4 PhD positions (m/f/d) and 2 Postdoc position (m/f/d) in forest biodiversity- ecosystem functioning (BEF) research - a beta-diversity experiment (BETA-FOR)

Julius-Maximilians University Würzburg (JMU) and its partner Universities Georg-August-University of Göttingen (GAUG), Leipzig University (UL), University of Bayreuth (UB), Universität Bremen (UB), University of Freiburg (UF), Technische Universität Dresden (TUD), Leuphana University Lüneburg (LUL), Philipps-University Marburg (PUM), Technical University Munich (TUM), German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig, University Halle (UH) in cooperation with the Bavarian Forest Nationalpark, are continuing a research collaboration for investigating the effects of enhancing the structural diversity between forest patches by silvicultural interventions, e.g., tree cutting to improve biodiversity and ecosystem functioning.

BETA-FOR offers four positions for doctoral researchers (m/f/d), and two for a postdoctoral researcher (m/f/d), addressing various aspects of structures, functions and biodiversity in experimentally manipulated forest patches. The study sites are located mainly in the University Forest of Würzburg and the Bavarian Forest Nationalpark, with additional sites in Lübeck, Hunsrück-Hochwald Nationalpark and the Saarland. The team of supervisors is highly interdisciplinary ranging from ecology to forest science and to remote sensing, with research foci related to biodiversity and ecosystem processes in below- and above-ground systems, along multiple trophic levels. We have a strong focus on statistical models of α-, β- and γ-diversity and multifunctionality. We will stimulate diverse cooperation within the research unit and with other internationally leading experts of the field.

Within the Research Unit **BETA-FOR** we offer the following subproject (SP) positions (pending final approval):

Starting date: 01 May, 2026

Postdoctoral Researcher

2 positions

1. **SP1: Syntheses and statistical service** PLs: Prof. Dr. Jörg Müller, Würzburg
2. **SP1: Syntheses and statistical service** PLs: Prof. Dr. Nico Eisenhauer, Leipzig

Doctoral Researcher

4 positions

1. **SP4: Trees in space and time – effects of ESBC measures on the complexity-diversity relationship in the forest landscape and on individual tree stress level** PLs: Prof. Dr. Dominik Seidel, Göttingen, Prof. Dr. Bernhard Schuldt, Dresden, Dr. Lars Sprengel Göttingen

2. **SP6: Volatiles – the invisible heterogeneity of forests** PLs: Prof. Dr. Jörg Müller, Würzburg, Prof. Dr. Thomas Schmitt, Würzburg, Prof. Dr. Simon Thorn, Marburg

3. **SP7: Functional implications of forest structural heterogeneity and microbial diversity on necromass decomposition and plant nutrition** PLs: Prof. Dr. Claus Bässler, Bayreuth, Prof. Dr. Michael Scherer-Lorenzen, Freiburg

4. **SP9: Understorey plants in space and time: Impact of enhanced forest structural heterogeneity on plant community dynamics and ecosystem stability** PLs: Prof. Dr. Andreas Fichtner, Lüneburg, Prof. Dr. Goddert von Oheimb, Dresden

We offer:

- Cutting-edge research projects in a real-world forest diversity experiment
- Outstanding, interdisciplinary and integrative research environment, offering many networking opportunities
- Individual supervision by internationally recognized scientists in BEF and forest biodiversity research
- Extensive data on biodiversity, forest structure, climate and ecosystem functions collected in a unique landscape experiment

Requirements/expected profile:

- Excellent M.Sc. degree in a project-related field (e.g. ecology, forest science, remote sensing, environmental sciences)
- Very good ecological knowledge and great interest with regard to forest biodiversity/functioning research
- Good quantitative and statistical skills in R
- Excellent communication skills in English - writing and speaking.
- Motivated to be a proactive team player in an international, interdisciplinary research consortium
- Field work experience in forests would be advantageous
- Driving license is a must; partly also a private car, if the company car is not available. (Reimbursements for private KM costs will be paid based on a flat rate per kilometer.)

Application deadline: 25 Februar 2026

Please submit your application **as one single pdf-file** including:

- Cover letter in English describing your motivation for the respective subproject (see below), research interests and relevant experience
- Curriculum vitae in tabular form
- Digital copy of the master`s certificate and transcript of records or equivalent
- Names and contact details of at least two scientific references
- Working email address

All universities of this consortium aims to reduce the underrepresentation of women and therefore explicitly encourages qualified women to apply. Our universities intend to raise the number of disabled persons in their employment. Severely handicapped applicants will be given preferential consideration in the case of broadly equal suitability, ability and professional achievements.

