

Analysis of the Baltic multiannual plan for cod, herring and sprat

The Baltic multiannual plan (Baltic MAP, or the Plan) is expected to be passed into legislation on 23 June 2016, after being rubber stamped at the European Parliament plenary. This is the final legislative step to be concluded under co-decision. It will likely enter into force by September 2016.

Negotiations were concluded at trilogue on 16 March. The deal was subsequently voted through the Fisheries Committee of the European Parliament and COREPER at Council level.

Several precedents have been set with the MAP:

This is the first MAP to have been concluded since the new CFP entered into force in 2014.

It is also the first since the European Court of Justice ruled that all areas of management plans which shape the parameters within which fishing opportunities could be set are taken through co-decision.¹

This MAP is particularly important as it marks the first time the EU has implemented a multispecies approach to fisheries management. Interactions between cod, herring and sprat, the most significant commercial species in the Baltic, will be taken into account. The Baltic is also simpler to manage compared to other sea areas with this method as there are relatively few stocks and no choke species.²

It also sets a precedent for setting quotas according to a range of fishing mortality rates (F ranges), rather than a fixed point. The CFP states in article 2.2 that F_{msy} is the upper limit for fishing mortality rates³, yet the MAP allows for overfishing beyond this limit.

We are greatly concerned by the reinterpretation of the MSY objective in the CFP. It is an environmental, social and economic imperative that the EU respects the deadline of 2020 that all fisheries shall be managed with a fishing mortality rate below F_{msy}.

Analysis in brief:

As this multispecies approach is new and untested in the management of EU fisheries, we strongly recommend risk averse and precautionary decisions being taken, in particular at the inception of the Plan. Over the course of the MAPs development, which began in 2011⁴, there have been considerable fluctuations in the scientific recommendations. What is a sustainable level of fishing mortality for cod has varied significantly during the process of developing the MAP. Considering the perilous condition of the cod stocks, in particular, we believe it is advisable to proceed in a precautionary manner, with risks minimised.

¹ <http://www.fishsec.org/2016/01/12/european-court-rules-cod-plan-unlawfully-amended-by-council-opens-door-for-progress-on-forthcoming-management-plans/>

² See EP study: [www.europarl.europa.eu/RegData/etudes/STUD/2015/563399/IPOL_STU\(2015\)563399_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2015/563399/IPOL_STU(2015)563399_EN.pdf)

³ CFP Basic Regulation - <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:354:0022:0061:EN:PDF>

⁴ <http://www.fishsec.org/2011/12/07/multi-species-plan-for-the-baltic-sea/>

While we are supportive of multiannual and multispecies management plans, they provide a longer-term perspective and aim to understand the complex interactions within ecosystems; it is still a process in its relative infancy. There has been a long political negotiation to allow for the MAP to become legislation.

Over the course of these negotiations, the interpretation of the scientific basis underpinning the Plan, in particular decisions relating to fishing mortality rates, has been inconsistent. Research has indicated and we foresee that if the upper limits allowed for within the MAP are utilised, serious environmental and economic problems would arise. Catches would not increase substantially but the risk of stock collapse becomes more probable.⁵

Cod specific risks:

The most recent ICES advice⁶ clearly shows that the Baltic cod stocks are in a precarious condition. In particular, we are concerned that the Western cod stock has been pushed to the brink of survival. In addition to having a depressed biomass since assessments began in 1994 as well as failing recruitment, the stock has been mercilessly overfished with quotas consistently set well above both scientific recommendations and Fmsy.

Despite the western Baltic cod stock having been in this poor state for decades, with recruitment the lowest in the recorded time series for the stock, the MAP, which is designed to conserve fish stocks, allows for a fishing mortality of 0.45 as soon as stock biomass increases to precautionary levels, regardless of the composition of the stock. Biomass has been below Btrigger since assessments began, and below Blim since 2008, which has serious implications for the stock's recruitment capacity. Hence, the lack of commitment to restoring the health of the stock as a priority, as well as legislating for overfishing as soon as one strong year class is recruited is both disappointing and reckless. There will be no yield to maximise if the stock collapses.

Eastern Baltic cod is a data-limited stock. Thus, no target fishing mortality ranges or conservation biomass reference points have been set. For stocks lacking sufficient data the MAP fails to provide a framework for how quotas would be set or for how to remedy the situation. In the past the Commission has proposed mandatory cuts for data-limited stocks.⁷ Moreover, several of the herring stocks also suffer from data deficiencies.

