JOINT EIFAAC/ICES/GFCM WORKING GROUP ON EELS (WGEEL)

VOLUME 7 | ISSUE 99

ICES SCIENTIFIC REPORTS

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ICES INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA
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ISSN number: 2618-1371

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ICES Scientific Reports

Volume 7 | Issue 99

JOINT EIFAAC/ICES/GFCM WORKING GROUP ON EELS (WGEEL)

Recommended format for purpose of citation:

ICES. 2025. Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL).
ICES Scientific Reports. 7:99. 134 pp. https://doi.org/10.17895/ices.pub.30488120

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i Executive summary

The Joint EIFAAC/ICES/GFCM Working Group on Eel (WGEEL) conducts the annual stock assessment for European eel (*Anguilla anguilla*) and reports on new emerging threats and opportunities. WGEEL provides the scientific basis for the ICES advice on fishing opportunities and conservation aspects for the European eel and further addresses requests from EIFAAC and GFCM.

This year, 2025, WGEEL assessed the state of the European eel population and its fisheries, reviewed the implementation of the WKFEA (Workshop on the Future of Eel Advice) roadmap, examined available recruitment data from coastal and marine habitats, reported on new scientific knowledge including developments in the Mediterranean region, agreed on the contents of an information sheet destined to inform stakeholders on the work of WGEEL, and provided information on data needs to be included in EU regional workplans.

After high levels in the late 1970s, European eel recruitment declined dramatically in the 1980s and remains low. Compared to 1960–1979, the recruitment in the "North Sea" index series was 1.3% with a confidence interval (C.I.) of [0.6-3.1%] (final) in 2024 and was 0.7% [0.4-1.1%] (provisional) in 2025. The "Elsewhere Europe" index was 7.2% [4.5-11.5%] (final) in 2024 and (provisional) 12.1% [7.4-19.5%] (provisional) in 2025. The yellow eel recruitment index was 14.3% [5.9-34.3%] in 2024.

The trend of reported commercial landings shows a long-term continuing decline, from a level of around 10 000 t in the 1960s to remaining above 2 000 t (glass eel + yellow eel + silver eel) during the past decade. The commercial glass eel fishery was 57.7 t in 2024 and 56.7 t in 2025. Reported landings from yellow and silver eel commercial fisheries (Y, S, YS) totalled 2 391 t in 2023 and 1 855 t in 2024 (provisional data). Reported recreational landings for yellow and silver eel combined was 76 t in 2024 (20 countries reporting) and no countries reported so far in 2025.

Other tasks carried out during the meeting consisted of defining and describing issues for the upcoming benchmark and clarifying the process of integrating the WGEEL database into the ICES Data Screening Utility (DATSU).

The Mediterranean countries forming the southern limit of the eel's range, is still significantly underrepresented in terms of data compared to the rest of the species distribution. WGEEL notes recent initiatives—such as Croatia's national monitoring project (2023-2026), the GFCM's MedSea4Fish (2023–2025), Lebanon's initiation of an eel monitoring program, and WWF-Türkiye's restoration of Lake Bafa and the Büyük Menderes Delta.

Hydropower remains a key source of mortality; current research focuses on effective screening and fish passage solutions. Regarding health and non-native pressures, the parasite *Anguillicola crassus* is established in Türkiye, Greece, and Croatia, while AngHV-1 persists in the Adriatic. However, a coordinated European eel health monitoring programme is still lacking. Illegal trade enforcement intensified through EUROPOL's Operation LAKE VII (2022/23), seizing ~24 million glass eels. New frameworks propose safe reintroduction protocols to turn enforcement gains into conservation outcomes. Overall, progress in data collection and regional cooperation is evident, but sustaining recovery of the critically endangered European eel requires coordinated, cross-border strategies that integrate science, management, and habitat restoration.

ii Expert group information

Expert group name	Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL)
Expert group cycle	Annual
Year cycle started	2025
Reporting year in cycle	1/1
Chair(s)	Caroline Durif, Norway
	Jan-Dag Pohlmann, Germany
Meeting venue(s) and dates	Online meeting, 08-12 September 2025 (28 participants)
	Rennes, France, hybrid, 29 September – 06 October 2025 (58 participants)



1 Introduction

1.1 Main Tasks

The **Joint EIFAAC/ICES/GFCM Working Group on Eels** (WGEEL), chaired by Caroline Durif, Institute of Marine Research, Norway and Jan-Dag Pohlmann, Thünen Institute, Germany, met in a split meeting from 08-12 September (online) and 29 September – 06 October 2025 (hybrid meeting) in Rennes, France, to address the ToRs in the EG resolution (Annex 1):

The working group used data and information provided in response to the eel data call 2025 (from 21 countries) and 16 country reports submitted by participants (Annex 6). The list of acronyms and glossary of terms used within this document is provided in Annex 2.

1.2 Participants

Fifty-eight experts attended the meeting, representing 21 countries, along with an observer from the European Commission DG MARE and an observer from Queen's University Belfast. A list of the meeting participants is provided in Annex 4.

1.3 ICES Code of Conduct

In 2018, ICES introduced a code of conduct that provides guidelines to its expert groups on identifying and handling actual, potential or perceived conflicts of interest. It further defines the standard for behaviours of experts contributing to ICES science. The aim is to safeguard the reputation of ICES as an impartial knowledge provider by ensuring the credibility, salience, legitimacy, transparency, and accountability in ICES work. Therefore, all contributors to ICES work are required to abide by the ICES Code of Conduct.

At the 2025 WGEEL meeting, one of the chairs raised the ICES Code of Conduct with all attendees. In particular, they were asked if they would identify and disclose an actual, potential, or perceived conflicts of interest as described in the Code of Conduct. One chair-invited participant raised a conflict of interest since his current work is linked to glass eel fishing industry and aquaculture. However, his participation was limited to giving an overview of aquaculture data availability and this did not pose a problem for the participants of WGEEL.

1.4 The European eel: Stock Annex

The Stock Annex was reviewed and updated in 2023 and is due for another revision in 2027 (ICES, 2023, https://doi.org/10.17895/ices.pub.24517486.v1).

1.5 The European eel: life history and reproduction

The life cycle of the European eel is described in detail in the Stock Annex. Mature eels migrate from their continental habitats to breed in the Sargasso Sea and then die. Larval eels drift across the Atlantic Ocean, metamorphosing into glass eel when arriving in continental waters.

The abundance of glass eel arriving in continental waters declined dramatically in the early 1980s to a historical low around 2010 and has not recovered since. The reasons for this decline are uncertain but anthropogenic impacts and oceanic factors are considered to have major impacts on the stock. These will likely affect local production differently throughout the eel's range. For a detailed description of factors affecting the eel stock, see the Stock Annex. In the planning and execution of measures for the recovery, protection, and sustainable use of the European eel, management must therefore account for the diversity of regional conditions.

1.6 Developments in the management framework for European eel

The management framework for the European eel is described in detail in the Stock Annex and reviewed periodically. The last review was in 2023, and in this section, we only report on developments since that date or on items not included therein.

1.6.1 EU Member State waters

Within EU Member State waters, the stock, fisheries, and other anthropogenic impacts are currently managed in accordance with Council Regulation (EC) No 1100/2007, "*establishing measures for the recovery of the stock of European eel*" (so-called 'Eel Regulation'). This regulation sets a framework for the protection and sustainable use of the stock of European eel in EU waters, coastal lagoons, estuaries, and rivers and communicating inland waters of Member States that flow into the seas in ICES Areas 3, 4, 6, 7, 8, 9, or into the Mediterranean Sea. Eel fisheries in EU waters are further regulated in:

- Council Regulation (EU) 2025/202 and Council Regulation (EU) 2025/219, fixing for 'fishing opportunities' (applicable in ICES waters, and the Mediterranean and Black Seas respectively)
- Regulation (EU) 2023/2124 on 'certain provisions for fishing for fishing in the GFCM Agreement area'
- Commission Implementing Decision (EU) No 2018/1986 'Specific Control and Inspection Programme' (amended by Commission Implementing Decision [EU] 2020/1320) and Commission Implementing Decision (EU) 2023/2376).

Other EU legislations and policy documents that have specific relevance to the European eel in the context of ICES are:

- EU Nature Restoration Law: Regulation (EU) 2024/1991
- Technical measures regulation : Regulation (EU) 2019/1241
- EU Marine Action Plan

1.6.2 General Fisheries Commission of the Mediterranean (GFCM) state waters

Between 2020 and 2024, work was undertaken in the Mediterranean region to develop an adaptive management plan for eels under the auspices of the General Fisheries Commission for the Mediterranean (GFCM). In 2023, the GFCM adopted Recommendation GFCM/46/2023/16, establishing a long-term management plan for European eel in the sea.

Recommendation GFCM/47/2024/1 maintains a six-month closure period for commercial fisheries and a ban on recreational fisheries for 2025. Additionally, it restricts commercial fishing activities for glass eels to a two-month period and allows such fishing only under specific conditions. These measures apply to all marine, freshwater and brackish waters of the Mediterranean Sea, including estuaries, coastal lagoons, and transitional waters.

1.6.3 Other international actors

The International Union for the Conservation of Nature (IUCN) listed the European eel as Critically Endangered in 2008 (IUCN, 2024). It was reassessed in both 2013 and 2018, and the status remains unchanged.

HELCOM updated their status assessments of red-listed species in the Baltic Sea (HELCOM 2025). The eel remains listed as Critically Endangered.

The European Eel was listed on Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), in 2014. This requires signatories to agree on cooperative conservation actions among Range States. The last meeting of Range States of the European eel took place in Malmö, Sweden in June 2019, which underlined the need for international cooperation to address the many gaps and challenges in European eel conservation and management. The possibility of a dedicated CMS instrument was discussed, and it was agreed that a 'Single Species Action Plan' (SSAP) would provide the most useful and immediate framework to advance coordinated measures for the conservation of the species. The SSAP aims to find common areas of work across Range States to co-ordinate measures to address threats, harmonise data collection and share knowledge. The fourth meeting of Range States will be held in Malmö, Sweden on 14–15 October 2025, with aim of finalizing the SSAP for approval in 2026.

In 2007, the European eel (*Anguilla anguilla*) was listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This listing came into force in March 2009, and soon after, in December 2010, the European Union (EU) ceased the import and export of European eel. In 2016, it was acknowledged that this export ban had resulted in significant changes in global eel trade with increases in exports of *A. anguilla* from Africa, *A. rostrata* from the Americas, and *A. bicolor* from Southeast Asia, and as such a wider examination of anguillid eels in trade was initiated. Three reports were developed, and multiple technical workshops were held. However, in addition to the on-going issue of illegal harvest and trade, there remained questions relating to the sustainability of these exports. As such in 2022, a resolution – a non-binding document of on-going actions – for anguillid eels was developed, but in early 2025 there was no consensus on the text. Later in the year, the European Union proposed that all species of anguillids be listed in Appendix II due to concerns over the status of the American and Japanese eel, and the fact that it is extremely challenging to tell species of eels in trade apart makes laundering an issue (a look-a-like listing). The genus listing proposal and resolution will be discussed in late 2025.

1.7 Assessment to meet management needs

The European Commission obtains both recurring and *ad hoc* scientific advice from ICES on the state of the eel stock, the management of the fisheries and other anthropogenic factors that impact it, as specified in the administrative agreement between European Commission and ICES for 2022 (ICES and EU, 2022a, b). In support of this advice, ICES is asked to provide the European Commission with estimates of catches, fishing mortality, recruitment and spawning stock, relevant reference points for management, information about the level of confidence in parameters underlying the scientific advice, and the origins and causes of the main uncertainties in the

information available (e.g. data quality, data availability, gaps in methodology and knowledge). 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 (DCF, EU, 2017), requires Member States data, collected through this framework, to be made available to end-users, such as ICES. Further details of the data collection are defined in 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 (EC, 2021a) and Commission Implementing Decision (EU) 2021/1168 of 27 April 2021 establishing the list of mandatory surveys and thresholds as part of the multiannual union programme for the collection and management of data in the fisheries and aquaculture sectors from 2022 (EC, 2021b).

ICES requests information from national representatives to the WGEEL on stock parameters, landings, restocking, and time-series (e.g. recruitment, yellow eel abundance, silver eel escapement).

Since UK exited the EU, UK has signed a memorandum of understanding (MoU) with ICES, effective as of 2021, which recognizes UK obligations to provide relevant data for ICES to undertake stock assessment and provide advice to the UK relating to the North Atlantic and its adjacent seas, including advice on fishing opportunities for the European eel.

Data collection varies considerably between, and sometimes within, countries, depending on management actions taken, anthropogenic impact, and type of assessment procedure. Accordingly, a range of methods may be employed to establish silver eel escapement limits (e.g. the Eel Regulation's ≥ 40% of B_0), management targets for individual rivers, river basins, RBDs, EMUs and nations, and for assessing compliance of current escapement with these limits/targets (e.g. for the Eel Regulation comparing $B_{current}$). These methods require various combinations of data on e.g. landings, recruitment length/age structure, restocking, abundance (as biomass and/or density) or maturity ogives, in order to estimate silver eel biomass, fishing and other anthropogenic mortality rates.

A description of data collection and methods used to establish silver eel escapement and mortality is further detailed in the report on the "technical evaluation of EU member states' progress reports for submission in 2024" (WKEMP4; ICES, 2025).

The ICES Study Group on International Post-Evaluation of Eel (SGIPEE) (ICES, 2010; 2011) and WGEEL (FAO and ICES, 2010; 2011) derived a framework for *post-hoc* combination of EMU / national 'stock indicators' of silver eel escapement biomass and anthropogenic mortality rates to an international total.

In 2020/2021, WKFEA (ICES, 2021a) addressed issues with the current advice, considered options for future assessment/advice and drafted a roadmap towards potential new or additional advice on fishing opportunities for the European eel to better suit the management needs. The progress made towards the implementation of the roadmap is described in Section **Error! Reference source not found.**.

1.8 Data Call

The WGEEL annually collates data on eel in support of its work. A dedicated data call hosted by ICES, EIFAAC, and GFCM and covering all natural range states of the European eel was initiated in 2017 and is considered an effective mechanism to significantly improve the situation of data provision and use. For details, see the Stock Annex.

In the 2025 data call, data on recruitment up to 2024, commercial landings, recreational landings, aquaculture production, restocking, yellow eel abundance and silver eel escapement time-series, including biometry were requested. The call also required the provision of associated metadata. Finally, all countries were requested to submit a summary indicating which annexes were provided or not.

The data call consists of excel spreadsheets all of which are further incorporated in the WGEEL database (data call annexes 1-9). Data Call Annex 0 summarizes whether a response has been submitted for each annex and if not provides justification. Data call annexes 1-3 comprise time series. Recruitment series (Data Call Annex 1) include series made of glass eel (G), a mixture of glass eel and young yellow eel series (GY) and yellow eel migrant (Y) series. Yellow eel (Y) standing stock time series (as opposed to migrant (Y) time series in Data Call Annex 1) are collected in Data Call Annex 2. Silver eel annual time series are collected in Data Call Annex 3. Data call annexes 1, 2, and 3 collect annual numbers but also gather information about metrics data collected with the series (e.g. somatic length, body mass, parasites and pathogens) at an individual or a group (averages) level.

The data call also collects information on commercial landings (Data Call Annex 4), recreational landings (Data Call Annex 5), and other landings (Data Call Annex 6). 'Other landings' refer to any kind of landings that are not reported under commercial or recreational landings (e.g. trap and transport/assisted migration). Data call annexes 4, 5, and 6 cover different stages, glass (G), yellow (Y), a mixture of yellow and silver eel (YS) and silver eel data (S).

Data Call Annex 7 covers eel 'Releases'. The range of eel stages in this annex is wider than in the other annexes as it covers G, QG (quarantined glass eel), OG (on grown eel), GY (mixture of glass and yellow), Y (yellow), YS (yellow and silver), and S (silver). Aquaculture data are covered in Data Call Annex 8 and analysed by WGEEL as eels are first collected from the population before going to aquaculture.

Data Call Annex 9 reports data on sampling either from the DCF or other sources. The format of group and individual metrics is the same as in the data call annexes 1 to 3 (time series) but the location of each fish collection, date (possibly rounded to year when not available), and details about the sampling scheme are also provided.

1.8.1 Address the generic EG TORs from ICES, and any requests from EIFAAC or GFCM (ToR a)

a) Conduct an assessment on the stock(s) to be addressed in 2025 using the method (assessment, forecast or trends indicators) as described in the Stock Annex and documented in TAF; - complete and document an audit of the calculations and results; and produce a brief report of the work carried out regarding the stock, providing summaries of the following where relevant:

   i) Where misreporting of catches is significant, provide qualitative and where possible quantitative information and describe the methods used to obtain the information;

See report 2024

   ii) For relevant stocks (i.e. all stocks for NEAFC request advice), estimate the percentage of the total catch that has been taken in the NEAFC Regulatory Area in the most recent years

There is no eel fishing in the NEAFC area. NEAFC stretches from southern tip of Greenland, east to the Barents Sea and south to Portugal (from their website) but the map shows that it is only outside the national waters.

iii) For category 2 and 3 stocks requiring new advice in 2025, implement the methods in guidance for harvest control rules and stock assessments for stocks in categories 2 and 3 . Replace the former 2 over 3 advice rule (2 over 5 for elasmobranchs) which is no longer considered precautionary

WGEEL considers that the establishment of an appropriate and effective framework for the advice under the principles of the precautionary approach is a matter of urgency. WKFEA has addressed the issue and provided a roadmap towards a benchmark in 2027, where reference points could be defined.

iv) Evaluate spawning stock biomass, total stock biomass, fishing mortality, catches (projected landings and discards) using the method described in the Stock Annex;

See Chapter 2 (ICES, 2025)

1) for category 1 and 2 stocks, in addition to the other relevant model diagnostics, the recommendations and decision tree formulated by WKFORBIAS (see Annex 2 of https://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/Fisheries%20Resources%20Steering%20Group/2020/WKFORBIAS_2019.pdf) should be considered as guidance to determine whether an assessment remains sufficiently robust for providing advice.

2) If the assessment is deemed no longer suitable as basis for advice, provide advice using an appropriate Category 2-5 approach as described in ICES technical guidance for harvest control rules and stock assessments for stocks in categories 2 and 3 or in Advice on fishing opportunities (for Cat 5 & 6).

3) If the assessment has been moved to a Category 2-5 approach in the past year, consider what is necessary to move back to a Category 1 and develop proposal for the appropriate benchmark process.

v) Provide all requested catch scenarios for the year(s) beyond the terminal year of the data (These are listed in ICES Guidance for completing single-stock advice)
WGEEL is not in a position to provide catch scenarios in the absence of accurate catch information.

vi) Historical and analytical performance of the assessment and catch options with a succinct description of associated quality issues. For the analytical performance of category 1 and 2 age-structured assessments, report the mean Mohn's rho (assessment retrospective bias analysis) values for time series of recruitment, spawning stock biomass, and fishing mortality rate. The WG report should include a plot of this retrospective analysis. The values should be calculated in accordance with the "Guidance for completing ToR viii) of the Generic ToRs for Regional and Species Working Groups - Retrospective bias in assessment" and reported using the ICES application for this purpose.

As a category 3 stock, there is no analytical assessment of the eel stock. The performance of the current assessment has not been formally reviewed. However, the trends in recruitment indices have been validated using a different analytical approach (GEREM; ICES, 2019). No catch options have been proposed so there is nothing to review.

b) Produce and quality assure a first draft of the advice for each stock according to ACOM guidelines.

A draft of the advice on the European eel stock has been provided to ICES as a separate document.

c) Include non-fisheries conservation considerations in accordance with the "ICES Guidelines on Non-Fisheries Conservation Considerations".

See ICES 2024 advice on European eel throughout its natural range.

d) Review progress on benchmark issues and processes of relevance to the Expert Group.

   i) update the benchmark issues lists for the individual stocks in SID;

   ii) review progress on benchmark issues and identify potential benchmarks to be initiated in 2025 for conclusion in 2026;

   iii) determine the prioritization score for benchmarks proposed for 2025–2026;

   iv) as necessary, document generic issues to be addressed by the Benchmark Oversight Group (BOG)

The European eel has not been benchmarked but proposed to take place in 2027 (WKFEA roadmap). A list of issues was drafted during WGEEL 2024 and has been submitted for evaluation in December 2024. Following WGEEL recommendations, in 2025 a workshop was held where a roadmap was developed to guide the finalization of the data call and data integration ahead of the WGEEL meeting. (ICES. 2025. The Sixth Workshop on Designing an Eel Data Call (WKEELDATA6). ICES Scientific Reports. 7:68. 20 pp. https://doi.org/10.17895/ices.pub.29290463)

e) Prepare the data calls for the next year's update assessment and for planned data evaluation workshops;

The data call was developed in the workshop in 2024. Following WGEEL recommendations, the workshop updated the 2025 data call templates and tools for the WGEEL, reviewed previous issues, and prepared for the upcoming benchmark. (ICES. 2025. The Sixth Workshop on Designing an Eel Data Call (WKEELDATA6). ICES Scientific Reports. 7:68. 20 pp. https://doi.org/10.17895/ices.pub.29290463)

f) Identify research needs of relevance to the work of the Expert Group

See chapter 4 (ICES, 2021a) and ICES (2021b). In this report see Chapter 3

g) Review and update information regarding operational issues and research priorities on the Fisheries Resources Steering Group SharePoint site.

Information was updated according to WKFEA roadmap.

h) Update TAF, SAG, ASD (Advice and Scenarios database) and SID with final assessment input and output and advice information.

TAF and SAG are updated. Rolling issues were updated in SID in 2024. ASD is not updated, because scenarios are not provided for European eel.

i) Consider and comment on Ecosystem and Fisheries Overviews with a focus on:

   i) identifying and correcting mistakes and errors (both in the text, tables and figures), and

   ii) proposing concrete evidence-based input that is considered essential for the advice but is currently under-developed or missing (with references and Data Profiling Tool entries, as appropriate).

This was addressed in chapter 4.1.1. "New and emerging threats" in report 2023. Fisheries and Ecosystem overview data are not used in stock assessments. Specific Ecosystem and Fisheries information is provided in country reports.

j) Report on developments in the state of the European eel (*Anguilla anguilla*) stock, the fisheries on it and other anthropogenic impacts;

See chapter 2

k) Report on updates to the scientific basis of the advice, including any new or emerging threats or opportunities;

See chapter 3

l) Identify and address Mediterranean-specific issues on European eel;

See section 3.1

m) Implement the roadmap proposed by WKFEA (as amended in WGEEL report 2024);

See chapter 4

n) Address the issue of areas without estimates of fishing mortality or stock biomass in relation to a holistic stock assessment;

See section 5.2

o) In collaboration with the ICES communications team, design an information sheet destined to inform non-scientists and stakeholders on the status of the eel population;

See chapter 6

p) To the extent possible, provide information on potential data needs and associated methods for the EU regional workplans, particularly in relation to DCF data collection

See chapter 7

2 Report on developments on the state of European eel (*Anguilla anguilla*) stock, fisheries, and other anthropogenic impacts

2.1 Recruitment

In the 2025 data call, data on recruitment up to 2025, fishery landings, recreational landings, aquaculture production, restocking, yellow eel abundance and silver eel abundance, including biometry were requested as well as the associated metadata.

2.1.1 Data sources

In this section, the latest trends in glass and yellow eel recruitment are addressed. The time-series are derived from fishery-dependent sources (i.e. landings records) and from fishery-independent surveys across much of the geographic range of European eel (Figure 2.1). There are three types of series:

- glass eel (G), age 0+cohort,
- a mixture of glass eel and yellow eel dominated by recruits from the same year (GY),
- and yellow eel (Y) recruiting to continental habitats.

The yellow eel series might consist of yellow eel of several ages (e.g. in the Baltic with mean age up to 6). The glass eel recruitment time-series have been separated into two geographical areas: "continental North Sea" (NS) and "Elsewhere Europe" (EE) (Figure 2.1). Since previous analyses by the working group (ICES, 2010, p19; Bornarel *et al.* (2017)) have shown different trends between the two sets. This is mostly due to a more pronounced decline of the North Sea series compared to the "Elsewhere Europe" area during the 1980s.

The WGEEL has collated information on recruitment from 110 time-series, some dating back to the beginning of 20th century.

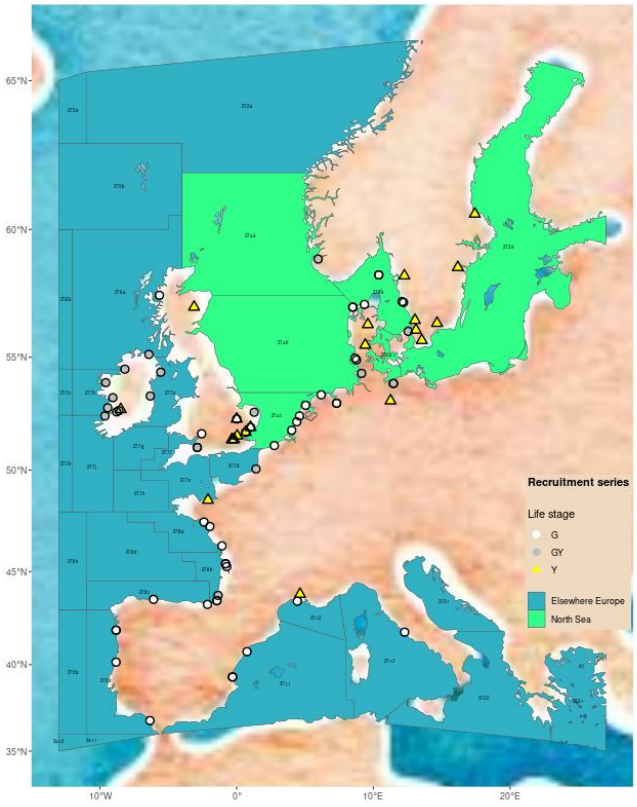


Figure 2.1 Map of recruitment sampling stations currently used to build the GLM trend models: white dots G = glass eel; grey dots GY = glass + yellow eel; yellow triangles Y = yellow eel. Green = North Sea, Blue = "Elsewhere Europe"

2.1.2 Details on data selection and processing

Out of the 110 series that were compiled in the data call, 82 were selected and used in the analysis (Figure 2.2, Table 1, Annex 9). The selection is based on three criteria:

1. First, if there are two or more series from the same location, i.e. they are not independent, only one series is kept.
2. The second rule is to exclude a series from the analysis when it is less than ten years long. If there are missing years, or years excluded for data quality reasons, the data series will be included when the total number of "good" years of data meets the 10 year criterion. Within any series, individual annual data can be excluded from the analysis where a one-off problem is identified which negates the value as an index for that year, such as a major reduction in effort (e.g. Covid or other effort related restriction).
3. Finally, it was decided to discard recruitment series that were obviously biased by re-stocking.

This year, the series BretGY fulfilled the criterion to be integrated. However, it was decided to postpone its integration to an upcoming benchmark exercise to promote the stability of the dataset.

See Annex 9, Table 3 for the reasons why the series have been excluded from the recruitment analysis.

Table 1 Summary of the number of series that have been received (2025 Data Call) and incorporated (kept) for the determination of the recruitment index by area and stage. Life stage: GY = glass eel and yellow eel, G = glass eel, Y = yellow eel Area: EE = "Elsewhere Europe", NS = North Sea.

Life stage	Area	Submitted	Kept
G	EE	34	22
	NS	20	18
	Total	54	40
GY	EE	14	13
	NS	16	8
	Total	30	21
Y	Total	26	21
TOTAL		110	82

Among the time-series based on trap indices, some have reported preliminary data for 2025 as their trapping season had not finished. As usual, the indices given for 2025 (current year) must be considered as provisional, especially those for yellow eel:

- 41 time-series were updated until 2025 (18 G, 15 GY, and 8 Y) (Annex 9; Table 5).
- On the other hand, 21 time-series (9 G, 5 GY, and 7 Y) were updated only until 2024 (Annex 9; Table 6). -
- 20 time-series were stopped or not updated beyond 2023.

Some have stopped reporting either because of a lack of eel recruits in case of the fishery-based surveys (Ems in Germany, stopped in 2001; Vidaa in Denmark, stopped in 1990), a lack of financial support (the Tiber in Italy, 2006) or the introduction of quota from 2008 to 2011 that has disrupted the five fishery-based French time-series.

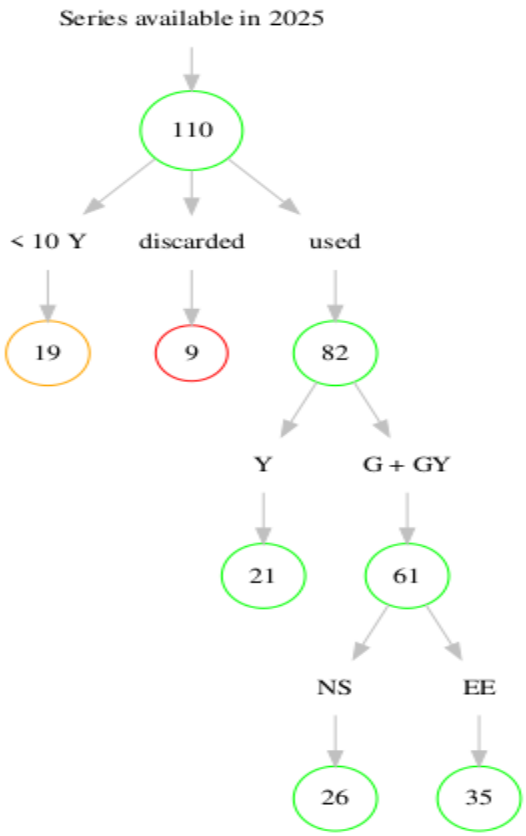


Figure 2.2 Schematic showing the recruitment series received (2025 Data Call) by type and region, and numbers selected for analysis. Y = Yellow eel, G = Glass eel, GY = mixed Glass and yellow eel. NS = North Sea (including Baltic) EE = "Elsewhere Europe" regions

The number of time series available is not evenly distributed across eel life stages and regions. It is influenced by factors including variations in the behaviour of eel, traditions of fishery and usage of eel, and the history of scientific investigation and eel management (Figure 2.3). Thus, most of the glass eel series come from the Atlantic while the yellow eel series come from the Baltic and the North Sea.

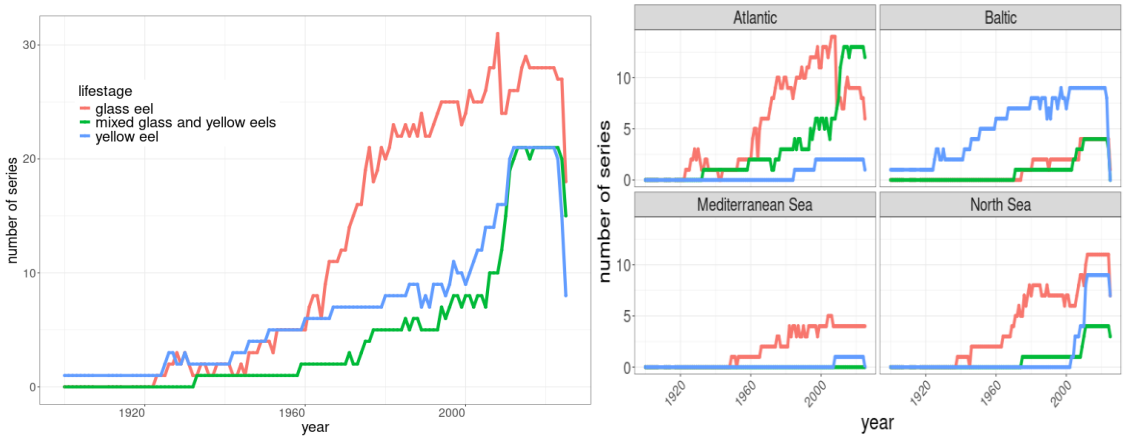


Figure 2.3 Temporal trends in the number of data points (a value provided by a given time series for a given year) that have been kept in the recruitment analysis per stage. The number of 2025 series is not final as the year has not yet ended and there are still series to be reported.

2.2 GLM based trends

The WGEEL recruitment index used in the ICES Annual Stock Advice is fitted using a GLM with a Gamma distribution and a log link: $glasseel \sim year : area + site$, where :

- $glasseel$ is individual glass eel time-series including both pure G series and those identified as a mixture of glass and yellow eel (G+Y),
- $site$ is the site monitored for recruitment,
- $area$ is either the continental North Sea or "Elsewhere Europe", and
- $year$ is the year coded as a categorical value. For yellow eel time-series, only one total area estimate is provided: $yellow\ eel \sim year + site$.

The trend is hindcasted using the predictions from 1960 onwards for 61 glass eel time-series and from 1950 onwards for 21 yellow eel time-series. Some zero values have been excluded from the GLM analysis: 23 for the glass eel model and 46 for the yellow eel model. This treatment has been tested and has no effect on the trend (ICES, 2017).

The predictions are given in reference to the geometric mean of the 1960-1979 period.

Analyses of provisional 2025 data show recruitment as a percentage of 1960-1979 levels at 0.7 % in the North Sea ([0.4-1.1]) and 12.1 % in "Elsewhere Europe" ([7.4-19.5]) (Figure 2.4, Table 2).

Table 1 Annual WGEEL recruitment index for the continental North Sea and "Elsewhere Europe". The index was estimated using a GLM (glasseel ~ area : year + site) fitted on 61 time-series comprising either pure glass eel or a mixture of glass eels and yellow eels. Number of series, "Elsewhere Europe" = 35, North Sea = 26. The predictions (p) have been scaled $\bar{p}_{1960-1979}$.