Please submit your application for BETA-FOR positions only in English and via the contact addresses given below in the description of the subproject. It is possible to apply for several positions but with tailored motivation letters.

Please do not send any original documents to us; only send photocopies. As we need to save costs, we will not be able to return your documents to you. They will be shredded shortly after a hiring decision has been made. If you enclose a postage-paid return envelope, we will return your application documents to you three months after a hiring decision has been made.

➔ Preselected candidates will be invited to online recruitments taking place in March 2025. Queries concerning the application process should be directed to the respective project leader; for consortium-related questions, please contact joerg.mueller@uni-wuerzburg.de .

SP1: Syntheses and statistical service – Focal Area 1: Optimizing forest multifunctionality and diversity

PLs: Prof. Dr. Jörg Müller, Würzburg, Dr. Oliver Mitesser, Würzburg, Prof. Dr. Carola Paul, Prof. Rupert Seidl, Freising, Prof. Dr. Christian Ammer, Göttingen

Co-PLs: Anne Chao (Taiwan) Torsten Hothorn (Switzerland), Fons van der Plas (Netherlands), Akira Mori (Japan)

The goal of BETA-FOR is to improve the understanding of the importance of between-patch heterogeneity in forests (ESBC) in comparison to anthropogenically homogenized (Control) forests for multifunctionality and -diversity in space and time. In Focal Area 1 we aim to synthesize data with focus on “Optimizing forest diversity and multifunctionality”. This will include a synthesis of meta-community mechanisms across taxa, diversity facets and trophic levels, will focus on Multifunctionality – Area Relationships, and will expand relationships between multidiversity and (ecological) multifunctionality to economic multifunctionality from patch to district scale. The position will support the replicated measurements of species and functions on all patches, for further analyses over time.

Here, we offer a four-year post-doc position in the Chair of Nature Conservation and Forest Ecology at the Faculty of Biology at the University Würzburg. The position is full time. Candidates wishing to work part time may also be considered. Remuneration will be based on the collective agreement for the public service of German federal states (Tarifvertrag für den öffentlichen Dienst der Länder, TV-L).

We are looking for candidates with deeper interest in analyses of biodiversity and ecosystem functions, in theory of ecology and in biodiversity management. You should be able to analyze large data sets, organizing sampling campaigns and deriving management recommendation based on ecological theory. A Master's degree in geography, biology, forestry or closely related subjects is a prerequisite for employment. You should possess a solid track record of publications and an excellent PhD. We offer you a pleasant working environment in Würzburg (Fabrickschleichach), team spirit and great support by the team (see PLs and Co-PLs) and a globally unique experimental dataset to work with.

For further information, please contact Prof. Dr. Jörg Müller, e-mail: joerg.mueller@uni-wuerzburg.de; telephone: +49-16090966475.

Please submit your application as a single PDF file: oekologische-station@uni-wuerzburg.de

SP1: Focal Area 3: Spatio-temporal insurance effects of heterogeneous forests

PL: Prof. Dr. Nico Eisenhauer, Leipzig

Co-PLs: Anne Chao (Taiwan), Fons van der Plas (Netherlands), Andreas Fichtner (Germany), Akira Mori (Japan), Carola Paul (Germany), Rupert Seidl, Shaopeng Wang (China)

The postdoctoral project aims to understand how structural and compositional heterogeneity in forest landscapes enhances the stability of biodiversity, ecosystem functions, and ecosystem services across space and time. Using long-term and high-resolution time-series data, the project will quantify how local (α-scale) stability and spatial asynchrony among forest patches contribute to large-scale (γ-scale) stability, thereby testing spatial and temporal insurance hypotheses. A key objective is to disentangle the relative roles of resistance and recovery to extreme events (e.g. drought) as drivers of long-term ecosystem stability. Finally, the project will assess how forest heterogeneity influences the level and stability of ecosystem multifunctionality and stakeholder-relevant services, with a focus on scaling relationships from local processes to landscape-level ecological and economic outcomes.

We offer a four-year postdoctoral position (m/f/d, 100%, TV-L) in the Experimental Interaction Ecology Group, German Centre for Integrative Biodiversity Research (iDiv), Leipzig University. We seek a highly motivated candidate with strong quantitative and analytical skills and a deep interest in biodiversity–ecosystem functioning relationships, ecological stability theory, and forest ecology. The successful applicant will synthesize and analyze large, complex, and multi-trophic datasets, including long-term time series, to assess ecosystem stability, resistance, recovery, and multifunctionality across spatial scales. The position requires experience in statistical modelling and data integration, as well as the ability to collaborate closely with a large, international consortium of scientists and to actively contribute to coordination activities, including the organization of focused workshops and synthesis meetings. Candidates must hold a PhD in ecology, biology, forestry, geography, or a related field, with an excellent publication record. We offer a stimulating and supportive research environment, strong team spirit, and access to a globally unique experimental forest dataset.

