

MSc Project

How do communities of freshwater fungi respond to the condition of riparian forests?

We are looking for an enthusiastic MSc student with a strong interest in applied freshwater ecology and biodiversity and a precise work attitude. The student will be working on spores of aquatic fungi collected from Swiss streams. The project involves lab work based at SUPSI Mendrisio (TI) and analyses of community data. This project is part of a larger research program investigating the effects of riparian forests on stream food webs.

Fungi are important decomposers of organic matter (e.g. fallen leaves from trees) worldwide, which is also true for aquatic ecosystems. As these aquatic fungi are adapted to colonize terrestrial substrate, they form an important link between processes on land and water. However, due to the cryptic life stages of aquatic fungi, there are still knowledge gaps on the ecology of many of the described species and their sensitivity to the condition of riparian forests.

Therefore, the project aims to assess the effect of riparian forests on following aspects of fungal communities:

1. α and β biodiversity
2. Spore composition
3. Sporulation rate

As it is currently unclear how these aspects of the fungal communities relate to decomposition of leaves, a subsequent goal of this project would be to investigate potential links between aquatic fungi and leaf decomposition.

As aquatic fungi are barely visible by eye, microscopic spore identification is one of the few tools to quantitatively assess the fungal community composition and reproduction (in form of sporulation) in aquatic environments. Their spores are highly adapted to the conditions of the aquatic environment (see pictures) and different species follow various reproductive strategies. This master project will provide a training opportunity for classical taxonomic skills based on microscopic identifications.



Requirements: Interest in aquatic ecology and willingness to independently perform extensive lab work and statistical analyses. English language skills are required. The MSc project can start any time.

Contact/Supervision:

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More info about the research groups:

https://www.supsi.ch/im_en/Research/ECOMIC/aree-ricerca/Stream-Ecology-Group.html

We are looking forward to meeting you!