

The multiannual plan for the Baltic Sea – A change in management needed

Background



The Baltic Sea multiannual plan (MAP), established by [Regulation \(EU\) 2016/1139](#), was designed as a cornerstone for EU fisheries management following the 2013 reform of the common fisheries policy (CFP). As the first multiannual and multi-species plan under the new CFP framework, it represented a critical test case for shifting from short-term annual decisions to long-term, objective-driven management with automated rules. A key aim of the MAP was to facilitate regionalised CFP implementation, tailoring management to the specific Baltic Sea ecosystem.

The primary goals of the Baltic MAP included applying the precautionary approach, restoring and maintaining fish populations above levels capable of producing maximum sustainable yield (MSY) by 2020 at the latest, implementing an ecosystem-based approach to minimise fishing impacts, contributing to good environmental status under the Marine Strategy Framework Directive by 2020, and eliminating discards through the landing obligation. The plan specifically covered commercially exploited stocks of cod, herring and sprat, incorporating provisions for setting total allowable catches (TACs) within ranges of fishing mortality consistent with achieving MSY (F_{MSY}), and establishing conservation reference points as safeguards.

Aim of the research

This analysis aims to contribute to the evaluation of the Baltic MAP by providing new insights into the evolution of Baltic fish stocks, the various pressures contributing to their difficult situation, and the

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effectiveness of the fisheries management system in setting fishing opportunities. It reviews historical trends in the state of major Baltic fish stocks, explores the importance of fishing and environmental changes on stock development, assesses the effectiveness of the management system in setting sustainable TACs, and examines the political process behind the MAP's adoption and its subsequent amendments. Ultimately, the findings inform recommendations for EU policymakers to improve Baltic Sea fisheries management.

Major results

The analysis reveals that four of the seven Baltic fish stocks managed under the MAP—both cod stocks (Eastern Baltic cod - EBC, and Western Baltic cod - WBC) and the open-sea herring stocks (Central Baltic herring - CBH, and Western Baltic spring spawning herring - WBSSH)—are critically endangered, with spawning stock biomass far below the limit under which the reproductive capacity of fish population is impaired (B_{lim}). **The MAP has largely failed to achieve its objective of restoring and maintaining harvested species populations above MSY levels.** Overfishing has pushed many stocks into low productivity states, where critically low biomass impairs their reproductive capacity, leading to a decoupling of stock size from fishing pressure and making recovery difficult even with reduced fishing efforts.

A major result of the analysis is that stock assessments suffer from important uncertainties, particularly for depleted Baltic fish stocks, often overestimating stock size and recruitment while underestimating fishing mortality, leading to **overly high scientific advice on catch limits**. This overestimation is compounded by "retrospective patterns" where models tend to underestimate recent fishing mortality and overestimate stock size. For critically endangered stocks, such as WBC, CBH, and likely EBC, this optimistic advice has resulted in TACs that were too high for the stock's actual productivity, driving them to further collapse. In addition, the Council frequently sets **TACs higher than the scientific advice** provided by ICES, exacerbating the problem. For EBC and WBSSH, "zero catch" advice from ICES was ignored by the Council, leading to continued exploitation and further stock depletion. Consequently, fisheries have often been unable to catch the entire TAC, indicating that stock sizes are lower than estimated and fishing is unprofitable.

In contrast to the widespread depletion, the Gulf of Riga herring (GoRH) and Baltic sprat (BS) stocks remain comparatively stable and healthy. This is attributed to sustainable fishing pressures (especially for GoRH) and favourable environmental conditions, including benefits from the EBC collapse and a warming Baltic Sea.

Generally, the Baltic Sea is undergoing **significant environmental degradation**, due to eutrophication (despite partly successful reduction efforts) and climate change, which profoundly exacerbates the vulnerability of fish stocks. Reduced salinity and expanding hypoxia drastically limit the "reproductive volume" for cod, notably concentrating EBC spawning to the Bornholm Basin and causing habitat loss. Warming waters and hypoxia lead to habitat compression for cod, increasing metabolic stress and reducing feeding opportunities, impacting growth and body condition. Similarly, warmer winters disrupt WBSSH reproduction through phenological mismatches between larval hatching and zooplankton prey availability. Eutrophication also degrades coastal spawning habitats for herring and can shift plankton communities towards less nutritious species, affecting herring condition.

Eventually, **food web interactions** further complicate these environmental effects. Following the EBC collapse, an increase in sprat led to significant predation pressure on cod eggs, hindering recovery. The diet of WBC has shifted from energy-rich herring to less nutritious prey like crabs, contributing to deteriorating

body condition. Increasing parasite loads, particularly from growing seal populations, negatively impact cod health, leading to chronic liver disease and increased mortality. While direct top-down control by seals and cormorants on overall cod populations is debated, localised cormorant predation on juvenile cod may hinder recovery in specific areas.

In summary, the analysis demonstrates that the **MAP's core management rules are fundamentally unsuitable for safeguarding depleted Baltic fish stocks**. The management system often violates precautionary principles due to uncertain scientific advice and the practice of setting TACs in the upper F_{MSY} range, which only productive stocks can withstand. The idea to delete the "5% rule" (Article 4(6)), which mandated a low probability of stock size falling below B_{lim} , is perceived as a further step towards depleting Baltic fish stocks by weakening safeguards.

To improve future fisheries management, recommendations include **developing an ecosystem-based, multi-species advice** that accounts for species interactions and environmental change. This necessitates new reference points, including more resilient biomass targets (like B_{MSY}), more precautionary F_{MSY} ranges, and clear rules for TAC setting. Crucially, recovery criteria are needed to prevent premature re-initiation of fishing on depleted stocks, coupled with additional conservation measures such as marine protected areas for spawning and nursery areas, and increased efforts to reduce eutrophication. The systemic depletion and deteriorating environmental conditions imply, however, that a fast recovery of cod and open sea herring stocks is unlikely even under a fishing ban.

Further information

This executive summary is available in the following languages: English, French, German, Italian, Polish and Spanish. The background analysis, which is available in English, and the summaries can be downloaded at: <https://bit.ly/4oEfUQh>

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