Sea trout (*Salmo trutta*) in subdivisions 22–32 (Baltic Sea)

ICES advice on fishing opportunities

ICES advises that new data (landings and surveys) available for sea trout in the Baltic Sea do not change the perception of the stock status and that the advice for this stock given in 2017 (for 2018 and 2019) is still valid for 2020 and 2021. ICES advises that when the precautionary approach is applied, commercial and recreational fisheries in the Gulf of Bothnia (subdivisions 30 and 31) should be reduced to safeguard the remaining wild sea trout populations in the region, both locally and on their migration routes. Commercial and recreational fishing should also be reduced in the eastern part of subdivision 26 and in the southern parts of subdivisions 22 and 24, in order to protect weak wild populations in these areas. Existing fishing restrictions in other Baltic Sea areas (subdivisions 25, 27–29, and 32) should be maintained.

Management measures to help achieve exploitation reductions include mesh size and water depth restrictions for gillnets, effort reductions, size restrictions, and temporal and spatial fishing closures in river mouths and in certain coastal areas. Reductions in exploitation should also include fisheries that target other species, but where sea trout are caught as bycatch.

The improvement of habitats through restoration in many Baltic Sea rivers, as well as the improvement of accessibility to spawning and rearing areas, is needed for the recovery of sea trout populations.

Stock development over time

Nominal catches have declined over time (Figure 1).

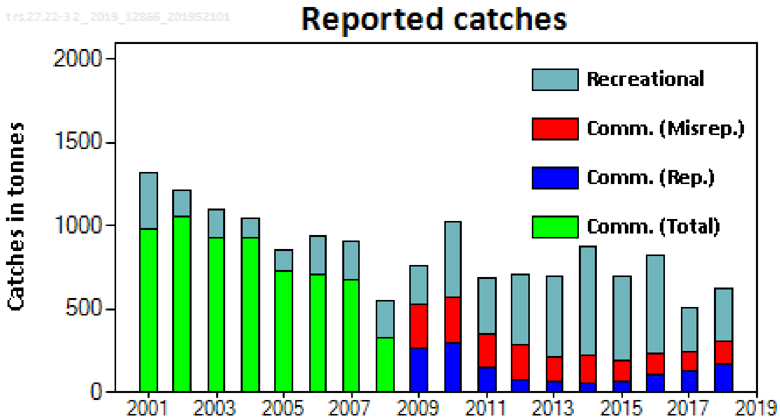

Figure 1 Sea trout in subdivisions 22–32 (Baltic Sea). Reported catches in the years 2001–2018: river catches (mainly recreational) and removals at sea (split into commercial and recreational nominal landings). From 2009 the total commercial reported catch is divided according to estimated misreporting of salmon as sea trout in the Main Basin offshore fishery. Total removals from the stock are the sum of all catches minus the misreported portion.

<u>Parr densities</u>

Densities of trout parr are presented in Figure 2. The differences seen between countries (Figures 2 and 4) partly reflect differences in monitoring sites, as well as the type of rivers or streams included. There is also a great variance ever year in the number of sampled sites, both within and among catchment areas.

A high variation is observed in the southern Baltic Sea (subdivisions 22–25), with no obvious long-term trends. In the eastern Main Basin (subdivisions 26, 28, and the eastern part of 29), average parr densities have increased in Estonia in the last decade. In the Gulf of Bothnia (subdivisions 30 and 31), average parr densities are low and highly variable without clear trends, whereas in the Gulf of Finland (subdivision 32) they have increased in Estonia and Finland.

Recruitment indices

Assessed recruitment indices in subdivisions 22–24 and 26 are moderate (Figures 3 and 4); they are estimated to be higher in subdivisions 25 and 27–32.

In Lithuania (Subdivision 26) the recruitment index is particularly low (Figure 4), which is believed to result from high summer temperatures and increasing commercial fisheries in Curonian Lagoon during the spawning migration. Long migration distances to the sea for many Lithuanian sea trout populations is another possible explanation for low status.

Most sea trout stocks in the Gulf of Bothnia (subdivisions 30 and 31), despite a relatively high index, are still considered weak as a result of diminished spawning runs. Although increasing spawner numbers have been observed in larger rivers over the last fifteen years, absolute numbers of ascending adults are still considered to be low. Bycatch of immature sea trout in sea fisheries (mainly coastal gillnets) continues to be high in the Gulf of Bothnia.

In recent years, Estonia has been considered to have the highest index in the Gulf of Finland, whereas it has remained relatively poor in Russia and Finland. Fishing regulations (e.g. release of wild fish, larger minimum size) recently introduced in Finland are likely to have contributed positively to stock status. Poaching remains a potential problem for sea trout populations in Russia.

