The BSAC recommends setting the catch levels for the Baltic stocks in 2016 at the values indicated in the table below. For all stocks, the recommendations are set after consideration of the biological advice, as it was presented by the vice chair of ACOM, Dr John Simmonds to the Joint WG of the Baltic Sea Advisory Council on 10th and 11th June 2015. For those recommendations marked in the table with an *, the BSAC Executive Committee was not able to reach consensus. Minority positions for those recommendations are stated in the text, with reference as footnotes to the organisations concerned.

Please note that the recommendations relate to the TAC for the regulatory areas, not for the different stock components. A thorough description of how the recommendations for each stock have been reached is given in the text below.

<table>
<thead>
<tr>
<th>Stock Description</th>
<th>TAC 2015</th>
<th>BSAC recommendation for TAC 2016</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cod 22-24</td>
<td>15.900</td>
<td>15.900*</td>
<td>0</td>
</tr>
<tr>
<td>Cod 25-32</td>
<td>51.428</td>
<td>51.428*</td>
<td>0</td>
</tr>
<tr>
<td>Herring 22-24</td>
<td>22.220</td>
<td>26.274</td>
<td>18 %</td>
</tr>
<tr>
<td>Herring 25-29, 32, ex GoR</td>
<td>163.451</td>
<td>176.527</td>
<td>8 %</td>
</tr>
<tr>
<td>Herring Gulf of Riga</td>
<td>38.780</td>
<td>32.963</td>
<td>- 15 %</td>
</tr>
<tr>
<td>Herring 30-31</td>
<td>158.470</td>
<td>134.700*</td>
<td>- 15 %</td>
</tr>
<tr>
<td>Sprat</td>
<td>213.581</td>
<td>213.581*</td>
<td>0</td>
</tr>
<tr>
<td>Salmon 22-31</td>
<td>95.928</td>
<td>116.000*</td>
<td>21 %</td>
</tr>
<tr>
<td>Salmon 32</td>
<td>13.106</td>
<td>13.106*</td>
<td>0</td>
</tr>
<tr>
<td>Plaice</td>
<td>3.409</td>
<td>4.091</td>
<td>20 %</td>
</tr>
</tbody>
</table>
Cod 22-24
The most recent benchmark of this stock resulted in a number of new observations and assumptions. The BSAC is convinced that most of these are quite relevant and that the new knowledge gives a more comprehensive and accurate picture of the situation. Despite this general acceptance of the new assessment of the stock, there is some reluctance to accept without question all the changes. The new values suggested for reference points for this stock are not uniformly accepted and it seems odd that $B_{\text{trigger}}$ for the stock is higher than the stock has ever been.

A stock recruitment curve for this stock is shown below:

It is in no way obvious that recruitment is reduced at spawning stocks below 27,400 tonnes. To force a hockey stick calculation into this plot in order to identify $B_{\text{lim}}$ involves a very high risk of introducing an artefact (by forcing observations to fit a predefined model). $B_{\text{lim}}$ could just as well be set at 20,000 tonnes. $B_{\text{trigger}}$ would then be 28,000 tonnes – and the status of the stock would be completely different than that opined by ICES. The stock would then be close to – if not above (see comments about in-year-catch below) – $B_{\text{trigger}}$.

That ICES has chosen to include the catches of the recreational fishery in the assessment is justifiable, if and when they have a significant impact on the stock. Nevertheless, the BSAC cannot accept that management of the commercial fisheries – which is done on the basis of fishing mortality – is linked directly to a perceived level of recreational fishery. The management of the commercial fishery should focus on the effect that this fishery has. In other words, it is the fishing mortality rate of the commercial fishery that is the parameter that has to be regulated. Recreational catches should not be entered into the quota system.
The ICES advice to reduce the TAC from a present alleged overfishing to MSY in a single year is considered extremely radical. It will have draconic effects on the industry and is believed to exclude any socio-economic considerations. The BSAC cannot endorse advice that so blatantly disregards the devastating effects it will have on the fishing industry and the people who depend on it.

It must be quite evident that such an abrupt change cannot be picked up by the industry in just one year - even if it is believed that the assessment gives a realistic picture of the status of the stock. A more gradual adaptation to the new perception of stock status must be allowed for.

Scrutinising the report from ICES in search for more sustainable solutions to the alleged crisis in the Western stock, in particular the catch options table, the BSAC finds that less draconic measures than those advised by ICES are also likely to ensure that the stock will continue to develop in a positive manner – albeit at a slightly slower pace.

