

Report on the eel stock, fishery and other impacts, in:

Ireland

2023

Note to the reader - this document accompanies a series of spreadsheet tables that provide the bulk of the data in a format most suitable for the working practices of the WGEEL. Summaries of these data are provided in this document.

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Reporting Period: This report was completed in September 2024 and contains data up to 2023 and some provisional data for 2024.

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1 Updates to the previous report

Changes just relate to updates on monitoring and outputs for the biomass and mortality indicators for 2021 and 2022.

All data mentioned in this report have been included in the datacall annex tables.

2 Stock status summary

In Ireland, we have calculated the biomass and mortality indicators for 2021 and 2022, but not 2023. The indicators were calculated using the IMESE model, as described in the Irish Eel Management Plan, in the triennial Reports to the EU and the Country Reports to WGEEL. Indicators were not calculated for 2023 as this was the third year that the main index catchments (Shannon, Erne) were lacking any field data to ground truth the calculation of silver eel production and escapement.

The IMESE model is used to estimate the biomass and escapement in freshwaters, and the mortality was determined using direct field estimates for turbine mortalities, or as described in the Irish EMP. Biomass was estimated in transitional waters using the method described in (Anon., 2018), ground truthed using fyke net data collected under the WFD surveys.

As fisheries were closed in 2009, ΣF is zero in all waters, and hydropower mortality ΣH was usually close to the downstream limit of freshwaters, so overall, mortality was calculated using the following formula:

$$\Sigma A = -\ln(B_{current}/B_{best})$$

$$\Leftrightarrow \exp(-\Sigma A) = B_{current}/B_{best} \Leftrightarrow \exp(-\Sigma A) \cdot B_{best} = B_{current}$$

$$\Sigma A_{tot} = -\ln\left(\frac{B_{current_{tot}}}{B_{best_{tot}}}\right)$$

$$= -\ln\left(\frac{B_{current_f} + B_{current_r}}{B_{best_{tot}}}\right)$$

$$= -\ln\left(\frac{B_{best_f} \cdot \exp^{-\Sigma A_f} + B_{best_r} \cdot \exp^{-\Sigma A_r}}{B_{best_{tot}}}\right)$$

$$= -\ln\left(\frac{B_{best_f} \cdot \exp^{-\Sigma A_f} + B_{best_r} \cdot \exp^{-\Sigma A_r}}{B_{best_{tot}}}\right)$$

Key:

EMU_code = Eel Management Unit code (see sheet 'EMU names and codes' for list of codes)

B_0 = the amount of silver eel biomass that would have existed if no anthropogenic influences had impacted the stock (kg).

B_{curr} = The amount of silver eel biomass that currently escapes to the sea to spawn (in the assessment year) (kg).

B_{best} = The amount of silver eel biomass that would have existed if no anthropogenic influences had impacted the current stock (kg).

ΣF = mortality due to fishing, summed over the age groups in the stock (rate)

ΣH = anthropogenic mortality excluding the fishery, summed over the age groups in the stock (rate)

ΣA = all anthropogenic mortality summed over the age groups in the stock (rate)

Table 2.1. Silver eel production, Bbest, for each EMU, (top), silver eel escapement Bcurrent, (middle), and the EU % indicator (bottom). Calculated with the Fane, without the Fane and the mid-point.