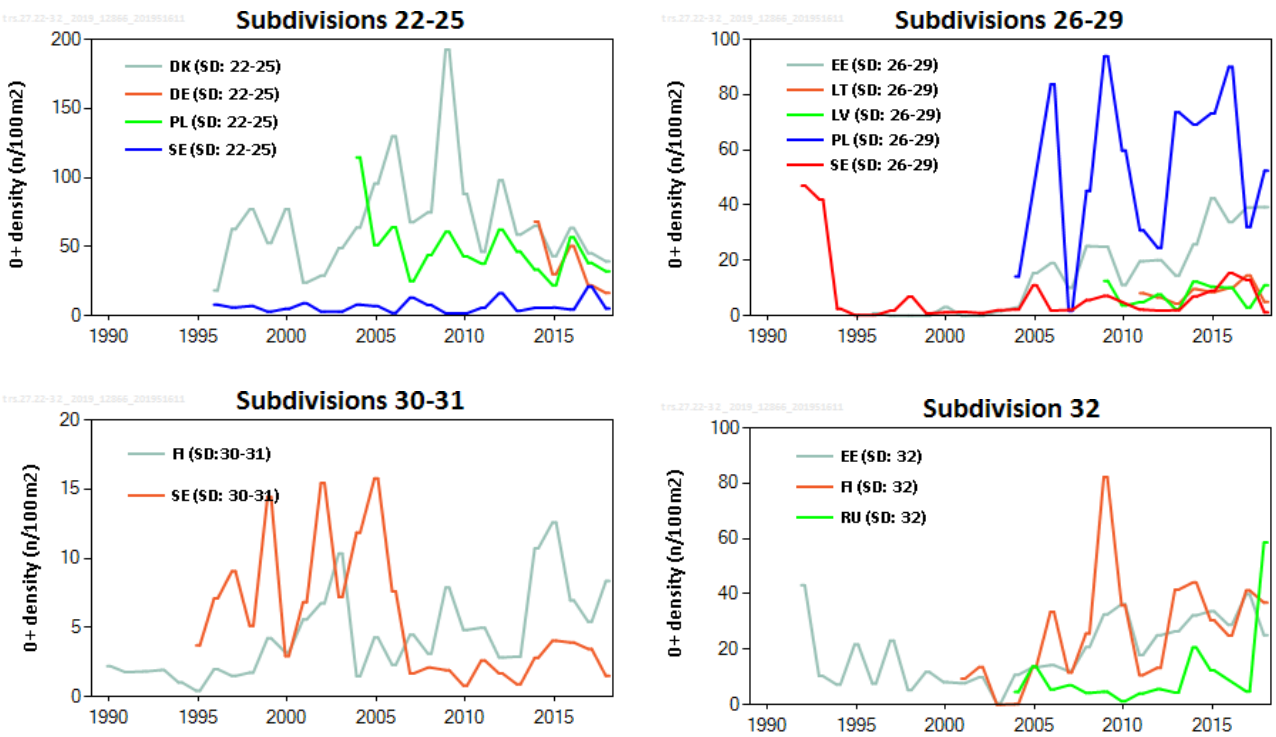

Figure 2 Sea trout in subdivisions 22–32 (Baltic Sea). Average densities of 0+ sea trout in (top left) Danish (DK), German (DE), Polish (PL), and Swedish (SE) rivers in ICES subdivisions 22–25; (top right) Estonian (EE), Lithuanian (LT), Latvian (LV), Polish (PL), and Swedish (SE) rivers in ICES subdivisions 26–29; (bottom left) Finnish (FI) and Swedish (SE) rivers in ICES subdivisions 30–31; and (bottom right) in Estonian (EE), Finnish (FI), and Russian (RU) rivers in ICES Subdivision 32. Note different scales on the *y*-axis. No density estimates were available from Poland (subdivisions 26–29) in 2005 and Russia (Subdivision 32) in 2016.

