will be conducted in July-August on the rented fishing vessel. The primary purpose of the survey is to produce abundance estimates and indices of recruitment for Gulf of Riga herring population in the Eastern Baltic (Sub-division 28.1) which are needed to produce tuning series for the assessment models and to predict recruitment. Other species are also intensively investigated to support ecosystem analyses.

Description of the population

Population targeted:
Primary sampling unit for this survey is acoustic record and fishing haul to decode acoustic records. The main target species from a survey perspective is herring. Main survey area is ICES Subdivision 28.1.

Population sampled:
Biological sampling procedure and length measurements are performed for herring. Length distribution should be recorded for all other species from every trawl-station, but with less intensity. For all species the total number and weight is recorded. Sampling level for all species is stratified on the ICES Sub-division level.

Stratification:
The Gulf of Riga Acoustic Herring Surveys are performed based on Survey Assignment accepted by ICES WGBIFS. Survey tracks are standard, trawling positions are selected according to survey manual and per each covered ICES rectangle.

Sampling design and protocols

Sampling design description:
Survey tracks designed to cover all survey area uniformly, acoustic records performed along tracks. Trawling positions in ICES rectangles are selected based on acoustic records. To decode acoustic records pelagic fish species and cod are used.

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

Regional coordination:
The survey is conducted in collaboration with national institute Estonia within the framework of ICES and is coordinated by the ICES Baltic International Fish Survey Working Group [WGBIFS].

Link to sampling design documentation:
Latest sampling design documentation could be found in “Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 – IBAS. Version 2.0” (WGBIFS, ICES, 2017, http://doi.org/10.17895/ices.pub.3368)

Design follows international recommendations: Y

Link to sampling protocol documentation:
Latest sampling protocol documentation could be found in "Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 – IBAS. Version 2.0" (WGBIFS, ICES, 2017, http://doi.org/10.17895/ices.pub.3368)

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Collection of the samples is performed according to the "Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 – IBAS. Version 2.0" (WGBIFS, ICES, 2017, http://doi.org/10.17895/ices.pub.3368)

Data capture

Means of data capture:
For data capture on board measuring board, marine scales, scalpel to collect otoliths are used. Hydrology probe and echo sounder are used to collect environmental information.

Data capture documentation:
Data capture documentation could be found in the "Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 – IBAS. Version 2.0" (WGBIFS, ICES, 2017, http://doi.org/10.17895/ices.pub.3368)

Quality checks documentation: Y
Quality checks documentation found in ICES Working Group on Baltic International Fish Survey. WGBIFS; outputs from 2024 meeting. ICES Scientific Reports. 6:55. https://doi.org/10.17895/ices.pub.25922290

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database:
All collected information is submitted to the International Council for the Exploration of the Sea (ICES) database BAD1 and Acoustic DB. Both available only for data providers and stock coordinators.

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Only target fish specimens' otoliths are stored permanently. Plankton samples are stored until processed. Collected fish otoliths are processed and stored in paper booklets or on plastic plates for each sample separately, each individual specimen is stored in separate sheet in booklet or in separate hollows on plastic plates. Otoliths are grouped by years, trips and fish species and stored in specific otoliths archive permanently. Zooplankton samples are stored in plastic bottles and fixed with alcohol. Plankton samples are utilised after analyses and data is saved in database.

Sample analysis:
Biological samples are collected and processed by following the next manuals:
Manual for age determination of Baltic herring: https://bior.lv/wp-content/uploads/2025/03/Manual_for_age_determination_of_Clupea_harengus.pdf
Collection and processing of pelagic fishes' biological material: https://bior.lv/wp-content/uploads/2025/03/Collection_and_processing_of_pelagic_fish_biological_material.pdf
Methods of collection and processing of oceanographic and meteorological data: https://bior.lv/wp-content/uploads/2025/03/Oceanographic_methodology_0.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y

The evaluation of data accuracy (precision levels) manual is found: https://bior.lv/wp-content/uploads/2025/03/The-assessment-of-precision-levels-for-biological-material-collected-during-commercial-fishing-trips_0.pdf

Editing and imputation methods:
After data input into file the significant deviations from normal distribution into specific sample are checked by two scientists. If error cannot be corrected, erroneous dataset is deleted from file.

Quality document associated to a dataset: N

Validation of the final dataset:
During data upload into database the validation process is implemented according to database vocabularies.

Sampling scheme identifier: LFJS

MS: LVA

Region: Baltic

Sampling scheme identifier: LFJS

Sampling scheme type: Research surveys at sea

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Data will be collected in 8 areas of the Latvian coastal zone at 3-5 m depth using beach seines.
The aim of the survey is to estimate the abundance of juvenile flatfish (flounder and turbot). Other fish species will also be intensively studied to support ecosystem analyses.

Description of the population

Population targeted:
Primary sampling unit is beach seine haul. Main survey area is the surf zone of the Baltic Sea which is the main nursery area of flatfishes. Main target species from a survey perspective are flounder and turbot. Sampling areas have been selected historically as the main recruitment areas for turbot (South-West Latvian coast) and flounder (North-West Latvian coast).

Population sampled:
Biological analysis of all flatfishes (flounder, turbot) is made. Other fish and nektobenthos species are also intensively investigated to support ecosystem analyses.

Stratification:
Stratification is not used in this research survey.

Sampling design and protocols

Sampling design description:
Sampling design is planned to monitor changes over time (years) at fixed stations, and to follow the relative abundance of flatfish juveniles in each area. Areas have been selected historically in places which are the most successful flatfish nursery areas. More than one haul in each area have been performed to ensure number of flatfishes caught per area are enough to do data analysis.

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

Regional coordination:
This is not an internationally coordinated survey.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-flatfish-juveniles-survey-using-beach-seine_0.pdf

Design follows international recommendations: N
The data will be collected with beach seine (mesh size in cod-end 8 mm) from the coast in surf zone of the Baltic Sea on the main nursery areas of flatfishes. The sampling area is approximately 4000 m2, the distance from the coastline is approximately 130 m. In every sampling area (Kolka - Gulf of Riga, Kolka - Irbe Strait, Lielirbe, Jurmalciems, Pape - Baltic Sea, Eastern part of the Gulf of Riga, Southern part of the Gulf of Riga, Western part of the Gulf of Riga) 5 hauls will be performed. Additionally, in two coastal locations (Kolka - Irbe

Strait, Pape - Baltic Sea) data will be collected with a flounder juvenile seine (once per year). The parameters of the fishing gear are as follows: horizontal opening - 12 m, vertical opening - 1.5 m, mesh twine eye size - 5 mm, mesh wing twine eye size - 8 mm, length of towing ropes - 15 meters, and diameter - 10 mm. The area covered by a single gear haul is approximately 300 m2. Other species (fish and nektobenthos) are also intensively investigated to support ecosystem analyses. During the survey the basic hydrological parameters (temperature, salinity, and oxygen content) will be measured.

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-flatfish-juveniles-survey-using-beach-seine_0.pdf

Protocol follows international recommendations: N
All fish species are collected after each haul to estimate total number and weight by species, while for flatfishes biological analysis is done. Other species (e.g. nektobenthos) are also intensively investigated to support ecosystem analyses. During the survey the basic hydrological parameters (temperature, salinity, and oxygen content) will be measured.

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Sampling period is extended to ensure survey will be performed in case of unfavourable weather conditions (e.g. strong wind, waves). Location of areas allow to do survey in one of the areas if the weather is bad in another one.

Data capture

Means of data capture:
For data capture measuring board, scales, buckets are used. Hydrology probe and Secchi disc are used to collect environmental information.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-flatfish-juveniles-survey-using-beach-seine_0.pdf

Quality checks documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-flatfish-juveniles-survey-using-beach-seine_0.pdf

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database: NA

Quality checks and data validation documentation:
Quality checks and data validation is implemented in BIODATA database to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
No samples are stored in this research survey. All fishes are measured immediately after each beach seine haul.

Sample analysis: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-flatfish-juveniles-survey-using-beach-seine_0.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-flatfish-juveniles-survey-using-beach-seine_0.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-flatfish-juveniles-survey-using-beach-seine_0.pdf

Quality document associated to a dataset: N

Validation of the final dataset:

Data quality is checked according to the Latvian Juvenile Flatfish Survey manual: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-flatfish-juveniles-survey-using-beach-seine_0.pdf

Sampling scheme identifier: GORDEM

MS: LVA

Region: Baltic

Sampling scheme identifier: GORDEM

Sampling scheme type: Research surveys at sea

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Benthic trawl surveys in the Gulf of Riga are planned for May, August and September. The survey will be conducted at standard stations using a small scientific trawl on a rented MRTK type fishing trawler in the Gulf of Riga (Sub-division 28.1). The main objective of the survey is to estimate the abundance of benthic fish species and to collect hydrological (temperature, salinity, oxygen), zooplankton and zoobenthos samples at the trawl stations during the survey. Three days at sea are planned for each survey for all trawl, zooplankton and hydrological sampling in the Gulf of Riga.

Description of the population

Population targeted:
Benthic fish community in the Gulf of Riga coastal and open waters. Primary sampling unit for this survey is fishing haul. The main target species from a survey perspective are all benthic fish species. Main survey area is Latvian EEZ Gulf of Riga (ICES Subdivision 28.1).

Population sampled:
Demersal species sampling. Length distributions are recorded for all benthic species from every trawl-station. For all species the total number and weight is recorded. Biological sampling is opportunistic for round goby.

Stratification:
A random stratified design is used to select catch-stations from a set of known trawlable sites. A list of continuously sampled long-year standard trawling stations starting from the 1970's is used. In every trip 14 trawling stations, 10 zooplankton samples, 10 zoobenthos, and 20 hydrological stations are sampled. In addition, information about marine litter is collected from each haul.

Sampling design and protocols

Sampling design description:
The available haul positions are heterogeneously distributed representing various depth layers (10-50 m) and ICES rectangles.

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

Regional coordination: N
Sampling design was developed in accordance with methodology provided by ICES (Latest sampling design documentation could be found in Manual for the Baltic International Trawl Surveys (BITS) Version 2.0: https://doi.org/10.17895/ices.pub.2883
The selected sampling design represents various depth layers and ICES rectangles

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Conducting-Benthic-Fish-Surveys-in-Gulf-of-Riga_0.pdf

Design follows international recommendations: N

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Conducting-Benthic-Fish-Surveys-in-Gulf-of-Riga_0.pdf

Protocol follows international recommendations: N
Sampling protocol was developed in accordance to methodology provided by ICES (Latest sampling protocol documentation could be found in Manual for the Baltic International Trawl Surveys (BITS) Version 2.0: https://doi.org/10.17895/ices.pub.2883

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Sampling period is extended to one month in each season to ensure the survey will be performed in case of unfavourable weather conditions (e.g. strong wind, waves).

Data capture

Means of data capture:
For data capture on board measuring board and scales are used. Plankton nets are used to collect zooplankton samples, and hydrology probe is used to collect environmental information.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Conducting-Benthic-Fish-Surveys-in-Gulf-of-Riga_0.pdf

Quality checks documentation: N
Data quality is checked during upload process to the local database ”BIODATA”.

Data storage

National database:
The name of national database is “BIODATA” (Biological Data Information System) and it’s available only for institute employees.

International database: NA

Quality checks and data validation documentation:
Quality checks and data validation is implemented after data input in Excel files and before the upload to the database to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Collected otoliths are processed and stored in paper envelopes for each individual specimen. Otoliths are grouped by years, trips and fish species and stored in specific otoliths archive permanently. Stomach samples are stored frozen and processed later in laboratory. Plankton samples are stored in ethanol and utilised after processing in laboratory.

Sample analysis: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Conducting-Benthic-Fish-Surveys-in-Gulf-of-Riga_0.pdf
Methodology for collection, analysis and data processing of zoobenthos samples: https://bior.lv/wp-content/uploads/2025/03/Methods_Zoobenthos.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
Evaluation of data accuracy (bias and precision) are described in cod sampling manual (is also applicable for other fish species): https://bior.lv/wp-content/uploads/2025/03/Collection-of-biological-material-from-cod-during-commercial-fishing-trips_0.pdf

Editing and imputation methods:
During the data entry, biological data are checked for minimal and maximal values. Once the data for the respective trip has been entered, the length & weight relationship is analysed by a linear regression model and Fulton’s coefficient. Outliers are marked, re-checked and if necessary, corrected. If data errors are found, original data and outputs, including all relevant databases, are corrected.

Quality document associated to a dataset: N

Validation of the final dataset:
Data from the survey are prepared in national databases format. All data, before entering the database, have to pass an extensive quality check.

Sampling scheme identifier: CFM

MS : LVA

Region: Baltic

Sampling scheme identifier: CFM

Sampling scheme type: Research surveys at sea

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Data will be collected in 6 areas in Latvian coastal zone at 3-5 m depth using Nordic coastal multi-mesh gillnets and fyke nets (in SD 28.1. stations). The objective of survey is to monitor changes in the fish communities in relation to the impact of eutrophication, habitat alteration, climate change, toxic substances, alien species and fishery. The results of the survey are used for the management of fishery in the Latvian coastal zone.

Description of the population

Population targeted:
Primary sampling unit is net haul. Main survey area is coastal zone at 3-5 m depth. This is a multispecies survey hence the whole composition of fish community in the specific area is monitored, including fishes with both - marine and freshwater - origins.

Population sampled:
This is a multispecies survey. All fish species (including those of both, demersal and pelagic, origin) and individuals are measured (individual length and weight).

Stratification:
Survey in each area every time is performed in selected fixed stations and depth. Number and distance of individual stations, position of nets has been chosen according to HELCOM guidelines for coastal fish monitoring: https://helcom.fi/wp-content/uploads/2020/01/HELCOM-Guidelines-for-coastal-fish-monitoring-2019.pdf. In the future, we plan to update the HELCOM guidelines to include the additional use of fyke nets in Latvian coastal monitoring, which is common practice in other countries.

Sampling design and protocols

Sampling design description:
Sampling design is planned out to monitor changes over time (years) at fixed stations, and to follow the relative abundance of different segments of the coastal fish community in each area. Areas have been selected historically to cover all Latvian coast.

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

Regional coordination:
This is not an internationally coordinated survey however, sampling design was developed in accordance with methodology provided by HELCOM (Guidelines for Coastal Fish Monitoring Sampling Methods of HELCOM, 2020: https://helcom.fi/wp-content/uploads/2020/01/HELCOM-Guidelines-for-coastal-fish-monitoring-2019.pdf) and it is performed in other countries of the Baltic Sea. No regional or multi-lateral agreement is used.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Coastal-Fish-Monitoring_1.pdf

Design follows international recommendations: Y
Sampling design was developed in accordance with methodology provided by HELCOM (Guidelines for Coastal Fish Monitoring Sampling Methods of HELCOM, 2020: https://helcom.fi/wp-content/uploads/2020/01/HELCOM-Guidelines-for-coastal-fish-monitoring-2019.pdf) and it is performed in other countries of the Baltic Sea

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Coastal-Fish-Monitoring_1.pdf

Protocol follows international recommendations: Y
Sampling protocol was developed in accordance to methodology provided by HELCOM (Guidelines for Coastal Fish Monitoring Sampling Methods of HELCOM, 2020: https://helcom.fi/wp-content/uploads/2020/01/HELCOM-Guidelines-for-coastal-fish-monitoring-2019.pdf)

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:

Sampling progress of coastal fish monitoring is revised every quarter of the year. In sampling design two net hauls per month are performed in 3 areas - in case of bad weather conditions at least one haul per month can be done to ensure continuity of monthly data.

Data capture

Means of data capture:
For data capture measuring board, scales, buckets are used. Hydrology probe and Secchi disc are used to collect environmental information.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Coastal-Fish-Monitoring_1.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Coastal-Fish-Monitoring_1.pdf

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database:
Data from this survey is used to calculate HELCOM indicators regarding coastal fish community. Indicator values are updated annually and are available in online database here: https://bio.helcom.fi/apex/f?p=108:5

Quality checks and data validation documentation:
Quality checks and data validation is implemented in national database to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
No samples are stored in this research survey. All fishes are measured immediately after each net haul.

Sample analysis: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Coastal-Fish-Monitoring_1.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Coastal-Fish-Monitoring_1.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Coastal-Fish-Monitoring_1.pdf

Quality document associated to a dataset: N

Validation of the final dataset:
https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Coastal-Fish-Monitoring_1.pdf

Sampling scheme identifier: STS

MS : LVA

Region: Baltic

Sampling scheme identifier: STS

Sampling scheme type: Research surveys at sea

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
The survey will be conducted on rented commercial vessel in June-July. The primary purpose of the survey is to determine turbot spawning stock in the Latvian economic zone. Other species are also investigated to support ecosystem analyses. The results of the survey complement the BITS surveys data on which the ICES scientific advice about turbot stock is based. The results of the survey are used in coastal fisheries management to determine the number of fishing gears (specialized turbot gillnets) allowed.

