

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 2022. This applies to both recreational and commercial catches and includes catches of glass eels for restocking and aquaculture.

All other anthropogenic mortalities should be minimized and eliminated where possible.

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 0.6% in 2021 (provisional) and 0.9% in 2020 (final). In the “Elsewhere Europe” index series it was 5.4% in 2021 (provisional) and 7.1% in 2020 (final), based on the available dataserie. For the yellow eel dataserie, recruitment for 2020 was 16% (final) of the 1960–1979 geometric mean; the 2021 data collection for yellow eel is ongoing. Time-series from 1980 to 2021 show that glass eel recruitment remains at a very low level.

ICES cannot assess the exploitation status relative to the maximum sustainable yield (MSY) and precautionary approach (PA) reference points, because the reference points are undefined. The 1960–1979 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 reference points.

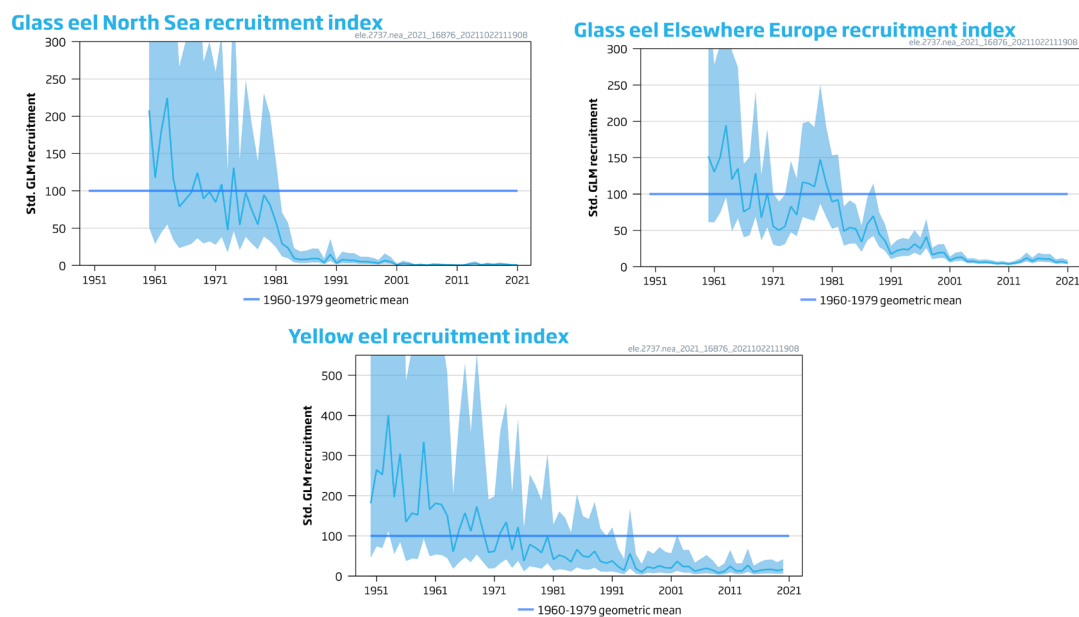


Figure 1 European eel. Indices, geometric mean of estimated (generalized linear model; GLM) glass eel recruitment for the continental “North Sea” (top left panel) and “Elsewhere Europe” (top right panel) series. The GLM was fitted to 56 time-series comprising either pure glass eel or a mixture of glass and yellow eels (26 “North Sea” and 30 “Elsewhere Europe”). The GLM was scaled in percentage to the 1960–1979 geometric mean. The “North Sea” series are from Norway, Sweden, Germany, Denmark, the Netherlands, 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 (GLM) yellow eel recruitment trends for Europe. The GLM was fitted to 21 yellow eel time-series and scaled in percentage to the 1960–1979 geometric mean. The series are from Denmark, Germany, Ireland, Sweden, and UK.

Catch scenarios

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

Basis of the advice

Table 1 European eel. The basis of the advice.

Advice basis	Precautionary approach
Management plan	<p>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 (<i>Anguilla anguilla</i>) in the Mediterranean Sea.</p> <p>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.</p>

Quality of the assessment

The advice is based on two glass eel recruitment indices and a yellow eel recruitment index, each comprising multiple time-series. The indices are 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-six glass eel and 21 yellow eel series were used in the analysis in 2021. The current advice is based on the fact that the recruitment indices used by ICES are well below the 1960–1979 geometric mean. The decline in yellow eel recruitment becomes more pronounced when data from the 1950s are used rather than the currently used baseline. However, because so few robust pre-1960s time-series are available, the baseline was set to the geometric mean of the 1960–1979 as in previous advice.