	1960		1970		1980		1990		2000		2010		2020	
	EE	NS	EE	NS	EE	NS	EE	NS	EE	NS	EE	NS	EE	NS
0	154	209	102	99	111	86	35	14	20.2	4.4	4.6	0.7	6.7	0.6
1	134	118	55	68	87	62	17	3	8.6	0.9	3.8	0.5	5.3	0.6
2	152	180	50	109	89	31	22	7	13.5	2.5	4.8	0.5	9.7	0.7
3	195	225	55	47	48	26	24	6	12.8	1.7	7.2	1.8	7.8	0.6
4	124	117	82	131	54	10	23	7	7.1	0.6	10.3	2.4	7.2	1.3
5	136	78	71	54	54	8	31	5	7.6	0.9	6.3	0.8	12.1	0.7
6	76	88	116	97	33	8	25	5	5.6	0.5	9.4	1.7		
7	81	98	114	77	58	10	42	4	6.4	1.2	9.9	1.0		
8	128	124	109	60	66	9	16	3	5.9	1.1	8.3	1.7		
9	67	90	141	104	43	4	21	6	4.3	0.8	5.9	1.3		

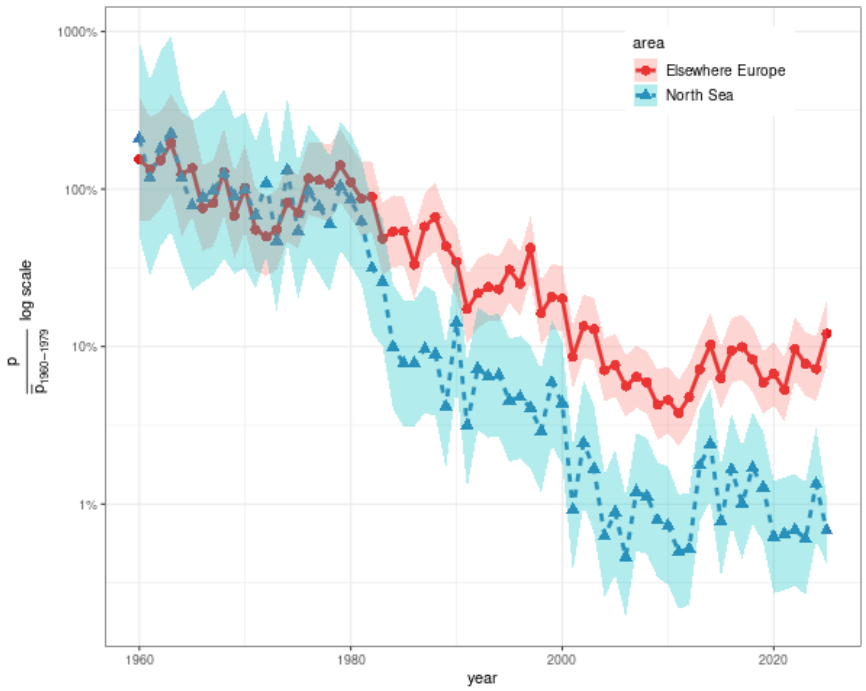


Figure 2.4 WGEEL glass eel recruitment index for the continental North Sea and "Elsewhere Europe" series with 95% confidence intervals updated to 2025. The index was estimated using a GLM (glasseel ~ area : year + site) fitted on 61 time-series comprising either pure glass eel or a mixture of glass eels and yellow eels. Number of series, "Elsewhere Europe" = 35, North Sea = 26. The predictions (p) have been scaled to $\bar{p}_{1960-1979}$. Note the logarithmic scale on the y-axis.

In "Elsewhere Europe", the mean value in 2025 is higher than the mean value in 2024, though the confidence intervals largely overlaps. This higher mean value in 2025 appears to be related to high values in the northern part of the area, especially due to Irish series that display high residuals (Figure 2.5). The situation is the reverse for the North Sea index. These results are still preliminary and will be updated next year once all the time series are available.

For the two glass eel indices, we carry out an analysis to assess the position of the last values of indices compared to the overall trend. To so, we used the model developed and adapted the model of Bénézech *et al*. (2024). This model fits an autoregressive model to the recruitment index from 1980 to 2024, using an AR(1) model. It postulates that the recruitment follows a trend that can vary with an autocorrelation.

$$
\begin{aligned}
&IR_t \sim LN(\mu_t, \sigma_R^2) \\
&\mu_t = \mu_{t-1} + a_t + \eta_t \qquad \text{with } \eta_t \sim N\left(0, \sigma_\eta^2\right) \\
&a_t = a_{t-1} + \delta_t \qquad \text{with } \delta_t \sim N\left(0{,}0.25 \cdot \frac{\sigma_\eta^4}{\sigma_R^2}\right)
\end{aligned}
$$

with IR_t the recruitment index in year t, μ_t is the average value predicted by the recruitment and a_t is the recruitment slope. δ_t, and η_t are the random noise.

In France, this model is used to predict upcoming recruitment and set up yearly quota each year

Then the model is used to predict the recruitment for 2025. Compared to Bénézech *et al.* (2024), we did not use any expert judgement regarding the prediction year. The distribution of the posterior 2025 recruitment is then compared to the value estimated by the WGEEL index. The model is run with JAGS using the exact same configuration as Bénézech *et al*. (2024).

The WGEEL estimated mean value of the "Elsewhere Europe" index corresponds to the 87.7% quantile of the posterior distribution of the prediction of the model of Benezech *et al.* (2024), while

the North Sea index (mean value) corresponds to the 30.7% quantile. This confirms that, while the "Elsewhere Europe" is higher than recent years and North Sea index is lower, they are both in the range of predicted values.

The 2024 yellow eel index is at 14.3% ([5.9-34.3]) of the 1960-1979 baseline (Figure 2.6, Table 3).

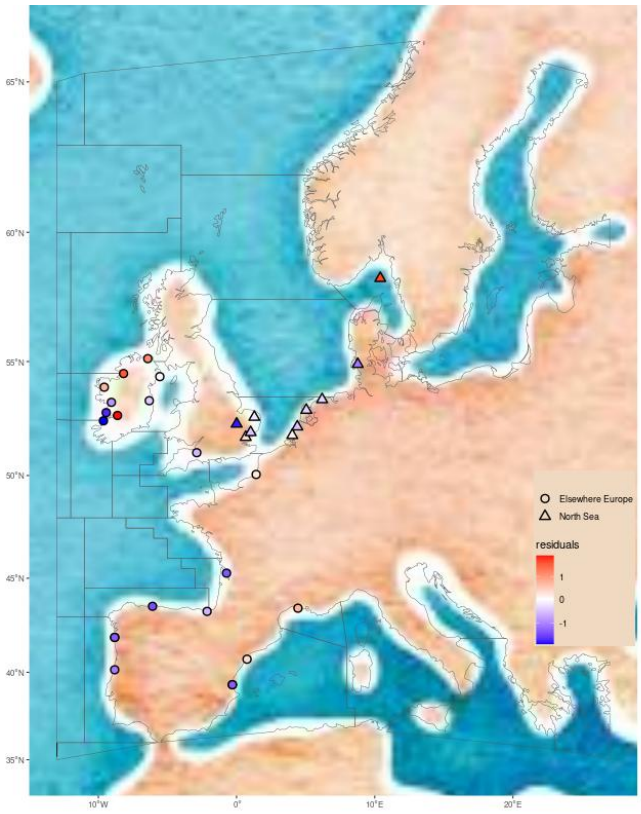


Figure 2.5 Maps of the model residuals for 2025 in "Elsewhere Europe" (dots) and North Sea (triangles). A positive (red) residual indicates that the young of the year time series has a higher value than the one predicted by the model for2025 whereas negative (blue) residuals indicate lower values.

Table 3 The yellow eel recruitment index for Europe updated to 2024. The yellow recruitment was estimated using a GLM (yelloweel ~ year) fitted to 21 yellow eel time-series. The predictions (p) are scaled to $\bar{p}_{1960-1979}$.

	1950	1960	1970	1980	1990	2000	2010	2020
0	175	161	61	99	32	17	13	15
1	256	178	63	42	37	17	24	12
2	247	175	108	52	17	37	15	10
3	387	148	135	47	14	25	16	11
4	191	61	66	35	55	24	29	14
5	297	115	123	66	13	13	12	
6	129	153	38	50	10	17	16	
7	152	113	80	47	21	20	17	
8	149	174	70	61	16	14	18	
9	323	116	58	37	21	8	14	

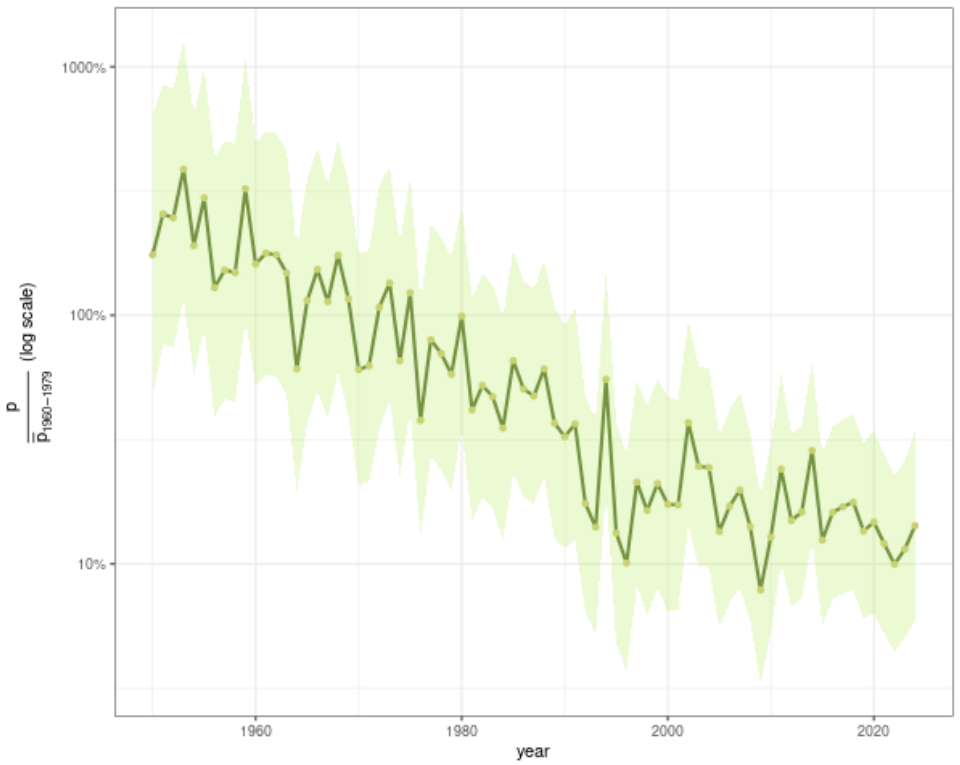


Figure 2.6 Yellow eel recruitment for Europe updated to 2024. The yellow eel recruitment was estimated using a GLM (yellow eel ~ year+site) fitted to 21 yellow eel time-series. Predictions (p) are scaled to the 1960-1979 average $\bar{p}_{1960-1979}$. Note the logarithmic scale on the y-axis.

2.3 Retrospective analysis

A retrospective analysis assesses whether the outcomes of an assessment are sensitive to the inclusion of a new year of data.

Figure 2.7 shows the variations of the GLM have varied through time. Several causes explain such variations:

- when the model is run in a given year, the latest values of many time series are not available yet (they are only provided the following year). As such, the estimate for the terminal year is based on a provisional dataset.
- some values are revised every year, particularly the ones for the terminal year
- the GLM is recalculated integrating the new times series every year following time series selection rules.

The Mohn's rho index is largely used to assess the robustness of ICES assessments to the addition of new annual data (Mohn 1999; ICES 2023b). Traditionally, the Mohn's rho index is fitted after iteratively fitting the model to truncated datasets where the data for the most recent years are sequentially removed. A Mohn's rho of 0 indicates that the assessment is unaffected by the addition of new years, while a positive (conversely negative) rho indicates that the assessment tends to provide a positively (conversely negatively) biased assessment. Given that the eel assessment is based on a GLM with "year" treated as a factor, the respective "year" effect is estimated almost independently and removing the terminal year has almost no effect on the estimation of the previous year. As such, this would mechanically (and artificially) lead to Mohn's rho close to 0. Therefore, we carried out the Mohn's rho analysis based on the dataset effectively used for each assessment year, to quantify the potential variability due to latter data revision of new times series integration. It was computed for each of the recruitment index using the assessment of WGEEL 2021 to 2025:

- "Elsewhere Europe": 0.04
- North Sea: -0.22
- Yellow eel: 0.25

The "Elsewhere Europe" is more stable than the two other indices. This is likely related to the higher number of time series included in the index that buffers potential revision of data points or inclusion of new time series. The Mohn's rho index of North Sea and Yellow eel are greater than 0.2 (absolute value). However, this is likely related to:

- the lower number of time series included in the two corresponding GLM, making the results more sensitive to latter revisions or integration of new time series,
- to the low values of the North-Sea index (Mohn's rho is a relative index and North Sea recruitment is below 1%, so even a revision from 1.5 to 1% implies a change of 50%
- to the natural stochasticity of recruitment.

Despite these high Mohn's rho indices, the retrospective diagrams do not display specific patterns (i.e. a situation in which the assessment is systematically above or below the previous assessments) and the trends are very consistent between assessment years, indicating that the assessment is robust (Figure 2.7).

The yellow eel series (Figure 2.7, lower panel) produces slightly more variation than the glass eel series (Figure 2.7, upper and central panels). This is possibly due to a lower number of sites leading to undue influence of incomplete reporting in the current year. Moreover, because

"Yellow" eel recruitment corresponds to 2-3 age classes, this series is more susceptible of being affected by local environmental conditions, along with density pressures, than the arrival of glass eel (0+), and this may increase the level of inter-annual variability beyond that observed for the glass eel "class of the year".

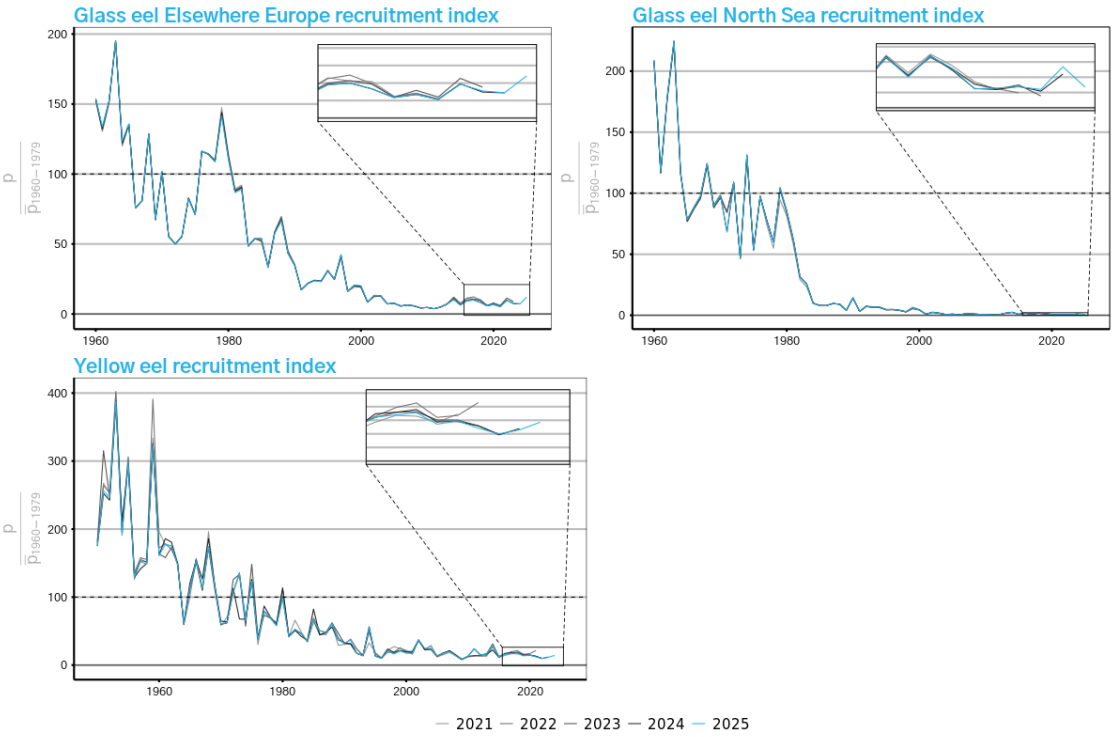


Figure 2.7 Retrospective analysis of the assessment model. Each line corresponds to an assessment for a given year. For "Yellow" eels, contrary to the other two indices, the assessment year Y only provides estimates until year Y-1 due to data availability when the assessment takes place.

2.4 Conclusion

The status of European eel remains critical. After high levels in the late 1970s, the European eel recruitment declined dramatically in the 1980s and has since remained low. Indices of both glass and yellow eel recruitment strongly declined from 1980 to 2011. In 2025, the "Elsewhere Europe" recruitment index reached 12.4% of the 1960-1979 geometric mean (provisional), a level not observed since the early 2000s. However, this still represents a very low proportion of the historical baseline and must be interpreted with caution given the stochastic nature of recruitment. Index values correspond to the recruitment as a percentage of the 1960–1979 geometric mean. Compared to 1960–1979, the recruitment in the "North Sea" index series was 1.3% with a confidence interval (C.I.) of [0.6-3.1%] (final) in 2024 and was 0.7% [0.4-1.1%] (provisional) in 2025. The "Elsewhere Europe" index was 7.2% [4.5-11.5%] (final) in 2024 and (provisional) 12.1% [7.4-19.5%] (provisional) in 2025. The yellow eel recruitment index was 14.3% [5.9-34.3%] in 2024.

Overall, time-series from 1980 to 2025 confirm that glass eel recruitment remains at a critically low level.

2.5 Trend in fisheries

This section presents and describes data from commercial, recreational and non-commercial fisheries, aquaculture production and restocking of eel. Data is reported by eel life stage (glass, yellow, silver), habitat type (freshwater, transitional, coastal, marine), and by eel management unit (EMU) where possible. Historical time series for which these details are not available are reported by country. The current database structure allows aggregation by country or EMU. The data presented are those reported to the yearly ICES WGEEL through data calls.

2.5.1 Commercial fisheries landings

Care should be taken with the interpretation of the landings as indicators of the stock, since the landings statistics also reflect changes in effort as well as of stock levels. In addition, landings data presented here might be incomplete due to a lack of reporting by countries. In summary, reported commercial landings are declining from a level of approximately 10 000 t in the 1960s to 1 910 t in 2024 (glass eel + yellow eel + silver eel).

2.5.1.1 Glass eel

Figure 2.1 presents the time-series up to and including 2025 for total commercial glass eel landings as reported by five countries in the eel data call (ES, FR, GB, IT, PT), including reconstructed data to fill data gaps. In Spain, part of the former Basque recreational fishery was recommissioned as a commercial fishery following the ban of recreational fisheries.

Glass eel landings show a sharp decline since 1980 from 2 000 t to about 40–60 t since 2009 onwards (Figure 2.8). In 2025, the raw (uncorrected) landings data for glass eels is 56.7 t, while it was 57.7 t in 2024 (Annex 13, Table 1).

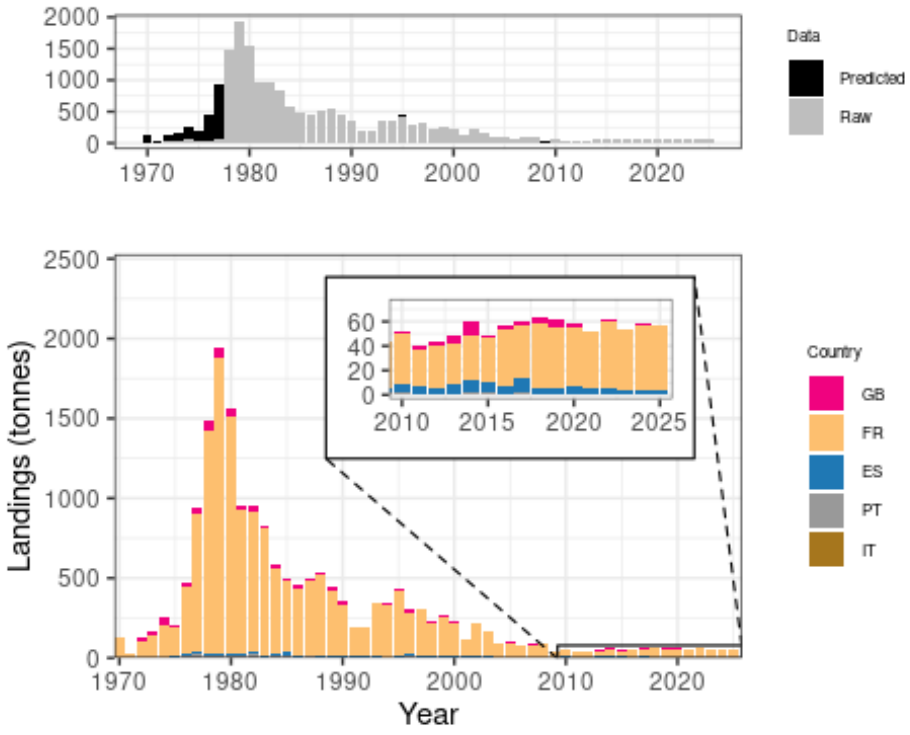


Figure 2.8 Time-series of reported or reconstructed commercial glass eel fishery landings (tonnes) by country. To fill data gaps, non-reported countries/years combinations were reconstructed. United Kingdom (GB), France (FR), Spain (ES), Portugal (PT), Italy (IT) are included, combining information from the Data Call 2025 and the WGEEL database updated to 2025. The inset box shows the proportion of reconstructed landings per year.

The ratio between reported commercial landings of glass eels and the recruitment index in "Elsewhere Europe" provides a relative measure of exploitation rate. The analysis was restricted to the "Elsewhere Europe" area since no commercial glass eel fisheries took place in the North Sea area in recent years. Moreover, the analysis was restricted to the post-2000 period for which data are more comprehensive. The exploitation rate for glass eels has decreased after the implementation of the Eel Regulation in 2009 and remained relatively stable since then (Figure 2.9). Data for 2009 were removed as France, which accounts for a significant part of the landings, did not report data for that year. After a peak in 2024, the currently estimated higher recruitment for 2025 contributes to the lowest exploitation rate. The exploitation rate can only be estimated for glass eel: since for yellow eel standing stock and silver eels no reliable abundance estimates are available to allow comparison with landings.

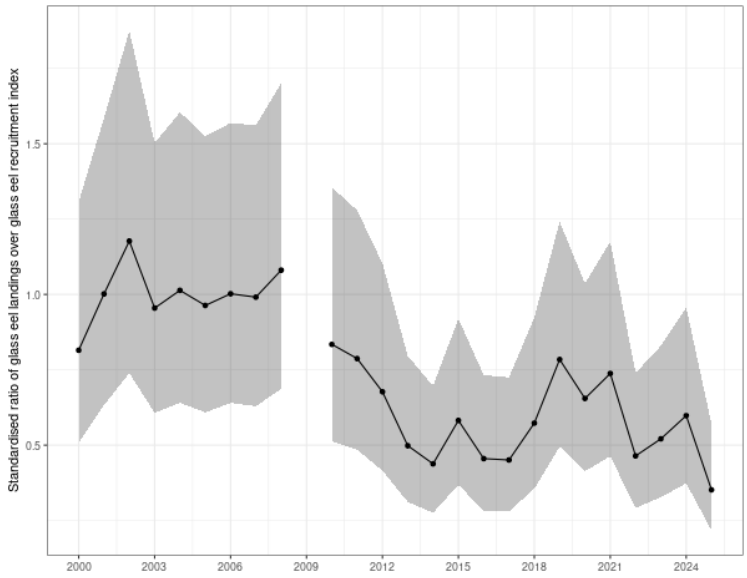


Figure 2.9 Reported G and GY commercial landings divided by recruitment index for EE (including landings reported in EMUs ES_Astu, ES_Cant, ES_Cata, ES_Minh, ES_Mino, ES_Vale, FR_Adou, FR_Arto, FR_Bret, FR_Garo, FR_Loir, FR_Sein, FR_total, GB_Dee, GB_NorW, GB_Seve, GB_SouE, GB_SouW, GB_Wale, GB_total, IT_Lazi, IT_Tosc, IT_Vene). The resulting ratio was standardised by the mean value till 2008 and is a relative proxy of the exploitation rate that informs on trends in fishing mortality. Landings data from 2000 are not available for GB. Year 2009 was removed since France, which accounts for a significant part of the landings, did not report data for this year.

2.5.1.2 Yellow and silver eel

Figure 2.10 presents aggregated landings data for yellow and silver eels coming and Figure 2.11 presents the time-series including reconstructed data to fill data gaps. The proportion of "corrected" landings was as high as 50% in the 1950s, but rather low since the mid-1980s. The total landings (including reconstructed) of yellow and silver eels decreased from 18 000–20 000 t in the 1950s to 2 000–3 500 t since 2009. Reported landings from yellow and silver eel commercial fisheries (Y, S, YS) add up to 1 855 t in 2024 and 2 091 t in 2023 (number of countries reporting 21 and 22). Yellow and silver eel commercial fisheries averaged 2 547 t per year over the five previous years (from 2018 to 2022). In addition to the data shown here, WGEEL received landings data from Egypt, but these have not been incorporated in the analyses as they need evaluation.

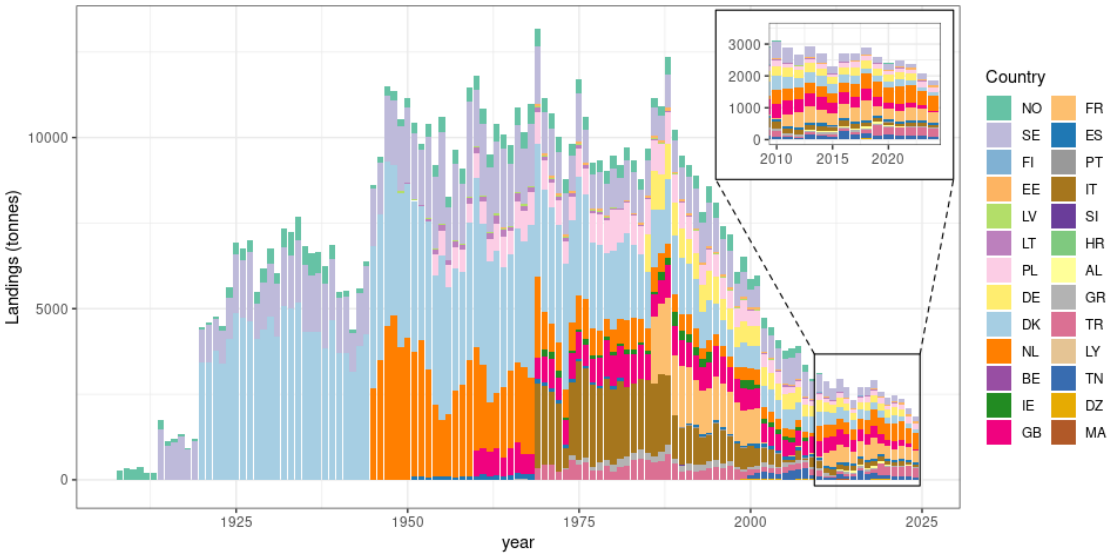


Figure 2.10 Time-series of reported commercial yellow (Y), silver (S) and yellow-silver (YS) eel fishery landings (tonnes) 1908-2024 by country. Norway (NO), Sweden (SE), Finland (FI), Estonia (EE), Latvia (LV), Lithuania (LT), Poland (PL), Germany (DE), Denmark (DK), Netherlands (NL), Belgium (BE), Ireland (IE), United Kingdom (GB), France (FR), Spain (ES), Portugal (PT), Italy (IT), Slovenia (SI), Croatia (HR), Albania (AL), Greece (GR), Türkiye (TR), Libya (LY), Tunisia (TN), Algeria (DZ), Morocco (MA) are included, combining information from the Data Call 2025 and the WGEEL database updated to 2024.

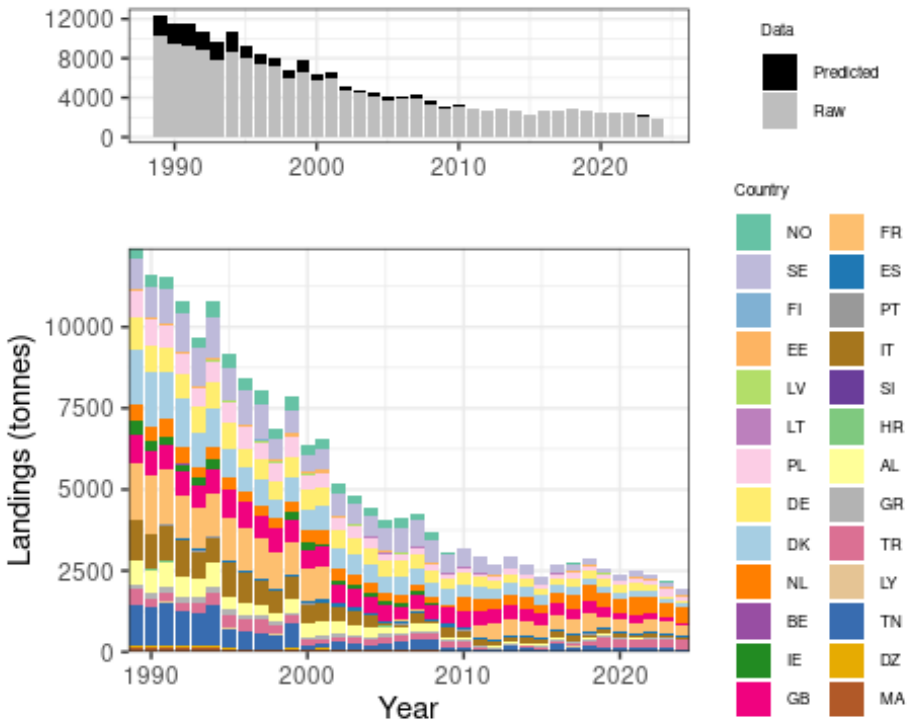


Figure 2.11 Time-series of reported and reconstructed commercial yellow (Y), silver (S) and yellow-silver (YS) eel fishery landings (tonnes) 1989-2025 by country. To fill data gaps, non-reported countries/years combinations were reconstructed. Norway (NO), Sweden (SE), Finland (FI), Estonia (EE), Latvia (LV), Lithuania (LT), Poland (PL), Germany (DE), Denmark (DK), Netherlands (NL), Belgium (BE), Ireland (IE), United Kingdom (GB), France (FR), Spain (ES), Portugal (PT), Italy (IT), Slovenia (SI), Croatia (HR), Albania (AL), Greece (GR), Türkiye (TR), Libya (LY), Tunisia (TN), Algeria (DZ), Morocco (MA) are included, combining information from the Data Call 2025 and the WGEEL database updated to 2024. The inset box shows the proportion of reconstructed landings per year.

2.5.2 Recreational fisheries

In addition to regulations described in Section 1, recreational fisheries in some countries were banned completely through local regulations and some countries restricted the season for recreational fishery in freshwater.

Recreational glass eel fishery landings decreased from over 1 000 t in the early 1980s, primarily from France, (Figure 2.12) to values below 5 t after 2005, with the inset revealing minimal residual catches that ceased in France in 2010 and in Spain in 2024 following regulatory bans.

Recreational landings of yellow and silver eel combined which summed up to 89 t for 2023 (12 countries reporting) and 78 t for 2024 (8 countries reported - Figure 2.13). France has provided estimation for all freshwater recreational fisheries in 2006, while for other years France provided declared catch by recreational fishers with gear in public rivers. Sweden provided estimations for some years in the past based on questionnaires and calculations from *Statistics Sweden*. Belgium data is based on a questionnaire from 2015 and did not update the date since then. This implies that total recreational catches for certain years are probably underestimated. The mean landings from yellow and silver eel recreational fisheries over the previous five years (2018–2022) were 524 t. The data for 2024 is incomplete and will change since some countries do not report the landings annually (e.g. Germany and Denmark, every three years).

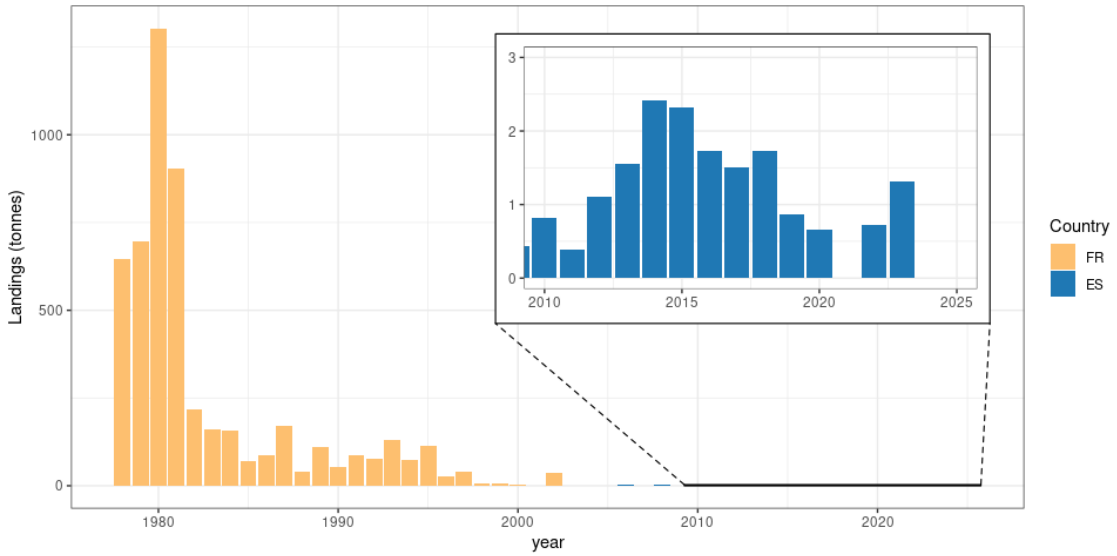


Figure 2.12 Time-series of reported recreational glass eel fishery landings (tonnes), 1978-2025 by country, France (FR), Spain (ES). Note: Recreational fisheries for glass eel were banned in France in 2010, and in Spain 2023.

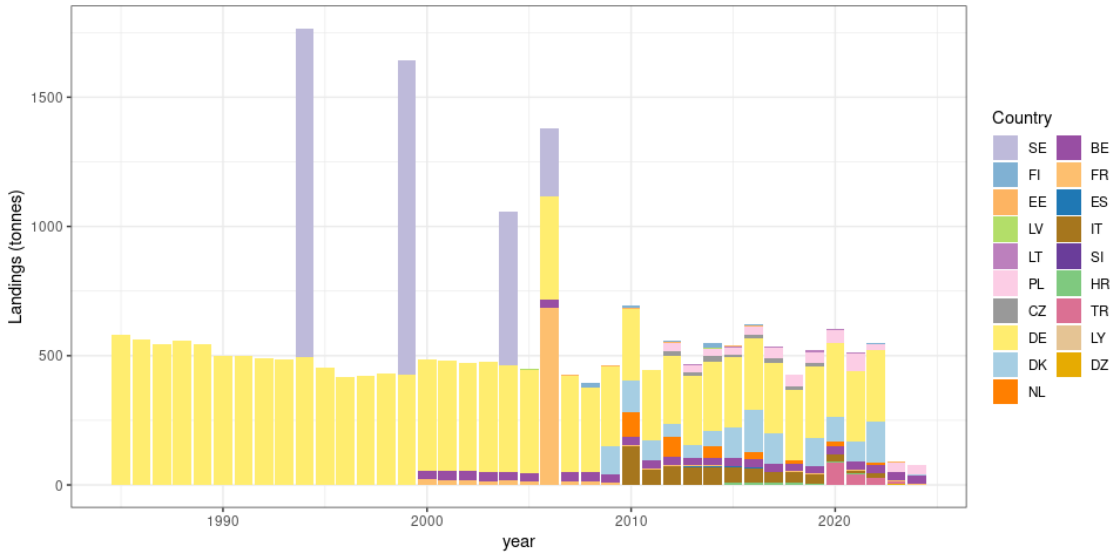


Figure 2.13 Time-series of reported or estimated recreational yellow and silver eel fishery landings (tonnes), by country. Sweden (SE), Finland (FI), Estonia (EE), Latvia (LV), Lithuania (LT), Poland (PL), Czech Republic (CZ), Germany (DE), Denmark (DK), Netherlands (NL), Belgium (BE), Ireland (IE), France (FR), Spain (ES), Italy (IT), Slovenia (SI), Croatia (HR), Türkiye (TR), Libya (LY), Algeria (DZ).

