**Master’s Thesis**

**Optimal seed mixtures for insect friendly urban gardens**

Urban community gardens are proposed biodiversity ‘hotspots’ in the city. Yet urban gardeners need better urban context-specific strategies to support biodiversity. Flowering plant seed mixtures are increasingly popular as a proposed pollinator conservation strategy. However, often seed mixtures are not adapted for urban environmental conditions including increased heat, drought and poor soil conditions. Furthermore, mixtures may be aesthetically pleasing for people, but not necessarily be evidence-based in that they are shown to prioritize and support pollinators. Studies are needed that design and test flowering plant mixtures that are aligned for urban gardens and their insect inhabitants.

The **Professorship for Urban Productive Ecosystems** offers a master thesis that investigates the following questions: **(1)** How can flowering plant species mixtures combine pollinator-attraction traits and urban resilience traits? **(2)** Which of these flowering species mixtures are most attractive to pollinators *in situ*? This thesis aims to provide a tested flowering plant mixture to be implemented in urban gardens and neighborhoods across the city of Munich as part of the research project **Biodiversität ins Quartier** („Gärtner\*innen und Bewohner\*innen gemeinsam mit zivilgesellschaftlichen Organisationen, Wissenschaft und weiteren Stadtakteur\*innen für mehr biologische Vielfalt in der Stadtnatur“) funded by the Bundesamt für Naturschutz. This unique project will work from theory to practice.

**Details: Developing a seed mixture for urban gardens**

The focus of this thesis is to develop and test 3 seed mixtures that consider: (i) increased temperatures, soil and air pollution in cities; (ii) the needs of urban gardeners; and (iii) as well as taking into account the "Flowering Mixture Guide for Projects in the Federal Biodiversity Program" of Germany. The mixes will give preference to native species and exclude organically bred/cultivated species/varieties modified with recent genetic engineering techniques. The herb and flower mixes will be conceptualized from literature on plant traits, tested using field studies on pollinator attraction, and analyzed using statistical methods. The result of the thesis will inform a research-based flower mix to be used by community gardeners and neighborhood residents in Munich.

**Requirements**

Previous experience with botany and plant ecology are highly beneficial. Good communication skills are especially beneficial. These project will aim to start as soon as possible (summer 2023). The thesis can be supervised in German or English.

**If you are interested or for any questions, please contact**

Professor Monika Egerer (monika.egerer[at]tum.de)

[*www.wildbienenforschung.de*](http://www.wildbienenforschung.de)