Description of the population

Population targeted:

Primary sampling unit is net haul. Main survey area is coastal zone at 3-20 m depth. The survey shall be carried out with large mesh (240 mm) bottom-set nets, which are used in commercial turbot fishery.

Population sampled:
This is a turbot targeted survey, but information about all other fish species and by-catch (including EPTS species) are collected (individual length and total weight by species).

Stratification:
The main turbot commercial fishery is carried out only in coastal fishery area in subdivision 28.2. The survey takes place during the turbot fishing ban to assess the size of the spawning stock.

Sampling design and protocols

Sampling design description:
Samples are collected according to special agreement with the coastal fishing company. An advantage is given to a company with experience in this type of fishery.

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

Regional coordination: N

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Scientific-Survey-of-Turbot_0.pdf

Design follows international recommendations: N

Link to sampling protocol documentation:
https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Scientific-Survey-of-Turbot_0.pdf

Protocol follows international recommendations: N

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Collection of the sample is performed according to the STS manual. The number of otoliths collected is especially monitored.

Data capture

Means of data capture:
Special monitoring protocols, electronical scales and measuring board.

Data capture documentation:
https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Scientific-Survey-of-Turbot_0.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Scientific-Survey-of-Turbot_0.pdf

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database:
At this moment there is no any international database where this is information could be stored.

Quality checks and data validation documentation:
Quality checks and data validation is implemented in national database to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Collected turbot otoliths are processed and stored in paper envelopes for each individual specimen. Otoliths are grouped by years, trips and stored in specific otoliths archive permanently.

Sample analysis:
https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Scientific-Survey-of-Turbot_0.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Scientific-Survey-of-Turbot_0.pdf

Editing and imputation methods:
During the data entry length, weight and age data are checked and constrained for minimal and maximal values. Excel data validation tool is used. Once the data for the respective trip has been entered, the length & weight relationship are analysed. A linear regression model is developed by determining the trend line and forecast confidence intervals. Those records that are outside confidence intervals are marked as erroneous and re-checked and if necessary, corrected. Excel macro is used for this checking. As a result, a graph with visual info and a table with problematic fish weights are obtained.
During the otolith preparation for age reading additional data quality check is performed, if necessary, corrections are made. If data errors are found, original data and outputs including all relevant databases are corrected.

Quality document associated to a dataset: N

Validation of the final dataset: Y
Data from the survey are prepared in national databases format. All data, before entering the database, have to pass an extensive quality check.

Sampling scheme identifier: ICHTHYO

MS: LVA

Region: Baltic

Sampling scheme identifier: ICHTHYO

Sampling scheme type: Research surveys at sea

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
The survey is conducted in June on the rented research or fishing vessel. The main purpose of the survey is to collect ichthyoplankton samples in the eastern Baltic Sea (ICES Subdivisions 26, 28.2). The collection of ichthyoplankton provides data on the abundance and composition of pelagic eggs and larvae and their dynamics in the Eastern Gotland Basin of the Baltic Sea.

Description of the population

Population targeted:
Main survey area is Latvian EEZ of the open part of the Baltic Sea (ICES Subdivisions 26 and 28.2). The main target species of the survey are all pelagic spawning fishes, with focus on sprat, cod and flounders.

Population sampled:
The target species of the survey are pelagic spawning fishes. The aim is to determine the abundance and composition of stages of development of pelagic fish eggs, and abundance and length distribution of pelagic fish larvae.

Stratification:
A list of permanently selected long-term standard sampling stations, where ichthyoplankton has been collected since the 1993, is used.

Sampling design and protocols

Sampling design description:
Ichthyoplankton surveys are carried out at standard stations. Sampling in the Eastern Gotland Basin (ICES Subdivisions 26 and 28.2) is carried out in June.

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

Regional coordination: NA

Link to sampling design documentation:
Sampling design documentation could be found in Guidelines for ichthyoplankton survey in the open part of the Baltic Proper: https://bior.lv/wp-content/uploads/2025/03/Methodology_of_Ichthyoplankton_collection.pdf

Design follows international recommendations: N

Link to sampling protocol documentation:
Sampling is carried out in accordance with the BIOR methodology, which is based on recommendations for ichthyoplankton sampling (Rass, 1965). Sampling protocol documentation could be found in the Guidelines for ichthyoplankton survey in the open part of the Baltic Proper:
https://bior.lv/wp-content/uploads/2025/03/Methodology_of_Ichthyoplankton_collection.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Data are collected according to the survey plan and submitted to the relevant databases according to the deadlines.

Data capture

Means of data capture:
Ichthyoplankton samples are collected with IKS-80 ring-net (mesh size 500 microns, diameter of the ring 80 cm) in two ways at the same station. First, it is lowered to the required depth and then pulled vertically to the surface. Second, this net is towed on the water surface at a speed of ca. 2 knots for 10 minutes.

Data capture documentation:
Data capture documentation could be found in the Guidelines for ichthyoplankton survey in the open part of the Baltic Proper: https://bior.lv/wp-content/uploads/2025/03/Methodology_of_Ichthyoplankton_collection.pdf

Quality checks documentation: NA

Data storage

National database:
The name of national database is “BIODATA” (Biological Data Information System) and it’s available only for institute employees.

International database: NA

Quality checks and data validation documentation:
Quality checks and data validation is implemented in database “BIODATA to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Ichthyoplankton samples are stored in plastic bottles and fixed with formaldehyde. Plankton samples are utilised after analyses and data is saved in the database.

Sample analysis:
Biological samples are collected and processed by the Guidelines for ichthyoplankton survey in the open part of the Baltic Proper: https://bior.lv/wp-content/uploads/2025/03/Methodology_of_Ichthyoplankton_collection.pdf

Data processing

Evaluation of data accuracy (bias and precision): NA

Editing and imputation methods: NA

Quality document associated to a dataset: NA

Validation of the final dataset: NA

Sampling scheme identifier: NEKTOBENTHOS

MS: LVA

Region: Baltic

Sampling scheme identifier: NEKTOBENTHOS

Sampling scheme type: Research surveys at sea

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
The survey is conducted in October-November (only ICES sub-division 28.2, Latvian EEZ) on a rented commercial fishing vessel. The main purpose of the survey is to collect nektobenthos samples in the eastern Baltic Sea (ICES Subdivision 28.2, Latvian EEZ). The collection of nektobenthos provides data on their abundance and biomass changes in the Eastern Gotland Basin of the Baltic Sea.

Description of the population

Population targeted:
The main survey area is the Latvian EEZ of the Baltic Sea (ICES Subdivision 28.2). The main target species of the survey are all species of mysids or opossum shrimps from Mysida order, class Malacostraca.

Population sampled:
The survey's target species are mysids. Its aim is to determine the abundance and biomass of all mysid species.

Stratification:
A list of depth-dependent sampling stations where nektobenthos has been collected since the 2000s is used.

Sampling design and protocols

Sampling design description:
The nektobenthos survey is carried out at depth-dependent stations. Sampling in the Eastern Gotland Basin (ICES Subdivision 28.2) is conducted in October-November.

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

Regional coordination: NA

Link to sampling design documentation:
Sampling design documentation could be found in the Methods for sampling, analyzing and processing data of nektobenthos: https://bior.lv/wp-content/uploads/2025/03/Methods_Nektobenthos.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation:
Sampling protocol documentation could be found in the Methods for sampling, analyzing and processing data of nektobenthos: https://bior.lv/wp-content/uploads/2025/03/Methods_Nektobenthos.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Data are collected according to the survey plan and submitted to the relevant databases according to the deadlines.

Data capture

Means of data capture:
Nektobenthos samples are collected with an Isaacs-Kidd midwater trawl (IKMT) 10 feet model (mesh size in codend 500 µm, cross-section of the trawl mouth 6 sqm). Samples are taken over 25, 50, 70, and 90 m of sea depth, at each station – in the full water column by step-like trawling method from 1-2 m over the bottom to the surface.

Data capture documentation:
Data capture documentation could be found in the Methods for sampling, analyzing and processing data of

nektobenthos: https://bior.lv/wp-content/uploads/2025/03/Methods_Nektobenthos.pdf

Quality checks documentation: Y
Quality checks and data validation is implemented in database "BIODATA to avoid input and many logical mistakes and errors.

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database: NA

Quality checks and data validation documentation:
To check the accuracy of the results, 10% of the samples are re-analysed, and the error and associated confidence limits are calculated.

Sample storage

Storage description:
Nektobenthos samples are stored in plastic jars and fixed with alcohol or formalin. Nektobenthos samples are utilised after analyses, and data are saved in the database.

Sample analysis:
Biological samples are collected and processed by following the Methods for sampling, analyzing and processing data of nektobenthos: https://bior.lv/wp-content/uploads/2025/03/Methods_Nektobenthos.pdf

Data processing

Evaluation of data accuracy (bias and precision): NA

Editing and imputation methods: NA

Quality document associated to a dataset: NA

Validation of the final dataset: NA

Sampling scheme identifier: ZOOPLANKTON

MS: LVA

Region: Baltic

Sampling scheme identifier: ZOOPLANKTON

Sampling scheme type: Research surveys at sea

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
The survey is conducted in June on the rented fishing or other vessel. The main purpose of the survey is to collect zooplankton samples in the Gulf of Riga (ICES Subdivision 28.1). The collection of zooplankton provides data on their abundance and biomass changes in the Gulf of Riga.

Description of the population

Population targeted:
The survey area is the Latvian EEZ of the Gulf of Riga (ICES subdivision 28.1). The main target species of the survey are all pelagic mesozooplankton species.

Population sampled:
The target species of the survey are pelagic mesozooplankton species. The aim is to determine the abundance and the biomass of all the species of mesozooplankton.

Stratification:
A list of permanently selected long-term standard sampling stations, where zooplankton has been collected since the 1960s, is used.

Sampling design and protocols

Sampling design description:

Zooplankton surveys are carried out at standard stations. Sampling is carried out in June.

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

Regional coordination: NA

Link to sampling design documentation:
Sampling design documentation could be found in the Methodology for collection, analysis and processing of zooplankton samples: https://bior.lv/wp-content/uploads/2025/03/Methods_Zooplankton.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation:
Sampling is carried out in accordance with the BIOR methodology, which is based on the UNESCO (1968) recommendations for zooplankton sampling. Sampling protocol documentation could be found in the Methodology for collection, analysis and processing of zooplankton samples: https://bior.lv/wp-content/uploads/2025/03/Methods_Zooplankton.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Data are collected according to the survey plan and submitted to the relevant databases according to the deadlines.

Data capture

Means of data capture:
Zooplankton samples are collected with a Juday net (mesh size 160 microns, diameter of the upper ring 36 cm). The Juday net is first lowered to the required depth and then pulled vertically to the surface. The zooplankton net is equipped with a Flow meter to determine the volume of water filtered.

Data capture documentation:
Data capture documentation could be found in the Methodology for collection, analysis and processing of zooplankton samples: https://bior.lv/wp-content/uploads/2025/03/Methods_Zooplankton.pdf

Quality checks documentation: Y
Quality checks documentation could be found in the Methodology for collection, analysis and processing of zooplankton samples: https://bior.lv/wp-content/uploads/2025/03/Methods_Zooplankton.pdf

Data storage

National database:
The name of national database is “BIODATA” (Biological Data Information System) and it’s available only for institute employees.

International database: NA

Quality checks and data validation documentation:
To check the accuracy of the results, 10% of the samples is re-analysed and the error and associated confidence limits calculated. Quality checks and data validation is implemented in database “BIODATA to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Zooplankton samples are stored in plastic bottles and fixed with alcohol. Plankton samples are utilised after analyses and data is saved in database.

Sample analysis:
Samples are collected and processed by the Methodology for collection, analysis and processing of zooplankton samples: https://bior.lv/wp-content/uploads/2025/03/Methods_Zooplankton.pdf

Data processing

Evaluation of data accuracy (bias and precision): NA

Editing and imputation methods: NA

Quality document associated to a dataset: NA

Validation of the final dataset: NA

Related to Table 2.5, 2.2 and Text Box 2.5, 4.2 (commercial fisheries data collection)

Sampling scheme identifier: OSF DEM-1 (SciObsAtSea)

MS: LVA

Region: Baltic

Sampling scheme identifier: OSF DEM-1 (SciObsAtSea)

Sampling scheme type: Commercial fishing trip

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
This sampling scheme is aiming to collect biological samples of target species (Cod and Flounder) from commercial catches in demersal fishery. The information is collected by scientific observer on-board during the fishing trips.

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is vessel*trip.

Population sampled:
Annually the list of fishing vessels with obtained fishing quota for main commercial species for demersal fishery is obtained from the Fisheries Department of the Ministry of Agriculture. PSU is randomly selected from the list of vessels by using Excel function ”RANDBETWEEN”. Random selection of PSU is monthly based, except March and December, when scientific surveys BITS Q1 and BITS Q4 are performed.

Stratification:
Due to very limited number of fishing vessels in Latvian fleet no stratification is used.

Sampling design and protocols

Sampling design description:
According to the results of random selection of PSU the vessel owner is called by phone to arrange the scientific observer participation in the next fishing trip. During the observer trip information about all fish species and all catch fractions are collected separately (Landings, Discards and BMS). Additionally, information about incidental by-catch of EPTS is collected.

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

Regional coordination:
This sampling scheme is not regionally coordinated.

Link to sampling design documentation:
Methodology description of randomly selected PSU from the list of fishing vessels is described in document "Methodology for the collection of biological samples from randomly selected fishing vessels": https://bior.lv/sites/default/files/inline-files/Methodology_for_collecting_biological_samples_from_fishing_vessels_randomly_1.pdfhttps://bior.lv/wp-content/uploads/2025/03/Methodology-for-collecting-biological-samples-from-fishing-vessels-randomly_1.pdf

Guidelines for scientific observers to collect biological information during a commercial fishing trip are described in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Design follows international recommendations: Y
Annually all international recommendations about sampling design are revised and if it's decided that they are appropriate the changes are implemented.

Link to sampling protocol documentation:
Sampling protocol documentation is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea":
https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Protocol follows international recommendations: Y
Annually all international recommendations about sampling design are revised and if it's decided that they are appropriate the changes are implemented.

Sampling implementation

Recording of refusal rate: Y
During the process of random selection of fishing vessel for the next observer trip the following information is registered in the "Random selection protocol: the name of selected vessel, type of fishing/segment, is able to enter into contact with the ship's representative - (negotiation date, time, contact person, phone), does the ship is available for data collection on the next voyage (yes/no, if "no" then the reason why it is not possible), does the ship is suitable for the observer to work (yes/no), do contact with a representative of the fishing vessel is successful (yes/no), has the journey taken place on the selected ship (yes/no).

Monitoring of sampling progress within the sampling year:
The samples are collected on month base and if it's not possible to carry out the planned trip, the selection process is repeated and next vessel from the list is selected.

Data capture

Means of data capture:
For data capture on board measuring board, scales, knife and tweezers to collet otoliths are used.

Data capture documentation:
Description of data capture is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Quality checks documentation: Y
Description of quality checks is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database:
All collected information is submitted to the International Council for the Exploration of the Sea (ICES) database RDBES (https://rdbes.ices.dk/#/).

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Collected otoliths are processed and stored in paper envelopes for each individual specimen. Otoliths are grouped by years, trips and fish species and stored in specific otoliths archive permanently.

Sample analysis:
Biological samples are collected and processed by following the next manuals: https://bior.lv/wp-content/uploads/2025/03/Baltic_Cod_Otolith_gathering_protocol_and_age_determination_method.pdf

Age reading of flounder is performed according to the Annex 6 of the Report of the 2nd Workshop on Age Reading of Flounder (WKARFLO): https://doi.org/10.17895/ices.pub.19280393.v1

Data processing

Evaluation of data accuracy (bias and precision): Y
Evaluation of data accuracy (bias and precision) are described in cod sampling manual (is also applicable for other fish species): https://bior.lv/wp-content/uploads/2025/03/Collection-of-biological-material-from-cod-during-commercial-fishing-trips_0.pdf

Editing and imputation methods:
During the data entry length, weight and age data are checked and constrained for minimal and maximal values. Excel data validation tool is used. Once the data for the respective trip has been entered, the length & weight relationship are analysed. A linear regression model is developed by determining the trend line and forecast confidence intervals. Those records that are outside confidence intervals are marked as erroneous and re-checked and if necessary, corrected. Excel macro is used for this checking. As a result, a graph with visual info and a table with problematic fish weights are obtained.
During the data entry process the Fulton's coefficient is used to check the length-weight relationship. Excel conditional formatting option is used to check data quality. After entering the weight that does not match the settings (Fulton's coefficient is > 2 or < 0.5), cell is coloured in red and additional data checking is performed.
During the otolith preparation for age reading additional data quality check is performed, if necessary, corrections are made. If data errors are found, original data and outputs including all relevant databases are corrected.

