BSAC Demersal Working Group
06 November 2025
10:00 – 12:30 (CEST) online through Zoom

Report

1. **Welcome by the Demersal WG Chair Teija Aho**

Teija Aho, the Demersal WG Chair welcomed all the BSAC members, the European Commission, Member States and all other observers.

2. **Formalities for the start of the meeting**

Apologies, AOB, and adoption of the agenda

The agenda was adopted.

3. **Cod recovery plan:**

- **Christopher Zimmermann on cod recovery plan**

Christopher Zimmermann, Thünen Institute of Baltic Sea Fisheries, Germany presented the status of the Baltic cod stocks and considerations for a Baltic cod recovery plan[1]. He stated that the Baltic ecosystem is changing at an unprecedented speed, suffering from combined impacts such as eutrophication and climate change. Degradation of essential benthic habitats, changes in food webs, lack of oxygen, changes in water temperature, salinity and other ecosystem processes are pronounced. The heatwaves may enhance stratification of the upper water layers in summer, leading to further reductions in bottom oxygen concentration. These changes affect growth, spatial distribution, and abundance of several fish species. The presenter underlined that future developments are difficult to predict reliably. Science needs to be reliable but can only use information from past to determine the future.

Despite drastic decreases in the fishing effort for western Baltic spring spawning herring and two Baltic cod stocks, these stocks show no signs of recovery.

Since 2003, the Baltic cod stock has been separated into the western and eastern cod stocks on the basis of the catching area. From 2013, it is possible to distinguish individual fish of the two stocks by means of genetic methods. The EU cod recovery plan in force from 2007 until 2016 and the Baltic MAP (in force since 2016) have not been successful in improving the situation.

In the case of western cod stock, current very low catches do not explain the high overall mortality, much of which likely results from unaccounted natural mortality. Young cod do not grow further. Recruitment has improved, but older year classes do not enter the fishery. ICES recommended a zero catch for 2026 and 2027. The AGRIFISH Council in October 2025 decided for a rollover of bycatch quota in 2026.

[1] Past Meetings - Baltic Sea Advisory Council; 251106 Baltic Cod Status - BSAC

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For the eastern cod stock the AGRIFISH Council in October 2025 decided for a rollover of bycatch quota in 2026. The stock does not show any signs of recovery despite a very low fishing mortality. Christopher Zimmermann underlined that the possibility of recovering the stock by taking into account only the fishing mortality are very limited. According to ICES, both cod stocks remain collapsed and cannot be commercially exploited for an unknown period. However, he emphasised that the Baltic cod stocks are far from being threatened according to the IUCN criteria. There are presently approximately 5 million adult western cod and 90 million adult eastern cod.

Among the potential causes of the current state of Baltic cod Christopher Zimmermann mentioned overfishing in the past, impact of predators, parasite infestation and malnutrition (thiamine deficiency). Neither of these factors explain the findings fully, like reasonable recruitment in the west and a continuous decline in condition over more than 30 years in the east.

Following extensive research, the scientists from the Leibniz-Institute of Baltic Sea Research (IOW) and the Thünen Institute of Baltic Sea Fisheries proved that the food web for the eastern Baltic cod has lengthened with large-scale cyanobacteria blooms, which increasingly occur due to eutrophication and climate change. Due to the trophic lengthening in the pelagial, the cod population has far less energy available. The eastern cod mainly feeds on pelagic fish, due to a lack of oxygen in the deeper basins. Only the pelagic food web in the central Baltic is affected by trophic lengthening due to the growth of N2-fixing cyanobacteria and associated microzooplankton. This fact could explain the continuous loss in condition over 30 years, long before other stressors appeared. If the nutrient regime does not improve, the eastern Baltic cod is unlikely to recover. The western Baltic cod feed mainly on common crab and other benthic organisms and their food web remains shorter. The benthic food web including flounder is not affected by trophic lengthening in neither area.

Research carried out in Germany using telemetry indicated that western cod is mainly affected by global warming and lack of oxygen. From end of July onwards the upper water layer is too warm for cod and deeper water have too little oxygen. Their habitat is therefore compressed. Wind-induced upwelling events occurring in the coastal areas can affect the coastal fish communities by bringing cold oxygen-free or even H_2S-rich waters to the surface. Many dead fish have been observed after such events at the sea bottom, twice of the German coast in the past 6 weeks.

In the context of the recovery of the cod stocks, Christopher Zimmermann underlined that time should not be wasted for negotiating little changes in the bycatch-TACs, while the fishing mortality should be kept low for an unknown period of time. Fisheries managers should focus on the herring and sprat for which fisheries have impact. The Baltic cod is mainly affected by nutrients in the Baltic Sea and efforts should be focused on reducing the input from land. In his view, (temporary) spawning closures could be a useful measure on the conditions that their effectiveness is monitored and evaluated. MPAs (year-round closures) will not help in cod recovery as they play no role in decreasing eutrophication. Measures aimed at minimising the impact of predators should be implemented, however hunting seals and cormorants appears to be less effective then changing to gear which keeps predators away from fish caught..