EMU Code	EMU Name	Bo Prod	Production (Bbest)									Av 2021-2022	Av 2021-2022	Av 2021-2022
			ex Fane	ex Fane	ex Fane	inc Fane	inc Fane	inc Fane	midpt	midpt	midpt	ex Fane	inc Fane	midpt
		kg	2021	2122	2023	2021	2122	2023	2021	2122	2023			
IE_East	EEMU	20,517	12,201	15,475	na	18,266	26,658	na	15,233	21,066	na	13,603	21,347	17,475
IE_NorW	NWIRBD	135,732	90,266	75,090	na	97,679	88,358	na	93,973	81,724	na	82,397	91,733	87,065
IE_Shan	SHIRBD	201,401	30,672	44,772	na	34,995	52,768	na	32,834	48,770	na	37,554	43,083	40,318
IE_SouE	SERBD	14,836	7,366	8,515	na	12,096	17,181	na	9,731	12,848	na	7,758	13,780	10,769
IE_SouW	SWRBD	24,577	10,441	12,049	na	17,255	24,185	na	13,848	18,117	na	10,987	19,549	15,268
IE_West	WRBD	192,377	99,815	115,463	na	163,459	232,603	na	131,637	174,033	na	105,175	186,377	145,776
	Total	589,440	250,761	271,363	na	343,750	441,753	na	297,255	356,558	na	257,473	375,869	316,671
EMU Code	EMU Name	Bo Prod	Escapement (Bcurrent)									Av 2021-2022	Av 2021-2022	Av 2021-2022
			ex Fane	ex Fane	ex Fane	inc Fane	inc Fane	inc Fane	midpt	midpt	midpt	ex Fane	inc Fane	midpt
		kg	2021	2122	2023	2021	2122	2023	2021	2122	2023			
IE_East	EEMU	20,517	12,056	15,308	na	18,029	26,320	na	15,043	20,814	na	13,451	21,076	17,264
IE_NorW	NWIRBD	135,732	74,623	65,703	na	82,000	78,911	na	78,312	72,307	na	69,882	79,186	74,534
IE_Shan	SHIRBD	201,401	29,671	41,458	na	33,994	49,454	na	31,833	45,456	na	35,396	40,925	38,161
IE_SouE	SERBD	14,836	7,366	8,515	na	12,096	17,181	na	9,731	12,848	na	7,758	13,780	10,769
IE_SouW	SWRBD	24,577	10,518	12,104	na	17,115	23,870	na	13,817	17,987	na	11,059	19,354	15,207
IE_West	WRBD	192,377	99,815	115,463	na	163,459	232,603	na	131,637	174,033	na	105,175	186,377	145,775
	Total	589,440	234,049	258,551	na	326,693	428,339	na	280,371	343,445	na	242,721	360,698	301,709
EMU Code	EMU Name	Bo Prod	%Bcurrent/Bo (EU Target)									Av 2021-2022	Av 2021-2022	Av 2021-2022
			ex Fane	ex Fane	ex Fane	inc Fane	inc Fane	inc Fane	midpt	midpt	midpt	ex Fane	inc Fane	midpt
		kg	2021	2122	2023	2021	2122	2023	2021	2122	2023			
IE_East	EEMU	20,517	58.8	74.6	na	87.9	128.3	na	73.3	101.4	na	65.6	102.7	84.1
IE_NorW	NWIRBD	135,732	55.0	48.4	na	60.4	58.1	na	57.7	53.3	na	51.5	58.3	54.9
IE_Shan	SHIRBD	201,401	14.7	20.6	na	16.9	24.6	na	15.8	22.6	na	17.6	20.3	18.9
IE_SouE	SERBD	14,836	49.6	57.4	na	81.5	115.8	na	65.6	86.6	na	52.3	92.9	72.6
IE_SouW	SWRBD	24,577	42.8	49.2	na	69.6	97.1	na	56.2	73.2	na	45.0	78.7	61.9
IE_West	WRBD	192,377	51.9	60.0	na	85.0	120.9	na	68.4	90.5	na	54.7	96.9	75.8
	Total	589,440	39.7	43.9	na	55.4	72.7	na	47.6	58.3	na	41.2	61.2	51.2

Table 2.2. Silver eel production (top), escapement (middle), and the EU % (bottom) for transitional waters only. 2015 onwards calculated using the IMESE mid-point.

