

PhD position on the conception of innovative mixed-species stands at UCLouvain, Belgium

Synopsis

As part of a 5-yr forest research programme funded by the ‘Service Public de Wallonie – Departement de la Nature et des Forets’, we offer a 4-yr PhD position focusing on the silviculture of mixed-species stands.

Context and project description

Mixed-species stands are increasingly preferred over monocultures for their ability to supply a larger range of ecosystem services and for their higher resilience to disturbances. However, information on feasible and profitable tree species combinations is still limited, which constitutes one major barrier for a larger implementation of such tree-diverse stands in forestry practice.

This PhD will contribute filling this gap by analyzing how tree species richness and identity impact individual tree growth and architecture in young forests.

Based on available data from selected tree diversity experiments (e.g. FORBIO - <https://treedivnet.ugent.be/ExpFORBIO.html>), the PhD student will:

- quantify the impact of local neighbourhood conditions, including resource availability, on individual tree growth;
- compare the effect of self-pruning vs artificial pruning on stem form and tree architecture, over a range of neighbourhoods;
- explore the outcome of alternative installation scenarios (e.g. tree species combinations, stem density, spatial arrangement of trees, timing of tree species introduction) on tree and stand growth, using the process-based and spatially-explicit HETEROFOR model.

Candidate profile

- strong background in forest science, forest ecology, soil science, environmental science, or related fields;
- experience in and motivation for field work;
- skills in statistics and data analysis, and experience with common statistical softwares such as SAS or R;
- interest in modeling;
- ability to work in a team and independently;
- ability to communicate/report clearly in English, both orally and in writing. Some knowledge of French or willingness to learn French language is expected;
- need to have a driving license.

Application

Your application will consist of a letter of motivation, a CV, academic transcripts, and contact details of at least two academic references. Please send your application by email with the subject “PhD – mixed-species stands” by December 4th, 2020 the latest to Quentin Ponette (quentin.ponette@uclouvain.be).

Based on this, a short list of candidates will be retained for an interview by visio-conference between 7th and 11th December. The successful candidate is expected to start working in January, 2021.

Working environment

The candidate will be hosted at the Earth and Life Institute of the University of Louvain (UCLouvain, Louvain-la-Neuve, Belgium). Within the Pole ‘Environmental Sciences’, the candidate will work in a research team focusing on the biogeochemistry of forest ecosystems, under the co-supervision of Mathieu Jonard and Quentin Ponette. The PhD researcher will strongly interact with the partners of the project, in particular with the site managers of all involved tree diversity experiments, as well as with practitioners.