Spatial patterns of demographic processes in Swiss forest reserves

Based on a network of forest reserves throughout Switzerland, ETH has been monitoring the development of unmanaged forests on permanent plots of different sizes in forest reserves throughout Switzerland since the 1950s. Since 2006, this project is a collaboration between WSL and ETH. At the same time, the measurement of the coordinates of living and dead trees on the permanent plots was started. So far, coordinates have been recorded for about 170 plots in 37 forest reserves where at least one survey has been carried out since 2006.

This dataset allows to spatially identify trees growing above the caliper threshold (recruitment) and trees that have died since the last inventory (mortality). In this thesis spatial point pattern analysis (e.g. Wiegand & Moloney 2014) and other statistical approaches will be used to investigate the spatial patterns of demographic processes in the forest reserves. In particular, we will investigate whether there are differences in the nature of the demographic processes along environmental and structural gradients, between forest types and species and in between different diameter classes of a given species.