EMU Code	EMU Name	Bo Prod	Production (Bbest)												
		kg	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	EEMU	14,263	4,055	3,545	2,597	2,379	3,373	3,648	3,547	3,223	2,546	3,202.2	4,603.7	3,061.7	3,025.5
	NWIRBD	35,558	26,513	23,320	17,168	15,690	22,035	23,841	23,323	21,171	16,552	21,077.8	30,154.0	20,080.8	19,814.9
	SHIRBD	83,443	60,510	53,211	39,165	35,795	50,294	54,415	53,219	48,309	37,786	48,092.9	68,816.5	45,825.2	45,221.2
	SERBD	38,488	29,505	25,961	19,117	17,469	24,521	26,532	25,964	23,566	18,415	23,465.3	33,560.8	22,351.1	22,053.5
	SWRBD	41,594	16,506	14,469	10,621	9,719	13,726	14,847	14,474	13,146	10,339	13,072.3	18,754.7	12,480.0	12,324.8
	WRBD	38,105	22,723	19,964	14,683	13,424	18,889	20,436	19,968	18,128	14,202	18,041.6	25,835.5	17,200.4	16,977.4
	Total	251,450	159,812	140,471	103,352	94,475	132,838	143,718	140,495	127,542	99,840	126,952	181,725	120,999	119,417
EMU Code	EMU Name	Bo Prod	Escapement (Bcurrent)												
		kg	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
IE_East	EEMU	14,263	-	3,545	2,597	2,379	3,373	3,648	3,547	3,223	2,546	3,202	4,604	3,062	3,025
IE_NorW	NWIRBD	35,558	-	23,320	17,168	15,690	22,035	23,841	23,323	21,171	16,552	21,078	30,154	20,081	19,815
IE_Shan	SHIRBD	83,443	-	53,211	39,165	35,795	50,294	54,415	53,219	48,309	37,786	48,093	68,817	45,825	45,221
IE_SouE	SERBD	38,488	-	25,961	19,117	17,469	24,521	26,532	25,964	23,566	18,415	23,465	33,561	22,351	22,054
IE_SouW	SWRBD	41,594	-	14,469	10,621	9,719	13,726	14,847	14,474	13,146	10,339	13,072	18,755	12,480	12,325
IE_West	WRBD	38,105	-	19,964	14,683	13,424	18,889	20,436	19,968	18,128	14,202	18,042	25,836	17,200	16,977
	Total	251,450	-	140,471	103,352	94,475	132,838	143,718	140,495	127,542	99,840	126,952	181,725	120,999	119,417
EMU Code	EMU Name	Bo Prod	%Bcurrent/Bo (EU Target)												
		kg	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
IE_East	EEMU	14,263	-	24.9	18.2	16.7	23.6	25.6	24.9	22.6	17.8	22.5	32.3	21.5	21.2
IE_NorW	NWIRBD	35,558	-	65.6	48.3	44.1	62.0	67.0	65.6	59.5	46.5	59.3	84.8	56.5	55.7
IE_Shan	SHIRBD	83,443	-	63.8	46.9	42.9	60.3	65.2	63.8	57.9	45.3	57.6	82.5	54.9	54.2
IE_SouE	SERBD	38,488	-	67.5	49.7	45.4	63.7	68.9	67.5	61.2	47.8	61.0	87.2	58.1	57.3
IE_SouW	SWRBD	41,594	-	34.8	25.5	23.4	33.0	35.7	34.8	31.6	24.9	31.4	45.1	30.0	29.6
IE_West	WRBD	38,105	-	52.4	38.5	35.2	49.6	53.6	52.4	47.6	37.3	47.3	67.8	45.1	44.6
	Total	251,450	-	55.9	41.1	37.6	52.8	57.2	55.9	50.7	39.7	50.5	72.3	48.1	47.5

Tables 2.1 shows the silver eel production (Bbest), along with escapement (Bcurrent), and the EU % indicator for each EMU (calculated with the Fane, without the Fane and the mid-point.). Table 2.2 depicts similar values from 2015 onwards using the IMSE mid-point.

Figure 2.1 shows 3-year averages for the total Ireland indicators for freshwaters (not including transitional waters).

