

Herring (*Clupea harengus*) in subdivisions 25–29 and 32, excluding the Gulf of Riga (central Baltic Sea)

ICES stock advice

ICES advises that when the EU multiannual plan (MAP) is applied, catches in 2018 that correspond to the F ranges in the plan are between 200 236 tonnes and 331 510 tonnes. According to the MAP, catches higher than those corresponding to F_{MSY} (267 745 tonnes) can only be taken under conditions specified in the MAP. This advice applies to all catches from the stock, including those taken in Subdivision 28.1.

Stock development over time

Spawning-stock biomass (SSB) decreased until 2001 and then increased, and it has been above $MSY B_{trigger}$ since 2006. Fishing mortality (F) increased until 2000 and then decreased, remaining below F_{MSY} since 2004. Recruitment in 2015 is estimated to be the highest of the whole time-series.

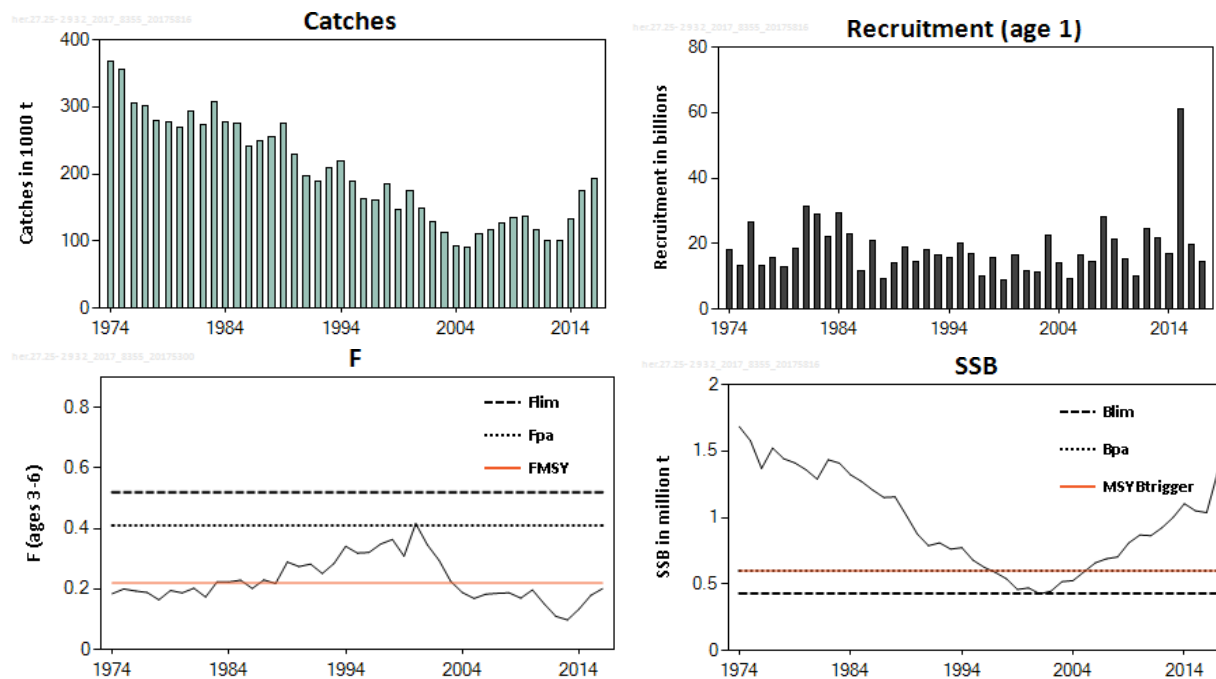


Figure 1 Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga. Summary of the stock assessment. (SSB in 2017 is predicted).