Quality document associated to a dataset: N

Validation of the final dataset:
Collected data are available in national database (BIODATA) format and in RDBES format. RDBES and BIODATA have a built-in quality check utility. All data must pass a comprehensive quality check before being entered into the database.

Sampling scheme identifier: OSF DEM-1 (SelfAtSea)

MS: LVA

Region: Baltic

Sampling scheme identifier: OSF DEM-1 (SelfAtSea)

Sampling scheme type: Commercial fishing trip

Observation type: SelfAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
This sampling scheme is aiming to collect biological samples of Flounder from commercial catches in demersal fishery. The information is collected by fishermen on-board during the fishing trips.

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is vessel*trip.

Population sampled:
Annually the list of fishing vessels with obtained fishing quota for main commercial species for demersal fishery is obtained from the Fisheries Department of the Ministry of Agriculture. PSU is randomly selected from the list of vessels by using Excel function "RANDBETWEEN". Random selection of PSU is monthly based, except March and December, when scientific surveys BITS Q1 and BITS Q4 are performed.

Stratification:

Due to very limited number of fishing vessels in Latvian fleet no stratification is used.

Sampling design and protocols

Sampling design description:
According to the results of random selection of PSU the vessel owner is called by phone to arrange the sample collection from the next fishing trip. An unsorted sample of flounder shall be collected from one fishing operation during the trip.

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

Regional coordination:
This sampling scheme is not regionally coordinated.

Link to sampling design documentation:
Methodology description of randomly selected PSU from the list of fishing vessels is described in document "Methodology for the collection of biological samples from randomly selected fishing vessels": https://bior.lv/wp-content/uploads/2025/03/Methodology-for-collecting-biological-samples-from-fishing-vessels-randomly_1.pdf

Design follows international recommendations: Y
Annually all international recommendations about sampling design are revised and if it's decided that they are appropriate the changes are implemented.

Link to sampling protocol documentation:
An unsorted sample of flounder approximately 25-50 kg are collected and shipped to the institute for the further analysis.

Protocol follows international recommendations: Y
Annually all international recommendations about sampling design are revised and if it's decided that they are appropriate the changes are implemented.

Sampling implementation

Recording of refusal rate: Y
During the process of random selection of fishing vessel for the next observer trip the following information is registered in the "Random selection protocol: the name of selected vessel, type of fishing/segment, is able to enter into contact with the ship's representative - (negotiation date, time, contact person, phone), does the ship is available for data collection on the next voyage (yes/no, if "no" then the reason why it is not possible), does the ship is suitable for the observer to work (yes/no), do contact with a representative of the fishing vessel is successful (yes/no), has the journey taken place on the selected ship (yes/no).

Monitoring of sampling progress within the sampling year:
The samples are collected on month base and if it's not possible to carry out the planned trip, the selection process is repeated and next vessel from the list is selected.

Data capture

Means of data capture:
Special inventory is not necessary. Fishermen are using one or two fish boxes for collecting the sample.

Data capture documentation:
The only requirement is to supply an unsorted sample of flounder.

Quality checks documentation: Y
The ERS fishing logbook is checked for flounder catches in the selected trip.

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database:
All collected information is submitted to the International Council for the Exploration of the Sea (ICES) database RDBES (https://rdbes.ices.dk/#/).

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Collected otoliths are processed and stored in paper envelopes for each individual specimen. Otoliths are grouped by years, trips and fish species and stored in specific otoliths archive permanently.

Sample analysis:
Age reading of flounder is performed according to the Annex 6 of the Report of the 2nd Workshop on Age Reading of Flounder (WKARFLO): https://doi.org/10.17895/ices.pub.19280393.v1

Data processing

Evaluation of data accuracy (bias and precision): Y
Evaluation of data accuracy (bias and precision) are described in flounder sampling manual (is also applicable for other fish species): https://bior.lv/wp-content/uploads/2025/03/The-collection-of-flounder-biological-material-from-commercial-fishing-trips_0.pdf

Editing and imputation methods:
During the data entry length, weight and age data are checked and constrained for minimal and maximal values. Excel data validation tool is used. Once the data for the respective trip has been entered, the length & weight relationship are analysed. A linear regression model is developed by determining the trend line and forecast confidence intervals. Those records that are outside confidence intervals are marked as erroneous and re-checked and if necessary, corrected. Excel macro is used for this checking. As a result, a graph with visual info and a table with problematic fish weights are obtained.
During the data entry process the Fulton's coefficient is used to check the length-weight relationship. Excel conditional formatting option is used to check data quality. After entering the weight that does not match the settings (Fulton's coefficient is > 2 or < 0.5), cell is coloured in red and additional data checking is performed.
During the otolith preparation for age reading additional data quality check is performed, if necessary, corrections are made. If data errors are found, original data and outputs including all relevant databases are corrected.

Quality document associated to a dataset: N

Validation of the final dataset:
Collected data are available in national database (BIODATA) format and in RDBES format. RDBES and BIODATA have a built-in quality check utility. All data must pass a comprehensive quality check before being entered into the database.

Sampling scheme identifier: OSF PEL-1 (SciObsAtSea)

MS: LVA

Region: Baltic

Sampling scheme identifier: OSF PEL-1 (SciObsAtSea)

Sampling scheme type: Commercial fishing trip

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
This sampling scheme aims to collect biological samples of target species (sprat and herring) from commercial catches in the pelagic fishery. The information is collected on-board by the scientific observer during fishing trips. The scheme covers the Latvian pelagic fleet in the Central Baltic area (22-24; 25-27, 28.2, 29, 32; 30-31).

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is vessel*trip.

Population sampled:
The list of fishing vessels with the obtained fishing quota for main commercial species for the pelagic fishery is annually obtained from the Fisheries Department of the Ministry of Agriculture. PSU is randomly selected from the list of vessels by using the Excel function “RANDBETWEEN”. Random selection of PSU is monthly based.

Stratification:
Due to very limited number of fishing vessels in Latvian fleet no stratification is used.

Sampling design and protocols

Sampling design description:
According to the results of a random selection of PSU, the vessel owner is called by phone to arrange the scientific observer participation in the next fishing trip. During the observer trip, information about all fish species and all catch fractions are collected separately (Landings and Discards). Additionally, information about incidental by-catch of birds and mammals is collected.

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

Regional coordination:
This sampling scheme is not regionally coordinated.

Link to sampling design documentation:
Methodology description of randomly selected PSU from the list of fishing vessels is described in document "Methodology for the collection of biological samples from randomly selected fishing vessels": https://bior.lv/wp-content/uploads/2025/03/Methodology-for-collecting-biological-samples-from-fishing-vessels-randomly_1.pdf

Guidelines for scientific observers to collect biological information during a commercial fishing trip are described in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Design follows international recommendations: Y
Annually all international recommendations about sampling design are revised, and if it's decided that they are appropriate, the changes are implemented.

Link to sampling protocol documentation:
Sampling protocol documentation is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Protocol follows international recommendations: Y
Annually all international recommendations about sampling design are revised, and if it's decided that they are appropriate, the changes are implemented.

Sampling implementation

Recording of refusal rate: Y
During the process of a random selection of fishing vessel for the next observer trip the following information is registered in the “Random selection protocol”: the name of the selected vessel, type of fishing/segment, is able to enter into contact with the ship's representative - (negotiation date, time, contact person, phone), does the ship is available for the data collection on the next voyage (yes/no, if "no" then the reason why it is not possible), does the ship is suitable for the observer to work (yes / no), do contact with a representative of the fishing vessel is successful (yes/no), has the journey taken place on the selected ship (yes/no).

Monitoring of sampling progress within the sampling year:
The samples are collected monthly, and if it’s not possible to carry out the planned trip, the selection process is repeated, and the next vessel from the list is selected.

Data capture

Means of data capture:
For data capture on board measuring board, marine scales and scalpel to collect otoliths are used.

Data capture documentation:
Description of data capture is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Quality checks documentation: Y
Description of quality checks is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database:
All collected information is submitted to the International Council for the Exploration of the Sea (ICES) database RDBES (https://rdbes.ices.dk/#/).

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Biological samples are collected and processed according to the following manual: https://bior.lv/wp-content/uploads/2025/03/Collection_and_processing_of_pelagic_fish_biological_material.pdf

Sample analysis:
Collected otoliths are processed and stored in paper booklets or plastic trays, each individual specimen is stored in separate sheet in booklet or place in a tray. Age reading for herring is performed according to the following manual: https://bior.lv/wp-content/uploads/2025/03/Manual_for_age_determination_of_Clupea_harengus.pdf

Age reading for sprat is performed according to the following manual:
https://bior.lv/wp-content/uploads/2025/03/Baltic_sprat_age_reading_methodology.pdf

After analysis, otoliths are grouped by years, trips and fish species and permanently stored in a specific otolith archive.

Data processing

Evaluation of data accuracy (bias and precision): Y
Evaluation of data accuracy (bias and precision) are described in cod sampling manual (is also applicable for other fish species): https://bior.lv/wp-content/uploads/2025/03/The-assessment-of-precision-levels-for-biological-material-collected-during-commercial-fishing-trips_0.pdf

Editing and imputation methods: Y
During the data entry, biological data (length, weight, sex, stage, age) are checked for minimal and maximal values. Once the data for the respective trip has been entered, the length & weight relationship is analysed by a linear regression model and Fulton's coefficient. Outliers are marked, re-checked and if necessary, corrected. If data errors are found, original data and outputs, including all relevant databases, are corrected.

Quality document associated to a dataset: N

Validation of the final dataset:
Data are prepared in national databases format and the RDBES format. The RDBES has an integrated quality check utility. All data before entering the database must pass an extensive quality check.

Sampling scheme identifier: OSF PEL-1 (SelfAtSea)

MS: LVA

Region: Baltic

Sampling scheme identifier: OSF PEL-1 (SelfAtSea)

Sampling scheme type: Commercial fishing trip

Observation type: SelfAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
This sampling scheme aims to collect biological samples of target species (sprat and herring) from commercial catches in the pelagic fishery. The information is collected on-board by the vessel captain during fishing trips. Sample is taken on-board by vessel's crew or in harbour by institute's representative and sent to laboratory for processing. The scheme covers the Latvian pelagic fleet in the Central Baltic area (22‑24; 25‑27, 28.2, 29, 32; 30‑31).

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is vessel*trip.

Population sampled:
The list of fishing vessels with the obtained fishing quota for main commercial species for the pelagic fishery is annually obtained from the Fisheries Department of the Ministry of Agriculture. PSU is randomly selected from the list of vessels by using the Excel function "RANDBETWEEN". Random selection of PSU is monthly based.

Stratification:
Due to very limited number of fishing vessels in Latvian fleet no stratification is used.

Sampling design and protocols

Sampling design description:
According to the results of a random selection of PSU, the vessel owner is called by phone to arrange the sampling from the next fishing trip.

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

Regional coordination:
This sampling scheme is not regionally coordinated.

Link to sampling design documentation:
Methodology description of randomly selected PSU from the list of fishing vessels is described in document "Methodology for the collection of biological samples from randomly selected fishing vessels": https://bior.lv/wp-content/uploads/2025/03/Methodology-for-collecting-biological-samples-from-fishing-vessels-randomly_1.pdf

Guidelines for scientific observers to collect biological information during a commercial fishing trip are described in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Design follows international recommendations: Y
Annually all international recommendations about sampling design are revised, and if it's decided that they are appropriate, the changes are implemented.

Link to sampling protocol documentation:
Sampling protocol documentation is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Protocol follows international recommendations: Y
Annually all international recommendations about sampling design are revised, and if it's decided that they are appropriate, the changes are implemented.

Sampling implementation

Recording of refusal rate: Y

During the process of random selection of fishing vessel for the next sample the following information is registered in the “Random selection protocol”: the name of selected vessel, type of fishing/segment, is able to enter into contact with the ship's representative - (negotiation date, time, contact person, phone), do contact with a representative of the fishing vessel is successful (yes/no), has the sample taken on the selected ship (yes/no).

Monitoring of sampling progress within the sampling year:
The samples are collected monthly, and if it’s not possible to carry out the planned trip, the selection process is repeated, and the next vessel from the list is selected.

Data capture

Means of data capture:
For data capture in laboratory measuring board, scales, scalpel to collect otoliths are used.

Data capture documentation:
Description of data capture is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Quality checks documentation: Y
Description of quality checks is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Data storage

National database:
The name of national database is “BIODATA” (Biological Data Information System) and it’s available only for institute employees.

International database:
All collected information is submitted to the International Council for the Exploration of the Sea (ICES) database RDBES (https://rdbes.ices.dk/#/).

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Biological samples are collected and processed according to the following manual: https://bior.lv/wp-content/uploads/2025/03/Collection_and_processing_of_pelagic_fish_biological_material.pdf

Sample analysis:
Collected otoliths are processed and stored in paper booklets or plastic trays, each individual specimen is stored in separate sheet in booklet or place in a tray. Age reading for herring is performed according to the following manual: https://bior.lv/wp-content/uploads/2025/03/Manual_for_age_determination_of_Clupea_harengus.pdf

Age reading for sprat is performed according to the following manual:
https://bior.lv/wp-content/uploads/2025/03/Baltic_sprat_age_reading_methodology.pdf

After analysis, otoliths are grouped by years, trips and fish species and permanently stored in a specific otolith archive.

Data processing

Evaluation of data accuracy (bias and precision): Y
Evaluation of data accuracy (bias and precision) are described in cod sampling manual (is also applicable for other fish species): https://bior.lv/wp-content/uploads/2025/03/The-assessment-of-precision-levels-for-biological-material-collected-during-commercial-fishing-trips_0.pdf

Editing and imputation methods: Y
During the data entry, biological data (length, weight, sex, stage, age) are checked for minimal and maximal values. Once the data for the respective trip has been entered, the length & weight relationship is analysed by a

linear regression model and Fulton's coefficient. Outliers are marked, re-checked and if necessary, corrected. If data errors are found, original data and outputs, including all relevant databases, are corrected.

Quality document associated to a dataset: N

Validation of the final dataset:
Data are prepared in national databases format and the RDBES format. The RDBES has an integrated quality check utility. All data before entering the database must pass an extensive quality check.

Sampling scheme identifier: GOR PEL-1 (SciObsAtSea)

MS: LVA

Region: Baltic

Sampling scheme identifier: GOR PEL-1 (SciObsAtSea)

Sampling scheme type: Commercial fishing trip

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
This sampling scheme aims to collect biological samples of target species (herring) from commercial catches in the pelagic fishery. The information is collected on-board by the scientific observer during fishing trips. The scheme covers the Latvian pelagic fleet in the Gulf of Riga (28.1).

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is vessel*trip.

Population sampled:
The list of fishing vessels with the obtained fishing quota for main commercial species for the pelagic fishery is annually obtained from the Fisheries Department of the Ministry of Agriculture. PSU is randomly selected from the list of vessels by using the Excel function "RANDBETWEEN". Random selection of PSU is quarterly based.

Stratification:
Due to very limited number of fishing vessels in Latvian fleet no stratification is used.

Sampling design and protocols

Sampling design description:
According to the results of a random selection of PSU, the vessel owner is called by phone to arrange the scientific observer participation in the next fishing trip. During the observer trip, information about all fish species and all catch fractions are collected separately (Landings and Discards). Additionally, information about incidental by-catch of birds and mammals is collected.

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

Regional coordination:
This sampling scheme is not regionally coordinated.

Link to sampling design documentation:
Methodology description of randomly selected PSU from the list of fishing vessels is described in document "Methodology for the collection of biological samples from randomly selected fishing vessels": https://bior.lv/wp-content/uploads/2025/03/Methodology-for-collecting-biological-samples-from-fishing-vessels-randomly_1.pdf

Guidelines for scientific observers to collect biological information during a commercial fishing trip are described in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Design follows international recommendations: Y
Annually all international recommendations about sampling design are revised, and if it's decided that they are

appropriate, the changes are implemented.

