The road to recovery for Baltic cod

Baltic cod is in crisis. The two main populations (Eastern and Western Baltic cod) are in a critical state after a massive decline over the past two decades, with no recovery in sight. As a result, the International Council for the Exploration of the Sea (ICES) has recommended a zero fishing quota for the Eastern Baltic cod population for the last three years. The trajectory for the Western Baltic cod is not far behind. In a last attempt to reverse the decline, targeted fishing for both cod stocks was prohibited in December 2021 and a limited bycatch quota agreed, but this is unlikely to rebuild the populations.

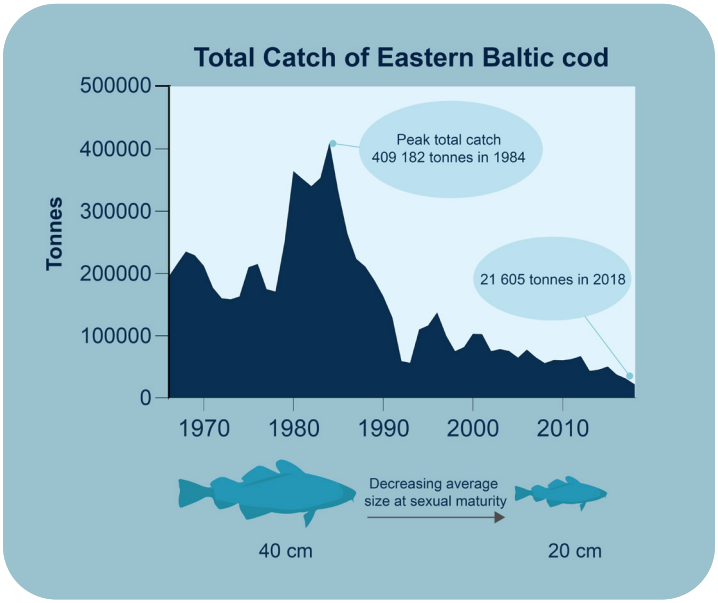
A new scientific report published by the Fisheries Secretariat shows that the collapse of the Baltic cod populations was not a sudden event, but an ongoing process driven by overfishing and environmental degradation. This comes at a crucial time for the planet, when we need our seas in prime condition and more resilient to the threats posed by climate change.

The Decline of Cod in the Baltic Sea report

The aim of the report is to collate current knowledge and research concerning the state of Baltic cod. Based on a scientific literature review of both academic studies and other literature, the report provides an overview of the situation of cod in the Baltic Sea today, including:

- the current features and the changes that have occurred in Baltic cod;
- factors/problems that are assumed to have contributed to the changes;
- suggested measures that may counteract these issues.

The report also describes European Union fisheries management in the Baltic Sea, and provides recommendations based on the current state of both the ecosystem and the legal framework.



Cod biology and stressors

Atlantic cod (*Gadus morhua*) is a top predator that plays an essential role in the Baltic Sea ecosystem. The two cod populations in the Baltic Sea are adapted to the challenging conditions of low sali-nity and low but variable oxygen concentration in the water that characterise this sea. However, both populations have declined dramatically in recent decades, and are now suffering from poor health, a reduced size distribution with few large individuals, and low productivity.

Cod has been an important food source for humans in the Baltic region for centuries. In more recent times, this popularity fed a profitable industry but unsustainable catch levels caused the fishing pressure outpaced the cod's reproductive ability to replenish the population by the end of the 1980's, resulting in the gradual collapse. This has resulted in a regime shift, where the cod fishery from the past (with a limited bycatch of flatfish) has now become a fishery targeting flatfish where cod is now just bycatch.

Decades of high fishing pressure are undoubtedly one of the main causes of cod decline in the Baltic but many other anthropogenic environmental stressors have played a role too. Eutrophication and chemical pollution have changed the marine environment, resulting in large areas of low levels of oxygen and dead zones where hardly any life is possible. In addition to the targeted cod fishery, other fishing practises have had great impact. For example, the large-scale fishing for small fish like sprat and young herring that provide essential food for cod leads to starvation. Also, the bycatches of cod in all life stages in demersal fisheries remove many juveniles and adults from the populations.