Stock and exploitation status

Table 1 Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga. State of the stock and fishery relative to reference points.

| | | Fishing pressure | | | | Stock size | | | | |
|---------------------------|-------------------|------------------|------|------|-----------------------|-------------------|------|------|---|----------------------------|
| | | 2014 | 2015 | 2016 | | 2015 | 2016 | 2017 | | |
| Maximum sustainable yield | F_{MSY} | ✓ | ✓ | ✓ | Below | $MSY B_{trigger}$ | ✓ | ✓ | ✓ | Above trigger |
| Precautionary approach | F_{pa}, F_{lim} | ✓ | ✓ | ✓ | Harvested sustainably | B_{pa}, B_{lim} | ✓ | ✓ | ✓ | Full reproductive capacity |
| Management plan | F_{ranges} | ✓ | ✓ | ✓ | Within range | $MSY B_{trigger}$ | ✓ | ✓ | ✓ | Above trigger |

Catch options

Table 2 Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga. The basis for the catch options.

| Variable | Value | Source | Notes |
|--------------------------|----------|-------------|---|
| F ages 3–6 (2017) | 0.195 | ICES (2017) | TAC constraint* |
| SSB (2017) | 1341625 | ICES (2017) | In tonnes |
| R _{age1} (2017) | 14587000 | ICES (2017) | RCT3 estimate (in thousands) |
| R _{age1} (2018) | 16114962 | ICES (2017) | Geometric mean 1988–2015 (in thousands) |
| Total catch (2017) | 224989 | ICES (2017) | TAC constraint* (in tonnes) |
| Discards (2017) | 0 | ICES (2017) | |

* TAC constraint in 2017: EU share 191 129 t + Russian quota 29 500 t + central Baltic herring stock caught in Gulf of Riga 4 580 t (mean 2011–2015) – Gulf of Riga herring stock caught in central Baltic Sea 220 t (mean 2011–2015) = 224 989 t.

Table 3 Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga. Annual catch options. All weights are in tonnes.

| Basis | Total catch (2018) | F _{total} (2018) | SSB (2018) | SSB (2019) | % SSB change * | % Advice change ** |
|--|--------------------|---------------------------|------------|------------|----------------|--------------------|
| ICES advice basis | | | | | | |
| EU MAP [^] : F _{MSY} | 267745 | 0.22 | 1283487 | 1113149 | -13% | 24% |
| EU MAP: F _{lower} | 200236 | 0.160 | 1309914 | 1194895 | -9% | -7% |
| EU MAP: F _{upper} | 331510 | 0.28 | 1257629 | 1037734 | -17% | 53% |
| Other options | | | | | | |
| ICES MSY approach: F _{MSY} | 267745 | 0.22 | 1283487 | 1113149 | -13% | 24% |
| F = 0 | 0 | 0 | 1383265 | 1448388 | 5% | -100% |
| F _{pa} | 457890 | 0.41 | 1203489 | 893608 | -26% | 112% |
| F _{lim} | 553453 | 0.52 | 1159630 | 789549 | -32% | 156% |
| SSB (2019) = B _{lim} | 924535 | 1.10 | 955800 | 429915 | -55% | 328% |
| SSB (2019) = B _{pa} | 739660 | 0.77 | 1065542 | 599790 | -44% | 242% |
| SSB (2019) = MSY B _{trigger} | 739660 | 0.77 | 1065195 | 599790 | -44% | 242% |
| F = F ₂₀₁₇ | 239413 | 0.195 | 1294692 | 1147220 | -11% | 11% |
| F = MAP F _{MSY lower} | 200236 | 0.16 | 1309914 | 1194895 | -9% | -7% |
| F = MAP F _{MSY lower} + 0.01 | 211757 | 0.17 | 1305469 | 1180807 | -10% | -2% |
| F = MAP F _{MSY lower} + 0.02 | 223170 | 0.18 | 1301041 | 1166908 | -10% | 3% |
| F = MAP F _{MSY lower} + 0.03 | 234473 | 0.19 | 1296629 | 1153196 | -11% | 8% |
| F = MAP F _{MSY lower} + 0.04 | 245670 | 0.20 | 1292232 | 1139667 | -12% | 14% |
| F = MAP F _{MSY lower} + 0.05 | 256760 | 0.21 | 1287852 | 1126319 | -13% | 19% |
| F = MAP F _{MSY lower} + 0.06 | 267745 | 0.22 | 1283487 | 1113149 | -13% | 24% |
| F = MAP F _{MSY lower} + 0.07 | 278626 | 0.23 | 1279138 | 1100155 | -14% | 29% |
| F = MAP F _{MSY lower} + 0.08 | 289405 | 0.24 | 1274805 | 1087334 | -15% | 34% |
| F = MAP F _{MSY lower} + 0.09 | 300081 | 0.25 | 1270488 | 1074684 | -15% | 39% |
| F = MAP F _{MSY lower} + 0.10 | 310657 | 0.26 | 1266186 | 1062202 | -16% | 44% |
| F = MAP F _{MSY lower} + 0.11 | 321133 | 0.27 | 1261900 | 1049886 | -17% | 49% |
| F = MAP F _{MSY upper} | 331510 | 0.28 | 1257629 | 1037734 | -17% | 53% |

* SSB 2019 relative to SSB 2018.

