

## **SEASONAL CLIMATE AND ALPINE LAND-USE DEVELOPMENT (CLIM-LAND)**

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**CLIM-LAND** is a multidisciplinary approach study. The overall goal of the study is to reconstruct seasonal climate variables in relation to Alpine land-use in the Austrian Alps during the last 4,000 years. For the quantitative inference of seasonal climatic variables we use diatom, chrysophyte-cyst and chironomid-based transfer functions, which were established from a lake calibration data set of the Austrian Central Alps. These transfer functions will be applied to the fossils of a sediment core from an Alpine lake (Oberer Landschitzsee), which is located slightly above the present tree-line at the southern slopes of the Niedere Tauern (Lungau). The seasonal climate pattern will be compared with plankton dynamics based on morphological and molecular surveys, catchment processes inferred from geochemical and mineralogical analyses, and with land-use impact indicated by pollen. Additionally, molecular biology should enable us to identify chrysophyte resting stages to species levels, thus getting way to recent species ecology and their use as bio-indicators.