Please submit your application only in English to Svenja Haenzel (Svenja.Haenzel@idiv.de). If you have any questions, please contact Prof. Dr. Nico Eisenhauer via email (nico.eisenhauer@idiv.de).

SP4: Trees in space and time – effects of ESBC measures on the complexity-diversity relationship in the forest landscape and on individual tree stress level

PLs: Prof. Dr. Dominik Seidel, Göttingen, Prof. Dr. Bernhard Schuldt, Dresden, Dr. Lars Sprengel, Göttingen

At the Georg August University of Göttingen (Foundation under Public Law), Department of Spatial Structures and Digitalization of Forests, a position is available **as of May 1, 2026**, subject to final approval by the DFG Main Committee, as a

Research Assistant (f/m/d- all genders welcome) (PhD candidate)

- Pay grade 13 TV-L -

is available as of May 1, 2026, subject to final approval by the DFG Main Committee. The position is **limited until April 30, 2029**.

The position advertised here in subproject 4 (Trees in space and time – effects of ESBC measures on the complexity-diversity relationship in the forest landscape and on individual tree stress level) of DFG Research Group BETAFOR therefore addresses the following two questions:

(1) How does the structural complexity of the forest landscape change as a result of silvicultural interventions aimed at improving the stand structure?

(2) How do these interventions affect the remaining trees in the immediate vicinity of the measures (especially in dry years)?

The project is being carried out in close cooperation with the Department of Silviculture and Forest Ecology of Temperate Zones (Prof. Ammer) and the Chair of Forest Botany at TU Dresden (Prof. Schuldt).

Your tasks

- Evaluation of airborne 3D laser scans of the study area in northern Bavaria
- Identifying test trees in the immediate vicinity of silvicultural measures from 3D laser scanning data
- Taking drill cores and performing dendrochronological analysis
- Writing publications
- Participating in research group meetings (twice a year)
- Presenting methods and results at conferences and project meetings

Your profile

- Completed university degree (diploma or M.Sc.) in forestry, geography, remote sensing, biology, ecology, or closely related subjects
- Fluent written and spoken German and English
- License to drive motor vehicles (class B) in Germany
- Basic knowledge of 3D laser scanning
- Basic knowledge of dendrochronology
- Strong communication and teamwork skills
- Clear affinity for spatial data and mathematical understanding
- Knowledge of R

We offer

A doctoral program “as part of a team,” not only with members of the department, but also within the research group, together with eight other doctoral candidates. As an employee in the Spatial Structures department, you will also gain exciting insights into pioneering work in short-range remote sensing, ecosystem research, and digital methods of forest structure mapping. We offer flexible working hours, extensive training opportunities as part of the university's qualification program, a wide range of interesting benefits (including childcare options during school holidays and sports activities for employees), as well as a company pension plan (VBL) and an annual bonus in accordance with TV-L.

We look forward to receiving applications consisting of a letter of motivation, CV, overview of your experience, references, and transcripts.

If you have any questions, please contact Prof. Dr. Dominik Seidel at dseidel@gwdg.de.

The University of Göttingen strives to increase the proportion of women in areas where they are underrepresented and therefore strongly encourages qualified women to apply. It also sees itself as a family-friendly university and promotes the compatibility of science/career and family life. The university is particularly committed to the professional participation of severely disabled employees and therefore welcomes applications from severely disabled persons. Applications from persons with severe disabilities will be given preference if they have the same qualifications. To protect your interests, please indicate any disability or equal treatment status in your application.

Please submit your detailed application with all important documents in a single PDF file by February 25th, 2025, to dseidel@gwdg.de

Note:

Please note that submitting your application constitutes your consent to the processing of your application data by us in accordance with data protection law. For more information on the legal basis and use of data, please refer to the information sheet on the General Data Protection Regulation (GDPR).

