European eel (*Anguilla anguilla*) throughout its natural range

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, there should be zero catches in all habitats in 2023. This applies to both recreational and commercial catches and includes catches of glass eels for restocking and aquaculture.

ICES advice on conservation aspects

ICES advises based on ecosystem based management considerations that:

- all non-fisheries related anthropogenic mortalities should be zero.
- the quantity and quality of eel habitats should be restored; this includes restoring connectivity and the physical, chemical, and biological properties of the habitats.

Stock development over time

The status of European eel remains critical. Indices of both glass and yellow eel recruitment strongly declined from 1980 to 2011. Index values correspond to the recruitment as a percentage of the 1960–1979 geometric mean. Glass eel recruitment in the "North Sea" index area was 0.5% in 2022 (provisional) and 0.6% in 2021 (final). In the "Elsewhere Europe" index series it was 9.7% in 2022 (provisional) and 5.5% in 2021 (final). The yellow eel recruitment index for 2021 was 19% (final) of the 1960–1979 geometric mean. Time-series from 1980 to 2022 show that glass eel recruitment remains at a very low level.

ICES cannot assess the exploitation status relative to maximum sustainable yield (MSY) and precautionary approach (PA) reference points because the reference points are undefined. The recruitment geometric mean between 1960–1979 is considered as a likely limit reference point (R_{lim}). The 1960–1979 geometric mean recruitment is considered as a likely limit reference point (R_{lim}). Given that the current recruitment estimate has been below R_{lim} for many years, it is assumed that current biomass is below a likely B_{lim}. Therefore, while stock-size reference points are also undefined, it is considered likely that the stock size is well below potential biological limit reference points.

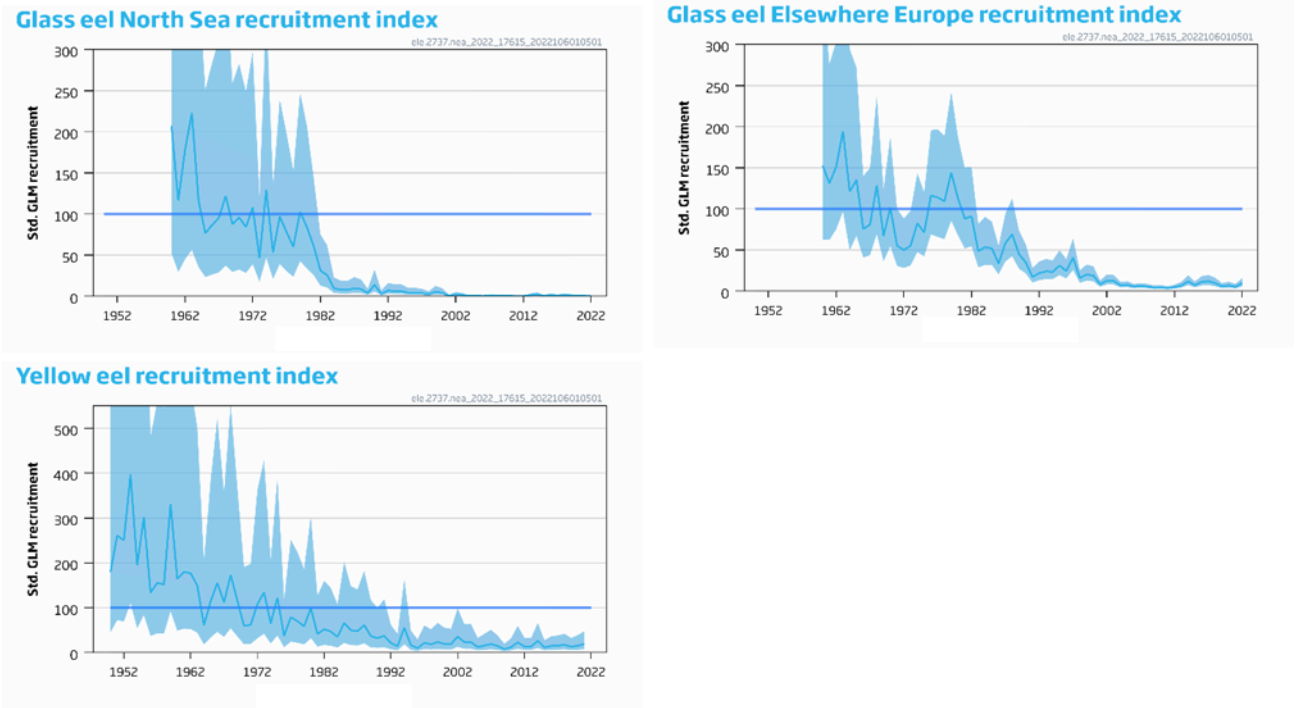

Figure 1 European eel. Indices, geometric mean of estimated glass eel recruitment for the continental "North Sea" (top-left panel) and "Elsewhere Europe" (top-right panel) series. A statistical model was fitted to 57 time-series comprising

either pure glass eel or a mixture of glass and yellow eels (26 "North Sea" and 31 "Elsewhere Europe"). The results were scaled in percentage to the 1960–1979 geometric mean. The "North Sea" series are from Norway, Sweden, Germany, Denmark, the Netherlands, UK, and Belgium; the "Elsewhere" series are from UK, Ireland, France, Spain, Portugal, and Italy. In the Baltic area, recruitment occurs at the yellow eel stage only, and series are thus not included in the glass eel recruitment index. Bottom panel: estimated yellow eel recruitment trends for Europe. A statistical model was fitted to 22 yellow eel time-series and scaled in percentage to the 1960–1979 geometric mean. The series are from Denmark, Germany, Ireland, Sweden, France, and UK. The horizontal line on each panel represents the likely R_{lim} (calculated from the 1960–1979 geometric mean).