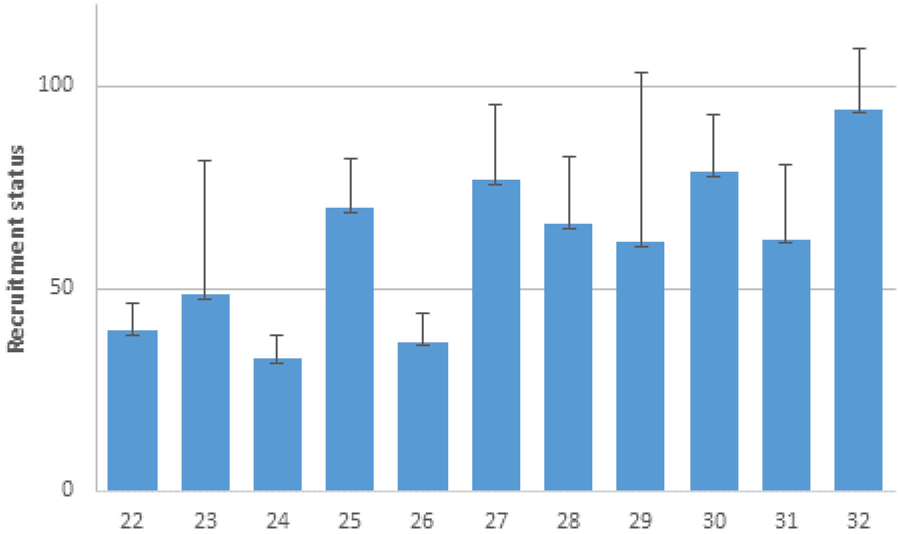

Figure 3 Sea trout in subdivisions 22–32 (Baltic Sea). Average relative recruitment index for 0+ sea trout parr in 2018 (with 95% confidence limits, only upper limit shown) by subdivision. Recruitment index is calculated as observed parr densities compared to modelled optimum parr densities by river system (100% = optimum level).

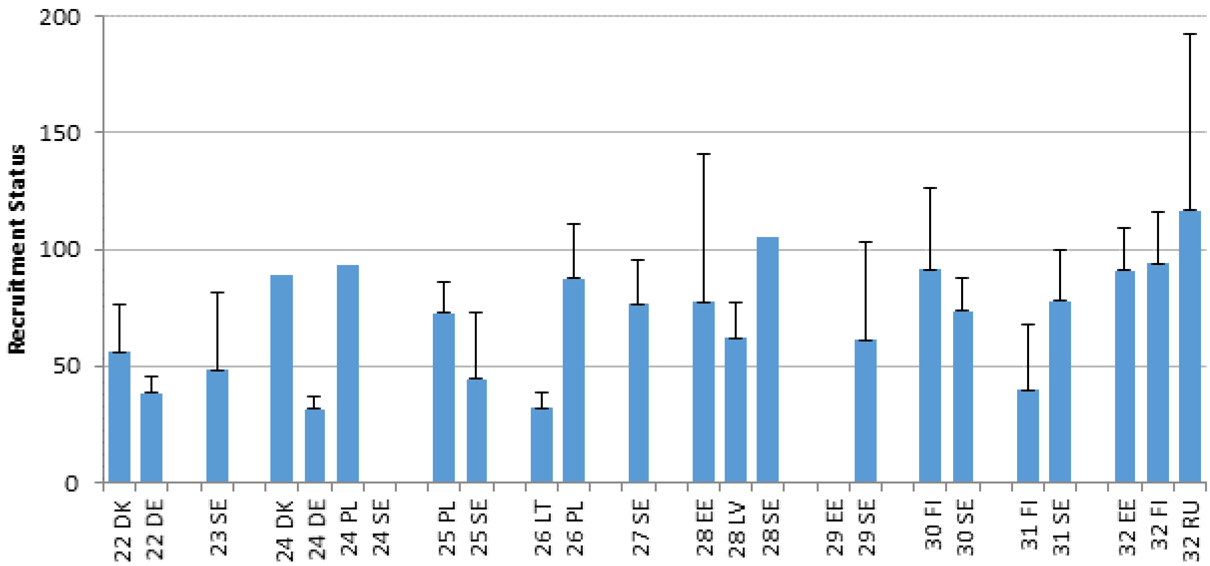

Figure 4 Sea trout in subdivisions 22–32 (Baltic Sea). Average relative recruitment index for 0+ sea trout parr in 2018 (with 95% confidence limits, only upper limit shown) by subdivision and country. Recruitment index is calculated as observed parr densities compared to modelled optimum parr densities by river system (100% = optimum level). DK = Denmark, DE = Germany, EE = Estonia, FI = Finland, LT = Lithuania, LV = Latvia, PL = Poland, SE = Sweden, and RU = Russia. Note that values for Denmark, Poland, and Sweden in Subdivision 24, and Sweden in Subdivision 28, are based on a single observation, preventing the calculation of confidence limits. The value for Sweden in Subdivision 24 is zero, whereas no data existed in 2018 for Estonia in Subdivision 29.

Catch scenarios

No quantitative assessment or forecast could be provided.

Basis of the advice

Table 1 Sea trout in subdivisions 22–32 (Baltic Sea). The basis of the advice.

Advice basis	Precautionary approach.
Management plan	There is no management plan for sea trout in the Baltic Sea.

Quality of the assessment

The assessment of sea trout status is based on electrofishing surveys, habitat data, other available information (e.g. spawner and smolt counts, sea ages of sea trout caught as bycatch), and expert knowledge. The approach used for the assessment of sea trout is still under development. For example, model-predicted densities could be improved to more adequately reflect interregional differences in productivity.