In 2021, seven new recruitment series were added to the recruitment trend analyses because these series now reached the agreed limit value of at least ten years of observations. A specific analysis of the influence of including new series over time has been conducted this year, which found that this inclusion confirms the recruitment trend.

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). Though 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 in recreational fisheries can be of the same order of magnitude as in commercial fisheries (except for glass eels).

An eel data call, issued for the first time in 2017, substantially improved the coverage and completeness of the data being reported to ICES. Subsequent annual calls were issued, the national stock indicators and associated data every third year, as reported to the EU in the progress reports. The most recent call was issued in 2021 (ICES, 2021a). 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 cover the entire stock area.

Issues relevant for the advice

The current advice is for zero catches of eel at all life stages in all habitats. The following implications should be considered:

- *Other anthropogenic mortalities*

The non-fishing anthropogenic mortality factors are substantial (ICES 2019a, 2020, 2021b) and can be grouped into those that result from 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 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]) aim 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. caused by hydropower, pumping stations, and pollution) that decrease production and escapement of silver eels should be reduced to, or kept as close as possible to, zero in 2022.

- *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 regulation and in many eel management plans for achieving the 40% escapement target on all EMUs (Eel Management Unit). Restocking is reliant on a glass eel fishery catch, which is in contradiction with the current advice.

The net benefit of restocking of eels to 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 performance estimates of stocked vs. non-stocked eels. ICES advises that given the above mentioned uncertainties and potential harmful effects (ICES 2016b), and following the precautionary approach, any catch for restocking should not 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 conservational purposes following the definition below), ICES consequently advises that any catch for aquaculture purposes should not be allowed.

- *Conservation measures:*

ICES acknowledges that catches for the purpose of subsequent release to improve survival may be part of 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, assuming that any associated mortality is less than that in the absence of such measures. Furthermore, upstream 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.

- *Potential loss of fisheries-dependent time-series:*

Many fishery-based time-series are utilized to assess temporal trends in recruitment and escapement. Changes to these time-series (e.g. through new fishery regulations or changes to habitat) may introduce biases in the time-series and compromise their use in the analyses. Sensitivity analyses showed that the current assessment was not sensitive to changes in fishery-based time-series; yet, losing these time-series would increase the noise in the outcome (i.e. standard error around the trend increases). This means that continuation of existing and the implementation of new fishery-independent time-series is recommended, especially since all time-series need to run for at least ten years of observations before they can be incorporated into the recruitment index.

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

The European eel (*Anguilla anguilla*) has been listed in CITES Appendix II and in the EU implementation of CITES rules (Annex B to Council Regulation (EC) No 338/97; EU, 1996) since 13 March 2009. Since 2010, import and export of eel from the EU has been prohibited. Some non-EU states within the range of European eel allow export of European eel, mostly to the Far East.

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, 2021c).

Basis of the assessment

Table 2 European eel. Basis of the assessment.

ICES stock data category	3 (ICES, 2019b)
Assessment type	Trend analysis, GLM of glass and yellow eel recruitment indices
Input data	Glass eel and yellow eel recruitment indices (informed by 56 glass eel and 21 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	A 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	-	-	-	-

Year	ICES advice	Predicted catch corresponding to the advice	TAC*	ICES catch**
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	-	-	-
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	-	-

* 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 (1945–2021), as reported to ICES by EU countries and UK where fisheries exist, combining information from the 2021 data call and the WGEEL database.

Year	United Kingdom	France	Spain	Portugal	Italy
1945			119		
1946			72		
1947			100		
1948			111		

Year	United Kingdom	France	Spain	Portugal	Italy
1949			9		
1950			4		
1951			2		
1952			0		
1953			3		
1954			6		
1955			0.906		
1956			0.884		
1957			3		
1958			0.402		
1959			7		
1960			9		
1961			17		
1962			11		
1963			8		
1964			11		
1965			4		
1966			6		
1967			5		
1968			4		
1969			4		
1970			5		
1971			1		
1972	17		1		
1973	28		1		
1974	58		2	2	
1975	10		3	6	
1976	13		12	13	
1977	39		18	23	
1978	61	1393	22	7	
1979	67	1850	17	9	
1980	40	1491	15	10	
1981	37	890	13	18	
1982	48	866	19	22	
1983	17	791	10	7	
1984	25	528	16	16	
1985	20	444	18	15	
1986	19	423	6	7	
1987	21	461	9	10	
1988	21	504	10	3	
1989	21	410	10	3	
1990	21	325	5	4	
1991	1	179	7	3	
1992	5	183	4	4	
1993	6	329	5	4	
1994	10	329	2	3	
1995	12	413	5	5	
1996	19	262	15	9	
1997	9	287	12	4	
1998	11	195	14	4	
1999	0.0	242	14	4	
2000	0	206	11	3	0
2001	0.809	101	12	1	0
2002	0.521	202	9	0.804	0
2003	2	151	10	1	0
2004	0.970	89	5	0.814	0
2005	2	89	6	1	0