Conservation status

Non-fisheries related anthropogenic mortalities are not reliably quantified (ICES, 2022a) and no reference points are defined.

The European eel (*Anguilla anguilla*) is listed on the IUCN Red List as critically endangered.

Catch scenarios

ICES is not in a position to provide catch scenarios in the absence of accurate catch information.

Basis of the advice

Table 1a The basis of the advice for **fishing opportunities**

Advice basis	Precautionary approach
Management plan	A management framework for eel within the EU was established in 2007 by Council Regulation (EC) No. 1100/2007 (EU, 2007) and the General Fisheries Commission for the Mediterranean (GFCM) adopted Recommendation GFCM/42/2018/1 (GFCM, 2018), establishing management measures for European eel (*Anguilla anguilla*) in the Mediterranean Sea. These management plans have not been evaluated by ICES for their conformity with the precautionary approach and, for this reason, have not been used as the basis for the advice. Eel fisheries in EU waters are further regulated in Council Regulations (EU) No 2022/109 and (EU) 2022/110 on 'Fishing Opportunities' (EU Council, 2022a,b) and in the Commission Implementing Decision (EU) No 2018/1986 'Specific Control and Inspection Programme' (EC, 2018).

Table 1b The basis of the advice for **conservation aspects**

Advice basis	Ecosystem-based management (EBM) considerations
Existing conservation measures	The European eel (*Anguilla anguilla*) has been listed as Critically Endangered on the IUCN Red List since 2008 (IUCN, 2022), in the CITES Appendix II since 2007 (CITES, 2007, 2022) and in the EU implementation of CITES rules (Annex B to Council Regulation [EC] No 338/97; EU Council, 1996) since 2009. European eel was added to Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) in 2014 (CMS, 2018). European eel was included on the OSPAR List of Threatened and/or Declining Species and Habitats in 2008. In 2014, the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) issued a recommendation to strengthen the protection of the European eel at all life stages (OSPAR, 2014). The Baltic Sea Action Plan (BSAP) of the Baltic Marine Environment Protection Commission (HELCOM) contains several targets for the European eel (HELCOM, 2007, updated 2021). National conservation measures are reported in the report on the technical evaluation of EU Member State progress reports for submission in 2021 (WKEMP), Eel Management Plan progress reports, and WGEEL country reports (ICES 2022a, 2022b); ICES is not aware of any information for countries not listed in these reports. Other international legislation relevant to eel conservation: • Directive 2000/60/EC, known as the Water Framework Directive (WFD; EU, 2000) • Directive 2008/56/EC, known as the Marine Strategy Framework Directive (MSFD; EU, 2008). • Council Directive 92/43/EEC, known as the Habitats Directive (EU, 1992) The Ramsar Convention on Wetlands (UN, 1976) aims to stem the loss and progressive encroachment on wetlands, an important European eel habitat.

Quality of the assessment

The assessment is based on two glass eel recruitment indices and a yellow eel recruitment index, each comprising multiple time-series. The indices are fitted based on data from fisheries and scientific surveys, forming the longest and most reliable time-series that constitute an index of abundance. The quality of the underlying recruitment data and the number of time-series reported yearly is variable. Fifty-seven glass eel and 22 yellow eel series were used in the analysis in 2022.

In the absence of precise quantitative information on the spatial distribution of recruitment, the model does not weight time-series. As a consequence, a time-series collected in a zone with low recruitment has the same weight as one collected in a zone of higher recruitment. Moreover, in the absence of weighting, regions with numerous collected time-series have a greater weight than data-limited regions in the resulting recruitment index. The increase in the recruitment index for the Elsewhere Europe region in 2022 compared to 2021 is partly due to the increase in the Irish series. This increase was not observed in the Bay of Biscay, where a large proportion of recruitment occurs.

Total landings and effort data are incomplete. In addition, a great heterogeneity is present among the time-series of landings owing to inconsistencies in reporting by, and between, countries. Changes in eel management practices have also affected commercial and non-commercial/recreational fisheries and the reporting of these fisheries.

Data deficiencies in reports on recreational fisheries are described by ICES (2016a). Although there has been evidence of improvements since then, landings in recreational fisheries remain largely unquantified. Estimates from countries, where they are available, show that landings of yellow and silver eels by recreational fisheries can be of the same order of magnitude as by commercial fisheries.

An annual eel data call, issued for the first time in 2017, substantially improved the coverage and completeness of the data being reported to ICES. National estimates of biomass indicators, mortality rates, and associated data are called for once every third year, in line with reporting on Eel Management Plan (EMP) implementation progress to the European Commission. The most recent call was issued in 2022 (ICES, 2022c). Data on eel, fisheries, and other anthropogenic impacts across the whole stock, however, remain incomplete. There is no single international legislative requirement to collect and provide data that covers the entire stock area.

Issues relevant for the advice

On fishing opportunities

Restocking

ICES notes that the restocking of eels (the practice of adding eels to a waterbody from another source) is considered a "conservation measure" in the EU Council Regulation (EU Council, 2007) and in many eel management plans is implemented for achieving the 40% escapement target on all Eel Management Units (EMUs). Restocking is reliant on a glass eel fishery catch, which is in contradiction with the current advice.