Link to sampling protocol documentation:
Sampling protocol documentation is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Protocol follows international recommendations: Y
Annually all international recommendations about sampling design are revised, and if it's decided that they are appropriate, the changes are implemented.

Sampling implementation

Recording of refusal rate: Y
During the process of a random selection of fishing vessel for the next observer trip the following information is registered in the "Random selection protocol": the name of the selected vessel, type of fishing/segment, is able to enter into contact with the ship's representative - (negotiation date, time, contact person, phone), does the ship is available for the data collection on the next voyage (yes/no, if "no" then the reason why it is not possible), does the ship is suitable for the observer to work (yes/no), do contact with a representative of the fishing vessel is successful (yes/no), has the journey taken place on the selected ship (yes/no).

Monitoring of sampling progress within the sampling year:
The samples are collected quarterly, and if it's not possible to carry out the planned trip, the selection process is repeated, and the next vessel from the list is selected.

Data capture

Means of data capture:
For data capture on board measuring board, marine scales and scalpel to collect otoliths are used.

Data capture documentation:
Description of data capture is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Quality checks documentation: Y
Description of quality checks is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database:
All collected information is submitted to the International Council for the Exploration of the Sea (ICES) database RDBES (https://rdbes.ices.dk/#/).

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Biological samples are collected and processed according to the following manual: https://bior.lv/wp-content/uploads/2025/03/Collection_and_processing_of_pelagic_fish_biological_material.pdf

Sample analysis:
Collected otoliths are processed and stored in paper booklets or plastic trays, each individual specimen is stored in separate sheet in booklet or place in a tray. Age reading for herring is performed according to the following manual: https://bior.lv/wp-content/uploads/2025/03/Manual_for_age_determination_of_Clupea_harengus.pdf

After analysis, otoliths are grouped by years, trips and fish species and permanently stored in a specific otolith archive.

Data processing

Evaluation of data accuracy (bias and precision): Y
Evaluation of data accuracy (bias and precision) are described in cod sampling manual (is also applicable for other fish species): https://bior.lv/wp-content/uploads/2025/03/The-assessment-of-precision-levels-for-biological-material-collected-during-commercial-fishing-trips_0.pdf

Editing and imputation methods: Y
During the data entry, biological data (length, weight, sex, stage, age) are checked for minimal and maximal values. Once the data for the respective trip has been entered, the length & weight relationship is analysed by a linear regression model and Fulton's coefficient. Outliers are marked, re-checked and if necessary, corrected. If data errors are found, original data and outputs, including all relevant databases, are corrected.

Quality document associated to a dataset: N

Validation of the final dataset:
Data are prepared in national databases format and the RDBES format. The RDBES has an integrated quality check utility. All data before entering the database must pass an extensive quality check.

Sampling scheme identifier: GOR PEL-1 (SelfAtSea)

MS: LVA

Region: Baltic

Sampling scheme identifier: GOR PEL-1 (SelfAtSea)

Sampling scheme type: Commercial fishing trip

Observation type: SelfAtSea

Time period of validity: 01.01.2026 - 31.12.2027

Short description (max 100 words):
This sampling scheme aims to collect biological samples of target species (herring) from commercial catches in the pelagic fishery. The information is collected on-board by the vessel captain during fishing trips. Sample is taken on-board by vessel's crew or in harbour by institute's representative and sent to laboratory for processing. The scheme covers the Latvian pelagic fleet in the Gulf of Riga (28.1).

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is vessel*trip.

Population sampled:
The list of fishing vessels with the obtained fishing quota for main commercial species for the pelagic fishery is annually obtained from the Fisheries Department of the Ministry of Agriculture. PSU is randomly selected from the list of vessels by using the Excel function "RANDBETWEEN". Random selection of PSU is weekly based.

Stratification:
Due to very limited number of fishing vessels in Latvian fleet no stratification is used.

Sampling design and protocols

Sampling design description:
According to the results of a random selection of PSU, the vessel owner is called by phone to arrange the sampling from the next fishing trip.

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

Regional coordination:
This sampling scheme is not regionally coordinated.

Link to sampling design documentation:
Methodology description of randomly selected PSU from the list of fishing vessels is described in document "Methodology for the collection of biological samples from randomly selected fishing vessels": https://bior.lv/wp-content/uploads/2025/03/Methodology-for-collecting-biological-samples-from-fishing-vessels-randomly_1.pdf

Guidelines for scientific observers to collect biological information during a commercial fishing trip are described in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Design follows international recommendations: Y
Annually all international recommendations about sampling design are revised, and if it's decided that they are appropriate, the changes are implemented.

Link to sampling protocol documentation:
Sampling protocol documentation is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Protocol follows international recommendations: Y
Annually all international recommendations about sampling design are revised, and if it's decided that they are appropriate, the changes are implemented.

Sampling implementation

Recording of refusal rate: Y
During the process of random selection of fishing vessel for the next sample the following information is registered in the “Random selection protocol”: the name of selected vessel, type of fishing/segment, is able to enter into contact with the ship's representative - (negotiation date, time, contact person, phone), do contact with a representative of the fishing vessel is successful (yes/no), has the sample taken on the selected ship (yes/no).

Monitoring of sampling progress within the sampling year:
The samples are collected monthly, and if it’s not possible to carry out the planned trip, the selection process is repeated, and the next vessel from the list is selected.

Data capture

Means of data capture:
For data capture in laboratory measuring board, scales, scalpel to collect otoliths are used.

Data capture documentation:
Description of data capture is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Quality checks documentation: Y
Description of quality checks is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Data storage

National database:
The name of national database is “BIODATA” (Biological Data Information System) and it’s available only for institute employees.

International database:

All collected information is submitted to the International Council for the Exploration of the Sea (ICES) database RDBES (https://rdbes.ices.dk/#/).

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Biological samples are collected and processed according to the following manual: https://bior.lv/wp-content/uploads/2025/03/Collection_and_processing_of_pelagic_fish_biological_material.pdf

Sample analysis:
Collected otoliths are processed and stored in paper booklets or plastic trays, each individual specimen is stored in separate sheet in booklet or place in a tray. Age reading for herring is performed according to the following manual: https://bior.lv/wp-content/uploads/2025/03/Manual_for_age_determination_of_Clupea_harengus.pdf

Age reading for sprat is performed according to the following manual:
https://bior.lv/wp-content/uploads/2025/03/Baltic_sprat_age_reading_methodology.pdf

After analysis, otoliths are grouped by years, trips and fish species and permanently stored in a specific otolith archive.

Data processing

Evaluation of data accuracy (bias and precision): Y
Evaluation of data accuracy (bias and precision) are described in cod sampling manual (is also applicable for other fish species): https://bior.lv/wp-content/uploads/2025/03/The-assessment-of-precision-levels-for-biological-material-collected-during-commercial-fishing-trips_0.pdf

Editing and imputation methods: Y
During the data entry, biological data (length, weight, sex, stage, age) are checked for minimal and maximal values. Once the data for the respective trip has been entered, the length & weight relationship is analysed by a linear regression model and Fulton's coefficient. Outliers are marked, re-checked and if necessary, corrected. If data errors are found, original data and outputs, including all relevant databases, are corrected.

Quality document associated to a dataset: N

Validation of the final dataset:
Data are prepared in national databases format and the RDBES format. The RDBES has an integrated quality check utility. All data before entering the database must pass an extensive quality check.

Sampling scheme identifier: SB-1 (SelfAtSea)

MS: LVA

Region: Baltic

Sampling scheme identifier: SB-1 (SelfAtSea)

Sampling scheme type: Commercial fishing trip

Observation type: SelfAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
This sampling scheme aims to collect biological samples of target species (herring) from commercial catches in the coastal trap-net fishery. Samples are randomly selected from coastal fishing companies and then sent to laboratory for processing. The scheme covers the Latvian coastal herring targeted fishery by trap-nets in the Gulf of Riga (SD 28.1).

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is vessel*trip.

Population sampled:
Herring trap-net sampling scheme has been designed to cover all herring fishery management areas in the Gulf of Riga. The total herring coastal limit in the Gulf of Riga is distributed by three coastal areas (Eastern,

Southern and Western). When the area limit is reached, the fishery is ceased in a given area.

Stratification:
Historical geographical stratification between three areas is used.

Sampling design and protocols

Sampling design description:
The list of fishing companies with the obtained fishing quota for the herring trap-net fishery is annually obtained from the Fisheries Department of the Ministry of Agriculture. PSU is randomly selected from the list of companies by using the Excel function "RANDBETWEEN". Random selection of PSU is monthly based.

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

Regional coordination:
This sampling scheme is not regionally coordinated.

Link to sampling design documentation:
During the main season of trap-net fishery in the Gulf of Riga (mid-April till the beginning of July), 18 samples in total.

Design follows international recommendations: N

Link to sampling protocol documentation:
Each unsorted biological sample should consist of at least 120 herring specimens. Sample should be transported to institute fresh or frozen ensuring good quality. Additional information on landing site, date, landed amount, fishing duration, bycatch and corresponding coastal logbook number should be provided.

Protocol follows international recommendations: N

Sampling implementation

Recording of refusal rate: Y
During the process of random selection of companies for the next sample the following information is registered in the "Random selection protocol": the name of selected company, type of fishing/segment, is able to enter into contact with the companies' representative - (negotiation date, time, contact person, phone), do contact with a representative of the fishing company is successful (yes/no), has the sample taken from the selected company(yes/no).

Monitoring of sampling progress within the sampling year:
The samples are collected weekly, and if it's not possible to carry out the planned trip, the selection process is repeated, and the next company from the list is selected.

Data capture

Means of data capture:
For data capture in laboratory measuring board, scales, scalpel to collect otoliths are used.

Data capture documentation:
Description of data capture is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Quality checks documentation: Y
Description of quality checks is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database:
All collected information is submitted to the International Council for the Exploration of the Sea (ICES)

database RDBES (https://rdbes.ices.dk/#/).

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Biological samples are collected and processed according to the following manual: https://bior.lv/wp-content/uploads/2025/03/Collection_and_processing_of_pelagic_fish_biological_material.pdf

Sample analysis:
Collected otoliths are processed and stored in paper booklets or plastic trays, each individual specimen is stored in separate sheet in booklet or place in a tray. Age reading for herring is performed according to the following manual: https://bior.lv/wp-content/uploads/2025/03/Manual_for_age_determination_of_Clupea_harengus.pdf

Age reading for sprat is performed according to the following manual:
https://bior.lv/wp-content/uploads/2025/03/Baltic_sprat_age_reading_methodology.pdf

After analysis, otoliths are grouped by years, trips and fish species and permanently stored in a specific otolith archive.

Data processing

Evaluation of data accuracy (bias and precision): Y
Evaluation of data accuracy (bias and precision) are described in cod sampling manual (is also applicable for other fish species): https://bior.lv/wp-content/uploads/2025/03/The-assessment-of-precision-levels-for-biological-material-collected-during-commercial-fishing-trips_0.pdf

Editing and imputation methods: Y
During the data entry, biological data (length, weight, sex, stage, age) are checked for minimal and maximal values. Once the data for the respective trip has been entered, the length & weight relationship is analysed by a linear regression model and Fulton's coefficient. Outliers are marked, re-checked and if necessary, corrected. If data errors are found, original data and outputs, including all relevant databases, are corrected.

Quality document associated to a dataset: N

Validation of the final dataset:
Data are prepared in national databases format and the RDBES format. The RDBES has an integrated quality check utility. All data before entering the database must pass an extensive quality check.

Sampling scheme identifier: SB-2 (SciObsAtSea)

MS: LVA

Region: Baltic

Sampling scheme identifier: SB-2 (SciObsAtSea)

Sampling scheme type: Commercial fishing trip

Observation type: SciObsAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
This sampling scheme aims to register detailed catch and bycatch information in coastal fishery. The information is collected by scientific observer on-board trips on coastal vessels (<12m) employing static gears, except herring trap-nets (SB-1).

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is vessel*trip.

Population sampled:
Landings, bycatch and discards in Latvian coastal municipalities with active commercial fishery (according to logbook information).

Stratification:

Sampling is covering all coastal commercial fishery segment.

Sampling design and protocols

Sampling design description:
The list of coastal fishery companies is annually obtained from the Fisheries Department of the Ministry of Agriculture. PSU is randomly selected from the list of companies. Weighted random selection of PSU is monthly based.

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

Regional coordination:
This sampling scheme is not regionally coordinated.

Link to sampling design documentation:
Guidelines for scientific observers to collect biological information during a commercial fishing trip are described in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Design follows international recommendations: N
Sampling will take place on a monthly basis throughout the year. In 2025 it was planned to observe the segment SB-2 within the LIFE REEF project with higher sampling intensity to define the statistically sound sampling design. The study was started in February 2025 and will end in January 2026. While the study is not yet finished and the data has not yet been fully analysed in 2026 it is planned to continue to observe the SB-2 segment using the LIFE REEF project methodology, with the aim to cover 1% of the average number of PSUs during the reference period.

Link to sampling protocol documentation:
Sampling protocol documentation is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Protocol follows international recommendations: N
During the observer trip information about all fish species and all catch fractions are collected separately (Landings, Discards and BMS). Additionally, information about incidental by-catch of birds and mammals is collected.

Sampling implementation

Recording of refusal rate: Y
During the process of random selection of companies for the next sample the following information is registered in the “Random selection protocol”: the name of selected company, type of fishing/segment, is able to enter into contact with the companies' representative - (negotiation date, time, contact person, phone), do contact with a representative of the fishing company is successful (yes/no), has the sample taken from the selected company(yes/no).

Monitoring of sampling progress within the sampling year:
Sampling progress is checked monthly. There are several fishing companies to choose from if there are complications in sampling progress or weather conditions.

Data capture

Means of data capture:
For data capture on board measuring board and scales are used.

Data capture documentation:
Description of data capture is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Quality checks documentation: Y
Description of quality checks is available in the document "Guidelines for Observers Working on Latvian

Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf
Data storage
National database: The name of national database is “BIODATA” (Biological Data Information System) and it’s available only for institute employees. **International database:** NA **Quality checks and data validation documentation:** Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.
Sample storage
Storage description: Collected otoliths are processed and stored in paper envelopes for each individual specimen. **Sample analysis:** Otoliths are grouped by years, trips and fish species and stored in specific otoliths archive permanently.
Data processing
Evaluation of data accuracy (bias and precision): Y Evaluation of data accuracy (bias and precision) are described in cod sampling manual (is also applicable for other fish species): https://bior.lv/wp-content/uploads/2025/03/The-assessment-of-precision-levels-for-biological-material-collected-during-commercial-fishing-trips_0.pdf **Editing and imputation methods: Y** During the data entry, biological data are checked for minimal and maximal values. Once the data for the respective trip has been entered, the length & weight relationship is analysed by a linear regression model and Fulton’s coefficient. Outliers are marked, re-checked and if necessary, corrected. If data errors are found, original data and outputs, including all relevant databases, are corrected. **Quality document associated to a dataset:** N **Validation of the final dataset:** Data are prepared in national databases format. All data before entering the database have to pass an extensive quality check.

Sampling scheme identifier: SB-2 (SelfAtSea)

MS: LVA
Region: Baltic
Sampling scheme identifier: SB-2 (SelfAtSea)
Sampling scheme type: Commercial fishing trip
Observation type: SelfAtSea
Time period of validity: 01.01.2025 - 31.12.2027
Short description (max 100 words): This sampling scheme aims to collect samples of specific species from coastal fishery to support biological data collection for these species. The information is collected by fishermen self-sampling from coastal vessels (<12m) employing static gears, except herring trap-nets (SB-1).
Description of the population
Population targeted: Primary sampling unit for this sampling scheme is vessel*trip. **Population sampled:** The main commercial fish species in coastal area: landings in Latvian fishery. Main coastal municipalities with active fishery (according to logbook information). **Stratification:**

Sampling is covering most of the Latvian coastline.

Sampling design and protocols

Sampling design description:
The list of coastal fishery companies is annually obtained from the Fisheries Department of the Ministry of Agriculture. PSU is randomly selected from the list of companies by using the Excel function "RANDBETWEEN". Random selection of PSU is monthly based. The total number of samples is not fixed and may vary depending on planned number of individuals for each species (see Table 2.2 Planning of sampling for biological variables). Sampling time is species and area specific.

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

Regional coordination:
This sampling scheme is not regionally coordinated.

Link to sampling design documentation:
Sampling design is not fixed and may depend on fishing activity and species occurrence in coastal areas.

Design follows international recommendations: N
Sampling will take place on a monthly basis throughout the year.