Of particular concern are the parallels between the cod collapse in Newfoundland, Canada in 1992 and what we and the scientific community are seeing in the Baltic Sea cod stocks today.

“This is a time for caution” stated leading cod biologist Dr. J.J. Maguire, while chairing the 2015 ICES benchmark on Baltic cod. Dr. Maguire was also present in the regional science office in Newfoundland during the collapse of northern Newfoundland cod. While the Baltic and the Northern Grand Banks are admittedly different ecosystems, with potentially different mechanisms at play impacting cod biodynamics, the stock, is ‘acting’ like the Newfoundland cod stock did just prior to one of the most devastating fishery collapses in history.

⁵ Möllmann et al. 2013 <http://icesims.oxfordjournals.org/content/early/2013/08/24/icesims.fst123.full>

⁶ ICES advice for quotas in 2017 for each Baltic stock - bit.ly/1Pf6gAG

⁷ <http://www.fishsec.org/2012/01/13/good-reasons-to-criticise-december-quota-decision/>

Much like the history of quotas for northern Newfoundland cod, the Baltic cod quotas are not limiting fishing effort or the fishing mortality rate. Only once in the past 12 years has the Western cod stock quota been exhausted, according to ICES records, and in recent years only 1/3 of the Eastern Baltic cod TAC has been fished. It has now been 25 years since a major commercial cod fishery has been operable in northern Newfoundland, since the collapse, and it is imperative that a similar fate in the Baltic. Otherwise the dependent fishing communities may face decades of hardship and the cod may not recover.

Loading the ecosystem with risk:

Currently, only 3 of 8 Baltic fish stocks covered in the MAP are within safe biological limits.⁸ The Baltic MAP fails to ensure that this situation will improve. In particular, the Plan endangers the future of the Baltic cod stocks and poses risks for the long-term viability of the fisheries.

Of particular concern is that the Plan fails to ensure stock recovery even when biomass is below $B_{trigger}$, given as a conservation biomass reference point in Annex II. In this situation, TACs can still be set **at** F_{msy} , which does not ensure a corresponding increase in biomass, rather than **below** F_{msy} , which would permit stock growth.

Moreover, the plan does not sufficiently recognise the inherent variability of environmental conditions within the Baltic and how that necessitates additional precautionary measures. Using MSY F -ranges based on “existing average environmental conditions” grossly under-appreciates the Baltic ecosystem and fish stock dynamics. Given the ecosystem shifts which the Baltic is prone to making and that fish tend to either be gorging or starving, basing MSY ranges on average conditions conceals the risks of the extremes.

Given the environmental variability, and for example the changes to stock recruitment, the assumptions around the current F -ranges could lead us to a situation where quotas are set in line with the Plan but the stock still collapses. In addition, the Council has a record of setting 70% of all quotas above scientific advice for the past 15 years. These factors mean we cannot support the MAP for allowing overfishing to continue and for undermining the MSY objective.⁹

One of the criticisms of the Baltic MAP negotiations has been that they are being used as the basis for other management plans across the EU.¹⁰ In this regard, the lack of recognition of the wide environmental variabilities here makes the Plan seem a potential template for the North Sea rather than the most appropriate for the Baltic region.

ICES was requested to provide the EU with F_{msy} ranges for selected Baltic and North Sea stocks. The following excerpt outlines the risks they identify with quotas set between F_{msy} and F_{upper} , and using $B_{trigger}$ as a baseline:

⁸ STECF report - https://stecf.jrc.ec.europa.eu/documents/43805/55543/2016-03_STECF+16-05+Monitoring+performance+CFP+CORRIGENDUM_JRCxxx.pdf

⁹ <http://www.fishsec.org/2015/12/04/report-from-the-new-economics-foundation-analyses-fishing-quota-decisions-landing-the-blame/>

¹⁰ The Guardian - <http://www.theguardian.com/environment/2016/mar/10/leaked-european-commission-plan-would-open-gates-to-overfishing>

“In utilizing FMSY ranges there are more advantages to fishing between FMSY and Flower than between FMSY and Fupper.

With higher fishing mortalities the following occurs:

- A need for increased fishing effort;
- Higher dependence of stock and yield on recruiting year classes and increased variability on catch opportunities;
- The size of the fish in the stock and the catch will be smaller on average;
- Greater probability of SSB being less than MSY Btrigger;
- A lower probability of density-dependent effects such as reduced growth or increased cannibalism.