The net benefit of the restocking of eels to the reproductive potential of the stock is unknown. It requires information on e.g. carrying capacity estimates of glass eel source estuaries, detailed mortality estimates at each step of the restocking process, and the spawning potential of stocked vs. non-stocked eels. ICES (2016b) found that while a local increase in eel production may be apparent, an assessment of net benefit to the spawning stock was unquantifiable. ICES advises that when constrained by the above-mentioned uncertainties and potential harmful effects (ICES, 2016b), while following the precautionary approach, no catch for restocking should be allowed.

Aquaculture

Since cultured eels are always wild caught and either permanently removed from the stock (for consumption) or used for restocking (and hence not for conservation purposes following the definition below), ICES consequently advises that no catch for aquaculture purposes should be allowed.

On conservation aspects

Other anthropogenic impacts

Other anthropogenic impacts (non-fishing) are substantial (ICES, 2019, 2020, 2021a, 2022b) and can be grouped into the following: (a) hydropower, pumping stations, and other water intakes; (b) habitat loss or degradation; (c) pollution, diseases, and parasites; and (d) other management actions that may affect levels of predation (e.g. conservation vs. control of predators). Climate change may have further effects, but these are not well understood.

Environmental impacts in marine, transitional, and freshwaters all contribute to the anthropogenic stresses on eels, their mortality, and their reproductive success. The implementation of environmental legislation (e.g. the EU Water Framework [WFD] and the Marine Strategy Framework directives [MSFD]) aims to improve the continental environment and could have a positive effect on the reproductive potential of silver eel.

At present, ICES is not able to quantify the level and the relative impact of non-fisheries anthropogenic factors on the reproductive capacity of the stock. However, given the state of the stock, ICES advises that all non-fisheries anthropogenic impacts (e.g. those caused by hydropower, pumping stations, and pollution) that decrease production and escapement of silver eels should be zero in 2023.

ICES acknowledges that catches for the purpose of subsequent release to improve survival may be part of temporary conservation measures – e.g., where dams exist and prevent downstream or upstream migration of silver and glass eel, transfer across barriers within the same waterbody could be considered if it is likely that the associated mortality is less than that in the absence of such measures. Furthermore, upstream assisted migration should only be applied if the future escapement of silver eels is ensured. In such conditions, the current advice does not apply to these catches.

Other aspects

Illegal, unreported, and unregulated (IUU) fishing is known to occur, and customs seizures indicate that the illegal export of glass eel could be substantial. Few countries reported the level of misreporting and illegal fisheries (i.e. the seizure of illegal nets as well as the illegal trade of glass eels from countries both inside and outside the EU) to ICES, EIFAAC, or GFCM.

Reference points

No reference points are formally defined for this stock. For the time being, the 1960–1979 recruitment is considered as a likely limit reference point (R_{lim}; ICES, 2021b).

Basis of the assessment

Table 2 European eel. Basis of the assessment.

ICES stock data category	3 (ICES, 2022d)
Assessment type	Trend analysis, GLM of glass and yellow eel recruitment indices
Input data	Glass eel and yellow eel recruitment indices (informed by 57 glass eel and 22 yellow eel time-series)
Discards and bycatch	Not included
Indicators	None
Other information	None
Working group	Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL)

History of the advice, catch, and management

Table 3 European eel. History of ICES advice.

Year	ICES advice	Predicted catch corresponding to the advice	TAC*	ICES catch**
1999	Recovery plan	-		
2000	No fishery and a recovery plan	0	-	-
2001	A recovery plan should be implemented for the eel stock, and fishing mortality should be reduced to the lowest possible level until such a plan is agreed upon and implemented	-	-	-
2002	Exploitation should be reduced to the lowest possible level until a recovery plan is agreed upon and implemented	-	-	-
2003	All anthropogenic mortality as close to zero as possible until a recovery plan is agreed upon and implemented	-	-	-
2004	-	-	-	-
2005	-	-	-	
2006	All anthropogenic mortality as close to zero as possible until a recovery plan is agreed upon and implemented	-	-	-
2007	All exploitation and other anthropogenic impacts should be reduced to a level as close to zero as possible, and a recovery plan for the whole stock should be implemented urgently	-	-	-
2008	All exploitation and other anthropogenic impacts should be reduced to as low as possible until there are clear signs of recovery	-	-	-
2009	All exploitation and other anthropogenic impacts should be reduced to as close to zero as possible	-	-	-
2010	All anthropogenic impacts should be reduced to as close to zero as possible until stock recovery is achieved	-	-	-
2011	All anthropogenic mortality as close to zero as possible until there is clear evidence that the stock is increasing	-	-	-
2012	All anthropogenic mortality as close to zero as possible until there is clear evidence that both recruitment and the adult stock are increasing	-	-	-
2013	All anthropogenic mortality as close to zero as possible until there is clear evidence that both recruitment and the adult stock are increasing	-	-	-
2014	All anthropogenic mortality as close to zero as possible until there is clear evidence of sustained increase in both recruitment and the adult stock	-	-	-
2015	All anthropogenic mortality as close to zero as possible	-	-	-
2016	All anthropogenic mortality as close to zero as possible	-	-	-
2017	All anthropogenic impacts as close to zero as possible	-	-	-

Year	ICES advice	Predicted catch corresponding to the advice	TAC*	ICES catch**
2018	All anthropogenic impacts as close to zero as possible	-	-	
2019	All anthropogenic impacts as close to zero as possible	-	-	
2020	All anthropogenic impacts as close to zero as possible	-		
2021	All anthropogenic impacts as close to zero as possible			
2022	Precautionary approach	0		
2023	Precautionary approach	0		

* There has never been a TAC for this stock.
** There are no ICES catch estimates for the entire stock.