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Christopher Zimmermann emphasised that the cod stocks in the Baltic are unlikely to recover within a decade. Efforts should be focused on improving the ecosystem, with measures applied mainly on land close to the land-sea interface.

Discussion

A representative of small-scale fisheries asked why the herring and sprat do not show the same dependency as cod on the trophic pyramid and their condition has improved. He also referred to the fact that studies conducted in some regions of the Baltic, such as the Åland Sea, indicate that cod is in good condition.

Christopher Zimmermann explained that herring and sprat are lower in the trophic pyramid than cod and for this reason are less affected. He agreed that some studies indicate that cod could be in a better condition if there is enough food available. Åland Sea cod is known to feed mainly on demersal species, so the trophic lengthening in the pelagic food web would not apply.

A representative of the OIG referred to the ICES advice for central Baltic herring, pointing clearly to the fact that an increase in SSB is a result of the decreased fishing mortality. Therefore measures taken at decreasing fishing mortality could be effective.

Christopher Zimmermann stated that central Baltic, Bothnian Bay and Gulf of Riga herring and Baltic sprat are the stocks where fishing mortality still has an impact on the spawning stock biomass. However, measures aimed at further reducing the fishing mortality are not effective in the case of western and eastern cod.

Another representative of the OIG asked whether the Baltic cod is affected by this shift in distribution of sprat to the north. She also stated that the impact of trawling on benthic communities and sediments should be considered.

Christopher Zimmermann confirmed that sprat and herring have had a more northerly distribution in recent years, and there is less overlap with the distribution of the eastern Baltic cod stock. It is, however, unclear whether the cod stock has been impacted by this shift of distribution. In his view, considering the size of the cod stock, there is enough sprat available as food for cod in SDs 25-26. ICES has not recommended including spatial considerations in the management.

With reference to the impact of trawling, he stated that trawling could only affect cod during spawning as cod are then vulnerable to disturbance. Therefore, spawning closures are recommended to reduce the disturbance, and are not meant to reduce the outtake. During the rest of the year cod is not affected by trawling.

Another representative of the OIG referred to the fact that trawling also disturbs nutrients and could therefore increase eutrophication.

She underlined the need for a holistic approach to cod recovery, taking into account not only the CFP but also Maritime Spatial Planning and Water Framework Directive.

She also referred to the HELCOM Red List of Species[2] where Baltic cod is categorised as endangered (worsened from status as vulnerable in 2013)

[2] https://helcom.fi/wp-content/uploads/2025/06/Red-List-II-species-2025.pdf

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Christopher Zimmermann reiterated its opinion that Baltic cod should not be listed on the Red List as it is not anywhere near being threatened by extinction.
With reference to bottom trawling, he referred to the experiments carried out in Germany that have shown no difference of trawled and untrawled bottom sediments. He underlined that 90% of the trawl effort has been removed from the fisheries in the past 4 years. In his view, trawling bans will have no impact on cod recovery. Storms have bigger impact on sediments than trawling in shallow waters like the western Baltic Sea.
A small-scale fisheries representative underlined that the recovery plan should focus on the core problem that cod are not growing. He referred again to the fact that the condition of pelagic fish in the Baltic has improved.
A representative of the OIG asked whether stone reef restoration carried out in Denmark could potentially help in restoring the ecosystem and providing more food for cod.
Christopher Zimmermann explained that the shortage of food for cod in the eastern part of the Baltic is mainly caused by eutrophication. It is not the case for the western cod which is mainly affected by water warming and lack of oxygen. Artificial reefs could help in locally cooling waters if located in the right place. In the western part of the Baltic, waters below 20 m depth are depleted from oxygen for more than four months of the year. The most effective and fastest way to reduce nutrient inflow is to restore wetlands on land. Wetlands are very effective in removing nutrients and their effects on the sea are quickly visible. Other measures to improve the state of the ecosystem include reducing the use of fossil fuels, as nutrients also enter the Baltic Sea through atmospheric transport.
The WG Chair asked whether cod restocking programmes could be of benefit to the cod recovery.
Christopher Zimmermann stated that the main problem is the survival of cod juveniles to the adult stage and thus restocking at age 1 would only increase the mortality of this age group..
An observer from MSC asked whether ICES disposes of enough information on different sub-populations of herring as well as spatial management measures to take give advice to the managers.
Christopher Zimmermann replied that ICES advice takes account of the information on sub-populations and advises fishing closures to protect weak stock components. With the development of genetic methods to identify different sub-populations, ICES will dispose of more knowledge and is now working on guidelines on providing advice for fisheries that concurrently catch multiple stocks of the same species. Research is carried out by different national institutes around the Baltic and it will take a number of years to have advice on different sub-stocks.
A representative of the OIG informed that WWF Finland is involved in wetland restoration through various projects focused on habitat creation, improving water quality, and supporting declining waterfowl populations, thus enhancing fisheries management by recreating critical habitats for spawning, nursery, and foraging, supporting both commercially important and endangered species.
Christopher Zimmermann agreed that the wetlands restoration has a huge effect on the sea and on the fish and therefore the efforts to restore the Baltic ecosystem should get across the land sea-border.

