

Master 2 internship: Investigating the effects of dispersion and managements practices on invertebrate biodiversity in fish ponds

Main context

Small and shallow lakes are the most abundant class of inland waters and often represent important biodiversity hotspots. Yet, patterns and controls of biodiversity are less understood, particularly in intensively managed systems. The high density and abundance of fish ponds in the Dombes region provide a perfect natural laboratory to test the importance of dispersion, biotic interactions, management practices (i.e., supplemental feeding, fertilization with manure and liming) and regular dry periods every 4-5 years. This project will investigate 1) the balance between regular occurring disturbances (dry “assec” periods) and recolonization from internal (sediment) and external sources (dispersion from nearby ponds) for biodiversity, and how biodiversity is modified by 2) management practices and 3) biotic interactions (e.g., competition, predation). In addition, quantifying individual and combined effects of the various management practices will inform the development of regional best-management practices to maximize biodiversity while maintaining fish yield.

Student project:

The student will specifically identify the effects of different management practices and biotic and abiotic controls on invertebrate biodiversity (in particular zooplankton and macroinvertebrates). The student will conduct field sampling and taxonomic analyses of zooplankton and macroinvertebrates of about 50 ponds that cover the broad range of different management practices and abiotic conditions. A parallel project investigating water quality and biogeochemistry of the ponds will provide supplementary data that are needed for the analyses and interpretation of the biodiversity data. Field work and data processing will be performed in close collaboration with other team members.

Student profile

We welcome students from Ecology/Evolution masters with a strong interest in Aquatic ecology. Interests in biodiversity / invertebrate ecology will be an asset. Other requirements are:

- a valid driving license
- good level of English
- strong organizational skills; ability to work in a team, autonomously and reliably
- ability / experience in microscopy
- data management and statistical analysis with R software
- ability and willingness to organize and participate in extensive fieldwork

Organizational details

The internship will take place over a period of 6 months, from February 2022 (preferably). It will take place at the LEHNA laboratory of the University of Lyon 1 (<https://umr5023.univ-lyon1.fr/>) and at Dombes ponds area for fieldworks. Supervisors will be Pr. Björn Wissel and Dr. Fanny Colas . The working language will be mainly English. This internship comes with a monthly stipend of approximately €600 per month. Fieldwork expenses will be covered.

Application

Applicants should send an application letter, with a statement of research interests and relevant experience and *curriculum vitae* as a single pdf to Pr. Björn Wissel, bjorn.wissel@univ-lyon1.fr and to

Dr. Fanny Colas, fanny.colas@univ-lyon1.fr. Applications will be open until October 31th, 2021.
Interviews will be held during November.