Start date: fall 2023
Number of positions: 2
Location: Czech University of Life Sciences in Prague

We are seeking highly motivated Ph.D. researchers to join our team within the Forest Dynamics Lab of the Department of Forest Ecology, Czech University of Life Sciences in Prague, Czech Republic. Our current research is focused on how disturbance regimes drive structural variability, carbon dynamics, and biodiversity at stand and landscape scales in primary mountain forests in central and eastern Europe.

Disturbance plays a dominant role in shaping the structure and function of forest ecosystems, but quantification of disturbance effects is typically limited by missing information on a locationÃ¢Â€Â™s history and a regionÃ¢Â€Â™s disturbance regime. Our lab uses tree-ring data to reconstruct site histories, providing insight into how forest characteristics recover from disturbances of variable severity. We are particularly interested in linking patterns in the severity and frequencies of disturbance to variation in tree size structure, carbon dynamics and biodiversity.

Despite the long history of land use, this region of Europe still has extensive remnants of primary mountain forests, particularly in the Carpathian and Dinaric mountain ranges. The large sub-continental region covered by the current research project includes the two dominant forest types in Europe, Norway spruce and mixed broad-leaf forests dominated by European beech.

The project will link biomass and biodiversity indicators to disturbance histories in primary forests that permit such direct contrasts of endogenous and exogenous drivers. The project will therefore provide novel insights on whether the predictions of present biomass and forest biodiversity indicators can be improved by more accurately partitioning the relative importance of exogenous and endogenous drivers. At the same time, this project will be the first to reconstruct biomass trends in large patches of primary forests in central and eastern Europe, while most other studies tend to be based on national forest inventories in managed forests, which greatly limits the ability to infer the long term dynamics of forest development. The proposed project will be organized into interlinked work packages subdivided into research questions focusing on quantification of the main drivers of forest dynamics and biomass and biodiversity indicators responses.
WP 1. Drivers of disturbance dynamics
WP 2. Tree growth history and mortality, forest biomass WP 3. Stand structural diversity and biodiversity indicators

The successful candidate will have access to a completed database of 20,000 tree cores collected from 1000 forest plots distributed throughout remaining patches of old-growth forest is central and eastern Europe. Plots are distributed in a hierarchical design (i.e. plots nested within stands, within landscapes throughout the Carpathian mountain range). The aim of the design is to partition the effects of disturbance effects at a variety of scales, from local variation among neighboring locations due to smaller-scale gap dynamics to more extreme events impacting entire landscapes.
The activities, together with our team, will include field work, laboratory processing of samples (mainly tree cores), statistically analyzing data, compiling results, and preparing peer-reviewed publications in international science journals. Two positions are available: 1) Forest Ecology Ph.D.

- the first position will focus on reconstructing disturbance histories using tree ring data and examining links with current forest structure, composition, and indicators of biodiversity. This position will include field work; 2) Dendroecology Ph.D. - the second position will focus more on dendroecological analyses of existing tree ring data (current database of 20,000 tree cores from 1000 forest plots across the study region) to examine links between tree growth and abiotic and biotic factors. Although the candidate for the second position is not expected to participate in field-work, there will be opportunities to visit impressive locations of old-growth forests across the region.

We are a young and energetic research team with close collaborations with international partners. Opportunities exist for exchange visits and meetings. To obtain more information about our team, visit http://scholar.google.cz/citations?user=DaBJTM4AAAAJ or www.remoteforests.org

Applicants should have a MSc (or equivalent) in environmental or related sciences (biology, ecology, geography, forest sciences), and good English communication and writing skills. Ideal candidates would have strong analytical skills, experience with large datasets and R, and some past experience working with tree rings, particularly for the second position. Both positions include a monthly net salary of 900 - 1200 Euros. In addition, there is a share increase based on the personal performance.
To compare living costs see here: https://www.expatistan.com/cost-of-living.

Applications: Please provide a CV listing your skills and qualifications. Applicants should also provide a short statement outlining why they believe themselves to be suitable for the above positions, as well as contact information for at least one reference. Successful candidates will start in October 2023.

Please email application to:
vejmelkova@fld.czu.cz

Czech University of Life Science
Faculty of Forestry and Wood Science
Kamycka 129, Praha 6 Suchdol, 16521
Czech Republic