

### Effects of temperature on invertebrate movement (master or bachelor thesis)

How do species respond to global warming? In this research project, we are aiming to understand how the movement of invertebrate species will change under warmer conditions. In the laboratory, the movement of invertebrate individuals will be tracked by automated camera systems under different temperatures. The resulting movement data can be analyzed not only for the trajectories of movement that the animals followed but also for higher level movement parameters such as the average of maximum speed. After statistical analyses, the relationships between movement and temperature can be used for a predictive understanding how animals will respond to global warming.

### Invasive species in food webs: who are they? (master thesis)

As threats to biodiversity invasive species received a lot of attention, which led to high number of studies analyzing either causes or consequences of invasions. To invade an ecosystem, an alien species has to successfully pass the biotic filter of the local species community. Food webs depict the entire set of trophic interactions in an ecosystem, which allows to define direct (predation) and indirect (facilitation, competition) effects among species. Thus, the complex food webs of natural communities are an important part of this biotic filter. Surprisingly, the ecology of invasive species has not been investigated in the context of complex food webs as most of the studies considering trophic interactions are based on simplified system of few interacting species. The goal of this master thesis is to fill this scientific gap by analyzing the patterns of trophic interactions of invasive species in food webs from various ecosystems. Taking into account the entire complexity of food webs will allow to better identify what are the properties of invasive species and what are the ecological mechanisms underlying their invasion success.