Developing tariff functions for volume estimation in Swiss forest reserves

Based on a network of forest reserves throughout Switzerland, ETH has been monitoring the development of forest reserves throughout Switzerland since the 1950s. Since 2006, this project is a collaboration between WSL and ETH. The forest reserves within this network have developed without human intervention since their designation as forest reserves. This development resulted in a higher number of very large trees (trees with DBH ≥ 80 cm) and higher basal area compared to the Swiss forests. The tariff functions used in the Swiss National Forest Inventory were derived from a dataset collected from managed, monospecific, and even-aged forests. These tariff functions might thus not be valid for trees growing in uneven-aged, mixed forests and for very large trees. In this thesis, the applicability of these volume functions for trees growing in forest reserves will be examined and new tariffs will be developed based on in-situ measurements carried out by the student. This will allow for more reliable volume estimates in Swiss forest reserves.