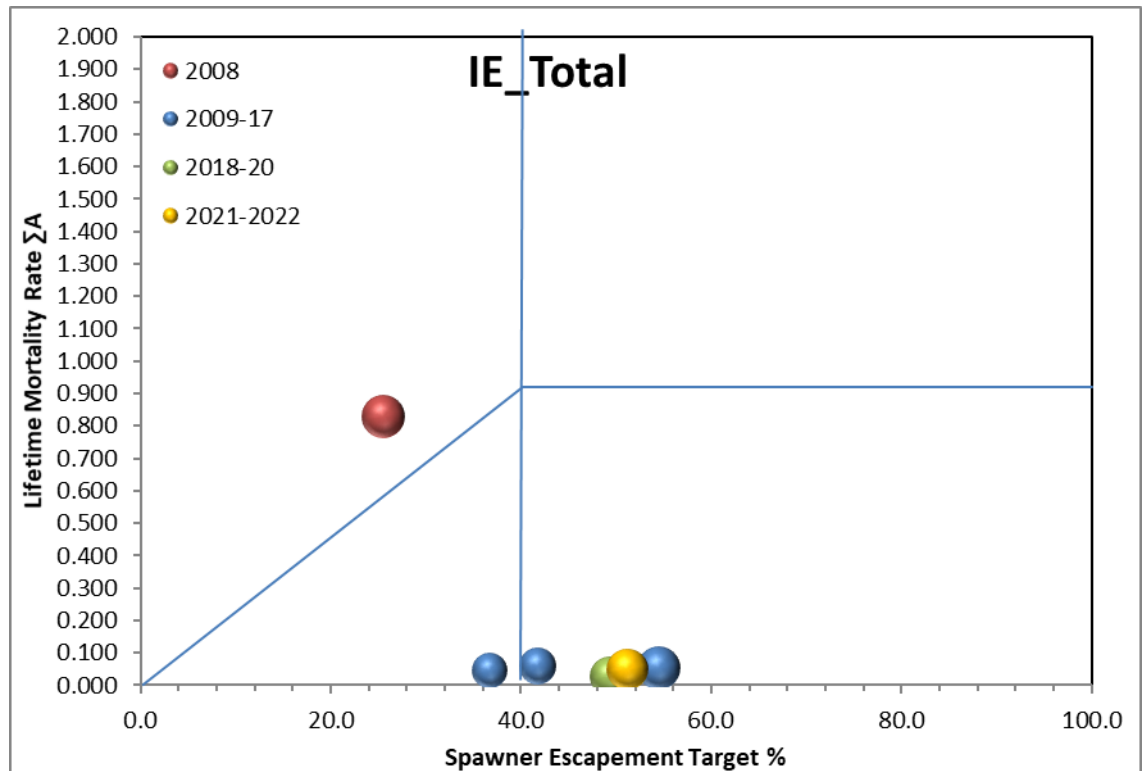


Figure 2.1: 3-year averages for the total Ireland indicators for freshwaters, not including transitional waters.

3 Overview of the stock and its management

3.1 Describe the eel stock and its management

A new Bye-Law was issued in 2024 to replace the expired Bye-law No C.S. 312, 2015. This new bye-law does not have a time constraint unlike the previous three which were valid for 3-year periods.

Bye-Law No C.S. 335, 2024 prohibits fishing for eel, or possessing or selling eel caught in a Fishery District in the State.

3.2 Significant changes since last report

No major changes in the management of the stock. Fishery impacts remain closed. Silver eel trap and transport remains operational.

There has been a relaxation in the level of scientific assessment, in particular in the Erne and Shannon, which is making it difficult to assess the compliance of the trap and transport fishery, and also making it difficult to run the silver eel biomass models for the country. Hence, we were not confident to run the models for the 2023 silver eel season.

We are investigating using the EDA model as an alternative to the now ageing IMESE model. The EDA model was first run in 2015, and this same model structure was rerun in 2024 in order to compare the data sets (Figure 3.1). Updates to the EDA model (through SUDOANG) will be applied and the current data set will be re-run. These updates include

- The EDA modelling framework has been further developed in recent years, and EDA 2.3 has now been applied to eel populations in France, Spain and Portugal (Briand et al., 2022). A key model improvement is the inclusion of separate length frequency and silvering rate models that estimate river reach varying silvering rates instead of a fixed national rate for silvering.

