

Eawag, the Swiss Federal Institute of Aquatic Science and Technology, is an international aquatic research institute within the ETH Domain (Swiss Federal Institutes of Technology). Eawag conducts research, education and expert consulting to achieve the dual goals of meeting direct human needs for water and maintaining the function and integrity of aquatic ecosystems.

The Department of Aquatic Ecology (Eco) located in Dübendorf has a vacancy for a

Post-doctoral researcher (80-100%)

Rapid adaptation of Quagga mussels to multiple stressors (2.5 years)

The position is part of the international interdisciplinary applied research project “SeeWandel-Climate: Modelling the consequences of climate change and neobiota for Lake Constance”. The ecosystem of Lake Constance is expected to undergo significant changes in the next few decades due to the interacting effects of continued climate warming and invasive species, such as the further proliferation of the quagga mussel that has recently invaded the lake. Existing long-term data and new data enable changes in the food web to be investigated, taking into account the interaction with climate change. The data is incorporated into simulation models that forecast the changing biology and ecology of Lake Constance for decades to come. The general goal of SeeWandel-Climate is to provide projections of the consequences of climate change and the impact of invasive species on the Lake Constance ecosystem and its sustainable utilization. The large collaborative project involves researchers from 7 institutions from Germany, Austria and Switzerland, working closely with authorities across borders relying on these projections to implement integrated management at Lake Constance. SeeWandel-Climate receives funding under the Interreg VI programme “Alpenrhein-Bodensee-Hochrhein (Germany/Austria/Switzerland/Liechtenstein)” which funds are provided by the European Regional Development Fund as well as the Swiss Confederation and cantons, and the international Lake Constance commissions “Internationale Gewässerschutzkommission für den Bodensee” (IGKB) and “Internationale Bevollmächtigtenkonferenz für die Bodenseefischerei” (IBKF).

The Quagga subproject aims to investigate invasive Quagga mussels’ resilience under multiple stressors to predict how they will develop in the changing Lake Constance. Specifically, this project aims to 1) experimentally assess Quagga mussels’ resilience to i) temperature stress, ii) oxygen limitation, iii) pollution and iv) resource limitation using laboratory experiments on shallow and deep mussels and comparing their associated epigenomics and transcriptomic signatures; 2) investigating DNA methylation changes in Quagga mussel populations collected in the field; 3) Monitor yearly the distribution of Quagga mussels in Lake Constance to better project their distribution in the future. This subproject also includes a collaboration with Francesco Pomati (Eawag) and Alexander Karatayev (Great Lakes Center, SUNY, USA).

The candidate is expected to: i) conduct fieldwork and lead multiple stressors experiments on Quagga mussels (single stressor and combined stressors), ii) generate and analyze whole-epigenome and transcriptome data from individuals from the field and from experiments, iii) participate in the yearly Quagga mussel monitoring at lake Constance, and iv) interpret and publish the project results through peer-reviewed articles and translational material dedicated to practitioners and stakeholders. There will opportunities to develop the postdoc’s own research interests, and to assist in the supervision of Bachelor and Master students. The position can be filled at 100% for 2.5 years or at 80% for 3 years.

Ideally, **the candidate** has a strong background in evolutionary ecology and/or bioinformatics, and has recently earned a PhD in a relevant field of ecology or evolutionary biology. Fieldwork experience and experience in conducting laboratory experiments would be additional assets. We particularly value interest to interact with local practitioners and stakeholders. Hence, good knowledge of spoken and written German would be an advantage to appropriately communicate project results beyond a purely academic setting. Excellent communication skills in English and ability to work in a team are essential.

Applications should include a cover letter with a concise statement about your previous education and research experience, your mid-term career plans, and your motivation to work on this project (1-2 pages); a curriculum vitae including a publication list; copies of your academic qualifications; and names and contact information of 2-3 academic references. **Applications must be submitted by 31st of December 2023.** The position can start as early as March 2024 or upon mutual agreement. The position will be based in the group of Alexandra Anh-Thu Weber (Adaptation & Conservation Genomics [Weber Lab](#)) and co-supervised by Piet Spaak.

Eawag offers a unique [research and working environment](#) and is committed to promoting equal opportunities for women and men and to support the compatibility of family and work. For more information about Eawag and our work conditions please consult www.eawag.ch and www.eawag.ch/en/aboutus/working/employment.

Any questions about the position can be directed to Alexandra Anh-Thu Weber (alexandra.weber@eawag.ch). **We look forward to receiving your application.**

The button below will redirect you to the application form. Please send it through this webpage, any other way of applying will not be considered.

<https://apply.refline.ch/673277/1118/pub/en/index.html>