The quality, sampling strategy, and comparability of results from electrofishing surveys are variable. The data collection could be improved through a standardized approach, as well as by the inclusion of index rivers. In some areas of the Baltic Sea, electrofishing monitoring of sea trout is restricted to sites that have been established specifically for salmon; these sites may not be optimal for the monitoring of sea trout. The quality of the assessment could also be improved by including information on life stages and stock composition at sea, such as the results of tagging and genetic studies.

There are doubts about the accuracy of the total commercial catch, particularly about the reported landings. A proportion of the salmon catches in the Main Basin longline fishery is misreported as sea trout (ICES, 2019), resulting in overestimation of sea trout catches (Table 5). In addition, discarding of undersized sea trout mainly takes place in the coastal fisheries, but no discard data are available from any fisheries.

The available information (e.g. tagging data) suggests that a significant amount of undersized sea trout are caught as bycatch in the gillnet fishery for other species. A recent pilot study conducted in Finnish waters suggested a survival rate of approximately 60% in spring and late autumn for sea trout released from whitefish gillnets (ICES, 2016). However, the survival rate of small sea trout released back to the sea in warmer waters is likely much lower than 60%. The amount of seal-damaged sea trout is unknown in most countries, but could be significant (Larsen *et al.*, 2015).

Recreational fisheries are significant in many countries, but catch estimates are either uncertain and incomplete or totally missing for several areas. More emphasis should be placed on estimating these catches, as they have the highest impact on the populations (Figure 1).

More precise information on the extent and distribution of catches in both commercial and recreational fishing would benefit the assessment.

Sea trout is an anadromous form of brown trout (*Salmo trutta L.*). Sea trout parr usually live in the same water system as resident brown trout; they breed together and genetically belong to the same population. This increases the uncertainty of parr data for sea trout assessment. Studies using microchemistry on parr otoliths should be used to estimate the reproductive contribution of resident and anadromous trout females in different regions.

Issues relevant for the advice

In some areas, parr densities are low and total exploitation (recreational and commercial) is considered to be too high to allow recovery. Therefore, exploitation rates should be reduced in those areas (subdivisions 30 and 31, the eastern part of Subdivision 26, and the southern parts of subdivisions 22 and 24). Because of the migratory behaviour of sea trout, the same advice applies to nearby areas.

Most of the sea trout in the Baltic Sea migrate to coastal areas near their home river and are therefore exploited locally, but there are stocks, subpopulations, and individuals with much longer migrations. Recent genetic studies indicate that long-distance migrations are more common than previously recognized. This migratory behaviour necessitates international cooperation in management for sea trout stocks.

There is a large variability in the habitat quality of sea trout rivers. Although many rivers should be suitable habitats for sea trout, many populations are reported to be limited by poor habitat conditions and migration obstacles. Habitat restoration and improved connectivity should be promoted where needed, and accessibility to spawning and nursery areas should be secured.

There is growing evidence that increased predation pressure on sea trout, mainly from seals and birds (Jepsen *et al.*, 2018), in some areas constitutes a high mortality factor that may be much higher than human exploitation.

Reference points

No reference points are available for sea trout.

For calculation of recruitment indices for sea trout stocks in different areas, ICES uses densities of sea trout parr expressed as a percentage of model-predicted optimal densities. These are derived from multiple regression on the highest observed values from the last fifteen years, combined with habitat parameters (ICES, 2011, 2019).

Basis of the assessment

Table 2 Sea trout in subdivisions 22–32 (Baltic Sea). The basis of the assessment and advice.

ICES stock data category	3 (ICES, 2018).
Assessment type	Evaluation of the recruitment index of stocks by comparing the observed parr densities to model-predicted optimal parr densities.
Input data	Parr densities from most of the rivers, smolt and spawner counts in some rivers (1990–2018). Catches 1979–2018; international landings, tag returns, age composition.
Discards and bycatch	Not included in the assessment, but bycatch is known to be high in some areas. There is no available information on discards.
Indicators	None.
Other information	None.
Working group	Assessment Working Group on Baltic Salmon and Trout (WGBAST).

Information from stakeholders

There is no additional available information.

History of the advice, catch, and management

Table 3 Sea trout in subdivisions 22–32 (Baltic Sea). ICES advice, management, and landings.