When studying the catch options table, it becomes apparent that in-year catch for the area is set much too high. It is simply not realistic to expect a commercial landing of 13.716 tonnes from the Western stock, plus some 5.500 tonnes (same level as 2014) from the Eastern stock. The total commercial landing would then be 19.216 tonnes – more than 4.000 tonnes above the TAC. If the assumption of status quo fishery holds, this would imply that the catch from the Western stock in 2015 would increase by some 5.000 tonnes from 8.099 tonnes in 2014 - in a time when the TAC has been reduced.

The circular argument of setting in-year F to the same as last year, and then claim that F is not being reduced, is not fair. When the F status quo argument further implies a significant overfishing on a stock where there is close to zero discard (even before the landing obligation was introduced) and no indication of black landings, then the argument is not only just unfair – it is also rather silly and certainly not validated.

The BSAC takes note of the fact that the stock is increasing – even without the inclusion of the 4.000 tonnes catch above TAC. The BSAC is also convinced that reductions of TACs for stocks where an increase is observed will not deliver anything but problems – with no obvious benefits for the stock concerned. There may be situations where an observed increase in stock size should not translate directly into an increase in TAC, but to reduce the TAC on a growing stock is not acceptable.
This leads the BSAC to conclude that the 2016 TAC for cod in Subdivisions 22-24 should be set as a rollover of the TAC for 2015. A rollover TAC would result in an expected commercial catch of approximately 10,000 tonnes from the Western stock in the total area plus approximately 6,000 tonnes from the Eastern stock component in Subdivision 24. Taking a commercial catch of 10,000 tonnes from the Western stock – assuming the ICES assessment is giving an accurate description of the stock – will correspond to a fishing mortality of 0.4, which is a 50% reduction of the 2014 F and will result in an increase in the spawning stock biomass of 40%, bringing the stock to the proposed level of B\text{trigger} in just one year.

From the ICES figures, it is thus evident that a rollover of the TAC will in no way jeopardise the continued growth of the stock.

Given the fact that the Western and Eastern Baltic cod stocks overlap, any problems caused by stock mixing, particularly in SD 24, and its consequences for cod stock conservation and assessment, must be taken into account when taking decisions on management measures related to the cod stock in SDs 22-24.

A minority group\(^1\) supports the ICES advice and a commercial TAC set well under the ICES advised total catch. In addition, given the stock overlap in subdivision (SD) 24 and the need to prevent overfishing on the WB cod stock, this group supports a separate sub-TAC for SD 22-23. ICES suggests some methods for dividing the TAC, but does not take a preference on any one specific method. The final commercial TAC for 2016 should represent the remaining advised catch after subtracting recreational fishing effort and adding any Eastern Baltic cod TAC allocated to subdivision 24.

\(^1\) The European Angler’s Alliance  
The Finnish Association for Nature Conservation  
The Fisheries Secretariat  
Oceana  
The Polish Ecological Club  
WWF
**Cod 25-32**

The BSAC takes note of the ICES assessment that the stock of cod above 30 cm has declined from a very high level in the years 2009 to 2012. The BSAC also notes that despite this alleged decline, the biomass is believed to be almost the same as it was in 2003.

The BSAC acknowledges that the assessment of cod in Subdivisions 25 to 32 is very problematic. The BSAC also takes note that the problems encountered are not caused by lack of data from the fishery, but rather from the fact that science is unable to explain the observed stock development.

That science, at least to some extent, is unable to explain why the stock develops as observed, should not be used as an argument to completely disregard the useful input that science can provide. On the other hand, it is equally unacceptable to use the defective scientific input as an argument to reduce the TAC, based only on precaution and a fishing pattern that has changed significantly over the latest year.

That being said, the BSAC is willing to recognise the development described by ICES as being the best assessment available. However, information from the fishers, as well as from the processing industry indicates that during 2014 and so far in 2015, the negative development has been reversed. It was suggested from the catches already in the autumn 2014 that the growth reduction, which has been described over the last couple of years, no longer seemed to be affecting the stock. Catches in the spring of 2015 have confirmed that this is indeed the case.