** Catch in 2018 relative to Advice for 2017 (216 000 t).

[^] MAP multiannual plan (EU, 2016).

Basis of the advice

Table 4 Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga. The basis of the advice.

| | |
|-----------------|---|
| Advice basis | EU Baltic multiannual plan |
| Management plan | The EU multiannual plan (MAP) in place for stocks in the Baltic Sea includes herring (EU, 2016). The advice is based on the provisions of the plan and is considered precautionary. |

Quality of the assessment

Preliminary investigations indicate that the stocks of western Baltic spring-spawning herring (Division 3.a and subdivisions 22–24) and central Baltic herring (subdivisions 25–29 and 32, excluding Gulf of Riga herring) are mixing in subdivisions 24–26 (Gröhler *et al.*, 2013). This is not taken into account in the current assessment but should be investigated further. Species misreporting of herring has occurred in the past (Hentati-Sundberg *et al.*, 2014) and there are again indications that it is a problem in some nations.

Historical assessments have generally shown an overall upwards revision in SSB and a downwards revision in fishing mortality.

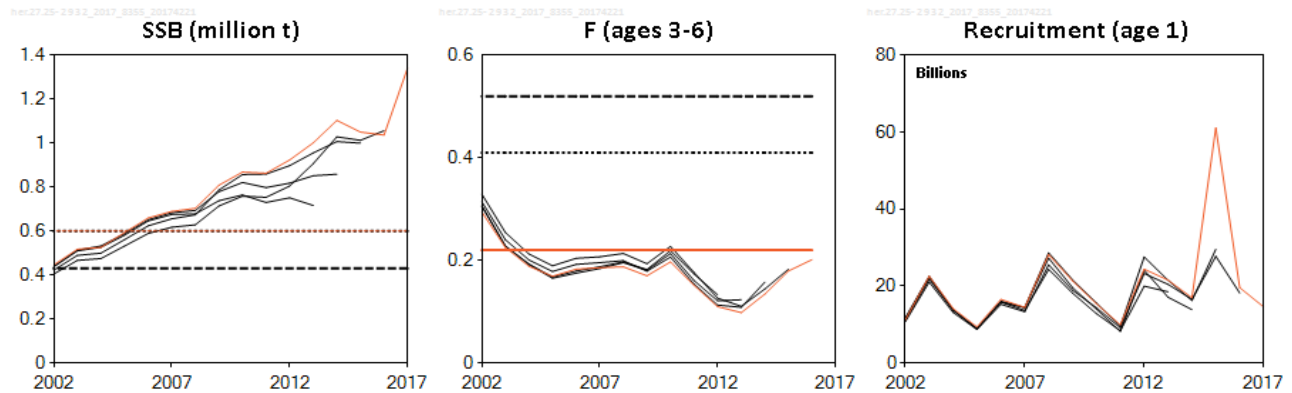


Figure 2 Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga. Historical assessment results (final-year recruitment estimates included).

Issues relevant for the advice

The F_{MSY} ranges in the EU Baltic Sea Multiannual Plan (MAP; EU, 2016) are consistent with the ranges provided by ICES (2015); these were evaluated to result in no more than 5% reduction in long-term yield compared with MSY. The ICES advice according to the MAP is based on the provisions of the plan and is considered precautionary. The ICES advice rule is used, i.e. F is adjusted by the factor $SSB/MSY B_{trigger}$ when SSB is below $MSY B_{trigger}$. For this stock, the SSB in 2018 is above $MSY B_{trigger}$. In such a situation, catch options applicable under the MAP correspond to fishing mortalities between F_{lower} and F_{upper} . However, according to the MAP, catches corresponding to F higher than F_{MSY} (i.e. Column B of Annex I in the MAP) can only be taken under conditions specified in the MAP.

Under the EU landing obligation, which entered into force in 2015, up to 9% interspecies quota transfers are allowed for stocks that are considered to be within safe biological limits (EU, 2013 – Article 15). Quota transfers were not considered in this catch advice. To achieve F_{MSY} exploitation, any transfer under this regulation should be accounted for in setting the TAC.