For some mixed fisheries it may be difficult to reconcile the Fs on different stocks. An approach for maximizing long-term yield could be to attempt to reconcile F on a mixed fishery using Fs between Flower and FMSY. If this cannot be accomplished, F between FMSY and Fupper could also be used in the short term. However, using $F > FMSY$ for the same stock in the long term implies that there are structural changes required in the fishery to avoid the consequences listed above.”¹¹

Given the concerns that ICES themselves have raised regarding setting fishing opportunities and the relationship to stock health and biomass, we recommend that quotas are set using fishing mortality rates only from Column A from Annex I, or in line with Article 4.3 of the MAP which allows for F to be lower than the numbers listed.

Furthermore, on any occasion in which F ranges listed in Column B from Annex I are made use of, an evidence-based, scientific justification for this must be provided publicly. Such decisions should only be taken if based on peer reviewed scientific advice that has been submitted and reviewed by STECF and made available to the public.

Science is being asked the wrong questions:

Central to the risks inherent in the Baltic MAP is that ICES has been asked to provide advice on the basis of unambitious targets and to avoid collapse, rather than “restoring and maintaining populations of fish stocks above biomass levels capable of producing the maximum sustainable yield.” (Article 2.2, CFP 1380/2013) The MAP would have been improved had Bmsy been used as a target with Btrigger as the lower band conservation biomass reference point.

Instead, the measures in the MAP used to define the conservation biomass reference points are Btrigger and Blim, both satisfactory to ICES precautionary framework but not adequate to achieve MSY. Where Bmsy is mentioned in the Plan, the relationship to Fmsy and fishing mortality ranges is not made concrete.

The EU has committed to fishing all stocks at MSY by 2015, and in situations where this is not possible by 2020 at the latest. In practice for multispecies management and in a mixed fisheries context, this means setting all TACs below Fmsy simultaneously. It is not possible to guarantee

¹¹ ICES paper, EU request to ICES to provide Fmsy ranges for selected North Sea and Baltic Sea stocks: http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2015/Special_Requests/EU_FMSY_ranges_for_selected_NS_and_BS_stocks.pdf

that all stocks have biomass above B_{msy} at the same time; however, fishing mortality can be controlled.

In order for quotas to be set in line with the CFP objectives, in a sustainable manner for the long-term, management of F must be at the forefront. Therefore, all aspects of F need to be understood. Not only do TACs need to correspond to $F < F_{msy}$, but the landing obligation must be strictly regulated and controlled. Discards which are unaccounted for damage the data collection principle of the regulation and is a wasteful, illegal practice. Data collection from recreational fisheries also needs to be improved.

Recommendations for improvements when the MAP is reviewed in 2019/2020:

We recommend that when the plan is reviewed after three years of implementation, that Annex I is revised to exclude values in Column B and comply with the MSY objective agreed in the CFP. This would fulfil article 2.2 of the CFP and promote sustainability.

The F ranges provided in Column A provide sufficient flexibility to manage stocks within a multispecies model. Fishing above F_{msy} has negative consequences for the sustainability of the stocks and is shown to not bring economic benefits or increase landings.¹² Instead, the maximum yield may decrease over time.

Reducing F below F_{msy} permits improvements in individual fish growth. This more risk-averse strategy leads to improved economic and ecological improvements.¹³ The F ranges in Column A are more risk-averse and better account for the environmental variability of the Baltic fisheries as well as scientific and statistical uncertainty, along with the data lag times.

Moreover, we recommend that as part of the review, the Commission asks ICES to evaluate if the Baltic MAP contributed to restoring and maintaining stocks above B_{msy} , the objective of article 2.2 of the CFP.

A clearer framework is required on how to manage data limited stocks. At present no provisions are made within the MAP, despite 2 of 8 quota-managed Baltic stocks being deficient to provide MSY ranges for. Half of these stocks lack conservation biomass reference points, in terms of B_{lim} , and it is unclear under what parameters TACs will be set for data-limited stocks in order to comply with the MSY objective. Moreover, the revised plan should use $B_{trigger}$ as a lower limit reference point, with B_{msy} as the target biomass.

Improving integration with the Marine Strategy Framework Directive (MSFD) is a necessary step to ensure that management can more effectively assess and respond to stocks within Good Environmental Status. Without this, an incorrect picture based only on biomass and F prevails and the state of fish stocks is understood in too narrow a sense.