SP6: Volatiles – the invisible heterogeneity of forests

PLs: Prof. Dr. Jörg Müller, Würzburg, Prof. Dr. Thomas Schmitt, Würzburg, Prof. Dr. Simon Thorn, Marburg

The goal of BETA-FOR is to improve the understanding of the importance of between-patch heterogeneity in forests (ESBC) in comparison to anthropogenically homogenized (Control) forests for multifunctionality and -diversity in space and time. In SP6 we aim to investigate the habitat-heterogeneity-hypothesis using the volatile organic compound (VOC) profiles and various insect communities in our research unit. Furthermore, SP6 aims on testing several hypotheses within the ephemeral patch concept. Here organism dependent on short-living ephemeral resources to insect communities should be more affected by volatile cues than organism dependent on more stable and long-living resources. Pitfall traps baited with the resources and with synthetic VOCs will be exposed to reveal the significance of VOCs for the resource user. Additional data will be extracted from environmental VOC and overall insect communities, as well as from several ephemeral resources of varying longevity (dung, carrion, two types of fungi and deadwood). For the latter we will track the colonization by insect communities and the change in volatile composition in cooperation with SP7 to test the role of volatiles in priority effects of deadwood communities.

Here, we offer a 42-month PhD position (m/f/d) in part time (65 %), in the Chair of Nature Conservation and Forest Ecology and the Evolutionary Chemical Ecology group, at the Faculty of Biology at the University Würzburg. We are looking for candidates with deeper interest in analyses of chemical cues and biodiversity, as well as in theory of ecology. You should be interested in organizing sampling campaigns, as well as in gas chromatography/mass spectrometry analyses of volatile organic compounds. A master's degree in chemistry, biology, forestry or closely related subjects is a prerequisite for employment. We offer you a pleasant working environment in Fabrikschleichach and Würzburg, team spirit and great support by the team (see Pls and Co-Pls) and a globally unique experimental dataset to work with.

For further information, please contact Prof. Dr. Thomas Schmitt, e-mail: thomas.schmitt@uni-wuerzburg.de; telephone: +49 931 31-84188.

Please submit your application as a single PDF file to: thomas.schmitt@uni-wuerzburg.de and oekologische-station@uni-wuerzburg.de

SP7: Functional implications of forest structural heterogeneity and microbial diversity on necromass decomposition and plant nutrition

PIs: Prof. Dr. Claus Bässler, Bayreuth; Prof. Dr. Michael Scherer-Lorenzen, Freiburg

The largest part of plant and animal biomass produced in forests enters the soil compartment, and returns into nutrient cycles as dead organic matter, which is decomposed by bacteria, fungi, arthropods and other soil organisms. The structure of the forest canopy affects light, temperature and moisture conditions at ground level, and the quantity and quality of litter and dead wood produced, which thus determines decomposer biodiversity, rates of decomposition and nutrient cycling. Therefore, changes in forest management practices that alter the forest canopy can largely affect decomposers, decomposition processes and nutrient fluxes.

This project aims to quantify the direct environmental (microclimate, resource availability) and indirect microbial diversity effects of Enhancement of Structural Complexity treatments on necromass decomposition at the patch (alpha), between-patch (beta) and forest district (gamma) level. A broad set of diversity measures, encompassing taxonomic, phylogenetic, and functional diversity, will be employed to enhance our mechanistic understanding of microbial diversity's relationship to decomposition processes. The project includes assessing the temporal aspects of decomposition through continuous monitoring of (i) crucial decomposer groups, specifically bacteria and fungi found in deadwood, and of (ii) decomposition rates of various necromass types, including often overlooked fungal mycelia. Finally, to evaluate the functional implications of different decomposition rates resulting from ESC treatments, we will use a tracer experiment to measure nutrient release from decomposing substrates and their subsequent uptake by plants.

We are looking for candidates (m/f/d) with a deep interest for molecular ecology and ecosystem functioning research, who appreciate intensive field work in the forest as well as lab work, and who have a good understanding of statistics. We offer a four-year TV-L 65 % contract, excellent working conditions, and an inspiring atmosphere at the Universities of Bayreuth and Freiburg.

Please submit your application to silke.wagner@uni-bayreuth.de. For questions about the sub-project, please contact Claus Bässler (claus.baessler@uni-bayreuth.de) or Michael Scherer-Lorenzen (michael.scherer@biologie.uni-freiburg.de)

SP9: Understorey plants in space and time: Impact of enhanced forest structural heterogeneity on plant community dynamics and ecosystem stability
PLs: Prof. Dr. Andreas Fichtner, Lüneburg, Prof. Dr. Goddert von Oheimb, Dresden

As a humanistic, sustainable and action-oriented university, Leuphana University of Lüneburg stands for innovation in education and science. Methodological diversity, interdisciplinary cooperation, transdisciplinary cooperation with practice and an overall dynamic development characterise its research profile in the core topics of education, culture, management/technology, sustainability and state. Its international study model with the Leuphana College, the Leuphana Graduate School and the Leuphana Professional School is unique in Germany and has won many awards.

