

Impacts of earthworm invasion on above- and belowground invertebrate communities in North American forest ecosystems

We offer **Bachelor or Master** theses in the framework of the **EcoWorm** project (“Ecosystem responses to exotic earthworm invasion in Northern American forests”) investigating the impacts of invasive European earthworms on North American forest ecosystems.

Background:

While global biodiversity is decreasing, local biodiversity is subject to gains and losses with consequences for ecosystem functioning. Biological invasions can have severe impacts on local ecosystems (Simberloff et al. 2013), with invasions by ecosystem engineers known to dramatically alter local abiotic and biotic environments with subsequent consequences for animal and plant communities and ecosystem functioning (Craven et al. 2017, Ferlian et al. 2018). The EcoWorm project led by Prof. Dr. Nico Eisenhauer investigates earthworm effects on relationships between plant communities, soil food webs, and ecosystem processes in formerly earthworm-free northern North American forests.

Thesis project:

There is a wealth of observational and experimental samples and data collected between 2016 and 2019, parts of which are still being processed in the lab and by different taxonomists. Potential thesis projects include, but are not restricted to a) responses of **aboveground and belowground invertebrate biodiversity** to earthworm invasion, b) responses of **nematode communities** (abundance, biomass, diversity, functional diversity, male-female ratios, etc.), or c) more **food-web and energy-flux** centered questions. Depending on the abilities and interests of the student and the availability of the required data, the exact topic can be further discussed.

What we offer and what we expect:

We offer research training and education in a diverse, welcoming and motivated team, supervision by experienced and highly motivated researchers at a unique research centre and the possibility to work on a globally important ecological question.

We expect students to be interested in soil ecology, biodiversity and ecosystem functioning. The ability and willingness to work in a team are absolutely necessary. Basal skills in the statistical software R or the motivation to acquire them are required. Furthermore, the willingness to acquire basal GIT version control skills to jointly develop R code needed for the project is required.

Contact:

The ECOWORM project is run by **Prof. Dr. Nico Eisenhauer** (nico.eisenhauer@idiv.de) and the thesis project will be co-supervised by **Dr. Malte Jochum** (malte.jochum@idiv.de).

Please get in touch if you are interested to further discuss the options.



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References:

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