2.5.3 Illegal, unreported and unregulated landings

Illegal, unreported, and unregulated fishing (IUU) is by its nature very difficult to quantify, and misreporting may therefore be substantial. Organized illegal glass eel trade is supplied by legally caught and IUU caught eel. This trade is considered high priority by Europol (the European Union's law enforcement agency) among environmental crimes, due to its economic significance, the poor status of the eel stock, and the large number of organizations affected. Recent enforcement successes, including EUROPOLs "Operation LAKE VII" led to the seizure of ~24 million

live glass eels in the 2022/23 season. Related police action and court decisions have been covered by many news reports during recent years.

In addition, illegal eel trade from range states is an issue of concern for CITES (CITES, 2023). To summarize, while IUU fisheries certainly exist for glass, yellow and silver eel, there are insufficient data available to quantify their effect on the total stock size or status with any level of certainty. Thus, efforts to improve traceability and the scale of demand will assist enforcement but also allow us to better understand what proportion of legal catch enters illegal trade, and thus estimate illegal catch which would inform the characterization of the impacts of all fisheries on the stock.

2.5.4 Other landings

All other landings, coming neither from professional or recreational fisheries were recorded separately. Most of them concern translocation within a river basin and/or an EMU to mitigate the impact of barriers to migration. Glass eel translocations (Annex 12) were reported by Ireland (since 1959, by numbers and mass) and the United Kingdom (since 1996, by mass only). Yellow eel translocations were reported in Sweden and Ireland (Annex 12) and silver eel translocations in 5 countries: mainly in Sweden, Ireland and Finland, and to a lesser extent in Netherlands and Spain (Annex 12).

2.6 Releases

Given that eels can be displaced at different life stages and transported from a few meters within the same waterbody (assisted migration) to being moved between waterbodies and/or EMUs (restocking), WGEEL broadly categories all of them as “releases”, though the term “restocking” is still used in some circumstances. As all data are grouped together, it is hard to distinguish the source of released eels, but other landings data should provide some information on the quantity of eels caught and subsequently released for assisted migration (or other purposes not including commercial or recreational fisheries). For more information, please see Stock Annex, Chapter 1.6.9.

Release data include eels released at the glass eel phase, either directly (G), or after a quarantine (QG), after a period of some months of growth in aquaculture (OG), at the yellow eel (Y) or silver eel (S) stage. There are also some releases of mixed life stages: Glass + Yellow eel (G+Y) and Yellow + Silver eel (Y+S) for Ireland and Spain, but they will not be presented in this report. Dekker and Beaulaton (2016) provide a review of available data that are not included in this report (based on reported data from countries).

2.6.1 Glass eel releases (G + QG)

Restocking of glass eel (G + QG) peaked during 1980s, followed by a decline to a low level in 2009 (Figure 2.14). The amount of restocked glass eels has increased since 2010 with high numbers in 2014, and from 2018 to 2022. The quantity of glass eels (G + QG) released were 9 and 7 tonnes in 2023 and 2024 respectively (number of countries reporting: 12 and 9).

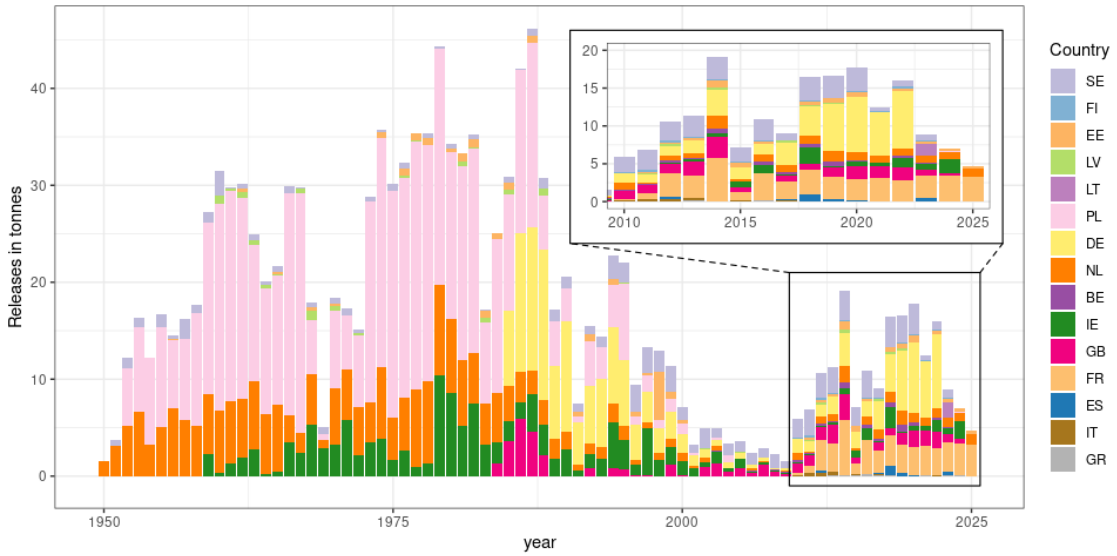


Figure 2.14 Reported releases of glass eel (G + QG, in tonnes) per country Sweden (SE), Finland (FI), Estonia (EE), Latvia (LV), Lithuania (LT), Poland (PL), Germany (DE), Netherlands (NL), Belgium (BE), Ireland (IE), United Kingdom (GB), France (FR), Spain (ES), Italy (IT), Greece (GR). Inset shows years since 2010 in greater resolution. 2024 and 2023 are provisional data (data are missing from 2024 because not all the countries have reported yet and from 2023 because German data have not been reported yet).

2.7 Ongrown eel (OG) and yellow eel (Y) releases

Releases of ongrown eels are presented in Figure 2.15. It has constantly increased since 2000 and reached a maximum in 2022.

Releases of yellow eel are represented in Figure 2.16. The quantity of yellow eels (Y) released in 2023 and 2024 was 1 and 0 tonnes (number of countries reporting: 2 and 2).

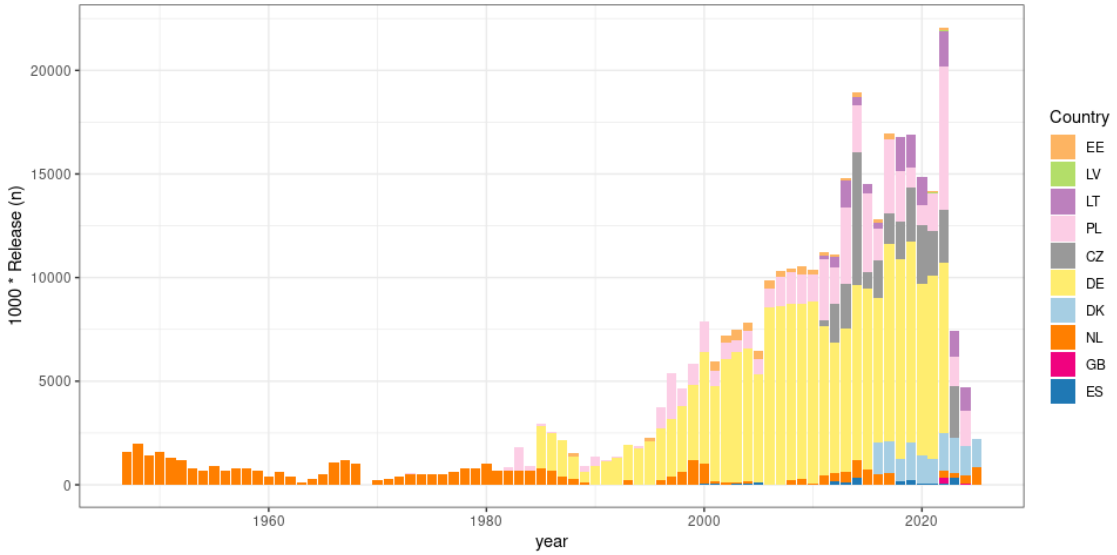


Figure 2.15 Reported releases of ongrown glass eel (OG, in thousands) per country, Estonia (EE), Latvia (LV), Lithuania (LT), Poland (PL), Czech Republic (CZ), Germany (DE), Denmark (DK), Netherlands (NL), United Kingdom (GB), Spain (ES). Data for recent years are provisional or incomplete and may change in future data calls. Data reported in numbers since biomass reporting is incomplete.

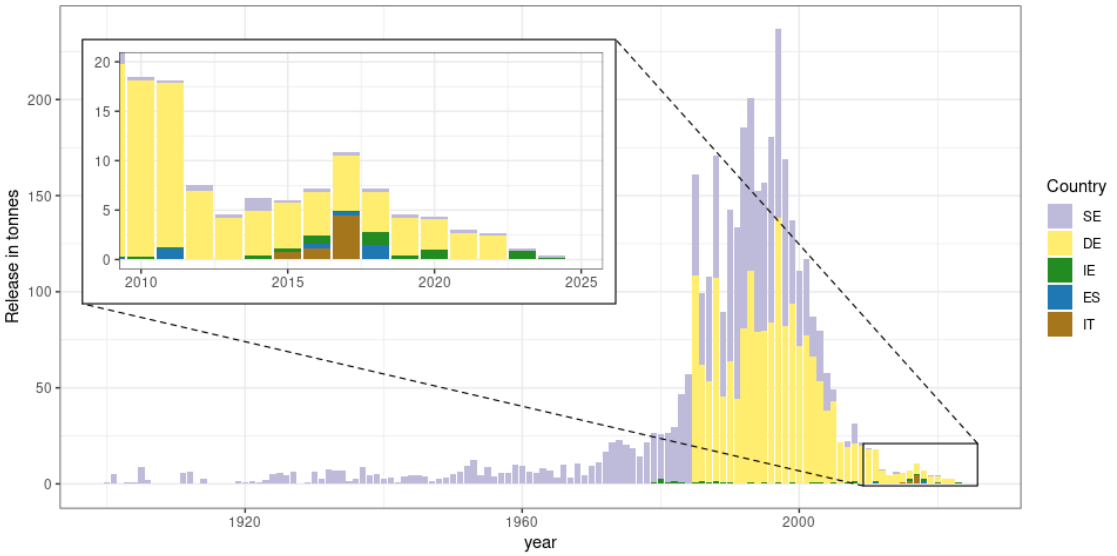


Figure 2.16 Reported releases of yellow eel (in tons) per country. Sweden (SE), Germany (DE), Ireland (IE), Spain (ES), Italy (IT). Inset shows the last 15 years in more detail. Data for recent years are provisional or incomplete and may change in future data calls.

2.7.1 Silver eel releases

Silver eel conservation fisheries to "trap and transport" silver eels around hydro power and pumping stations take place e.g. in Sweden, Finland, Ireland, and the Netherlands. In Greece and France, a proportion of the silver eels caught by the fishery are recorded as landings and later released in the Mediterranean Sea. These are reported as released silver eel (Figure 2.17). Spain has released silver eels from the Encanyissada Lagoon. The quantity of silver eels (S) released in 2023 and 2024 is 130 and 109 tonnes respectively (number of countries reporting: 5 and 5).

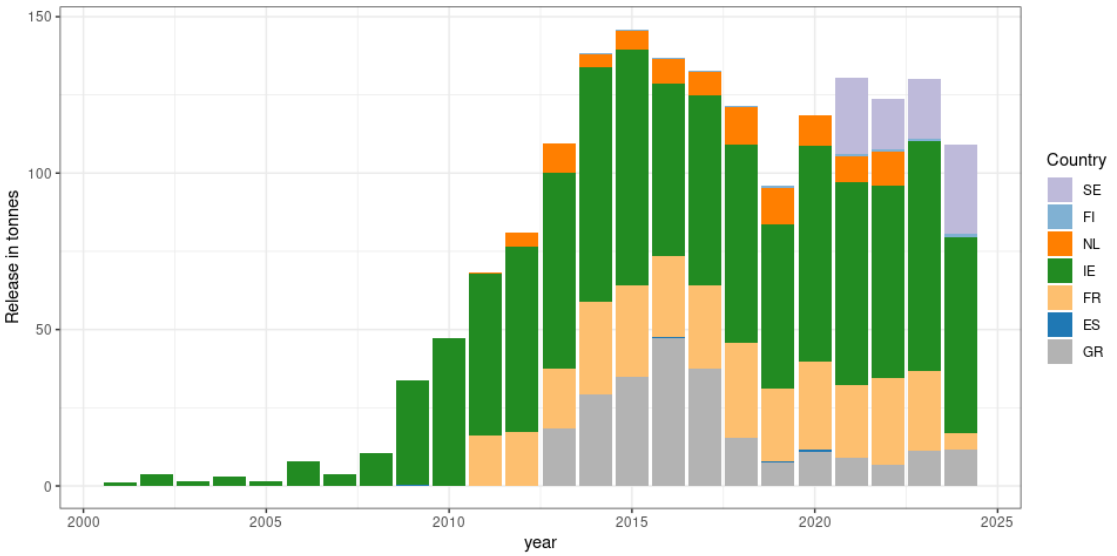


Figure 2.17 Reported releases of silver eel (in tonnes) per country, Sweden (SE), Finland (FI), Netherlands (NL), Ireland (IE), France (FR), Spain (ES), Greece (GR).

2.8 Aquaculture

All eel aquaculture currently relies upon wild eel for seeding. WGEEL collect production data in its yearly data calls, but those data are known to be largely incomplete. In this context, WGEEL considered that those data are not reliable (see Section 3).

3 Report on updates to the scientific basis of the advice, including any new or emerging threats or opportunities

This chapter is not intended as a comprehensive review but a selection of recent papers and projects related to eel research.

3.1 Mediterranean data

The Mediterranean provides important habitat for European eel and represents the southern limit of its range, encompassing diverse environments (e.g. rivers, lagoons, estuaries, wetlands), whilst also being subjected to anthropogenic pressures. In recent years, an increasing number of countries have initiated national and multinational programs to address this knowledge gap, reflected by the growing number of publications and projects from this region. These studies addressed topics such as biometry, growth, population structure, and condition (Glamuzina *et al.*, 2022; Gurkan *et al*., 2024; Partal *et al*., 2025; Mahmoud *et al*., 2024); morphology (Milošević *et al*., 2021; Demirci, 2024; Barić *et al*., 2023; Taylan *et al*., 2025); reproduction, life stage, and migration (Milošević *et al*., 2022; Casalini *et al*., 2024); health status (Glamuzina *et al*., 2022; Bahrioğlu, 2025; Kan *et al*., 2025), fisheries and catch data (Glamuzina *et al*., 2022), historical trends and anthropogenic impacts (Glamuzina, 2024). A new article investigated the recent and drastic decline of the European eel in the Ebro Delta, an important Mediterranean wetland (Franch *et al*., 2025). The authors used long-term data from traditional fisheries and a fish monitoring scheme to reflect the eel decline onset in the late 1970s and also a recent, sharp and ongoing decline of similar magnitude (> 80%).

Following Recommendation GFCM/42/2018/1 and discussions held at the 2019 GFCM Working Group on the management of European eel (WGMEASURES–EEL), the GFCM implemented a research program on European eel in the Mediterranean Sea from 2020 to 2022. To follow up on the outcomes of this initiative, in 2023, the Scientific Advisory Committee on Fisheries (SAC) endorsed the 2023–2024 Roadmap to inform a long-term management plan for eel in the Mediterranean with selected activities in support of the decision-making process.

Having not previously participated in the GFCM-funded eel research program (2020-2022), Croatia has recently launched a national monitoring project for European eel in June 2023 (see https://podaci.ribarstvo.hr/drugi-podaci-o-ribarstvu/studije/), which aims to assess the stock along the eastern Adriatic coast through seasonal sampling and historical data analysis.

At the regional level, ongoing initiatives, including the MedSea4Fish programme (see ICES, 2024), highlight growing regional efforts to close knowledge gaps and strengthen conservation and management efforts of European eel across the Mediterranean. MedSea4Fish is the GFCM capacity development program for the Mediterranean Sea, with a main objective to support riparian countries and relevant stakeholders in fulfilling their objectives in line with the GFCM 2030 Strategy and creating a level-playing field that facilitates addressing the sustainability of fisheries at the national, subregional and regional levels. The MedSea4Fish project foresees supporting the collection, harmonization, collation, integration and analysis of basic information required for the provision of advice on the status of key stocks, to assist the work of the Scientific Advisory Committee (SAC) in formulating comprehensive quality advice on the status of key stocks and their management in the Mediterranean region. In Lebanon, specific actions and activities have been identified and launched to improve the knowledge of the fishery resources in

the country. This includes the execution, in cooperation with the GFCM and the National Centre for Marine Sciences (CNRS-L), of a monitoring program on commercial and non-commercial priority species (12 fish species, including NIS and European eel) (LOT 1), and of a discard monitoring program (LOT 2).

The aim of the activities under Lot 1 will be to collect relevant biological data on the main commercial and non-commercial species, including non-indigenous species in Lebanese marine fisheries (GSA 27 Lebanon). The sampling design for the data collection exercise will be based on the GFCM DCRF Manual. The aim of the activities under Lot 2 will be to collect relevant data on catch composition, on the composition of the discard in commercial catches in Lebanese marine fisheries.

Despite these ongoing efforts, data on fisheries, biology, and population dynamics of the European eel are lacking in the Mediterranean region compared to the rest of the distribution area. There are very few recruitment time-series in this region and none in countries outside of the EU. This lack of data is inconsistent with the importance of the Mediterranean as a natural habitat for the European eel.

3.2 Ecology & Habitat selection

Studies on the marine phase of the European eel life cycle are still scarce compared to continental phases. While several papers tackled silver eel migration between the continent and the Sargasso Sea (Righton *et al*., 2016; Wright *et al*., 2022) and better described larval distribution in the spawning area (Miller and Hanel, 2011; Miller *et al*. 2019), recent information on biological processes and transport mechanisms at the European continental slope were lacking. A research survey on board the German research vessel METEOR in 2022 focused on abundance, distribution and recruitment mechanisms of late-stage larvae of the European eel from the Bay of Biscay along the western Iberian Peninsula to the northwestern coast of Morocco (Marohn *et al*., 2025). Findings from the study fit into a historical long-term pattern, with late-stage larval abundance decreasing in parallel with glass eel recruitment, suggesting that no disproportionately increased mortalities occur during the final larval drift across the continental slope.

In addition, a case study in the Strait of Gibraltar provided new insights into the recruitment mechanisms that control the transport of eel larvae into the Mediterranean Sea and adjacent areas (Freese *et al*., 2025). Findings showed that leptocephali of *A. anguilla* are most likely transported into the Mediterranean under conditions where nocturnal vertical migration coincides with strong eastward surface currents, highlighting the importance of small-scale hydrographic processes and selective tidal transport as drivers of basin-scale recruitment dynamics.

Silver eel migration patterns using telemetric technology in estuaries, lagoons and at sea have been made available (COLAGANG Project, south of France, Verhelst *et al*. 2025).

Timing of metamorphosis and arrival into multiple European rivers are being investigated using otolith microstructure and microchemistry (see UK Country Report). Such methodology provides more insight on habitat use and selection (ongoing project in the Poole Harbour basin, Dorset, UK). In the Camargue lagoon complex (France), microchemistry otolith analyses showed that more than 70% of eels were residents, (Hoste, 2024). Similar results have been found in the River Glaven (UK) using mark-and-recapture data (Champkin *et al*. 2024).

Investigating life-history and morphometric traits in relation to habitat use strategies and health status (including parasites and contamination) will enable better assessment of the impact of habitat quality on individual growth and condition (Teichert *et al.* 2023). Eel growth was compared between different habitats within a lagoon complex in terms of abundance, life history traits (Hoste *et al*. 2024), health status (Hoste *et al*. 2025) and habitat use tactics (Hoste, 2024). A

novel PhD study commencing in 2025 will assess the impact of changing lacustrine conditions on eel head-shape morphometry, trophic interactions and reproductive potential of two distinct eel ecotypes (narrowhead and broadhead) within two large lake systems in Northern Ireland.

Among 29 estuaries along the French English Channel and the Atlantic coast, Denis *et al*. (2024) found that larger estuaries which are subjected to stronger anthropogenic pressures displayed less eel abundance. At the European scale, the ongoing DIASPARA project (2024-2026 – EU co-funded) is improving stock assessment models by utilizing spatio-temporal variability in life history traits and environmental conditions.

Several studies have highlighted the need for better data and targeted restoration to support eel recovery (Champkin *et al*., 2024; Hansen *et al.,* 2023; Sjögren Englund, 2025). However, a more comprehensive and integrated conservation strategy, spanning multiple regions is required for effectively combining research and management strategies to ensure the long-term survival of the European eel (Diaz *et al*. 2025).

3.3 Field monitoring methods

Recent papers (Poole *et al*. 2024 and Berg 2024) highlight the importance of using standardized fyke-net protocols to model trends in yellow eel biomass in open waters, addressing unavoidable imbalances in the design, allowing for covariates and correlation structures that reflect the nature of the samples, and delivering standardised trends.

Acoustic cameras are increasingly used for continuous, non-intrusive recording and counting of fish passage in natural environments and artificial structures such as fishways. Le Quinio (2024) have developed an innovative method for analysing acoustic videos that focuses on swimming locomotion instead of the morphological properties of fish.

3.4 Eel management and assessment

Díaz *et al*., (2025) highlights that despite more than a decade of implementation of the European Council Eel Regulation (ECER), the European eel (*Anguilla anguilla*) population shows no recovery, with biomass levels remaining critically low. The paper reviews the eel's complex life cycle, panmictic population structure, and multiple threats, arguing for a comprehensive, integrated, and regionally coordinated conservation approach. It proposes a governance framework similar to the Water Framework Directive's Common Implementation Strategy, involving multidisciplinary working groups that link science, management, and policy. The authors call for harmonized assessment methods and a shift from long-term escapement goals to short-term mortality reduction targets. They advocate adaptive, science-based management that evolves with new evidence. Finally, the study stresses the immediate need to reduce anthropogenic mortality in line with ICES "zero catch" advice, combined with long-term measures to restore habitats and improve connectivity.

3.5 Hydropower

Water is frequently diverted from or into rivers for flood protection, water level management, domestic supply, agriculture, industry and hydropower generation. Eels and other fish can be entrained in turbines, pumps and consumptive water intakes, resulting in damage and/or mortality. Recent literature is focused on screening (Sonnino Sorisio *et al*., 2025), fish passage solutions (Evans *et al*., 2025: ICPR, 2025: Sonnino Sorisio *et al*., 2024), eel pass design (Williamson *et al*., 2025) and deflection methodologies (Lenihan *et al*., 2025). Meanwhile, ongoing projects such

as the Nationale glasaal knooppuntenlijst (Griffioen *et al*., 2025) have released findings on improved accessibility around barriers for glass eel migration.

3.6 Non-Native and Invasive aquatic species

Invasive species are widely recognized as a major cause of global biodiversity loss as they pose a significant threat to ecosystem services and have a profound impact on all levels of the biological hierarchy (Cucherousset & Olden, 2011; Simberloff *et al*., 2013). These impacts often include disruptions to native communities and changes to ecosystem functioning through mechanisms such as predation and competition (Strayer, 2010). The impacts on native species such as the European eel are, however, poorly documented.

The Atlantic blue crab has rapidly spread along the western Mediterranean coasts, halting eel fisheries in some areas (ICES, 2021). Eels resting in the substrate are vulnerable to predation and injury by blue crabs (Clavero *et al.,* 2022), representing a major threat, as the crab's potential invasive range overlaps with 63% of the European eel's Iberian habitat (Bedmar *et al*., 2024). Some studies have also documented the predation of eel by another invasive species the European catfish (*Silurus glanis*) in Portugal (Moncada *et al*., 2025) and Italy (Mancini *et al*., 2022). However, further studies focusing on the impact of invasive species on the European eel are needed to improve the management of aquatic systems and accelerate the recovery of the eel population, given the knowledge gap on this topic.

3.7 Virus and Parasites

As stated in previous WGEEL reports (WGEEL 2021, 2023, 2024), the invasive swim bladder parasite, *Anguillicola crassus*, poses a threat to successful eel migration and therefore reproduction. In 2025, two studies in Türkiye, performed by Bahrioğlu (2025) and Şeydanur *et al*. (2025), examined the presence and pathological impact of the invasive swim bladder parasite *A. crassus* in European eel (*A. anguilla*). Bahrioğlu's research documented the occurrence and spread of the parasite in Güllük Lagoon, highlighting its establishment in local eel populations, while Şeydanur *et al*. (2025) focused on the histopathological consequences of infestation in Lake Bafa, revealing severe tissue damage in the swim bladder, including inflammation, fibrosis, and epithelial degeneration. Furthermore, in five estuarine systems in Northern and Western Greece the prevalence of *A. crassus*, and associated parameters affecting risk of infection, were investigated by Kantzoura *et al.* (2025). Although high prevalence was found, it varied among investigated locations. Multivariate binary logistic model analysis demonstrated that the significant factors associated with infection of *A. crassus* in the studied population were condition factor K(), sex, life stage, and eels' origin from Vistonis estuarine system. In Croatia, Radočaj *et al.* (2025) presented records on the prevalence of *A. crassus*. Despite eel infestation with *A. crassus* recently reported in Türkiye, Greece and Croatia, Órfão *et al.* (2025) found lack of evidence for *A. crassu*s infection of European eel in three streams on Madeira Island, Portugal.

Viral infections such as anguillid herpesvirus 1 (AngHV-1) and eel virus European X (EVEX) have also been suggested to play an important role in the decline of the European eel population. Recent investigation in the largest Croatian eel fishery site, Neretva River Delta, revealed presence of AngHV-1 (14 out of 32 analysed eels were positive on AngHV-1), while all samples were negative on EVEX (Gavrilović, 2024).

Health disorders (non-infectious diseases), including reproductive disorders, can be caused by persistent pollutants (heavy metals, pesticides, PCBs, etc.). Despite various local and non-continuous studies, no harmonized, systematic, and synchronized eel health monitoring has been carried out so far. Consequently, areas with low levels of these particular disease-causing agents

cannot be determined, making implementation of biosecurity measures (e.g. obligate disease diagnostic for stocking/restocking, quarantine, waste management) difficult and increasing risk of disease spread (Gavrilović *et al*., 2024).

3.8 Handling of confiscated glass eels

The considerable volume of seized glass eels makes it necessary to establish protocols to ensure their proper handling and successful, safe release into the wild. Sanahuja *et al*. (2025) demonstrated that capture and transport impose physiological stress on glass eels, compromising their immune defences, and indicated that a recovery period of up to two months in controlled conditions is necessary before release. Building on the need for such a recovery phase, Verhelst *et al*. (2025) propose a comprehensive decision framework (Figure 3.1 below) for the safe reintroduction of confiscated eels. This framework recommends a quarantine period for pathogen testing and molecular species identification to prevent the introduction of diseases or non-native species upon reintroduction. Together, these studies provide a foundation for developing best practices to ensure that law enforcement successes in combating illegal trade can translate into positive conservation outcomes for the critically endangered European eel.

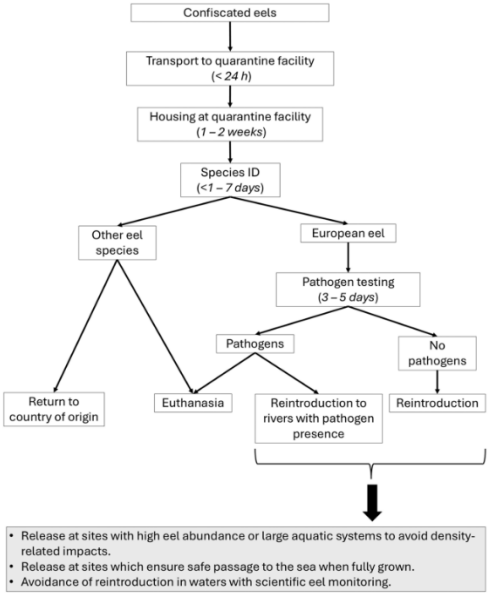


Figure 3.1 Decision tree-based guideline for reintroduction of confiscated glass eels, Taken from Verhelst *et al*., 2025.

3.9 Eel market vortex

A new Study (Clavero *et al*., 2025) demonstrates that a market extinction vortex, a self-fuelled process where exploitation intensifies as a species becomes rarer due to the human eagerness to pay for scarce items), is exacerbating eel decline This conclusion is based on a long-term longitudinal monitoring analysis of glass eel prices (1925–2024) and landings (1949–2024) in Spain. The analysis showed that landings sharply declined after peaking in the late 1970s, while prices augmented exponentially across the century. The critical finding is that the collapse in abundance was directly linked to an acceleration in price increases, resulting in a negative price-abundance relationship since the late 1970s. This dynamic means that exponentially rising prices compensate for the massive reduction in harvest, promoting continued overexploitation and

ensuring that the overall market value of constantly declining glass eel landings has remained relatively constant.

3.10 Aquaculture data

Starting with the current report, aquaculture production will no longer be reported within the ICES dataset. Production figures reported by the ICES members have been incomplete, as the existence of only a single eel farm in several member countries has raised concerns about commercial sensitivity when individual production data are reported.

Aquaculture is a major stakeholder in the use of glass eels. The latest publicly available production data from FEAP (Federation of European Aquaculture Producers) European Aquaculture Production Report 2017-2023 (FEAP, 2024) is used instead (Table 4). These data are also considered incomplete, allowing only a trend to be established.

Table 4. Estimation of European eel aquaculture production from EU countries 2017-2023 (FEAP, 2024)

Production (Tonnes)	Year						
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Netherlands	2000	2150	2150	2150	2150	2000	2000
Germany	927	1207	1202	1202	1202	1332	1322
Italy	850	850	750	700	650	550	400
Denmark	750	-	-	-	-	-	-
Spain	330	330	360	360	320	350	360
Portugal	200	-	-	-	-	-	-
Sweden	105	100	96	110	110	110	110
Poland	86	1	11	11	-	-	-
Czech Republic	2	1	-	-	-	-	-
Greece	-	1207	-	-	-	-	-
Grand total	**5250**	**5846**	**4569**	**4533**	**4432**	**4342**	**4192**

4 Implementation of the roadmap proposed by WKFEA

4.1 Recruitment model benchmark

The current ICES advice on fishing opportunities for eel is based on a statistical analysis of several time-series on recruitment (glass eel and or a mixture of glass + yellow eels, and of young yellow eel time-series). The data and methods used by WGEEL have never been peer-reviewed through the benchmark process. As issues have been identified related to either recruitment data or to recruitment analysis, a benchmark for eel recruitment is scheduled in the next few years. The benchmark time schedule will be established once ACOM has approved the list of issues (https://sid.ices.dk/manage/RollingIssues.aspx).

The following issues are going to be addressed during the benchmark:

- Existing recruitment data series evaluation
- Impact and standardize reporting for recruitment series (weight and/or numbers)
- Compare the current method used to assess the recruitment index (GLM) with other option (GEREM or others).
- Design formally accepted reference points for the recruitment index. Check if the currently used limit reference point (1960–1979 recruitment) is the best option.
- Evaluate/Define rules for adding new data series to recruitment analysis
- Take uncertainty/variability within individual (recruitment) data series into account

4.2 Preparing the Benchmark Data Call

The benchmark process will consist of two workshops: the data workshop where the recruitment series used in the assessment will be evaluated; and the benchmark workshop during which the full model assessment will be evaluated to be used for the official ICES advice.

During WGEEL the data call template for the data workshop was prepared. In the data call detailed information on each recruitment series will be asked for through an information sheet (Annex 7). In addition, information on absolute biomass or number of young-of-the-year will be requested, which is needed to feed the GEREM model which estimates total European eel recruitment (Bornarel *et al.* 2018). Detailed information on absolute biomass will be requested, resulting in an information sheet (Annex 8).

For new series and absolute biomass, data providers will be requested to send the series through Data Call Annex 1 of the usual data call. The part on group metrics and individual metrics will not be requested for the benchmark workshop.

4.3 Updating the roadmap

The current roadmap for improving future advice on the European eel stock (ICES 2021 WKFEA) outlines the necessary steps to develop tools and models for the final spatial stock assessment model that can be used in ICES advice. This roadmap was updated in 2024 (WGEEL, 2024). The roadmap was updated again in 2025 to include information about the needed regional model

development. (Figure 4.1, Table 5). These regional models will have to be developed so that the spatial stock assessment model that uses the regional models, can be developed. All model development will be dependent on additional project funding, because such large tasks would not be possible in WGEEL only.

The timeline for the database updates and model development is detailed in SG 5 chapter.