Year	ICES advice	Predicted catch corresp. to advice	Agreed TAC	Nominal commercial landings (t)*
2003	No advice.	-	-	934
2004	No advice.	-	-	926
2005	Implement spatial restrictions, min. mesh size, and effort limitation.	-	-	732
2006	Implement spatial restrictions, min. mesh size, and effort limitation. Urgent need to reduce exploitation in SDs 30–32.	-	-	707
2007	Implement spatial restrictions, min. mesh size, and effort limitation. Urgent need to reduce exploitation in SDs 30–32.	-	-	677
2008	Framework for advice under revision. No new advice.	-	-	331
2009	Reduce exploitation in SDs 30–32 and implement fishing restrictions. In SDs 22–29, improve river habitats.	-	-	488
2010	Reduce exploitation in SDs 30–32 and enforce fishing restrictions. In SDs 22–29, improve river habitats and maintain current restrictions.	-	-	474
2011	In SDs 30–32 enforce fishing restrictions, implement min. mesh size and effort limitations, and increase protective areas. In SDs 22–29, improve river habitats and maintain current restrictions.	-	-	300
2012	No new advice, same as for 2011.	-	-	254
2013	Reduce exploitation in SDs 30–32 and maintain current fishing restrictions in SDs 22–29. Improve river habitats.	-	-	207
2014	No new advice, same as for 2013.	-	-	202
2015	No new advice, same as for 2014.	-	-	197
2016	Reduce exploitation in SDs 30–31, eastern parts of SD 26, and southern parts of SDs 22 and 24. Maintain current fishing restrictions in other Baltic Sea areas. Improve river habitats.	-	-	240
2017	Same as for 2016.	-	-	225
2018	Reduce exploitation in SDs 30–31, eastern parts of SD 26, and southern parts of SDs 22 and 24. Reduce bycatch of sea trout in fisheries targeting other species. Maintain current fishing restrictions in other Baltic Sea areas. Improve river habitats.	-	-	**311
2019	Same as for 2018.	-	-	
2020	Precautionary approach (same as for 2018–2019).			
2021	Same as for 2020.			

* Total sea trout catches are expected to be much larger, as there are also recreational catches, discards, and potential unreporting.
** Preliminary.

History of catch and landings

Historically, commercial catches have been much larger than present catches. There has been a significant decrease in the commercial catch from 2004 to 2013. The Main Basin is the most important area for the commercial fisheries.

Data on recreational catches are incomplete. It is considered that recreational catches could at present be up to three times the commercial catch.

There is no specific sea trout fishery in the Gulf of Bothnia and the Gulf of Finland, but sea trout are caught as bycatch in fisheries targeting whitefish, pikeperch, and perch. A significant part of this fishery is recreational.

Table 4 Sea trout in subdivisions 22–32 (Baltic Sea). Nominal catches (commercial + recreational, and in tonnes round fresh weight) of sea trout in the Baltic Sea in the years 1979–2000. Commercial catches after 2000 are presented in Table 5 and recreational catches after 2000 in Table 6. S = sea, C = coast, and R = river.

