

European project MoSTFun expands biodiversity monitoring to include aquatic fungi

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A new European project, MoSTFun, aims at adding aquatic fungi to biodiversity monitoring programs. MoSTFun, which stands for “**M**onitoring **S**trategies and **T**ools to address knowledge gaps on aquatic **F**ungal biodiversity” is funded through the [Biodiversa+ EU Biodiversity Partnership](#) and part of a new wave of innovations in biodiversity monitoring across Europe.

Aquatic fungi, i.e. fungi living in freshwater and marine ecosystems, are tiny in size, but play hugely important roles in ecosystems, for instance as microbial decomposers of terrestrial plant litter in streams and lakes, and decomposers and parasites of phytoplankton in lakes and coastal waters. Research has also shown that aquatic fungi are well suited to be used in biomonitoring of aquatic ecosystems.

The diversity of fungi and all other lifeforms is crucial for the health of ecosystems and the services they provide to human society. However, human activities alter ecosystems and, in most cases, lead to biodiversity loss, threatening the ability of ecosystems to provide these services and to remain stable over time. Scientists have raised awareness of this threat and in response, biomonitoring programs have been established to assess changes in ecosystem status and health. Despite their importance for healthy and stable ecosystems that benefit human society, aquatic fungi have so far not been included in biomonitoring programs to assess changes in ecosystem status and biodiversity over time and space.

“Society and environmental policy tend to care about the big animals and plants, but in ecosystems it’s often the small and inconspicuous beings, such as fungi, that do the heavy lifting”, explains Andreas Bruder of SUSPI, coordinator of MoSTFun. *“They contribute disproportionately to the good functioning and stability of ecosystems. If we as a society care about the health of ecosystems, we need to understand and monitor how the biodiversity of aquatic fungi is changing across space and time, and for this we need their inclusion in standardized biomonitoring programs. MoSTFun is making the first steps towards this goal.”*

Over the next three years, MoSTFun will develop the tools and knowledge needed to also include aquatic fungi in biodiversity monitoring programs. MoSTFun unites scientists, biomonitoring experts and conservation professionals, and establishes collaborations with existing monitoring programs to ensure that aquatic fungi find their place in biomonitoring programs. MoSTFun will also closely interact with stakeholders and end-users to create the motivation and momentum for uptake of the tools and knowledge generated by MoSTFun into biodiversity policy.

What is MoSTFun and who is involved?

The MoSTFun consortium includes experts in molecular ecology, mycology, ecology, earth observation, conservation, and biomonitoring from research teams based in Estonia, Germany, Italy, Norway, Spain, Sweden, Switzerland, Canada, and the United States. MoSTFun is one of the 33 projects funded in the Biodiversa+ and the European Union [joint call for projects in 2022](#) “Improved transnational monitoring of biodiversity and ecosystem change for science and society” (BiodivMon). Biodiversa+ is the European Biodiversity Partnership supporting excellent research on biodiversity with an impact for society and policy. This call represents a financial commitment of more than 46 million Euro from the participating countries and co-funding from the European Commission.

Quotes:

“Aquatic biodiversity often remains overlooked in the conservation agenda and in biomonitoring – at our peril! Because of their tiny size, aquatic fungi are out of sight, out of mind, but they punch way above their size in terms of ecosystem importance. This project will help establish these small but mighty organisms in our efforts to monitor the status and health of our aquatic systems across Europe.” Monika Böhm, Global Center for Species Survival, Indianapolis Zoo, USA

“The society is committed to monitor, conserve and restore stable and functional aquatic ecosystems which means that we cannot overlook aquatic fungi in the work to be done.” Teppo Rämä, Principal Investigator in MoSTFun based at UiT the Arctic University of Norway

“Society is aware of the biodiversity loss occurring for higher organisms, like animals and plants. However, it occurs at all levels, including microorganisms that conduct the most important functions in nature. Therefore, the monitoring and understanding of key organisms like aquatic fungi is needed to protect aquatic ecosystems. This is especially required in marine systems, including coastal and estuarine areas, where the study of these organisms has been traditionally neglected” Albert Reñé, Principal Investigator in MoSTFun based at ICM-CSIC.

“Protecting the rich diversity of life in our lakes, streams, and oceans requires a holistic approach that considers the interconnected web of life. This includes understanding the vital role of aquatic fungi, which are often overlooked but play a critical role in the healthy functioning of these ecosystems. In this new project, we have united experts in conservation, monitoring, and aquatic fungi with the common goal of developing the tools and knowledge needed to bring these fungi out of the shadows and into European efforts to reduce biodiversity loss and protect aquatic ecosystems.” Jennifer Anderson, Principal Investigator in MoSTFun based at SLU, The Swedish University of Agricultural Sciences.

Further information:

www.MOSTFUN.eu, [account on X](#), [account on LinkedIn](#)

Contacts:

Andreas Bruder
University of Applied Sciences and Arts of Southern Switzerland (Switzerland)
andreas.bruder@supsi.ch
+41 792026834

Katie Millette
GEO BON and McGill University, Montreal (Canada)
katie.millette@mcgill.ca

Veljo Kisand
University of Tartu (Estonia)
kisand@ut.ee

Hans-Peter Grossart
Leibniz Institute for Freshwater Ecology and Inland Fisheries (Germany)
hanspeter.grossart@igb-berlin.de

Laura Garzoli
National Research Council of Italy (Italy)
laura.garzoli@cnr.it
+390323518300 (reception)

Jennifer Anderson
Swedish University of Agricultural Sciences (Sweden)

jennifer.anderson@slu.se

Teppo Rämä
UiT The Arctic University of Norway (Norway)
teppo.rama@uit.no

André Frainer
Norwegian Institute for Nature Research (NINA)
andre.frainer@nina.no

Albert Reñé
Institut de Ciències del Mar - Agencia Estatal Consejo Superior de
Investigaciones Científicas
albertrene@icm.csic.es

Monika Böhm
Global Center for Species Survival, Indianapolis Zoo (USA)
mbohm@indyzoo.com
+1 317 969 7403

Note to the editors:

The Indianapolis Zoo's Global Center for Species Survival is a partnership with the International Union for Conservation of Nature's Species Survival Commission. The Global Center supports and connects thousands of conservation experts working to secure a future for animals, fungi and plants in more than 160 countries.

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