Link to sampling protocol documentation:
Sampling protocol documentation is available in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Protocol follows international recommendations: N
Sampling documentation is available in the following documents:
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

https://bior.lv/wp-content/uploads/2025/03/Neogobius_melanostomus_data_acquisition_-protocol_and_biological_parameter_determination_method.pdf

https://bior.lv/wp-content/uploads/2025/03/Collection_and_processing_of_pelagic_fish_biological_material.pdf

https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Sampling implementation

Recording of refusal rate: Y
During the process of random selection of companies for the next sample the following information is registered in the "Random selection protocol": the name of selected company, type of fishing/segment, is able to enter into contact with the companies' representative - (negotiation date, time, contact person, phone), do contact with a representative of the fishing company is successful (yes/no), has the sample taken from the selected company(yes/no).

Monitoring of sampling progress within the sampling year:
Sampling time is species and area-specific and can be adjusted depending on the fishing activity and species occurrence in coastal areas. Sampling progress is checked quarterly.

Data capture

Means of data capture:
For data capture in laboratory measuring board, scales scalpel to collect otoliths are used.

Data capture documentation:

Data capture documentation is available in the following documents: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

https://bior.lv/wp-content/uploads/2025/03/Neogobius_melanostomus_data_acquisition_-protocol_and_biological_parameter_determination_method.pdf

https://bior.lv/wp-content/uploads/2025/03/Collection_and_processing_of_pelagic_fish_biological_material.pdf

https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Quality checks documentation: Y
Quality checks documentation is available in the following documents: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

https://bior.lv/wp-content/uploads/2025/03/Neogobius_melanostomus_data_acquisition_-protocol_and_biological_parameter_determination_method.pdf

https://bior.lv/wp-content/uploads/2025/03/Collection_and_processing_of_pelagic_fish_biological_material.pdf

https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Data storage

National database:
The name of national database is “BIODATA” (Biological Data Information System) and it’s available only for institute employees.

International database:
All collected information is partially submitted to the International Council for the Exploration of the Sea (ICES) database RDBES (https://rdbes.ices.dk/#/).

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Collected otoliths are processed and stored in paper envelopes for each individual specimen.

Sample analysis:
Otoliths are grouped by years, trips and fish species and stored in specific otoliths archive permanently.

Data processing

Evaluation of data accuracy (bias and precision): Y
Evaluation of data accuracy (bias and precision) are described in cod sampling manual (is also applicable for other fish species): https://bior.lv/wp-content/uploads/2025/03/The-assessment-of-precision-levels-for-biological-material-collected-during-commercial-fishing-trips_0.pdf

Editing and imputation methods: Y

During the data entry, biological data (length, weight, sex, stage, age) are checked for minimal and maximal values. Once the data for the respective trip has been entered, the length & weight relationship is analysed by a linear regression model and Fulton's coefficient. Outliers are marked, re-checked and if necessary, corrected. If data errors are found, original data and outputs, including all relevant databases, are corrected.

Quality document associated to a dataset: N

Validation of the final dataset:
Data are prepared in national databases format and the RDBES format. The RDBES has an integrated quality check utility. All data before entering the database must pass an extensive quality check.

Sampling scheme identifier: SAL_LLD (SelfAtSea)

MS: LVA

Region: Baltic

Sampling scheme identifier: SAL_LLD (SelfAtSea)

Sampling scheme type: Biological parameters specific

Observation type: SelfAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to collect Atlantic salmon length, weight, sex ratio, age structure data and samples for genetic catch structure analyses from specialized scientific salmon fishery with longlines in the open sea (ICES subdivisions 26, 28).

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is vessel*trip.

Population sampled:
Sampling targets all Atlantic salmon populations in open sea - ICES subdivisions 26 and 28.

Stratification: NA

Sampling design and protocols

Sampling design description:
Annually 150 samples of Atlantic salmon biological data are collected by two contract fishermen. Scale samples for age determination and biological data are collected in the scale books. Length, gutted weight (1.1 conversion factor used for full weight), sex and origin (adipose fin clipped or fish with adipose fin) is registered. Tissue samples from caudal fin stored in Eppendorf tubes with 96% ethanol for genetic analyses.

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

Regional coordination:
This sampling scheme is not regionally coordinated.

Link to sampling design documentation:
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation:
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Fishermen submit scale books with biological data during all fishing season. Institute staff can control the amount of biological data and samples collected.

Data capture

Means of data capture:
For length measurements measuring board with millimetre increments is used and electronic scales for weight measurements.

Data capture documentation:
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database:
Data that is collected through the data calls is stored in ICES WGBAST database.

Quality checks and data validation documentation:
Quality checks and data validation is implemented in all mentioned above databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Scale samples collected are stored in scale books in the Institute' s repository, access to samples is organized through staff responsible for age reading. The condition of the scale books is periodically checked. Tissue samples for genetic analyses stored in Eppendorf tubes with 96% ethanol.

Sample analysis:
Salmon parr age reading is done in accordance with Atlantic salmon scale reading guidelines https://sfcc.co.uk/assets/files/Atlantic%20Salmon%20Scale%20Reading%20Guidelines.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality document associated to a dataset: N

Validation of the final dataset:
Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: BAL_PEL_CET (SelfAtSea)

MS: LVA

Region: Baltic

Sampling scheme identifier: BAL_PEL_CET (SelfAtSea)

Sampling scheme type: Commercial fishing trip

Observation type: SelfAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
According to Regulation (EU) 2019/1241 of the European Parliament and of the Council of 20 June 2019 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures Latvia is obliged to monitor pelagic trawl fishery. Monitoring is performed by specially educated fishermen who observe pelagic commercial trips in the Baltic Sea and Gulf of Riga. Additionally, during the observation's information about EPTS species by-catch is collected. It should be highlighted that in all monitoring period by-catch of cetaceans were not observed.

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is vessel*trip.

Population sampled:
Population is all Latvian pelagic fleet. It is planned to cover up to 10% of all pelagic fishery trips annually.

Stratification:
Due to very limited number of fishing vessels in Latvian fleet no stratification is used.

Sampling design and protocols

Sampling design description:
Each year based on the results of tender the winner is taking responsibility to organise trips for observer (not licensed but specially trained person). The winner is providing for observers the contacts of the vessel owners to arrange the necessary trips. In case, when it's not possible to take observer on board vessel crew is asked to collect necessary information (not more than 10% of all observed trips during the year).

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

Regional coordination:
No regional coordination.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Monitoring-of-cetaceans-and-PETS-species-bycatch-in-pelagic-trawl-fishery_0.pdf

Design follows international recommendations: N

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Monitoring-of-cetaceans-and-PETS-species-bycatch-in-pelagic-trawl-fishery_0.pdf

Protocol follows international recommendations: N

Sampling implementation

Recording of refusal rate:
Recording of refusal rate is not performed.

Monitoring of sampling progress within the sampling year:
Monitoring of sampling progress is up to performer of the monitoring. The performer of the monitoring is following-up that the number of trips specified in the contract is observed.

Data capture

Means of data capture:
Special monitoring protocols, photo camera or mobile phone.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Monitoring-of-cetaceans-and-PETS-species-bycatch-in-pelagic-trawl-fishery_0.pdf

Quality checks documentation: Y
Collected data is compared with the E-logbooks data.

Data storage

National database:

The name of national database is “BIODATA” (Biological Data Information System) and it’s available only for institute employees.

International database:
Collected data is used to response on ICES data call for advisory work related to bycatch of protected species (WGBYC) according to provided guidelines.

Quality checks and data validation documentation: Y
Quality checks and data validation is implemented in national databases to avoid input and many logical mistakes and errors. Quality of the data is performed during the upload process to the ICES WGBYC portal.

Sample storage

Storage description:
The methodology of the monitoring does not provide the collection of biological samples.

Sample analysis:
The methodology of the monitoring does not provide the collection of biological samples.

Data processing

Evaluation of data accuracy (bias and precision): N

Editing and imputation methods: N

Quality document associated to a dataset: N

Validation of the final dataset:
Quality checks and data validation is implemented in national databases to avoid input and many logical mistakes and errors. Quality of the data is performed during the upload process to the ICES WGBYC portal.

Sampling scheme identifier: HSF-1 (SelfAtSea)

MS: LVA

Region: North Sea and Eastern Arctic

Sampling scheme identifier: HSF1 (SelfAtSea)

Sampling scheme type: Commercial fishing trip

Observation type: SelfAtSea

Time period of validity: 01.01.2026 - 31.12.2027

Short description (max 100 words):
According to the data collection requirements and thresholds set out in the EU's multiannual data collection program, a MS must collect biological data if the total annual landings from a stock exceed 200 tons. Given the fishing activity in the North Atlantic with shrimp trawls in recent years and the average annual shrimp catch above a certain threshold, it has been decided to collect shrimp length data.

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is vessel*trip.

Population sampled:
The population is relatively small (1-3 vessels), with only one vessel observed in recent years.

Stratification:
Due to very limited number of active fishing vessels in the region, no stratification is used.

Sampling design and protocols

Sampling design description:
Due to the lack of clear requirements from end users, it is planned to collect information from one haul per quarter.

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

Regional coordination:
No regional coordination.

Link to sampling design documentation:
https://bior.lv/wp-content/uploads/2025/10/Data_collection_North_Atlantic_EN.pdf

Design follows international recommendations: N

Link to sampling protocol documentation:
https://bior.lv/wp-content/uploads/2025/10/Data_collection_North_Atlantic_EN.pdf

Protocol follows international recommendations: N

Sampling implementation

Recording of refusal rate:
Recording of refusal rate is not performed.

Monitoring of sampling progress within the sampling year:
The person responsible for monitoring ensures that the number of hauls specified in the contract is observed.

Data capture

Means of data capture:
Special monitoring protocols.

Data capture documentation:
https://bior.lv/wp-content/uploads/2025/10/Data_collection_North_Atlantic_EN.pdf

Quality checks documentation: Y
Collected data is compared with the E-logbooks data.

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available only for institute employees.

International database: N

Quality checks and data validation documentation: Y
Quality checks and data validation is implemented in national databases to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
The methodology of the monitoring does not provide the collection of biological samples.

Sample analysis:
The methodology of the monitoring does not provide the collection of biological samples.

Data processing

Evaluation of data accuracy (bias and precision): N

Editing and imputation methods: N

Quality document associated to a dataset: N

Validation of the final dataset:
Quality checks and data validation is implemented in national databases to avoid input and many logical mistakes and errors.

Related to Table 2.3 and Text Box 2.3 (diadromous data collection

Sampling scheme identifier: LV_SAL_Parr

MS : LVA

Region: Baltic

Sampling scheme identifier: LV_SAL_Parr

Sampling scheme type: Diadromous (scientific)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to annually collect Atlantic salmon parr density data using electrofishing method in all the rivers with great significance for wild salmon reproduction.

Description of the population

Population targeted:
Survey targets Atlantic salmon *Salmo salar* populations in all AU5 Latvian wild, mixed and potential salmon rivers.

Population sampled:
Sampling will cover all populations of the Atlantic salmon *Salmo salar* in AU5 salmon rivers of Latvia.

Stratification:
It is currently considered that each AU5 salmon river in Latvia holds genetically distinct salmon population.

Sampling design and protocols

Sampling design description:
Each year 12 salmon rivers including some tributaries will be monitored (at least 51 electrofishing site) covering the overall distribution of the species. Parr electrofishing sites are established in representative rifle sections in the rivers where salmon spawning takes place. Number of sites sampled depends on river size and quantity of reproduction habitats available in the river. Annually two pass electrofishing will be conducted in monitoring sites from the last decade of July to the end of August. In Salmon index river Salaca and its tributaries three pass electrofishing will be conducted. All the salmon parr will be measured and divided into age groups to calculate 0+ and older parr density. Scale samples will be collected from subsample of five fish from the length classes to verify distribution in age groups.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
If, due to hydrological conditions, in any of the sites it is not possible to carry out sampling in the same time at the season as previously, the sampling is performed later when conditions are suitable. If such conditions do not occur, site is not sampled.

Data capture

Means of data capture:
Stationary (SE 300; KC Denmark) direct current electrofishing devices are used for electrofishing. For length measurements 50 cm measuring board with millimetre increments is used.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available for institute employees.

International database:
Data that is collected through the data calls and is available via ICES SharePoint.

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Sample storage

Storage description:
Scale samples collected are stored in scale books in the Institute's repository, access to samples is organized through staff responsible for age reading. The condition of the scale books is periodically checked.

Sample analysis:
Salmon parr age reading is done in accordance with Atlantic salmon scale reading guidelines https://sfcc.co.uk/assets/files/Atlantic%20Salmon%20Scale%20Reading%20Guidelines.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Biological data are entered and compiled in Excel database format. Limits are defined for the biological parameters (minimum and maximum values). Once the data on the salmon parr are entered, the length measurements of the fish are analysed (independently reviewed by two researchers) and, if necessary, the erroneous entries are corrected in an Excel file and in the electrofishing protocol).

Sampling scheme identifier: LV_TRS_Parr

MS : LVA

Region: Baltic

Sampling scheme identifier: LV_TRS_Parr

Sampling scheme type: Diadromous (scientific)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to annually collect sea trout *Salmo trutta* parr density data using electrofishing method in the rivers with greatest significance for wild sea trout reproduction.

Description of the population

Population targeted:
Survey targets sea trout *Salmo trutta* populations in the rivers of Baltic Sea eastern assessment area (East).

Population sampled:
Sampling will cover 42 sea trout streams from three river basin districts. These rivers currently have the greatest significance for wild sea trout reproduction. Sampling will not take place in rivers where sea trout is found only in certain years.

Stratification:
It is currently considered that each Baltic Sea eastern assessment area (East) sea trout river in Latvia holds genetically distinct sea trout population.

Sampling design and protocols

Sampling design description:
Each year 42 sea trout rivers will be monitored covering the overall distribution of the species (at least 64 electrofishing sites). Parr electrofishing sites are established in representative rifle sections in the rivers where sea trout spawning takes place. Number of sites sampled depends on river size and quantity of reproduction habitats available in the river. Annually two pass electrofishing will be conducted in monitoring sites from the last decade of July to the end of August. All sea trout parr will be measured and divided into age groups to calculate 0+ and older parr density. Scale samples will be collected from subsample of five fish from the length classes to verify distribution in age groups.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
If, due to hydrological conditions, in any of the sites it is not possible to carry out sampling in the same time at the season as previously, the sampling is performed later when conditions are suitable. If such conditions do not occur, site is not sampled.

Data capture

Means of data capture:
Stationary (SE 300; KC Denmark) or backpack-type (EFBP400) direct current electrofishing devices are used for electrofishing. For length measurements 50 cm measuring board with millimetre increments is used.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Data storage

National database:

The name of national database is “BIODATA” (Biological Data Information System) and it’s available for institute employees.

International database:
Data that is collected through the data calls and is available via ICES SharePoint.

Quality checks and data validation documentation:
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Sample storage

Storage description:
Scale samples collected are stored in scale books in the Institute’s repository, access to samples is organized through staff responsible for age reading. The condition of the scale books is periodically checked.

Sample analysis:
Sea trout parr age reading is done in accordance with a guide to the interpretation of sea trout scales https://aquadocs.org/bitstream/handle/1834/25127/112_Elliott.pdf?sequence=1&isAllowed=y

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Biological data are entered and compiled in Excel database format. Limits are defined for the biological parameters (minimum and maximum values). Once the data on the salmon parr are entered, the length measurements of the fish are analysed (independently reviewed by two researchers) and, if necessary, the erroneous entries are corrected in an Excel file and in the electrofishing protocol).

Sampling scheme identifier: LV_SAL_Smolt

MS : LVA

Region: Baltic

Sampling scheme identifier: LV_SAL_Smolt

Sampling scheme type: Diadromous (scientific)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to annually estimate Atlantic salmon smolt production in Latvian salmon index river Salaca and in one data limited Latvian salmon river using partial smolt trap and mark recapture method.

Description of the population

Population targeted:
Survey targets wild Atlantic salmon populations in the Salaca and data limited small salmon rivers.

Population sampled:
Wild Atlantic salmon populations in Salaca and data limited small salmon.

