In the framework of the Biodiversity Exploratories project (www.biodiversity-exploratories.de), funded by the DFG, we invite applications for a

PhD position (m/f/d) in Insect Ecology and Conservation

Background

Within the project Artificial Intelligence for Insect Biodiversity Monitoring (AIforIBM, Biodiversity Exploratories), we investigate the effects of grassland management on arthropod biodiversity and community composition. AIforIBM aims to monitor flying insects in grasslands at a very high temporal resolution. The project will develop camera trap systems and deep learning algorithms to quantify insect abundance, morpho-group diversity, and body size distributions in cooperation with world-leading experts on artificial intelligence for image analyses (Prof. Mäder, TU Ilmenau). This position focuses on the ecology aspect of the project, while a second PhD in Ilmenau will be dealing with programming/AI development. Because of the high temporal resolution of our data, we can investigate how land-use activities affect the dynamics and stability of the insect communities by quantifying the reference state, disturbance effects, and recovery phases directly. We will differentiate between demographic and (re)colonisation processes in response to disturbances by land use. Thereby, AIforIBM will advance the technology available for insect monitoring and the mechanistic understanding of the effects of land use on insect communities.

Your profile

- Full university degree (Diploma/M.Sc.) in biology, ecology, zoology or a related discipline.
- Interest in arthropod ecology and conservation.
- Sound knowledge of arthropod taxonomy and identification.
- Ability to identify arthropods from images.
- Experience in scientific programming (preferably R) and writing.
- Fluent in German and English, reading and writing.
- Good communication skills and ability to work in a team.
- Ability and willingness to conduct fieldwork.
- Interest in digital technologies and artificial intelligence is advantageous.

Tasks

- Testing and deploying camera-trap setups in the field
- Identifying pictures of insects as training data for the algorithms
- Evaluate identifications of photos by the algorithm
- Deploy the camera traps in the grassland plots of the Biodiversity Exploratories to monitor the insect community in high temporal resolution in response to land-use activities
- Use the collected data to analyse the response of insect communities to land use in an unprecedented degree of detail

Our offer

- A stimulating working environment and an interdisciplinary research team.
- The ability to develop a profile as an arthropod ecologist with a broad scope bridging classical and cutting-edge digital research methods.
- A salary by TV-L E13 (65 %). The contract for the position will be limited to 36 months.
- Participation in the qualification programs offered by the TUM graduate school.
- TUM is an equal opportunity employer. Qualified women are particularly encouraged to apply. Applicants with disabilities are treated with preference, given comparable qualifications.

Contact

Please send your application, including a cover letter, a detailed CV and contact information of two referees, as soon as possible (latest by 31.1.2023) in the form of a single pdf file to Sebastian Meyer (sebastian.t.meyer@tum.de). The anticipated appointment date is 1.5.2023. For more information, see www.biodiversity-exploratories.de or www3.ls.tum.de/toek. For further inquiries, please contact PD Dr Sebastian Meyer (sebastian.t.meyer@tum.de).