Year	Main Basin																Total	Gulf of Bothnia						Total	Gulf of Finland				Total	Grand
	Denmark[1,4]	Estonia	Finland[2]			Germany[4]	Latvia		Lith.		Poland			Sweden[4]			Main	Finland[2]			Sweden			Gulf of	Estonia	Finland[2]			Gulf of	Total
	S + C	C	S	S + C	R	C	S + C	R	C	R	S[9]	S + C	R	S[6]	C[6]	R	Basin	S	C	R	S[6]	C[6]	R	Bothnia	C	S	C	R	Finland	
1979	3.0	na		10.0		na	na		na		na	81[3]	24.0	na	na	3.0	121.0		6.0	na	na	na	na	6.0	na		73.0	0.0	73.0	200.0
1980	3.0	na		11.0		na	na		na		na	48[3]	26.0	na	na	3.0	91.0		87.0	na	na	na	na	87.0	na		75.0	0.0	75.0	253.0
1981	6.0	na		51.0		na	5.0		na		na	45[3]	21.0	na	na	3.0	131.0		131.0	na	na	na	na	131.0	2.0		128.0	0.0	130.0	392.0
1982	17.0	na		52.0		1.0	13.0		na		na	80.0	31.0	na	na	3.0	197.0		134.0	na	na	na	na	134.0	4.0		140.0	0.0	144.0	475.0
1983	19.0	na		50.0		na	14.0		na		na	108.0	25.0	na	na	3.0	219.0		134.0	na	na	na	na	134.0	3.0		148.0	0.0	151.0	504.0
1984	29.0	na		66.0		na	9.0		na		na	155.0	30.0	na	na	5.0	294.0		110.0	na	na	na	na	110.0	2.0		211.0	0.0	213.0	617.0
1985	40.0	na		62.0		na	9.0		na		na	140.0	26.0	na	na	13.0	290.0		103.0	na	na	na	na	103.0	3.0		203.0	0.0	206.0	599.0
1986	18.0	na		53.0		na	8.0		na		na	91.0	49.0	7.0	9.0	8.0	243.0		118.0	na	1.0	24.0	na	143.0	2.0		178.0	0.0	180.0	566.0
1987	31.0	na		66.0		na	2.0		na		na	163.0	37.0	6.0	9.0	5.0	319.0		123.0	na	1.0	26.0	na	150.0	na		184.0	0.0	184.0	653.0
1988	28.0	na		99.0		na	8.0		na		na	137.0	33.0	7.0	12.0	7.0	331.0		196.0	na	na	44.0	42.0	282.0	3.0		287.0	0.0	290.0	903.0
1989	39.0	na		156.0		18.0	10.0		na		na	149.0	35.0	30.0	17.0	6.0	460.0		215.0	na	1.0	78.0	37.0	331.0	3.0		295.0	0.0	298.0	1,089.0
1990	48[3]	na		189.0		21.0	7.0		na		na	388.0	100.0	15.0	15.0	10.0	793.0		318.0	na	na	71.0	43.0	432.0	4.0		334.0	0.0	338.0	1,563.0
1991	48[3]	1.0		185.0		7.0	6.0		na		na	272.0	37.0	26.0	24.0	7.0	613.0		349.0	na	na	60.0	54.0	463.0	2.0		295.0	0.0	297.0	1,373.0
1992	27[3]	1.0		173.0		na	6.0		na		na	221.0	60.0	103.0	26.0	1.0	618.0		350.0	na	na	71.0	48.0	469.0	8.0		314.0	0.0	322.0	1,409.0
1993	59[3]	1.0		386.0		14.0	17.0		na		na	202.0	70.0	125.0	21.0	2.0	897.0		160.0	na	na	47.0	43.0	250.0	14.0		704[7]	0.0	718.0	1,865.0
1994	33[8,3]	2.0		384.0		15[8]	18.0		+		na	152.0	70.0	76.0	16.0	3.0	769.0		124.0	na	na	24.0	42.0	190.0	6.0		642.0	0.0	648.0	1,607.0
1995	69[8,3]	1.0		226.0		13.0	13.0		3.0		na	187.0	75.0	44.0	5.0	11.0	647.0		162.0	na	na	33.0	32.0	227.0	5.0		114.0	0.0	119.0	993.0
1996	71[8,3]	2.0		76.0		6.0	10.0		2.0		na	150.0	90.0	93.0	2.0	9.0	511.0		151.0	25.0	na	20.0	42.0	238.0	14.0		78.0	3.0	95.0	844.0
1997	53[8,3]	2.0		44.0		+	7.0		2.0		na	200.0	80.0	72.0	7.0	7.0	474.0		156.0	12.0	na	16.0	54.0	238.0	8.0		82.0	3.0	93.0	805.0
1998	60.0	8.0		103.0		4.0	7.0		na		208.0	184.0	76.0	88.0	3.0	6.0	747.0		192.0	12.0	0.0	9.0	39.0	252.0	6.0		150.0	3.0	159.0	1,158.0
1999	110[8,3]	2.0		84.2		9.0	10.0		1.0		384.0	126.0	116.0	51.0	2.0	3.0	898.0		248.3	12.0	0.0	18.0	41.0	319.3	8.0		93.0	3.0	104.0	1,321.3
2000	58.0	4.0		64.0		9.0	14.0		1.0		443.0	299.0	70.0	42.0	4.0	3.0	1,011.0		197.0	12.0	0.0	14.0	36.0	259.0	10.0		56.0	3.0	69.0	1,339.0

[1] Additional sea trout catches are included in the salmon statistics for Denmark until 1982.

[2] Finnish catches include about 70% non-commercial catches in 1979–1995, 50% in 1996–1997, 75% in 2000–2001.

[3] Rainbow trout included.

[4] Sea trout are also caught in the Western Baltic in sub-divisions 22 and 23 by Denmark, Germany and Sweden.

[5] Catches reported by licensed fishermen and from 1985 also catches in trapnets used by non-licensed fishermen.

[6] Finnish catches include about 85% non-commercial catches in 1993.

[7] ICES subdivisions 22 and 24.

[8] Catches in 1979–1997 included sea and coastal catches, since 1998 coastal (C) and sea (S) catches are registered separately.

na=Data not available.

\+ Catch less than 1 tonne.

Table 5 Sea trout in subdivisions 22–32 (Baltic Sea). Nominal commercial catches (in tonnes round fresh weight) of sea trout in the Baltic Sea (2001–2018). S = sea, C = coast, and R = river.

