REFRESH – Zooplankton: an integrative biological quality element for assessing the ecological status of lakes

Núria Cid Puey, Ana Cristina Cardoso, Peeter Nõges, Tiina Nõges & Martin Kernan

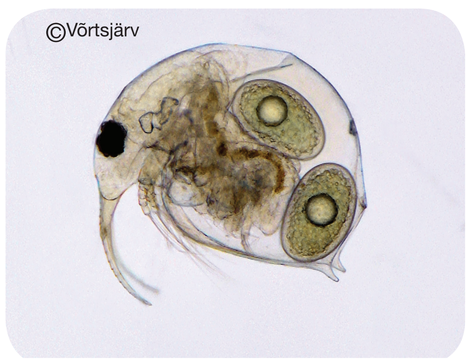
> *Zooplankton has a strong indicator value, which cannot be covered by sampling fish and phytoplankton without a very comprehensive and costly effort.*
>
> *Jeppesen et al., 2011*

What are the implications for the Water Framework Directive considering global change?

The six-year River Basin Management planning cycle of the Water Framework Directive (WFD) offers an opportunity to review the methods used for the assessment of the ecological status of EU water bodies.

Zooplankton has been shown to be crucial for the understanding of lake ecosystem functioning and to provide a cost-effective Biological Quality Element (BQE) to be included in the current list of organism groups.

Effects on trophic structure of lakes due to climate and land use change will be evidenced in the zooplankton community. Thus, it can provide an essential tool to improve our capacity for lake management with potential applications to transitional waters and large rivers in Europe.



Synthesis

➲ The EU Water Framework Directive environmental objectives are established on the basis of ecological status assessment, focused on five species groups (macroinvertebrates, fish, phytoplankton, macrophytes and phytobenthos) **but zooplankton are not considered**.

➲ Results from the REFRESH project demonstrate that **zooplankton is an important, integrative and cost-efficient indicator** of the ecological quality of lakes and of recovery after restoration.

➲ Including zooplankton metrics among mandatory biological quality elements for lakes will **improve our capacity for lake management** under future climate and land use changes.

> *We strongly recommend the EU to include zooplankton as a central BQE in the WFD assessments.*
>
> *Jeppesen et al., 2011*

Jeppesen E., P. Nõges, T. A. Davidson, J. Haberman, T.Nõges, K. Blank, T.L. Lauridsen, M. Søndergaard, C. Sayer , R. Laugaste, L.S. Johansson ,R. Bjerring & S.L. Amsinck. 2011. Zooplankton as indicators in lakes - a plea for including zooplankton in the ecological quality assessment of lakes according to the European Water Framework Directive (WFD). – Hydrobiologia 676:270-297.

Get in touch!

The key objective of REFRESH is to develop a framework that will enable water managers to design cost-effective restoration programmes for freshwater ecosystems.

Visit the REFRESH website: www.refresh.ucl.ac.uk

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SEVENTH FRAMEWORK PROGRAMME