Opening Statement,
IFI,
20.03.24

Iascach Intíre Éireann
Inland Fisheries Ireland

Opening Statement

of

Mr. Barry Fox, Head of Operations, Inland Fisheries Ireland

on

'Compliance with the Nitrates Directive: Implications for Ireland' for the Joint Oireachtas Committee on Agriculture, Food and the Marine.

Good evening, Deputies and Senators.

Thank you for inviting us this evening to discuss the Nitrates Directive and associated matters in a national context. I am accompanied by Dr. Fiona Kelly this evening who is a Senior Research Officer in Inland Fisheries Ireland and Mr. Brian Beckett who is the Director of Sustainability and Climate Action in Inland Fisheries Ireland.

Inland Fisheries Ireland (IFI) is the statutory authority tasked under section 7(1) of the Inland Fisheries Act 2010, with responsibility for the protection, management, and conservation of the inland fisheries resource and is one of Ireland's core environmental agencies. Ireland has approximately 74,000 km of rivers and streams, 12,200 lakes and an extensive coastline of almost 3,200 km, all of which fall under IFI's jurisdiction. IFI's role relates to all fish species in fresh water and their habitats, to all aspects of the aquatic environment, such as water quality, biodiversity and hydromorphology and all factors that influence biotic communities within water bodies. The protection and conservation of valuable water resources and protection and enhancement of biological diversity are core components of IFI's legislative remit. IFI has a long history of assessing the health of rivers, lakes, and transitional waters through the

monitoring of fish populations, these national monitoring programmes report on the status of fish populations and inform riverine restoration and protection measures. The fisheries service has worked since the 1950's with all stakeholders including Ireland's farming communities to safeguard the sustainability of fish populations for the benefit of all.

Healthy freshwater and marine ecosystems are essential for people and nature. Fish populations are a key component of these ecosystems and a primary barometer of environmental health. Freshwater and marine ecosystems and many species are under severe environmental pressure, and some are threatened with extinction due to a combination of factors including water quality decline. Ireland's particularly vulnerable and threatened fish species include the Atlantic salmon, Sea and Brown trout, Arctic char (glacial relict species), Pollan, Smelt, Shad species, Sea and River Lamprey and the critically endangered European eel all rely on clean and abundant water for survival.

Inputs of excessive nutrients (nitrogen and phosphorus) to water bodies leads to an increase in plant and algal growth that degrades water quality. Fish need good quality water and oxygen to survive. An increase in plant growth causes a reduction in dissolved oxygen in the water when the algae die and decompose and can cause fish to die. Eutrophication (i.e. enrichment by nutrients) can also kill off plants that fish depend on for their habitat and alter the river or lake bed habitat for invertebrate species which are a food source for many fish species. When algae and plants increase in a waterbody this can lead to a reduction in water clarity and recreational suitability for stakeholders (e.g. anglers) and can also reduce the ability of some fish to see prey or predators. Some algal blooms pose an additional threat because they produce toxins, these can be a public health risk and could destroy economically important fisheries. In a report on fish kill trends in Ireland, that will be published in Q2, IFI has identified that agriculture and eutrophication have been the largest contributor to fish kills in Ireland since 1969. The proportion of fish kills attributed to agriculture and eutrophication, was lower in the 2006-2022 period than the 1969-2006 period.

The EU Water Framework Directive states that all surface waters should reach at least Good Ecological Status by 2027. Good ecological status means a healthy aquatic environment aligning with IFI's legislative remit to protect and conserve our fish populations. EPA data indicate that in Ireland, 46% of surface waters are in unsatisfactory condition. Of those water bodies considered 'At Risk of not meeting Good Ecological Status', 63% are under pressure from agricultural sources. Elevated nitrogen concentrations are one of the factors that leads

to poor water quality outcomes in all waters. The EPA has developed a Source Load Apportionment Model (SLAM) which estimates the proportion of the nitrogen inputs to waters in each catchment that comes from each sector. The proportion of the nitrogen coming from agriculture (pasture and arable) is over 90% in the most acutely affected catchments, namely the Barrow, Nore, Suir and Blackwater catchments. IFI is responsible for the National Water Framework Directive fish monitoring programme. Evidence of nutrient enrichment was noted across the Barrow and Nore catchments (and other catchments) during catchment wide river surveys carried out by IFI in 2020 and 2021, along with 26 deteriorations in fish ecological status.

The EPA considers that Good Ecological Status (WFD) is unlikely to be supported in rivers when nitrate concentrations are higher than 1.8 mg/l as N (equivalent to 8mg/l NO3-). In 2022, 44% of Ireland's rivers had concentrations higher than 8 mg/l NO3 in 2022 (EPA, 2023). It is clear that reductions in nitrogen loads in waters in these catchments are needed to deliver good water quality outcomes and support healthy fish populations and aquatic ecosystems overall.

