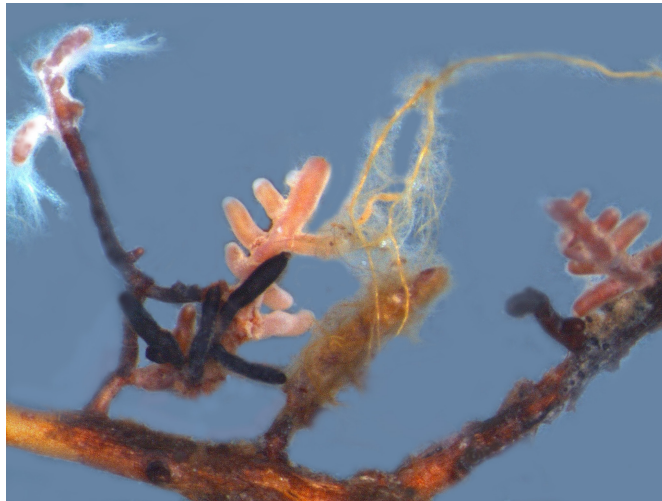




Swiss Federal Institute for Forest, Snow and Landscape Research WSL
Biodiversity and Conservation Biology

[Ecological Genetics](#)

Head: [Dr. Martina Peter](#)



We study ecological processes in populations of plants, mycorrhizal fungi and animals with molecular-genetic methods and supplement them with experimental approaches. We mainly investigate species that are relevant for Switzerland owing to their function in ecosystems, their distributional focus or their conservation status. We describe how plants of the Alpine region evolve to adapt to changing environmental conditions (adaptation). As important symbiosis partners of our forest trees, we investigate mycorrhizal fungi, their adaptation to tree partners and local conditions, and their significance for the stability of forest ecosystems in a changing environment. We study what effects the characteristics and configuration of landscape elements impose on the dispersal and the connectivity of organisms and their populations or how land use affects rare species of plants and animals (conservation genetics).

My research focus lies in diverse aspects of the symbiotic interaction between forest trees and fungi and their role for forest ecosystems in a changing environment. As the interface between plants and soil, mycorrhizal fungi link above- and below-ground processes, forming a large network that connects trees in a forest. They are usually very species-rich, with one tree interacting with hundreds of mycorrhizal fungi, which in turn interact with the roots of many trees. I'm interested in what role this diversity and network plays in forest functioning and how mycorrhizal communities and populations are affected by and adapt to changing conditions such as climate-change driven drought. For population studies, we mainly focus on two mycorrhizal fungal species that are of high ecological (*Cenococcum geophilum*) but also economical (the Burgundy truffle *Tuber aestivum*) importance.