Year	United Kingdom	France	Spain	Portugal	Italy
2006	1	67	4	3	0
2007	2	77	5	0.905	0
2008	0.817	79	5	0.750	0
2009	0.291	0	4	1	0
2010	1	41	6	2	0
2011	2	31	5	1	0
2012	3	34	5	0.808	0
2013	6	34	7	1	0
2014	12	35	11	1	0.425
2015	3	36	9	1	0.159
2016	4	46	7	0.409	0.06
2017	4	43	11	2	0.146
2018	5	53	5	1	0.243
2019	7	50	4	0.587	0.243
2020	3	49	6	0.891	0
2021*		46	4	1	0

* Preliminary data.

0 = no catch.

Empty cell = no information, not collected, or not pertinent.

The figures in the table are rounded unless < 1 tonne.

Table 5a European eel. Official commercial landings (tonnes) of yellow and silver eel (1908–2021) 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 2021 data call and the WGEEL database.

Year	NO	SE	FI	EE	LV	LT	PL	DE*	DK	NL**	BE
1908	268										
1909	327										
1910	303										
1911	384										
1912	187										
1913	213										
1914	282	1461									
1915	143	997									
1916	117	1078									
1917	44	1284									
1918	35	884									
1919	64	1145									
1920	80	970							3413		
1921	79	1072							3443		
1922	94	926							3760		
1923	140	948							3396		
1924	290	1201							4130		
1925	325	1714							4880		
1926	341	1707							4726		
1927	354	2011							4648		
1928	325	1040							4117		
1929	425	1394							4375		
1930	450	1529							4773		
1931	329	1795							4195		
1932	518	1589							5088		
1933	694	1494							5014		
1934	674	1769							5171		
1935	564	1951							4316		
1936	631	1654							4332		
1937	603	1725							4329		
1938	526	1871							3849		

Year	NO	SE	FI	EE	LV	LT	PL	DE*	DK	NL**	BE
1939	434	1774							4662		
1940	143	1626							3709		
1941	174	1822							3717		
1942	131	1226							3140		
1943	136	1828							3917		
1944	150	2320							4245		
1945	102	1906							4169	2668	
1946	167	1745							4269	3492	
1947	268	2347			10	8			4784	4502	
1948	293	2212			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		2	33	238	804		3901	2339	
1967	491	1835		3	39	153	906		3679	2524	
1968	569	2052		3	28	165	943		4476	2209	
1969	522	1922		49	36	134	935		3878	2389	
1970	422	1209		62	29	118	847		3558	1111	
1971	415	1391		60	29	124	722		3378	853	
1972	422	1204		73	25	126	696		3429	857	
1973	409	1212		69	27	120	645		3656	823	
1974	368	1034		51	20	86	691		2977	840	
1975	407	1391		82	19	114	810		3485	1000	
1976	386	935		72	24	88	761		3054	1172	
1977	352	989		66	16	68	868		2502	783	
1978	347	1076		63	18	70	910		2492	719	
1979	374	954		28	21	57	979		1904	530	
1980	387	1112		26	9	45	1214		2288	664	
1981	369	887		22	10	27	944		2227	722	
1982	385	1161		14	12	28	911		2541	842	
1983	324	1212		29	9	23	868		2119	937	
1984	310	963		72	12	27	819		1871	691	
1985	352	1029		75	18	29	1022	1097	1630	679	
1986	272	828		61	19	32	921	1119	1672	721	
1987	282	699		67	25	20	887	1031	1279	538	
1988	513	933		110	15	23	943	1018	1878	425	
1989	313	902		55	13	21	813	964	1696	526	
1990	336	916		61	13	19	768	830	1675	472	
1991	323	1058		52	14	16	670	725	1465	573	
1992	372	1152		39	17	12	638	762	1451	548	
1993	340	1119		59	19	10	568	790	1080	293	