Outstanding work includes:

- The transition to a more detailed OS river network
- Development of methods to assess eel density in large water bodies such as lakes, large river segments and estuaries

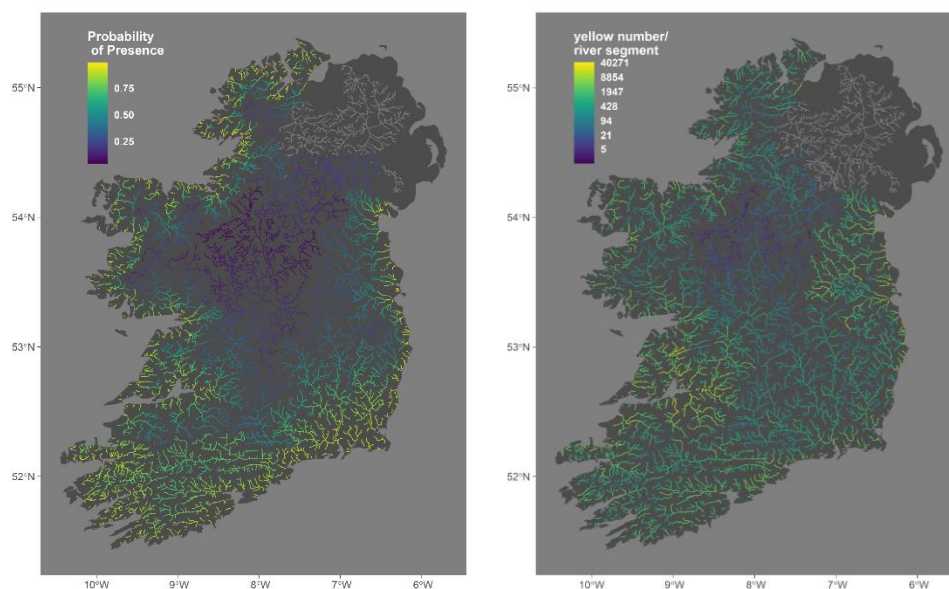


Figure 3.1 Probability of presence and yellow eel number outputs of EDA model for 2022.

4 Impacts on the stock

4.1 Fisheries

Extract from TEGE report on activities in 2023:

All management regions confirmed a closure of the eel fishery for the 2023 season with no commercial or recreational licences issued. The eel fishery, with the exception of the strictly managed L. Neagh, also remained closed in N. Ireland in 2023.

For the complete modelling of silver eel escapement, information is required on the levels of illegal fishing and illegal catch. Therefore, this information is required on an annual basis. A questionnaire was circulated to the IFI Regions and the Department of Agriculture, Environment and Rural Affairs (DAERA) in Northern Ireland and the Loughs Agency. ERBD found traps (n=6) and set lines (n=6) but believe these were targeting other species, e.g. coarse fish and crayfish. Low levels of illegal activity were reported in the ShIRBD, with seizures in Lough Ree, Lough Derravaragh and the Ratty Rivers. Two illegal nets were seized in the

SERBD in the River Nore, but they were targeting salmon but would have the potential to catch eel. The poor quality of the export data currently available to the TEGE makes it difficult to determine the level of illegal catch. There were no instances of seizures of illegal or undocumented eel shipments.

Transboundary: DAERA reported increased patrols in the Erne, but no illegal activity detected.

4.1.1 Glass eel fisheries

There is no authorised commercial or recreational catch of juvenile eel in Ireland as glass eel and elver fishing in Ireland is prohibited by law (1959 Fisheries Act, Sec. 173).

There are no recreational glass eel fisheries in Ireland.

4.1.2 Yellow eel fisheries

There are no new landings data since 2008 as the commercial fisheries were closed in 2009. There are no data available for yellow eel caught by recreational fishermen (only rod angling). Rod angling catches are required by law to be released alive.

4.1.3 Silver eel fisheries

Commercial Silver Eel Fisheries were closed in 2009 and remained closed in 2023.

4.2 Restocking

Stocking has not taken place in Ireland between 2009 and 2022. Currently stocking is not included in the Irish Eel Management Plan.

Assisted migration of juvenile eel takes place at some barriers within individual rivers. No cross-river transfers take place.

4.3 Aquaculture

There are no aquaculture facilities in Ireland.

4.4 Entrainment

No new information available since last reported on in the 2018 Country Report. A mortality study was conducted in the Northwestern River Basin District in 2018 and 2019; results are being analysed and are not available for this report.