Climate change

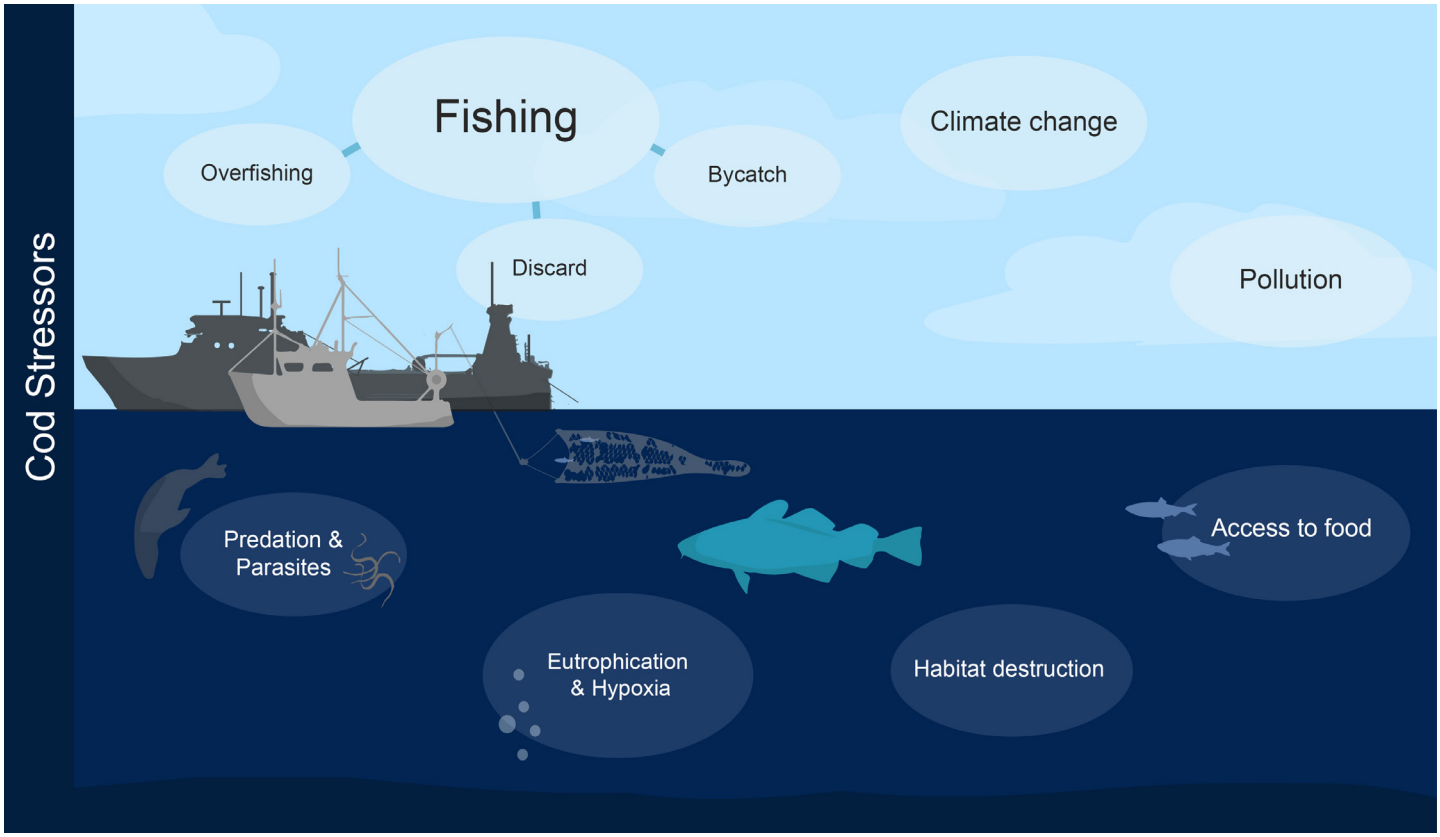
Climate change is causing sea temperature to rise, impacting the resilience of the ocean and the species within it. As the Baltic Sea is a shallow sea basin, almost completely enclosed by land, effects of climate change will likely be severe. The feeding patterns, reproduction and spawning times of cod are all linked to temperature. Essentially, the effects of climate change adds further burdens to the Baltic cod populations, making it even more important to limit the direct human impacts on the species in any way we can.

Fisheries management in the Baltic Sea

Despite the clear evidence of the perilous state of Baltic cod, Baltic EU Member States have set fishing limits above the sustainable levels advised by scientists every year since 2013. In July 2019, the impending collapse of the Eastern Baltic cod population led the European Commission to announce emergency measures to save this stock. This resulted in the introduction of an immediate ban on all targeted commercial cod fishing in most of the Baltic Sea. Yet, despite this drastic step and against the advice of scientists, fishers were allowed to catch cod again in 2020. That year, 2,000 tonnes of Eastern Baltic cod landings were permitted, provided it was classed as 'bycatch', leading to a further decline of the populations. This led to the decision in October 2021 to ban all targeted fishing for cod (both the Eastern and Western stock) and to significantly reduce the amount of unavoidable bycatch allowed.

However, only part of the problem is addressed by the new restrictions. Since most of the cod are now bycatch in demersal fisheries for other species – fisheries, predominantly with trawl gear, that catch a variety of species throughout the year. To manage all stocks sustainably, fishing should be limited by the needs of the most vulnerable species and therefore halted once that populations is depleted, even if it means that 'available' quota from other stocks goes unexploited.

Since 2015, there is an EU policy – the landing obligation – which makes it illegal to discard cod above quota. But a lack of effective control mechanisms means that unwanted cod continue to be thrown back dead into the sea. This does nothing for the recovery of the populations and seriously undermines scientists' ability to monitor the stocks, since illegal discards do not appear in the catch and landings data they use in their calculations.



Recommended actions

To help cod recover in the Baltic Sea, an ecosystem-based approach must be implemented that recognizes the interactions among species in food webs, crucial habitats for all life stages of cod and the importance of predatory fish to a healthy ecosystem. On all management levels, concrete steps must be taken toward low-impact fisheries in the Baltic Sea, safeguarding essential habitats, as well as combatting pollution and eutrophication.