A mixture of central Baltic herring (subdivisions 25–27, 28.2, 29, and 32) and the Gulf of Riga (Subdivision 28.1) herring is caught in the central Baltic Sea. In the assessment and the advice the central Baltic herring stock is considered to be caught both in and outside the central Baltic Sea. The TAC (sum of the EU and the Russian autonomous quotas) is set for herring caught in the central Baltic management area, which includes also a small amount of Gulf of Riga herring caught in the central Baltic Sea but excludes central Baltic herring caught outside the central Baltic Sea.

The TAC value proposed for the central Baltic area is based on the advised catch for the central Baltic herring stock, plus the assumed catch of the Gulf of Riga herring taken in the central Baltic, minus the assumed catch of herring from the central Baltic stock taken in the Gulf of Riga. The values of the two latter are given by the average over the last five years.

- Central Baltic herring assumed to be taken in the Gulf of Riga in 2018 (Subdivision 28.1) is 4340 t (average 2012–2016);

- Gulf of Riga herring assumed to be taken in Subdivision 28.2 in 2018 is 260 t (average 2012–2016).

As an example, following the ICES MSY approach (here identical to the MAP F_{MSY}), catches from the central Baltic herring stock in 2018 should be no more than 267 745 t. The corresponding TAC in the central Baltic management area for 2018 would be calculated as $267\,745\text{ t} + 260\text{ t} - 4340\text{ t} = 263\,665\text{ t}$.

Activities that have a negative impact on the spawning habitat of herring should not occur, unless the effects of these activities have been assessed and shown not to be detrimental (ICES, 2003, 2014).

Reference points

Table 5 Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga. Reference points, values, and their technical basis.

| Framework | Reference point | Value | Technical basis | Source |
|------------------------|------------------------------|-----------|---|--|
| MSY approach | MSY $B_{trigger}$ | 600 000 t | B_{pa} | ICES (2013) |
| | F_{MSY} | 0.22 | Stochastic simulations with Beverton, Ricker, and segmented regression stock–recruitment curve from the full time-series (1974–2013). | ICES (2015) |
| Precautionary approach | B_{lim} | 430 000 t | B_{loss} | ICES (2013) |
| | B_{pa} | 600 000 t | $1.4 \times B_{lim}$ | ICES (2013) |
| | F_{lim} | 0.52 | Consistent with B_{lim} | ICES (2013) |
| | F_{pa} | 0.41 | Consistent with B_{pa} | ICES (2013) |
| Management plan | MAP MSY $B_{trigger}$ | 600 000 t | MSY $B_{trigger}$ | EU (2016 – Annex II column A) |
| | MAP B_{lim} | 430 000 t | B_{lim} | EU (2016 – Annex II column B) |
| | MAP F_{MSY} | 0.22 | F_{MSY} | EU (2016 – Annex I columns A and B) |
| | MAP target range F_{lower} | 0.16–0.22 | Consistent with the ranges provided by ICES (2015), resulting in no more than 5% reduction in long-term yield compared with MSY. | ICES (2015) and EU (2016 – Annex I column A) |
| | MAP target range F_{upper} | 0.22–0.28 | Consistent with the ranges provided by ICES (2015), resulting in no more than 5% reduction in long-term yield compared with MSY. | ICES (2015) and EU (2016 – Annex I column B) |

Basis of the assessment

Table 6 Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga. Basis of assessment and advice.

| | |
|--------------------------|---|
| ICES stock data category | 1 (ICES, 2016). |
| Assessment type | Age-based analytical assessment, XSA (ICES, 2017) that uses catches in the model and in the forecast. |
| Input data | Commercial catches (international landings, age and length frequencies from catch sampling); one survey acoustic index (BIAS); natural mortalities from multispecies model (SMS) until 2011, for 2012–2016 natural mortalities are based on regression of M against eastern Baltic cod SSB; fixed maturity ogive. |
| Discards and bycatch | Not included; considered negligible. |
| Indicators | None. |
| Other information | Last benchmarked in 2013 (ICES, 2013). |
| Working group | Baltic Fisheries Assessment Working Group (WGBFAS) |

Information from stakeholders

There is no available information.