Year	NO	SE	FI	EE	LV	LT	PL	DE*	DK	NL**	BE
1994	472	1262		47	19	12	635	833	1200	330	
1995	454	948		45	38	9	642	778	892	354	
1996	353	1053		55	24	9	629	603	752	300	
1997	467	1065		59	25	11	526	616	797	285	
1998	331	646		44	30	17	544	567	597	323	
1999	447	702		65	26	18	599	645	717	357	
2000	281	531	0	67	14	22	444	591	628	370	3
2001	304	643	0	67	17	23	435	569	707	439	3
2002	311	591	0	50	10	26	373	544	614	370	3
2003	240	565	0	49	10	24	366	498	648	310	3
2004	237	583	0	39	11	32	337	475	546	310	3
2005	249	676	0	31	10	45	220	455	534	255	3
2006	293	732	0	33	8	32	184	472	596	240	0
2007	194	702	0	31	10	30	181	424	537	197	0
2008	211	671	1	31	13	27	160	406	466	148	0
2009	69	514	2	22	5	17	161	375	467	108	0
2010	32	525	2	19	9	38	173	367	422	445	0
2011	0.00	450	2	16	6	23	119	279	370	371	0
2012	0.00	340	2	18	6	16	119	245	317	352	0
2013	0.00	374	1	17	5	28	137	265	356	319	0
2014	0.00	324	1	17	4	15	117	233	346	320	0
2015	0	246	0.609	14	5	12	102	226	282	293	0
2016	3	280	1	15	4	28	138	207	265	312	0
2017	11	245	1	16	9	24	173	242	257	421	0
2018	3	251	1	18	6	20	146	227	182	477	0
2019	4	188	0.394	22	6	5	168	209	183	484	0
2020	4	194	0.202	39	7	7	104		182	475	0

* German data after 2019 are incomplete.

** data from NL are incomplete before 2010

0 = no catch.

Empty cell = no data, not collected, or not pertinent.

The figures in the table are rounded unless < 1 tonne.

Table 5b European eel. Official commercial landings (tonnes) of yellow and silver eel (1951–2021) in Ireland (IE), United Kingdom (UK), France (FR), Spain (ES), Portugal (PT), Italy (IT), Slovenia (SL), Croatia (HR), Greece (GR), Turkey (TR), Tunisia (TN), and Morocco (MA), combining information from the 2021 data call and the WGEEL database.

Year	IE	UK	FR	ES	PT	IT	SL	HR	GR	TR	TN	MA
1951				90								
1952				102								
1953				80								
1954				98								
1955				103								
1956				106								
1957				80								
1958				115								
1959				100								
1960		772		98								
1961		768		154								
1962		696		115								
1963		788		137								
1964		549		92								

Year	IE	UK	FR	ES	PT	IT	SL	HR	GR	TR	TN	MA
1965		784		130								
1966		881		192					15			
1967		569		164					19			
1968		586		176					5			
1969		606		136		2469			3	342		
1970	200	752		119		2300			0	441		
1971	200	842		107		2113			0	460		
1972	200	633		119		1997			4	220		
1973	91	723		100		588			15	315		
1974	67	765		93		2122			130	588		
1975	79	762		78		2886			134	448		
1976	150	622		83		2596			159	499		
1977	108	691		80		2390			89	282		
1978	76	824		67		2172			225	283		
1979	110	1045		97		2354			185	396		
1980	75	912		90		2198			227	224		
1981	94	907		98		2270			251	374		
1982	144	943		20		2025	0.795		255	424		
1983	117	866		18		2013	0.67		201	588		
1984	88	973		11		2050	1		285	616		
1985	87	750		17		2135	2		190	583		
1986	87	651	1944	13		2134	3		152	517		
1987	230	684	2062	21		2265	2		266	543		
1988	215	934	2265	14		2027	2		268	756		
1989	400	875	1746	5	14	1243	1		156	472		
1990	256	784	1778	9	13	1088	2		194	230		
1991	245	737	1645	50	23	1097	1		209	262		
1992	234	715	1321	54	30	1084	0.061		185	245		
1993	260	671	1280	66	34	782	0.066		182	261		
1994	300	778	1280	51	27	771	0.718		201	329		
1995		900	1280	69	24	1047	0.01		201	390		
1996		805	1280	62	26	953	0.012		151	342		
1997		731	1223	61	25	727	0.002		137	400		
1998		693	1150	44	23	666	0.003		88	300		
1999	250	668	1005	48	23	634			81	200		
2000	250	587	1009	55	22	588	0.004	0	88	176	0	
2001	98	583	1024	130	15	520	0.019	0	93	122	0	
2002	123	551	30	106	27	415	0.009	0	136	147	0	
2003	111	552	21	96	11	446		0	77	158	0	
2004	136	472	13	85	9	379		0	58	165	0	
2005	101	476	8	88	7	75	0.003	0	116	176	0	
2006	133	383	15	116	10	56	0.014	0	77	162	0	