We propose these steps to aid the recovery of cod in the Baltic Sea:

Implement an ecosystem-based approach to fisheries management

1. Implement multi-species management in demersal fisheries

Today, most of the cod is taken as bycatch in demersal fisheries for flatfish and other fish species. Setting catch limits individually for each stock – so-called Total Allowable Catches (TACs) - do not reflect the reality in the fisheries, as catches of one species results in the bycatch of others. As a first step, Baltic Sea Member States and the European Commission need to request that ICES provides real multispecies advice on fishing opportunities.

2. Add a sufficient precautionary buffer to the fishing quotas

A combination of multiple anthropogenic stressors make fish stocks in the Baltic more vulnerable to overexploitation and less likely to recover. This should be taken into account in the discussion on fishing limits. TAC proposals from the European Commission shall incorporate a sufficiently large buffer to be precautionary and in line with Common Fisheries Policy (CFP) objectives. We propose that the European Commission makes a Special Advice Request to ICES to calculate how large this buffer needs to be.

3. Set industrial fishing limits based on the precautionary approach and EBFM

Forage fish like sprat and small herring are an essential source of food for predatory fish, mammals and seabirds. These populations are also targeted by very large-scale pelagic trawlers and, when landed, mainly used in fish meal production feeding other fish in aquaculture or livestock. When setting the catch limits for these so-called industrial fisheries, the fish's role as food for other species should be taken into account, as well as the spatial distribution of the stocks and their predators. Fishing effort should not be too concentrated.

Make fisheries sustainable

1. Prioritise low impact fishing

A system that favours low impact fishing by providing priority access to fishing opportunities for the vessels that do the least damage, or fish in the most sustainable manner, would benefit both the fishing industry and the ecosystem. Such a principle is already outlined in Article 17 of the CFP; Member States should implement this by allocating fishing opportunities to vessels with the lowest cod bycatch. Our analysis shows that this policy is still not fully implemented, even though the CFP regulation was adopted in 2013. It is important that the Baltic Member States make more use of this obligation, to the benefit of all Baltic fish populations.

2. Make REM mandatory in fisheries

Sustainable management is only possible if catch data is reliable and there is an appropriate level of control and enforcement. Remote Electronic Monitoring (REM) provides a cost effective way to address all of the above. Particularly considering the documented continued illegal discarding of unwanted cod, it is time to make REM mandatory in fisheries interacting with cod in the Baltic Sea.

3. Mandatory selectivity measures to reduce bycatch

Over the past years, advances have been made in alternative gears development which would help prevent bycatches of cod, but very few of these improvements are currently used by the fishing sector. To decrease cod mortality, making the use of best available selective gear mandatory in fisheries with bycatch of cod, would be an effective way to reduce/minimise cod mortality.

Improve environmental protection

1. Implement the HELCOM Baltic Sea Action Plan

The Baltic Sea marine environment is in a dire state due to several reasons, foremost eutrophication and hypoxia caused by agricultural run-off and pollutants from human activities. These wide-ranging problems are best addressed through coordinated action among all nations around the Baltic Sea. The Baltic Marine Environment Protection Commission also known as the - Helsinki Commission (HELCOM) - provides a framework for this regional coordination and joint actions are agreed and implemented under a Baltic Sea Action Plan (BSAP), which was updated in 2021. Full implementation of the HELCOM BSAP will lead to meaningful improvement of the state of the Baltic Sea.

2. Actively work to restore damaged ecosystems & minimize bottom trawling

Humans have greatly damaged essential habitats in the Baltic Sea for decades. Bottom trawling is one of the especially harmful activities that are allowed to continue – even in protected areas. The new EU restoration law will provide an opportunity to make binding agreements on ecosystem restoration. Such efforts should be combined with a removal of the most destructive fishing gears from the Baltic Sea in a just and progressive manner.

3. Connect environment and fisheries in legislation, policy and implementation

Even though strong links between fisheries and environmental law exist through several EU laws and directives, there are only a few examples of Member States actually combining them in their national management. However, as they are legally obliged to follow EU law, delaying and avoiding the implementation of an Ecosystem-Based Approach to Fisheries Management at a national level is no longer an option. To do this, full integration of fisheries and environmental policies is needed at national level, as well as in inter-governmental organisations (IGOs) like HELCOM and BALTFISH.

Cod has an essential role in the Baltic ecosystem and plays a key part in the recovery of the Baltic Sea. Even though the current state of Baltic cod is the worst it has ever been, recovery is possible if steps are taken now to turn the downwards trend. It is the responsibility of Baltic countries, the European Commission and all stakeholders to support these efforts and bring around the return of the cod.

Download the full report here:

www.fishsec.org/returnofthecod/

The report was produced by the Fisheries Secretariat as part of the Return of the Cod project. The project is dedicated to creating the conditions for restoring cod populations in the Baltic Sea.

The Fisheries Secretariat (FishSec) is an independent non-profit organisation dedicated to the protection and restoration of marine ecosystems, with a focus on fisheries.

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