

## **Briefing: ICES advice for Baltic cod 2009**

On 23 May, ICES' Advisory Committee (ACOM) published their advice regarding the exploitation of the Baltic Sea cod stocks in 2009. The following provides a summary and comment on their assessments and advice.

The Baltic Sea cod is managed as two separate stocks since 2004, the Eastern and the Western stock. The stocks are biologically distinct from one another, although there is some migration of fish between the areas. The Eastern stock is currently about seven times larger than the Western counterpart. In 2007, an EU multi annual management plan for both cod stocks in the Baltic was adopted, which aims at restoring the fish stocks to sustainable levels.

### ***Subdivision 22 -24, Western Baltic***

The Western Baltic cod stock is a highly productive stock and has historically been much larger than what it is today. In the seventies it was twice as big as today.

ICES classify the stock as being at risk of reduced reproductive capacity, as well as suffering from a too high fishing pressure.

The quantity of mature cod also known as the Spawning Stock Biomass "SSB", within this stock is approximated to 22 984 tonnes.

Coincidentally, 23 000 tonnes of mature fish is considered to be the precautionary minimum level that will allow the stock to sustain itself.

Fishing has altered the age structure and subsequently the size and structure of the cod stock to the point that many of the older, larger fish have been removed (a large female cod can potentially produce much more eggs than a younger female). This means that the stock is highly dependent upon those fish that reach maturity each year.

Over the last 9 years there have been relatively low numbers of cod reaching mature age. This is thought to be primarily caused by unfavourable environmental conditions and continual high levels of fishing on the mature stock.

The amount of fish that are killed by fishing, known as fishing mortality "F", is considered to be too high. In 2007 the fishing mortality is considered to be 1,07. This implies that 1.07 times of the cod that was present in the beginning of the year was caught. A fishing mortality above 1 is possible as fish mature and grow to a size where they can join or "recruit" to the fishery throughout the year and are subsequently killed by fishing. However, if only low numbers of cod are reaching maturity and recruiting to the fishery, a high fishing mortality results in the stock being harvested unsustainably. Hence, there is a risk that the capital is harvested rather than the interest.

The stock is categorised as being "overfished" with respect to the potential long term yield. This means that the stock could be much larger, and more fish could be caught in the future if fishing mortality was reduced.

ICES has previously recommended a fishing mortality of 0.3 – 0.6, to ensure that the stock would sustain itself and provide long term yields. In order to bring the stock to a sustainable level, a reduction of fishing mortality of 28% is needed.

Taking into account the low numbers of cod that reaching maturity and by also applying the precautionary approach limits to take into account of the uncertainty in stock assessments, *ICES advise that the landings for 2009 should not exceed 13 700 tonnes. This means a reduction of 28% in Total Allowable Catch (TAC) compared to 2008.*

### ***Subdivision 25- 32, Eastern Baltic***

The Eastern Baltic cod stock has historically been much larger than what it is today. Due to very favourable environmental conditions and extremely strong year classes in the end of the seventies, the stock reached it historically highest levels in 1980-1982, when it was 4 times larger than today. In recent years the stock has declined to the lowest level on record. The stock has declined as a result of overfishing together with unfavourable environmental conditions (mainly low oxygen concentrations as a result of low water inflow from the North Sea).

ICES reports that the stock is still at historical low levels, although an increase is observed since 2005, as a result of strong year classes in 2003 and 2005 (a “strong year class” means that there was a high production of young fish at a particular year). This means that the state of the stock is still poor, but has improved in the last 3 years.

The strong year classes of 2003 and 2005 could contribute to an improvement of the stock if the fishing pressure is kept at a low level.

The SSB is estimated to be at 160 051 tonnes.

ICES has previously recommended that 160 000 tonnes is also the level below which there is a risk that the number of mature fish will seriously decline and the stock could collapse. In terms of precautionary levels ICES has earlier recommended that this stock should have a SSB of 240 000 tonnes in order for the size of the stock to be within safe biological limits.

However, these reference levels were established already in 1998, and a recent analysis of the Baltic Sea ecosystem indicates a major regime shift in terms of food web composition and environmental conditions. This indicates that the biomass reference levels might be outdated and are therefore not used in the current stock classification and advice. ICES will revise their reference levels in the future.

The estimated fishing mortality is considered to be at sustainable levels. The 2008 fishing mortality is estimated to 0.5. However, the stock is described as being “overfished” with respect to the potential long term yield for the fishery, meaning that the stock could be much larger, and more fish could be caught in the future if fishing mortality was reduced.

ICES have previously recommended a target fishing mortality of 0.3. Such a landing would correspond to 56 400 tonnes in 2009. The EU management plan implies a reduction of 10% in fishing mortality each year until the target mortality of 0.3 is reached. A 10% reduction in fishing mortality for 2009 would correspond to landings of 79 900 tonnes. However, the EU management plan limits the increase in TAC between years to 15%. Last year a TAC of 42 260 tonnes were agreed upon (EU + Russia).

A 15% increase in TAC corresponds to a TAC of 48 600 tonnes for 2009. This catch corresponds to a fishing mortality of 0.25. In relation to precautionary limits, ICES states that the stock could sustain a fishing mortality of 0.6 which correspond to landings less than 100 400 tonnes.

ICES recommend that the EU management plan is implemented as it is closer to the target fishing mortality and will give longer term benefits in terms of long-term yield and low risk to the stock compared to when applying the precautionary fishing mortality.

ICES have not evaluated if the EU management plan is in accordance with the precautionary approach but will do so over the summer of 2008.

*ICES therefore advise to limit landings to 48 600 tonnes for the year 2009.*

ICES estimates the unallocated landings, meaning illegal landings outside of the allocated quota (often referred to as IUU fishing), to be at least within the range of 30-40% for this fish stock. ICES have chosen to include these estimates in their assessments and advice of this stock.

The advice can therefore only be seen as a TAC if IUU is completely removed.

### ***Why don't ICES recommend a zero catch for this stock like last year?***

ICES have changed their opinion regarding the state of the Eastern Baltic cod stock compared to recent years. The SSB is much higher than what was predicted in 2007, due to larger reductions in estimates of recent fishing mortalities. In reality this means that the fishing effort has been lower than what ICES previously expected. This in turn leads to a higher survival of the stronger 2003 and 2005 year classes, and a better contribution to the spawning stock.

SSB is now predicted to be 60% higher than what was predicted last year.

*However, ICES state that the status of this stock is still poor, and that it continues to be at a historical low. It is therefore important that the fishing pressure is kept at a low level in order to allow this positive trend in the stock biomass to continue.*

### **What happens next?**

The European Commission, after consulting with their advisory Scientific, Technical and Economic Committee for Fisheries (STECF), will publish their recommendations to the Fisheries Council prior to the Council's October meeting, where the 2009 TAC:s and quotas will be agreed. In the meantime, the European Commission on behalf of the EU, will negotiate with Russia, who also fish in the Baltic.

*It is very important that the EU council of ministers follow the scientific recommendations provided by ICES in order to safeguard the sustainability of Baltic fish stocks. This is particularly important regarding the Eastern cod stock which is finally showing an improving trend in stock biomass.*

*If the fishing effort is dramatically increased as a result of this positive trend, there is a risk that the stock will not be given the opportunity to stabilize, which in turn could put the stock at risk of collapse. This happened to the Grand Banks cod stock outside the East coast of Canada in 1992. After more than 15 years of no fishing, this stock which used to be one of the world's largest cod stock, has still not recovered.*