History of the advice, catch, and management

Table 7 Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga. ICES advice and official landings. All weights are in tonnes.

| Year | ICES advice | Predicted catch corresp. to advice | Agreed TAC* | ICES catch SDs 25–29+32 |
|--------|--|--|-----------------------|-------------------------|
| 1988** | | 204000 | 399000 | 286000 |
| 1989** | | 176000 | 399000 | 290000 |
| 1990** | | 112000 | 399000 | 244000 |
| 1991** | TAC for entire area | 293000 | 402000 | 213000 |
| 1992** | F near present level | 343000 | 402000 | 210000 |
| 1993** | Increase in yield at higher F | 371000 | 560000 | 231000 |
| 1994** | Increase in yield at higher F | 317000–463000 | 560000 | 242000 |
| 1995** | TAC | 394000 | 560000 | 221000 |
| 1996** | TAC | 394000 | 560000 | 195000 |
| 1997** | No advice | - | 560000 | 208000 |
| 1998** | No advice | - | 560000 | 212000 |
| 1999** | Proposed $F_{pa} = (0.17)$ | 117000 | 476000 | 178000 |
| 2000** | Proposed $F_{pa} = (0.17)$ | 95000 | 405000 | 208000 |
| 2001** | Proposed $F_{pa} = (0.17)$ | 60000 | 300000 | 188000 |
| 2002** | $F < F_{pa}$ | < 73000 | Not agreed | 168000 |
| 2003** | $F < F_{pa}$ | < 72000 | 143000 | 154000 |
| 2004 | $F < F_{pa}$ | < 80000 | 171000 | 93000 ^{^^^} |
| 2005 | $F < F_{pa}$ (single-stock exploitation boundaries) | < 130000 | 130000 ^{***} | 92000 ^{^^^} |
| 2006 | $F < F_{pa}$ (single-stock exploitation boundaries) | < 120000 | 128000 ^{***} | 110000 ^{^^^} |
| 2007 | $F < F_{pa}$ (single-stock exploitation boundaries) | < 164000 | 133000 [^] | 116000 ^{^^^} |
| 2008 | $F < F_{pa}$ (single-stock exploitation boundaries) | < 194000 | 153000 [^] | 126154 ^{^^^} |
| 2009 | $F < F_{pa}$ (single-stock exploitation boundaries) | < 147000 | 143609 [^] | 134126 ^{^^^} |
| 2010 | $F < F_{pa}$ (single-stock exploitation boundaries) | < 103000 | 139776 ^{^^} | 136706 ^{^^^} |
| 2011 | MSY Framework ($F = 0.19$) | < 95000 | 120020 ^{^^} | 116785 ^{^^^} |
| 2012 | MSY transition ($F = F_{pa} = 0.19$) | < 92000 | 93317 ^{^^} | 100893 ^{^^^} |
| 2013 | MSY transition ($F = F_{pa} = 0.19$) | < 117000 | 101480 ^{^^} | 100954 ^{^^^} |
| 2014 | MSY approach | < 164000 | 132225 ^{^^} | 132700 ^{^^^} |
| 2015 | MSY approach ($F_{MSY} = 0.26$) | < 193000 | 186351 ^{^^} | 174433 ^{^^^} |
| 2016 | MSY approach ($F_{MSY} = 0.22$) | ≤ 201000 | 206605 ^{^^} | 192056 ^{^^^} |
| 2017 | MSY approach ($F_{MSY} = 0.22$) | ≤ 216000 | 220629 ^{^^} | |
| 2018 | MAP target F ranges: F_{lower} to F_{upper} ($F = 0.16$ – 0.28), but F higher than $F_{MSY} = 0.22$ only under conditions specified in MAP | 200236–331510, but catch higher than 267745 only under conditions specified in MAP | | |

* TAC for subdivisions 22–29S and 32.

** 1987–2003 incl. Gulf of Riga herring.

*** TAC for subdivisions 25–28(2), 29, and 32.

[^] EU TAC for subdivisions 25–28(2), 29, and 32.

^{^^} TAC is calculated as EU (subdivisions 25–28(2), 29, and 32) + Russian autonomous quotas.

^{^^^} Excl. the Gulf of Riga (Subdivision 28.1) herring stock.

