

The Department of Forest and Soil Sciences, Institute of Forest Ecology and the Department of Material Sciences and Process Engineering, Institute of Wood Technology and Renewable Materials is currently seeking two

Postgraduate Research Associate (project employment)

Reference code: 93

Extent of employment: 30 hours per week
Duration of employment: June 2022, limited to 30th of September 2024

Workplace: 1190 Vienna, Peter-Jordan-Straße 82 and
3430 Tulln a.d. Donau, Konrad-Lorenz-Straße 24

Gross monthly salary and pay grade in terms of collective agreement for university staff (payable 14 times per year): B1, € 2.294.00

We are looking for two PhD students for a position within the Waldfonds project “Adapting future tree species composition of the Vienna Woods to possible consequences of climate change based on past drought responses, as indicated by forest site -, soil - and tree ring parameters”. In case the so-called “Sonderrichtlinie Waldfonds” will be extended, the position can be extended up to 3 years as well.

Background: Drought stress response has become an integral part of adaptive forest management and its understanding is required for estimating the consequences of climate change on prospective tree species range shifts. The dominant tree species in the Vienna Woods is European beech (*Fagus sylvatica*). Other species like oak, hornbeam, larch, red and black pine, silver fir, Norway spruce, Douglas fir, false acacia and Norway maple make up a relatively small percentage of the forest cover. European beech is a species, which is particularly, vulnerable to soil drought and higher temperatures are assumed to increase the frequency and intensity of these droughts. The proposed study tries to link site factors, dendrochronology, dendrochemistry and eco-hydrological modeling with a worldwide unique set of soil and foliage data (up to 97 forest sites) of 1984 and 2012. The final goal of our team are drought sensitivity characterizations of the previous experiences with the existing tree species and recommendations for future tillering and their management with regard to climate change.

Within the overall project (leader and co-supervisor: Torsten W. Berger), the respective partial task of the PhD student is as follows:

Position 1 – Tree ring analysis

The application of dendrochronology (supervisor: Michael Grabner) for evaluating historical drought stress reactions of beech and admixed tree species in regard to resistance, recovery and resilience. Building on these manifold data analyses, the use of stable isotopes of carbon ($^{13}\text{C}/^{12}\text{C}$ ratios; co-supervisor: Wolfgang Wanek) will be tested for characterizing drought stress periods.

Position 2 – Forest site ecology

The survey of all forest sites in regard to chemical and physical soil properties and forest nutrition parameter (supervisor: Torsten W. Berger). The next goal is the characterization of selected drought periods via retrospective dendrochemical analyses (co-supervisor: Michael Grabner) and modeled soil water availabilities (co-supervisor: Klaus Dolschak) and to develop decision supports for future climate scenarios and tree species.

Required skills and qualifications

- Diploma degree in Forest- or Wood Sciences, Biology or other equivalent university degree
- In-depth knowledge of chemical/technical laboratory skills and statistical data analysis
- Willingness to do field work
- Excellent written and spoken English, German language skills are an asset
- Willingness and ability to publish in English
- Class B driving licence

Desirable skills and qualifications

- Willingness to write a dissertation at the University of Natural Resources and Life Sciences is desired
- High motivation, organizational talent, flexibility
- Team and communication skills, social competence

Applications can be submitted until: 30th of May 2022

University of Natural Resources and Life Sciences Vienna seeks to increase the number of its female faculty and staff members. Therefore qualified women are strongly encouraged to apply. In case of equal qualification, female candidates will be given preference unless reasons specific to an individual male candidate tilt the balance in his favour.

People with disabilities and appropriate qualifications are specifically encouraged to apply.

Please send your job application incl.

- motivation letter incl. the number of the position
- CV
- Two letters of recommendation

to Personnel department, University of Natural Resources and Life Sciences, Peter-Jordan-Straße 70, 1190 Vienna; E-Mail: kerstin.buchmueller@boku.ac.at. (**Reference code: 93**)

We regret that we cannot reimburse applicants travel and lodging expenses incurred as part of the selection and hiring process.

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