Year	Main Basin																Total Main Basin	Gulf of Bothnia				Total Gulf of Bothnia	Gulf of Finland				Total Gulf of Finland	Grand Total	Estimated misreported catch*
	Denmark	Estonia	Finland		Germany	Latvia			Lithuania		Poland			Sweden				Finland		Sweden			Estonia	Finland		Russia			
	S	C	S	C	S C	S	C	R	S	R	S	C	R	S	C	R		S	C	C	R		C	S	C	R			
2001	54	2	5	14	10	1	11			2	486	219	11	23	2	3	844	2	54	16	44	115	8	0	17		25	984	
2002	35	5	2	8	12	0	13			2	539	272	53	11	2		954	0	49	25		74	11	0	11		23	1051	
2003	40	2	1	4	9	1	5				583	169	32	8	3		858	0	41	21	0	62	7	0	7		14	934	
2004	46	3	1	5	12		7			1	606	122	36	9	3		851	1	39	21	0	61	7	0	7		14	926	
2005	14	4	1	7	14		7	1		1	480	86	20	5	3		644	0	46	24	0	70	6	0	11		18	732	
2006	44	10	1	10	12		7			1	414	98	17	6	2		623	1	40	20	0	61	9	0	13		23	707	
2007	26	4	2	8	9		8			1	354	133	39	6	3		592	0	45	15	0	61	13		12		26	678	
2008	18	4	1	11	13		8	0	0	2	34	90	48	4	3		236	0	47	19	0	67	8	0	18		26	328	
2009	12	7	1	8	4		10	0	0	2	259	103	26	3	3		439	0	46	17	1	64	11		17		28	530	-266
2010	8	5	0	6	3		5	0	0	2	343	81	30	2	3		489	0	37	20	1	58	11	0	10		22	568	-299
2011	6	5	0	5	3			6	0	2	139	65	39	1	2		275	0	33	18	1	53	12		10		22	350	-148
2012	11	8	0	5	18		4	1	0	3	37	74	26	0	3		191	0	41	18	2	61	14	0	16	0	29	281	-70
2013	4	7	0	6	14		5	1	0	11	43	44	8	0	3		148	0	29	14	1	44	12		9	0	21	212	-60
2014	10	5	0	6	14		5	1	0	5	21	72	28	0	3		170	0	22	11	0	33	10	0	7	0	17	220	-54
2015	8	5	0	4	14		4	0	0	6	13	83	7	0	2		145	0	16	13	1	30	11		6	0	17	192	-66
2016	1	6	0	3	12		5	0	0	4	62	86	3	0	2		184	0	18	10	0	29	14		6	0	20	232	-104
2017	6	5	0	3	9		4	0		1	111	41	1	0	3		184		16	9	16	41	13		6	0	19	244	-128
2018	3	7		1	10	0	6	1	0	7	179	55	3	0	2	0	274		13	9	0	22	10		6	0	16	312	-170

* Based on the estimated number of salmon misreported as sea trout in the Main Basin (ICES, 2019).

Table 6 Sea trout in subdivisions 22–32 (Baltic Sea). Nominal recreational catches (in tonnes round fresh weight) of sea trout in the Baltic Sea (2001–2018). S = sea, C = coast, and R = river.

	Main Basin							Total Main Basin	Gulf of Bothnia			Total Gulf of Bothnia	Gulf of Finland		Total Gulf of Finland	Whole of the Baltic	Grand Total
	Denmark	Estonia	Finland	Latvia		Poland	Sweden		Finland	Sweden			Estonia	Finland		Finland	
Year	C+R	C	R	C	R	R	R		R	C	R		C	R		C	
2001	n.a.							0.0	7.0			7.0		3.0	3.0	324.0	334.0
2002	n.a.		0.2				2.8	3.0	6.5		38.4	44.9		2.6	2.6	116.0	166.5
2003	n.a.		0.2				3.6	3.8	11.1		31.5	42.6		1.6	1.6	116.0	164.0
2004	n.a.		0.5				2.6	3.1	10.6		28.2	38.8		2.1	2.1	80.0	123.9
2005	n.a.		0.5				1.5	2.0	10.6		30.9	41.5		2.7	2.7	80.0	126.2
2006	n.a.		0.1				1.3	1.4	5.3		32.5	37.8		3.3	3.3	187.0	229.4
2007	n.a.		0.3				1.3	1.6	8.2		31.5	39.6		3.1	3.1	187.0	231.3
2008	n.a.		0.2				2.6	2.7	8.9		39.7	48.6		2.3	2.3	163.0	216.6
2009	n.a.		0.4				2.3	2.7	10.6		45.8	56.4		5.5	5.5	163.0	227.6
2010	346.0		0.4		0.1	1.6	3.3	351.3	7.3		39.1	46.4		1.2	1.2	56.0	454.9
2011	224.0		0.4			1.7	2.2	228.3	7.5	1.7	39.3	48.5		2.2	2.2	56.0	335.0
2012	260.0		0.3			2.4	2.2	264.9	10.6	2.5	38.9	51.9		3.8	3.8	109.0	429.6
2013	301.0	1.4	0.2	3.0		n.a.	1.3	306.9	10.6	1.5	46.2	58.3	3.3	3.8	7.1	109.0	481.3
2014	521.0	1.5	0.3	3.8		n.a.	0.7	527.3	5.2	1.4	43.0	49.6	3.1	2.2	5.3	71.0	653.3
2015	395.7	1.7	0.3	2.9		n.a.	0.6	401.2	1.7		27.6	29.3	4.6	1.0	5.6	71.0	507.1
2016	323.1	2.3	0.2	5.0	0.1	n.a.	0.4	331.1	1.8		21.7	23.6	4.9	0.5	5.4	232.0	592.1
2017	n.a.	1.9	0.3	3.7		n.a.	0.1	6.0	3.9		15.5	19.4	4.3	0.3	4.6	232.0	262.0
2018	47.06*	0.0	0.0	7.7		n.a.	0.0	54.8	3.0		15.5	18.5	6.4	0.7	7.0	232.0	312.3

