

Herring (*Clupea harengus*) in subdivisions 30 and 31 (Gulf of Bothnia)

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches in 2021 should be no more than 65 018 tonnes.

Stock development over time

Catches have been in decline since 2017.

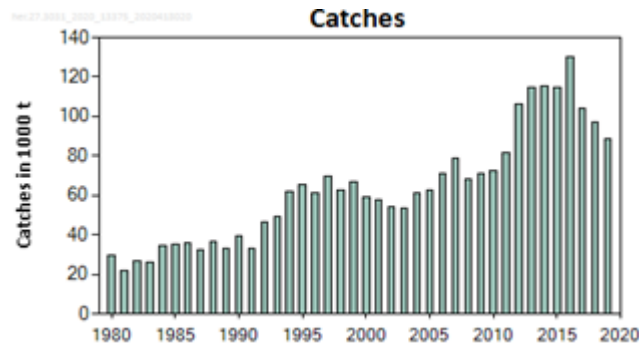


Figure 1 Catches from herring in subdivisions 30 and 31.

Stock and exploitation status

Table 1 Herring in subdivisions 30 and 31. State of the stock and the fishery relative to reference points.

		Fishing pressure			Stock size					
		2017	2018	2019	2017	2018	2019			
Maximum sustainable yield	F_{MSY}	?	?	?	Unknown	$MSY B_{trigger}$?	?	?	Unknown
Precautionary approach	F_{pa}, F_{lim}	?	?	?	Unknown	B_{pa}, B_{lim}	?	?	?	Unknown
Management plan	F_{MGT}	—	—	—	Not applicable	B_{MGT}	—	—	—	Not applicable
Qualitative evaluation	-	?	?	?	Unknown	-	?	?	?	Unknown

Catch scenarios

Last years' advice was based on a category 3 assessment. Due to data input issues, it was decided to downgrade the assessment to category 5. The ICES framework for category 5 stocks was applied (ICES, 2012). The precautionary buffer was last applied in 2019 and has not been applied since. The advice is the same as the one provided last year (27% reduction of the catches in 2018).

Table 2 Herring in subdivisions 30 and 31. Annual catch scenarios.

Advised catch for 2020	65018 tonnes	
Discard rate	Negligible	
Precautionary buffer	Not applied (last applied in 2019)	-
Catch advice for 2021	65018 tonnes	

Basis of the advice

Table 3 Herring in subdivisions 30 and 31. The basis of the advice.

Advice basis	ICES precautionary approach.
Management plan	The EU multiannual plan (MAP) in place for stocks in the Baltic Sea includes herring in subdivisions 30 and 31 (EU, 2018). The plan cannot be applied, as it requires a full analytical category 1 assessment.

Quality of the assessment

The stock was benchmarked in 2020; however, after the meeting, issues were discovered in the survey data, which could not be rectified in time for the 2021 catch advice to be provided based on a benchmarked assessment.

Issues relevant for the advice

The basis for the advice is the ICES precautionary approach (category 5 assessment). Thus, the Management Plan cannot be applied as this requires a full analytical category 1 assessment.

Reference points

There are no reference points for this stock.

Basis of the assessment

Table 4 Herring in subdivisions 30 and 31. Basis of the assessment and advice.

ICES stock data category	5 (ICES, 2019a).
Assessment type	No analytical assessment (ICES, 2020).
Input data	Catches.
Discards and bycatch	Not included; discarding and bycatch are considered negligible.
Indicators	None.
Other information	Last interbenchmarked in 2018 (ICES, 2019b).
Working group	Baltic Fisheries Assessment Working Group (WGBFAS)

Information from stakeholders

There is no additional information available.

History of the advice, catch, and management

Table 5a Herring in subdivisions 30 and 31. ICES advice, TAC, and catches. All weights are in tonnes.

Year	ICES advice for Subdivision 30	ICES advice for Subdivision 31	Catch corresponding to advice	Agreed TAC*	ICES catch
1987					32628
1988					36418
1989					33086
1990					39180
1991	TAC for the eastern part of the subdivision, allowance for the western part	TAC for the eastern part of the subdivision, allowance for the western part	41000	84000	33419
1992	<i>Status quo</i> F	<i>Status quo</i> F	47000	84000	46610
1993	<i>Status quo</i> F	Increase in yield by increasing F	39000	90000	49314
1994	No specific advice	Increase in yield by increasing F	41000	90000	61986
1995	TAC	Increase in yield by increasing F	91400	110000	65547
1996	TAC	Increase in yield by increasing F	91400	110000	61303
1997	$F(97) = 1.4 \times F(95)$	Increase in yield by increasing F	78000	110000	69808
1998	<i>Status quo</i> F	Increase in yield by increasing F	50000	110000	62474
1999	Reduce catches	Increase in yield by increasing F	-	94000	66502

