Vacancy for a PhD fellowship (4 years)

Forest & Nature Lab, Ghent University (Belgium)

Large solitary trees in the face of climate change: contributions to biodiversity and ecosystem functions (CoolTree)

Project funded by the Research Foundation-Flanders (FWO)

Project background

Large solitary trees (LSTs) are recognised for their ecological significance and disproportionately contribute to biodiversity and ecosystem functioning. In agricultural and urban landscapes, they serve as islands with their own microenvironment: they harbour important parts of local biodiversity, contribute to carbon stocks and nutrient cycling, and cool the local microclimate. LSTs, however, decline across the world due to climate change (warming, droughts and heat waves), pests and pathogens, disturbance, and other causes. In this new project, we will study LSTs and their associated biodiversity (e.g. plants, lichens, mosses, arthropods) and functions (e.g. microclimate buffering, carbon storage, nutrient cycling) across Europe, as early warning signals of climate change before they occur elsewhere. LSTs may indeed be more susceptible to climate change than trees in a buffered forest context, and effects may cascade onto other trophic and biological levels. We aim to quantify, better understand and predict how LSTs' potential performance and survival declines in the face of climate change will alter future associated biodiversity and ecosystem functioning. By using wide spatiotemporal environmental gradients of climate and urbanisation across Europe, we will be able to project these contributions across spatiotemporal scales under current conditions and future scenarios. We will provide the first integrative study on LSTs and their benefits and this will reshape our current understanding of the impacts of climate change on large trees.

Here, we advertise for a PhD candidate to join the CoolTree project's dynamic team consisting of another PhD and a postdoc, led by Prof. Pieter De Frenne, and with extensive collaborations with Prof. Koenraad Van Meerbeek (KU Leuven) and Dr. Arno Thomaes (INBO), all promotors of the project. The project has an international focus with fieldwork performed in Belgium, but also along a north-south transect from France, Germany, Sweden, Norway, and Poland to Estonia, within the FLEUR network (www.fleur.ugent.be), and will involve also extensive collaborations with these colleagues.

Research Environment

The successful candidate will be based at the Forest & Nature Lab (www.fornalab.ugent.be) of Ghent University, Belgium. ForNaLab consists of 30 staff members and is headed by Profs. Kris Verheyen, Lander Baeten, Jan Mertens and Pieter De Frenne. The research group is part of the Department of Environment at the Faculty of Bioscience Engineering, Ghent University (https://www.ugent.be/bw/environment).

The Forest & Nature Lab aims at understanding the interactions between the ecological processes, composition, and structure of terrestrial ecosystems, with a clear link to management and policy. ForNaLab is actively involved in numerous national and international projects and networks, including FORMICA (www.formica.ugent.be), FLEUR (www.fleur.ugent.be), forestREplot (www.forestreplot.ugent.be), TreeDivNet (www.treedivnet.ugent.be), TreeDivBelgium (www.treedivbelgium.ugent.be), FunDivEUROPE (www.fundiveurope.eu) and smallFOREST (http://u-picardie.fr/smallforest/uk/).

Interested?

Please send your CV, transcript of records and a one-page cover letter explaining how you would approach the position, and answering the following selection criteria, to Pieter.DeFrenne@ugent.be by **22 February 2022** (all documents should be merged together into one single PDF file):

Requirements of the PhD Candidate

- You have a Masters, or Honours, degree in Bioscience Engineering, Biology, Ecology or equivalent degree in Life or (Applied) Biological Sciences with some background in Ecology (*also candidates that will obtain an equivalent degree in June 2022 are invited to apply*)
- You have excellent study grades
- You are an enthusiastic and highly motivated student with a strong interest in trees, biodiversity, vegetation, arthropods, ecology, and/or climate change
- You have good knowledge of both the biotic and abiotic components and processes in temperate forest ecosystems and of trees, vegetation and/or arthropods
- You are a team player with good English communication skills and are motivated to work in a collaborative project with other researchers, PhD students, postdocs and technical assistants

Our offer

- We offer a PhD scholarship for four years (full time, ca. €1900 net per month)
- Preferable start date is April 2022, but this date can be negotiated
- Collaboration in a young and dynamic scientific team
- The possibility to gain experience in doing scientific research, with many travelling opportunities and field work across Europe
- The opportunity to obtain a PhD degree at Ghent University in a topical field of applied environmental sciences and climate change