History of the catch and landings

Table 8 Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga. Catch distribution by fleet in 2016 as estimated by ICES.

| Total herring catch in the central Baltic management area (2016) | Total catch of stock (2016) | Landings | Discards |
|--|-----------------------------|-----------------------|--|
| 188 029 t | 192 056 t | Mainly pelagic trawls | Discarding is considered to be negligible. |
| | | 192 056 t | |

Table 9 Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga. History of commercial catch and landings; both the official and ICES estimated values are presented by area for each country participating in the fishery. All weights are in tonnes.

| Year | Denmark | Estonia | Finland | Germany | Latvia | Lithuania | Poland | Russia** | Sweden | Total |
|-------|---------|---------|---------|---------|--------|-----------|--------|----------|--------|--------|
| 1977 | 11900 | | 33 700 | | | | 57200 | 112814 | 48700 | 264314 |
| 1978 | 13900 | | 38 300 | 100 | | | 61300 | 113872 | 55400 | 282872 |
| 1979 | 19400 | | 40 400 | | | | 70400 | 100958 | 71300 | 302458 |
| 1980 | 10600 | | 44000 | | | | 58300 | 103002 | 72500 | 288402 |
| 1981 | 14100 | | 42500 | 1000 | | | 51200 | 93431 | 72900 | 275131 |
| 1982 | 15300 | | 47500 | 1300 | | | 63000 | 86423 | 83800 | 297323 |
| 1983 | 10500 | | 59100 | 1000 | | | 67100 | 69059 | 78600 | 285359 |
| 1984 | 6500 | | 54100 | | | | 65800 | 89757 | 56900 | 273057 |
| 1985 | 7600 | | 54200 | | | | 72800 | 95225 | 42500 | 272325 |
| 1986 | 3900 | | 49400 | | | | 67800 | 98773 | 29700 | 249573 |
| 1987 | 4200 | | 50400 | | | | 55500 | 100916 | 25400 | 236416 |
| 1988 | 10800 | | 58100 | | | | 57200 | 106009 | 33400 | 265509 |
| 1989 | 7300 | | 50000 | | | | 51800 | 105017 | 55400 | 269517 |
| 1990 | 4600 | | 26900 | | | | 52300 | 101269 | 44200 | 229269 |
| 1991 | 6800 | 27036 | 18100 | | 20709 | 6500 | 47100 | 31900 | 36500 | 194645 |
| 1992 | 8100 | 22264 | 30000 | | 12533 | 4600 | 39200 | 29500 | 43000 | 189197 |
| 1993 | 8900 | 25420 | 32300 | | 9576 | 3000 | 41100 | 21600 | 66400 | 208296 |
| 1994 | 11300 | 26345 | 38200 | 3700 | 9797 | 4900 | 46100 | 16700 | 61600 | 218641 |
| 1995 | 11400 | 30681 | 31400 | | 9328 | 3600 | 38700 | 17000 | 47200 | 189309 |
| 1996 | 12148 | 35943 | 31502 | | 11569 | 4243 | 30712 | 14626 | 25909 | 166652 |
| 1997 | 9397 | 42585 | 23749 | | 10140 | 3324 | 26229 | 12526 | 44078 | 172028 |
| 1998 | 13876 | 34005 | 24777 | | 9972 | 2368 | 19344 | 10520 | 70997 | 185860 |
| 1999 | 6185 | 35437 | 17850 | | 8292 | 1312 | 18121 | 12676 | 48866 | 148739 |
| 2000 | 15786 | 30135 | 23330 | | 6718 | 1070 | 23066 | 14814 | 60161 | 175080 |
| 2001 | 15786 | 27425 | 26103 | | 5217 | 1639 | 28358 | 15797 | 29832 | 150156 |
| 2002 | 4557 | 21010 | 25724 | 291 | 3917 | 1537 | 28510 | 14168 | 29423 | 129137 |
| 2003 | 5339 | 13300 | 14698 | 3860 | 3132 | 2060 | 26311 | 13363 | 31785 | 113848 |
| 2004 | 175 | 10912 | 14468 | 4323 | 2655 | 1778 | 22834 | 6526 | 29336 | 93006 |
| 2005 | 3053 | 10783 | 6410 | 3713 | 1951 | 748 | 18476 | 7007 | 39426 | 91600 |
| 2006 | 100 | 13400 | 9600 | 3200 | 3000 | 1200 | 16800 | 7600 | 55300 | 110400 |
| 2007 | 1352 | 13979 | 13890 | 1672 | 3212 | 3474 | 19802 | 8772 | 49879 | 116030 |
| 2008 | 1250 | 21581 | 19134 | 3358 | 3520 | 1749 | 13331 | 8551 | 53681 | 126154 |
| 2009 | 1463 | 19937 | 23329 | 1252 | 4108 | 3576 | 18441 | 11800 | 50208 | 134127 |
| 2010 | 5367 | 17915 | 21602 | 2235 | 3903 | 1492 | 25028 | 9126 | 50037 | 136706 |
| 2011 | 1848 | 14924 | 19229 | 2730 | 3432 | 1997 | 27998 | 8471 | 36156 | 116785 |
| 2012 | 1415 | 11380 | 18049 | 896 | 2637 | 1847 | 25472 | 13044 | 26153 | 101000 |
| 2013 | 3419 | 12601 | 18175 | 1415 | 3548 | 1724 | 20568 | 10046 | 29458 | 100954 |
| 2014 | 2723 | 15334 | 27905 | 1731 | 4853 | 2096 | 27316 | 15854 | 34888 | 132700 |
| 2015 | 332 | 18782 | 31571 | 2917 | 5657 | 4694 | 39024 | 20889 | 50568 | 174433 |
| *2016 | 4040 | 20097 | 28852 | 4340 | 8362 | 5184 | 40990 | 24179 | 56011 | 192056 |

