

Doctoral Candidate – Soil–Pollinator Interactions and Soil Health

Professorship for Soil Biophysics and Environmental Systems

TUM School of Life Sciences, Technical University of Munich, Freising

About us:

Our group at TUM's Soil Biophysics and Environmental Systems Professorship embraces a holistic, interdisciplinary approach to soil research, merging physics, biology and environmental science to address urgent challenges of soil health and ecosystem services. We explore how soil structure, water movement, microbial and root activity form feedback loops that determine ecosystem productivity and resilience. Our research spans from pore-scale measurements and instrumentation to field-scale experiments and modelling of whole-plant–soil systems. This innovative framework underpins our commitment to training the next generation of researchers who can traverse disciplinary boundaries and contribute to sustainable land-management solutions.

Project Overview

This position is part of the Horizon Europe project ProPollSoil – Understanding and managing soil health impacts to protect soil-dependent pollinators (<https://cordis.europa.eu/project/id/101219108>).

Within Work Package 4.6, our team at TUM investigates how soil physical and hydraulic properties, land management, and contamination influence the nesting conditions and habitat quality of ground-nesting pollinators. The PhD candidate will combine soil biophysical measurements, field monitoring, and laboratory analyses to identify soil health indicators that enhance pollinator diversity and resilience.

Key Responsibilities

- Conduct soil sampling and perform physical, hydraulic, and chemical analyses across experimental sites and Living Labs in Europe.
- Quantify relationships between soil structure, moisture dynamics, and pollinator nesting activity.
- Contribute to the development and testing of soil health indicators relevant to pollinator conservation.
- Collaborate within an international, interdisciplinary consortium and present findings in scientific journals and conferences.

Qualifications

- Master's degree in Soil Science, Environmental Science, Ecology, or a closely related discipline.
- Strong interest in soil biophysics, biodiversity, and ecosystem services.
- Experience with field and laboratory soil measurements; knowledge of soil–fauna interactions is an advantage.

- Very good written and spoken English; German skills are beneficial.
- High motivation for collaborative, interdisciplinary research and international teamwork.
- Keen interest in both field and laboratory experimental work.
- A B1 driving license is beneficial.

What We Offer

We offer a 65% position as academic staff (TV-L E13, 65%) with the opportunity to pursue a doctoral degree. The position is limited to three years, with the possibility of extension. Payment will follow the Collective Agreement for the Civil Service of the Länder (TV-L).

TUM strives to increase the proportion of women in its workforce and explicitly encourages applications from qualified women.

In addition, we offer:

- A highly topical research environment linking soil physics, ecology, and biodiversity conservation.
- Supervision within an experienced, international consortium under Horizon Europe.
- Access to excellent analytical facilities and training opportunities at the TUM School of Life Sciences.
- A supportive, family-friendly, and multicultural working atmosphere in Freising.

Start date: 1 February 2026 (or as soon as possible)

Duration: 3 years

Application Process

Please submit a single PDF file containing your cover letter, CV, BSc and MSc certificates, and contact details of two references by 30 November 2025 to application.sbe@ls.tum.de.

In your cover letter, explicitly describe your background and experience in one or more of the following areas: soil science, soil physics, ecology, and/or pollinators.

As part of your application, you provide personal data to the Technical University of Munich (TUM). Please view our privacy policy on the collection and processing of personal data pursuant to Art. 13 of the EU General Data Protection Regulation at: <https://portal.mytum.de/kompass/datenschutz/Bewerbung/>.

By submitting your application, you confirm that you have read and understood this information.

Find out more about us at www.tum.de and <https://www.lss.ls.tum.de/sbe/get-to-know-us/>.

Contact:

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Professorship for Soil Biophysics and Environmental Systems

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