The University is seeking a responsible, motivated and committed candidate for the Institute of Ecology - subject to the approval of funds – for the position of a

Doctoral Researcher (m/f/d)
(salary group EG 13 TV-L, 65 %)

for a limited period of 48 month to start at 01.05.2026.

You will join the Vegetation Ecology and Biodiversity Conservation Group within the Institute of Ecology and work on the subproject “Understorey plants in space and time: Impact of enhanced forest structural heterogeneity on plant community dynamics and ecosystem stability”, which is part of the research unit BETA-FOR (https://www.uni-wuerzburg.de/for5375/about/). You will closely collaborate with the working groups of Prof. Dr. Goddert von Oheimb (TUD Dresden University of Technology) and Prof. Dr. Benjamin Delory (Utrecht University).

Project description:
Understorey plant communities represent a major component of plant diversity in temperate forests and are central to the regulation of key ecosystem processes. This subproject offers the opportunity to work with a long-term dataset to explore how structural heterogeneity among forest patches (enhancement of structural beta complexity, ESBC) shapes the diversity and functioning of understorey plant communities across spatial and temporal scales.
The subproject explores the effects of ESBC on multiple facets of plant diversity (taxonomic, functional, and phylogenetic) over time and links interannual variation in forest floor conditions to changes in plant communities across spatial scales. A further focus is to understand how changes in understorey plant diversity affect the temporal stability of above- and belowground productivity at the community level, as well as identifying the underlying mechanisms related to local and spatial insurance effects.

Tasks:
- Compile and manage long-term data on vegetation, forest structure, and microclimate
- Conduct vegetation surveys
- Collect and analyse above- and belowground traits of understorey plants in both field and laboratory settings
- Conduct field measurements, including light availability and aboveground understorey biomass sampling
- Install minirhizotron tubes and acquire and analyse root images
- Perform statistical analyses of ecological data using advanced methods
- Collaborate in an international research team
- Preparation and publication of scientific papers and submission of a PhD thesis

Your profile:
- Completed scientific university degree (Master’s or equivalent) in a relevant field (e.g., biology, forest sciences, environmental sciences)
- Strong knowledge of forest ecology and a keen interest in biodiversity research

- Strong knowledge of temperate understorey plants, including species identification and an understanding of both species and community ecology
- High enthusiasm for fieldwork, with willingness to undertake extended stays (several weeks) in different regions of Germany
- Experience with functional traits of leaves and roots is an advantage
- Experience with minirhizotron techniques and root ecology is an advantage
- Strong skills and solid experience in statistical analysis using R
- Excellent written and spoken English
- Motivation to work proactively as part of a research team
- Valid driving licence recognized in Germany, with willingness to drive an institute vehicle

Our offer:

- an inspiring working environment as part of the university community of researchers, teachers, students and staff in technology and administration,
- a workplace at one of the most beautiful university locations in Germany in a true campus university with an internationally acclaimed central building by Daniel Libeskind and the directly adjacent Wilschenbruch nature reserve,
- a high level of job security as part of the public service,
- an additional company pension scheme through the Versorgungsanstalt des Bundes und der Länder (VBL),
- flexible and family-friendly working hours within a flexitime framework from 6 a.m. to 9 p.m.,
- flexible and family-friendly opportunities to alternate between presence work and mobile work,
- an extensive internal and external continuing education programme,
- a wide range of sporting activities sponsored by the university, which employees can take part in for one hour per week during working hours to promote their health,
- a university-sponsored catering service for lunch and dinner in the refectory,
- a Germany ticket sponsored by the university as a job ticket

Your application:

For questions regarding the content of the positions, please contact Prof. Dr. Andreas Fichtner (andreas.fichtner@leuphana.de) or Prof. Dr. von Oheimb (goddert_v_oheimb@tu-dresden.de).

Leuphana University of Lüneburg promotes professional gender equality and heterogeneity among its members. Applications from people with severe disabilities will be given preferential consideration if they have the same qualifications.

Please upload your application documents (consisting of a cover letter in English describing motivation for the project, research interest and relevant experience; CV, including a list of publications if applicable; digital copies of MA/BA/Diploma certificates; contact details of at least two scientific references; please without photo) by **25.02.2026** to our **application portal**. We are looking forward to receiving your application!