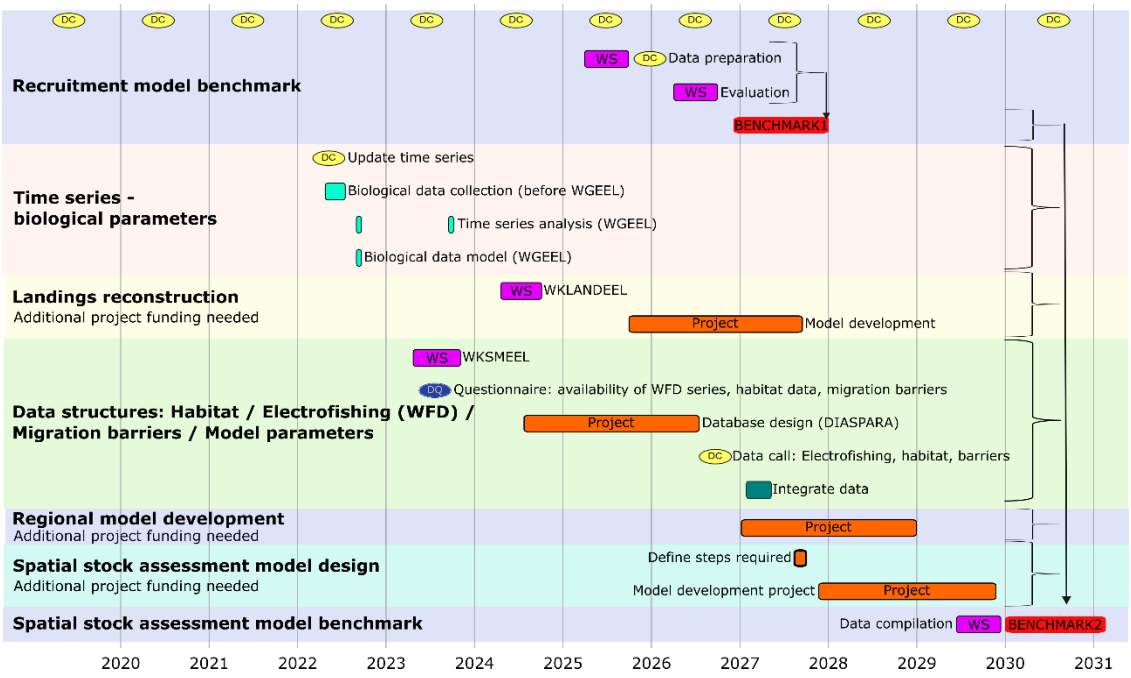


Figure 4.1 Updated roadmap following WKFEA 2021 and WGEEL 2024. The section with regional model development is added in 2025.

Table 5 Status and updates of the different tasks listed in the WKFEA roadmap (ICES 2021). Italic = new step in the roadmap

Task	Status	Notes	Project/Working group/Workshop
Recruitment model benchmark			
Annual data call – time series	In progress	annual	ICES
Benchmark process 1, incl. workshop	Not started	draft data call files; awaiting ACOM sign off	ICES
Time series - Biological parameters			
DC - Update time series and biological parameters	Completed		WGEEL
Biological data collection (before WGEEL)	Completed	Included in annual data call	WGEEL
Time series analysis	Partially completed	Preliminary analysis done	WGEEL 2022 and 2023
Biological data model	Partially completed	Preliminary analysis done	WGEEL 2022
Landings reconstruction			
Workshop 1 - Landing data improvement	Completed	Proposed a modelling framework to reconstruct landings	WKLANDEEL
Project - Reconstruction of eel landings statistics	Not started	Using results from WKLANDEEL	No funding call identified

Data structures: Habitat / Electrofishing (WFD) / Migration barriers / Model parameters			
Workshop – availability of data	Partially completed	Questionnaire was carried out for the design of the data call	WKSMEEL, WGEEL
Design databases	In progress	Habitat, Barriers	DIASPARA
Data call - WFD series	Not started	Pending deliverables from DIASPARA	WGEEL
Data call - Habitat data	Not started	Pending deliverables from DIASPARA	WGEEL
Data call for migration barriers	Not started	Pending deliverables from DIASPARA; subsample DIASPARA's data call Spring 2026	DIASPARA/WGEEL
Regional model development			
Model development and robustness tests	Not started	Using results from GFCM/Sudoang/DIASPARA	No funding call identified
Spatial stock assessment model			
Kick of Meeting - Define steps required	Not started	Using results from GFCM/Sudoang/DIASPARA/Regional model	No funding call identified
Model development and robustness tests	Not started		No funding call identified
Spatial stock assessment model benchmark			
Benchmark process 2, incl. data call	Not started	Pending spatial stock assessment model project	ICES

5 Data and stock assessment

5.1 Tasks

This subgroup worked on the database changes and DATSU, addressing the issue of areas without estimates of fishing mortality or stock biomass in, and addressing spatial grouping in the models and data.

The subgroup also held discussions with the DIASPARA project (Work Package 2) to ensure the match in the current and future data with the database work.

5.2 Addressing the issue of areas without estimates of fishing mortality or stock biomass in relation to a holistic stock assessment

One of the assigned tasks this year was addressing last year resolution e: "Address the issue of areas without estimates of fishing mortality or stock biomass in relation to a holistic stock assessment". After internal discussion, it was decided that this will be better addressed by following the WKFEA roadmap and the suggestions of the Workshop on the Development of a Spatial Database Model for Eel (WKSMEEL, 2023), through working towards the development of regional stock assessment models by regional experts. First, more work needs to be done to define data and modelling needs in the different regions and for the different regional assessment models, before guidelines can be provided on how mortality and biomass may be estimated. Work towards this is underway in the DIASPARA project, and discussions were held on the current progress, and on planning the work that is needed for this in the future.

5.3 DATSU and databases

Timeline

The roadmap set by WKFEA and revised in 2024 and 2025 is presented in Section 4. A more detailed analysis of the development of a common database for all diadromous fishes was conducted by the group and can be summarized in Figure 5.1.

Currently WGEEL stores data in two types of data structure within a single database. The first was designed during WKEELDATA (ICES, 2017) and WKTEEL (ICES, 2022a), and comprises landings, biomass indicators, mortality indicators, other landings, releases, aquaculture data, all stored in the same structure. This first data structure has been analysed by DIASPARA, and can be combined with data from WGNAS and WGBAST as data are collated at the stock unit or EMU, i.e. at the regional level. The name of this data structure is the **stock database**.

A second dataset was designed during WKEELDATA2 (ICES, 2019) and corresponds to time series and associated group and individual metrics. It is stored in two separate data structures. The first data structure is for series (corresponding to Annex 1 – recruitment, Annex 2 – yellow eel standing stock, Annex 3 – Silver eels). The second data structure was designed during WKEELDATA4 (ICES, 2022b). It broadens the series to store sampling, corresponding to DCF and electrofishing or any sampling allowing to collect biometry or quality data.

DIASPARA has merged the two structures in a single database, adapted it to ICES rules and vocabularies, and created a hierarchical structure allowing to include data from other species

e.g. salmon and trout data collected by WGNAS, WGBAST, and WGTRUTTA, but also in the future data on other diadromous species. This database is called the **metric database.**

Stock database , metric database, and continental habitat vocabulary

DIASPARA is creating the vocabularies and tables structures necessary for a full relational database storing data on diadromous fishes, including the metric database, the stock database, and the habitat vocabulary. This database aims at storing data from WGEEL, WGNAS, and WGBAST.

The metric database allows for a simplification of the previous database structure (by joining tables corresponding to Annex 9 (sampling) and annexes 1, 2, or 3 (series)). It also handles methods, subgroup for group metrics (e.g. separated entries for males or females, or for G and Y stages in mixed GY series). The series will make use of the ICES vocabulary on stations (Figure 5.1, Metric DB).

The stock database is a database based on the Salmoglob postgresSQL database and model structure of WGNAS, which has been modified to allow the use of data from WGEEL and WGBAST. The metric database will also store all information on trout and salmon (Figure 5.1, Stock DB).

The habitat vocabulary is a referential for the habitat. It includes the current codes used in the Baltic Sea, and those used by the GFCM in its habitat database. It is a referential of continental habitats.

The development is done with the supervision and support of the ICES data centre. They have already developed an exchange format for the metric database, which has been discussed during specific and group meetings at the WGEEL. The databases will be released between January and April 2026.

Both metric and stock databases will be included in a common database structure (already developed in Postgres), designed for all migratory fish. ICES will work on the creation of the format for the stock database and create the database in an SQL server and DATSU. This development is envisioned in 2026.

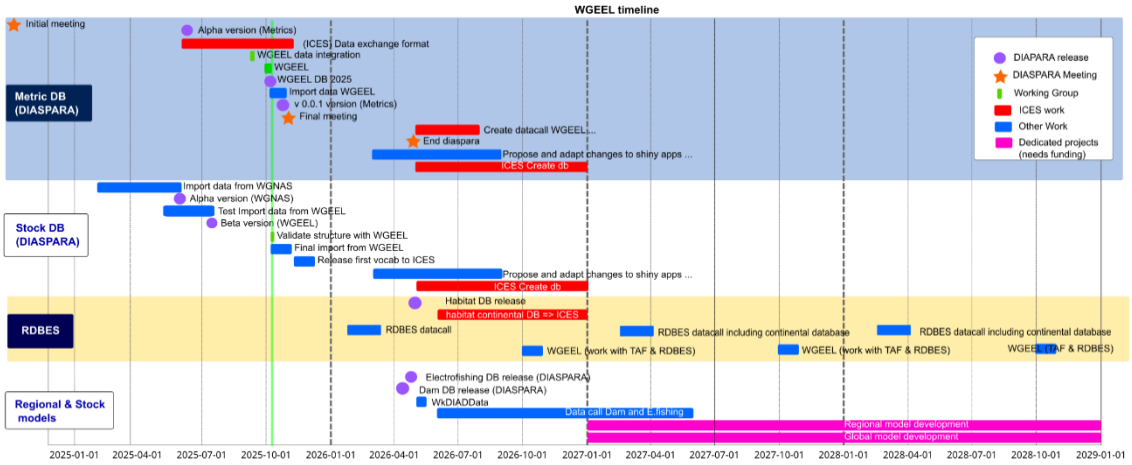


Figure 5.1. Timeline for the development of a common diadromous fish database, use of RDBES for marine and continental landings and the development of regional models. This timeline includes from DIASPARA, ICES and the WGEEL.

The next data call will unfortunately not be able to use the DATSU format, as it would break the workflow of the data collection during the then-ongoing recruitment time-series benchmark.

Therefore, using the DATSU format for the data call will be postponed until 2027 for both the stock DB and the metric DB.

Regional model development

Templates for a dam database and an electrofishing database will be released as a draft, to be analysed by a workshop organized by WGDIAD. This workshop will invite experts from WGEEL, but also from WGTRUTTA, WGNAS, and WGBAST interested in future use of these data or already developing their own data calls. On this basis, the development of regional models and global models could start from 2027. The regional and global model development is dependent on scientific production that will require dedicated work and specific fundings and cannot be carried out by the WGEEL.

RDBES

The WGEEL is currently storing landings and sampling related to fisheries in its metric database. The continental habitat vocabulary will allow for including data related to commercial fisheries in continental waters into the RDBES. WGEEL will progressively shift from its database to RDBES (Figure 5.1 RDBES). This process is foreseen to be a several year process. Next year, WGEEL will start to analyse landings and sampling data from the RDBES, to identify gaps and provide recommendations for data collection and submission to the RCG data call.

In 2027, continental landings will start to be available in RDBES. Information will need to be given to national data providers during RCGs explaining the progressive shift from a WGEEL database to the RDBES. At the end the of the process, the landings from RDBES will be corrected with the transparent assessment framework (TAF), in R scripts containing specific methods of rectification for each country. The data will be aggregated at the regional unit level, and stored as inputs for the future spatial whole stock assessment model within the stock database. A similar process will be established for accessing data from the RDBFIS in the Mediterranean. At that point, WGEEL should review the processes that are used by different areas to correct for landings data.

5.4 Habitat division

The status of eel production in EU and non-EU eel management units (Figure 5.2) is assessed by national or sub-national fishery and/or environment management agencies. The terminology eel management unit (EMU) has been used by WGEEL and others for several years now but with various and unrecorded definitions leading to some confusion. It most often represents a management area for eel, which most often correspond to a river basin district (RBD) as defined in the WFD (EU, 2000). However, in cases of stock assessments at other spatial scales, and for stock parts lying outside the EU, EMUs have also been defined, either as being the management units used by the country (e.g. Tunisia) or as the whole country. In practice, data provision from some EMUs can be divided into further geographical subunits.

The current division by EMU creates issues when trying to build a consistent spatial division of the stock into consistent subunits. For instance, EMUs are shared between the Atlantic and the Mediterranean. For this reason, another hierarchy developed during DIASPARA has been presented during the working group.

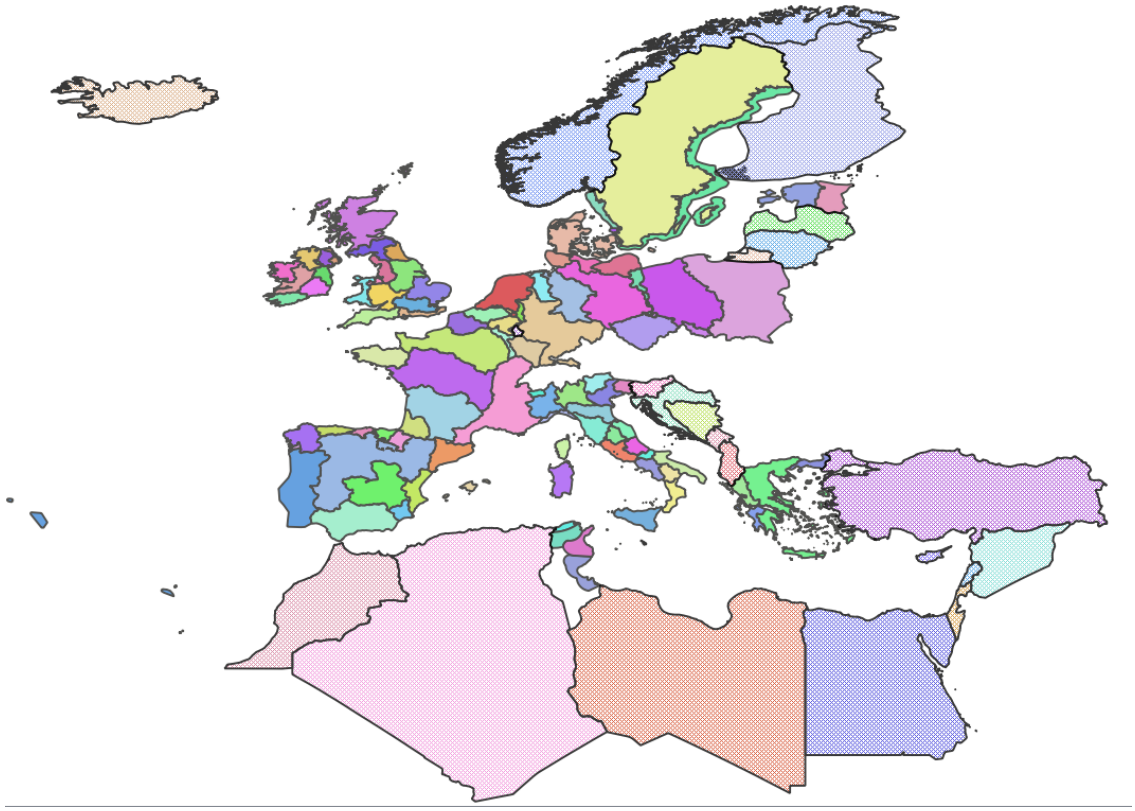


Figure 5.2. Current map of eel management units (EMUs) as reported by countries or corresponding to national entities where no EMU is described at the national level. WGEEL reviewed the habitat data produced within the DIASPARA project, focusing on how best to define areas for assessment for future use. DIASPARA required guidance on how to divide continental habitat areas in a way that would be practical both for modelling purposes and for data providers.

WGEEL recommended that habitat data be divided according to ICES ecoregions, with some modifications following ICES divisions and subdivisions, to ensure broader usability and compatibility with future modeling efforts. Figures 5.3-5.7 present the divisions chosen and discussed. The following maps illustrate a spitting of basins consistent with marine division, subdivision or area level.

The habitat database will still provide information on lower levels, e.g. basins, which will be able to be used in regional models but the division proposed here could for the structure of the future Bayesian model used to assess the whole stock.

In the north, Iceland, and Northern part of the Scandinavian peninsula have been grouped together as will correspond to sectors of low density and growth (Figure 5.3).

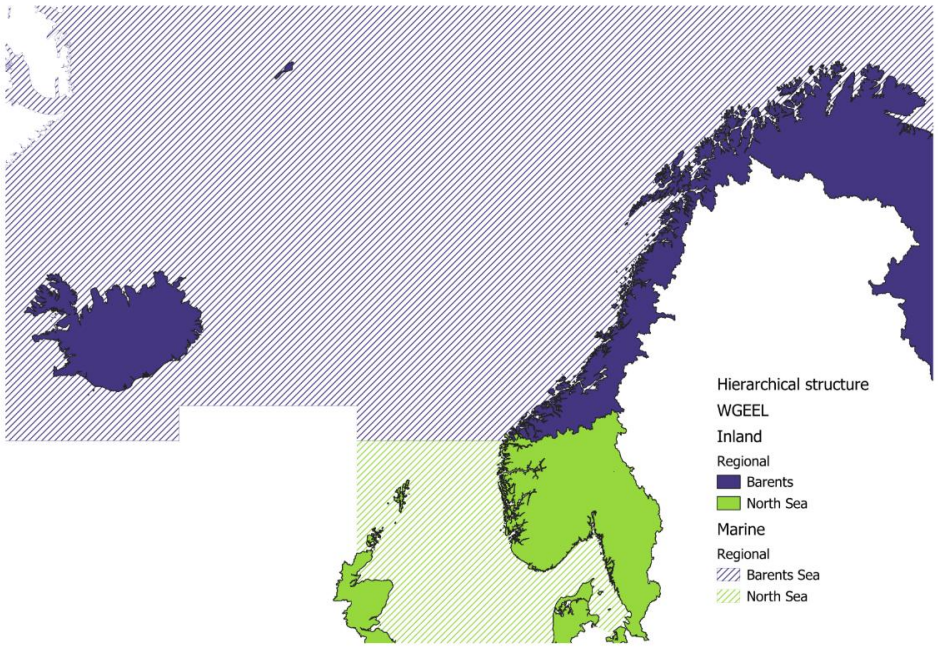


Figure 5.3. Northern Norway, Barents Sea & Iceland.

Further South, the Baltic will be treated as single unit following the current ICES divisions. Regional substructure, identical to those created for WGBAST will also be used (Figure 5.4).

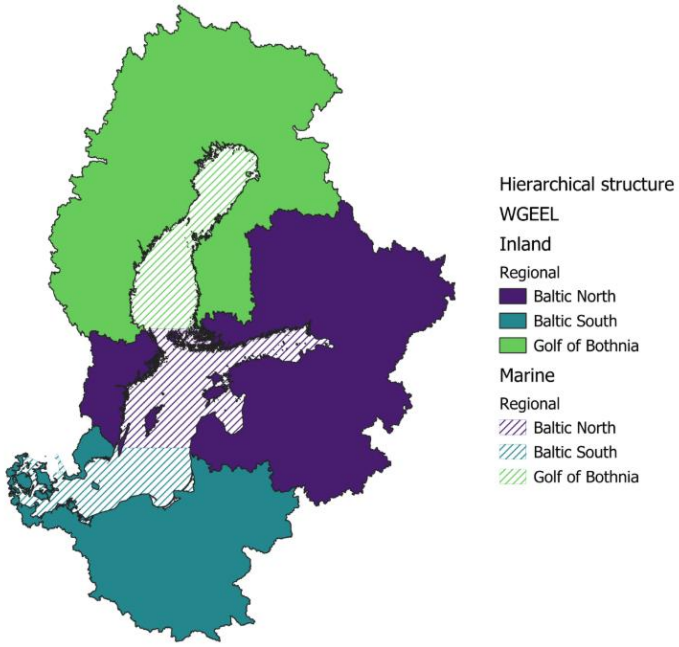


Figure 5.4. Baltic Sea divided into three areas following GFCM divisions. They can still be grouped in models if needed.

The Mediterranean is split according to the new divisions introduced by ICES. During discussions within WGEEL, the consensus was that splitting into Eastern, Central and Western Mediterranean, and the Adriatic would probably devise regions with different densities and stock parameters. A splitting between northern and southern mediterranean can easily be added for the continental part of the stock (Figure 5.5).

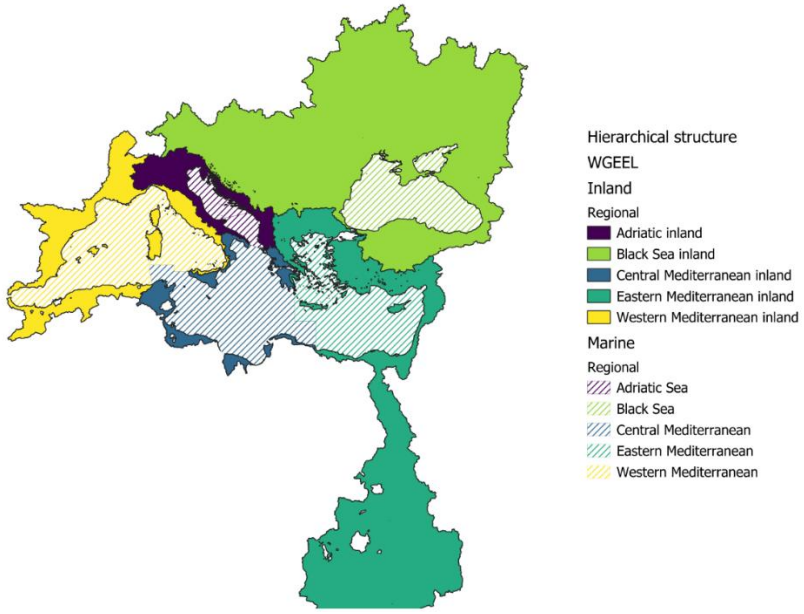


Figure 5.5. Mediterranean & Black Sea divided into four areas, based on input from regional eel experts.

In the North Sea, the grouping of southern Norway and the Swedish West coast would probably allow for homogeneous growth or recruitment levels (Figure 5.6). Great Britain East coast is separated from West and Ireland due to recruitment differences. English Channel is separated from the North Sea because as recruitment indices are currently different between the North Sea and "Elsewhere Europe" (Figure 5.6).

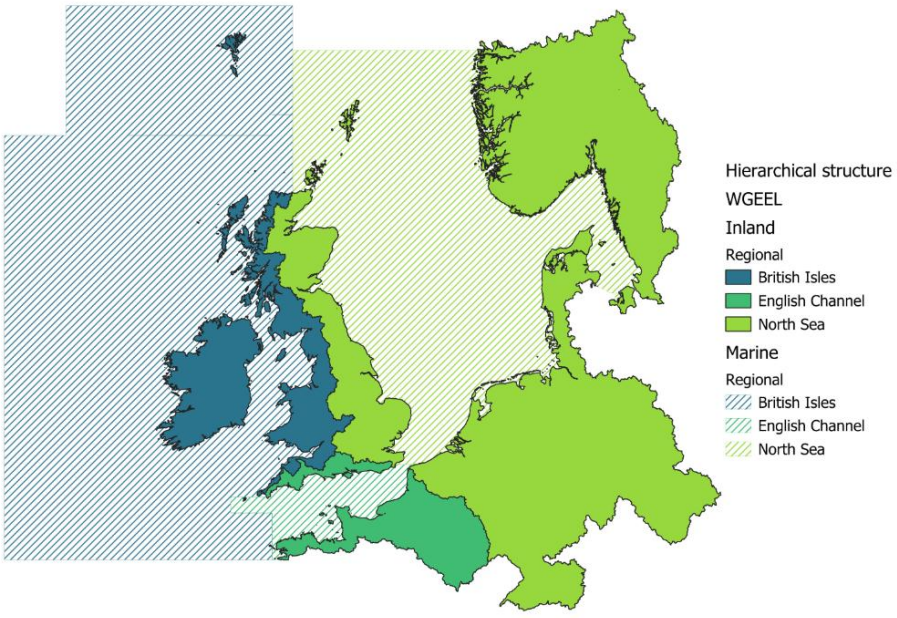


Figure 5.6. The North Sea, which can be further divided between the continental part, the Scandinavian part and the East coast of the United Kingdom.

Finally, the Atlantic divisions follow those tested in SUDOANG. (Drouineau *et al.*, 2021) with the North Sea separated from the Bay of Biscay and the Portuguese coast (Figure 5.7).

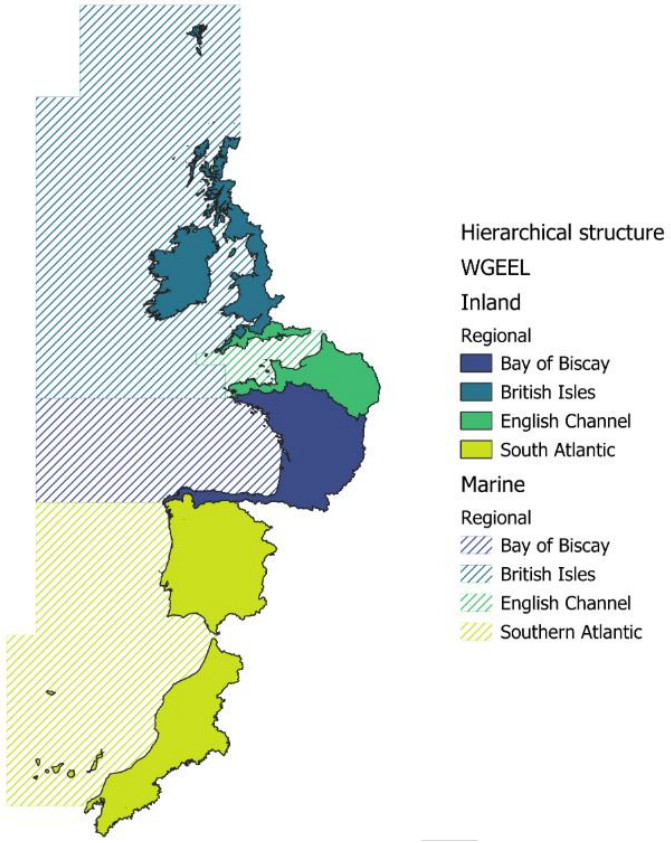


Figure 5.7. Atlantic regions, showing the separation of Channel, Biscay, and Southern Atlantic.

6 In collaboration with the ICES communication team, design an information sheet aiming to inform non-scientists and stakeholders on the status of the eel population

In this ToR, a draft framework was prepared by the WGEEL to be transferred to the ICES communication team for the design of a two-page information sheet intended to inform non-scientists, e.g. fishers and stakeholders about the status of the European eel population. Following a series of consultations, the framework outlined the key elements to be included, such as the eel's life cycle, pressures, and distribution across European waters, presented in clear and concise language. The framework proposed the inclusion of infographics illustrating essential concepts and highlighting the ecological importance of the species. It also suggested a diagram depicting the process from data collection to the formulation of ICES Advice, including which parties are involved at each stage. The overall aim of this work was to explain the work of WGEEL towards the assessment of the stock status. Further work will be undertaken along with the ICES communications team.

7 Potential data needs and associated methods for the EU regional workplans, particularly in relation to DCF data collection

WGEEL focused on end-user input for the draft regional work plans (RWPs) for data collection performed within the EU Data Collection Framework (DCF). RWPs for the 2028-2030 period were drafted for the three regions defined within the EU Regional Coordination structure, namely: the North Atlantic, North Sea and Eastern Arctic (RWP NANSEA), the Baltic Sea (RWP Baltic), and the Mediterranean and Black Sea (RWP Med & BS). The goal of these initial RWPs for eel data collection across all three regions is to provide guidance on the collection of recruitment, standing-stock (yellow eel), and silver eel data within the DCF framework for better harmonization. These details will be outlined in the text and table documents in the three RWPs for the 2028-2030 period (in Section 2 – Biological data, and in Text Box 2.3 & Table 2.3 – Diadromous in the RWPs).

As the outcomes of WKFEA and DIASPARA will contribute to a more holistic, cross-regional eel assessment and a more comprehensive use of data and modelling approaches, WGEEL also summarized background information and parameter input needs for potentially relevant models, namely the eel density analysis (EDA) and the eel stock assessment model (ESAM). The corresponding descriptions and parameter tables are provided in Annex 9 of this report. This will also be included in the three RWPs for the 2028-2030 period in the "*test studies*" section (in Text Box 1a in the RWPs) to support the preparation of future RWPs (for the 2031–2033 period).

It should be noted that test studies are still under development and not expected to be finalized at the start of the 2028-2030 period. The deadline to submit the RWPs is October 2026; therefore, the work plans were not completed during the WGEEL meeting, and work on the RWPs will continue afterwards.

Annex 1: Resolution

2024/AT/FRSG13 The J**oint EIFAAC/ICES/GFCM Working Group on Eels** (WGEEL), chaired by Jan-Dag Pohlmann, Thünen Institute, Germany and Caroline Durif, Norway will meet, in a split meeting from **08-12 September 2025 (online) and 29 September – 06 October 2025 (Rennes, France)** to: Address the generic EG ToRs from ICES, and any requests from EIFAAC or GFCM;

a) Report on developments in the state of the European eel (*Anguilla anguilla*) stock, the fisheries on it, and other anthropogenic impacts;
b) Report on updates to the scientific basis of the advice, including any new or emerging threats or opportunities;
c) Identify and address Mediterranean-specific issues on European eel;
d) Implement the roadmap proposed by WKFEA (as amended in WGEEL report 2024);
e) Address the issue of areas without estimates of fishing mortality or stock biomass in relation to a holistic stock assessment;
f) In collaboration with the ICES communications team, design an information sheet destined to inform non-scientists and stakeholders on the status of the eel population;
g) To the extent possible, provide information on potential data needs and associated methods for the EU regional workplans, particularly in relation to DCF data collection.

Material and data relevant for the meeting must be available to the group on the dates specified in the 2025 ICES data call.

WGEEL will **report by 16th October 2025** for the attention of ACOM, WGDIAD, FRSG and FAO, EIFAAC and GFCM.

Annex 2: Country reports

The country reports will be published alongside this report as working documents. Please follow the links listed below to pull up the corresponding country report directly.

- Belgium – To be added at a later date
- Denmark – Click here to access the country report
- Estonia – Click here to access the country report
- Finland – Click here to access the country report
- Germany – Click here to access the country report
- Greece – Click here to access the country report
- Ireland – Click here to access the country report
- Latvia – Click here to access the country report
- Lithuania – Click here to access the country report
- Netherlands – Click here to access the country report
- Norway – Click here to access the country report
- Poland – Click here to access the country report
- Portugal – Click here to access the country report
- Spain – Click here to access the country report
- Sweden – Click here to access the country report
- UK – Click here to access the country report

Annex 3: List of participants

Name	Institute	Country	Participation
Elsa Amilhat	University of Perpignan Centre of Education and Research on Mediterranean Environments	France	
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Laurent Beaulaton	French Agency for Biodiversity OFB, INRAE, Institut Agro, Univ Pau and Pays Adour/E2S UPPA	France	
Joost Blom	BioMar A/S, Denmark	Netherlands	
Clarisse Boulenger	U3E INRAE, OFB, Institut Agro, Univ Pau and Pays Adour/E2S UPPA	France	
Adele Boyd	AFBI Fisheries and Aquatic Ecosystems Branch	United Kingdom	
Cedric Briand	Eaux et Vilaine	France	
Karin Camara	North Rhine Westphalian State Agency for Consumer Protection und Nutrition Centre for Applied Fisheries, Fish Ecology and Aquaculture	Germany	
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Marieke Desender	Research Institute Nature and Forest	Belgium	
Tyrell DeWeber	Potsdam Institute of Inland Fisheries	Germany	
Estibaliz Diaz	AZTI, Marine Research, Basque Research and Technology Alliance (BRTA),	Spain	
Isabel Domingos	University of Lisbon, Faculty of Sciences	Portugal	
Hilaire Drouineau	INRAE EABX	France	
Caroline Durif (Chair)	Institute of Marine Research Austevoll Research Station	Norway	

Name	Institute	Country	Participation
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Derek Evans	AFBI Fisheries and Aquatic Ecosystems Branch	United Kingdom	Online
Marko Freese	Thünen Institute of Fisheries Ecology	Germany	
Ana Gavrilovic	University of Zagreb Faculty of Agriculture, Department of Fisheries, Apiculture, Wildlife management and special Zoology	Croatia	
Rob van Gemert	Swedish University of Agricultural Sciences, Department of Aquatic Resources (SLU Aqua)	Sweden	
Jason Godfrey	Marine Directorate of Scotland, Freshwater Laboratory	United Kingdom	Online
Matthew Gollock	Zoological Society of London	United Kingdom	Online
Chris Grzesiok	Environment Agency	United Kingdom	
Tessa van der Hammen	Wageningen Marine Research	Netherlands	
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Andrzej Kapusta	National Inland Fisheries Research Institute	Poland	
Janis Kolangs	Institute of Food Safety Animal Health and Environment	Latvia	
Clément Lebot	Institut Agro	France	

Name	Institute	Country	Participation
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Jordan Moss	Atlantic Technological University	Ireland	
Delphine Nicolas	Tour du Valat	France	
Ciara O'Leary	Inland Fisheries Ireland	Ireland	
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Name	Institute	Country	Participation
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Sami Vesala	Natural Resources Institute	Finland	

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Annex 5: Meeting agenda

Agenda (All times CET) – WGEEL annual meeting 2025

Rennes (France), Agricultural University

29.09 - 06.10.2025

Monday 29th September

9:00-10:30 Welcome & Introduction / Agree on agenda / Tour de table

10:30-12:00 Presentation of SG and assignments (incl. coffee break)

12:00-12:30 Logistics (Lunch, field trip, venue, etc.)