Stratification: NA

Sampling design and protocols

Sampling design description:
The wild salmon smolt production in the Salaca River has been monitored since 1964 using smolt trap. Salaca is most productive wild salmon river in Latvia and has index river status. Similar sampling each year will be initiated in one data limited Latvian salmon river – wild salmon river Vitrupe, Pēterupe, Irbe, Užava, Saka or potential salmon river Aģe (the choice of the river may be influenced by hydrological conditions). Every year the trap in the Salaca and one data limited salmon river will be installed in the end of April-beginning of May, when the water temperature reaches 6-8ºC. Taking into account that the smolt trap covers only a part of the river, in order to evaluate the efficiency (catchability) of the trap during the counting period, a sample group of caught salmon are marked with polyethylene Streamer tags with unique numbering or visible implant elastomer (VIE) tags. Tagged salmon are released approximately 3 km above the smolt trap. Tag recoveries allow calculations of the total number of smolts that have migrated to the sea in the given year. For all the salmon caught smoltification stage is assessed. All salmon smolts are measured to the fork length. A sample of scales is collected from every fifth salmon and stored in the scale book for age reading, and photo fixation is performed for subsample of smolts.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
If, due to hydrological or weather conditions it is not possible to carry out sampling, data interpolation is used to estimate number of smolt in-between days when sampling was performed. This method is also used, to have more accurate estimate, if a large amount of smolts is recorded in the first days of the counting, which indicates that the counting was started a little late and migration was already started.

Data capture

Means of data capture:
Salmon smolts are counted using a specialized smolt trap. The length of the fyke net wings and the opening of the wings are 20 m. Mesh size in the cod end 10-24 mm. For trap efficiency estimates smolts are marked with Streamer tags or VIE tags. For length measurements 50 cm measuring board with millimetre increments is used. The data is entered in a special field protocol. The water temperature is measured with a YSI multi-parameter probe.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Data storage

National database:
The name of national database is “BIODATA” (Biological Data Information System) and it’s available for institute employees.

International database:
Data that is collected through the data calls and is available via ICES SharePoint.

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Sample storage

Storage description:
Scale samples collected are stored in scale books in the Institute's repository, access to samples is organized through staff responsible for age reading. The condition of the scale books is periodically checked.

Sample analysis:
Salmon smolt age reading is done in accordance with Atlantic salmon scale reading guidelines https://sfcc.co.uk/assets/files/Atlantic%20Salmon%20Scale%20Reading%20Guidelines.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: LV_TRS_Smolt

MS : LVA

Region: Baltic

Sampling scheme identifier: LV_TRS_Smolt

Sampling scheme type: Diadromous (scientific)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to annually estimate sea trout smolt production in Salaca and in one data limited Latvian river using partial smolt trap and mark recapture method.

Description of the population

Population targeted:
Survey targets wild sea trout populations in Salaca and data limited sea trout rivers.

Population sampled:
Wild sea trout populations in Salaca and data limited sea trout rivers.

Stratification: NA

Sampling design and protocols

Sampling design description:
The wild sea trout smolt production in the Salaca River has been monitored since 1964 using smolt trap. Similar sampling will be initiated each year in one data limited sea trout river basin - Vitrupe, Pēterupe, Irbe, Užava,

Saka or Aģe (the choice of the river may be influenced by hydrological conditions). Every year the trap will be installed in the end of April-beginning of May, when the water temperature reaches 6-8ºC. Taking into account that the smolt trap covers only a part of the river, in order to evaluate the efficiency (catchability) of the trap during the counting period, a sample group of caught sea trout are marked with polyethylene Streamer tags with unique numbering or visible implant elastomer (VIE) tags. Tagged sea trout are released approximately 3 km above the smolt trap. Tag recoveries allow calculations of the total number of smolts that have migrated to the sea in the given year. For all the sea trout caught smoltification stage is assessed. All sea trout smolts are measured to the fork length. A sample of scales is collected from every fifth sea trout smolt and stored in the scale book for age reading, and photo fixation is performed for subsample of smolts.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
If, due to hydrological or weather conditions it is not possible to carry out sampling, data interpolation is used to estimate numbers of smolt in-between days when sampling was performed. This method is also used, to have more accurate estimate, if a large amount of smolts is recorded in the first days of the counting, which indicates that the counting was started a little late and migration was already started.

Data capture

Means of data capture:
Sea trout smolts in Salaca River are counted using a specialized smolt trap. The length of the fyke net wings and the opening of the wings are 20m. Mesh size in the cod-end 10-24mm. For trap efficiency estimates smolts are marked with Streamer tags or VIE tags. For length measurements 50cm measuring board with millimetre increments is used. The data is entered in a special field protocol. The water temperature is measured with a YSI multi-parameter probe.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Data storage

National database:
The name of national database is “BIODATA” (Biological Data Information System) and it’s available for institute employees.

International database:
Data that is collected through the data calls and is available via ICES SharePoint.

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_tr

utta_populations.pdf

Sample storage

Storage description:
Scale samples collected are stored in scale books in the Institute’s repository, access to samples is organized through staff responsible for age reading. The condition of the scale books is periodically checked.

Sample analysis:
Sea trout smolt age reading is done in accordance with a guide to the interpretation of sea trout scales https://aquadocs.org/bitstream/handle/1834/25127/112_Elliott.pdf?sequence=1&isAllowed=y

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: LV_SAL_Ad

MS : LVA

Region: Baltic

Sampling scheme identifier: LV_SAL_Ad

Sampling scheme type: Diadromous (scientific)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to annually estimate Atlantic salmon ascending spawners in Latvian salmon index river Salaca using automatic fish counter VAKI Riverwatcher CS. Data will be used in population full life cycle analysis.

Description of the population

Population targeted:
Survey targets wild Atlantic salmon population in Salaca river.

Population sampled:
Wild Atlantic salmon population in Salaca River.

Stratification: NA

Sampling design and protocols

Sampling design description:
Salaca is most productive wild salmon river in Latvia and has index river status. For ascending spawner count every year at the beginning of July in the river Salaca fencing weir type structure with VAKI Riverwatcher automatic fish counter is installed. All salmon adults ascending through the scanner and photo tunnel are automatically recorded, providing information on species, sex, size and total number. Continuous survey of spawning migration is carried out until the end of November. The ending date of the survey depends on the hydrological conditions. At least once a week, records should be downloaded and backed up to external storage.

Each record is reviewed and verified by an employee of the Institute.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
If, due to hydrological or weather conditions it is not possible to install the fencing weir type structure with VAKI Riverwatcher in the beginning of July, it should be done until early September (before migration intensifies) when conditions allow it to still cover the migration peak.

Data capture

Means of data capture:
Fencing weir type structure with VAKI Riverwatcher CS automatic fish counter equipped scanner and photo tunnel is used to count ascending salmon adults. Winari software is used to analyse data from the counter.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Data storage

National database: NA

International database: NA

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Sample storage

Storage description: NA

Sample analysis: NA

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_tr

utta_populations.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Each record of automatic counter is reviewed and verified by an employee of the Institute.

Sampling scheme identifier: LV_TRS_Ad

MS : LVA

Region: Baltic

Sampling scheme identifier: LV_TRS_Ad

Sampling scheme type: Diadromous (scientific)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to annually estimate Sea trout ascending spawners in Salaca River basin using automatic fish counter VAKI Riverwatcher CS. Data will be used in population full life cycle analysis.

Description of the population

Population targeted:
Survey targets wild sea trout populations of Salaca River basin.

Population sampled:
Wild sea trout populations in Salaca River basin.

Stratification: NA

Sampling design and protocols

Sampling design description:
For ascending spawner count every year at the beginning of July in the river Salaca fencing weir type structure with VAKI Riverwatcher automatic fish counter is installed. All sea trout adults ascending through the scanner and photo tunnel are automatically recorded, providing information on species, sex, size and total number. Continuous survey of spawning migration is carried out until the end of November. The ending date of the survey depends on the hydrological conditions. At least once a week, records should be downloaded and backed up to external storage. Each record is reviewed and verified by an employee of the Institute.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
If, due to hydrological or weather conditions it is not possible to install the fencing weir type structure with VAKI Riverwatcher in the beginning of July, it should be done until early September (before migration intensifies) when conditions allow it to still cover the migration peak.

Data capture

Means of data capture:
Fencing weir type structure with VAKI Riverwatcher CS automatic fish counter equipped scanner and photo tunnel is used to count ascending sea trout adults. Winari software is used to analyse data from the counter.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Data storage

National database: NA

International database: NA

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Sample storage

Storage description: NA

Sample analysis: NA

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Each record of automatic counter is reviewed and verified by an employee of the Institute.

Sampling scheme identifier: LVriverY

MS : LVA

Region: Baltic

Sampling scheme identifier: LVriverY

Sampling scheme type: Diadromous (scientific)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to collect length, weight and yellow eel abundance data from LV_Latv EMU rivers using electrofishing method.

Description of the population

Population targeted:
Survey targets yellow eels in LV_Latv EMU rivers.

Population sampled:
Yellow eels in LV_Latv EMU rivers with no migration obstacles where restocking was carried out.

Stratification: NA

Sampling design and protocols

Sampling design description:
Each year 20 sites are sampled in the rivers with no downstream migration obstacles for eel. For sampling electrofishing method is used. Electrofishing sites are established in representative river sections - mostly streams with moderately dense to dense vegetation and coarse substrate. One pass electrofishing is conducted in monitoring sites from June to the end of August. All yellow eels caught are measured, and density of individuals per area unit is calculated. Two eels from length group are collected for detailed analyses (length, weight, sex, eye diameter, length of pectoral fin and presence of *Anguillicola crassus* in swimming bladder) and otolith extraction for age reading.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Protocol follows 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:
Stationary direct current electrofishing device (SE 300 or KC Denmark) is used for electrofishing. For length measurements measuring board with millimetre increments is used and electronic scales for weight measurements. Eye diameter and pectoral fin length is measured with electronic calliper. Otolith thin slices for age reading are prepared with Accutom 100 cut-off machine from Struers.

Data capture documentation:
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Data storage

National database: NA

International database: NA

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Sample storage

Storage description:
Otolith samples collected are stored in Ziplock bags (with accompanying biological information) in the Institute's repository until preparation of thin slices for age reading. Access to samples is organized through

staff responsible for age reading.

Sample analysis:
Eel age reading is done in accordance with a manual for the ageing of eel:
https://doi.org/10.17895/ices.pub.19280858.v1
Eel maturity is determined according to method described in *Durif et al* 2009

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset and determined age is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: LVlakeY

MS : LVA

Region: Baltic

Sampling scheme identifier: LVlakeY

Sampling scheme type: Diadromous (scientific)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to collect length, weight and yellow eel abundance data from LV_Latv EMU lakes using electrofishing method.

Description of the population

Population targeted:
Survey targets yellow eels in LV_Latv EMU lake.

Population sampled:
Yellow eels in LV_Latv EMU lakes with no migration obstacles where restocking was carried out.

Stratification: NA

Sampling design and protocols

Sampling design description:
Each year 7 lakes with no downstream migration obstacles for eel are sampled (two at least 200 m long transects in each lake). For sampling electrofishing method is used. Electrofishing sites are established in the coastal zone with vegetation and depth no deeper than 1 m. Monitoring is conducted from June to the end of August. All yellow eels caught are measured, and density of individuals per area unit is calculated. Two eels from length group are collected for detailed analyses (length, weight, sex, eye diameter, length of pectoral fin and presence of *Anguillicola crassus* in swimming bladder) and otolith extraction for age reading.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-

content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Protocol follows 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:
Sampling transects are electrofished using stationary direct current electrofishing device (powered by generator) on the boat. For length measurements measuring board with millimetre increments is used and electronic scales for weight measurements. Eye diameter and pectoral fin length is measured with electronic caliper. Otolith thin slices for age reading are prepared with Accutom 100 cut-off machine from Struers.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Data storage

National database: NA

International database: NA

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Sample storage

Storage description:
Otolith samples collected are stored in Ziplock bags (with accompanying biological information) in the Institute's repository until preparation of thin slices for age reading. Access to samples is organized through staff responsible for age reading.

Sample analysis:
Eel age reading is done in accordance with a manual for the ageing of eel:
https://doi.org/10.17895/ices.pub.19280858.v1
Eel maturity is determined according to method described in *Durif et al* 2009

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset and determined age is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: DaugY

MS : LVA

Region: Baltic

Sampling scheme identifier: DaugY

Sampling scheme type: Diadromous (scientific)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to collect length, weight and yellow eel abundance data from four scientific fyke nets in Daugava River.

Description of the population

Population targeted:
Survey targets yellow eel in Daugava River basin.

Population sampled:
Yellow eel in Daugava River basin.

Stratification: NA

Sampling design and protocols

Sampling design description:
In the Daugava estuary area, in the period from May to November, four small-sized (mesh size 8 - 10mm) fyke nets are installed in one line for registration of yellow eels. The total number of fishing days are recorded. All eels caught are kept alive in a cage until tagging and biological sampling procedure. Total length, weight, length of pectoral fin, eye diameter is measured, to determine the maturity according to *Durif et al*. 2009.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Protocol follows 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:
Four small-sized (mesh size 8-10mm) fyke nets are used for collecting eel samples. For length measurements measuring board with millimetre increments is used and electronic scales for weight measurements. Eye diameter and pectoral fin length is measured with electronic caliper.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf **Quality checks documentation:** Y https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf
Data storage
National database: NA **International database:** Data that is collected through the data calls and is available via ICES SharePoint. **Quality checks and data validation documentation:** https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdfhttps://bior.lv/sites/default/files/inline-files/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf
Sample storage
Storage description: NA **Sample analysis:** NA
Data processing
Evaluation of data accuracy (bias and precision): Y https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf **Editing and imputation methods: Y** https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf **Quality document associated to a dataset:** NA **Validation of the final dataset:** Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: DaugS

MS : LVA
Region: Baltic
Sampling scheme identifier: DaugS
Sampling scheme type: Diadromous (scientific)
Observation type: Self water body
Time period of validity: 01.01.2025 - 31.12.2027
Short description (max 100 words): Sampling scheme aiming to collect length, weight and silver eel escapement data from four scientific fyke nets in Daugava River.
Description of the population
Population targeted: Survey targets silver eel in Daugava River basin. **Population sampled:** Silver eel in Daugava River basin.

Stratification: NA

Sampling design and protocols

Sampling design description:
In the Daugava estuary area, in the period from May to November, four small-sized (mesh size 8 - 10 mm) fyke nets are installed in one line for registration of silver eel escaping to the Gulf of Riga. The total number of fishing days are recorded. All eels caught are kept alive in a cage until tagging and biological sampling procedure. Total length, weight, length of pectoral fin, eye diameter is measured, to determine the silvering stage according to *Durif et al.* 2009.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Protocol follows 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:
Four small-sized (mesh size 8-10mm) fyke nets are used for collecting eel samples. For length measurements measuring board with millimetre increments is used and electronic scales for weight measurements. Eye diameter and pectoral fin length is measured with electronic caliper.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Data storage

National database: NA

International database: Data that is collected through the data calls and is available via ICES SharePoint.

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Sample storage

Storage description: NA

Sample analysis: NA

Data processing

Evaluation of data accuracy (bias and precision): Y

https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: LilY

MS : LVA

Region: Baltic

Sampling scheme identifier: LilY

Sampling scheme type: Diadromous (scientific)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to collect length, weight and yellow eel abundance data from scientific fyke net in Lilaste River that connects Lake Lilastes with the Gulf of Riga.

Description of the population

Population targeted:
Survey targets yellow eel in Lilaste River basin.

Population sampled:
Yellow eel in Lilaste River basin.

Stratification: NA

Sampling design and protocols

Sampling design description:
In the Lilaste River, a full inventory of migrating yellow eels is carried out in the period from April to November by installing one small mash size (14 - 20 mm) fyke net with wings in the width of the Lilaste River. The total number of fishing days are recorded. All eels caught are kept alive in a cage until tagging and biological sampling procedure. Total length, weight, length of pectoral fin, eye diameter is measured, to determine the maturity according to *Durif et al.* 2009.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Protocol follows 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: One small mash size (8-10mm) fyke net is used for collecting eel samples. For length measurements measuring board with millimetre increments is used and electronic scales for weight measurements. Eye diameter and pectoral fin length is measured with electronic caliper. **Data capture documentation:** https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf **Quality checks documentation:** Y https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf
Data storage
National database: NA **International database:** Data that is collected through the data calls and is available via ICES SharePoint. **Quality checks and data validation documentation:** https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf
Sample storage
Storage description: NA **Sample analysis:** NA
Data processing
Evaluation of data accuracy (bias and precision): Y https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf **Editing and imputation methods: Y** https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf **Quality document associated to a dataset:** NA **Validation of the final dataset:** Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: LilS

MS : LVA
Region: Baltic
Sampling scheme identifier: LilS
Sampling scheme type: Diadromous (scientific)
Observation type: Self water body
Time period of validity: 01.01.2025 - 31.12.2027
Short description (max 100 words): Sampling scheme aiming to collect length, weight and silver eel escapement data from scientific fyke net in

Lilaste River that connects Lake Lilastes with the Gulf of Riga.

