

Supporting document

# **Proposal to adopt Lake Nitrogen Standards in the 3rd River Basin Planning Cycle for Water Framework Directive classification of lake water bodies**

*Sustainability at the heart of a living, working, active landscape valued by everyone.*

Annex V of the Water Framework Directive (WFD) refers to 'nutrient conditions' as one of the general physicochemical elements supporting ecological status. In the UK, Total Phosphorus (TP) was the only nutrient assessed as a supporting element in freshwaters for the first and second River Basin Cycles. However, evidence from scientific literature suggests that, for lakes in particular, nitrogen also plays a significant role in ecological functioning and the eutrophication process. Lake Nitrogen standards have therefore been developed through the UK Technical Advisory Group. Following consultation in 2019, it was recommended that these standards are adopted in Northern Ireland, and to include Nitrogen Status in the classification of lake water bodies in the Third River Basin Cycle.

The Lake Nitrogen standards are based on a type specific, annual mean Total Nitrogen (TN) concentration and will be applied as an independent supporting physicochemical element for classification purposes following the adoption in Northern Ireland regulations.

Northern Ireland was unable to contribute data during the development of the standards as we did not have TN data for our lake water bodies. Total Nitrogen monitoring and analysis commenced in January 2019 and a complete years dataset is now available for all 21 lake water bodies.

Assessment of Lake Nitrogen status will be based on three years data but we have assessed the single year's data to provide an indication of how the adoption of these standards would impact on the status of our lake water bodies.

A total of 6 lakes classified as High status for Total Nitrogen, 6 classified as Good status and 9 classified as Moderate status.

The Total Nitrogen status of each lake water body was compared with the Total Phosphorus (TP) status for that lake water body. The status of both nutrients was the same at 8 lake water bodies (38.1%) whilst Total Phosphorus status was lower at 13 (61.9%). Based on this one year dataset, Total Nitrogen did not produce a lower nutrient status at any of the lake water bodies and therefore inclusion of these standards in WFD classification had no impact on Physicochemical Status, Ecological Status or Overall Surface Water Status of NI surveillance lake water bodies.



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