Year	IE	UK	FR	ES	PT	IT	SL	HR	GR	TR	TN	MA
2007	114	450	26	82	11	277	0.009	0	90	179	0	
2008	108	399	31	66	7	56	0.031	0	71	171	0	
2009	0	460	42	89	8	330	0.002	0	78	158	0	
2010	0	461	20	105	11	265	0.003	0	59	182	0	
2011	0	456	368	94	6	190	0	0	83	28	0	
2012	0	415	473	122	4	182	0	0	55	38	0	
2013	0	427	504	133	3	172	0.001	0	38	48	0	23
2014	0	402	434	130	3	185	0	0.516	58	56	0	23
2015	0	323	357	92	3	170	0	0.149	60	71	0	4
2016	0	347	443	115	2	205	0	0.595	61	75	0	7
2017	0	322	434	98	2	214		0.559	48	81	0	2
2018	0	367	617	93	4	124		0.61	43	111	153	2
2019	0	296	310	64	2	127		0.562	20	330	129	
2020	0	182	330	97	3	89		0	28	233	140	

0 = no catch.

Empty cell = no data, not collected, or not pertinent.

The figures in the table are rounded unless < 1 tonne.

Table 6 European eel. Recreational landings (tonnes) of glass eel (1978–2021) in countries where fisheries exist, i.e. France (FR) and Spain (ES), combining information from the 2021 data call and the WGEEL database.

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
2004		0.858	0.858
2005	0	1	1
2006	1	2	3
2007	0	1	1
2008	0	2	2
2009	0	0.439	0.439
2010	0	0.821	0.821
2011	0	0.389	0.389
2012	0	1	1
2013	0	2	2
2014	0	2	2
2015	0	2	2
2016	0	2	2
2017	0	2	2
2018	0	2	2
2019	0	0.865	0.865
2020	0	0.662	0.662

0 = no catch.

Empty cell = no data, not collected, not pertinent.

The figures in the table are rounded unless < 1 tonne.

Table 7a European eel. Recreational landings (tonnes) of yellow and silver eel (1980–2021) in Finland (FI), Estonia (EE), Latvia (LV), Lithuania (LT), Poland (PL), Germany (DE), Denmark (DK), Netherlands (NL), Belgium (BE), France (FR), and Spain (ES), combining information from the 2021 data call and the WGEEL database.

Year	FI	EE	LV	LT	PL	DE	DK	NL	BE	FR	ES
1980											
1981											
1982											
1983											
1984											
1985						582					
1986						563					
1987						546					
1988						558					
1989						543					
1990						501					
1991						498					
1992						489					
1993						486					
1994						493					
1995						452					
1996						416					
1997						424					
1998						430					
1999						425					
2000			2			429			34	21	
2001			1			426			34	20	
2002			1			417			34	19	
2003			0.418			428			34	15	
2004			0.655			414			34	17	
2005		2	3			398			34	13	
2006		1	0.326			399			34	684	
2007		0.958	0.34			375			34	15	
2008	17	1	0.183			326			34	15	
2009		1	0.69			310	108		34	7	
2010	10	1	0.348			277	126	111	30	5	
2011		0.98	0.383			272	80		30	3	
2012	5	0.612	0.415	1	32	263	52	59	30	5	
2013		0.589	0.738	3	27	265	50		30	5	1
2014	20	0.536	0.503	2	30	270	57	70	30	4	1
2015		0.744	0.45	5	27	270	118		30	4	0.993
2016	8	0.634	0.17	2	34	275	164	24	30	3	0.814
2017		0.579	0.45	3	31	276	117		30	3	0.103
2018	2	0.565	0.166	0.587	30	271	105	10	30	3	0.876
2019		0.615	0.258	6	30	276	110		30	2	2
2020*		1	0.519	1	28		99		30	1	
2021*										0.182	

* Preliminary data.