Year	ICES advice for Subdivision 30	ICES advice for Subdivision 31	Catch corresponding to advice	Agreed TAC*	ICES catch
2000	Reduce catches	Increase in yield by increasing F	-	85000	58852
2001	$F_{pa} = 0.21$	Exploitation rate should not be increased	36000	72000	57806
2002	F below F_{pa}	Exploitation rate should be decreased	53000	64000	53969
2003	F below F_{pa}	No increase in catches	53000	60000	53644
2004	F below F_{pa}	No increase in catches	53000	61200	61423
2005	F below F_{pa}	No increase in catches	63700	64000	62911
2006	F below F_{pa}	Less than average catches (2002–2004)	92600/97600	91600	71318
2007	F below F_{pa}	Less than average catches (2002–2005)	88100	82800	78678
2008	F below F_{pa}	No increase in catch	70300	87000	67914
2009	Same advice as last year	Same advice as last year	70300	82700	71248
2010	F below F_{pa}	Same advice as last year	112600	103300	72590
2011	F below F_{pa}	No basis for advice	118000	104400	81850
2012	MSY framework	No increase in catches	107000	106000	106007
2013	MSY framework (F_{MSY})	Reduce catches by more than 20%	99100	106000	114396
2014	MSY approach (F_{MSY})	Increase catches by no more than 20%	142300	138000	115366
2015	MSY approach (F_{MSY})	Increase catches by no more than 20%	186434	158470	114942
2016	MSY approach ($F_{MSY} = 0.15$)	Precautionary approach ($\leq 20\%$ increase in catch)	103254	103254	130029
2017	MSY approach ($F_{MSY} = 0.15$)	Precautionary approach	140998	140998	104358

* TAC for subdivisions 29N, 30, and 31 (IBSFC Management Unit 3), and from 2005 for subdivisions 30 and 31.

Table 5b Herring in subdivisions 30 and 31. ICES advice, TAC, and catches. All weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	Agreed TAC	ICES catch
2018	MSY approach ($F_{MSY} = 0.21$)	≤ 95566	84599	97366
2019	MSY approach ($F_{MSY} = 0.21$)	≤ 88703	88703	88907
2020	Precautionary approach	≤ 65018	65018	
2021	Precautionary approach	≤ 65018		

History of the catch and landings

Table 6 Herring in subdivisions 30 and 31. Catch distribution by fleet in 2019, as estimated by ICES.

Catch (2019)	Landings			Discards
	96% trawls	3% trapnets	1% gillnets	
88907 tonnes	88907 tonnes			Discarding is negligible

Table 7 Herring in subdivisions 30 and 31. History of ICES commercial catches by subdivision (SD) for each country participating in the fishery. All weights are in tonnes.

Year	Finland		Sweden		Total		Grand total
	SD 30	SD 31	SD 30	SD 31	SD 30	SD 31	
1980	18758	8899	1392	760	20150	9659	29809
1981	12410	7206	1290	620	13700	7826	21526
1982	16117	7982	1730	670	17847	8652	26499
1983	16104	7011	2397	696	18501	7707	26208
1984	23228	8322	2401	594	25629	8916	34545
1985	24235	8595	1885	717	26120	9312	35432
1986	23988	8754	2501	336	26489	9090	35579
1987	22615	7788	1905	320	24520	8108	32628

Year	Finland		Sweden		Total		Grand total
	SD 30	SD 31	SD 30	SD 31	SD 30	SD 31	
1988	24478	8501	3172	267	27650	8768	36418
1989	25453	4005	3205	423	28658	4428	33086
1990	28815	7603	2467	295	31282	7898	39180
1991	23219	6800	3000	400	26219	7200	33419
1992	35610	6900	3700	400	39310	7300	46610
1993	36600	8752	3579	383	40179	9135	49314
1994	53860	5195	2520	411	56380	5606	61986
1995	58806	3898	2280	563	61086	4461	65547
1996	54372	5080	1737	114	56109	5194	61303
1997	63532	4195	1995	86	65527	4281	69808
1998	54115	5358	2777	224	56892	5582	62474
1999	60483	3909	1862	248	62345	4157	66502
2000	54886	2479	1374	113	56260	2592	58852
2001	52987	2755	1997	67	54984	2822	57806
2002	46315	3532	3903	219	50218	3751	53969
2003	45932	3855	3707	150	49639	4005	53644
2004	50236	5831	5214	142	55450	5973	61423
2005	55422	4800	2520	169	57942	4969	62911
2006	66962	2684	1403	269	68365	2953	71318
2007	72116	2992	3317	253	75433	3245	78678
2008	61756	2309	3674	175	65430	2484	67914
2009	64881	2166	3992	209	68873	2375	71248
2010	68760	1898	1755	177	70515	2075	72590
2011	75130	3218	3370	132	78500	3350	81850
2012	94248	5206	6392	161	100640	5367	106007
2013	98935	4486	10849	126	109784	4612	114396
2014	97779	4637	12755	195	110534	4832	115366
2015	96414	4370	14001	157	110415	4527	114942
2016	103432	4371	22067	159	125499	4530	130029
2017	90490	3068	10672	127	101162	3195	104358
2018	78770	2100	16 210	286	94980	2386	97366
2019	71113	2130	15473	190	86586	2320	88907

Summary of the assessment

There is no analytical assessment for this stock.

Sources and references

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