History of catch and landings

Landings data are not complete for the entire natural range of the European eel.

Table 4 European eel. Commercial landings (tonnes) of glass eel (1945–2022), as reported to ICES by EU Member States (France [FR], Spain [ES], Portugal [PT], and Italy [IT]) and UK, combining information from the 2022 data call and the WGEEL database. Empty cell = no data, data not collected, or data not pertinent.

Year	UK	FR	ES	PT	IT	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			8
1964			11			11
1965			4			4
1966			6			6
1967			5			5
1968			4			4
1969			4			4
1970			5			5
1971			1			1
1972	16.7		1			17.7
1973	28.2		1			29.2
1974	57.5		2	1.6		61.1
1975	10.5		2.6	5.6		18.7
1976	13.1		11.6	12.5		37.2
1977	38.6		17.5	22.6		78.7
1978	61.2	1393	21.6	7.3		1483.1
1979	67	1850	17.3	8.8		1943.1
1980	40.1	1491	15.4	10.1		1556.6
1981	36.9	890	13	18.1		958
1982	48	866	19.3	22.2		955.5
1983	16.9	791	10.3	6.7		825

Year	UK	FR	ES	PT	IT	Total
1984	25	528	16.4	16.1		585.5
1985	20	444	18.3	14.8		497.1
1986	19	423	6.4	7		455.4
1987	21.3	461	9.4	9.5		501.2
1988	21.4	504	9.9	2.6		537.8
1989	20.6	410	9.9	2.8		443.3
1990	20.9	325	5.3	4.5		355.7
1991	1.1	179	6.8	2.8		189.7
1992	5	183	3.7	4.5		196.1
1993	5.7	329	5.2	3.6		343.6
1994	9.5	329	2.4	2.9		343.8
1995	11.9	413	4.9	5.3		435.1
1996	18.8	262	14.5	8.7		304
1997	8.7	287	12	4.4		312.1
1998	11.2	195	14.1	4.5		224.8
1999		242	13.9	3.6		259.5
2000		206	11	3		220
2001	0.8	101	12	1.1		115
2002	0.5	202	8.6	0.8		211.9
2003	1.7	151	10	1.5		164.1
2004	1	89	5.1	0.8		95.9
2005	1.7	89	6.4	1.2		98.3
2006	1.3	67	4.1	2.7		75.2
2007	2.1	77	5.2	0.9		85.2
2008	0.8	79	5.1	0.8		85.7
2009	0.3		3.7	1.4		5.3
2010	1.3	41	6.5	2.4		51.2
2011	2.3	31.3	5.2	1.1		39.8
2012	2.8	34.3	5.3	0.8		43.2
2013	5.9	33.6	7.2	1.1		47.8
2014	12	35.3	11.3	1.2	0.4	60.3
2015	2.8	36.1	8.8	1.3	0.2	49.1
2016	4	46.4	6.1	0.4	0.1	57
2017	3.3	43.2	10.8	2.2	0.1	59.6
2018	4.2	53.4	4.5	1	0.2	63.4
2019	6.6	50	4.1	0.6	0.2	61.5
2020	3.4	47.8	6	0.9		58
2021	0.1	46	4.2	1.2		51.6
2022	0.5	53.4	4.7	0.9		59.5

Table 5a European eel. Official commercial landings (tonnes) of yellow and silver eel (1908–2022) in Norway (NO), Sweden (SE), Finland (FI), Estonia (EE), Latvia (LV), Lithuania (LT), Poland (PL), Germany (DE), Denmark (DK), Netherlands* (NL), and Belgium (BE), combining information from the 2022 data call and the WGEEL database. Empty cell = no data, data not collected, or data not pertinent.

Year	NO	SE	FI	EE	LV	LT	PL	DE	DK	NL*	BE
1908	268.1										
1909	326.6										
1910	303.1										
1911	383.8										
1912	187.3										
1913	212.7										
1914	282	1460.6									
1915	143	996.9									
1916	117	1078.2									
1917	44	1283.6									
1918	35	884.4									
1919	64	1145.4									

Year	NO	SE	FI	EE	LV	LT	PL	DE	DK	NL*	BE
1920	80	969.6							3413		
1921	79	1072.4							3443		
1922	94	925.9							3760		
1923	140	947.7							3396		
1924	290	1201.1							4130		
1925	325	1714.2							4880		
1926	341	1707.3							4726		
1927	354	2011.5							4648		
1928	325	1040.1							4117		
1929	425	1393.7							4375		
1930	450	1528.8							4773		
1931	329	1794.8							4195		
1932	518	1588.7							5088		
1933	694	1494							5014		
1934	674	1768.7							5171		
1935	564	1950.9							4316		
1936	631	1654.5							4332		
1937	603	1725.1							4329		
1938	526	1870.5							3849		
1939	434	1774.4							4662		
1940	143	1625.7							3709		
1941	174	1821.8							3717		
1942	131	1226.5							3140		
1943	136	1827.8							3917		
1944	150	2319.8							4245		
1945	102	1906.1							4169	2668	
1946	167	1744.6							4269	3492	
1947	268	2346.8			10	8			4784	4502	
1948	293	2211.9			10	14			4386	4799	
1949	214	2329			50	21			4492	3873	
1950	282	2628			10	29			4500	4152	
1951	312	2311			10	32			4400	3661	
1952	178	1848			10	39			3900	3978	
1953	371	2756			20	80			4300	3157	
1954	327	2459			20	147	609		3800	2085	
1955	451	3338			40	163	732		4800	1651	
1956	293	1702			20	131	656		3700	1817	
1957	430	2494			20	168	616		3600	2509	
1958	437	2024			20	149	635		3300	2674	
1959	409	3522			24	155	566		4000	3413	
1960	430	1905			37	165	733		4937	2999	
1961	449	2387			43	139	640		4110	2452	
1962	356	2171			41	155	663		4122	1443	
1963	503	2334			56	260	762		4166	1618	
1964	440	2612		3	37	225	884		3505	2068	
1965	523	2051		0.3	35	125	682		3402	2268	
1966	510	2219		1.9	33	238	804		3901	2339	
1967	491	1835		2.7	39	153	906		3679	2524	
1968	569	2052		2.9	28	165	943		4476	2209	
1969	522	1922		49	36	134	935		3878	2389	
1970	422	1209		61.5	29	118	847		3558	1111	
1971	415	1391		59.5	29	124	722		3378	853	
1972	422	1204		73.4	25	126	696		3429	857	
1973	409	1212		69	27	120	644.7		3656	823	
1974	368	1034		51.1	20	86	691.1		2977	840	
1975	407	1391		82.1	19	114	809.7		3485	1000	
1976	386	935		71.6	24	88	760.5		3054	1172	

