



FACULTY OF SCIENCE  
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## RESTORATION ECOLOGY

### OFFER

- We can offer our expertise in the field of reclamation technologies.
- We have great experience in post-mining site restoration as well as in the restoration of other types of habitats.
- We prefer complex tasks that allow us to elaborate more principal research questions on site.

### KNOW-HOW & TECHNOLOGIES

Our group carries out research focused on the interaction of the individual components of ecosystems and their changes during primary succession. These findings are then applied to the development of methods for the recovery of heavily distributed ecosystems. The model ecosystems are dynamic ecosystems after large disturbances such as mining, farming or the restoration of oligotrophic ecosystems by topsoil removal. We study:

- Biogeochemical cycles and their interaction as the main drivers of change in the evolution of ecosystems.
- Biogeochemical cycles of biogenic elements carbon, nitrogen, phosphorus, in relation to other key elements and natural conditions.

**We are capable of performing complex studies of ecosystem-level processes in terms of energy and nutrient flows as well as particular tasks dealing with this topic.**

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## KEY RESEARCH EQUIPMENT

We are equipped to study fluxes of major elements, C, N, P and major energy fluxes in ecosystems as well as soil biota community structures and compositions. The key equipment includes an eddy covariance tower, equipment for field measurements of soil respiration, a laboratory for the analysis of soil and plant material, equipment to study organic matter quality and microbial community composition using PLFA (LC GC MS).

## PARTNERSHIPS & COLLABORATIONS

### ACADEMIC PARTNERS

- The Institute of Microbiology ASCR
- The Institute of Botany of the ASCR
- Biology Centre ASCR
- Czech Geological Survey
- University of Antwerp

### PRIVATE AND PUBLIC SECTOR

- Sokolovská Uhelná a.s.
- R princip
- ENKI o.p.s.
- B-Ware Netherlands

**Our mission is to try to understand the functioning of the terrestrial ecosystem by linking data about energy flow, nutrient cycling and biodiversity with a strong emphasis on the role of aboveground and belowground interactions. We then use that knowledge in the restoration of ecosystems heavily disturbed or degraded by human activity.**

## MAIN PROJECTS

- The role of roots and litter in plant-soil feedback: consequences for soil biota and plant succession. 2015–2017, Czech Science Foundation.
- Mycorrhizal community dynamics during succession on mining heaps in relation to changes in vegetation and soil development. 2013–2017, Czech Science Foundation.
- The role of leaf functional traits in soil or ganic matter accumulation during primary succession. 2012–2016, Czech Science Foundation.

## ACHIEVEMENTS

- Elucidation of relationships between litter quality and C storage in post mining sites.
- Contributing to successful heathland restoration.
- Guideline for using of primary succession in restoration.