* Preliminary.

** In 1977–1990 sum of catches for Estonia, Latvia, Lithuania, and Russia.

Table 10 Herring in subdivisions 25–29 and 32 (excluding Gulf of Riga herring). Catches (in tonnes) from the central Baltic management area and of the central Baltic stock.

| Year | Catches of herring from the central Baltic area | | | Central Baltic herring stock catches | |
|------|---|----------------------------|--------|---|---|
| | Central Baltic herring stock | Gulf of Riga herring stock | Total | Central Baltic herring caught in Gulf of Riga | Total catch of central Baltic herring stock |
| 1977 | 261900 | - | 261900 | 2400 | 264300 |
| 1978 | 276600 | - | 276600 | 6300 | 282900 |
| 1979 | 297800 | - | 297800 | 4700 | 302500 |
| 1980 | 282700 | - | 282700 | 5700 | 288400 |
| 1981 | 269200 | - | 269200 | 5900 | 275100 |
| 1982 | 292600 | - | 292600 | 4700 | 297300 |
| 1983 | 280600 | - | 280600 | 4800 | 285400 |
| 1984 | 269300 | - | 269300 | 3800 | 273100 |
| 1985 | 267700 | - | 267700 | 4600 | 272300 |
| 1986 | 248300 | - | 248300 | 1300 | 249600 |
| 1987 | 231600 | - | 231600 | 4800 | 236400 |
| 1988 | 262500 | - | 262500 | 3000 | 265500 |
| 1989 | 263600 | - | 263600 | 5900 | 269500 |
| 1990 | 223300 | - | 223300 | 6000 | 229300 |
| 1991 | 188500 | - | 188500 | 6100 | 194600 |
| 1992 | 185700 | 1300 | 187000 | 3500 | 189200 |
| 1993 | 204000 | 1200 | 205200 | 4300 | 208300 |
| 1994 | 213600 | 2100 | 215700 | 5000 | 218600 |
| 1995 | 183200 | 2400 | 185600 | 6100 | 189300 |
| 1996 | 162300 | 4300 | 166600 | 4400 | 166700 |
| 1997 | 167700 | 2900 | 170600 | 4300 | 172000 |
| 1998 | 181800 | 2800 | 184600 | 4100 | 185900 |
| 1999 | 144400 | 1900 | 146300 | 4300 | 148700 |
| 2000 | 170500 | 1900 | 172400 | 4600 | 175100 |
| 2001 | 147300 | 1200 | 148500 | 2900 | 150200 |
| 2002 | 125600 | 400 | 126000 | 3500 | 129100 |
| 2003 | 109500 | 400 | 109900 | 4300 | 113800 |
| 2004 | 89700 | 200 | 89900 | 3300 | 93000 |
| 2005 | 89300 | 500 | 89800 | 2300 | 91600 |
| 2006 | 107200 | 400 | 107600 | 3200 | 110400 |
| 2007 | 114500 | 100 | 114600 | 1500 | 116000 |
| 2008 | 120100 | 100 | 120200 | 6100 | 126154 |
| 2009 | 129200 | 100 | 129300 | 4900 | 134126 |
| 2010 | 131500 | 400 | 131900 | 5200 | 136706 |
| 2011 | 111300 | 100 | 111400 | 5500 | 116785 |
| 2012 | 97200 | 200 | 97400 | 3800 | 100893 |
| 2013 | 96900 | 300 | 97200 | 4100 | 100954 |
| 2014 | 128200 | 200 | 128400 | 4500 | 132700 |
| 2015 | 169465 | 316 | 169781 | 4968 | 174433 |
| 2016 | 187741 | 289 | 188029 | 4315 | 192056 |