12:30-13:30 Lunch

13:30-14:00 Presentation: ICES View Point / Zotero

14:00-17:00 SG breakouts

Tuesday 30th September

09:00-9:30 Morning plenary

09:30-12:30 SG breakouts

12:30-13:30 Lunch

13:30-14:00 Delphine Nicolas, "Monitoring eels in a Mediterranean lagoon: focus on Tour du Valat actions in the Camargue"

14:00-17:00 SG breakouts

Wednesday 1st September

9:00-9:30 Morning plenary

09:30-12:00 SG breakouts

12:00-13:00 Lunch (Creperie) – BUS LEAVES AT 13:00

13:00-19:00 Field trip

19:00: Dinner at Agro Institute (catering)

Thursday 2nd September

9:00-9:30 Morning plenary

9:30-10:30 Eel quality meet-up in main room (Marieke)

10:30-12:30 DIASPARA meet up (Viktor, Becky, Cedric, Hilaire, JD …)

09:30-12:30 SG breakouts

12:30-13:30 Lunch

13:30-14:15 Presentation: DIASPARA / Database

14:15-17:00 SG breakouts

Friday 3rd September

9:00-9:30 Morning plenary

9:30-11:00 Advice agreement

11:00-12:30 SG breakouts

12:30-13:30 Lunch

12:30-17:00 SG breakouts

Saturday 4th September

10:00-11:00 ToRs, recommendations, venue, dates

11:00-11:45 Discussion: Information sheet (Jonny)

11:45-13:00 Lunch

13:30-14:30 Discussion: Benchmark data call (Laurent)

14:30-14:45 Update: WGBYCATCH (Jani)

14:00-XX SG Breakouts

19:30 Dinner

Sunday 5th September

Report reading (individual)

Monday 6th September

09:00-12:30 Report agreement

12:30-13:30 Lunch

13:30 - end Report agreement

End of meeting

Annex 6: Abbreviations, acronyms, and glossary

ABBREVIATION/ACRONYM	DEFINITION
AA	Administrative Agreement, typically the recurring agreement between ICES and the EC
ACFM (ICES)	Advisory Committee on Fisheries Management
ACOM (ICES)	Advisory Committee on Management
ADGEEL	Advice drafting group on eel, for ICES
AIC	Akaike Information Criterion
AngHV-1	Anguillid herpes virus 1
ANCOVA	Analysis of Covariance
ANOVA	Analysis of Variance
BERT	Bayesian Eel Recruitment Trend model
BIC	Bayesian Information Criterion
CCM	Catchment Characterisation and Modelling
CITES	Convention on International Trade in Endangered Species of Flora and Fauna
CMS	Convention on the Conservation of Migratory Species of Wild Animals
COMM	European Commission, also EC is used.
CPUE	Catch per unit of effort
CR	Country Report
C&R	Catch and release
CUSUM	Cumulative Sum Control Chart
DAERA	Department of Agriculture, Environment and Rural Affairs (N. Ireland)
DBEEL	Database on Eel (from EU POSE project)
DCF	Data Collection Framework of the European Union
DEMCAM	Demographic Camargue Model
DG-MARE	Directorate-General for Maritime Affairs and Fisheries, European Commission
DLS	Data-Limited Stocks
EC	European Commission, also COMM is used.
EDA	Eel Density Analysis (model, France)
e-DNA	Environmental DNA
EIFAAC	European Inland Fisheries & Aquaculture Advisory Commission
EIFAC	European Inland Fisheries Advisory Commission – became EIFAAC in 2008
EFF	European Fisheries Fund
EMU	Eel Management Unit
EMFF	European Maritime and Fisheries Fund
EMP	Eel Managment Plan
EQD	Eel Quality Database
EROD	Ethoxyresorufin-O-deethylase
ESAM	Eel Stock Assessment Model
EU	European Union

Abbreviation/Acronym	Definition
EU MAP	The European Multi-Annual Plan, previously the DCF
EVEX	Eel Virus European X
FAO	Food and Agriculture Organisation
FEAP	The Federation of European Aquaculture Producers
GAM	Generalised Additive Model
GEM	German Eel Model
GFCM	General Fisheries Commission of the Mediterranean
GIS	Geographic Information Systems
GLM	Generalised Linear Model
GlobAng	French Model of Eel Population Dynamics
GST	Glutathione-S-transferase
HPS	Hydropower Station
ICES	International Council for the Exploration of the Sea
IMESE	Irish model for estimating silver eel escapement
IUCN	International Union for the Conservation of Nature
IUU	Illegal, Unreported and Unregulated fisheries
IYFS	International Young Fish Survey
LAM	Lifetime anthropogenic mortalities
LHT	Life History Trait
LVPA	Length-based Virtual Population Assessment
L50	L50 = the length (L) at which half (50%) of a fish species may be able to spawn
MS	Member State, typically used in reference to EU Member States but not only
MSY	Maximum Sustainable Yield
NAO	North Atlantic Oscillation
NA	Not applicable
NC	Not collected, code to explain an empty data value cell
ND	No data, code to explain an empty data value cell
NDF	Non-detriment Finding
NP	Not pertinent, code to explain an empty data value cell
NR	Not recorded, code to explain an empty data value cell
POSE	Pilot projects to estimate potential and actual escapement of silver eel (EU project)
RBD	River Basin District, typically as defined according to the EU Water Framework Directive
RGMAREEL	Workshop on Fisheries Related Impacts on Silver eels 2017
RG-TEMPP	Review of the Trans-border management plan for European eel, *Anguilla anguilla*, in the Polish-Russian zone of the Pregola River basin and Vistula Lagoon
RS_EMP	Review Service – Evaluation of Eel management Plans 2010
SAC	The GFCM Scientific and Advisory Committee on Fisheries
SCICOM	The Science Committee of ICES
SGAESAW	Study Group on anguillid eels in saline waters 2009
SGIPEE	Study Group on International Post-Evaluation on Eels 2010, 2011

ABBREVIATION/ACRONYM	DEFINITION
SLIME	Restoration the European Eel population; pilot studies for a scientific framework in support of sustainable management (EU project)
SMEP II	Scenario-based Model for Eel Populations, vII (model applied in England and Wales, UK)
SPR	Estimate of spawner production per recruiting individual.
SQL	Special purpose programming language for managing data
SRG	Scientific Review Group of the European Commission
SSB	Spawning–Stock Biomass
STECF	Scientific, Technical and Economic Committee for Fisheries, European Commission
ToR	Terms of Reference
VPA	Virtual Population Analysis
WFD	Water Framework Directive, European Directive
WG	Working Group
WGEEL	Joint EIFAAC/ICES/GFCM Working Group on Eels
WGRFS	Working Group on Recreational Fisheries Surveys
WKBALTEEL	Workshop on Baltic Eel 2010
WKBECEEL	Working Group on Biological Effects of Contaminants in Eel 2016
WKEELCITES	Workshop on Eel and CITES 2015
WKEELDATA	Workshop on Designing an Eel Data Call 2017
WKEELDATA2	Second Workshop on designing an Eel Data Call 2019
WKEELMIGRATION	Workshop on the Temporal Migration patterns of European Eels 2020
WKEMP	Workshop on Evaluating Management Plans – 2018
WKEPEMP	The Workshop on Evaluating Progress with Eel Management Plans 2013
WKESDCF	Workshop on Eels and Salmon in the Data Collection Framework 2012
WKFEA	Workshop on the future of eel advice 2021
WKLIFE	Workshop on the Development of Assessments based on LIFE-history traits and Exploitation Characteristics
WKPGMEQ	Workshop of a Planning Group on the Monitoring of Eel Quality under the subject “Development of standardized and harmonized protocols for the estimation of eel quality”
WKSTOCKEEL	Workshop on Eel Stocking 2016
WKTEEL	Workshop on Tools for Eel 2018
YFS1	Young Fish Survey: North Sea Survey location

GLOSSARY

Term	Definition
Anthropogenic	Caused by humans.
Assisted migration	The practice of trapping and transporting juvenile eel within the same river catchment to assist their upstream migration at difficult or impassable barriers, without significantly altering the production potential (B_{best}) of the catchment
Bootlace, fingerling	Intermediate sized eels, approx. 10–25 cm in length. These terms are most often used in relation to restocking. The exact size of the eels may vary considerably. Thus, it is a confusing term.
Carrying Capacity	The average maximum biomass of eel that can be supported by a given habitat.
Catch	The WGEEL uses the term catch(es) to mean fish that are caught but not necessarily landed. See landings below
Depensation	The effect on a population when a decrease in spawners leads to a faster decline in the number of offspring than in the number of adults.
Eel River Basin or Eel Management Unit	"Member States shall identify and define the individual river basins lying within their national territory that constitute natural habitats for the European eel (eel river basins) which may include maritime waters. If appropriate justification is provided, a Member State may designate the whole of its national territory or an existing regional administrative unit as one eel river basin. In defining eel river basins, Member States shall have the maximum possible regard for the administrative arrangements referred to in Article 3 of Directive 2000/60/EC [i.e. River Basin Districts of the Water Framework Directive]." EC No. 1100/2007.
Elver	Young eel, in its first year following recruitment from the ocean. The elver stage is sometimes considered to exclude the glass eel stage, but not by everyone. To avoid confusion, pigmented 0+cohort age eel are included in the glass eel term.
Escapement	The quantity of eel that leaves (escapes) a water body, after taking account of all natural and anthropogenic losses. Most commonly used with reference to silver eel – silver eel escapement.
Glass eel	Young, unpigmented eel, recruiting from the sea into continental waters. WGEEL consider the glass eel term to include all recruits of the 0+ cohort age group, including some pigmented eel.
Landings	The WGEEL uses the term Landings to mean fish that are brought ashore.
Leptocephalus	Flat and transparent marine larval stage of eel, on migration from spawning ground to continental waters, between pre-Leptocephalus and metamorphosis to glass eel
Lifestage	Defined stage in the lifecycle of eel, whether leptocephalus, glass eel, yellow eel, or silver eel.
Limit Reference Point	A Limit Reference Point indicates a state of a fishery and/or a resource which is considered to be undesirable and which management action should avoid.
Non-Detriment Finding (NDF)	In relation to CITES, the competent scientific authority has advised in writing that the capture or collection of the specimens in the wild or their export will not have a harmful effect on the conservation status of the species or on the extent of the territory occupied by the relevant population of the species.

Term	Definition
Ongrown eels	Eels that are grown in culture facilities for some time before being restocked. Whether the time is to meet quarantine requirements, for the receiving environment conditions to be suitable, or as part of the culture and grading purpose.
Pre-leptocephalus	First larval stage of eel, between hatching from ovum and leptocephalus
Production	The amount of fish produced from a waterbody. Sometimes referred to for silver eel in terms as escapement + anthropogenic losses, or production – anthropogenic losses = escapement.
River Basin District (RBD)	The area of land and sea, made up of one or more neighbouring river basins together with their associated surface and groundwaters, transitional and coastal waters, which is identified under Article 3(1) of the Water Framework Directive as the main unit for management of river basins. The term is used in relation to the EU Water Framework Directive.
Restocking	The practice of adding fish [eels] to a waterbody from another source, to supplement existing populations or to create a population where none exists
Silver eel	Migratory phase following the yellow eel phase. Eel in this phase are characterized by darkened back, silvery belly with a clearly contrasting black lateral line, enlarged eyes. Silver eel undertake downstream migration towards the sea, and subsequently westwards. This phase mainly occurs in the second half of calendar years, although some are observed throughout winter and following spring.
Target Reference Point	A Target Reference Point indicates to a state of fishing and/or a resource which is considered to be desirable and at which management action, whether during development or stock rebuilding, should aim. FAO, 1995.
To silver (silvering)	Silvering is a requirement for downstream migration and reproduction. It marks the end of the growth phase and the onset of sexual maturation. This true metamorphosis involves a number of different physiological functions (osmoregulatory, reproductive), which prepare the eel for the long return trip to the Sargasso Sea. Unlike smoltification in salmonids, silvering of eels is largely unpredictable. It occurs at various ages (females: 4 – 20 years; males 2 – 15 years) and sizes (body length of females: 50 – 100 cm; males: 35 – 46 cm) (Tesch, 2003).
Trap and Transport	Capturing downstream migrating silver eel for transportation around hydropower turbines
Yellow eel	Life-stage resident in continental waters. Often defined as a sedentary phase, but migration within and between rivers, and to and from coastal waters occurs and therefore includes young pigmented eels ('elvers' and bootlace).

STOCK REFERENCE POINTS and DATA CALL TERMS

Term	Definition
Age	The age of eel in years, with part years as plus growth (e.g, 0+, 1+), starting at recruitment to coastal waters. Glass eel are defined as 0+.
Aggregate habitat (AL)	Data Call term for aggregrated habitats where data is combined across habitat categories
A_{lim}	Limit anthropogenic mortality: Anthropogenic mortality, above which the capacity of self-renewal of the stock is considered to be endangered and conservation measures are requested (Cadima, 2003).

Term	Definition
A_{pa}	Precautionary anthropogenic mortality: Anthropogenic mortality, above which the capacity of self-renewal of the stock is considered to be endangered, taking into consideration the uncertainty in the estimate of the current stock status.
Aquaculture production	The biomass of eel harvested from aquaculture during a time frame; e.g., a year.
Baltic region	The countries bordering the Baltic Sea; sometimes other countries in the catchment are also included.
bio_age	mean age
bio_g_in_gy	proportion (in %) of glass eel [100 for only glass eel ; 0 for only yellow eel ; the proportion if mix of glass and yellow eel]
bio_length	mean length in mm
bio_sex_ratio	sex ratio express as a proportion of female; between 0 (all males) and 100 (all females)
bio_year	year during which biological samples where collected
bio_weight	mean individual weight in g
$B_{current}$ or B_{curr}	The Current escapement biomass: The amount of silver eel biomass that currently escapes to the sea to spawn, corressponding to the assessment year.
B_{best}	The amount of silver eel biomass that would have existed if no anthropogenic influences had impacted the current stock, included re-stocking practices, hence only natural mortality operating on stock. The Best achievable escapement biomass under present conditions: escapement biomass corresponding to recent natural recruitment that would have survived if there was only natural mortality and no restocking, corressponding to the assessment year.
B_0	The amount of silver eel biomass that would have existed if no anthropogenic influences had impacted the stock. Reference point for the theoretical maximum quantity of silver eel expressed as biomass that would have escaped from a defined eel producing area, in the absence of any anthropogenic impacts.
B_{lim}	Limit spawner escapement biomass, below which the capacity of self-renewal of the stock is considered to be endangered and conservation measures are requested (Cadima, 2003).
B_{MSY}	Spawning stock biomass (SSB) that is associated with the Maximum Sustainable Yield.
$B_{MSY-trigger}$	Value of spawning–stock biomass (SSB) which triggers a specific management action, in particular: triggering a lower limit for mortality to achieve recovery of the stock.
B_{pa}	Precautionary spawner escapement biomass: The spawner escapement biomass, below which the capacity of self-renewal of the stock is considered to be endangered, taking into consideration the uncertainty in the estimate of the current stock status.
Commercial Fisheries	Fisheries with sale of catch for commercial gain
Coastal waters	WFD coastal waters
das_comment	Comment (including comments about data quality for this year)
das_effort	Effort (if used)
das_value	Value

Term	Definition
das_year	Year
Eel management unit (EMU)	Eel management unit defined in an Eel Management Plan under the Eel Regulation 1100/2007.
EFF	European Fisheries Fund
EMFF	European Maritime and Fisheries Fund
F	Fishing mortality rate
FAO areas	See http://www.fao.org/fishery/area/search/en
F_{lim}	F_{lim} is the fishing mortality which in the long term will result in an average stock size at B_{lim}.
F_{pa}	ICES applies a precautionary buffer F_{pa} to avoid that true fishing mortality is above F_{lim}.
F-rec	recreational fishing mortality, per reporting year, in kg
Fresh waters	Waters with zero salinity
F_{MSY}	F_{MSY} is estimated as the fishing mortality with a given fishing pattern and current environmental conditions that gives the long-term maximum yield.
G	Code in Data Call for data comprising Glass eel only as defined in Glossary
G+Y	Code in Data Call for data comprising a Glass eel with yellow eel mix
GEE-n	Glass eel equivalents in numbers – the quantity of eel expressed as equivalent number of glass eel. Method provided in ICES (2013) report p103.
Glass eel recruitment series	Time series enumerating glass eel recruiting from the sea into continental waters.
GLM	Generalized Linear Model (used by ICES to predict and fill in gaps in the data)
Habitat	Waters occupied by eel, whether fresh, transitional, coastal or marine
ICES statistical rectangles	See http://gis.ices.dk/sf/index.html?widget=StatRec
Inland waters	Fresh waters, not under the jurisdiction of Marine fisheries management (i.e. the CFP).
Landings from fisheries	Commercial landings include any eel taken from the water and landed on the market. Recreational landings include any eel taken from the water by recreational fisheries. Other landings include eel caught for assisted migration, translocation,
Length in mm	Total length measured from tip of nose to tip of tail (TL)
Longitude	x (longitude) EPSG:4326. WGS 84 (Google it)
Latitude	y (latitude) EPSG:4326. WGS 84 (Google it)
M	Natural Mortality
North Sea	For the purposes of ICES eel management, taken as ICES sea areas IV_a, IV_b, IV_c and inflowing fresh water systems
Marine waters	(Abbreviated MO) Open marine waters
q_aqua_kg	Aquaculture production (kg) in reporting year
q_aqua_n	Aquaculture production (number of eel) in reportng year

Term	Definition
Fisheries - Recreational	Recreational (= non-commercial) fishing is the capture or attempted capture of living aquatic resources mainly for leisure and/or personal consumption
Releases	Eel released to the wild after capture
R_{target}	The Geometric Mean of observed recruitment between 1960 and 1979, periods in which the stock was considered healthy
R(s)	The amount of eel (<20 cm) restocked into national waters annually
S	Code in Data Call for data comprising Silver eel
Sea region (division)	ICES Sea area statisitical rectangle. Where required for freshwater eel habitats, is the sea area the River basin drains to
SEE–n	Silver eel equivalents in numbers – the quantity of eel expressed as equivalent number of silver eel
SEE_com	Commercial fishery silver eel equivalents
SEE rec	Recreational fishery silver eel equivalents)
SEE_hydro	Mortility in hydropower, pumps and water intakes etc expressed as Silver eel equivalents
SEE_habitat	Silver eel equivalents relating to anthropogenic influences on habitat (quantity/quality)
SEE_release	Silver eel equivalents relating to release activity
SEE_other	Silver eel equivalents from `other` sources
ser_nameshort	short name of the recruitment series, this must be 4 letters + stage name, e.g. VilG, LiffGY, FremS, the first letter is capitalised and the stage name too
ser_namelong	long name of the recuitment series eg `Vilaine estuary` for the Vilaine;
ser_typ_id	type of series 1= recruitment series, 2 = yellow eel standing stock series, 3 silver eel series
ser_effort_uni_code	unit used for effort, it is different from the unit used in the series, for instance some of the Dutch series rely on the number hauls made to collect the glass eel to qualify the series, see units sheet
ser_comment	This comment should at least include a short description of the methods, give an idea on the size of the eels and the proportion of glass eel, whether it is mixed (e.g. glass and yellow) or not, possible biases (e.g. by restocking) and a mention if the series is special in any way (e.g. very old/long) Note that this text will be displayed as a description of the series in the shiny app, thus consider the "readability"
ser_uni_code	Units used in the series, see tr_units_uni sheet
ser_lfs_code	Lifestage see tr_lifestage_lfs sheet
ser_hty_code	Habitat type see tr_habitattype_hty (F=Freshwater, MO=Marine Open,T=transitional, AL=aggregate...)
ser_locationdescription	This should provide a description of the site, e.g. if ist far inland, in the middle of a river, near a dam etc. Also please specify the adjectant marine region (Baltic, North Sea) etc. (e.g. "Bresle river trap 3 km from the sea" or IYFS/IBTS sampling in the Skagerrak-Kattegat" Note that this text will be displayed as a description of the site in the shiny app, thus consier the "readability"

Term	Definition
ser_emu_nameshort	The codes of the emu (emu_nameshort) in sheet tr_emu_emu. In case you provide data for each EMU separately then you don't need to fill in for AL and vice versa
ser_cou_code	The cou_code in the tr_country_cou table
ser_area_division	FAO code of sea region (division level) see tr_fao_area (column division)(https://github.com/ices-eg/WGEEL/wiki). These codes are for use only in the case of Coastal and Marine Open waters – otherwise you can leave it blank. ICES statistical rectangles (http://gis.ices.dk/sf/index.html?widget=StatRec) and FAO areas map (http://www.fao.org/fishery/area/search/en)
ser_tblcodeid	This should refer to the id of the series once inserted in ICES station table, currently void : ignore
ser_x	x (longitude) EPSG:4326. WGS 84
ser_y	y (latitude) EPSG:4326. WGS 84
ser_sam_id	The sampling type corresponds to trap partial, trap total, see tr_samplingtype_sam (sam_id)
Silver eel abundance series	Time series of abundance of silver eel determined by consistent regular count or survey (usually by capturing migrating silver eel)
Skagerrak-Kattegat	For the purposes of ICES eel management, taken as ICES Sea areas III_b, III_c and inflowing fresh water systems
SPR	Spawner per recruit: estimate of spawner production per recruiting individual
%SPR	Ratio of SPR as currently observed to SPR of the pristine stock, expressed in percentage. %SPR is also known as Spawner Potential Ratio
Standing stock	The total stock of eel present in a waterbody at a point in time, expressed as a number of individuals or total biomass
sumA	total Anthropogenic mortality, per reporting year, in kg
sumF	total Fishing Mortality per reporting year, in kg
sumH	total non fishing Anthropogenic mortality, per reporting year in kg
sumF_com	Mortality due to commercial fishery, summed over age groups in the stock
SumF_rec	Mortality due to recreational fishery, summed over age groups in the stock
SumH_hydro	Mortality due to hydropower (plus water intakes etc) summed over the age groups in the stock (rate)
SumH_habitat	Mortality due to anthropogenic influence on habitat (quality/qauntity) summed over the age groups in the stock (rate)
SumH_other	Mortality due to other anthropogenic influence summed over the age groups in the stock (rate)
SumH_release	Mortality due to release summed over the age groups in the stock (rate: negative rate indicates positive effect of release)
Transitional waters	WFD transitional waters, implies reduced salinity
Transport/relocation operations	When eels have been collected somewhere in traps and transported to other places where they appear as “release” for the purposes of data recording
ΣF	The fishing mortality rate, summed over the age-groups in the stock

Term	Definition
ΣH	The anthropogenic mortality rate outside the fishery, summed over the age-groups in the stock.
ΣA	The sum of anthropogenic mortalities, i.e. ΣA = ΣF + ΣH.
Y	Code in Data Call for data comprising yellow eel only
Yellow eel abundance series	Time series of abundance of yellow eel determined by consistent regular count or survey
Yellow eel recruitment series	Time series enumerating yellow eel where this life stage is first observed at a site or is the stage at which eel enter freshwaters
Yellow eel standing stock series	Time series of abundance of yellow eel determined by consistent regular count or survey
"3Bs & ΣA"	Refers to the 3 biomass indicators (B_0, B_{best} and $B_{current}$) and anthropogenic mortality rate (ΣA).
40% EU Target	From the Eel regulation (1100/2007): "The objective of each Eel Management Plan shall be to reduce anthropogenic mortalities so as to permit with high probability the escapement to the sea of at least 40% of the silver eel biomass relative to the best estimate of escapement that **would have existed if no** anthropogenic influences had impacted the stock". The WGEEL takes the EU target to be equivalent to a reference limit, rather than a target.

Annex 7: Series description template

1) Recruitment series metadata

The data collected below is to facilitate the benchmark process for evaluating the data and location of recruitment series.

2) Identifiers

ser_code (ser_nameshort)

WGEEL Database short code assigned to individual recruitment series If not already existing, left empty.

ser_name (ser_namelong)

WGEEL Database name assigned to individual recruitment series. If not already existing provide a comprehensive name (few words) to describe this data.

3) Series description

Data owner: name of the organisation who collects the data

Starting year: [XXXX[- Still ongoing / ending year [XXXX[

Country (ser_cou_code): WGEEL 2 digit Country Code; list provided

EMU (ser_emu_nameshort): WGEEL EMU Code; list provided

X & Y

Habitat type (ser_hty_code): WGEEL habitat categories; Freshwater; WFD Transitional water - implies reduced salinity; WFD Coastal water; Marine water (open sea); list provided

Total catchment area (ser_surface_total): Required for GEREM model assessment; this variable can be calculated from provided X & Y during Workshop; how variable is calculated for series in deltas (e.g. Den Oever) and marine areas will need to be determined.

Type of sampling (ser_sam_id): WGEEL list of sampling types; commercial catch, commercial CPUE, trapping all, trapping partial, scientific estimate. Scientific estimate relates to fishery independent netting samples in marine/coastal and transitional waters.

Sampled life stage (ser_lfs_code): glass eel (G), yellow eel (Y) or mixture of glass and yellow eel (GY) [make sure that definition is clear]

GY proportion: For GY samples report on the proportion in numbers of glass and yellow eels. The proportion should be reported to capture temporal variation, between years or within season variation.

For GY and Y series provide length and age distribution figures representative from the run. Provide figures for annual and seasonal variation.

Possible issue: series with schematic sampling (measure x specimens per length class; stratified, non-random), or only part of the season monitored. These will affect the calculation of the proportion.

4) Protocol description

Location description

Describe the location in one paragraph giving the size of the site for netting, location of the trap in relation to riverbank or dam. Provide pictures, map, schemes to help with the interpretation of how the site is operating.

Protocol description (current)

Gear type (ser_geartype/ ser_sam_gear): WGEEL list of gear types

Briefly describe the current sampling protocol and specific gear used at the monitoring site, i.e. number of stations/ladders/boats used in the method. Do you catch a specific part of the population (size selectivity, target active vs passive glass eels).

Describe how are eels counted, measured, weighed? Is the total catch processed or just a subsample? If a subsample, what is the size (mass or number of individuals)? How often are eels counted (e.g. daily, weekly, monthly)?

Is the sampling all year round or restricted to specific months? If the latter outline typically which period (months)? How often

Describe how the data is processed (sum, mean, statistical analysis, ...). Is the data reported in number of eels or weight of eels. Have reported values been converted from weight to numbers or the other way around. Describe the conversion factor(s) and how it/they have been derived.

Provide a brief description of data handling from collection of raw data to the data being provided, e.g., if aggregated data are provided explain the process. How is the mean calculated, are variance estimates calculated, do you provide confidence interval, are corrections applied etc.? How is data stored (e.g. excel, database)? Are processes to evaluate data accuracy, bias and precision implemented? If so, describe processes. Are other quality checks to validate data implemented? If so, please describe.

If possible provide an estimate (min-max) of the proportion of eel counted/sampled on the total run (trap efficiency, exploitation rate, ...). Is that based on weight or number? This proportion aims to derive an estimate, even unprecise, of absolute recruitment based on the observations, that could be used to inform the model GEREM. Describe on what information it based on or if it is based on expert judgment only.

5) Internal issues that might affect the series

Have there been changes in the sampling protocol over time or any other known internal sources of uncertainty or bias that could have affected the quality of the reported data (e.g. modifications that affected efficiency, changes in gear, sampling protocol, fishing location, fishing effort, change in operators, switching from human observer to AI, has the time of the year when sampling was conducted changed, etc.)?

Please provide a description of these changes, including the year the change occurred. If corrections were applied provide a detailed description of the correction method and provide all relevant data.

Change in effort, provide a series of effort with unit (ser_effort_unit), explain any variation and consequences of the reliability of the series

Do you change the way you convert (conversion factor) number weight at any point in the time series? Is the raw data still accessible and the process reproducible?

Are there any other data indicating recruitment in the area? Do they show similar or different trends to the reported series? (groundtruthing)

6) External impacts affecting the series

Restocking

Is it possible that restocked individuals are captured in this series or were captured in the past? Provide the proportion of restocked individuals over time if available along with the method to get this proportion. Please provide a description of the issue and potential changes over time (e.g. number of restocked eels in the area per year, upstream, downstream, ...). If corrections were applied to account for restocking, provide a detailed description of the correction method.

Barriers

Are there, or have there been migration barriers downstream or upstream of the sampling location that may affect the catch of the series?

Provide a description of the issue and potential changes over time (e.g. new barriers built, barriers demolished, fishpasses built, barrier management, changes in discharges rates). If corrections were applied provide a detailed description of the correction method and provide all relevant data.

Mortalities

Are there, or have there been sources of mortality downstream from the sampling, e.g. glass eel fisheries, pumping stations, changes in predation, changes in hydro-climatic conditions, etc.

Please provide a description of the sources of mortality and potential changes over time. Please provide data on the level of mortality per year, if available. If corrections were applied, provide a detailed description of the correction method and provide all relevant data.

Environment

Have there been any changes to the environment around the sampling location that could have impacted the time series? e.g. changes in water discharge, river management, pollutants, etc.

Please provide a description of the changes, including the year of change. If corrections were applied provide a detailed description of the correction method and provide all relevant data.

Others

Are there, or have there been there any other known external sources of uncertainty or bias that could affect the quality of the reported recruitment data? Please provide a description, including potential changes over time. If corrections were applied provide a detailed description of the correction method and provide all relevant data.

7) Additional information

Give major references pertinent to understand the recruitment series (report, scientifical articles, ...).

Annex 8: Absolute biomass and numbers of glass eel metadata

The data collected below is to facilitate the benchmark process for evaluating the data on absolute value of recruitment.

1) Identifiers

ser_name (ser_namelong)

WGEEL Database name assigned to individual recruitment series. If not already existing provide a comprehensive name few words) to describe this data.

2) Data summary

Data owner: name of the organisation who collects the data

Starting year: [XXXX[- Still ongoing / ending year [XXXX[

Country (ser_cou_code): WGEEL 2 digit Country Code; list provided

EMU (ser_emu_nameshort): WGEEL EMU Code; list provided

X & Y

Habitat type (ser_hty_code): WGEEL habitat categories; Freshwater; WFD Transitional water - implies reduced salinity; WFD Coastal water; Marine water (open sea); list provided

Total catchment area (ser_surface_total): Required for GEREM model assessment; this variable can be calculated from provided X & Y during Workshop; how variable is calculated for series in deltas (e.g. Den Oever) and marine areas will need to be determined.

Type of estimate: one of: trapping all, mark-recapture, modeling [should we provide definitions?]

Sampled life stage (ser_lfs_code): glass eel (G), yellow eel (Y) or mixture of glass and yellow eel (GY) [make sure that definition is clear]

GY proportion: For GY samples report on the proportion in numbers of glass and yellow eels. The proportion should be reported to capture temporal variation, between years or within season variation.

For GY and Y series provide length and age distribution figures representative from the run. Provide figures for annual and seasonal variation.

Possible issue: series with schematic sampling (measure x specimens per length class; stratified, non-random), or only part of the season monitored. These will affect the calculation of the proportion.

3) Protocol description

Location description

Describe the location in one paragraph giving the size of the site for netting, location of the trap in relation to riverbank or dam. Provide pictures, map, schemes to help with the interpretation of how the site is operating.

Protocol description (current)

Give an overview on how the absolute recruitment is estimated (both the field data collection and the statistical analysis or the model). Provide a scheme if needed.

Make as many subsections as needed to describe in details field data collection and the statistical analysis or the model

Field data collection (copy as many times as needed)

From field data to the variable used as an input for the model/analysis

Gear type (ser_geartype/ ser_sam_gear): WGEEL list of gear types

Briefly describe the current sampling protocol and specific gear used at the monitoring site, i.e. number of stations/ladders/boats used in the method. Do you catch a specific part of the population (size selectivity, target active vs passive glass eels).

Describe how are eels counted, measured, weighed? Is the total catch processed or just a subsample? If a subsample, what is the size (mass or number of individuals)? How often are eels counted (e.g. daily, weekly, monthly)?

Is the sampling all year round or restricted to specific months? If the latter outline typically which period (months)? How often

Describe how the data is processed (sum, mean, statistical analysis, ...). Is the data reported in number of eels or weight of eels. Have reported values been converted from weight to numbers or the other way around. Describe the conversion factor(s) and how it/they have been derived.

Provide a brief description of data handling from collection of raw data to the data being provided, e.g., if aggregated data are provided explain the process. How is the mean calculated, are variance estimates calculated, do you provide confidence interval, are corrections applied etc.? How is data stored (e.g. excel, database)? Are processes to evaluate data accuracy, bias and precision implemented? If so, describe processes. Are other quality checks to validate data implemented? If so, please describe.

Statistical analysis / model (copy as many times as needed)

Give a short overview on how the model is working

model type: statistical analysis, deterministic model, Bayesian model, …

Describe the hypothesis of the model.

Describe the main equation(s).

Describe how the model is working in details (how absolute recruitment is estimated).

What are the input(s) and the output(s) of the model.

How the confidence interval for the absolute recruitment is calculated?

What are the limits of the model (including those due to the field sampling) particularly those affecting the estimate of absolute recruitment?

4) Internal issues that might affect the series

Have there been changes in the sampling protocol over time or any other known internal sources of uncertainty or bias that could have affected the quality of the reported data (e.g. modifications that affected efficiency, changes in gear, sampling protocol, fishing location, fishing effort, change in operators, switching from human observer to AI, has the time of the year when sampling was conducted changed, etc.)?

Please provide a description of these changes, including the year the change occurred. If corrections were applied provide a detailed description of the correction method and provide all relevant data.

Change in effort, provide a series of effort with unit (ser_effort_unit), explain any variation and consequences of the reliability of the series

Do you change the way you convert (conversion factor) number weight at any point in the time series? Is the raw data still accessible and the process reproducible?

Are there any other data indicating recruitment in the area? Do they show similar or different trends to the reported series? (ground truthing)

5) External impacts affecting the series

Restocking

Is it possible that restocked individuals are captured in this series or were captured in the past? Provide the proportion of restocked individuals over time if available along with the method to get this proportion. Please provide a description of the issue and potential changes over time (e.g. number of restocked eels in the area per year, upstream, downstream, ...). If corrections were applied to account for restocking, provide a detailed description of the correction method.

Barriers

Are there, or have there been migration barriers downstream or upstream of the sampling location that may affect the catch of the series?

Provide a description of the issue and potential changes over time (e.g. new barriers built, barriers demolished, fishpasses built, barrier management, changes in discharges rates). If corrections were applied provide a detailed description of the correction method and provide all relevant data.

Mortalities

Are there, or have there been sources of mortality downstream from the sampling, e.g. glass eel fisheries, pumping stations, changes in predation, changes in hydro-climatic conditions, etc.

Please provide a description of the sources of mortality and potential changes over time. Please provide data on the level of mortality per year, if available. If corrections were applied, provide a detailed description of the correction method and provide all relevant data.

Environment

Have there been any changes to the environment around the sampling location that could have impacted the time series? e.g. changes in water discharge, river management, pollutants, etc.

Please provide a description of the changes, including the year of change. If corrections were applied provide a detailed description of the correction method and provide all relevant data.

Others

Are there, or have there been there any other known external sources of uncertainty or bias that could affect the quality of the reported recruitment data? Please provide a description, including potential changes over time. If corrections were applied provide a detailed description of the correction method and provide all relevant data.

6) Additional information

Give major references pertinent to understand the recruitment series (report, scientifical articles, ...)

Annex 9: Data needs for EDA and ESAM, regional work plans

Summary of details on the data collection needs for Eel Density Analysis (EDA) as well as Eel Stock Assessment Model (ESAM) that will be described in EU Regional Work Plans (RWP).

RWPs for the 2028-2030 period are currently being drafted for the three regions defined within the EU Regional Coordination structure, namely: North Atlantic, North Sea and Eastern Arctic (RWP NANSEA), Baltic Sea (RWP Baltic) and the Mediterranean and Black Sea (RWP Med&BS).

In the respective RWPs, the EDA and ESAM data collection needs will be included under test studies (Text Box 1a), since the data needs are still under evaluation. The purpose of placing the draft into in the test studies section is to provide information for preparing future RWPs (i.e., for the 2031-2033 period). It should be noted that test studies are still under development and not expected to be finalised at the start of the 2028-2030 period. The deadline to submit the RWPs is October 2026; hence the text below is not finalised and the work on the RWPs will continue after the WGEEL meeting.