4.5 Habitat Quantity and Quality

Text from TEGE 2023 report:

In 2023, the EPA produced an update to the water quality for Ireland's rivers, lakes, transitional / coastal water and groundwater using information collected in 2022 (see download link below). This report found that there had been no significant change in biological water quality in Irish rivers or lakes in 2022. The rate of decline was found to largely match the rate of improvement. Nitrate concentrations were noted as being too high in 40% of rivers and in 20% of estuaries, and this was attributed to agricultural runoff. There was no indication of reductions in nitrate levels. Phosphate concentrations were too high in 28% of rivers and 36% of lakes. The sources were noted as wastewater discharges and agricultural sources. These levels have generally remained stable in recent year. Nitrate and phosphorous concentration to the marine

environment have been increasing since 2013. Loads of both nutrients were higher in 2022 than the levels recorded in 2021, this has led to a continuation of pressures to marine water bodies.

<https://www.epa.ie/publications/monitoring--assessment/freshwater--marine/Water-Quality-2022-Indicator-Report-Web.pdf>

Inland Fisheries Ireland is responsible for delivering the fish monitoring element of the WFD in Ireland. Eel are included in the WFD (fish) monitoring of rivers, lakes and transitional waters. Summary reports are available for all sites surveyed (www.wfdfish.ie). All reports are uploaded to the website <http://www.wfdfish.ie>.

Barriers

To fulfil its remit to produce a georeferenced database of barriers to fish passage on the Irish river network, the National Barriers Programme (NBP) team has performed a desk-based survey to identify potential barriers at a national scale, collating significant volumes of geospatial data from state agencies, such as the OPW, OSi, TII, Waterways Ireland, and Irish Rail, as well as historic IFI barrier surveys. This has produced a geodatabase of 73,076 potential barriers, which are being assessed using field surveys and desk-based analysis photographs or video of barrier sites. Using the IFI developed I-BAST application to date 28,053 structures have been assessed, 25,763 were classified as being ‘not a barrier’ with 7,822 classified as a ‘potential barrier’ requiring further work. Detailed assessments using the SNIFFER survey have been carried out on 255 structures in advance of mitigation works

In the ESB operated Clady River a fish lift is being replaced with a vertical slot fish pass, this work is scheduled for 2024.

4.6 Others

Text from TEGE 2023 report:

Fish Kill

National fish kills are reported in the IFI annual reports and published online. A review of the data was carried out recently and the numbers in the table will have changed from previous TEGE reports.

<http://www.fisheriesireland.ie/Corporate/corporate-publications.html>

There were 25 reported fish kills in 2022 and 17 in 2023 at the time of writing.

5 National stock assessment

5.1 Description of Method

The stock assessment methods are described in the Irish Eel Management Plan and in the 2012, 2015, 2018 and 2021 Irish Management Reports to the EU. The 2024 report is in prep.

5.1.1 Data collection

Recruitment: mostly using fixed station river ladder traps. With the exception of the Shannon and the Erne, these are partial traps subject to considerable site-specific environmental variation (river flow, tidal height).

Yellow Eel: standard Dutch type double ended summer fyke nets and depletion and single pass electrofishing in shallow rivers.

Silver Eel: Index Rivers using mark-recapture and index fishing stations (Erne, Shannon, Fane, Barrow) and permanent river trap (Burrishoole).

5.1.2 Analysis

Ireland used a system of extrapolating from index data rich catchments to data poor catchments for calculating estimates of pristine and current biomass as described in the Irish Eel Management Plan (Chapter 5) and the WGEEL report (ICES, 2008).

Eel production in transitional waters was estimated using CPUE from fyke net surveys to calibrate an analysis of transitional water body types and habitat and this was applied retrospectively back to 2009.

Note: Coastal waters were not included in the production and escapement analysis.

This method was ground thruthed by applying the EDA model to the same data set. This EDA analysis was also completed in 2015. Updates to the EDA model can be incorporated to improve the model and rerun. However, this has not been completed yet.

Further information is available in the National reports to the EU.