Year	NO	SE	FI	EE	LV	LT	PL	DE	DK	NL*	BE
1977	352	989		65.8	16	68	867.8		2502	783	
1978	347	1076		63.2	18	70	910.4		2492	719	
1979	374	954		28.5	21	57	978.9		1904	530	
1980	387	1112		25.7	9	45	1214		2288	664	
1981	369	887		21.9	10	27	943.5		2227	722	
1982	385	1161		13.9	12	28	911.3		2541	842	
1983	324	1212		28.8	9	23	868		2119	937	
1984	310	963		72.2	12	27	819.4		1871	691	
1985	352	1029		75.1	18	29	1022.5	1096.7	1630	679	
1986	272	827.7		61.1	19	32	920.7	1118.7	1672	721	
1987	282	699.4		66.7	25	20	886.6	1031	1279	538	
1988	513	932.7		109.7	15	23	943.3	1018	1878	425	
1989	313	902		54.8	13	21	812.9	963.6	1696	526	
1990	336	916.2		61.3	13	19	768.1	829.7	1675	472	
1991	323	1058.5		52.4	14	16	669.7	724.7	1465	573	
1992	372	1152.5		39.4	17	12	638.2	761.7	1451	548	
1993	340	1119.4		59.2	19	10	568	790.1	1080	293	
1994	472	1262		46.9	19	12	635.1	833.1	1200	330	
1995	454	948		45.4	38	9.4	641.9	777.9	892	354	
1996	353	1053.3		55.1	24	8.6	629	603	751.5	300	
1997	467	1065		59.1	25	10.7	526	616.2	797	285	
1998	331	646.4		44.2	30	17.1	544.4	566.9	597	323	
1999	447	701.6		64.8	26	17.9	599.1	645.1	717	357	
2000	281	530.9		67	13.7	22	443.6	591.2	628	370.1	2.9
2001	304	643.2		67	17.4	23	434.5	569	707	439.5	2.9
2002	311	591.4		49.9	9.6	25.6	372.9	543.9	614	370.2	2.9
2003	240	565.1		48.6	10.3	23.5	365.5	497.9	648	309.8	2.9
2004	237	583.2		39.2	11.3	32	337.2	475.3	546	310.2	2.9
2005	249	675.8		30.7	10.3	44.6	219.9	454.8	534	255.2	2.9
2006	293	732.3		33.4	7.9	31.6	184.4	472.2	596	240.3	
2007	194	702.5		31.1	9.6	29.8	180.7	423.6	537	197	
2008	211	671.4	1	30.6	12.9	27	159.7	406.1	466	147.6	
2009	69	514.1	1.8	22.1	4.9	17.2	160.6	374.6	467	108	
2010	32	525.1	2.3	18.9	8.9	37.6	173.2	367.1	422	445	
2011	0	450.4	1.5	16.2	6	22.6	118.8	278.9	370	370.6	
2012	0	340	1.5	17.7	6.3	15.8	119.3	245.4	317	351.7	
2013	0	374.4	1.3	17.4	4.7	28.4	137.4	264.8	356	318.9	
2014	0	324.2	1	16.7	4.4	15.4	116.8	232.9	346	320.3	
2015	0	246.5	0.6	14.2	5.2	11.8	102.4	226.1	282	293	
2016	3	279.5	1.3	15.2	4.2	28.4	138.4	206.8	265	312.5	
2017	10.9	245	1.1	15.7	8.6	24.3	172.6	241.7	257.3	421.3	0
2018	3.4	251	1.1	18.3	5.8	20.3	146.5	226.9	181.8	476.9	
2019	4	188.2	0.4	21.7	6.1	4.6	167.5	209.1	183.3	484	
2020	4	194.4	0.4	38.8	6.7	6.8	103.6		182.2	475.5	
2021	5	170.5	0.3	47.9	6.4	9.9	126.6		232.8	523.7	
2022											

* Landings from the Netherlands are incomplete before 2010.

Table 5b European eel. Official commercial landings (tonnes) of yellow and silver eel (1951–2022) in Ireland (IE), United Kingdom (UK), France (FR), Spain (ES), Portugal (PT), Italy (IT), and Slovenia (SL), combining information from the 2022 data call and the WGEEL database. Empty cell = no data, data not collected, or data not pertinent.