The low catch rates experienced in 2013 and 2014 have also changed for the better. The total catch from the Polish, German and Danish fleets in the first half of the last three years is shown in the following table:
![](image)

<table>
<thead>
<tr>
<th>Member State/Year</th>
<th>% exploited in first 6 months</th>
<th>TAC</th>
<th>Catch ‘000 tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poland</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>53</td>
<td>14.443</td>
<td>7.690</td>
</tr>
<tr>
<td>2014</td>
<td>30</td>
<td>20.484</td>
<td>6.122</td>
</tr>
<tr>
<td>2013</td>
<td>32</td>
<td>19.438</td>
<td>6.246</td>
</tr>
<tr>
<td><strong>Germany</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015¹</td>
<td>29</td>
<td>4.300</td>
<td>1.248</td>
</tr>
<tr>
<td>2014²</td>
<td>14</td>
<td>5.796</td>
<td>792</td>
</tr>
<tr>
<td>2013²</td>
<td>12</td>
<td>4.711</td>
<td>541</td>
</tr>
<tr>
<td><strong>Denmark³</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>61</td>
<td>11.310</td>
<td>6.899</td>
</tr>
<tr>
<td>2014</td>
<td>31</td>
<td>15.945</td>
<td>4.943</td>
</tr>
<tr>
<td>2013</td>
<td>30</td>
<td>15.204</td>
<td>4.561</td>
</tr>
</tbody>
</table>

Data from: Poland (CMR/FMC Fisheries Monitoring Centre), Denmark (Danish AgriFish Agency) and Germany (Federal Office for Agriculture and Food) ¹ From Jan.-May ² For whole year ³ First 25 weeks.

It is quite obvious that the catch rates in all the cod fisheries in the Eastern Baltic have increased markedly – also when the reduction in TAC from 2014 to 2015 is incorporated.

At the General Assembly of the BSAC in Helsinki on 7th May 2015, Dr. Michael Naumann of Leibniz Institute for Baltic Sea Research, explained that a large volume of water from the major inflow in December 2014 will most probably turn the entire Baltic deep water from anoxic to oxic, with widespread consequences for the ecosystem. A cruise carried out in February 2015 showed that the Bornholm Basin has been completely ventilated. There have also been other cruises and a cruise carried out April showed that ventilation is starting to take place in the Gotland Basin. A comparison of the effect on the inflow that took place in 1993, and the results gathered so far since November 2014 show that this will lead to a better situation than that which took place in the mid 1990’s. The anticipation is that in the next 1-2 years all the deep basins will have developed oxic solutions.
This is a very positive message and one that leads to the conclusion that the slight increase described by ICES from 2014 to 2015 will certainly continue in 2016.

Further to this, it has previously been argued by the BSAC that one of the problems with cod in the Eastern Baltic is the very low fishing pressure. This has resulted in an increase in the abundance of small cod, a decrease in growth of these cod and a declining stock of sprat. In 2011 it was calculated by the then vice chair of ACOM Dr. Carl O’Brien that if the fishery for cod were to increase to that equal to $F_{\text{target}}$ in the management plan, a TAC for sprat could be set 12,000 tonnes above the TAC that was advised. It must be rather obvious that the fishing industry did not strongly support the managers’ choice to set a low TAC for both cod and sprat, when higher TACs for both would result in a similar development.

With reference to the migration between Subdivisions 24 and 25, there is some concern that a reduced fishing pressure on the Eastern component will increase the pressure on the Western cod stock in Subdivision 24.

Also bearing in mind that the TAC for this stock was reduced by 22 % last year, the BSAC finds that the time has come when the industry should be allowed to experience that management is not only about reductions.

The following are highlighted:

- The negative development in growth has been reversed
- Inflow of saline water is promising for the recruitment
- Catch rates are increasing
- Abundance of cod above 30 cm has increased from 2014 to 2015
- The industry has suffered under reduction in TAC – despite the introduction of a landing obligation.

The BSAC therefore recommends that the TAC for cod in 2016 in the Eastern Baltic is set as a rollover of the TAC for 2015. Due to the lack of an analytical assessment, it is not possible to describe the expected consequences for the stock, but it appears that all conditions for a further increase in stock size have been met.
A minority group\textsuperscript{2} points out that due to ongoing issues in the Eastern Baltic Cod assessment, ICES has categorized this stock as data-limited and applied the precautionary approach. This group supports the use by ICES of the precautionary approach in this situation. It calls for coordinated scientific assessments for the entire Baltic Sea region to be undertaken in order to address concerns identified in the advice, thus validating an analytical assessment for next year at the latest. It supports the ICES advice for the total catch of Eastern Baltic cod, with a corresponding TAC reduced by any amount used in subdivision 24 to account for stock mixing with Western Baltic Cod.

Two other organisations\textsuperscript{3} find that catch accountability is a CFP priority. They recommend that the TAC solution for cod in 2016 should be accompanied by measures to ensure accurate documentation of catches and adequate quota deductions for those Member States that are not able to meet this requirement. In this context they find that a rollover minus 15\% is acceptable. This would allow the SSB to rebuild and fishers to adapt.