0 = no fishing or no information.

Empty cell = no data, not collected, or not pertinent.

The figures in the table are rounded unless < 1 tonne.

Table 7b European eel. Recreational landings (tonnes) of yellow and silver eel (1980–2021) in Italy (IT), Slovenia (SL), and Turkey (TR), combining information from the 2021 data call and the WGEEL database. Countries omitted include those where recreational landings are prohibited as well as those that have not reported.

Year	IT	SL†	TR	Total
1980		0		0
1981		0		0
1982		0		0
1983		0		0
1984		0		0
1985		0		582
1986		0.07		563
1987		0.14		546
1988		0.134		559
1989		0.11		543
1990		0.06		501
1991		0.058		498
1992		0.092		489
1993		0.078		486
1994		0.036		493
1995		0.029		452
1996		0.143		416
1997		0.207		424
1998		0.088		431
1999		0.023		425
2000		0.004		485
2001		0.02		481
2002		0.033		471
2003		0.004		477
2004		0.006		465
2005		0		449
2006		0.004		1118
2007		0		425
2008		0		393
2009		0		461
2010	150	0		709
2011	61	0		446
2012	74	0		522
2013	70	0		452
2014	70	0		555
2015	60	0		516
2016	57	0		598
2017	41			501
2018	42			495
2019	34			491
2020*	25		87	272
2021*				0.182

* Preliminary data.

0 = no fishing or no information.

Empty cell = no data, not collected, or not pertinent.

The figures in the table are rounded unless < 1 tonne.

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 56 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 16 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			180.9
1951			264.6
1952			252.6
1953			400.9
1954			196.6
1955			304.4
1956			134.8
1957			156.7
1958			152.5
1959			334.5
1960	152.0	208.1	166.1
1961	130.4	117.4	181.1
1962	150.6	179.5	178.3
1963	194.6	224.7	150.2
1964	120.0	116.4	60.8
1965	135.2	78.8	114.6
1966	75.6	88.3	157.1
1967	80.8	97.8	111.6
1968	128.6	124.2	172.8
1969	67.3	89.6	115.7
1970	101.4	98.6	59.3
1971	55.5	84.9	61.8
1972	50.2	108.9	107.6
1973	55.5	47.3	134.3
1974	83.0	131.1	64.8
1975	71.4	54.2	122.1
1976	116.2	97.8	37.5
1977	114.5	74.2	78.8
1978	110.1	54.9	70.1
1979	147.5	94.6	58.4
1980	114.7	81.4	98.7
1981	89.3	57.9	41.3
1982	92.1	29.1	52.1
1983	48.9	23.4	46.9
1984	53.8	9.7	35.2
1985	52.2	7.8	66.0
1986	34.1	8.1	49.8
1987	59.0	9.3	47.5
1988	69.7	9.3	61.6
1989	45.1	4.0	36.7
1990	35.4	14.6	32.3
1991	17.3	3.3	37.7
1992	22.0	7.8	23.5
1993	24.1	6.9	14.3
1994	23.6	6.8	56.1
1995	31.1	4.9	18.2
1996	25.0	4.9	10.1
1997	41.1	4.3	22.8

Year	Elsewhere Europe index (%)	North Sea Index (%)	Yellow eel Europe index (%)
1998	16.3	3.1	19.6
1999	19.1	6.6	25.3
2000	19.4	4.7	20.7
2001	8.8	1.0	20.0
2002	12.3	2.6	36.6
2003	13.1	1.9	23.7
2004	7.3	0.6	23.7
2005	7.4	1.1	12.4
2006	6.0	0.5	16.0
2007	6.4	1.3	19.3
2008	5.7	1.2	14.9
2009	4.3	0.8	8.1
2010	4.8	0.7	11.6
2011	3.7	0.5	24.2
2012	4.9	0.5	12.7
2013	7.1	1.7	12.9
2014	12.0	2.5	26.8
2015	7.6	0.9	10.5
2016	11.5	1.7	14.0
2017	10.6	1.2	16.2
2018	10.4	1.8	16.6
2019	6.2	1.4	13.9
2020	7.1	0.9	16.1
2021*	5.4	0.6	

Figures in the table are rounded
 * Preliminary data

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Recommended citation: ICES. 2021. European eel (*Anguilla anguilla*) throughout its natural range. In Report of the ICES Advisory Committee, 2021. ICES Advice 2021, ele.2737. nea, <https://doi.org/10.17895/ices.advice.7752>.