Year	IE	UK	FR	ES	PT	IT	SL
1908							
1909							
1910							
1911							
1912							

Year	IE	UK	FR	ES	PT	IT	SL
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							
1948							
1949							
1950							
1951				90			
1952				102.2			
1953				80.2			
1954				97.7			
1955				102.9			
1956				106.1			
1957				80			
1958				115			
1959				100			
1960		771.7		98			
1961		768.4		153.8			
1962		696.1		114.9			
1963		787.8		136.9			
1964		548.9		91.5			
1965		783.8		130.4			
1966		881		191.5			
1967		568.7		163.8			
1968		585.6		175.6			
1969		605.6		136.4		2469	

Year	IE	UK	FR	ES	PT	IT	SL
1970	200	752.1		119.4		2300	
1971	200	842.2		107.4		2113	
1972	200	632.6		119.4		1997	
1973	91	723.2		100.2		588	
1974	67	765		93.4		2122	
1975	79	762.2		78		2886	
1976	150	621.7		82.7		2596	
1977	108	690.5		79.9		2390	
1978	76	823.6		67		2172	
1979	110	1045		96.8		2354	
1980	75	912.2		89.8		2198	
1981	94	907.1		97.7		2270	
1982	144	942.5		19.9		2025	0.8
1983	117	866.4		18.4		2013	0.7
1984	88	973.4		11		2050	1.2
1985	87	750		16.5		2135	2.5
1986	87	650.8	1944	13.4		2134	2.7
1987	230	684.1	2062	21.2		2265	1.6
1988	215	933.6	2265	13.9		2027	1.5
1989	400	874.7	1746	5.3	13.5	1243	1.3
1990	256	783.9	1778	8.7	13	1088	1.9
1991	245	736.9	1645	49.8	23.5	1097	1.4
1992	234	715.4	1321	54.3	29.7	1084	0.1
1993	260	670.7	1280	66.5	33.9	782	0.1
1994	300	777.8	1280	50.7	26.6	771	0.7
1995		899.6	1280	69.4	23.7	1047	0
1996		805.2	1280	61.7	25.6	953	0
1997		730.7	1223	61.5	24.7	727	0
1998		693.4	1150	43.6	23.3	666	0
1999	250	667.8	1005	48.3	23.1	634	
2000	250	587.2	1008.8	55.3	21.8	588	0
2001	98	582.7	1024.1	130.2	15	520	0
2002	123	551.1	30.4	105.6	26.9	415	0
2003	111	552.3	21.4	95.6	10.6	446	
2004	136	471.7	12.5	85.3	8.8	379	
2005	101	477.2	7.8	88	7	75	0
2006	133	383.5	15	115.6	10.1	56	0
2007	114	450.4	26.1	82.1	10.5	277	0
2008	108.3	400.6	31.4	65.6	7	56	0
2009	0	462.4	42	89.2	8.2	329.9	0
2010	0	461.1	20.2	104.6	11	265.1	0
2011	0	455.9	368	93.6	5.9	189.7	0
2012	0	415.1	472.6	121.6	3.8	182.4	0
2013	0	426.5	504.1	132.7	2.7	172.2	0
2014	0	392.8	434.4	130.4	3.3	184.6	0
2015	0	341	356.9	92	2.9	170.3	0
2016	0	347.2	442.6	115.1	2.4	205	0
2017	0	321.8	434.1	98.2	1.5	213.8	
2018	0	366.9	617.4	85.1	3.6	123.5	
2019	0	295.6	312.7	64.1	1.9	126.6	
2020	0	182.2	347.9	60	3.2	89.5	
2021	0	244	293.6	69.7	2.4	50	
2022	0	115		38			

Table 5c European eel. Official commercial landings (tonnes) of yellow and silver eel (1951–2022) in Croatia (HR), Albania (AL) Greece (GR), Turkey (TR), Tunisia (TN), Algeria (DZ), and Morocco (MA), combining information from the 2022 data call and the WGEEL database. Empty cell = no data, data not collected, or data not pertinent.

Year	HR	AL	GR	TR	TN	DZ	MA	Total
1908								268.1
1909								326.6
1910								303.1
1911								383.8
1912								187.3
1913								212.7
1914								1742.6
1915								1139.9
1916								1195.2
1917								1327.6
1918								919.4
1919								1209.4
1920								4462.6
1921								4594.4
1922								4779.9
1923								4483.7
1924								5621.1
1925								6919.2
1926								6774.3
1927								7013.5
1928								5482.1
1929								6193.7
1930								6751.8
1931								6318.8
1932								7194.7
1933								7202
1934								7613.7
1935								6830.9
1936								6617.5
1937								6657.1
1938								6245.5
1939								6870.4
1940								5477.7
1941								5712.8
1942								4497.5
1943								5880.8
1944								6714.8
1945								8845.1
1946								9672.6
1947								11918.8
1948								11713.9
1949								10979
1950								11601
1951								10816
1952								10055.2
1953								10764.2
1954								9544.7
1955								11277.9
1956								8425.1
1957								9917
1958								9354
1959								12189
1960								12075.7
1961								11142.2