Description of the population

Population targeted:
Survey targets silver eel in Lilaste River basin.

Population sampled: Silver eel in Lilaste River basin.

Stratification: NA

Sampling design and protocols

Sampling design description:
In the Lilaste River, a full inventory of escaping silver eels is carried out in the period from April to November by installing one small mash size (14-20mm) fyke net with wings in the width of the Lilaste River. The total number of fishing days are recorded. All eels caught are kept alive in a cage until tagging and biological sampling procedure. Total length, weight, length of pectoral fin, eye diameter is measured, to determine the maturity according to *Durif et al.* 2009.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Protocol follows 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:
One small mash size (8-10mm) fyke net is used for collecting eel samples. For length measurements measuring board with millimetre increments is used and electronic scales for weight measurements. Eye diameter and pectoral fin length is measured with electronic caliper.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Data storage

National database: NA

International database: Data that is collected through the data calls and is available via ICES SharePoint.

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Sample storage

Storage description: NA

Sample analysis: NA

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: LV_EEL_COM

MS : LVA

Region: Baltic

Sampling scheme identifier: LV_EEL_COM

Sampling scheme type: Diadromous (commercial)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to gather European eel length, weight, sex ratio and age structure data from commercial fisheries in Latvian inland waters.

Description of the population

Population targeted:
The survey targets European eel population in Latvian inland waters.

Population sampled:
European eel population in Latvian inland waters.

Stratification: NA

Sampling design and protocols

Sampling design description:
Biological data are collected opportunistically as landings in commercial eel fisheries are low and it is not possible to plan the number of samples. Otolith samples are collected in scale books for age determination. In the scale books total length, weight, length of pectoral fin, eye diameter is measured, to determine the silvering stage according to *Durif et al. 2009*. Also, sex and presence of *Anguillicola crassus* in swimming bladder is registered.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Fishermen submit scale books containing otoliths and biological data throughout the fishing season. Institute staff can control the amount of biological data and samples collected

Data capture

Means of data capture:
For length measurements, a measuring board with millimeter increments is used and electronic scales for weight measurements. The eye diameter and pectoral fin length are measured with a digital caliper. Otolith thin-slices for age reading are prepared with Accutom 100 cut-off machine from Struers.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available for institute employees.

International database: NA

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Sample storage

Storage description:
Otolith samples collected are stored in Ziplock bags (with accompanying biological information) in the Institute's repository until preparation of thin-slices for age reading. Thin-slices of otoliths after age reading are also stored in Ziplock bags with accompanying biological information. Access to samples is organized through staff responsible for age reading.

Sample analysis: Eel age reading is done in accordance with a manual for the ageing of eel:
https://doi.org/10.17895/ices.pub.19280858.v1
Eel silvering stage is determined according to method described in *Durif et al 2009.*

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_the_assessment_of_Anguilla_anguilla_stock.pdf

Quality document associated to a dataset: NA

Validation of the final dataset: Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset and determined age is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: LV_SAL_COM

MS : LVA

Region: Baltic

Sampling scheme identifier: LV_SAL_COM

Sampling scheme type: Diadromous (commercial)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to gather Atlantic salmon length, weight, sex ratio and age structure data from commercial fisheries in Daugava River.

Description of the population

Population targeted:
The survey targets Atlantic salmon population in Daugava River.

Population sampled:
Atlantic salmon population in Daugava River.

Stratification: NA

Sampling design and protocols

Sampling design description:
As landings are low, fishermen are asked to collect biological data from all salmon caught. Scale samples are collected in scale books for age determination. In the scale books length, weight, sex and origin (adipose fin clipped or fish with adipose fin) is registered..

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Fishermen submit scale books containing biological data throughout the fishing season. Institute staff can control the amount of biological data and samples collected.

Data capture

Means of data capture:
For length measurements measuring board with millimeter increments is used and electronic scales for weight measurements.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_tr

utta_populations.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Data storage

National database:
The name of national database is "BIODATA" (Biological Data Information System) and it's available for institute employees.

International database: NA

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Sample storage

Storage description:
Scale samples collected are stored in scale books in the Institute's repository, access to samples is organized through staff responsible for age reading. The condition of the scale books is periodically checked.

Sample analysis:
Salmon age reading is done in accordance with Atlantic salmon scale reading guidelines https://sfcc.co.uk/assets/files/Atlantic%20Salmon%20Scale%20Reading%20Guidelines.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: LV_TRS_COM

MS : LVA

Region: Baltic

Sampling scheme identifier: LV_TRS_COM

Sampling scheme type: Diadromous (commercial)

Observation type: Self water body

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to gather sea trout length, weight, sex ratio and age structure data from commercial fisheries in Daugava River.

Description of the population

Population targeted:

The survey targets sea trout population in Daugava River.

Population sampled:
Sea trout population in Daugava River.

Stratification: NA

Sampling design and protocols

Sampling design description:
As landings are low, fishermen are asked to collect biological data from all sea trout caught. Scale samples are collected in scale books for age determination. In the scale books length, weight, sex and origin (adipose fin clipped or fish with adipose fin) is registered..

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Fishermen submit scale books containing biological data throughout the fishing season. Institute staff can control the amount of biological data and samples collected.

Data capture

Means of data capture:
For length measurements, a measuring board with millimeter increments is used and electronic scales for weight measurements.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Data storage

National database:
The name of the national database is "BIODATA" (Biological Data Information System) and it's available for institute employees.

International database: NA

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Sample storage

Storage description:
Scale samples collected are stored in scale books in the Institute's repository, access to samples is organized through staff responsible for age reading. The condition of the scale books is periodically checked.

Sample analysis:
Sea trout age reading is done in accordance with a guide to the interpretation of sea trout scales https://aquadocs.org/bitstream/handle/1834/25127/112_Elliott.pdf?sequence=1&isAllowed=y

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: LV_FW_SAL_REC

MS : LVA

Region: Baltic

Sampling scheme identifier: LV_FW_SAL_REC

Sampling scheme type: Diadromous (recreational)

Observation type: SelfOnShore

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to gather data on number of salmon kelts caught in the salmon rivers where licensed angling is organized. In Salaca River additional data on length, sex ratio, origin (wild or hatchery) and age structure are gathered by local NGO.

Description of the population

Population targeted:
Survey targets salmon populations in Latvian AU5 salmon rivers.

Population sampled:
Salmon populations in Salaca River.

Stratification: NA

Sampling design and protocols

Sampling design description:
Anglers are allowed to catch one salmon per day per one license and must report to organizers each fish. At the end of the year, organizers of licensed angling are reporting to Institute angling data by fish species. One NGO collecting additional data: collect scale samples from kelts in scale books for age reading. In the scale books length, sex and origin (adipose fin clipped or fish with adipose fin) is registered.

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

Regional coordination:

Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year: Y
At the end of the year, organizers of licensed angling are reporting to Institute angling data by fish species. One NGO collecting additional data submits scale books at the end of the angling season.

Data capture

Means of data capture:
For length measurements measuring board with millimetre increments is used.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Data storage

National database: The name of the national database is "BIODATA" (Biological Data Information System) and it's available for institute employees.

International database: Available on ICES SharePoint

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Sample storage

Storage description:
Scale samples collected are stored in scale books in the Institute's repository, access to samples is organized through staff responsible for age reading. The condition of the scale books is periodically checked.

Sample analysis:
Salmon age reading is done in accordance with Atlantic salmon scale reading guidelines https://sfcc.co.uk/assets/files/Atlantic%20Salmon%20Scale%20Reading%20Guidelines.pdf

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: LV_FW_TRS_REC

MS : LVA

Region: Baltic

Sampling scheme identifier: LV_FW_TRS_REC

Sampling scheme type: Diadromous (recreational)

Observation type: SelfOnShore

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
Sampling scheme aiming to gather data on number of sea trout kelts and skippers caught in the rivers where licensed angling for salmon and sea trout is organised. In Salaca River additional data on length, sex ratio, origin (wild or hatchery) and age structure are gathered by local NGO.

Description of the population

Population targeted:
Survey targets sea trout populations in the rivers of Baltic Sea eastern assessment area (East).

Population sampled:
Sea trout populations in Salaca River basins.

Stratification: NA

Sampling design and protocols

Sampling design description:
Anglers are allowed to catch one sea trout per day per one license and must report to organizers each fish. At the end of the year, organizers of licensed angling are reporting to Institute angling data by fish species. One NGO collecting additional data: collect scale samples from kelts and skippers in scale books for age reading. In the scale books length, sex and origin (adipose fin clipped or fish with adipose fin) is registered.

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

Regional coordination:
Sampling design and protocols were not developed as part of a regional or multi-lateral agreement.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Design follows international recommendations: Y

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year: Y
At the end of the year, organizers of licensed angling are reporting to Institute angling data by fish species. One NGO collecting additional data submits scale books at the end of the angling season.

Data capture

Means of data capture:

For length measurements measuring board with millimetre increments is used.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality checks documentation: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Data storage

National database: The name of the national database is "BIODATA" (Biological Data Information System) and it's available for institute employees.

International database: Available on ICES SharePoint

Quality checks and data validation documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Sample storage

Storage description:
Scale samples collected are stored in scale books in the Institute's repository, access to samples is organized through staff responsible for age reading. The condition of the scale books is periodically checked.

Sample analysis:
Sea trout age reading is done in accordance with sea trout scale reading guidelines: https://aquadocs.org/bitstream/handle/1834/25127/112_Elliott.pdf?sequence=1&isAllowed=y

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Editing and imputation methods: Y
https://bior.lv/wp-content/uploads/2025/03/Guidelines_for_collecting_biological_data_for_assessing_Salmo_salar_and_Salmo_trutta_populations.pdf

Quality document associated to a dataset: NA

Validation of the final dataset:
Limits are defined for the biological parameters (minimum and maximum values) in Excel database. Before being provided to the end user the dataset is independently reviewed by two researchers and, if necessary, the erroneous entries are corrected.

Sampling scheme identifier: BAL_RECR (SelfAtSea)

MS : LVA

Region: Baltic

Sampling scheme identifier: BAL_RECR (SelfAtSea)

Sampling scheme type: Biological parameters specific

Observation type: SelfAtSea

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
This sampling scheme aims to register detailed catch and bycatch information in trolling which is the most important segment of salmon and trout recreational fishery in the Baltic Sea. The information is collected by a contracted NGO and is representing most of the Latvian trolling activities in SD 26 and 28.

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is vessel*trip.

Population sampled:
Landings, bycatch and discards.

Stratification: Sampling is covering the main Latvian trolling area in SD 26 and 28.

Sampling design and protocols

Sampling design description:
Samples are collected according to fishing activities which is yearly specific. Due to the small boat sizes involved in trolling (<10m) number of fishing trips is heavily impacted by weather conditions. Sampling design is covering contracted NGO fishermen representing most trolling activities in Latvia. Additional information about other anglers outside the NGO, the number of boats and their effort are also obtained from contracted NGO. For salmon and sea trout the presence of adipose fin is registered to distinguish wild and reared specimens and scale samples collected for age reading. Prior to release, genetic samples are collected from all the wild salmon caught to determine their affiliation to specific salmon rivers.

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

Regional coordination:
This sampling scheme is not regionally coordinated.

Link to sampling design documentation: Sampling design documentation is described in guidelines "Collection of Information of Recreational Fishing at Sea": https://bior.lv/wp-content/uploads/2025/03/Collection-of-Information-of-Recreational-Fishing-at-Sea_0.pdf

Design follows international recommendations: N
Samples are collected according to special agreements with the contracted NGO covering the main fishing area and effort.

Link to sampling protocol documentation: Sampling protocol documentation is available in guidelines "Collection of Information of Recreational Fishing at Sea": https://bior.lv/wp-content/uploads/2025/03/Collection-of-Information-of-Recreational-Fishing-at-Sea_0.pdf

Protocol follows international recommendations: N
During the fishing trip information about all fish species and all catch fractions are collected separately (landings, discards). Additionally, information about incidental by-catch (including EPTS) is collected.

Sampling implementation

Recording of refusal rate: N
Sample collection is based on agreement with the contracted NGO.

Monitoring of sampling progress within the sampling year: Y
Sampling progress is checked periodically during the active fishing season.

Data capture

Means of data capture:
For data capture on board measuring board and scales are used.

Data capture documentation: Description of data capture is available in guidelines "Collection of Information of Recreational Fishing at Sea": https://bior.lv/wp-content/uploads/2025/03/Collection-of-Information-of-Recreational-Fishing-at-Sea_0.pdf

Quality checks documentation: Y
Quality check procedure is similar as described in the document "Guidelines for Observers Working on Latvian Fishing Vessels in the Baltic Sea": https://bior.lv/wp-content/uploads/2025/03/Handbook_for_observers_Working_on_Latvian_Fishing_Vessels_in_the_Baltic_Sea_v2.pdf

Data storage

National database: The name of the national database is "BIODATA" (Biological Data Information System) and it's available for institute employees.

International database: NA

Quality checks and data validation documentation: Quality checks and data validation is implemented in the database mentioned above to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
Collected scales are processed and stored in paper envelopes for each specimen. Scales are grouped by years, trips and fish species and stored in specific scales archive permanently.

Sample analysis:
Tissue samples from caudal fin are taken from each salmon and placed in screw cap Eppendorf tubes filled with 96% ethanol. Samples are stored in the freezer until further analysis.

Data processing

Evaluation of data accuracy (bias and precision): Y
https://bior.lv/wp-content/uploads/2025/03/The-assessment-of-precision-levels-for-biological-material-collected-during-commercial-fishing-trips_0.pdf

Editing and imputation methods: Y
During the data entry, biological data are checked for minimal and maximal values. Once the data for the respective trip has been entered, the length & weight relationship is analysed by a linear regression model and Fulton's coefficient. Outliers are marked, re-checked and if necessary, corrected. If data errors are found, original data and outputs, including all relevant databases, are corrected.

Quality document associated to a dataset: N

Validation of the final dataset:
Data from the fishing trip are prepared in national databases format. All data before entering the database have to pass an extensive quality check.

Sampling scheme identifier: BAL_RECR_FLE

MS : LVA

Region: Baltic

Sampling scheme identifier: BAL_RECR_FLE

Sampling scheme type: Biological parameters specific

Observation type: SciObsOnShore

Time period of validity: 01.01.2025 - 31.12.2027

Short description (max 100 words):
This sampling scheme aims to register flounder recreational angling fishing activity to obtain detailed catch and bycatch information from the most popular recreational fishery for Latvian anglers in the open part of Baltic Sea and Irbe Strait (Subdivision 28).
The primary purpose of the survey is to identify a fishing community engaged in flounder angling from the coast in the Baltic Sea open shore of the Baltic Sea. Other species are also investigated to support ecosystem analyses.

Description of the population

Population targeted:
Primary sampling unit for this sampling scheme is site*trip.

Population sampled:
Landings, bycatch and EPTS.

Stratification:
Sampling is covering the most popular Latvian angling area in Baltic Sea open shore and Irbe Strait in SD 28.

Sampling design and protocols

Sampling design description:
The flounder recreational angling survey will be conducted in September-December. For the survey is selected 10 most popular places along the coastline from the Northern pier of Liepaja to Kolka. Twice per month two

sites (PSU) from the list will be randomly selected by using Excel function "RANDBETWEEN".

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

Regional coordination:
This sampling scheme is not regionally coordinated.

Link to sampling design documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Shore-Based-Flounder-Recreational-Fishing-Survey_0.pdf

Design follows international recommendations:
This sampling scheme is not regionally coordinated.

Link to sampling protocol documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Shore-Based-Flounder-Recreational-Fishing-Survey_0.pdf

Protocol follows international recommendations: N
During the survey information about all fish species and all catch fractions are collected separately (landings and bycatch). Additionally, information about incidental by-catch (including EPTS) is collected.

Sampling implementation

Recording of refusal rate: Y
Information about the refusal rate (individual angler on shoreline) will be collected during the survey.

Monitoring of sampling progress within the sampling year: Y
Sampling progress is checked periodically during the active fishing season.

Data capture

Means of data capture:
For data capture measuring board is used.

Data capture documentation: https://bior.lv/wp-content/uploads/2025/03/Guidelines-for-Shore-Based-Flounder-Recreational-Fishing-Survey_0.pdf

Quality checks documentation: N

Data storage

National database: The name of the national database is "BIODATA" (Biological Data Information System) and it's available for institute employees.

International database: NA

Quality checks and data validation documentation: Quality checks and data validation is implemented in the database mentioned above to avoid input and many logical mistakes and errors.

Sample storage

Storage description:
No samples are stored from this survey.

