

Eawag, the Swiss Federal Institute of Aquatic Science and Technology (Dübendorf, Switzerland), ETH Zurich, and University of Zurich (both Zurich, Switzerland) are world-wide re-owned research institutions and among the highest ranked universities in the fields of ecology and environmental sciences. They offer excellent laboratory and field facilities for interdisciplinary research, and long-term research programs and data sets. They share common goals towards education, research, and technology transfer at the highest international level.

The Altermatt lab at Eawag and University of Zurich and the Pellissier lab at ETHZ have a vacancy for a shared

PhD position in Ecology:

“Assessing biodiversity in the Yunnan River Network using environmental DNA”

Rivers are among the most biodiverse ecosystems worldwide, with invaluable significance for mankind. Information on biodiversity, however, is often hard to assess. In this PhD project you will apply environmental DNA (eDNA) metabarcoding to uncover the biodiversity of fish in the Yunnan River Network in China. The goal is to get a high spatial and temporal coverage of biodiversity patterns across river systems in Yunnan river networks. The project is part of a large ETHZ initiative on Biodiversity, Earth, Climate Coupling in Yunnan (Western China) (BECCY), including ecologists, geologists, mathematicians, and involving Swiss and Chinese partner institutions.

The position is to be filled with a motivated candidate, capable of advancing the emerging research field of metabarcoding, specifically focusing on eDNA-based diversity assessments using high throughput sequencing (HTS) in riverine ecosystems.

This project builds on recent advances in molecular techniques, creating novel opportunities to assess biodiversity in a unifying and scalable way. The goal of this PhD project is to study the biodiversity of freshwater fish along the rivers corresponding to possible river capture events. The PhD student will conduct extensive field work in China to collect eDNA across major river basins. Sequencing will be conducted in collaboration with our Chinese partner institutions (Prof. Dr. Xiaowei Zhang at Nanjing University and Prof. Xiaoyong Chen from the Kunming Institute of Zoology). We will conduct analysis of topology in relation to alpha and beta diversity. We will specifically explore the effect of current and past river network structure on species composition and lineage relationships between existing and lost connections using species data sampled in the field and collected from other sources. The data will be analysed in spatially-explicit ecological models linking to Earth System models.

To apply, you must have a completed Master's degree in Molecular Ecology, Ecology, Microbiology or a closely related science field. Applicants must have proven previous laboratory and bioinformatics experience in eDNA or HTS approaches, and ideally should have some knowledge on spatial data analysis. Experience in field work and/or programming is an asset. An excellent standard of written and spoken English is required. The successful applicant will be based in Zurich in the group of Prof. Dr. Florian Altermatt (www.altermattlab.ch) and Prof. Dr. Loïc Pellissier (<https://landecology.ethz.ch/the-group/people/loic-pellissier.html>), but will also spend extended periods of time for field work in China. You will be enrolled at ETH Zurich, work at Eawag in Dübendorf and be part of the PhD program in Ecology of the Zurich Life Science Graduate School (<https://www.ieu.uzh.ch/en/teaching/phd/graduate.html>). The position will be for a period of four years, and should start in summer 2020. The project is financed by ETH Zurich.

We are looking for a highly motivated, enthusiastic and independent person with a passion for science to join our team. The Altermatt lab has a shared base at Eawag and UZH in Dübendorf/Zurich, and the Pellissier lab at WSL and ETH in Birmensdorf/Zurich. Zurich hosts many other research groups in ecology and biodiversity research, and is among the world's leading cities in terms of science, culture and quality of life. Applications from women are especially welcome.

For further information about the position please consult www.altermattlab.ch or contact Prof. Dr. Florian Altermatt, Email florian.altermatt@eawag.ch.

Applications must be submitted by March 15 2020. Your application should include a letter of motivation, a complete CV, relevant diplomas, and the names and contact information for three references.

We look forward to receive your application through this webpage. *Any other way of applying will not be considered.* Please click on the link below, this will take you directly to the application form.

<https://apply.refline.ch/673277/0762/pub/1/index.html>