Year	HR	AL	GR	TR	TN	DZ	MA	Total
1962								9762
1963								10623.7
1964								10414.4
1965								10000.6
1966			14.9					11133.4
1967			19					10381.2
1968			4.9					11211
1969			2.9	342				13420.9
1970			0	441				11168
1971			0	460				10694.1
1972			4.3	220				10005.7
1973			15.5	315				8793.6
1974			129.8	588				9832.4
1975			133.8	448				11694.7
1976			158.7	499				10599.3
1977			89.2	282				9283.2
1978			225.3	283				9342.5
1979			185.5	396				9034.8
1980			226.9	224				9470.6
1981			250.6	374				9200.9
1982			255.2	424				9705.6
1983			200.8	588				9325.1
1984			285.4	616				8790.6
1985			189.6	583				9694.8
1986			151.6	517				11144.6
1987			266.3	543				10900.9
1988			268.1	756				12337.7
1989			155.6	472				10213.7
1990			194.2	230				9444.1
1991			209.4	262				9166.3
1992			184.8	245				8859.9
1993			181.9	261				7814.7
1994			200.5	329				8546.4
1995			201.4	390				8071.6
1996			151.3	342				7396.3
1997			136.5	400				7154.3
1998			87.6	300				8404.8
1999			80.7	200		20.4		7213.8
2000			88.1	176	109.9	17.2		7916.8
2001			93.4	122	144.1	44.5		7960.5
2002			136.3	147	204.4	25.4		6458.5
2003			76.5	158	171.7	25.2		5161.1
2004			58.1	165	132.5	29		4968
2005			116.1	176	197	7.6		4653.8
2006			77.1	162	266.3	2.7		7795.4
2007			89.7	179	296.5	14.6		5864.1
2008			71.1	171	316.7	14		4318.9
2009			78.5	158	122.2	14.2		4271.9
2010			58.6	182	92.6	3.4		3567.7
2011			83.2	28.3	79.6			3136.2
2012			55.2	38	55	0.4		3763.7
2013		47	38	48.2	149.6	3	23	3691.3
2014	0.5	43	58.3	56	83.6	6	23	3075.6
2015	0.1	50	60.2	71	81.4	3	4	2992.4
2016	0.6	41	60.9	75	250.4	2	7	3349.5
2017	0.6	47	48.3	81	153	10.6	2	3313.4
2018	0.6	60	42.8	111	166.3	33	2	4124

Year	HR	AL	GR	TR	TN	DZ	MA	Total
2019	0.6	70	20.4	330	107	25.2		3962.1
2020		40	27.9	232.8	129.9	18		3509.7
2021		22	18.9	267.3	105.3	4.7		2200.9
2022								153

Table 6 European eel. Recreational landings (tonnes) of glass eel (1978–2022) in countries where fisheries exist, i.e. France (FR) and Spain (ES), combining information from the 2022 data call and the WGEEL database. Empty cell = no data, data not collected, or data not pertinent.

Year	FR	ES	Total
1978	647		647
1979	697		697
1980	1303		1303
1981	904		904
1982	219		219
1983	161		161
1984	156		156
1985	71		71
1986	87		87
1987	172		172
1988	40		40
1989	110		110
1990	54		54
1991	87		87
1992	77		77
1993	130		130
1994	74		74
1995	113		113
1996	25		25
1997	39		39
1998	6		6
1999	6		6
2000	2		2
2001	1		1
2002	37		37
2003			
2004		0.9	0.9
2005	0	1.2	1.2
2006	1	1.7	2.7
2007	0	1.3	1.3
2008	0	1.6	1.6
2009	0	0.4	0.4
2010	0	0.8	0.8
2011	0	0.4	0.4
2012	0	1.1	1.1
2013	0	1.6	1.6
2014	0	2.4	2.4
2015	0	2.3	2.3
2016	0	1.7	1.7
2017	0	1.5	1.5
2018	0	1.7	1.7
2019	0	0.9	0.9
2020	0	0.7	0.7
2021*	0	0	0
2022*	0	0.7	0.7

* Preliminary

Table 7a European eel. Recreational landings (tonnes) of yellow and silver eel (1980–2022) in Finland (FI), Estonia (EE), Latvia (LV), Lithuania (LT), Poland (PL), Czechia (CZ), Germany (DE), Denmark (DK), Netherlands (NL), Belgium (BE), and Ireland (IE), combining information from the 2022 data call and the WGEEL database. Countries omitted in tables 7a and 7b include those where recreational landings are prohibited as well as those that have not reported.

Year	FI	EE	LV	LT	PL	CZ	DE	DK	NL	BE	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			1.7				428.9			33.6	
2001			1.2				425.9			33.6	
2002			1.1				417.3			33.6	
2003			0.4				427.9			33.6	
2004			0.7				413.9			33.6	
2005		1.7	2.6				398.1			33.6	
2006		1	0.3				399.1			33.6	
2007		1	0.3				375.4			33.6	
2008	17	1.1	0.2				326.4			33.6	
2009		1.4	0.7				309.8	108		33.6	
2010	10	1.1	0.3				276.7	125.5	111	30	
2011		1	0.4				271.8	79.5		30	
2012	5	0.6	0.4	1.4	32.4	17.1	262.6	52.3	59	30	
2013		0.6	0.7	3	26.7	15.4	265.2	50.3		30	
2014	20	0.5	0.5	1.8	29.5	18.8	270.1	57	70	30	
2015		0.7	0.5	5	26.5	12.4	270.5	118.3		29.5	
2016	8	0.6	0.2	1.6	34.2	12.4	274.6	164.3	24	29.5	
2017		0.6	0.5	3	30.9	17.3	275.5	117.1		29.5	
2018	2	0.6	0.2	0.6	30	11.5	271.1	105	24	29.7	
2019		0.6	0.3	6	30.4	12.3	276	110		29.7	
2020	2	1.1	0.5	1.2	27.7			98.9	24	29.7	
2021		0.5	0.3	6.8	29.5			79		29.6	
2022											0

Table 7b European eel. Recreational landings (tonnes) of yellow and silver eel (1980–2022) in France (FR), Spain (ES), Italy (IT), Slovenia (SL), and Turkey (TR), combining information from the 2022 data call and the WGEEL database. Countries omitted in tables 7a and 7b include those where recreational landings are prohibited as well as those that have not reported. Empty cell = no data, data not collected, or data not pertinent.

