

MSc Project

Change of food-web structure and food-chain length in response to macro- and micro-climate and forest management



We are looking for an enthusiastic MSc student who will be working on decomposer food-webs in aquatic, terrestrial and interconnected habitats in forests across Switzerland. The project is based in the workgroup of Prof. Dr. Martin Gossner (Forest Entomology) at Swiss Federal Research Institute WSL in Birmensdorf. Start: March/April 2022 (or by arrangement).

Background

Land-use and climate change are major drivers of global biodiversity loss. As biodiversity at multiple trophic levels is important for multifunctionality of ecosystems, changes in community composition and species interaction networks (food-webs) will likely challenge ecosystem functioning and stability. Understanding and predicting these effects is important, especially in complex landscapes such as forests, where aquatic and terrestrial communities are interconnected, but might respond differently to global change.

Aims

This project aims to (1) reconstruct food-webs via bulk and/or compound-specific stable isotope and fatty acid analyses, and (2) determine decomposition rates and secondary production of decomposer invertebrates and ultimately (3) assess and quantify the effects of temperature and management on aquatic, terrestrial and interconnected food-webs in forests. In order to answer these questions, we will use field sampling and field mesocosms in managed and unmanaged forests all over Switzerland.

Requirements

Interest in community ecology, forest and landscape management, and analytical chemistry. Skills in taxonomical identification of invertebrates are advantageous, but not mandatory.

Contact / Supervision

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More info: <https://www.wsl.ch/de/ueber-die-wsl/forschungseinheiten/waldgesundheit-und-biotische-interaktionen/waldentomologie.html>

If you have any question, do not hesitate to contact us. We are looking forward to meeting you!