3rd Mission Lakes Webinar Series

Turning pollution into resources

Join us for the 3rd joint Mission Lakes webinar, bringing together four EU-funded projects exploring how lake-related pollution streams can be transformed into valuable resources. Through case studies ranging from nutrient-rich sediments and waste-derived algae production to integrated restoration strategies in vulnerable lakes, the webinar highlights circular, nature-based solutions that connect lake restoration, biodiversity protection, and sustainable resource use across Europe.

Date: 12 February 2026 **Time (CET): 13:00 – 15:00**

Online | Platform: Zoom **Registration link: Mission Lakes Webinar**

Agenda

1. **Welcome & Introduction (5 min):** *Dr. Tallent Dadi (FERRO Coordinator), Helmholtz Centre for Environmental Research - UFZ*
2. **EUROLakes Presentation: Vico Lake: A EUROLakes Demosite for Integrated Restoration** – *Prof. Raffaele Pelorosso, University of Tuscia (15 min)*
3. **FERRO Presentation: Unlocking the Potential of Lake Sediments as Sustainable Phosphorus Fertilizers** – *Assoc. Prof. Dr. Olga Tammeorg, University of Helsinki and Assoc. Prof. Dr. Kasper Reitzel, University of Southern Denmark (30 min)*
4. **FutureLakes Presentation: LOCALITY: Turning Waste into Nature-Based Algae Solutions** – *Dr. Margarida Costa, NIVA – Norwegian Institute for Water Research (15 min)*
5. **ProCleanLakes Presentation: Unique Microalgae in Oligotrophic Lakes: Ecological Value and Sustainable Economic Potential** – *Prof. Emerita Dr. Athena Economou-Amilli, NKUA (15 min)*
6. **Panel Discussion & General Q&A** (20 min)
7. **Announcements and closing remarks (5 min):** *All Project Coordinators*

Who should attend

This webinar is open to anyone with an interest in lake restoration, circular resource use, and nature-based solutions. It will be particularly relevant for researchers and practitioners, water, environmental and policy professionals, project managers and decision-makers, as well as students and early-career researchers.

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Abstracts & Speaker Profiles

Presentation 1 | EUROLakes | Vico Lake: A EUROLakes Demosite for Integrated Restoration

Abstract: The presentation introduces the Vico Lake case study, focusing on current water quality conditions, ongoing pressures, and strategies developed within the EUROLakes project. The lake, a deep volcanic basin (>40 m) with limited water renewal, is highly prone to eutrophication, natural arsenic release, and strong agricultural impacts. Key issues include oxygen depletion in deep layers and soil erosion. Proposed solutions combine retention basins, nature-based solutions (NBS), and improved land management developed through a participatory process. Turning pollution into resources is also explored through the energetic reuse of hazelnut pruning residues.

Speaker: Dr. Raffaele Pelorosso – Professor, University of Tuscia. *Raffaele is the Work Package Leader of WP3 (Demosite) in the EUROLakes project, coordinating demonstration and assessment activities for lake restoration, nature-based solutions, and sustainable land management. His research focuses on landscape planning, environmental modelling, and ecosystem services, with particular attention to land-use dynamics and nature-based approaches for water and climate regulation.*

Presentation 2 | FERRO | Unlocking the Potential of Lake Sediments as Sustainable Phosphorus Fertilizers

Abstract: Sediment removal can be one of the most effective strategies for improving ecological conditions of lakes in the long-term. Repurposing sediments as phosphorus (P) fertilizer offers a sustainable solution to close the human-altered P cycle and address P shortages. However, previous studies, focused on using sediment mainly as a growing medium (soil conditioner), have shown mixed results regarding its effectiveness as a P source for crops, with some reporting negative impacts on plant growth and contamination risks. In this lecture, we will present our latest findings on sediment reuse, exploring innovative approaches to optimize its potential while minimizing environmental risks.

Speaker(s):

i. **Dr. Olga Tammeorg – Associate Professor in Aquatic Sciences, University of Helsinki**
ii. **Dr. Kasper Reitzel – Associate Professor in Freshwater Ecology, University of Southern Denmark**

Olga Tammeorg *(Assoc. Prof (Docent) in Aquatic sciences) is a researcher from University of Helsinki focusing on tackling nutrient pollution in lakes, with a particular emphasis on legacy phosphorus—sediment nutrient accumulations from past and ongoing human activities. Her research on lakes in Finland and Estonia has uncovered key reasons behind the failure of many restoration efforts and led to the development of a sustainable, paradigm-shifting approach to lake restoration.*

Kasper Reitzel *is Associate Professor in Freshwater Ecology at University of Southern Denmark and has focused on lake restoration and phosphorus speciation for more than 20 years. He is currently exploring solutions for sustainable management of freshwater ecosystems coupled to safe phosphorus recycling in agriculture. This involves the potential for using phosphorus solubilizing microorganisms (biostimulants) to improve the fertilizer yield of recycled sediments and nature-based solutions to address diffuse nutrient leaching into the aquatic environment.*