Eel Density Analyses (EDA) Model

EDA is a GIS-based statistical model that requires detailed spatial, habitat, and abundance data, and biometric data. It requires that each datapoint can be assigned to a given river segment of the hydrographic network. Any form of sampling method that allows for the estimation of an absolute density of eel in a given river segment, and for sampling of biometric data, is suitable, e.g., electrofishing, fyke net surveys, or similar. Below we list methods to clarify requirements.

Regional eel populations in coastal lagoon habitats will be analysed using demographic models, such as the Eel Stock Assessment Model (ESAM). The ESAM model is an age-, sex- and stage-structured dynamic model that integrates the main biological processes of European eel and the anthropogenic pressures on the species at the single-site scale. Once developed, the model will be able to provide estimates on the stock on the level of Eel Management Units (EMU), (EU) river basin level, and whole stock level (ICES).

Data collection needs for EDA:

Electrofishing:

- Station data: the coordinates of the electrofishing station, so that it can be linked to the relevant river segment.
- Operation data: details on the date and the methods used for each specific electrofishing operation, e.g. sampling protocol, length and width of electrofished stretch of water, etc.
- Batch data: numbers collected at each electrofishing pass, or otherwise the total number/density of the whole fishing operation.
- Biometric data: Individual data on length, weight, eye size (diameter), pectoral fin length, etc.

Fyke-net surveys:

- Station data: the coordinates of the fyke-net station, so that it can be linked to the relevant river segment.
- Operation data: details on the date and the methods used for each specific fyke-net survey, e.g. sampling protocol, effort, etc.
- Batch data: conversion from catches to density, e.g., mark-recapture, including details on methods, numbers of eel tagged, numbers recaptured.
- Biometric data: Individual data on length, weight, eye size (diameter), pectoral fin length, etc.

Other methods:

If other methods are used, similar requirements as for electrofishing and fyke-net surveys will be needed. The following table presents an overview of the input parameters required to parameterize EDA of which some can be derived from data collection within the DCF.

Input parameters required for the Eel Density Analyses (EDA) model

Category	Parameter / Variable	Description / Data source	Unit / Type
Spatial reference	River segment ID	Unique segment identifier from hydrographic network (e.g. RHT, CCM v2.1).	Categorical
	Coordinates (station)	Latitude/longitude of each electrofishing station, linked to segment.	Decimal degrees
	Distance from sea (Σl)	Cumulative distance from sea along the river network.	km
Habitat descriptors	Altitude (H)	Mean altitude of segment.	m a.s.l.
	River width (W_i)	Mean wetted width of segment (RHT variable).	m
	Flow (Q)	Mean discharge at segment; used in dam-height model.	$m^3\ s^{-1}$
	July water temperature (θ)	Mean July temperature at segment; main environmental driver.	°C
	Land cover (optional)	From Corine Land Cover; excluded in EDA 2.2 after low significance.	Index
Connectivity / obstacles	Dam height (h′)	Reported or modelled dam height (ROE database).	m

Category	Parameter / Variable	Description / Data source	Unit / Type
	Transformed dam height ($h''\lambda$)	Height transformed by λ-power ($\lambda \approx 1.5$ in EDA 2.2.1).	m^λ
	Cumulated dam height ($\Sigma h'\lambda$)	Sum of transformed dam heights from sea to segment.	m^λ
	Difficulty of access (A_i)	Synthetic variable combining distance to sea + β × cumulated dam height ($\beta \approx 1.7$).	Dimensionless index
Sampling / observation data	Electrofishing method (ω)	Fishing protocol: full (ω_ful), bank (ω_bf), deep-habitat (ω_dhf), eel-specific (ω_eai / ω_fue).	Categorical
	Water surface (S)	Area sampled per station; used to compute densities.	m^2
	Effort / number of passes	Number of electrofishing passes or points per station.	Count
	Catch per pass	Number of eels caught; used to calculate density (eel / 100 m^2).	Count
	Size class (τ)	Length classes: <150, 150–300, 300–450, 450–600, 600–750, >750 mm.	mm class
	Year (t_i)	Sampling year (factor in Δ and Γ models).	Year
Model variables	Presence probability (Δ-model)	Binomial GAM component predicting probability of non-zero density.	Modelled
	Positive density (Γ-model)	Gamma GAM component predicting density where present.	Modelled
	Difficulty of access transformation coefficients (λ, β)	Calibrated coefficients controlling dam/distance weighting.	$\lambda \approx 1.5$; $\beta \approx 1.7$
Silvering / production	Silvering rate ($\Pi\tau_{,i}$)	Probability of silvering per size class τ and river segment i (Durif-based logistic model).	Probability (0–1)
	Fecundity ($F\tau$)	Derived from mean length of female size classes (e.g. 528, 671, 842 mm).	Eggs per female

Category	Parameter / Variable	Description / Data source	Unit / Type
	Biomass conversion	Density × mean weight per size class; aggregated for Bcurrent/Bbest.	g m^{-2} or t EMU^{-1}
Calibration / validation	Index river escapement	Observed silver eel counts (trap or mark-recapture) for model validation.	No. or kg $year^{-1}$
	Habitat surface correction	Adjustment of RHT water surface with observed basin area (S_obs / S_rht).	Ratio

Eel Stock Assessment Model (ESAM)

The ESAM model is an age-, sex- and stage-structured dynamic model that integrates the main biological processes of European eel and the anthropogenic pressures on the species at the single-site scale.

This model's strength lies in the possibility of embedding a set of default parameters in order to run simulations under all data availability conditions, from data-rich to data-poor cases, producing outputs of time series for landings and silver eel escapement. The ESAM model was specifically developed for lagoons, which represent highly productive habitats for European eel in the Mediterranean region, but its structure allows adaptation to other habitat types with suitable data.

The model and its input parameters are described in detail in *Ciccotti & Morello (eds.), 2023: European eel in the Mediterranean Sea – Outcomes of the GFCM Research Programme (FAO Studies and Reviews No. 103, pp. 391–392)*.

The following table presents an overview of the input parameters required to parameterize ESAM of which some can be derived from data collection within the DCF.

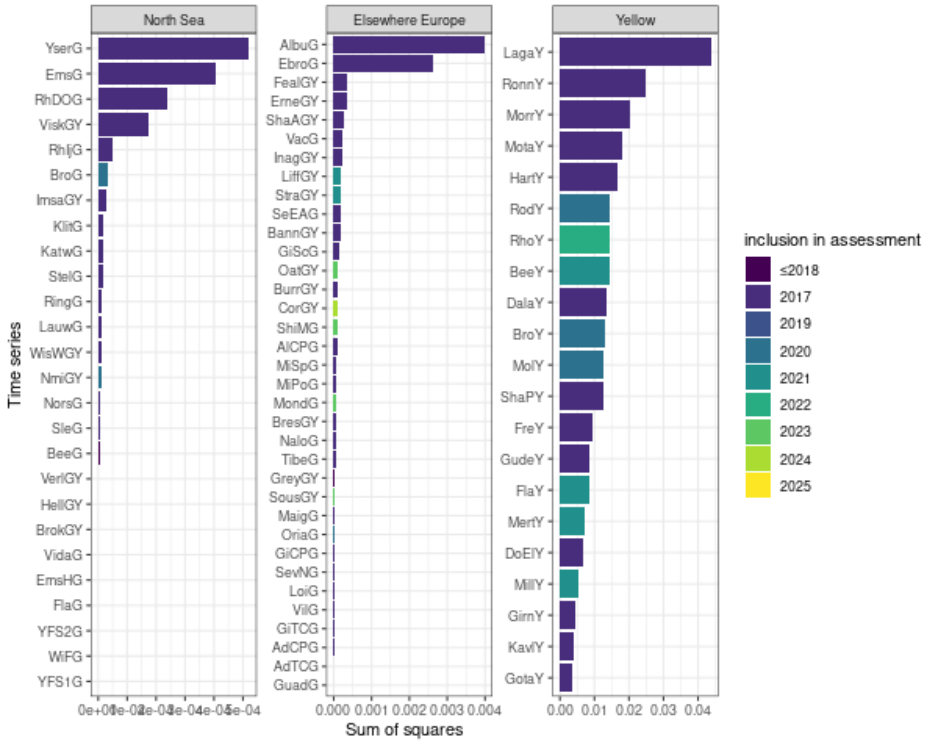
Input Parameters Required for the ESAM Model

Category	Parameter	Description / Data Source	Unit / Type
Recruitment	Natural recruitment	Annual number of glass eels entering the system (observed or estimated). Can use CPUE or landings of glass eels as proxy.	No. of individuals or kg/year
Recruitment	Stocking (restocking)	Quantity of glass/yellow eels introduced into the system (stocking programmes).	No. or kg/year
Population structure	Age–length–weight relationships	Derived from local sampling data or literature; defines growth parameters (e.g. von Bertalanffy).	Function parameters

Population structure	Sex ratio	Proportion of males/females in stock, possibly size-dependent.	%
Population structure	Maturity schedule	Size or age at silvering, by sex.	Age or length class
Mortality	Natural mortality (M)	Size-, sex-, and temperature-dependent (e.g. Bevacqua et al. 2011).	Annual rate
Mortality	Fishing mortality (F)	Separate for yellow and silver eels, derived from landings and effort data.	Annual rate
Mortality	Hydropower / barrier mortality	Mortality during downstream migration; can be site-specific or default.	% per migration
Mortality	Other anthropogenic mortalities	Entrainment, pumping, pollution, etc., if known.	% per year
Habitat descriptors	Habitat surface area	Wetted area of the site (lagoon, delta, estuary).	ha
Habitat descriptors	Habitat productivity / carrying capacity	Biomass potential in absence of anthropogenic pressure (B_0).	kg ha^{-1}
Habitat descriptors	Water temperature regime	Annual mean temperature, affects growth and mortality.	°C
Habitat descriptors	Connectivity to sea	Degree of opening/closure affecting recruitment and escapement.	Qualitative (index or % open)
Fishery data	Landings	Annual total catch (yellow + silver eels).	kg/year
Fishery data	Fishing effort	No. of gears, days, or vessels operating per year.	Various
Model calibration	Escapement	Silver eel biomass leaving the system; used for validation or comparison.	kg/year

Annex 10: Sensitivity of recruitment indices to individual time series

To check the influence of each time series in the models, the GLMs were fitted while removing each time series one at a time. The effect of removing the time series was quantified through the sum of square of the difference of the predictions of the the model with all time series and the model without the corresponding time series (Figure 15). Unsurprisingly, the longest time series have the largest influence on the model results (e.g. AlbuG or EbroG), but the results are also sensitive to series that were introduced more recently (e.g. MolY or StraGY). This type of analysis might be relevant in the future before integrating any new time series.



Influence of each time series on the final index. The influence is quantified as the sum of square difference between a model with all data and a model without the corresponding time series. The colour indicates the year when the time series was used in the assessment for the first time.

Annex 11: Recruitment series tables

Table 1: Short description of the 61 Glass eel in the recruitment index calculation updated to 2025. EE: "Elsewhere Europe", NS: North Sea. Min and max indicate the first year and last year in the records, and missing indicated the number of missing/excluded years. Unit for the data collected is given (nr = number; index = calculated value following a specified protocol, nr/m2 = number per square metre, nr/h = number per hour, kg/boat/d = kg per boat per day). Habitat: C = coastal water, F = freshwater, MO = marine water (open sea), T = transitional water with lower salinity (according to Water Framework Directive).

code	area	min	max	missing	life stage	sampling type	unit	habitat	country
AdCPG	EE	1928	2008	40	G	com. cpue	kg/boat/d	T	FR
AdTCG	EE	1986	2008	0	G	com. catch	t	T	FR
AlCPG	EE	1982	2025	7	G	com. cpue	kg/boat/d	F	ES
AlbuG	EE	1949	2025	6	G	com. catch	kg	F	ES
BeeG	NS	2006	2025	0	G	trap	nr	F	GB
BroG	NS	2011	2025	2	G	trap	nr	F	GB
EbroG	EE	1966	2025	3	G	com. catch	kg	T	ES
EmsG	NS	1946	2025	0	G	com. catch	kg	T	DE
EmsHG	NS	2014	2024	0	G	trap	nr	T	DE
FlaG	NS	2007	2025	0	G	trap	nr	F	GB
GiCPG	EE	1961	2008	40	G	com. cpue	kg/boat/d	T	FR
GiScG	EE	1994	2025	0	G	sci. surv.	index	T	FR
GiTCG	EE	1923	2008	0	G	com. catch	t	T	FR
GuadG	EE	1998	2025	0	G	sci. surv.	index	T	ES
KatwG	NS	1991	2025	2	G	sci. surv.	index	T	NL
KlitG	NS	2008	2024	0	G	sci. surv.	nr/m2	F	DK
LauwG	NS	1976	2025	6	G	sci. surv.	nr/h	T	NL
LoiG	EE	1924	2008	0	G	com. catch	kg	T	FR
MaigG	EE	1994	2025	0	G	trap	kg	F	IE
MiPoG	EE	1974	2025	0	G	com. catch	kg	T	PT
MiSpG	EE	1975	2025	0	G	com. catch	kg	T	ES
MondG	EE	1989	2025	2	G	sci. surv.	nr/h	T	PT
NaloG	EE	1953	2025	0	G	com. catch	kg	T	ES
NorsG	NS	2008	2024	0	G	sci. surv.	nr/m2	F	DK
OriaG	EE	2006	2025	0	G	sci. surv.	nr/m3	T	ES
RhDOG	NS	1938	2025	0	G	sci. surv.	index	T	NL

code	area	min max	missing	life stage	sampling type	unit	habitat	country
RhIjG	NS	196920225		G	sci. surv.	index	T	NL
RingG	NS	198120240		G	sci. surv.	index	C	SE
SeEAG	EE	197220202		G	com. catch	t	T	GB
SevNG	EE	1962200825		G	com. cpue	kg/boat/d	T	FR
ShiMG	EE	201420240		G	trap	nr	T	GB
SleG	NS	200820240		G	sci. surv.	nr/m2	F	DK
StelG	NS	197120250		G	sci. surv.	index	T	NL
TibeG	EE	197520060		G	com. catch	t	T	IT
VacG	EE	200420250		G	trap	nr	T	FR
VidaG	NS	197119900		G	com. catch	kg	T	DK
VilG	EE	197120153		G	trap	t	T	FR
YFS1G	NS	197519890		G	sci. surv.	index	MO	SE
YFS2G	NS	199220251		G	sci. surv.	index	MO	SE
YserG	NS	196420243		G	sci. surv.	kg	T	BE
BannGY	EE	1933202511		GY	trap	kg	F	GB
BresGY	EE	200320250		GY	trap	nr	F	FR
BrokGY	NS	201220250		GY	trap	nr	T	DE
BurrGY	EE	1987202518		GY	trap	kg	F	IE
CorGY	EE	201220251		GY	trap	kg	F	IE
ErneGY	EE	198020250		GY	trap	kg	F	IE
FealGY	EE	1985202514		GY	trap	kg	F	IE
GreyGY	EE	200920250		GY	trap	nr	F	GB
HellGY	NS	201020230		GY	sci. surv.	nr	T	DK
ImsaGY	NS	197520240		GY	trap	nr	F	NO
InagGY	EE	199620255		GY	trap	kg	F	IE
LiffGY	EE	201220250		GY	trap	kg	F	IE
NmiGY	NS	200920250		GY	trap	nr	F	GB
OatGY	EE	201320232		GY	trap	nr	F	GB
ShaAGY	EE	197720250		GY	trap	kg	F	IE
SousGY	EE	201320240		GY	trap	nr	F	FR
StraGY	EE	201220250		GY	trap	nr	F	GB
VerlGY	NS	201020250		GY	trap	nr	T	DE
ViskGY	NS	197120240		GY	trap	kg	F	SE

code	area	min	max	missing	life stage	sampling type	unit	habitat	country
WiFG	NS	2006	2024	0	GY	trap	nr	T	DE
WisWGY	NS	2004	2024	0	GY	trap	nr	F	DE

Table 2: Short description of the yellow eel in the recruitment index calculation. EE: "Elsewhere Europe", NS: North Sea. Min and max indicate the first year and last year in the records, and missing indicated the number of missing/excluded years. Unit for the data collected is given (nr = number; index = calculated value following a specified protocol, nr/m2 = number per square metre, nr/h = number per hour, kg/boat/d = kg per boat per day). Habitat: C = coastal water, F = freshwater, MO = marine water (open sea), T = transitional water with lower salinity (according to Water Framework Directive).

code	area	min	max	missing	life stage	sampling type	unit	habitat	country
BeeY	NS	2011	2025	0	Y	trap	nr	F	GB
BroY	NS	2011	2025	2	Y	trap	nr	F	GB
DalaY	NS	1951	2024	3	Y	trap	kg	F	SE
DoElY	NS	2003	2023	2	Y	trap	nr	F	DE
FlaY	NS	2012	2025	0	Y	trap	nr	F	GB
FreY	EE	1997	2024	0	Y	trap	nr	F	FR
GirnY	NS	2008	2024	1	Y	trap	nr	F	GB
GotaY	NS	1900	2017	14	Y	trap	kg	F	SE
GudeY	NS	1980	2023	0	Y	trap	kg	F	DK
HartY	NS	1967	2023	0	Y	trap	kg	F	DK
KavlY	NS	1992	2023	0	Y	trap	kg	F	SE
LagaY	NS	1925	2024	0	Y	trap	kg	F	SE
MertY	NS	2012	2024	0	Y	trap	nr	F	GB
MillY	NS	2011	2021	0	Y	trap	nr	F	GB
MolY	NS	2005	2025	1	Y	trap	nr	F	GB
MorrY	NS	1960	2016	0	Y	trap	kg	F	SE
MotaY	NS	1942	2024	0	Y	trap	kg	F	SE
RhoY	EE	2008	2024	0	Y	trap	nr	F	FR
RodY	NS	2005	2025	2	Y	trap	nr	F	GB
RonnY	NS	1917	2018	33	Y	trap	kg	F	SE
ShaPY	EE	1985	2025	0	Y	trap	kg	F	IE

Table 3: Short description of the series that were excluded from the analysis. EE: "Elsewhere Europe", NS: North Sea. Min and max indicate the first year and last year in the records, and missing indicated the number of missing/excluded years. Unit for the data collected is given (nr = number; index = calculated value following a specified protocol, nr/m2 = number per square metre, nr/h = number per hour, kg/boat/d = kg per boat per day). Habitat: C = coastal water (according to the EU Water Framework Directive, WFD), F = freshwater, MO = marine water (open sea), T = transitional water with lower salinity (according to WFD).

code	area	min	max	miss-ing	life stage	sam-pling type	unit	hab-itat	comment	coun-try
GariG	EE	2017	2018	0	G	trap	in-dex	T	too short	IT
InagG	EE	2010	2025	0	G	trap	kg	F	too short	IE
LeacG	EE	2017	2024	5	G	trap	in-dex	T	too short	IT
MiScG	EE	2018	2025	0	G	sci. surv.	nr/h	T	too short	PT
OrbfG	EE	2019	2020	0	G	trap	in-dex	T	too short	IT
PilaG	EE	2024	2024	0	G	trap	in-dex	T	too short	IT
PogoG	EE	2019	2023	0	G	trap	in-dex	T	too short	IT
PovoG	EE	2019	2023	0	G	trap	in-dex	T	too short	IT
SeHMG	EE	1979	2020	4	G	com. catch	t	T	Alan the HMRC dataset is based on a guesstimate of distribution of nett trade data between glass vs yellow/silver until about 2008 and then much better EA sales data in more recent years so a mix of two methods of collecting data, one of which is of uncertain quality. The Severn EA dataset is the catches reported by fishermen we know there was under reporting in old years but it is better now, so there are quality issues too but at least the data source is consistent over time	GB
ShiFG	EE	2017	2022	1	G	trap	nr	F	too short	GB
TibnG	EE	2022	2023	0	G	trap	in-dex	T	too short	IT
TrasG	EE	2024	2024	0	G	trap	in-dex	F	too short	IT

code	area	min	max	miss-ing	life stage	sam-pling type	unit	hab-itat	comment	coun-try
VeAmG	NS	2017	2024	1	G	trap	kg	T	too short	BE
WaSG	NS	2015	2024	0	G	sci. surv.	nr	T	too short	DE
BeeGY	NS	2011	2025	0	GY	trap	nr	F	Duplicated series from BeeG, this series will not be used in the analysis	GB
BretGY	EE	2014	2024	0	GY	sci. surv.	in-dex	T	inclusion to be decided during bench-mark	FR
BroGY	NS	2011	2025	2	GY	trap	nr	F	This series cannot be used as it is in the same location as BroG and mixed model with location effect do not work.	GB
Ems-BGY	NS	2013	2024	0	GY	trap	nr	F	There is a series downstream	DE
FarpGY	NS	2007	2024	0	GY	trap	nr	F	Long enough (10 years) but stocking in-fluence	DE
FlaGY	NS	2007	2025	2	GY	trap	nr	F	We already have a glass eel series at this site	GB
HHKGY	NS	2010	2013	0	GY	trap	nr	T	2023 : will always be > 4 years, series stopped	DE
HoSGY	NS	2010	2010	0	GY	trap	nr	T	too short	DE
LangGY	NS	2015	2025	0	GY	trap	nr	T	too short	DE
MeusY	NS	1992	2024	6	Y	trap	nr	F	There has been a change in the number of eel transported in the Meuse over time. In historical time there was a huge restocking. The proportion of restocked eel has only been reported from 2019	BE
MiSpY	EE	2019	2020	0	Y	trap	kg	T	too short	ES
NakkY	NS	2022	2024	0	Y	trap	nr	F	too short	FI
VeAmY	NS	2017	2024	1	Y	trap	nr	T	too short	BE
WaSEY	NS	2015	2024	0	Y	sci. surv.	nr	T	too short	DE

Table 4: Short description of the data points (i.e. series x year) that have been excluded (kept = 3) or for which some warning were raised (kept = 4) in the recruitment index calculation in 2025 and 2024. EE: "Elsewhere Europe", NS: North Sea. Life stage: GY = glass eel and yellow eel, G = glass eel, Y = yellow eel. Unit for the data collected is given (nr = number; index = calculated value following a specified protocol, nr/m2 = number per square metre, nr/h = number per hour, kg/boat/d = kg per boat per day). Habitat: C = coastal water, F = freshwater, MO = marine water (open sea), T = transitional water with lower salinity (according to the EU Water Framework Directive, WFD).

code	Stage	Country	Division	Year	Kept	Comment
BeeG	G	GB	27.4.c	2025	4	Provisional count to end of June 2025
BeeGY	GY	GB	27.4.c	2025	4	Provisional count to end of June 2025
BeeY	Y	GB	27.4.c	2025	4	Provisional count to end of June 2025
BresGY	GY	FR	27.7.d	2025	4	
BroG	G	GB	27.4.c	2024	4	High flows limited trapping to end May, updated to end of trapping season
BroG	G	GB	27.4.c	2025	4	Provisional count to end of June 2025
BroGY	GY	GB	27.4.c	2024	4	Updated data from 658 to end of trapping season High flows limited trapping to end May.
BroGY	GY	GB	27.4.c	2025	4	Provisional count to end of June 2025
BroY	Y	GB	27.4.c	2024	4	updated data from 9 to end of trapping season. High flows limited trapping to end May
BroY	Y	GB	27.4.c	2025	4	Provisional count to end of June 2025
BrokGY	GY	DE	27.4.b	2025	4	preliminary data (monitoring continues)
DoElY	Y	DE	27.4.b	2024	0	not sampled
Ems-BGY	GY	DE	27.4.c	2024	4	
EmsHG	G	DE	27.4.c	2024	4	
FealGY	GY	IE	27.7.j	2025	4	underestimate
FlaG	G	GB	27.4.c	2025	4	Provisional count to end of June 2025
FlaGY	GY	GB	27.4.c	2025	4	Provisional count to end of June 2025
FlaY	Y	GB	27.4.c	2025	4	Provisional count to end of June 2025
GreyGY	GY	GB	27.7.g	2024	4	Provisional data inc start of June at which point pass was not adequately maintained
GreyGY	GY	GB	27.7.g	2025	4	Missing data for March to June 2025.
LangGY	GY	DE	27.4.b	2025	4	preliminary data (monitoring continues)
MertY	Y	GB	27.4.c	2024	4	Provisional data to end of June
MertY	Y	GB	27.4.c	2025	0	No data available for this trap, may have been removed
MillY	Y	GB	27.4.c	2024	0	Trap lost

code	Stage	Country	Division	YearKept	Comment
MillY	Y	GB	27.4.c	20250	Trap has been removed and will not be replaced
MolY	Y	GB	27.4.c	20254	Provisional count to end of June 2025
NmiGY	GY	GB	27.4.c	20244	data updated from NMiGY 102, NMiY 151 to NMiGY 214, to NMiY 524 (incomplete trapping season)
NmiGY	GY	GB	27.4.c	20254	Provisional count to end of June 2025 NmiG 44, NMiGY 724, NMiY 2177
OatGY	GY	GB	27.7.d	20240	No count. Pass/trap not functioning due to high river flows/issues with pump
OatGY	GY	GB	27.7.d	20250	No data available for 2025 due to technical issues with the camera trap.
RhIjG	G	NL	27.4.c	20240	the index is stopped
RodY	Y	GB	27.4.c	20254	Provisional count to end of June 2025
SeEAG	G	GB	27.7.f	20243	Effort highly restricted due to market forces/CITES restrictions. Provisional figure of 1281.78kg to be updated next year.
SeHMG	G	GB	27.7.f	20243	Effort highly restricted due to market forces/CITES restrictions. Provisional figure of 1230.97kg to be updated next year.
ShiFG	G	GB	27.6.a	20240	Trap site discontinued
ShiFG	G	GB	27.6.a	20250	Trap site discontinued
SousGY	GY	FR	27.8.b	20244	Provisional data
VacG	G	FR	37.1.2	20254	The monitoring started late because of water pump failure. Provisional data
VerlGY	GY	DE	27.4.b	20254	preliminary data (monitoring continues)

Table 5: Series updated to 2025. Codes for stages are G = glass eel, GY = glass eel + yellow eel, Y = yellow eel, Area NS = North Sea, EE = "Elsewhere Europe", Division = FAO marine division.

code	Name	Coun.	Stage	Area	Division	country
AlCPG	Albufera de Valencia commercial CPUE	ES	G	EE	37.1.1	ES
AlbuG	Albufera de Valencia commercial catch	ES	G	EE	37.1.1	ES
BeeG	Beeleigh_Glass_<80mm	GB	G	NS	27.4.c	GB
BroG	Brownshill_Glass_<80mm	GB	G	NS	27.4.c	GB
EbroG	Ebro delta lagoons	ES	G	EE	37.1.1	ES
FlaG	Flatford_GE_<80mm	GB	G	NS	27.4.c	GB
GiScG	Gironde scientific estimate	FR	G	EE	27.8.b	FR

code	Name	Coun.	Stage	Area	Division	country
KatwG	Katwijk scientific estimate	NL	G	NS	27.4.c	NL
LauwG	Lauwersoog scientific estimate	NL	G	NS	27.4.b	NL
MiPoG	Minho portuguese part commercial catch	PT	G	EE	27.9.a	PT
MiSpG	Minho spanish part commercial catch	ES	G	EE	27.9.a	ES
MondG	Mondego estuary	PT	G	EE	27.9.a	PT
NaloG	Nalon Estuary commercial catch	ES	G	EE	27.8.c	ES
OriaG	Oria scientific monitoring	ES	G	EE	27.8.b	ES
RhDOG	Rhine DenOever scientific estimate	NL	G	NS	27.4.c	NL
StelG	Stellendam scientific estimate	NL	G	NS	27.4.c	NL
VacG	Vaccares	FR	G	EE	37.1.2	FR
YFS2G	IYFS2 scientific estimate	SE	G	NS	27.3.a	SE
BannGY	Bann Coleraine trapping partial	GB	GY	EE	27.6.a	GB
BresGY	Bresle	FR	GY	EE	27.7.d	FR
BrokGY	Broklandsau Pumping Station	DE	GY	NS	27.4.b	DE
BurrGY	Burrishoole	IE	GY	EE	27.7.b	IE
CorGY	Corrib Galway Weir	IE	GY	EE	27.7.b	IE
ErneGY	Erne Ballyshannon trapping all	IE	GY	EE	27.7.b	IE
FealGY	River Feale	IE	GY	EE	27.7.j	IE
GreyGY	Greylake_Elvers/Yellow (mainly yellow>120mm with 20-25% elvers <120mm)	GB	GY	EE	27.7.g	GB
InagGY	River Inagh	IE	GY	EE	27.7.b	IE
LiffGY	Liffey	IE	GY	EE	27.7.a	IE
NmiGY	New Mills Elvers/Yellow >80mm	GB	GY	NS	27.4.c	GB
OatGY	Oath Lock predominantly glass eel and elvers (<120mm)	GB	GY	EE	27.7.d	GB
ShaAGY	Shannon Ardnacrusha trapping all	IE	GY	EE	27.7.b	IE
StraGY	Strangford	GB	GY	EE	27.7.a	GB
VerlGY	Verlath Pumping Station	DE	GY	NS	27.4.b	DE
BeeY	Beeleigh_Yellow_121mm+	GB	Y	NS	27.4.c	GB
BroY	Brownshill_Yellow_>120mm	GB	Y	NS	27.4.c	GB
FlaY	Flatford Yellow eel >120mm	GB	Y	NS	27.4.c	GB
MertY	Thames - Wandle - Merton Abbey Mills	GB	Y	NS	27.4.c	GB
MillY	Thames - Hogsmill Middle Mill	GB	Y	NS	27.4.c	GB
MolY	Thames-Molesey weir	GB	Y	NS	27.4.c	GB

code	Name	Coun.	Stage	Area	Division	country
RodY	Thames - Roding	GB	Y	NS	27.4.c	GB
ShaPY	Shannon Parteen trapping partial	IE	Y	EE	27.7.b	IE

Table 6: Series updated to 2024. Codes for stages are G = glass eel, GY = glass eel + yellow eel, Y = yellow eel, Area NS = North Sea, EE = "Elsewhere Europe", Division = FAO marine division..

code	Name	Coun.	Stage	Area	Division	country
EmsHG	Ems (Herbrum) Glass eel monitoring	DE	G	NS	27.4.c	DE
KlitG	Klitmoeller A	DK	G	NS	27.3.a	DK
NorsG	Nors A	DK	G	NS	27.3.a	DK
RhIjG	Rhine Ijmuiden scientific estimate	NL	G	NS	27.4.c	NL
RingG	Ringhals scientific survey	SE	G	NS	27.3.a	SE
SeEAG	Severn EA commercial catch	GB	G	EE	27.7.f	GB
ShiMG	Shieldaig river mouth scientific estimate	GB	G	EE	27.6.a	GB
SleG	Slette A	DK	G	NS	27.4.b	DK
YserG	IJzer Nieuwpoort scientific estimate	BE	G	NS	27.4.c	BE
ImsaGY	Imsa Near Sandnes trapping all	NO	GY	NS	27.4.a	NO
SousGY	Souston glass and yellow eel trap	FR	GY	EE	27.8.b	FR
ViskGY	Viskan trapping all	SE	GY	NS	27.3.a	SE
WiFG	Frische Grube	DE	GY	NS	27.3.b, c	DE
WisWGY	Wallensteingraben	DE	GY	NS	27.3.b, c	DE
DalaY	Dalälven trapping all	SE	Y	NS	27.3.d	SE
DoElY	Dove Elde eel ladder	DE	Y	NS	27.4.b	DE
FreY	Fremur	FR	Y	EE	27.7.e	FR
GirnY	Girnock Burn trap scientific estimate	GB	Y	NS	27.4.b	GB
LagaY	Lagan trapping all	SE	Y	NS	27.3.a	SE
MotaY	Motala Ström trapping all	SE	Y	NS	27.3.d	SE
RhoY	Rhone_Beaucaire	FR	Y	EE	37.1.2	FR

Annex 12: Additional recruitment figures



Figure A12.1: WGEEL glass eel recruitment index for the continental North Sea and "Elsewhere Europe" series with 95% confidence intervals updated to 2025. The index was estimated using a GLM (glasseel ~ area : year + site) fitted on 61 time-series comprising either pure glass eel or a mixture of glass eels and yellow eels. Number of series, "Elsewhere Europe" = 35, North Sea = 26. The predictions (p) are scaled to $\bar{p}_{1960-1979}$.

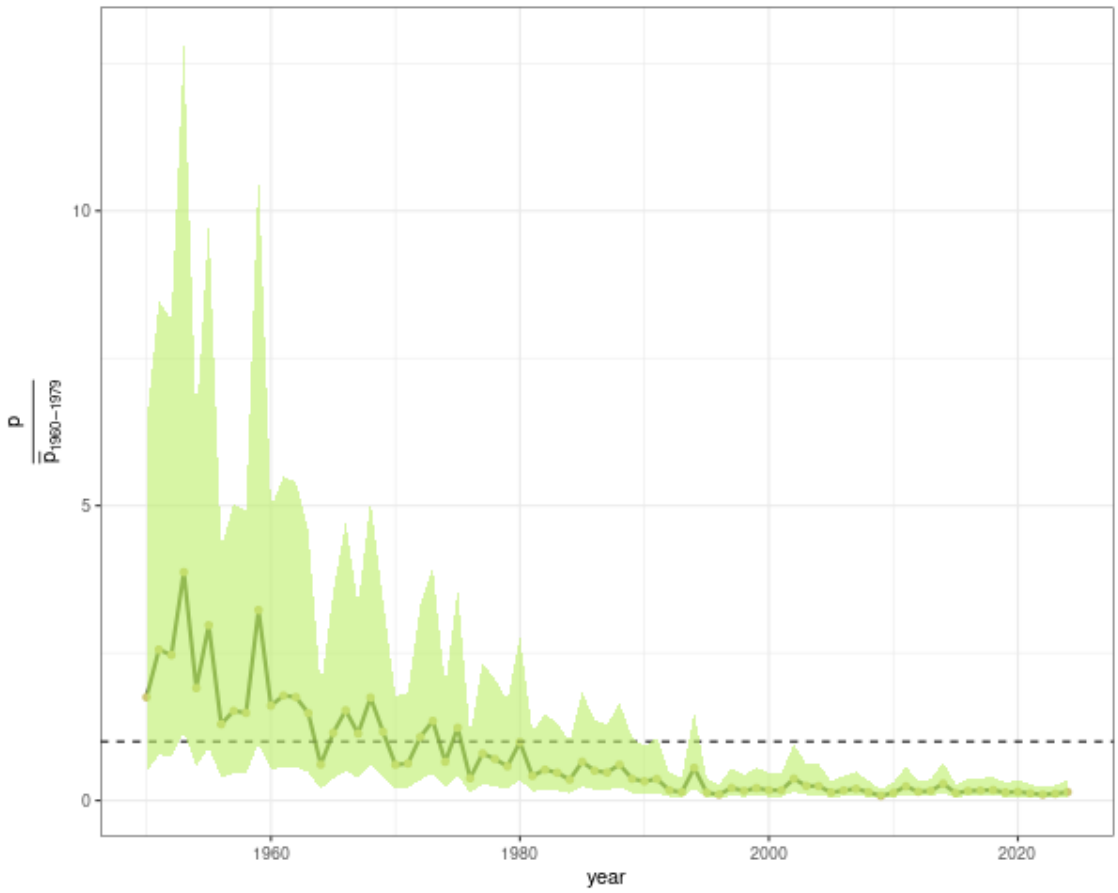


Figure A12.2: Yellow eel recruitment for Europe updated to 2024 . The yellow recruitment was estimated using a GLM (yellow eel ~ year+site) fitted to 21 yellow eel time-series. The predictions (p) are scaled to the 1960-1979 average $\bar{p}_{1960-1979}$.