**Herring 22-24**

The BSAC is in favour of following the advice from ICES to set the TAC at 26,274 tonnes, in agreement with previous BSAC recommendation to allocate 50\% of the catch opportunities on this stock to the management area in question.

**Herring 25-29, 32, ex GoR**

Translating the advice from the biology to management for this stock is complicated by the fact that there is not a single TAC agreed for this stock. Nevertheless, ICES has indicated that an increase in the total catch to 201,000 tonnes would be in agreement with MSY. This corresponds to an increase in relation to last year’s advice of 4\%. But it should be pointed out that the TAC for this stock (including expected Russian catches), was set 7,000 tonnes below the advice for 2015.

Consequently, the rate of increase should be set to the advice for 2016, divided by the TAC (incl. Russian catch) for 2015 catch, \textit{i.e.} \( 201.000 / 185.900 = 8\% \).

This corresponds to setting a 2016 EU TAC for herring in Subdivisions 25-29, 32, ex GoR at 176,527 tonnes.

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\textsuperscript{2} The European Angler’s Alliance  
The Finnish Association for Nature Conservation  
The Fisheries Secretariat  
Oceana  
The Polish Ecological Club  
WWF

\textsuperscript{3} Baltic Sea 2020 and the Environmental Defense Fund
Herring Gulf of Riga

In the Gulf of Riga the fishery for herring is strictly regulated by means of effort as well as outtake. The assessment by ICES indicates a stock that is undulating around a stable size above that of $B_{\text{trigger}}$ and a fishing mortality roughly in agreement with $F_{\text{MSY}}$.

Without going into details about the somewhat complex calculation of the extent of migration into and out of the Gulf, the BSAC recommends that the 2016 TAC for herring in the Gulf of Riga is set as a reduction of 15 % of the 2015 TAC.

This corresponds to a 2016 TAC for herring in Gulf of Riga of 32.963 tonnes.

Herring 30-31

The 2016 TAC for herring in this management area should be set as a 15 % reduction of the 2015 TAC. This implies a 2016 TAC of 134.700 tonnes.

The fisheries representatives from Sweden and Finland underline the need to accomplish the acoustic surveys in SDs 30 and 31. The planned benchmark for this stock is anticipated and it is hoped that this will also lead to an improved assessment of herring in this management area.

A minority group\(^4\) advises that the herring TAC is set according to the biological advice of 103.254 tonnes.

\(^4\) The European Angler’s Alliance  
The Finnish Association for Nature Conservation  
The Fisheries Secretariat  
Oceana  
The Polish Ecological Club  
WWF
Sprat

The BSAC is not comfortable with the assessment of sprat in the Baltic. The retrospective analysis of stock size shows changes of more than 100,000 tonnes from year to year, and the suggested value of $F_{\text{MSY}}$ has constantly been reviewed and revised, without any convincing explanation. In 2013, the $F$ was 0.35, in 2014 and 2015 it was 0.29, and the proposed for $F$ for 2016 is 0.26. This has resulted in an advice for a number of years to reduce the fishery. It appears to the BSAC that rather than reacting to changes in the stock situation, management seems to be engaged in an unproductive chasing of the latest biological evaluation. Management does not reflect that the stock is well above $B_{\text{trigger}}$, and the BSAC finds that it might be sensible to manage the fishery in a more pragmatic manner – not just focusing on next year’s $F$ or SSB.

The most recent revision of the stock size has resulted in a downward adjustment of biomass and an upward adjustment of fishing mortality.

Despite the very unstable estimates of biomass, there is no obvious trend in the results. This could be an indication that the constant revisions of biomass levels are more a consequence of data uncertainty than they are a consequence of model bias. The BSAC is convinced that an enhanced collection of data will be able to improve this situation significantly. The establishment of an acoustic survey that covers the whole distribution range of the stock would significantly improve the assessment.

Biological data for most of the pelagic stocks in the North Eastern Atlantic area show that recruitment in 2014 has been exceptionally high. This is indeed also the case for sprat in the Baltic, and data from the fishery demonstrate that the actual recruitment is much higher than the roughly 150 billion estimated by ICES. Conservative as it is however, the ICES estimate of recruitment still gives rise to an increase in SSB from the presently estimated 750,000 tonnes to more than a million tonnes in 2016. It is also quite clear that the development of SSB from 2016 to 2017 is fairly uninfluenced by the outtake within the ranges indicated in the catch options table. All catch levels listed in the table result in an estimated SSB in 2017 of roughly one million tonnes.

