Doctoral candidate (PhD) (65%; d/f/m)

Soundscapes across cityscapes: relationships among biodiversity, sound, and human health and wellbeing in urban green infrastructure

Project background:

Urban green spaces are critical for both biodiversity and human health. Sound and the urban soundscape can be indicators of biodiversity and environmental conditions and can have a profound impact on human health. Still, the relationship between urban features (green and grey structures) and biodiversity as well as soundscapes is understudied, as is how soundscapes impact the restorative power of urban nature. The aim of the CitySoundscapes project is to identify how the characteristics of urban soundscapes relate to the structural complexity of urban green spaces, sound-based biodiversity in urban green spaces and human health. We combine urban ecology, environmental psychology, acoustics research and urban planning to collectively provide information for the planning and management of urban green spaces in the city of Munich and beyond. Through citizen engagement and stakeholder collaboration, we aim to promote biodiversity-based health interventions.

The research is funded by the Research Initiative for the Conservation of Biodiversity (FEdA), the Federal Ministry of Education and Research (BMBF), who funds scientific projects to analyze biodiversity in Germany and to develop and implement innovative, effective measures to protect and improve biodiversity.

PhD Topic: The impact of urban green space structural complexity on biodiversity and urban soundscapes

We are offering **one PhD position** to a highly motivated student focusing on the interconnections between biophonic and anthrophonic sounds and environmental features with an emphasis on vegetation complexity, urban infrastructure, and bird diversity. The thesis is part of a greater project studying urban green space and soundscapes and how these relate to human health and wellbeing. Utilizing terrestrial mobile laser scanning (TLS) and automated recording units (ARUs), as well as advanced modeling techniques, this thesis will quantify songbird diversity indices and their relationship with greenspace structure and surrounding urban landscape. The results of this work will contribute to tools and guidelines for creating multifunctional and biodiverse urban green spaces in Munich.

Job description:

The researcher will collect field data on urban greens space structural complexity and soundscapes. Her/his main responsibilities will be the coordination of data collection, own data collection, analysis of complexity data, set-up and monitoring of acoustic recorders, and analysis of soundscapes using AI. The researcher will work closely with other PhD researcher to understand influence on acoustic comfort. The job will be mainly associated with the Professorship for Forest and Agroforest Systems in Freising, DE, but will be jointly supervised.

The candidate we are looking for ideally has:

- Experience with environmental data and quantitative data analysis
- Experience modelling and relevant languages (R, Python etc.)
- Experience with spatial 3D data and computing
- Ecological knowledge of bird biology and urban ecosystems

- Enthusiasm for and competence in ecological field work
- Interest in supervising and working with other students during your PhD

Job requirements:

- Excellent diploma or master's degree in related field
- Excellent skills in field and lab work
- Very good knowledge of English and German
- A driver's license valid in Germany
- Pronounced scientific and writing skills are a benefit

Who we are:

You will be co-supervised by the following research groups at the Technical University of Munich: **Professorship for Forest and Agroforestry Systems (Peter Annighöfer)** and the **Chair for Terrestrial Ecology (Sebastian Meyer)**

What we offer:

- An innovative and lively working environment at the university and campus
- Access to modern facilities and infrastructure at a strong research department
- Scientific exchange, flexibility, independence and self-responsibility
- Extensive options of vocational training (meetings, workshops, conferences)
- A chance to receive your doctoral degree
- TV-L E13 (65%), initially limited to 3 years

Starting date:

As soon as possible; ideally June 2024 (part-time 65%, fixed-term for 3 years)

Interested?

Please send your application with: (1) a letter of interest including a short outline of career goals and research experience, (2) a detailed CV, (3) contact information of two referees, (4) and relevant certificates or credentials, in the form of one single pdf-file (**CitySounds_phd_WP01_surname.pdf**) by 03.05.2024 to Prof. Dr. Peter Annighöfer; peter.annighoefer@tum.de

Questions regarding project or position?

Please contact: Prof. Annighöfer and/or PD Sebastian Meyer or visit our webpages for more information on our research groups and the kind of work we do.

Application closing date: Friday, 03.05.2024

The research is funded by the Research Initiative for the Conservation of Biodiversity (FEdA), the Federal Ministry of Education and Research (BMBF), who funds scientific projects to analyze biodiversity in Germany and to develop and implement innovative, effective measures to protect and improve biodiversity. Currently, 44 projects are part of FEdA. In the spirit of "transformative" science, the initiative supports the targeted exchange between research, politics, business, agriculture and forestry, nature conservation and civil society. More information at www.feda.bio.