

PhD position (ETH ZÜRICH)

Bewerbungsfrist: k.A.

PhD position (100%) in Rewilding of Forest Ecosystems

The *Professorship of Forest Ecology* at ETH Zurich is a dynamic interdisciplinary research team that examines both theoretical and applied questions in forest ecology by combining empirical and modeling techniques. The overall aim of the group is to further our understanding of the structure and function of forest ecosystems, with a particular focus on mountain areas such as the European Alps. We offer excellent facilities in a relaxing work atmosphere with many opportunities for collaboration within and beyond the group.

Project background

The ever-increasing human pressure on ecosystems has led to the initiative of re-wilding some ecosystems, including forests. In the context of the EU project “WILDCARD” that is starting in early 2024, the carbon and biodiversity implications of the re-wilding of forests and agricultural land are being investigated in a multi-disciplinary team with 16 European partner institutions joining forces. The project is partly based on a unique long-term dataset of forest dynamics from forest reserves (EuFoRIa) that will continually be updated and expanded in the context of WILDCARD. Yet, these data do not lend themselves easily to inter- and extrapolation in time and space, which however is needed for a Europe-wide assessment of the opportunities and risks of re-wilding of ecosystems. Developing and applying methods and tools to allow for such inter- and extrapolation is the core of our task in this project. A postdoc and a PhD student will work jointly on this exciting yet demanding project in our lab.

Job description

You will analyze the extensive data from the EuFoRIa project using top-notch statistical methods. You will use these data to evaluate and further develop models of long-term forest dynamics. Ultimately, you will apply these models to inter- and extrapolate the trajectories of forest ecosystems in the absence of management. You will initialize the models with the first inventories from EuFoRIa, and will run them across time based on reconstructed climate, soil, and disturbance data. Disagreement with subsequent inventories will show you the need for model adaptations. You will quantify the relationship between simulated forest structure and carbon storage, other ecosystem services as well as aspects of biodiversity, thus providing ample scope for cooperation with the biodiversity specialists of WILDCARD. Your active involvement in selected inventory campaigns is possible, although the project focuses on the use of existing data. You will be supervised by and collaborate with a postdoc working in the same project, thus providing further opportunities for exchange. This 4-year PhD position is based in the Professorship of Forest Ecology at ETH Zurich, Switzerland. There will be a requirement to take courses at ETH Zurich as part of the PhD training programme.

Your profile

Essential experience, skills, and characteristics:

- A MSc degree in forest sciences, forestry, environmental sciences, ecology, geography, landscape ecology, or a related field, with good knowledge of forest ecology
- Good knowledge of statistics, or the willingness to delve deep into this subject
- Interest to get involved in the use of Artificial Intelligence in forest ecology
- Good command of English (oral and written)
- Strong teamwork and communication skills
- Ability to work independently, with flexibility, humour, and critical thinking
- Willingness and capacity to learn
- Motivated to work with data, numbers, code, and computers

Desirable criteria:

- Experience with the development, testing and application of forest dynamic models
- Knowledge in Git and programming languages such as R, C++ or C#
- Familiarity with European forest ecosystems

Interested?

We look forward to receiving your online application with the following documents:

- Curriculum vitae
- A letter (1-2 pages) explaining your interests and motivation to apply for this position
- Copies of BSc and MSc educational records from which the grades are evident
- Names and contact details of three reference persons

Please note that we exclusively accept applications submitted through our online application portal (https://jobs.ethz.ch/job/view/JOPG_ethz_gYvXdFmYAOk2RX9NHA). Applications via email or postal services will not be considered. Screening of applications will start on 1st of November 2023. Applications are accepted until the position is filled.

More information about our group can be found on our website <http://www.fe.ethz.ch>. For further information about this job, please contact Harald Bugmann by email harald.bugmann@env.ethz.ch (please do not send any application documents to this address).