*First half of 2018 only.

Summary of the assessment

Assessment results are presented at the beginning of the advice document (Figures 1–4).

Table 7 Sea trout in subdivisions 22–32 (Baltic Sea). Summary of the assessment. Average densities of sea trout parr (age 0+) in rivers in ICES subdivisions 22–32, by country: Denmark (DK), Poland (PL), Sweden (SE), Germany (GER), Estonia (EE), Lithuania (LT), Latvia (LV), Finland (FI), and Russia (RU). All values are in n × 100 m^{-2} (same data as in Figure 2).

Year	DK	PL	SE	GER	EE	LT	LV	PL	SE	FI	SE	EE	FI	RU
	Subdivisions 22–25				Subdivisions 26–29					Subdivisions 30–31		Subdivision 32		
1990										2.2				
1991										1.8				
1992									47.0	1.8		43.1		
1993									42.0	1.9		10.4		
1994									2.5	1.0		7.2		
1995									0.2	0.4	3.7	21.7		
1996	18.3		8.0		0.9				0.3	2.0	7.1	7.6		
1997	62.7		6.0		0.0				1.9	1.5	9.1	23.1		
1998	77.0		7.0		0.0				6.9	1.7	5.1	5.3		
1999	52.6		3.0		0.0				0.9	4.2	14.4	11.8		
2000	77.0		5.0		3.1				1.2	3.2	2.9	8.1		
2001	24.0		9.0		0.0				1.4	5.6	6.8	7.8	9.4	
2002	29.0		3.0		0.0				1.0	6.7	15.4	9.9	13.6	
2003	48.9		3.0		1.6				2.0	10.3	7.2	0.4	0.0	
2004	63.8	114.5	8.0		3.0			14.2	2.3	1.5	11.9	10.8	0.2	4.6
2005	95.5	51.2	7.0		15.4				11.0	4.3	15.8	13.5	13.6	13.8
2006	129.8	64.1	2.0		19.0			83.8	1.9	2.3	7.6	14.3	33.5	5.6
2007	67.8	25.2	13.0		10.2			1.8	2.1	4.5	1.7	12.2	11.7	7.0
2008	74.8	43.8	7.7		25.2			45.1	5.7	3.1	2.1	20.8	25.7	4.2
2009	192.5	60.6	1.8		25.0		12.6	93.8	7.2	7.9	1.9	32.6	82.2	4.7
2010	88.2	43.0	1.8		11.1		3.7	59.8		4.8	0.8	36.3	35.9	1.3
2011	46.4	37.8	5.7		19.7	8.2	5.0	30.9	2.2	5.0	2.6	17.9	10.7	4.0
2012	98.0	62.2	16.2		20.1	6.6	7.7	24.6	1.9	2.8	1.7	25.1	13.3	5.6
2013	58.7	46.3	3.6		14.6	4.4	2.4	73.6	2.0	2.9	0.9	26.5	41.5	4.4
2014	65.0	33.4	5.7	68.1	25.8	9.6	12.4	69.2	7.0	10.7	2.8	32.3	44.1	20.6
2015	43.1	22.2	5.9	30.2	42.5	8.6	10.5	73.2	9.0	12.6	4.0	33.7	30.5	12.4
2016	63.4	56.6	4.5	50.3	33.9	10.0	10.1	90.0	15.4	7.0	3.9	28.8	25.0	
2017	45.3	38.2	21.1	22.0	39.2	14.6	3.0	32.1	12.9	5.4	3.5	39.9	41.2	4.8
2018	39.3	32.1	5.2	16.5	39.3	5.0	11.0	52.4	1.2	8.4	1.5	25.1	36.8	58.6

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