5.1.3 Reporting

Assessment data collected by the various agencies are collated by the Technical Expert Group on Eel and reported annually. The data are then reported to the EU every three years as required under the Regulation. Key data are included in the Country Report for ICES.

Previous reports are available on the Inland Fisheries Ireland Eel Management webpage

<https://www.fisheriesireland.ie/Fisheries-Management/eel-management-plan.html#management-actions>

5.1.4 Data quality issues and how they are being addressed

Data are reported to the Irish Technical Eel Group (TEGE - formerly the SSCE) on an annual basis and any issues are discussed and the agencies responsible notified.

An all-Ireland eel age intercalibration workshop was carried out in December 2014.

Identification of subjective variables, such as fish colour, presence of lateral line dots in silver eels, can be interpreted differently between observers.

Very low levels of fishing effort, such as some fyke net effort in transitional waters under WFD sampling, need to be interpreted with caution.

No calculations for biomass were calculated for any EMU for 2023 due to the lack of ground thruthing in key locations. The TEGE members felt they could not continue to extrapolate by using outdated data. Examples of data missing include Mark Recapture efficiencies for the key index fishing sites, verification of quantities of eels migrating post trap and transport, and quantification of mortalities in the hydropower stations.

5.2 Assessment results

Index Rivers

Shannon

In the 2021, 2022 and 2023 silver eel fishing seasons, conservation eel fishing was conducted at three sites, two at Athlone, and one at Killaloe. The total quantities transported are given in Table 2.1. The catch at Killaloe was also reported in the datacall for the Shannon Killaloe time series index, see Figure 5.1 for the time series.

Silver eel production on the Shannon was estimated to have been 23,903 kg, 36,943 kg and 34,660 kg in 2021, 2022 and 2023 respectively. These figures need to be treated with some caution as they have not been verified in the field.

The Shannon River remains well below the EU target of 40%, with values less than 20% since 2015.

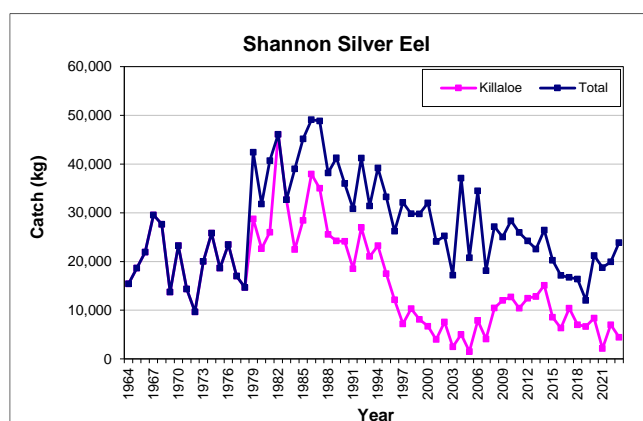


Figure 5.1 Total silver eel catch (kg) in the River Shannon and that for the Killaloe index site shown separately.

Burrishoole

Silver eel trapping was continued in Burrishoole in 2021, 2022 and 2023. Silver eel production on the Burrishoole was estimated to have been 451 kg, 571 kg and 458 kg in 2021, 2022 and 2023 respectively. The data were included in the datacall for the Burrishoole time series index and are shown in Figure 5.2.

The average weight of silver eels has been dropping over the past decade, contributed to by a decrease in the size of female eels and an increase in the proportion of males.

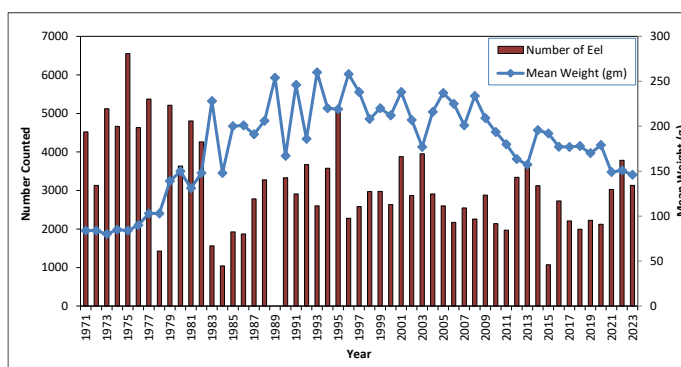


Figure 5.2 The number of silver eel counted in the fish traps at Burrishoole, and the mean weight of the individual eels (gm).