As an example, the eastern Baltic cod stock may have 'enough' spawning biomass (determinable only if the stock were not data-limited), however this biomass is composed of mostly of small

¹² Möllmann et al. 2013 <http://icesjms.oxfordjournals.org/content/early/2013/08/24/icesjms.fst123.full>

¹³ Svedäng and Hornborg, Waiting for a flourishing Baltic cod (*Gadus morhua*) fishery that never comes: old truths and new perspectives (2015) <http://icesjms.oxfordjournals.org/content/early/2015/06/17/icesjms.fsv112>

fish of indeterminate age. This composition does not reflect the “age and size distribution” that would characterise a healthy stock.¹⁴ Even if F-ranges and precautionary biomass levels were available for this stock, the permitted increases in F according to the plan would rapidly deplete the stock again.

The MAP in its current form does not reflect the precaution necessary to prevent overfishing eastern Baltic cod, other Baltic stocks, nor does the Plan reflect the ambition of the CFP.

According to the European Parliament rapporteur, Jaroslaw Walesa (EPP, PL), “it is important to keep in mind that the plan is a pioneer proposition in a very sensitive ecosystem of the Baltic Sea. Indeed, it may be seen as a “work in progress” given that the scientists are working on more advanced multispecies approaches, which may need to be reflected in the plan at a later stage.”¹⁵

The revision of the MAP in three years’ time will provide an opportunity to amend the Plan so that it adheres to the ambitions of the CFP. In the meantime it is important that improvements to the multispecies models are made, and given the new and untested nature of multispecies management that precaution is observed.

¹⁴ Marine Strategy Framework Directive guidelines - <http://www.msfd.eu/knowseas/guidelines/3-INDICATORS-Guideline.pdf>

¹⁵ J.Walesa European Parliament report on the Baltic MAP - <http://www.europarl.europa.eu/sides/getDoc.do?type=REPORT&reference=A8-2015-0128&format=XML&language=EN>

Provisional annexes to the Baltic MAP:

ANNEX I

Target fishing mortality

<i>Stock</i>	<i>Target fishing mortality range consistent with achieving F_{msy}</i>	
	<i>Column A (Part of the range of F_{msy} as referred to in Article 4(2) and (3))</i>	<i>Column B (Part of the range of F_{msy} as referred to in Article 4(4))</i>
<i>Western Baltic cod</i>	<i>0.15-0.26</i>	<i>0.26-0.45</i>
<i>Eastern Baltic cod</i>	<i>Not defined</i>	<i>Not defined</i>
<i>Central Baltic herring</i>	<i>0.16-0.22</i>	<i>0.22-0.28</i>
<i>Gulf of Riga herring</i>	<i>0.24-0.32</i>	<i>0.32-0.38</i>
<i>Bothnian Sea herring</i>	<i>0.11-0.15</i>	<i>0.15-0.18</i>
<i>Bothnian Bay herring</i>	<i>Not defined</i>	<i>Not defined</i>
<i>Western Baltic herring</i>	<i>0.23-0.32</i>	<i>0.32-0.41</i>
<i>Baltic Sprat</i>	<i>0.19-0.26</i>	<i>0.26-0.27</i>

ANNEX II

Conservation biomass reference points

<i>Stock</i>	<i>Column A</i>	<i>Column B</i>
	<i>Spanning stock biomass reference point (in tonnes) as referred to in Article 5(2) (MSY Btrigger)</i>	<i>Spanning stock biomass reference point (in tonnes) as referred to in Article 5(3) (Blim)</i>
<i>Western Baltic cod</i>	<i>38 400</i>	<i>27 400</i>
<i>Eastern Baltic cod</i>	<i>Not defined</i>	<i>Not defined</i>
<i>Central Baltic herring</i>	<i>600 000</i>	<i>430 000</i>
<i>Gulf of Riga herring</i>	<i>60 000</i>	<i>Not defined</i>
<i>Bothnian Sea herring</i>	<i>316 000</i>	<i>Not defined</i>
<i>Bothnian Bay herring</i>	<i>Not defined</i>	<i>Not defined</i>
<i>Western Baltic herring</i>	<i>110 000</i>	<i>90 000</i>
<i>Baltic Sprat</i>	<i>570 000</i>	<i>410 000</i>