



## **Using modern analogues to reconstruct past landcover**

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The physical cover of the earth plays an important role in the earth system. It affects the climate through feedbacks such as albedo and surface roughness, forms part of the carbon cycle as both sink and source and is both affected by and can affect human societies. Reconstructing past changes in land use and land cover helps to understand how these interactions may have changed over time, and provides important boundary conditions for paleoclimate models.

Pollen assemblages, extracted from sedimentary sequences, provide one of the most abundant sources of information about past changes in land cover over the Holocene period. However, the relationship between plant cover and sedimentary pollen abundance is complex and non-linear, being affected by differential dispersal, production and taxonomic resolution. One method to correct for this and provide quantified estimates of past land cover is to calibrate modern pollen assemblages against contemporary remotely sensed estimates of land cover. Results will be presented from developing such a calibration for a set of European modern pollen samples and AVHRR-based tree cover estimates. An emphasis will be placed on the output of validation tests of the calibration, and what this indicates for the predictive skill of this approach. The calibration will then be applied to a set of pollen sequences for the European continent for the past 11,000 years, and the patterns of reconstructed land cover will be discussed.