Year	FR	ES	IT	SL	TR	Total
1980				0		0
1981				0		0
1982				0		0
1983				0		0
1984				0		0
1985				0		581.6
1986				0.1		562.9
1987				0.1		546.5
1988				0.1		558.6
1989				0.1		542.6
1990				0.1		501.3
1991				0.1		498.2
1992				0.1		488.6
1993				0.1		485.6
1994				0		492.9
1995				0		452.2
1996				0.1		416.5
1997				0.2		424
1998				0.1		430.6
1999				0		424.8
2000	20.9			0		485.1
2001	19.9			0		480.6
2002	19			0		471.1
2003	14.7			0		476.6
2004	16.8			0		465
2005	12.9			0		448.9
2006	683.9			0		1117.9
2007	14.6			0		424.9
2008	14.9			0		393.1
2009	7.1			0		460.6
2010	4.9		149.5	0		709
2011	3.2		60.6	0		446.5
2012	4.6		73.6	0		539
2013	4.7	1	69.7	0		467.3
2014	4.3	1	69.8	0		573.4
2015	3.5	1	60.2	0		528.2
2016	3.1	0.8	56.8	0		610.3
2017	2.9	0.1	41.3			518.5
2018	2.5	0.9	42.3			520.3
2019	0.8	2.2	33.7			501.9
2020	0.5		24.5		87.3	297.4
2021			12.6		41.7	200
2022						0 *

* Preliminary data.

Summary of the assessment

Table 8 European eel. Recruitment indices: geometric means of estimated (GLM) recruitment for glass eel in the continental "North Sea" and "Elsewhere Europe", and recruitment of yellow eel in Europe. The glass eel GLM (predicting recruitment as a function of area, year, and site) was fitted to 57 time-series, comprising either pure glass eel or a mixture of glass eels and yellow eels and scaled to the 1960–1979 geometric mean so that values correspond to the recruitment as a percentage of the 1960–1979 geometric mean. The yellow eel GLM (predicting recruitment as a function of year and site) was fitted to 22 yellow eel time-series and scaled to the 1960–1979 geometric mean so that values correspond to the recruitment as a percentage of the 1960–1979 geometric mean. These indices are updated on an annual basis and, as they are presented in relative terms, may change the historical values.

Year	Elsewhere Europe index (%)	North Sea index (%)	Yellow eel Europe index (%)
1950			179.9
1951			261.2
1952			250.5
1953			396.8
1954			195
1955			302
1956			133.7
1957			155.4
1958			151.9
1959			331.5
1960	152.8	207.8	164.9
1961	131.4	116.5	180.1
1962	151.1	177.9	177.2
1963	194.8	222.9	149.5
1964	121.1	116.1	60.7
1965	135.4	76.8	114.3
1966	75.8	86.8	155.5
1967	81	95.4	112
1968	128.7	122.2	173.4
1969	67.4	88	115.9
1970	101.5	96	59.7
1971	55.5	84.2	62
1972	50.1	107.9	107.8
1973	55.4	46.5	134.6
1974	82.8	129.2	65.2
1975	71.3	53.3	122.6
1976	116.3	97.2	37.6
1977	114.1	78	79
1978	109.5	60.3	70.2
1979	144.3	102.9	58.5
1980	112.8	84.1	99.2
1981	88.4	61.3	41.5
1982	90.9	31.3	52.2
1983	48.7	25.8	47
1984	53.8	9.8	35.2
1985	52	8.1	66.2
1986	33.7	7.9	50
1987	58.5	9.7	47.5
1988	69.3	8.9	61.6
1989	45.1	4	36.8
1990	35.2	13.8	32.4
1991	17.3	3.1	37.5
1992	22	7.1	21.4
1993	24.1	6.3	14.2
1994	23.6	6.2	55.6
1995	31.2	4.4	16.5
1996	24.7	4.5	10.1

Year	Elsewhere Europe index (%)	North Sea index (%)	Yellow eel Europe index (%)
1997	40.9	3.9	21.9
1998	16.2	2.7	18.5
1999	20.3	5.4	23.6
2000	19.1	4.3	19.3
2001	8.4	0.9	18.8
2002	13	2.3	35.8
2003	12.7	1.7	23.4
2004	7.2	0.6	23.5
2005	7.8	1	12.4
2006	5.7	0.5	16
2007	6.4	1.1	19.1
2008	5.7	1.1	14.6
2009	4.3	0.8	7.6
2010	4.7	0.7	12.3
2011	3.7	0.4	23
2012	5	0.5	13.7
2013	7	1.6	13.5
2014	12	2.3	26.5
2015	7.4	0.8	11.6
2016	11.3	1.6	14.9
2017	12.3	1.1	15.7
2018	9.9	1.6	17.2
2019	6.1	1.3	13.3
2020	7.1	0.8	15.4
2021	5.5	0.6	19.5
2022*	9.7	0.5	

Figures in the table are rounded
* Preliminary data

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Recommended citation: ICES. 2022. European eel (*Anguilla anguilla*) throughout its natural range. *In* Report of the ICES Advisory Committee, 2022. ICES Advice 2022, ele.2737.nea, https://doi.org/10.17895/ices.advice.19772374