Erne

In the 2021, 2022 and 2023 silver eel fishing seasons, conservation eel fishing was conducted at five sites in 2021 and 2022 and four sites in 2023.

Silver eel production on the Erne was estimated to have been 78,876 kg, 61,941 kg and 98,702 kg in 2021, 2022 and 2023 respectively. These figures need to be treated with some caution as they have not been verified in the field.

The Erne is reporting values above the EU target of 40%.

Fane

Silver eel production on the Fane was estimated to have been 2,723 kg, 4,515 kg and 1,760 kg in 2021, 2022 and 2023 respectively.

6 Other data collection

6.1 Recruitment time series

An issue that has arisen is the ability to distinguish between elver and yellow eel in the recruitment series traps. This data has been captured in some locations for over 7 years however the old time series data consists of a combination of both glass/elver and older yellow eel. A decision will need to be taken on whether we now split the data into the different life stages or continue to combine them.

For the Erne and Shannon systems, additional traps were installed post Eel Regulation and EMP. These data have been excluded from the data call (mentioned in the comment box) as the effort will have changed from the original time series. Decision to be made on whether we include a new series 'Erne additional traps and these 2 series can be combined if required to get an accurate picture of recruitment for the system.

6.2 Yellow eel abundance surveys

See Datacall 2024 and TEGE Annual Report 2023

6.3 Silver eel escapement surveys

See Datacall 2024 and TEGE Annual Report 2023

6.4 Biological parameters

See Datacall 2024 and TEGE Annual Report 2023

6.5 Parasites & Pathogens

See Datacall 2024 and TEGE Annual Report 2023

6.6 Contaminants

No new information for 2023

6.7 Predators

No new information for 2023

7 New Information

1) TRACE-FISH project

As part of the EU Regulation (EU 1100/2007) for the recovery of European eel stocks, Ireland developed a National Eel Management Plan, a key element of which is the Trap and Transport scheme managed by the Electricity Supply Board (ESB). Due to the presence of the hydroelectric dam at Ardnacrusha, large numbers of elvers (young eels) are trapped and transported to facilitate their upstream migration. Identifying which of the 14 major lakes in the Shannon catchment provides optimal habitats for eel production is critical for maximizing conservation efforts in this system. Through the analysis of trace element fingerprints (TEF) of yellow eels from known locations and then linking them to a sample of migrating silver eels, this study seeks to quantify the relative contribution of each lake to Ireland's overall silver eel population. Such data will guide more efficient conservation practices, including potentially the targeted transport of elvers to the most productive lakes.

The use of TEF has proven effective in determining rearing locations of various fish species, including cultured salmon, and preliminary results indicate its utility for eels. In this project, samples are being processed using Inductively Coupled Plasma Mass Spectrometry (ICP-MS) and classified to specific lakes through an ensemble machine learning approach using a range of models (including Random Forest and Gradient Boosting Machines). The study will examine the TEF of otoliths, liver, and flesh from eels in 14 Shannon lakes and nine other major Irish

lakes, with samples currently being collected over the next 2 months. During the eel migration season, 100 eels will be gathered from the ESB-operated fishery at Killaloe, located downstream of the Shannon lakes. These datasets will enable the calculation of the relative productivity of each lake. Understanding the contribution of each of the lakes to the adult spawners migrating from the catchment to their spawning grounds in the Sargasso Sea, we aim to inform fishery managers of the optimum locations to transport elvers to maximise the connectivity of the Irish eel population.

Conference Abstract/Presentation:

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8 References

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Briand, C., Mateo, M., Drouineau, H., Korta, M., Díaz, E. and Beaulaton, L. (2022). Eel Density Analysis (EDA 2.3) Escapement of silver eels (*Anguilla anguilla*) from French, Spanish and Portuguese rivers GT4 - deliverable E4.1.1.

TEGE (2023). Report on the Technical Expert Group on Eel to the North-South Standing Scientific Committee on Inland Fisheries (NSSSCIF).