Summary of the assessment

Table 11 Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga. Assessment summary. Weights are in tonnes.

| Year | Recruitment Age 1 thousands | SSB* tonnes | Catches tonnes | F Ages 3–6 |
|------|-----------------------------------|----------------|-------------------|---------------|
| 1974 | 18115116 | 1683342 | 368652 | 0.184 |
| 1975 | 13329768 | 1577408 | 354851 | 0.20 |
| 1976 | 26360651 | 1368886 | 305420 | 0.193 |
| 1977 | 13400270 | 1521998 | 301952 | 0.189 |
| 1978 | 15702005 | 1441824 | 278966 | 0.164 |
| 1979 | 12856079 | 1410091 | 278182 | 0.195 |
| 1980 | 18714285 | 1359022 | 270282 | 0.187 |
| 1981 | 31191975 | 1288491 | 293615 | 0.20 |
| 1982 | 29099041 | 1434355 | 273134 | 0.174 |
| 1983 | 22131126 | 1408071 | 307601 | 0.22 |
| 1984 | 29453591 | 1321236 | 277926 | 0.22 |
| 1985 | 22882573 | 1270356 | 275760 | 0.23 |
| 1986 | 11529532 | 1205417 | 240516 | 0.20 |
| 1987 | 21003876 | 1150388 | 248653 | 0.23 |
| 1988 | 9414139 | 1154698 | 255734 | 0.22 |
| 1989 | 14219555 | 1017851 | 275501 | 0.29 |
| 1990 | 19057155 | 875410 | 228572 | 0.27 |
| 1991 | 14679230 | 788409 | 197676 | 0.28 |
| 1992 | 17932210 | 809946 | 189781 | 0.25 |
| 1993 | 16521728 | 762903 | 209094 | 0.28 |
| 1994 | 15800551 | 773069 | 218260 | 0.34 |
| 1995 | 20081061 | 679845 | 188181 | 0.32 |
| 1996 | 16842346 | 626540 | 162578 | 0.32 |
| 1997 | 10049377 | 588136 | 160002 | 0.35 |
| 1998 | 15724393 | 540088 | 185780 | 0.36 |
| 1999 | 8724032 | 459795 | 145922 | 0.31 |
| 2000 | 16372756 | 470975 | 175646 | 0.42 |
| 2001 | 11726445 | 427121 | 148404 | 0.35 |
| 2002 | 11224354 | 446227 | 129222 | 0.30 |
| 2003 | 22562502 | 517700 | 113584 | 0.23 |
| 2004 | 14162085 | 525969 | 93006 | 0.189 |
| 2005 | 9381523 | 593317 | 91592 | 0.169 |
| 2006 | 16534868 | 659796 | 110372 | 0.183 |
| 2007 | 14457857 | 689864 | 116030 | 0.186 |
| 2008 | 28194423 | 703641 | 126155 | 0.188 |
| 2009 | 21372087 | 808877 | 134127 | 0.170 |
| 2010 | 15382382 | 868744 | 136706 | 0.197 |
| 2011 | 9954930 | 863526 | 116785 | 0.151 |
| 2012 | 24392292 | 923727 | 100893 | 0.110 |
| 2013 | 21540883 | 1001657 | 100954 | 0.098 |
| 2014 | 16964240 | 1103797 | 132700 | 0.134 |
| 2015 | 61114865 | 1050468 | 174433 | 0.179 |
| 2016 | 19584250 | 1036926 | 192056 | 0.20 |
| 2017 | 14587000** | 1341625*** | | |

* At spawning time.

** Output from survey data (RCT3 analysis).

*** Predicted.

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