The BSAC has repeatedly stated and does so again this year that the timing of the scientific survey for sprat needs to be adjusted in order to align with the observed changes in abundance over recent years. A more relevant picture of the stock size would be available if the survey took place later in the year than at present.

Based on these considerations, the BSAC recommends setting the 2016 TAC for sprat in the Baltic as a rollover of the TAC for 2015. This would result in reduction in fishing mortality from 0.36 to 0.32, which is the value of the precautionary mortality.
The BSAC recommends setting the 2016 TAC for sprat in the Baltic Sea at 213.581 tonnes.

A minority group\(^5\) would like the Commission to give priority to the improvement of the condition of cod and consider a spatial management plan for clupeid stocks. It supports a sprat TAC of 205.000 tonnes, which corresponds to the ICES advice and the MSY approach.

**Salmon 22-31**

The BSAC is disheartened to experience that ICES is unable to offer unambiguous advice on salmon. It is evident that salmon differs from most other species in many aspects and stakeholders have become used to the advice being somewhat more "word-based" than numeric. But why the “Stock Advice” section must use more text than all other stocks combined is incomprehensible.

The advice given is an unacceptable mixture of biology and management. There is a clear statement that a commercial catch of 116.000 specimen is in agreement with MSY fishery. Then ICES adds a section on unwanted catches in 2014 and some speculation on unreporting and misreporting. It may be relevant for stocks without a discard ban to indicate historic levels of discards, but to complicate the catch advice for a stock under a landing obligation is silly.

The BSAC observes that there is a discard ban on salmon and that ICES states that a commercial catch of 116.000 specimens is in agreement with MSY fishery.

The TAC for salmon in Subdivisions 22-31 should consequently be set at 116.000 specimens.

\(^5\) The European Angler’s Alliance
The Finnish Association for Nature Conservation
The Fisheries Secretariat
Oceana
The Polish Ecological Club
WWF
A minority group\textsuperscript{6} recommends that the ICES advice be followed. It emphasizes the need for long-term stock specific rebuilding measures, including habitat restoration and the removal of physical barriers in rivers and fisheries restrictions for weaker stocks in estuaries and rivers. The corresponding TAC for salmon from the ICES estimated total commercial catch at sea is the ICES estimate for “wanted reported catch.” It supports a Baltic Sea salmon TAC of 89,300 individual fish, which corresponds to the ICES advice and the MSY approach.

\textbf{Salmon 32}

In line with the arguments presented for salmon in Subdivisions 22-31, the BSAC recommends setting the TAC for salmon in the Gulf of Finland to 13,106 specimens, which is a rollover of the TAC for 2015, whilst keeping the mortality on wild salmon at the lowest possible level.

The same organisations as in footnote \textsuperscript{6} support a TAC of 10,100 individual reared fish with a zero catch of wild salmon, which corresponds to the ICES advice and to the precautionary approach.

\textbf{Plaice}

For plaice, management operates with a single TAC for the whole Baltic. However, the catches of plaice in the Baltic are taken from two stocks, one of which also occurs outside the regulatory area. For both stocks affected by the Baltic fishery, ICES describes a significant increase in abundance. For the stock that is shared with Kattegat, the analytical assessment shows that catches can be increased by 114 \% and still be in agreement with MSY. For the smaller stock, the biological advice is based on indications in stock development. The observed increase in abundance is 36 \% which is then, for precautionary reasons, reduced to an advised 20 \% increase in catches.

It is obvious from the scientific analyses that stock development for plaice in the Baltic is very positive. However, much remains unknown about the fishery for the two stocks. Discard patterns are believed to vary significantly between Member States and detailed knowledge about the recently established stock in Subdivisions 24-25 is obviously still wanting.

\textsuperscript{6} The European Angler’s Alliance
The Finnish Association for Nature Conservation
The Fisheries Secretariat
Oceana
The Polish Ecological Club
WWF
Against this background, the BSAC is concerned about how a landing obligation for plaice can be introduced. Unless the TAC setting reflects the actual abundance of plaice and includes detailed knowledge of discards, there is a great risk that the species will become a choke species.

As a result, the BSAC is inclined to recommend that the TAC is set as high as possible within the framework of the biological advice. This is mainly in order to ensure that the apparently very rapid and well-documented increase in plaice will not become a problem for the fishery targeting cod. Until better knowledge regarding discards and stock abundance (including better knowledge about the distribution between Kattegat and the Baltic Subdivisions) is obtained, the BSAC recommends setting the 2016 TAC for plaice in the Baltic as a 20% increase in the TAC for 2015, which corresponds to a TAC of 4.091 tonnes.