



Firth of Clyde cod spawning closure for 2022/23

1. Do you agree with the Scottish Government's view that it is appropriate to renew the seasonal closure in the Clyde, as in previous years, to protect spawning cod, for 2022/23?

Please provide your comments in the text box below

LINK members agree that the closure for the protection of spawning cod in the Clyde should continue, as West coast and Irish Sea cod stocks continue to show limited population recovery according to ICES assessments. The results from the Scottish Oceans Institute/Clyde Fishermen's Association study discussed in the consultation paper indicating the presence of spawning cod is promising and supports the need to retain the closure to protect this population. Protected areas are proven to enable population recovery of cod and provide tangible benefits to fisheries¹.

2. Do you have any views on the proposed continuation of exemptions, which have previously applied, for fishing boats fishing with scallop dredges, creels or trawls used for fishing for Norway lobsters?

Please provide your comments in the text box below

LINK members do not support the retention of the exemptions contained in the 2019 SSI. We agree with the notion to strengthen the closure, and request that the exemptions granted to *Nephrops* trawlers, creel and scallop dredgers be removed from the SSI providing the Clyde Cod closure.

The Future Fisheries Management Strategy makes a commitment to consider additional protections for spawning and juvenile aggregation areas in Scottish waters. Cod is listed as a Priority Marine Feature (PMF) and an OSPAR Threatened and Declining Species. Cod prefer coarse sediments for spawning² and several coarse sediment habitat types are found throughout Areas 1 and 2. These include 'circalittoral and offshore sand and coarse sediment communities', which is listed as a Protected Feature within the Clyde Sea Sill nature conservation MPAs and overlaps with the spawning closure. Therefore, disturbance to this habitat caused by mobile demersal gear, including those currently exempt under the 2019 SSI, should be prohibited throughout Areas 1 and 2 during the closure. The National Marine Plan (General Policy 9B) requires that "*Development and use of the marine environment must: [...] Not result in significant impact on the national status of Priority Marine Features*". Therefore, LINK members would like to see progressive steps taken to reduce pressures on and enable recovery of PMFs that provide critical habitat for cod and other commercial species at important life-history stages, both within and outside MPAs to maximise the recovery of cod (and other fish and shellfish species) in Scottish waters. General Policy 9B should therefore apply to cod and its spawning habitat within the Clyde, where the status of this population has already been severely impacted potentially contributing to impact of national significance, which validates the rejection of these fishing exemptions.

ICES advise that when the MSY approach is applied there should be zero catches of Atlantic Cod in 2021 and 2022. Both juvenile and mature cod may be taken as bycatch by *Nephrops* trawlers, creel and scallop dredgers; when spawning, cod aggregate around specific grounds with a high level of fidelity, making them vulnerable to high fishing mortality. Furthermore, the continuation of fishing activity in Areas 1 and 2 is likely to disturb cod spawning behaviour both in terms of noise from fishing activity and deployment of gear². Interrupting the spawning process reduces the chances of successful reproduction and population recovery. Given the critical

¹ Moland, E., Olsen, E. M., Knutsen, H., Garrigou, P., Espeland, S. H., Kleiven, A. R., ... & Knutsen, J. A. (2013). Lobster and cod benefit from small-scale northern marine protected areas: inference from an empirical before-after control-impact study. *Proceedings of the Royal Society B: Biological Sciences*, 280(1754), 20122679.

² González-Irusta, J. M., & Wright, P. J. (2016). Spawning grounds of Atlantic cod (*Gadus morhua*) in the North Sea. *ICES Journal of Marine Science*, 73(2), 304-315.



status of the West coast cod population and the evidence for reproductive isolation in the Clyde area, it is important to strengthen the closure to prevent disturbance and bycatch occurrence and maximise recovery.

3. Do you have any views on alternative or complementary measures that could be considered for the protection of cod spawning in the Firth of Clyde for 2024 and beyond?

Please provide your comments in the text box below

There are several complementary measures that would support the protection and recovery of cod in the Clyde. Increased monitoring and enforcement should be prioritised parallel to the implementation of management measures for the protection and recovery of cod, including the roll out of Remote Electronic Monitoring (REM) with cameras for the Scottish fleet. Roll out of REM with cameras for the Scottish fleet, should be considered an important priority to prevent the management measures imposed by the 2019 SSI from becoming undermined. The information collated through the roll out of REM with cameras throughout the Scottish fleet will strengthen the ability of decision-making procedures to be adaptive, reflective and transparent. As a minimum, long-term monitoring to assess the effect of the seasonal closure is essential to inform an adaptive approach to future management³.

Cod play a key ecological role as top demersal fish predators and their decline within the Clyde has contributed to a major shift in fish assemblages in recent years. Notably, both cod and the coarse gravel and mixed sands habitat present in Areas 1 and 2, play a key role in oceanic carbon cycling. In particular, seabed sediments like coarse gravel and mixed sands are important in supporting biochemical carbon cycling processes⁴. Damage or disruption to such natural marine carbon sinks should be reduced as part of a transition to climate-smart and nature-friendly fisheries⁵. Therefore, spatial protection of cod spawning habitat should be prioritised as part of a suite of measures to contribute to the national recovery of cod populations.

This response is supported by the following LINK member organisations:

Fidra, Marine Conservation Society, National Trust for Scotland, Scottish Wildlife Trust, WWF Scotland

Scottish Environment LINK is the forum for Scotland's voluntary environment community, with over 35 member bodies representing a broad spectrum of environmental interests with the common goal of contributing to a more environmentally sustainable society.

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³ Eero, M., Hinrichsen, H. H., Hjelm, J., Huwer, B., Hüsey, K., Köster, F. W., ... & Zimmermann, C. (2019). Designing spawning closures can be complicated: Experience from cod in the Baltic Sea. *Ocean & Coastal Management*, 169, 129-136.

⁴ Woulds, C., Bouillon, S., Cowie, G. L., Drake, E., Middelburg, J. J., & Witte, U. (2016). Patterns of carbon processing at the seafloor: the role of faunal and microbial communities in moderating carbon flows. *Biogeosciences*, 13(15), 4343-4357.

⁵ https://media.mcsuk.org/documents/Climate_Smart_Fishing_Report_FINAL.pdf

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