Sample analysis:
All fishes are measured and immediately returned to the anglers.

Data processing

Evaluation of data accuracy (bias and precision): N

Editing and imputation methods: Y
During the data entry, length information by species is checked for minimal and maximal values.

Quality document associated to a dataset: N

Validation of the final dataset: N

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.

Provide information under each point in all sections.

Please indicate sampling scheme identifier (e.g combination of 'sector' and 'sampling scheme' or 'variables' from the annex table). Each identifier is unique and can be used only once; records with identical scheme identifiers are overwritten in the platform. Do not add any tables others than from the template.

Create a first survey specification record as a reference to the regional WP, add 'RWP ECON' in the 'sector name' field and leave the other fields empty.

Sampling scheme identifier: RWP_ECON 2025-2027

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): RWP ECON
Sampling scheme:
Variables:
Supra region(s):
Survey planning
Survey design and strategy
1. Data sources: **2. Sample sizes:** **3. Survey methods:** **4. Additional information used in the survey strategy:**

Estimation design
1. Calculation method for population estimate: **2. Calculation method for derived data:** **3. Nonresponse handling:**
Error checks
Data storage and documentation
1. Data storage: **2. Documentation:**
Revision
Confidentiality
1. Are procedures for confidential data handling in place and documented? **2. Are protocols to enforce confidentiality between DCF partners in place and documented?** **3. Are protocols to enforce confidentiality with external users in place and documented?** **4. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation**.

Sampling scheme identifier: Fleet (Economic)

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): Socioeconomic data on fisheries
Sampling scheme: Census
Variables: Fleet economic variables from Table 7 of EU MAP Delegated Decision 2021/1167
Supra region(s): All Supra regions
Survey planning
The population is defined as all vessels in the EU Fishing Fleet Register belonging to economically active enterprises engaged in fishing and corresponding to the Statistical Classification of Economic Activities in the European Community, NACE Rev.2, code 03.1. Fisheries data are collected by means of a complete census of economically active sole proprietors, fishing enterprises and fishing farms engaged in commercial fishing and subject to catch limitations and licences.
Survey design and strategy
1. Data sources: The data source is the Central Statistical Bureau of Latvia (CSB) questionnaire statistical form "1-Fishery": https://www.csp.gov.lv/lv/katalogs/parskats-par-zvejniecibu-4 The statistical questionnaire form "1-Fishery" is approved for compulsory completion by the Act of the Cabinet

of Ministers of the Republic of Latvia No. 812 Section 2.71 of 20.12.2016. (MK noteikumi No 812: "Oficiālās statistikas veidlapu paraugu apstiprināšanas un veidlapu aizpildīšanas un iesniegšanas noteikumi" https://likumi.lv/ta/id/287576-oficialas-statistikas-veidlapu-paraugu-apstiprinasanas-un-veidlapu-aizpildisanas-un-iesniegsanas-noteikumi).
The CSB is a direct administrative body under the Ministry of Economics of the Republic of Latvia and acts as the main performer and coordinator of official statistical work in the country. The CSB is responsible for the organisation of statistical work and the authenticity of the data it produces by aggregating the information obtained from respondents.

2. Sample sizes:

The sample size is a complete coverage of the population described in the previous section, as the survey is based on the sampling frame of the census.

3. Survey methods:

The survey method is a web census survey with individual automatically generated access to the online questionnaire: https://e.csp.gov.lv/portal/Account/Login?ReturnUrl=%2fportal%2f
However, if required, the questionnaire form could be made available in MS Word format.

4. Additional information used in the survey strategy:

The separate document with supporting information, which contains a full description of the objectives of the survey, the needs of enterprises for data provision, the legal basis, the use of administrative data, the survey sample, data publications and the main users of the data, is available and can be downloaded from the CSB website at the bottom: "Apsekojuma mērķis, tiesiskais pamatojums un iegūto datu izmantošana" (https://www.csp.gov.lv/lv/media/6270/download?attachment). Telephone numbers for consultation on the completion of the questionnaire form are given at the bottom of the web page.

Estimation design

1. Calculation method for population estimate:

The survey is based on the census sampling frame. No additional estimation is required.

2. Calculation method for derived data:

If there is a need for estimation, a variety of methods can be applied depending on the specific case and described (as a deviation) after the data collection has been carried out.

3. Nonresponse handling:

Non-response is managed by sending reminders.

Error checks

The data collected are systematically checked and potential errors are eliminated. When the data from the submitted surveys are entered into the Integrated Statistical Data Management System (ISDMS), the logical and arithmetic verification of the primary data is carried out according to the validation algorithms.
If an indicator is missing or incorrect in the full survey, the statistician contacts the respondent and makes the necessary corrections.

Data storage and documentation

1. Data storage:

All data collected are stored in the Integrated Statistical Data Management IT System (ISDMS) CASIS. This system was developed in 2010 to harmonise data collection, processing and storage in the CSB. The interviews are based on the web and mobile versions of CASIS CAWI.

2. Documentation:

The additional methodological documentation for the 1-Fishery survey can be found at the following link: https://stat.gov.lv/en/metadata/2682-fishery-and-aquaculture
The additional methodological documentation for the Quality Assurance Framework can be found at the following link: https://www.csp.gov.lv/en/quality-assurance-framework

Revision

The methodology used and the published data are final and not subject to revision. Data revisions may occur during the survey period if the respondent updates the data for one of the previous periods of the reference year, but not more frequently than once per quarter.

Confidentiality

1. Are procedures for confidential data handling in place and documented?
In enterprise statistics cells are defined as confidential according to the threshold rule and the dominance rule (n,k).
2. Are protocols to enforce confidentiality between DCF partners in place and documented?
Cells are safe for publication if at least 4 respondents (n=4) contributed, and the proportion of a single contributor is less than 80% (1.80) or the proportion of two contributors is less than 90% (2.90).
3. Are protocols to enforce confidentiality with external users in place and documented?
https://www.csp.gov.lv/en/confidentiality-production-official-statistics
4. **Are there any issues with publication of data due to confidentiality reasons? Provide an explanation**.
The confidentiality of information provided by respondents is protected by Section 17 of the Law on Statistics, which defines the rights and obligations of the Central Statistical Bureau of Latvia and other state bodies producing official statistics: https://likumi.lv/ta/en/en/id/274749-statistics-law

Sampling scheme identifier: Aquaculture (Economic)

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): RWP ECON 2025-2027

Sampling scheme: Census

Variables: Economic variables in the aquaculture sector from Table 10 of EU MAP Delegated Decision 2021/1167

Supra region(s): Not applicable

Survey planning

The population is all economically active enterprises engaged in aquaculture and corresponding to the Statistical Classification of Economic Activities in the European Community, NACE Rev. 2, code 03.2. Data on aquaculture are collected through a complete census of aquaculture enterprises approved by the Food and Veterinary Service.

Survey design and strategy

1. Data sources:
The data source is the Central Statistical Bureau of Latvia (CSB) questionnaire statistical form "1-Aquaculture": https://www.csp.gov.lv/lv/katalogs/parskats-par-akvakulturu-2023-gada
The statistical questionnaire form "1-Aquaculture " is approved for compulsory completion by the Act of the Cabinet of Ministers of the Republic of Latvia No. 812 Section 2.1 of 20.12.2016. (MK noteikumi No 812: "Oficiālās statistikas veidlapu paraugu apstiprināšanas un veidlapu aizpildīšanas un iesniegšanas noteikumi" https://likumi.lv/ta/id/287576-oficialas-statistikas-veidlapu-paraugu-apstiprinasanas-un-veidlapu-aizpildisanas-un-iesniegsanas-noteikumi).
The CSB is a direct administrative body under the Ministry of Economics of the Republic of Latvia and acts as the main performer and coordinator of official statistical work in the country. The CSB is responsible for the organisation of statistical work and the authenticity of the data it produces by aggregating the information obtained from respondents.

2. Sample sizes:
The sample size is a complete coverage of the population described in the previous section, as the survey is based on the sampling frame of the census.
3. Survey methods:
The survey method is a web census survey with individual automatically generated access to the online questionnaire: https://e.csp.gov.lv/portal/Account/Login?ReturnUrl=%2fportal%2f
However, if required, the questionnaire form could be made available in MS Word format.
4. Additional information used in the survey strategy:
The separate document with supporting information, which contains a full description of the objectives of the survey, the needs of enterprises for data provision, the legal basis, the use of administrative data, the survey sample, data publications and the main users of the data, is available and can be downloaded from the CSB website at the bottom: "Apsekojuma mērķis, tiesiskais pamatojums un iegūto datu izmantošana" (https://www.csp.gov.lv/lv/media/6606/download?attachment)
Telephone numbers for consultation on the completion of the questionnaire form are given at the bottom of the web page.

Estimation design

1. Calculation method for population estimate:
The survey is based on the census sampling frame. No additional estimation is required.
2. Calculation method for derived data:
If there is a need for estimation, a variety of methods can be applied depending on the specific case and described (as a deviation) after the data collection has been carried out.
3. Nonresponse handling:
Non-response is managed by sending reminders.

Error checks

The data collected are systematically checked and potential errors are eliminated. When the data from the submitted surveys are entered into the Integrated Statistical Data Management System (ISDMS), the logical and arithmetic verification of the primary data is carried out according to the validation algorithms.
If an indicator is missing or incorrect in the full survey, the statistician contacts the respondent and makes the necessary corrections.

Data storage and documentation

1. Data storage:
All data collected are stored in the Integrated Statistical Data Management IT System (ISDMS) CASIS. This system was developed in 2010 to harmonise data collection, processing and storage in the CSB. The interviews are based on the web and mobile versions of CASIS CAWI.
2. Documentation:
The additional methodological documentation for the 1-Fishery survey can be found at the following link: https://stat.gov.lv/en/metadata/2682-fishery-and-aquaculture
The additional methodological documentation for the Quality Assurance Framework can be found at the following link: https://www.csp.gov.lv/en/quality-assurance-framework

Revision

The methodology used as well as the published data are final, and revisions are not applicable.

Confidentiality

1. Are procedures for confidential data handling in place and documented?
In enterprise statistics cells are defined as confidential according to the threshold rule and the dominance rule (n,k).
2. Are protocols to enforce confidentiality between DCF partners in place and documented?
Cells are safe for publication if at least 4 respondents (n=4) contributed, and the proportion of a single contributor is less than 80% (1.80) or the proportion of two contributors is less than 90% (2.90).
3. Are protocols to enforce confidentiality with external users in place and documented?
https://www.csp.gov.lv/en/confidentiality-production-official-statistics
4. **Are there any issues with publication of data due to confidentiality reasons? Provide an explanation**.
The confidentiality of information provided by respondents is protected by Section 17 of the Law on Statistics, which defines the rights and obligations of the Central Statistical Bureau of Latvia and other state bodies producing official statistics: https://likumi.lv/ta/en/en/id/274749-statistics-law

Sampling scheme identifier: Fleet (Social)

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): Fleet (Social)

Sampling scheme: Non-Probability Sample Survey

Variables: Social variables for the fishing sectors from Table 9 of EU MAP Delegated Decision 2021/1167

Supra region(s): All Supra regions

Survey planning

The population is defined as all economically active enterprises engaged in fishing and corresponding to the Statistical Classification of Economic Activities in the European Community, NACE Rev. 2, codes 03.1. and 03.2.
Fisheries data are collected by means of a complete census of economically active sole proprietors, fishing enterprises and fishing farms engaged in commercial fishing and subject to catch limitations and licenses.

Survey design and strategy

5. Data sources:
The data source is a statistical questionnaire developed by fisheries and social experts in cooperation with the leading research and consulting company in Latvia - Kantar.
The Kantar brand in Latvia was established in 1993 and represents one of the world's largest and leading data, knowledge and consulting companies. The company is one of the leading full-service market, social and media research agencies in Latvia, constantly introducing research innovations into its practice (https://www.kantar.lv/kas-mes-esam/darbiba/).
The survey will be conducted by the company selected through the open tender procedure, according to the rules of the Public Procurement Law of the Republic of Latvia (https://likumi.lv/ta/en/en/id/287760-public-procurement-law) and Regulation (EU) 1025/2012 (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32012R1025).
The specifications for the open tender, including a detailed description of how the survey should be conducted

and a questionnaire form, were also developed by Kantar. According to the rules, the company specialising in social research, which has expressed its wish to participate in the task and which can provide the service according to the criteria listed in the specification, should be selected to carry out the survey.

6. Sample sizes:

The sample size is planned to be around 15% of the total population in each sector, as the survey is based on a non-probability sampling design. The strategy for determining the sample size is as follows:

- Stage I: Recruitment of respondents using the short questionnaire "Recruitment of respondents". The duration of the first stage of the survey is 2-3 weeks. The respondents are recruited on different working days and at different working hours to reach the target group as much as possible. Interviewers also provide respondents with a detailed description of the purpose of the social survey and how the information collected will be used after the survey. The minimum number of attempts to reach each contact is 10. As a result, 100% of the companies in each sector are covered and the target group (respondents who agreed to participate in the social survey) is defined.
- Stage II: The link to the online statistical questionnaire for the social survey is provided to the target group of respondents.

7. Survey methods:

The survey method is a web-based non-probability sample survey with personalised, automatically generated access for respondents to the online questionnaire. However, if necessary, the questionnaire form could be provided in MS Word format and sent by e-mail. The survey will be carried out over a period of five weeks using the "Fisheries Workers" questionnaire. The computerised web or postal questionnaires will be available to respondents who agreed to participate in the survey during the first phase (recruitment) in both target groups.

8. Additional information used in the survey strategy:

The auxiliary information, which provides a full description of the objectives of the survey, the needs of the enterprises for the provision of data, the legal basis, the use of the data, the publications and the main users of the data, can be provided on specific request if necessary.

In order to ensure the quality of the survey, interviewers are briefed prior to the survey. The briefing includes a detailed description of the objectives and methods of the survey, as well as the questionnaire form.

Estimation design

4. Calculation method for population estimate:

Estimation is used to increase the survey data from the sample to the total population reported annually by the Central Statistical Bureau (CSB) for official statistics. The calculation is based on the ratio of employees in each sector to the total population.

5. Calculation method for derived data:

The response rate, the coverage achieved, and the updated planned sample size/planned sample rate in % for the data collected, calculated separately for each sector and each variable.

6. Nonresponse handling:

Non-response will be handled by three electronic reminders sent to respondents together with the invitation to participate in the survey if the questionnaires are not completed at the specified stage of the survey.

Error checks

The collected data are systematically checked, and potential errors are eliminated. The logical and arithmetic verification of the primary data is carried out according to the validation algorithms.

If an indicator is missing or incorrect in the full survey, the statistician contacts the respondent and makes the necessary corrections.

The recalculated results for some variables such as “Employment by gender” are cross-checked with the data collected by the Central Statistical Bureau (CSB).

Data storage and documentation

3. Data storage:

All data collected will be stored in the database of the social research company selected through an open tender process.

4. Documentation:

The common methodology recommended by PGECON is taken into account in the collection of social data:

https://datacollection.jrc.ec.europa.eu/documents/d/dcf/eumap_guidance_social

Revision

The methodological revisions related to the structure of the questionnaire can be applied before a new survey is carried out, if such a need exists. The main effort is to make the data collection process clear to respondents from the outset and to avoid frequent methodological changes.

Confidentiality

5. Are procedures for confidential data handling in place and documented?

The data confidentiality of the information provided by respondents is protected by the Section 17 of the Statistics Law (https://likumi.lv/ta/en/en/id/274749-statistics-law). If the data collected is marked as confidential, the information cannot be provided or, in some cases, could be provided in a grouped format where the individual data cannot be identified.

6. Are protocols to enforce confidentiality between DCF partners in place and documented?

NA

7. Are protocols to enforce confidentiality with external users in place and documented?

NA

8. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.

NA

Sampling scheme identifier: Aquaculture (Social)

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): Aquaculture (Social)

Sampling scheme: Non-Probability Sample Survey

Variables: Social variables for the aquaculture sector from Table 9 of EU MAP Delegated Decision 2021/1167

Supra region(s): All Supra regions

Survey planning

The population is defined as all economically active enterprises engaged in aquaculture and corresponding to the Statistical Classification of Economic Activities in the European Community, NACE Rev. 2, codes 03.1. and 03.2.
Data on aquaculture are collected through a complete census of aquaculture enterprises approved by the Food and Veterinary Service.

Survey design and strategy

1. Data sources:

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10. Are protocols to enforce confidentiality between DCF partners in place and documented?

NA

11. Are protocols to enforce confidentiality with external users in place and documented?

NA

12. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.

NA