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Presentation 3 | FutureLakes | LOCALITY: Turning waste into nature-positive algae solutions

Abstract: LOCALITY is currently developing circular algae-based value chains for food, aquafeed, agriculture, and textiles while supporting marine ecosystems. The project is based on the use of waste streams from the greenhouse, fish, and textile industries, which were characterized and used for successful microalgae cultivation, now in the upscaling phase. 123 kg of seaweed were also produced. Biorefinery pipelines for algae and seaweed were established, and ingredients were produced and tested for nutritional, functional, and structural properties. Industrial synergies and an integrative approach have been key to developing these innovative algae-based products. Recommendations addressing regulatory and market barriers will ensure successful European market entry and environmental sustainability. These efforts position LOCALITY to accelerate Europe's transition to sustainable, nature-positive solutions.

Speaker: Dr. Margarida Costa – Head of Microalgae Section, NIVA – Norwegian Institute for Water Research *Margarida is driving transnational projects on algae biotechnology and sustainable solutions. She specializes in added-value marine compounds, with experience spanning cyanobacteria (CIIMAR, Portugal), marine sponges (University of Iceland), and industrial microalgae cultivation (Allmicroalgae). Her work bridges science and industry to develop innovative algae-based products. Margarida has co-authored 30+ peer-reviewed papers, book chapters, and holds a patent.*

Presentation 4 | ProCleanLakes | Unique Microalgae in Oligotrophic Lakes: Ecological Value and Sustainable Economic Potential

Abstract: Oligotrophic lakes – especially those in protected areas – are expected to host highly specialized microalgal communities that thrive under low-nutrient conditions and contribute disproportionately to ecosystem stability, water quality, and biodiversity. Although these microorganisms are often explored by biologists as a key ecological asset, however, they are often overlooked as an emerging opportunity for science-informed, sustainable development, in contrast to other biota (e.g. fish populations).

This lecture explores the ecological functions and conservation value of unique microalgae in the protected oligotrophic lake Trichonis (one of the three demo-lakes in the "ProCleanLakes" Horizon project), highlighting their role as indicators of past and recent environmental shifts and guardians of ecosystem resilience. Furthermore, the lecture examines regulated pathways through which the unique microalgal diversity can support local economies—such as through ecotourism, environmental services, bio-based innovation, and education—without compromising ecological integrity. By bridging cutting-edge ecological research with policy frameworks and management practices, the lecture aims to stimulate dialogue between scientists and decision-makers on how biodiversity conservation can align with long-term socioeconomic benefits.

Speaker: Dr. Athena Economou-Amilli – Professor Emeritus, National and Kapodistrian University of Athens (NKUA) *Athena has extensive research and teaching experience, including leadership roles in Greek Institutions and in Administrative Appointments abroad (*https://sites.google.com/view/athena-economou-amilli/*). As Head of the AlReCu (Algae-Research-and-Culture) Group in the Department of Biology, she has led floristic- taxonomic-ecological studies, primarily focusing on microalgae from diverse aquatic habitats. Her work applies the modern polyphasic approach (LM, SEM, and molecular data) and includes the maintenance of microalgal strains in a dedicated culture bank (https://phycotheca.biol.uoa.gr/) -, supporting the development of competitive research programs in both basic and applied research.*

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Project	Website	Social media
EUROLakes	https://eurolakes.eu/	https://www.linkedin.com/company/eurolakes https://www.facebook.com/people/EUROLakes/61567686029563/ https://www.instagram.com/eurolakes/ https://www.youtube.com/@EUROLakesMissionOceanProject
FERRO	https://ferroproject.eu/	https://x.com/FERROproject https://www.linkedin.com/company/ferro-project/ https://www.youtube.com/channel/UCV7EKSO_gp0VhMW8PyDJB8Q https://bsky.app/profile/ferroproject.bsky.social
FutureLakes	https://futurelakes.eu/	https://www.linkedin.com/company/futurelakes/ https://bsky.app/profile/futurelakes.bsky.social https://www.youtube.com/channel/UCwD2C6e8VGznR4L8Zde9iSw
ProCleanLakes	https://procleanlakes.eu/	https://www.linkedin.com/company/procleanlakes-project https://www.youtube.com/@ProCleanLakes https://www.instagram.com/procleanlakes_/

Disclaimer

This webinar is organised within the *Mission Lakes* initiative and brings together results from the EU-funded projects: **EUROLakes (Grant Agreement No. 101157482)**, **FERRO (Grant Agreement No. 101157743)**, **FutureLakes (Grant Agreement No. 101156425)** and **ProCleanLakes (Grant Agreement No. 101157886)**.

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