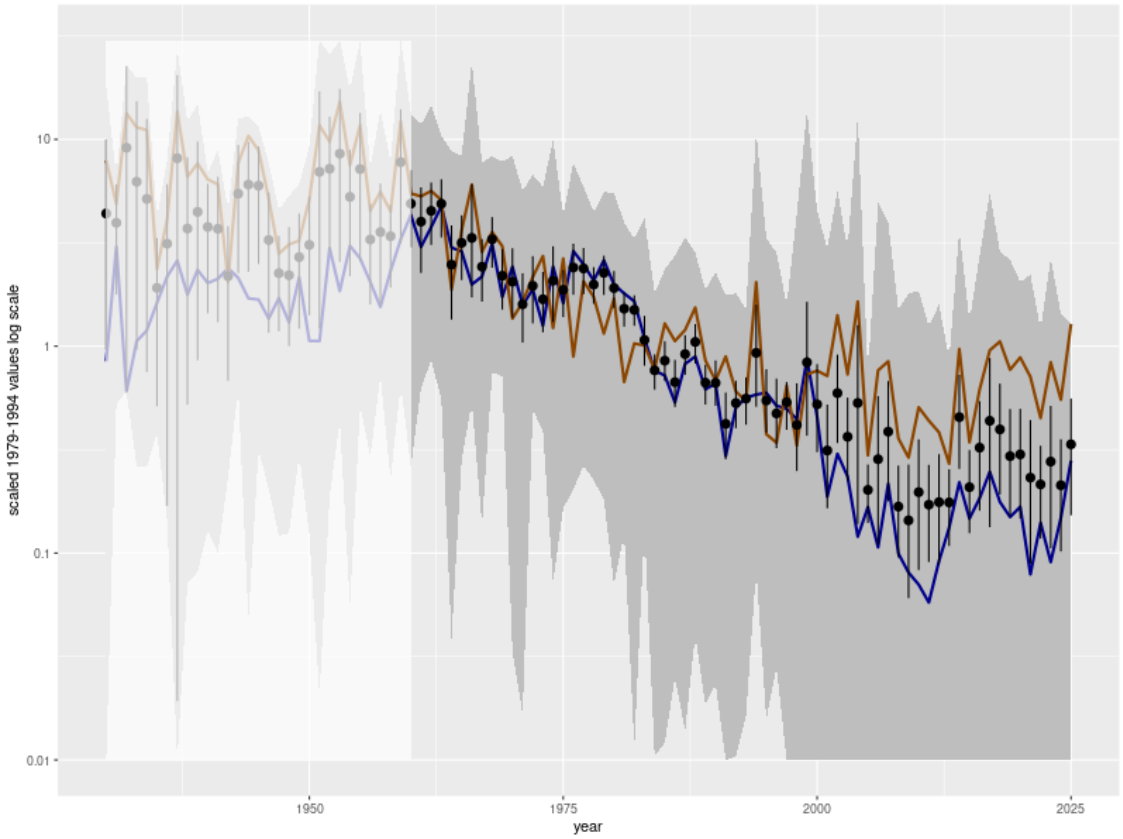


Figure A12.3: Time-series of glass eel and yellow eel recruitment in Europe with 45 time-series out of the 110 available to the working group. Each time-series has been scaled to its 1979-1994 average. The mean arithmetic values of the combined yellow and glass eel time-series and their bootstrap confidence interval (95%) are represented as black dots and bars. The brown line represents the mean value for yellow eel and the blue line represents the mean value for glass eel time-series. The range of these time-series is indicated by a grey shade. Note that individual time-series from Figure 6 were removed to make the mean value clearer. Also note the logarithmic scale.

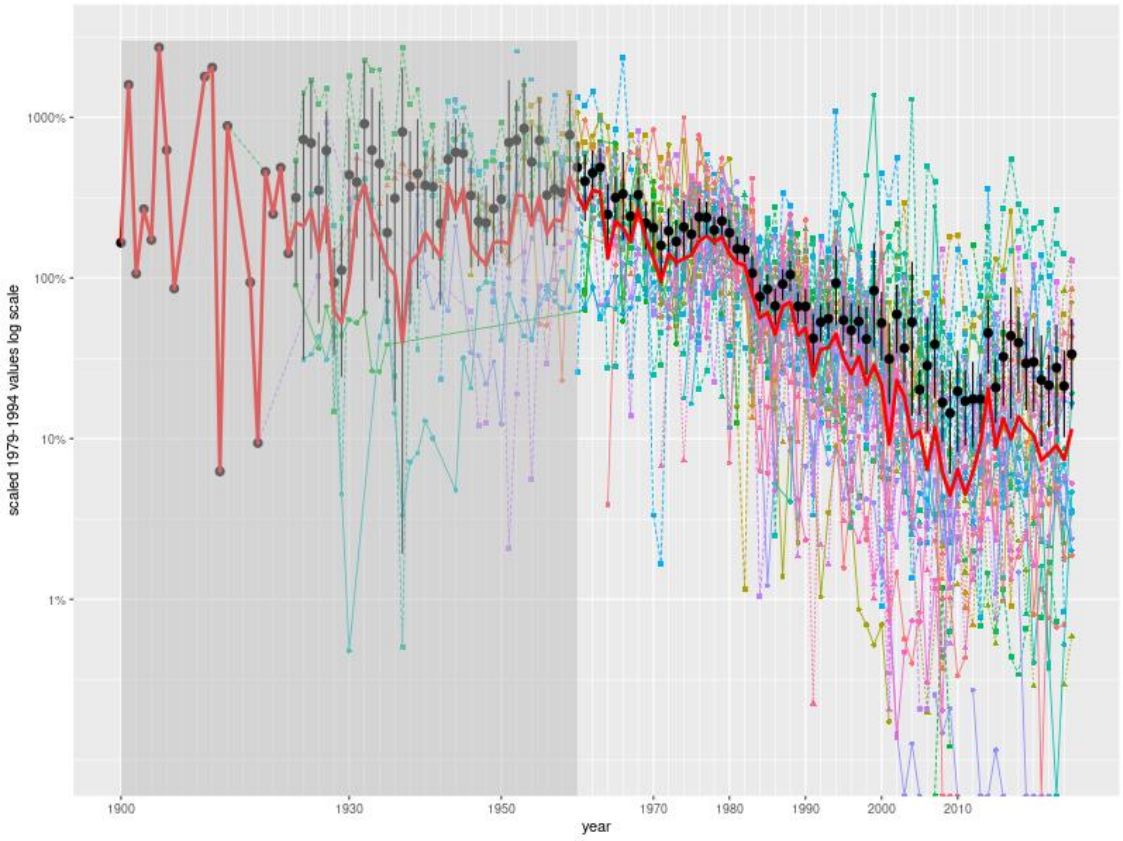


Figure A12.4: Time-series of glass eel and yellow eel recruitment in European rivers with time-series having data for the 1979-1994 period. Each time-series has been scaled to its 1979-1994 average. The mean arithmetic values and their bootstrap confidence interval (95%) are represented as black dots and bars. Geometric means are presented in red.

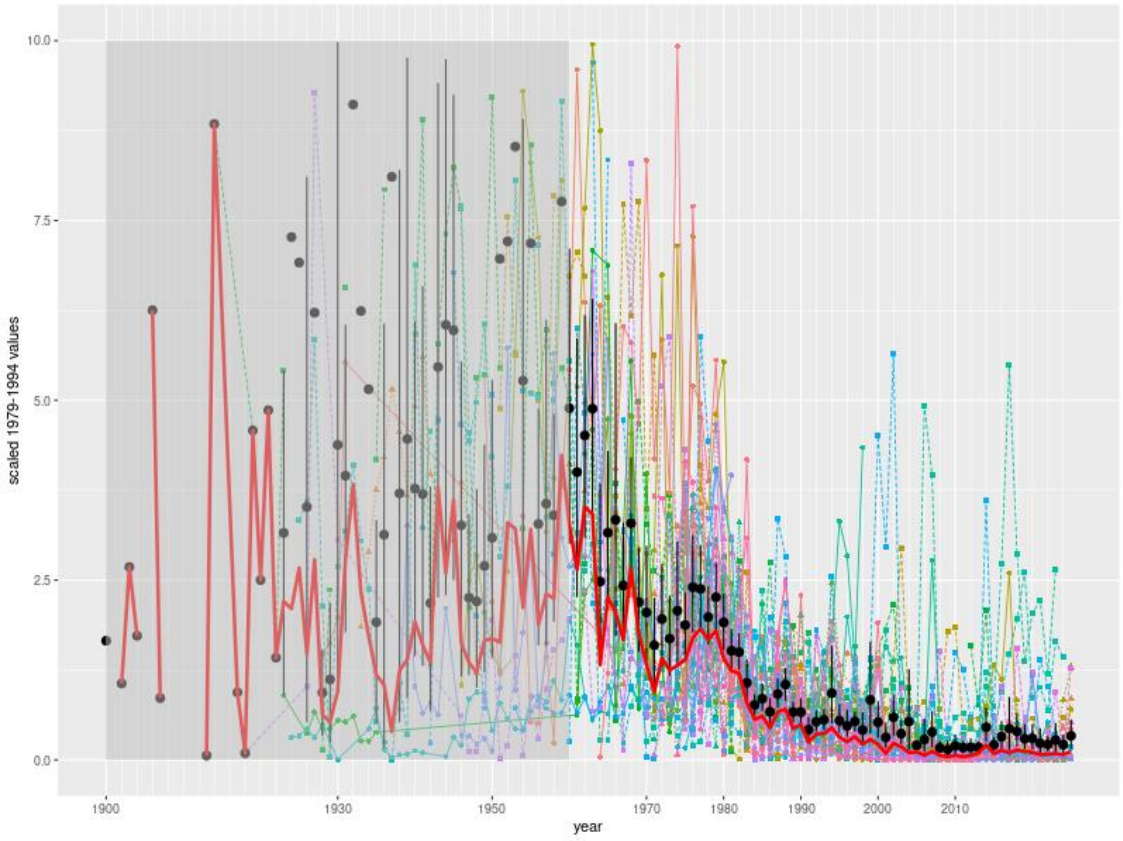


Figure A12.5: Time-series of glass eel and yellow eel recruitment in European rivers with time-series having data for the 1979-1994 period. Each time-series has been scaled to its 1979-1994 average. Note the logarithmic scale on the y-axis. The mean arithmetic values and their bootstrap confidence interval (95%) are represented as black dots and bars. Geometric means are presented in red.

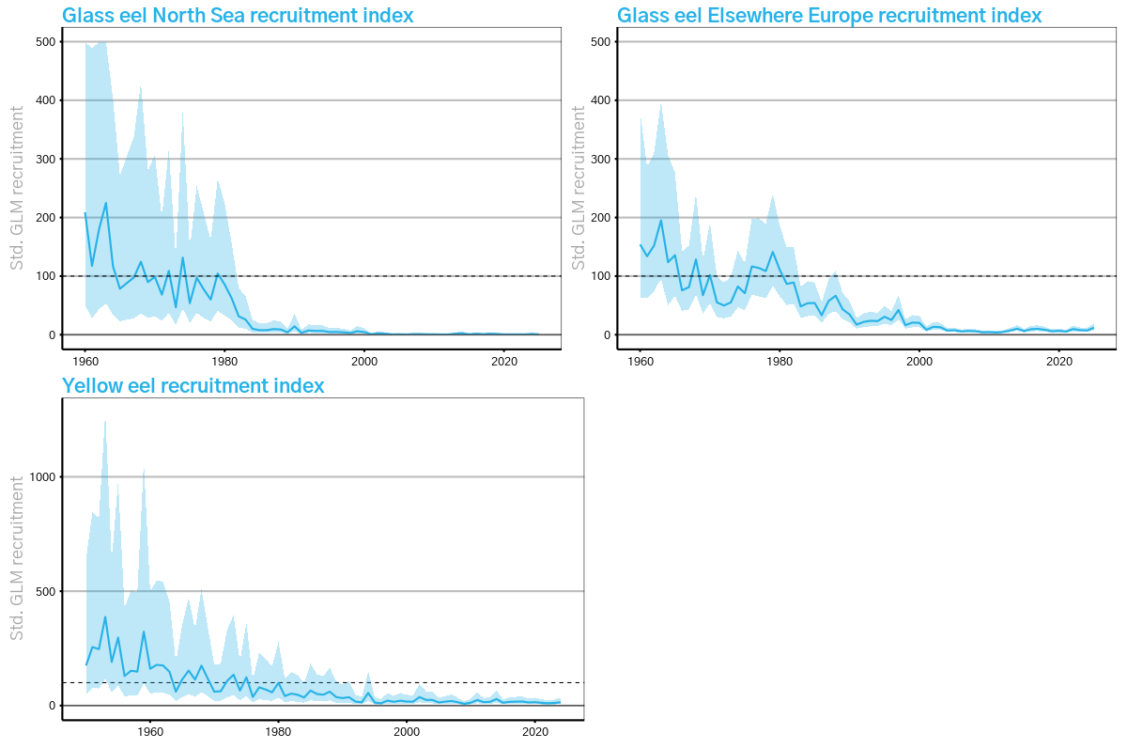


Figure A12.6: Annual WGEEL recruitment index for the continental North Sea (top panel) and "Elsewhere Europe" (center panel). The index was estimated using a GLM (glasseel ~ area : year + site) fitted on 61 time-series comprising either pure glass eel or a mixture of glass eels and yellow eels. Number of series, "Elsewhere Europe" = 35, North Sea = 26. The predictions p have been scaled to $\bar{p}_{1960-1979}$. Yellow eel recruitment(bottom panel) for Europe updated to 2024. The yellow eel recruitment was estimated using a GLM (yellow eel ~ year+site) fitted to21yellow eel time-series *p* and scaled to the 1960-1979 average $\bar{p}_{1960-1979}$.

Annex 13: Trends in landings and releases

Table 1: Glass eel commercial fisheries landings (in tonnes) from 1984 to 2025 reported by countries: Spain (ES), France (FR), United Kingdom (GB), Italy (IT), Portugal (PT). Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	ES	FR	GB	IT	PT	total
1945	119.2					119.2
1946	71.9					71.9
1947	100.1					100.1
1948	110.6					110.6
1949	9.3					9.3
1950	3.8					3.8
1951	2.1					2.1
1953	2.5					2.5
1954	5.9					5.9
1955	0.9					0.9
1956	0.9					0.9
1957	2.8					2.8
1958	0.4					0.4
1959	6.6					6.6
1960	9.5					9.5
1961	16.7					16.7
1962	11.1					11.1
1963	8.0					8.0
1964	11.0					11.0
1965	4.0					4.0
1966	6.0					6.0
1967	5.0					5.0
1968	4.0					4.0
1969	4.0					4.0
1970	5.0					5.0
1971	1.0					1.0
1972	1.0		16.7			17.7
1973	1.0		28.2			29.2
1974	2.0		57.5		1.6	61.1
1975	2.6		10.5		5.6	18.7
1976	11.6		13.1		12.5	37.2
1977	17.5		38.6		22.6	78.7
1978	21.6	1,393.0	61.2		7.3	1,483.1
1979	17.3	1,850.0	67.0		8.8	1,943.1
1980	15.4	1,491.0	40.1		10.1	1,556.6
1981	13.0	890.0	36.9		18.0	957.9
1982	19.3	866.0	48.0		22.2	955.5
1983	10.3	791.0	16.9		6.7	824.9
1984	16.4	528.0	25.0		16.1	585.5

Year	ES	FR	GB	IT	PT	total
1985	18.3	444.0	20.0		14.8	497.1
1986	6.4	423.0	19.0		7.0	455.4
1987	9.4	461.0	21.3		9.5	501.2
1988	9.9	504.0	21.4		2.6	537.9
1989	9.9	410.0	20.6		2.8	443.3
1990	5.3	325.0	20.9		4.5	355.7
1991	6.8	179.0	1.1		2.8	189.7
1992	3.7	183.0	5.0		4.5	196.2
1993	5.2	329.0	5.7		3.6	343.5
1994	2.4	329.0	9.5		2.9	343.8
1995	4.9	413.0	11.9		5.3	435.1
1996	14.5	262.0	18.8		8.7	304.0
1997	12.0	287.0	8.7		4.4	312.1
1998	14.1	195.0	11.2		4.5	224.8
1999	13.9	242.0			3.6	259.5
2000	11.0	206.0			3.0	220.0
2001	12.0	101.0	0.8		1.1	114.9
2002	8.6	202.0	0.5		0.8	211.9
2003	10.0	151.0	1.7		1.4	164.1
2004	5.1	89.0	1.0		0.8	95.9
2005	6.4	89.0	1.7		1.2	98.3
2006	4.1	67.0	1.3		2.7	75.1
2007	5.2	77.0	2.1		0.9	85.2
2008	5.1	79.0	0.8		0.8	85.7
2009	3.7		0.3		1.4	5.4
2010	6.5	41.0	1.3		2.4	51.2
2011	5.2	31.3	2.3		1.1	39.9
2012	5.3	34.3	2.8		0.8	43.2
2013	7.2	33.6	5.9		1.1	47.8
2014	11.3	35.3	12.0	0.4	1.2	60.2
2015	8.8	36.1	2.8	0.2	1.3	49.2
2016	6.6	46.4	4.0	0.1	0.4	57.5
2017	11.1	43.2	3.3	0.1	2.2	59.9
2018	4.5	53.4	4.2	0.2	1.0	63.3
2019	4.3	50.0	6.6	0.2	0.6	61.7
2020	6.3	48.3	3.4		0.9	58.9
2021	4.5	46.6	0.1		1.2	52.4
2022	4.7	54.5	1.1		0.9	61.2
2023	3.6	49.0	0.9		0.5	54.0
2024	3.3	52.5	1.4		0.5	57.7
2025	3.3	52.5	0.6		0.3	56.7

Table 2a: Commercial fisheries landings (in tonnes) for yellow eel and silver eel from 1908 to 2024 (part 1), reported by countries: Albania (AL), Belgium (BE), Germany (DE), Denmark (DK), Algeria (DZ), Estonia (EE), Spain (ES), Finland (FI), France (FR) (to be continued for other countries in next table). Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	AL	BE	DE	DK	DZ	EE	ES	FI	FR*
1908									
1909									
1910									
1911									
1912									
1913									
1914									
1915									
1916									
1917									
1918									
1919									
1920				3,413.0					
1921				3,443.0					
1922				3,760.0					
1923				3,396.0					
1924				4,130.0					
1925				4,880.0					
1926				4,726.0					
1927				4,648.0					
1928				4,117.0					
1929				4,375.0					
1930				4,773.0					
1931				4,195.0					
1932				5,088.0					
1933				5,014.0					
1934				5,171.0					
1935				4,316.0					
1936				4,332.0					
1937				4,329.0					
1938				3,849.0					
1939				4,662.0					
1940				3,709.0					
1941				3,717.0					
1942				3,140.0					
1943				3,917.0					
1944				4,245.0					
1945				4,169.0					
1946				4,269.0					
1947				4,784.0					
1948				4,386.0					
1949				4,492.0					

Year	AL	BE	DE	DK	DZ	EE	ES	FI	FR*
1950				4,500.0					
1951				4,400.0			90.0		
1952				3,900.0			102.2		
1953				4,300.0			80.2		
1954				3,800.0			97.7		
1955				4,800.0			102.9		
1956				3,700.0			106.1		
1957				3,600.0			80.0		
1958				3,300.0			115.0		
1959				4,000.0			100.0		
1960				4,937.0			98.0		
1961				4,110.0			153.8		
1962				4,122.0			114.9		
1963				4,166.0			136.9		
1964				3,505.0		3.0	91.5		
1965				3,402.0		0.3	130.4		
1966				3,901.0		1.9	191.5		
1967				3,679.0		2.7	163.8		
1968				4,476.0		2.9	175.6		
1969				3,878.0		49.0	136.4		
1970				3,558.0		61.5	119.4		
1971				3,378.0		59.5	107.4		
1972				3,429.0		73.4	119.4		
1973				3,656.0		69.0	100.2		
1974				2,977.0		51.1	93.4		
1975				3,485.0		82.1	78.0		
1976				3,054.0		71.6	82.7		
1977				2,502.0		65.8	79.9		
1978				2,492.0		63.2	67.0		
1979				1,904.0		28.5	96.8		
1980				2,288.0		25.7	89.8		
1981				2,227.0		21.9	97.7		
1982				2,541.0		13.9	19.9		
1983				2,119.0		28.8	18.4		
1984				1,871.0		72.2	11.0		
1985			1,096.7	1,630.0		75.1	16.5		
1986			1,118.7	1,672.0		61.1	13.4		1,944.0
1987			1,031.0	1,279.0		66.7	21.2		2,062.0
1988			1,018.0	1,878.0		109.7	13.9		2,265.0
1989			963.6	1,696.0		54.8	5.3		1,746.0
1990			829.7	1,675.0		61.3	8.7		1,778.0
1991			724.7	1,465.0		52.4	49.8		1,645.0
1992			761.7	1,451.0		39.4	54.3		1,321.0
1993			790.1	1,080.0		59.2	66.5		1,280.0
1994			833.1	1,200.0		46.9	50.7		1,280.0

Year	AL	BE	DE	DK	DZ	EE	ES	FI	FR*
1995			777.9	892.0		45.4	69.4		1,280.0
1996			603.0	751.5		55.1	61.7		1,280.0
1997			616.2	797.0		59.1	61.5		1,223.0
1998			566.9	597.0		44.2	43.6		1,150.0
1999			645.1	717.0	20.4	64.8	48.3		1,005.0
2000		2.9	591.2	628.0	17.2	67.0	55.3		1,008.8
2001		2.9	569.0	707.0	44.5	67.0	130.2		1,024.1
2002		2.9	543.9	614.0	25.4	49.9	105.6		30.4
2003		2.9	497.9	648.0	25.2	48.6	95.6		21.4
2004		2.9	475.3	546.0	29.0	39.2	85.3		12.5
2005		2.9	454.8	534.0	7.6	30.7	88.0		7.8
2006			472.2	596.0	2.7	33.4	115.6		15.0
2007			423.6	537.0	14.6	31.1	82.1		26.1
2008			352.8	466.0	13.9	30.6	65.6	1.0	31.4
2009			311.6	467.0	14.2	22.1	89.2	1.8	42.0
2010			318.5	422.0	3.4	18.9	76.1	2.3	20.2
2011			287.0	370.0		16.2	61.6	1.5	368.0
2012			246.9	317.0	0.4	17.7	85.4	1.5	472.6
2013	47.0		265.9	356.0	3.0	17.4	86.8	1.3	504.1
2014	43.0		231.1	346.0	6.0	16.7	101.9	1.0	434.4
2015	50.0		213.7	282.0	3.0	14.2	63.5	0.6	356.9
2016	41.0		208.8	265.0	2.0	15.2	83.0	1.3	442.6
2017	47.0	0.0	244.3	257.3	10.6	15.7	74.3	1.1	434.1
2018	60.0		228.6	181.8	33.0	18.3	64.1	1.1	617.4
2019	70.0		209.7	183.3	25.2	21.7	57.6	0.4	309.6
2020	40.0		228.9	182.2	18.0	38.8	81.7	0.4	348.3
2021	22.0		223.4	232.8	4.7	47.9	69.6	0.4	314.7
2022	17.0		207.8	163.1	7.6	52.4	66.1	2.3	390.0
2023	20.0			125.2	3.4	59.5	69.5	0.0	371.6
2024	19.0			100.7	7.7	55.3	71.0	0.0	319.3

*** Landings from France are incomplete between 2002 and 2010.**

Table 2b: Commercial fisheries landings (in tonnes) for yellow eel and silver eel from 1908 to 2024 (part 2), reported by countries: United Kingdom (GB), Greece (GR), Croatia (HR), Ireland (IE), Italy (IT), Lithuania (LT), Latvia (LV), Libya (LY) (to be continued for other countries in next table). Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	GB	GR	HR	IE	IT	LT	LV	LY
1908								
1909								
1910								
1911								
1912								
1913								
1914								
1915								
1916								
1917								
1918								
1919								
1920								
1921								
1922								
1923								
1924								
1925								
1926								
1927								
1928								
1929								
1930								
1931								
1932								
1933								
1934								
1935								
1936								
1937								
1938								
1939								
1940								
1941								
1942								
1943								
1944								
1945								
1946								
1947						8.0	10.0	
1948						14.0	10.0	
1949						21.0	50.0	

Year	GB	GR	HR	IE	IT	LT	LV	LY
1950						29.0	10.0	
1951						32.0	10.0	
1952						39.0	10.0	
1953						80.0	20.0	
1954						147.0	20.0	
1955						163.0	40.0	
1956						131.0	20.0	
1957						168.0	20.0	
1958						149.0	20.0	
1959						155.0	24.0	
1960	771.7					165.0	37.0	
1961	768.4					139.0	43.0	
1962	696.1					155.0	41.0	
1963	787.8					260.0	56.0	
1964	548.9					225.0	37.0	
1965	783.8					125.0	35.0	
1966	881.0	14.9				238.0	33.0	
1967	568.7	19.0				153.0	39.0	
1968	585.6	4.9				165.0	28.0	
1969	605.6	2.9			2,469.0	134.0	36.0	
1970	752.1	0.0		200.0	2,300.0	118.0	29.0	
1971	842.2	0.0		200.0	2,113.0	124.0	29.0	
1972	632.6	4.3		200.0	1,997.0	126.0	25.0	
1973	723.2	15.5		91.0	588.0	120.0	27.0	
1974	765.0	129.8		67.0	2,122.0	86.0	20.0	
1975	762.2	133.8		79.0	2,886.0	114.0	19.0	
1976	621.7	158.7		150.0	2,596.0	88.0	24.0	
1977	690.5	89.2		108.0	2,390.0	68.0	16.0	
1978	823.6	225.3		76.0	2,172.0	70.0	18.0	
1979	1,045.0	185.5		110.0	2,354.0	57.0	21.0	
1980	912.2	226.9		75.0	2,198.0	45.0	9.0	
1981	907.1	250.6		94.0	2,270.0	27.0	10.0	
1982	942.5	255.2		144.0	2,025.0	28.0	12.0	
1983	866.4	200.8		117.0	2,013.0	23.0	9.0	
1984	973.4	285.4		88.0	2,050.0	27.0	12.0	
1985	750.0	189.6		87.0	2,135.0	29.0	18.0	
1986	650.8	151.6		87.0	2,134.0	32.0	19.0	
1987	684.1	266.3		230.0	2,265.0	20.0	25.0	
1988	933.6	268.1		215.0	2,027.0	23.0	15.0	
1989	874.7	155.6		400.0	1,243.0	21.0	13.0	
1990	783.9	194.2		256.0	1,088.0	19.0	13.0	
1991	736.9	209.4		245.0	1,097.0	16.0	14.0	
1992	715.4	184.8		234.0	1,084.0	12.0	17.0	
1993	670.7	181.9		260.0	782.0	10.0	19.0	
1994	777.8	200.5		300.0	771.0	12.0	19.0	

Year	GB	GR	HR	IE	IT	LT	LV	LY
1995	899.6	201.4			1,047.0	9.4	38.0	
1996	805.2	151.3			953.0	8.6	24.0	
1997	730.7	136.5			727.0	10.7	25.0	
1998	693.4	87.6			666.0	17.1	30.0	
1999	667.8	80.7		250.0	634.0	17.9	26.0	
2000	587.2	88.1		250.0	588.0	22.0	13.7	
2001	582.7	93.4		98.0	520.0	23.0	17.4	
2002	551.1	136.3		123.0	415.0	25.6	9.6	
2003	552.3	76.5		111.0	446.0	23.5	10.3	
2004	471.7	58.1		136.0	379.0	32.0	11.3	
2005	477.2	116.1		101.0	75.0	44.6	10.3	
2006	383.5	77.1		133.0	56.0	31.6	7.9	
2007	450.4	89.7		114.0	277.0	29.8	9.6	
2008	400.6	71.1		108.3	56.0	27.0	12.9	
2009	462.4	78.5		0.0	289.9	17.2	4.9	
2010	461.1	58.6		0.0	225.1	37.6	8.9	
2011	455.9	83.2		0.0	149.7	22.6	6.0	
2012	415.1	55.2		0.0	142.4	15.8	6.3	
2013	426.5	38.0		0.0	129.8	28.4	4.7	
2014	392.8	58.3	0.5	0.0	144.4	15.4	4.4	
2015	341.0	60.2	0.1	0.0	129.2	11.8	5.2	
2016	347.2	60.9	0.6	0.0	166.9	28.4	4.2	
2017	321.8	48.3	0.6	0.0	165.0	24.3	8.6	
2018	366.9	42.8	0.6	0.0	121.9	20.3	5.8	
2019	295.6	20.4	0.4	0.0	126.6	4.6	6.1	1.3
2020	182.2	27.9	0.4	0.0	95.7	6.8	6.7	1.9
2021	244.0	19.2	0.4	0.0	82.9	9.9	6.4	0.2
2022	166.7	17.5	0.5	0.0	112.5	11.6	6.1	2.1
2023	104.7	19.4	0.5	0.0	85.8	6.3	5.0	0.9
2024	59.7	21.8	0.4	0.0	59.7	9.5	0.3	

Table 2c: Commercial fisheries landings (in tonnes) for yellow eel and silver eel from 1908 to 2024 (part 2), reported by countries: Morocco (MA), Netherlands (NL), Norway (NO), Poland (PL), Portugal (PT), Sweden (SE), Slovenia (SI), Tunisia (TN), Türkiye (TR). The total column is the yearly sum for all countries included in tables 2a, 2b, and 2c and not just the countries listed in this particular table. Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	MA	NL*	NO	PL	PT	SE	SI	TN	TR	total
1908			268.1							268.1
1909			326.6							326.6
1910			303.1							303.1
1911			383.8							383.8
1912			187.3							187.3
1913			212.7							212.7
1914			282.0			1,460.6				1,742.6
1915			143.0			996.9				1,139.9
1916			117.0			1,078.2				1,195.2
1917			44.0			1,283.6				1,327.6
1918			35.0			884.4				919.4
1919			64.0			1,145.4				1,209.4
1920			80.0			969.6				4,462.6
1921			79.0			1,072.4				4,594.4
1922			94.0			925.9				4,779.9
1923			140.0			947.7				4,483.7
1924			290.0			1,201.1				5,621.1
1925			325.0			1,714.2				6,919.2
1926			341.0			1,707.3				6,774.3
1927			354.0			2,011.5				7,013.5
1928			325.0			1,040.1				5,482.1
1929			425.0			1,393.7				6,193.7
1930			450.0			1,528.8				6,751.8
1931			329.0			1,531.4				6,055.4
1932			518.0			1,723.7				7,329.7
1933			694.0			1,546.2				7,254.2
1934			674.0			1,844.9				7,689.9
1935			564.0			1,950.9				6,830.9
1936			631.0			1,654.5				6,617.5
1937			603.0			1,725.1				6,657.1
1938			526.0			1,870.5				6,245.5
1939			434.0			1,774.4				6,870.4
1940			143.0			1,625.7				5,477.7
1941			174.0			1,629.0				5,520.0
1942			131.0			1,131.6				4,402.6
1943			136.0			1,546.0				5,599.0
1944			150.0			2,001.6				6,396.6
1945		2,668.0	102.0			1,673.4				8,612.4
1946		3,492.0	167.0			1,516.6				9,444.6
1947		4,502.0	268.0			1,914.4				11,486.4
1948		4,799.0	293.0			1,866.5				11,368.5

Year	MA	NL*	NO	PL	PT	SE	SI	TN	TR	total
1949		3,873.0	214.0			1,902.0				10,552.0
1950		4,152.0	282.0			2,192.0				11,165.0
1951		3,661.0	312.0			1,933.0				10,438.0
1952		3,978.0	178.0			1,600.0				9,807.2
1953		3,157.0	371.0			2,381.0				10,389.2
1954		2,085.0	327.0	609.0		2,113.0				9,198.7
1955		1,651.0	451.0	732.0		2,656.0				10,595.9
1956		1,817.0	293.0	656.0		1,537.0				8,260.1
1957		2,509.0	430.0	616.0		2,228.0				9,651.0
1958		2,674.0	437.0	635.0		1,757.0				9,087.0
1959		3,413.0	409.0	566.0		2,797.0				11,464.0
1960		2,999.0	430.0	733.0		1,648.0				11,818.7
1961		2,452.0	449.0	640.0		2,079.0				10,834.2
1962		1,443.0	356.0	663.0		1,911.0				9,502.0
1963		1,618.0	503.0	762.0		2,107.0				10,396.7
1964		2,068.0	440.0	884.0		2,304.0				10,106.4
1965		2,268.0	523.0	682.0		1,823.0				9,772.5
1966		2,339.0	510.0	804.0		1,975.0				10,889.3
1967		2,524.0	491.0	906.0		1,623.0				10,169.2
1968		2,209.0	569.0	943.0		1,817.0				10,976.0
1969		2,389.0	522.0	935.0		1,690.0			342.0	13,188.9
1970		1,111.0	422.0	847.0		1,209.0			441.0	11,168.0
1971		853.0	415.0	722.0		1,391.0			460.0	10,694.1
1972		857.0	422.0	696.0		1,204.0			220.0	10,005.7
1973		823.0	409.0	644.7		1,212.0			315.0	8,793.6
1974		840.0	368.0	691.1		1,034.0			588.0	9,832.4
1975		1,000.0	407.0	809.7		1,391.0			448.0	11,694.8
1976		1,172.0	386.0	760.5		935.0			499.0	10,599.2
1977		783.0	352.0	867.8		989.0			282.0	9,283.2
1978		719.0	347.0	910.4		1,076.0			283.0	9,342.5
1979		530.0	374.0	978.9		954.0			396.0	9,034.7
1980		664.0	387.0	1,214.0		1,112.0			224.0	9,470.6
1981		722.0	369.0	943.5		887.0			374.0	9,200.8
1982		842.0	385.0	911.3		1,161.0	0.8		424.0	9,705.6
1983		937.0	324.0	868.0		1,212.0	0.7		588.0	9,325.1
1984		691.0	310.0	819.4		963.0	1.2		616.0	8,790.6
1985		679.0	352.0	1,022.5		1,029.0	2.5		583.0	9,694.9
1986		721.0	272.0	920.7		841.1	2.7		517.0	11,158.1
1987		538.0	282.0	886.6		718.1	1.6		543.0	10,919.6
1988		425.0	513.0	943.3		965.5	1.5		756.0	12,370.6
1989		526.0	313.0	812.8	13.5	928.4	1.3		472.0	10,240.0
1990		472.0	336.0	768.1	13.0	941.6	1.9		230.0	9,469.4
1991		573.0	323.0	669.7	23.5	1,084.4	1.4		262.0	9,192.2
1992		548.0	372.0	638.2	29.7	1,181.8	0.1		245.0	8,889.4
1993		293.0	340.0	568.0	33.9	1,145.9	0.1		261.0	7,841.3