With respect to the questions posed by the committee, IFI comments as follows:

Questions 1 and 2 are outside of IFI's area of expertise.

3. Is it possible to maintain Ireland's Nitrates Derogation at its current level, while ensuring that there are improvements to Ireland's water quality?

Given the issues identified by IFI staff on the ground, this would likely require a significant investment in targeted measures including storage infrastructure and capacity combined with detailed Nutrient Management Planning, which should clearly demonstrate a nutrient balance on lands whether on the farm of origin or the lands where organic fertiliser is to be exported. Increased awareness-raising and advice on water quality as well as increased compliance and enforcement activity would be critical.

4. Is the Nitrates Action Programme fit for purpose in protecting Ireland's water quality?

The programme is fit for purpose in principle but there are challenges to effective implementation that need to be addressed potentially requiring further investment in infrastructure, awareness and compliance/enforcement (e.g. answer given to Q3).

5. Are there additional supports required to ensure farmers can be compliant with the Nitrates Action Programme?

In IFI's experience, challenges to compliance most often relate to organic fertiliser management and land use practice. Additional supports could include:

- Supports for investment in storage infrastructure.
- Increased training supports for farmers, contractors and advisors - to increase awareness of the value of good water quality, potential value of slurry and soiled water as a fertiliser and the potential negative impacts on the environment of poor practices.
- Support for detailed nutrient management planning with associated soil sampling so landowners are aware of the nutrient requirements in more detail with the aim of achieving a nutrient balance and sustainable management of nutrient load.
- Supports to restrict cattle access to waters for all landowners (not just derogation farmers) and supports to further protect riparian and instream habitats through the creation of buffer zones where multiple co-benefits (biodiversity, climate, water quality) would accrue. Associated supports to install drinkers away from watercourses.
- Supports for clear span farm watercourse crossings protecting water quality.
- Supports to increase awareness of the potential negative ecological impacts of bankside and instream works and best practise if the work is required.

6. Are there additional resources required to ensure the measures required by the Nitrates Action Programme are adequately resourced?

IFI notes and welcomes the relevant resources in respect of supports and enforcement outlined by Mr. Bill Callanan (Department of Agriculture, Food and the Marine) at this committee's meeting held on March 6th. Inland Fisheries Ireland is also a member of the EPA's national agricultural inspection programme working group, which is seeking to harmonise inspections between the Department and the local authorities and move those inspections to a risk-based approach.

Inland Fisheries Ireland and its staff are passionate about the protection and preservation of good water quality. This goal is fully aligned with Good and High ecological status under the Water Framework Directive and IFI's statutory remit to conserve, protect and manage the inland fisheries resource in the most sustainable way possible. IFI works with all relevant authorities and stakeholders to maintain High and Good status waters where they exist, and to prevent deterioration of ecological status in all waters. As an organisation we are committed to expanding our resources and efforts to restore and protect our environment and enforce

legislation where necessary, particularly where it can support the restoration of water quality and aquatic biodiversity. We are equally committed to continued collaboration and partnership with all stakeholders to safeguard the sustainability of Ireland's fish populations for the benefit of all into the future.

IFI recommends that funding is made available to install a network of high frequency real time monitoring devices (for N and P) in catchments at high risk from excessive nutrient inputs. These sensors should have IoT (Internet of Things) capability and the real time data could be made available to farmers and other stakeholders to inform on farm activities.

Protecting diminishing water resources is becoming more complicated due to climate change; therefore extra provision must be made in the NAP to adapt to extreme events such as floods and droughts/heatwaves. Inland Fisheries Ireland has initiated a research programme to bridge a knowledge gap related to the impacts of climate change on Ireland's fish species and their habitats. The project is measuring long-term changes in water temperature and other environmental variables in Irish rivers, lakes and estuaries through a series of over 300 high frequency dataloggers measuring environmental variables every 15 minutes. Advances in mapping tools is making it possible to identify areas in catchments at risk from climate change and other environmental impacts. IFI would encourage farmers to participate in any proposed mitigation activities once the national risk maps from this project have been published and additional funding for measures for farmers could be targeted in high-risk catchments.

IFI and colleagues in University College Dublin are working with the Waters of Life project to develop a bespoke multi-disciplinary monitoring programme to detect change and assess the effectiveness of measures to protect and restore high status objective waterbodies. IFI would encourage farmers to participate in the Waters of Life voluntary results-based payment schemes as part of this and other EIPs.

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