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In reply to a question on joint commitment issued by the European Commission and Baltic Sea Member States during the AGRIFISH Council in October 2025 agreeing on the need to request ICES to provide specific scientific advice on fish stocks rebuilding trajectories. **Christopher Zimmermann** underlined that recovery of the cod stocks in the Baltic will not be possible unless measures are taken on land to reduce nutrient input.
A small-scale fisheries representative asked whether reducing herring and sprat outtake to maximise their stock sizes could potentially improve the condition of cod[3].
A small-scale representative from Poland referred to the impact of the growing populations of predators on Baltic fish stocks. He remarked that there are no dead flatfish among other dead fish on the picture taken at the bottom of the Baltic Sea.
A small-scale representative from Germany asked what are the perspectives for the recovery of cod and for Baltic fisheries. He underlined the need for predator management with effective measures.
Christopher Zimmermann emphasised that the main problem for eastern Baltic cod is limited energy uptake driven by environmental conditions. The cod population has far less energy available than in areas without cyanobacteria blooms. If the nutrient regime does not improve, the eastern Baltic cod will not recover. Habitat restoration efforts with a focus on improving bottom oxygen content are the only way to help cod. He stated that perspectives for demersal fishery in the Baltic are pessimistic in the next 20 years. Flatfish share the same habitat as western Baltic cod and are a bit more tolerant to warm waters and reduced oxygen levels. However, they also die if water temperature exceeds a certain limit and they can't live without oxygen. In the future, coastal fisheries for cod and flatfish may be carried out on a small scale, but pelagic fisheries will dominate in the Baltic. He agreed that studies have confirmed that predation by seals and cormorants has an impact on cod populations, but there must be also another reason for the disappearance of juvenile cod. Seal predation can be limited by using special seal-proof gears. Such gears should be used even at the expense of lower catches.
A small-scale fisheries representative noted that the recent survey data suggest some increase in the abundance of smaller cod in the eastern Baltic. He asked how this could be explained and what could be done to help this cod grow.
Christopher Zimmermann stated that the high recruitment estimates noted in one year cannot be considered as reliable to assess the state of the stock. The state of the population should be assessed by taking into account the SSB, composed of adult fish. The negative effects of poor oxygen conditions, in combination with low salinity, on cod offspring survival are well documented.
The WG Chair thanked Christopher Zimmermann for his presentation.

4. Science Focus Group – any issues of relevance that could be brought to the group

[3] WKBBALTPEL, Item - Benchmark Workshop on Baltic Pelagic stocks (WKBBALTPEL) - International Council for the Exploration of the Sea - Figshare

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The WG Chair invited the participants to propose issues for discussion at the Science Focus Group relevant to the cod recovery plan.
A representative of the OIG underlined the need for holistic approach to the recovery of fish stocks and proposed to invite experts on wetland restoration aimed at nutrient removal to the next meeting of the Science Focus Group.
Another representative of the OIG proposed to invite experts from the Åland Sea, where the cod are in much better condition, to find out more information about this sub-population of cod.
A small-scale representative from Germany underlined that measures aimed at managing the predators should be introduced without delay.
A small-scale representative proposed to invite cod experts from areas where cod had collapsed and recovered, such as Kattegat.
A representative of the OIG stated that the Demersal Working Group should continue discussing the cod recovery, as the group is more representative of the BSAC composition than the Science Focus Group. Moreover, the Science Focus Group is already overloaded with topics for discussion. In her view, the two cod stocks should be discussed separately in the presence of relevant experts.
The BSAC Secretariat informed that Professor Christian Möllmann, from the University of Hamburg will present the report on the Baltic MAP, commissioned by the PECH Committee of the European Parliament.
The Demersal Working Group decided to continue discussing cod recovery in its next meeting in March 2026. The WG decided to ask the Science Working Group for some input on cod recovery measures to the next Demersal WG. The WG decided to invite wetland restoration experts and cod experts to its next meeting.
The Working Group Chair thanked all participants for good discussions.

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