Year	MA	NL*	NO	PL	PT	SE	SI	TN	TR	total
1994		330.0	472.0	635.1	26.6	1,297.7	0.7		329.0	8,582.1
1995		354.0	454.0	641.9	23.7	971.4	0.0		390.0	8,095.1
1996		300.0	353.0	629.0	25.6	1,053.3	0.0		342.0	7,396.3
1997		285.0	467.0	526.0	24.7	1,073.4	0.0		400.0	7,162.8
1998		323.0	331.0	544.4	23.3	649.3	0.0		300.0	6,066.8
1999		357.0	447.0	599.1	23.1	701.6			200.0	6,504.8
2000		370.1	281.0	443.6	21.8	532.0	0.0	109.9	176.0	5,853.8
2001		438.8	304.0	434.5	15.0	643.2	0.0	144.1	122.0	5,980.8
2002		369.6	311.0	372.9	26.9	666.7	0.0	204.4	147.0	4,731.2
2003		309.4	240.0	365.5	10.6	628.6		171.7	158.0	4,443.0
2004		309.8	237.0	337.2	8.8	613.6		132.5	165.0	4,082.2
2005		255.0	249.0	219.9	7.0	714.2	0.0	197.0	176.0	3,768.1
2006		240.3	293.0	184.4	10.1	771.2	0.0	266.3	162.0	3,851.3
2007		197.0	194.0	180.7	10.5	761.9	0.0	296.5	179.0	3,904.6
2008		147.6	211.0	159.7	7.0	727.0	0.0	316.7	171.0	3,377.2
2009		108.0	69.0	160.6	8.2	519.0	0.0	122.2	158.0	2,945.8
2010		445.0	32.0	173.2	11.0	525.3	0.0	92.6	182.0	3,113.8
2011		370.6	0.0	118.8	5.9	457.0	0.0	79.6	28.3	2,881.9
2012		351.7	0.0	119.3	3.8	336.5	0.0	55.0	38.0	2,680.6
2013	23.0	318.9	0.0	137.4	2.7	356.5	0.0	149.6	48.2	2,945.2
2014	23.0	320.3	0.0	116.8	3.3	302.0	0.0	83.6	56.0	2,700.9
2015	4.0	293.0	0.0	102.4	2.9	228.7	0.0	81.4	71.0	2,314.8
2016	7.0	312.5	3.0	138.4	2.4	261.8	0.0	250.4	75.0	2,717.6
2017	2.0	421.2	10.9	172.6	1.5	227.7		153.0	81.0	2,722.9
2018	2.0	474.7	3.4	146.5	3.6	231.6		166.3	111.0	2,901.7
2019		484.0	4.0	167.5	1.9	156.1		107.0	330.0	2,583.0
2020		475.5	4.0	103.6	3.2	185.5		129.9	232.8	2,394.4
2021		523.7	5.0	126.6	2.4	166.8		105.3	267.3	2,475.6
2022		538.1	4.0	115.3	1.7	117.1		105.0	275.8	2,380.3
2023		456.3	5.0	192.8	2.8	174.8		105.5	281.9	2,090.9
2024		479.0	2.0	154.2	4.6	148.6		62.4	280.0	1,855.2

*** Landings from the Netherlands are incomplete before 2010.**

Table 3a: Recreational fisheries landings (in tonnes) for yellow eel and silver eel from 1980 to 2025 (part 1), reported by countries: Belgium (BE), Czech republic (CZ), Germany (DE), Denmark (DK), Algeria (DZ), Estonia (EE), Spain (ES), Finland (FI), France (FR), Croatia (HR), Ireland (IE) (to be continued for other countries in next table). Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	BE	CZ	DE	DK	DZ	EE	ES	FI	FR	HR	IE
1980											
1981											
1982											
1983											
1984											
1985			581.6								
1986			562.8								
1987			546.3								
1988			558.5								
1989			542.5								
1990			501.3								
1991			498.1								
1992			488.5								
1993			485.6								
1994			492.9								
1995			452.2								
1996			416.3								
1997			423.7								
1998			430.5								
1999			424.8								
2000	33.6		428.9						20.9		
2001	33.6		425.9						19.9		
2002	33.6		417.3						19.0		
2003	33.6		427.9						14.7		
2004	33.6		413.9						16.8		
2005	33.6		398.1			1.7			12.9		
2006	33.6		399.1			1.0			683.9		
2007	33.6		375.4			1.0			14.6		
2008	33.6		326.4			1.1		17.0	14.9		
2009	33.6		309.8	108.0		1.4			7.1		
2010	30.0		276.7	125.5		1.1		10.0	4.9		
2011	30.0		272.0	79.5		1.0			3.2		
2012	30.0	17.1	262.3	52.3		0.6		5.0	4.6		
2013	30.0	15.4	265.4	49.9		0.6	1.0		4.7		
2014	30.0	18.8	270.3	57.0		0.5	1.0	20.0	4.3		
2015	29.5	12.4	270.5	118.3		0.7	1.0		3.5	10.1	
2016	29.5	12.4	273.9	164.3		0.6	0.8	8.0	3.1	8.9	
2017	29.5	17.3	275.5	117.1		0.6	0.1		2.9	7.6	
2018	29.7	11.5	271.1			0.6	0.9	2.0	3.6	6.8	
2019	29.7	12.3	276.0	110.0		0.6	2.2		2.3	5.7	
2020	29.7		285.5	98.9		1.1		2.0	2.0	5.0	
2021	29.6		272.9	79.0		0.5			3.3	1.9	

Year	BE	CZ	DE	DK	DZ	EE	ES	FI	FR	HR	IE
2022	29.5		274.7	160.0	0.9	0.4		5.0	1.7	1.3	0.0
2023	29.5			4.1	6.0	0.6			3.5		0.0
2024	29.5			6.6				0.0	4.4		0.0
2025											0.0

Table 3b: Recreational fisheries landings (in tonnes) for yellow eel and silver eel from 1980 to 2025 (part 2), reported by countries: Italy (IT), Lithuania (LT), Latvia (LV), Libya (LY), Netherlands (NL), Poland (PL), Sweden (SE), Slovenia (SI), Türkiye (TR). The total column is the yearly sum for all countries included in tables 3a and 2b and not just the countries listed in this particular table. Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	IT	LT	LV	LY	NL	PL	SE	SI	TR	total
1980								0.0		0.0
1981								0.0		0.0
1982								0.0		0.0
1983								0.0		0.0
1984								0.0		0.0
1985								0.0		581.6
1986								0.1		562.9
1987								0.1		546.4
1988								0.1		558.6
1989								0.1		542.6
1990								0.1		501.4
1991								0.1		498.2
1992								0.1		488.6
1993								0.1		485.7
1994							1,273.3	0.0		1,766.2
1995								0.0		452.2
1996								0.1		416.4
1997								0.2		423.9
1998								0.1		430.6
1999							1,218.0	0.0		1,642.8
2000			1.7					0.0		485.1
2001			1.2					0.0		480.6
2002			1.1					0.0		471.0
2003			0.4					0.0		476.6
2004			0.7				594.0	0.0		1,059.0
2005			2.6					0.0		448.9
2006			0.3				259.9	0.0		1,377.8
2007			0.3					0.0		424.9
2008			0.2					0.0		393.2
2009			0.7					0.0		460.6
2010	149.5		0.3		95.0			0.0		693.0
2011	60.6		0.4					0.0		446.7
2012	73.6	1.4	0.4		77.0	32.4		0.0		556.7
2013	69.7	3.0	0.7			26.7		0.0		467.1
2014	69.8	1.8	0.5		46.0	29.5		0.0		549.5
2015	60.2	5.0	0.5			26.5		0.0		538.2
2016	56.8	1.6	0.2		29.0	34.2		0.0		623.3
2017	41.3	3.0	0.5			39.7				535.1
2018	42.3	0.6	0.2		13.0	45.3				427.6
2019	33.7	6.0	0.3	0.1		42.1				521.0
2020	24.5	1.2	0.5	0.1	18.0	49.8			87.2	605.5

Year	IT	LT	LV	LY	NL	PL	SE	SI	TR	total
2021	12.6	6.8	0.3	0.0		65.4			41.7	514.0
2022	17.1		0.2	0.2	10.0	25.9			24.2	551.1
2023	0.8	2.5	0.1	0.1		33.7			8.1	89.0
2024	1.7		0.0			33.7				75.9
2025										0.0

Table 4: Raw recreational landings (tonnes) for glass eels from 1978 to 2023 for Spain (ES), France (FR). Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	ES	FR	total
1978		647.0	647.0
1979		697.0	697.0
1980		1,303.0	1,303.0
1981		904.0	904.0
1982		219.0	219.0
1983		161.0	161.0
1984		156.0	156.0
1985		71.0	71.0
1986		87.0	87.0
1987		172.0	172.0
1988		40.0	40.0
1989		110.0	110.0
1990		54.0	54.0
1991		87.0	87.0
1992		77.0	77.0
1993		130.0	130.0
1994		74.0	74.0
1995		113.0	113.0
1996		25.0	25.0
1997		39.0	39.0
1998		6.0	6.0
1999		6.0	6.0
2000		2.0	2.0
2001		1.0	1.0
2002		37.0	37.0
2004	0.9		0.9
2005	1.2	0.0	1.2
2006	1.7	1.0	2.7
2007	1.3	0.0	1.3
2008	1.6	0.0	1.6
2009	0.4	0.0	0.4
2010	0.8	0.0	0.8
2011	0.4	0.0	0.4
2012	1.1	0.0	1.1
2013	1.6	0.0	1.6
2014	2.4	0.0	2.4
2015	2.3	0.0	2.3
2016	1.7	0.0	1.7
2017	1.5	0.0	1.5
2018	1.7	0.0	1.7
2019	0.9	0.0	0.9

Year	ES	FR	total
2020	0.7	0.0	0.7
2022	0.7		0.7
2023	1.3		1.3

Table 5a: Release of glass eel (G) and quarantined glass eel (QG) in millions from 1950 to 2025 reported by countries Belgium (BE), Germany (DE), Estonia (EE), Spain (ES), Finland (FI), France (FR), United Kingdom (GB) (to be continued for other countries in next table). Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	BE	DE	EE	ES	FI	FR	GB
1950							
1951							
1952							
1953							
1954							
1955							
1956			0.2				
1957							
1958							
1959							
1960			0.1				
1961							
1962			0.9				
1963							
1964			0.2				
1965			0.7				
1966							
1967							
1968			1.4				
1969							
1970			1.0				
1971							
1972			0.1				
1973							
1974			1.8				
1975							
1976			2.6				
1977			2.1				
1978			2.7				
1979							
1980			1.3				
1981			2.7				
1982			3.0				
1983			2.5				
1984			1.8				4.0
1985		22.6	2.4				11.0
1986		39.5					17.8
1987		41.4	2.5				13.7
1988		42.4					6.3
1989		21.0					0.0
1990		31.9					0.0
1991		13.2	2.0				0.0

Year	BE	DE	EE	ES	FI	FR	GB
1992		17.5	2.5				2.4
1993		20.5					0.0
1994		22.8	1.9				2.3
1995		19.9					2.1
1996		10.7	1.4				0.1
1997		9.5	0.9				0.2
1998		7.9	0.5				0.1
1999		8.5	2.3				3.6
2000		6.1	1.1				0.4
2001	0.2	3.3					0.0
2002		2.9					3.0
2003	0.3	2.0					3.9
2004		1.6					1.2
2005		1.9					2.4
2006	0.3	1.1					1.0
2007		1.0					3.6
2008	0.4	0.5					1.3
2009	0.5	0.8					0.7
2010	0.4	5.0			0.2	0.6	3.1
2011	0.5	3.4	0.7		0.3	2.4	3.3
2012	0.6	4.0	0.9	1.1	0.2	9.3	4.0
2013	0.4	5.1	0.9		0.2	8.8	5.8
2014	1.6	10.4	3.0		0.1	17.0	8.3
2015		6.0	1.9		0.1	3.5	1.9
2016	1.2	5.0	0.9		0.1	10.3	0.1
2017	0.7	9.8		0.4	0.1	7.0	2.5
2018	1.6	13.5	1.4	3.6	0.1	9.5	2.3
2019	2.0	21.5	1.6	1.0	0.1	9.7	3.8
2020	0.9	24.4	2.0		0.1	9.2	5.1
2021	0.0	19.3			0.2	10.3	4.6
2022	0.9	24.8	1.1		0.1	8.0	5.3
2023	0.4		1.1	2.2	0.1	7.3	2.0
2024	0.0		1.1		0.0	8.0	2.3
2025			0.8			7.2	

Table 5b: Release of glass eel (G) and quarantined glass eel (QG) in millions from 1950 to 2025 reported by countries Greece (GR), Ireland (IE), Italy (IT), Lithuania (LT), Latvia (LV), Netherlands (NL), Poland (PL), Sweden (SE). The total column is the yearly sum for all countries included in tables 5a and 5b and not just the countries listed in this particular table. Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	GR	IE	IT	LT	LV	NL	PL	SE	total
1950						5.1		0.0	5.1
1951						10.2		0.1	10.3
1952						16.9	18.0	0.2	35.1
1953						21.9	26.0	0.2	48.1
1954						10.5	27.0		37.5
1955						16.5	31.0	0.2	47.7
1956						23.1	21.0	0.1	44.4
1957						19.0	25.0	0.3	44.3
1958						16.9	35.0	0.1	52.0
1959		6.6				20.1	53.0	0.1	79.8
1960		1.0			3.2	21.1	64.0	0.3	89.7
1961		3.7			1.0	21.0	65.0	0.0	90.7
1962		5.6			2.6	19.8	62.0	0.1	91.0
1963		7.8			1.9	23.2	42.0	0.0	74.9
1964		0.7			1.3	20.0	39.0	0.0	61.2
1965		1.3			0.7	22.5	40.0	0.1	65.3
1966		10.0				8.9	69.0	0.1	88.0
1967		6.9			1.8	6.9	74.0	0.0	89.6
1968		15.0			3.6	17.0	17.0	0.1	54.1
1969		8.2				2.7	2.0	0.1	13.0
1970		9.3			1.8	19.0	24.0	0.1	55.2
1971		16.4				17.0	17.0	0.1	50.5
1972		6.3			1.1	16.1	22.0	0.1	45.7
1973		10.0				13.6	61.9	0.1	85.6
1974		10.9				24.4	71.0	0.0	108.1
1975		4.8				14.4	70.0	0.1	89.3
1976		7.4			0.9	18.0	68.0	0.3	97.2
1977		2.9			0.5	25.8	77.0	0.0	108.3
1978		3.7				27.7	73.0	0.3	107.4
1979		29.6				30.6	73.0	0.3	133.5
1980		26.1				24.8	51.8	0.2	104.2
1981		17.5			1.8	22.3	60.0	0.0	104.3
1982		26.4			0.3	17.2	63.2	0.2	110.3
1983		9.9			1.9	14.1	25.1	0.0	53.5
1984		7.6				16.6	47.6	0.0	77.6
1985		6.1			1.5	11.8	36.3	0.6	92.3
1986		5.4				10.5	50.2	0.1	123.5
1987		13.9			0.3	7.9	56.9	0.7	137.3
1988		12.5			2.9	8.4	16.7	0.7	89.9
1989		6.9				6.8	14.0	1.0	49.7
1990		10.2				6.1	10.2	1.1	59.5

Year	GR	IE	IT	LT	LV	NL	PL	SE	total
1991		2.2				1.9	1.7	0.6	21.6
1992		5.7				3.5	13.8	0.7	46.1
1993		7.2				3.8	9.7	1.0	42.2
1994		18.9				6.2	13.1	2.4	67.6
1995		11.3			0.6	4.8	23.7	2.0	64.4
1996		3.9				1.8	2.8	2.6	23.3
1997		15.0				2.3	5.1	2.5	35.5
1998		5.7				2.5	2.5	2.2	21.4
1999		7.7			0.3	2.9	4.0	3.2	32.5
2000		5.8				2.8	3.1	1.6	20.9
2001		3.0				0.9	0.7	0.9	9.0
2002		1.4			0.3	1.6		1.4	10.6
2003		4.2				1.6	0.5	0.7	13.2
2004		1.4			0.1	0.3	2.2	1.1	7.9
2005		3.7			0.1	0.1		1.0	9.2
2006		0.6			0.0	0.6		1.3	4.9
2007		1.0			0.0	0.2		1.0	6.8
2008		0.4				0.0		1.4	4.0
2009		0.4	0.0			0.3		0.8	3.5
2010		0.4	0.3			2.7		1.9	14.6
2011		0.3	0.9		0.3	0.5		2.6	15.2
2012		0.6	0.9		1.0	2.3		2.6	27.5
2013	0.4	1.0	0.9			1.9		2.7	28.1
2014	0.2	2.2			1.4	5.7		3.0	52.9
2015	0.0	2.9	0.4			0.9		1.9	19.5
2016	0.5	4.5	0.2			3.0		2.9	28.7
2017	0.1	0.7	0.4		1.0	3.0		0.9	26.6
2018	0.1	8.4			0.7	3.6		3.1	47.9
2019	0.0	0.5			0.7	4.7		2.9	48.5
2020		2.0			0.0	2.9		3.1	49.7
2021	0.0	1.7	0.2		0.0	2.4		0.4	39.1
2022	0.0	4.2	0.2			2.7		0.8	48.1
2023	0.2	2.7		3.1		2.3	0.0	0.8	22.2
2024	0.2	5.9				2.1	0.3		19.9
2025						2.5			10.5

Table 6: Releases of yellow eel from 1900 to 2024 in millions, reported by countries Germany (DE), Spain (ES), Ireland (IE), Italy (IT), Sweden (SE). Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	DE	ES	IE	IT	SE	total
1900					0.1	0.1
1901					0.5	0.5
1902					0.0	0.0
1903					0.1	0.1
1904					0.0	0.0
1905					0.7	0.7
1906					0.1	0.1
1907					0.0	0.0
1911					0.4	0.4
1912					0.5	0.5
1913					0.0	0.0
1914					0.2	0.2
1917					0.0	0.0
1918					0.0	0.0
1919					0.1	0.1
1920					0.1	0.1
1921					0.1	0.1
1922					0.1	0.1
1923					0.2	0.2
1924					0.3	0.3
1925					0.6	0.6
1926					0.3	0.3
1927					0.5	0.5
1928					0.0	0.0
1929					0.1	0.1
1930					0.9	0.9
1931					0.5	0.5
1932					1.0	1.0
1933					0.9	0.9
1934					0.8	0.8
1935					0.2	0.2
1936					0.2	0.2
1937					0.7	0.7
1938					0.5	0.5
1939					0.5	0.5
1940					1.0	1.0
1941					0.7	0.7
1942					0.6	0.6
1943					1.8	1.8
1944					1.6	1.6
1945					1.7	1.7
1946					1.3	1.3
1947					0.7	0.7

Year	DE	ES	IE	IT	SE	total
1948					1.1	1.1
1949					1.2	1.2
1950					1.3	1.3
1951					0.8	0.8
1952					1.3	1.3
1953					3.4	3.4
1954					1.0	1.0
1955					1.7	1.7
1956					1.7	1.7
1957					1.0	1.0
1958					1.4	1.4
1959					1.8	1.8
1960					1.4	1.4
1961					1.2	1.2
1962					1.0	1.0
1963					0.8	0.8
1964					0.5	0.5
1965					0.3	0.3
1966					0.8	0.8
1967					0.3	0.3
1968					1.3	1.3
1969					0.6	0.6
1970					0.6	0.6
1971					0.7	0.7
1972					1.0	1.0
1973					2.0	2.0
1974					0.7	0.7
1975					1.1	1.1
1976					1.8	1.8
1977					2.6	2.6
1978					1.9	1.9
1979				0.1	1.9	2.0
1980				0.3	1.3	1.6
1981				0.1	1.6	1.7
1982				0.1	1.9	2.0
1983				0.1	1.6	1.7
1984				0.0	1.1	1.1
1985	3.0			0.1	1.6	4.7
1986	2.0			0.2	0.9	3.1
1987	1.8			0.1	1.2	3.1
1988	2.5			0.1	1.5	4.1
1989	1.5			0.1	1.0	2.6
1990	1.8			0.1	1.0	2.9
1991	1.3			0.0	1.3	2.6
1992	1.8			0.0	1.7	3.5

Year	DE	ES	IE	IT	SE	total
1993	2.3		0.1		1.1	3.5
1994	1.9		0.0		1.3	3.2
1995	1.9		0.1		0.9	2.9
1996	1.9		0.0		1.2	3.1
1997	3.1		0.1		1.2	4.4
1998	2.0		0.0		1.1	3.1
1999	2.3		0.1		0.6	3.0
2000	1.9		0.0		0.5	2.4
2001	2.1		0.0		0.5	2.6
2002	1.6		0.1		0.4	2.1
2003	1.4		0.1		0.4	1.9
2004	1.2		0.0		0.3	1.5
2005	1.2		0.1		0.2	1.5
2006	0.7		0.0		0.1	0.8
2007	0.7		0.1		0.2	1.0
2008	0.5	0.0	0.1		0.2	0.8
2009	0.5	0.0	0.0		0.1	0.6
2010	0.4	0.0	0.0		0.1	0.5
2011	0.2	0.0	0.0		0.1	0.3
2012	0.1	0.0	0.0		0.1	0.2
2013	0.1	0.0	0.0		0.1	0.2
2014	0.1	0.0	0.0		0.3	0.4
2015	0.1	0.0	0.0	0.1	0.1	0.3
2016	0.1	0.2	0.1	0.1	0.2	0.7
2017	0.1	0.1	0.0	0.2	0.4	0.8
2018	0.1	0.2	0.1		0.4	0.8
2019	0.1		0.0		0.5	0.6
2020	0.1		0.1		0.2	0.4
2021	0.1		0.0		0.2	0.3
2022	0.1		0.0		0.2	0.3
2023			0.1		0.3	0.4
2024			0.0		0.3	0.3

Table 7: Releases of silver eel from 2001 to 2024 in millions, reported by countries Spain (ES), Finland (FI), France (FR), Greece (GR), Ireland (IE), Netherlands (NL), Sweden (SE). Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	ES	FI	FR	GR	IE	NL	SE	total
2001					0.0			0.0
2002					0.0			0.0
2003					0.0			0.0
2004					0.0			0.0
2005					0.0			0.0
2006					0.0			0.0
2007					0.0			0.0
2008					0.1			0.1
2009	0.0				0.2			0.2
2010					0.2			0.2
2011			0.1		0.2	0.0		0.3
2012			0.1		0.2	0.0		0.3
2013			0.1	0.0	0.2	0.0		0.3
2014	0.0	0.0	0.2	0.1	0.3	0.0		0.6
2015		0.0	0.2	0.1	0.3	0.0		0.6
2016	0.0	0.0	0.2	0.1	0.2	0.0		0.5
2017		0.0	0.2	0.1	0.2	0.0		0.5
2018		0.0	0.2	0.0	0.2	0.0		0.4
2019	0.0	0.0	0.2	0.0	0.2	0.0		0.4
2020	0.0	0.0	0.2	0.0	0.2	0.0		0.4
2021		0.0	0.1	0.0	0.2	0.0	0.0	0.3
2022	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.3
2023		0.0	0.1	0.0	0.2		0.0	0.3
2024		0.0	0.0	0.0	0.1		0.0	0.1

Table 8: Releases of ongrown glass eel from 1947 to 2025 in millions, reported by countries: Czech republic (CZ), Germany (DE), Denmark (DK), Estonia (EE), Spain (ES), United Kingdom (GB), Lithuania (LT), Latvia (LV), Netherlands (NL), Poland (PL). Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	CZ	DE	DK	EE	ES	GB	LT	LV	NL	PL
1947									1.6	
1948									2.0	
1949									1.4	
1950									1.6	
1951									1.3	
1952									1.2	
1953									0.8	
1954									0.7	
1955									0.9	
1956									0.7	
1957									0.8	
1958									0.8	
1959									0.7	
1960									0.4	
1961									0.6	
1962									0.4	
1963									0.1	
1964									0.3	
1965									0.5	
1966									1.1	
1967									1.2	
1968									1.0	
1969									0.0	
1970									0.2	
1971									0.3	
1972									0.4	
1973									0.5	0.1
1974									0.5	0.0
1975									0.5	
1976									0.5	
1977									0.6	0.0
1978									0.8	
1979									0.8	
1980									1.0	0.0
1981									0.7	
1982									0.7	0.1
1983									0.7	1.1
1984									0.7	0.2
1985		2.0							0.8	0.1
1986		1.8							0.7	0.0
1987		1.8							0.4	0.0
1988		1.1		0.2					0.3	0.0

Year	CZ	DE	DK	EE	ES	GB	LT	LV	NL	PL
1989		0.5							0.1	0.2
1990		0.9							0.0	0.4
1991		1.1							0.0	0.0
1992		1.3							0.0	0.1
1993		1.7							0.2	0.0
1994		1.7							0.0	0.1
1995		2.1		0.1					0.0	0.0
1996		2.5							0.2	1.0
1997		2.8							0.4	2.2
1998		3.2							0.6	0.8
1999		3.6							1.2	1.0
2000		5.4			0.0				1.0	1.4
2001		4.6		0.4	0.1				0.1	0.8
2002		6.0		0.4	0.0				0.1	0.8
2003		6.3		0.5	0.0				0.1	0.6
2004		6.4		0.4	0.1				0.1	0.8
2005		5.2		0.4	0.1				0.0	0.7
2006		8.6		0.4	0.0				0.0	0.9
2007		8.6		0.3	0.0				0.0	1.4
2008		8.5		0.2					0.2	1.5
2009		8.4		0.4					0.3	1.4
2010		8.8		0.2					0.1	1.3
2011	0.3	7.2		0.2	0.0		0.2		0.4	2.9
2012	1.9	6.3		0.1	0.2		0.5		0.4	1.7
2013	2.1	6.9		0.1	0.1		1.3		0.5	3.7
2014	6.4	8.4		0.2	0.3		0.4		0.9	2.3
2015	0.8	8.7			0.0		0.4		0.7	3.8
2016	1.8	7.0	1.5	0.2			0.3		0.5	1.5
2017	1.5	9.5	1.5	0.3			0.0		0.6	3.6
2018	1.8	9.6	1.1		0.1		1.6	0.0		2.4
2019	2.6	9.7	1.8		0.2		1.6			1.0
2020	2.8	8.3	1.3		0.1		1.4			0.9
2021	2.2	8.8	1.2	0.1	0.0		0.0	0.0		1.8
2022	2.6	8.2	1.8	0.1	0.1	0.3	1.7	0.0	0.4	6.9
2023	2.5		1.7		0.3		1.3	0.0	0.3	1.4
2024			1.4		0.0	0.1	1.1		0.4	1.7
2025			1.4	0.0					0.9	

Table 9: Other landings of glass eels in millions from 1959 to 2024 for Ireland (IE). Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	IE	total
1959	6.6	6.6
1960	1.0	1.0
1961	3.7	3.7
1962	5.6	5.6
1963	7.8	7.8
1964	0.7	0.7
1965	1.3	1.3
1966	10.0	10.0
1967	6.9	6.9
1968	15.0	15.0
1969	8.2	8.2
1970	9.3	9.3
1971	16.4	16.4
1972	6.3	6.3
1973	10.0	10.0
1974	10.9	10.9
1975	4.8	4.8
1976	7.4	7.4
1977	2.9	2.9
1978	3.7	3.7
1979	29.6	29.6
1980	26.1	26.1
1981	17.5	17.5
1982	26.4	26.4
1983	9.9	9.9
1984	7.6	7.6
1985	6.1	6.1
1986	5.4	5.4
1987	13.9	13.9
1988	12.5	12.5
1989	6.9	6.9
1990	10.2	10.2
1991	2.2	2.2
1992	5.7	5.7
1993	7.2	7.2
1994	18.9	18.9
1995	11.3	11.3
1996	3.9	3.9
1997	15.0	15.0
1998	5.7	5.7
1999	7.7	7.7
2000	5.8	5.8
2001	3.0	3.0

Year	IE	total
2002	1.4	1.4
2003	4.2	4.2
2004	1.4	1.4
2005	3.7	3.7
2006	0.6	0.6
2007	1.0	1.0
2008	0.4	0.4
2009	0.4	0.4
2010	0.4	0.4
2011	0.3	0.3
2012	0.6	0.6
2013	1.0	1.0
2014	2.8	2.8
2015	2.9	2.9
2016	4.5	4.5
2017	0.7	0.7
2018	8.4	8.4
2019	0.5	0.5
2020	2.0	2.0
2021	1.7	1.7
2022	4.2	4.2
2023	2.7	2.7
2024	5.9	5.9

Table 10: Other landings of glass eels (Y) in millions from 1900 to 2024 for Ireland (IE), Sweden (SE). Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	IE	SE	total
1900		0.1	0.1
1901		0.5	0.5
1902		0.0	0.0
1903		0.1	0.1
1904		0.0	0.0
1905		0.7	0.7
1906		0.1	0.1
1907		0.0	0.0
1909		0.0	0.0
1911		0.4	0.4
1912		0.5	0.5
1913		0.0	0.0
1914		0.2	0.2
1917		0.0	0.0
1918		0.0	0.0
1919		0.1	0.1
1920		0.1	0.1
1921		0.1	0.1
1922		0.1	0.1
1923		0.2	0.2
1924		0.3	0.3
1925		0.6	0.6
1926		0.3	0.3
1927		0.5	0.5
1928		0.0	0.0
1929		0.1	0.1
1930		0.9	0.9
1931		0.5	0.5
1932		1.0	1.0
1933		0.9	0.9
1934		0.8	0.8
1935		0.2	0.2
1936		0.2	0.2
1937		0.7	0.7
1938		0.5	0.5
1939		0.5	0.5
1940		1.0	1.0
1941		0.6	0.6
1942		0.6	0.6
1943		1.8	1.8
1944		1.6	1.6
1945		1.7	1.7
1946		1.3	1.3

Year	IE	SE	total
1947		0.7	0.7
1948		1.1	1.1
1949		1.2	1.2
1950		1.3	1.3
1951		0.7	0.7
1952		1.2	1.2
1953		3.3	3.3
1954		1.0	1.0
1955		1.6	1.6
1956		1.7	1.7
1957		0.9	0.9
1958		1.4	1.4
1959		1.8	1.8
1960		1.4	1.4
1961		1.1	1.1
1962		0.9	0.9
1963		0.7	0.7
1964		0.3	0.3
1965		0.3	0.3
1966		0.6	0.6
1967		0.2	0.2
1968		1.0	1.0
1969		0.6	0.6
1970		0.3	0.3
1971		0.4	0.4
1972		0.7	0.7
1973		1.6	1.6
1974		0.3	0.3
1975		0.8	0.8
1976		1.5	1.5
1977		2.4	2.4
1978		1.6	1.6
1979	0.1	1.6	1.7
1980	0.3	0.7	1.0
1981	0.1	1.4	1.5
1982	0.1	1.4	1.5
1983	0.1	1.0	1.1
1984	0.0	0.2	0.2
1985	0.1	0.8	0.9
1986	0.2	0.4	0.6
1987	0.1	0.5	0.6
1988	0.1	0.6	0.7
1989	0.1	0.2	0.3
1990	0.1	0.2	0.3
1991	0.0	0.3	0.3

Year	IE	SE	total
1992	0.0	0.3	0.3
1993	0.1	0.1	0.2
1994	0.0	0.3	0.3
1995	0.1	0.0	0.1
1996	0.0	0.1	0.1
1997	0.1	0.1	0.2
1998	0.0	0.1	0.1
1999	0.1	0.1	0.2
2000	0.0	0.1	0.1
2001	0.0	0.0	0.0
2002	0.1	0.2	0.3
2003	0.1	0.2	0.3
2004	0.0	0.1	0.1
2005	0.1	0.1	0.2
2006	0.0	0.1	0.1
2007	0.1	0.1	0.2
2008	0.1	0.1	0.2
2009	0.0	0.1	0.1
2010	0.0	0.1	0.1
2011	0.0	0.1	0.1
2012	0.0	0.1	0.1
2013	0.0	0.1	0.1
2014	0.0	0.3	0.3
2015	0.0	0.1	0.1
2016	0.1	0.2	0.3
2017	0.0	0.4	0.4
2018	0.1	0.4	0.5
2019	0.0	0.5	0.5
2020	0.1	0.2	0.3
2021	0.0	0.2	0.2
2022	0.0	0.1	0.1
2023	0.1	0.3	0.4
2024	0.0		0.0

Table 11: Other landings of silver eels (S) in millions from 2001 to 2024 for Ireland (IE), Sweden (SE). Note that values shown as 0.0 are due to rounding and do not correspond to an actual 0.

Year	IE	SE	total
2001	0.0		0.0
2002	0.0		0.0
2003	0.0		0.0
2004	0.0		0.0
2005	0.0		0.0
2006	0.0		0.0
2007	0.0		0.0
2008	0.1		0.1
2009	0.2		0.2
2010	0.2	0.0	0.2
2011	0.2	0.0	0.2
2012	0.2	0.0	0.2
2013	0.2	0.0	0.2
2014	0.3	0.0	0.3
2015	0.3	0.0	0.3
2016	0.2	0.0	0.2
2017	0.2	0.0	0.2
2018	0.2	0.0	0.2
2019	0.2	0.0	0.2
2020	0.2	0.0	0.2
2021	0.2	0.0	0.2
2022	0.2	0.0	0.2
2023	0.2	0.0	0.2
2024	0.1		0.1