

PhD position in Forest Ecology and Remote Sensing

The Schuldt lab at the Chair of Ecophysiology and Vegetation Ecology, University of Würzburg, Germany (<https://www.biozentrum.uni-wuerzburg.de/en/bot2/schuldt>) is offering a PhD position within the DFG-funded project *BEECHDECLINE – Drought-induced tree mortality of European beech affected by legacy effects and small-scale heterogeneity in soil properties and tree neighbourhood composition* to start on July 1, 2021. The salary will be based on the collective agreement for the public service of German federal states (TV-L, 65% position) for the duration of three years, but at most until June 30, 2024.

Project description: The extreme 2018/19 drought resulted in large-scale vitality loss, partial crown dieback and tree mortality in European beech (*Fagus sylvatica*), the most important tree species of Central Europe's natural forest vegetation. At affected sites, a high heterogeneity was observed with individuals showing strong drought responses up to death occurring next to vital and seemingly unaffected individuals. Most likely, complex interactions of various abiotic and biotic factors are responsible for this uneven distribution of drought response within beech stands. While small-scale heterogeneity in abiotic factors, predominantly soil properties, drives the variability of soil water availability within the stand, intra-specific competition as a critical biotic factor might further mediate legacy effects and drought-induced mortality. The successful candidate will confirm the visual categorization of tree vitality and crown condition by historical remote sensing products, and describe small-scale variability in the topographic, edaphic, structural and competition status of each tree in 25 stands along a climatic gradient. In a companion dendrochronological study, the loss of vitality among the same trees will be quantified and compared through decline indicators. The close collaboration with our project partner at the Technical University of Munich (Dr. Christian Zang) offers exchange experiences with other doctoral students in the field of forest ecology and climate change.

About us: The Schuldt lab is specialized in forest ecology, ecophysiology and plant hydraulics. Our research aims at identifying plant responses to climate change, causes and consequences of drought-induced tree mortality and key traits with causal relationship to climatic stressors. Thereby, we work on improving our understanding of the functioning of natural and artificial ecosystems.

Requirements: Applicants should hold an excellent university degree in ecology, forestry, geography, environmental sciences, or a related discipline. Candidates with research experience in remote sensing, forest mensuration and/or soil science are preferred. Due to intensive fieldwork, a driving licence is a prerequisite. Advanced command of English and the ability to write scientific manuscripts is essential, while advanced knowledge in statistical analyses with R is a plus. We are looking for an outstanding and highly motivated candidate, who is team-oriented and willing to learn and work independently and precisely, both in the lab and in the field. The University of Würzburg is an equal opportunities employer and places particular emphasis on fostering career opportunities for female scientists and scholars. Qualified women are therefore strongly encouraged to apply. Severely handicapped applicants will be given preferential consideration when equally qualified.

Application: Applications including a cover letter, CV with degree, certificates and grades, and contact information of two references should be sent by **April 30, 2021** as a **single pdf-document** to Prof. Dr. Bernhard Schuldt (bernhard.schuldt@uni-wuerzburg.de; +49-931-31-89929).

Virtual interviews will take place in early May. Please note that we explicitly prefer digital documents by email, and do not return any original documents sent to us by mail; these will be shredded after a decision has been made. Only if you enclose a postage-paid return envelope, we will return your documents three months after a hiring decision has been made.