



Universität für Bodenkultur Wien  
University of Natural Resources  
and Life Sciences, Vienna

# Maintenance or cultivation?

## Woodland management strategies in the late Neolithic pile dwellings of Lakes Mondsee and Attersee and in surrounding settlements

Thorsten Jakobitsch

University of Natural Resources and Life Sciences Vienna (BOKU), Institute of Botany  
Austrian Archaeological Institute (OeAI)

### Introduction

Archaeobotany's goals are the reconstruction of subsistence strategies, agricultural regimes and food habits of past cultures and it can be seen as the science of past human and plant relationships. Archaeological deposits beneath the groundwater table display fairly good preservation of plant material due to the anaerobic conditions in the sediments which prevent their decay. Prehistoric pile dwellings found at lakeshores offer a rich assemblage of preserved organic materials, such as pollen and plant macroremains. By studying these remains the subsistence strategies as well as the vegetation can be reconstructed.

### Aim and research question(s)

The aim of this research is a reconstruction of subsistence strategies of the Neolithic farmers from settlements at Mondsee and Attersee. The focus will lie on human impact on the forest around the settlement. The research questions for this thesis are: How was the forest around the settlement affected by agriculture, fruit-gathering, and fodder management for domestic animals? Did the pile dwellers practice woodland management?



Top: The site of Mooswinkel shown in the map. Bottom: Reconstruction of a pile dwelling. (Illustration: National Museum of Slovenia)



A sediment sample from the site Mooswinkel with plant remains.

### Methodology – Material

During archaeological excavations at Mooswinkel (Mondsee), sediment samples have been collected from the cultural layers of the nowadays submerged settlement. The settlement was dated to 3.700 – 3.400 BCE. The sediment samples were wet sieved and plant material was sorted out and identified. The following materials were recorded: remains of cultivated plants, wild plant seeds, twigs and wood scraps, charcoal, buds, conifer needles and leaves, mosses, insects and arthropods, and animal dung from domestic animals (sheep/goat and cattle). The animal dung was further examined for botanical micro-remains to reconstruct the dietary habits of the domestic animals.

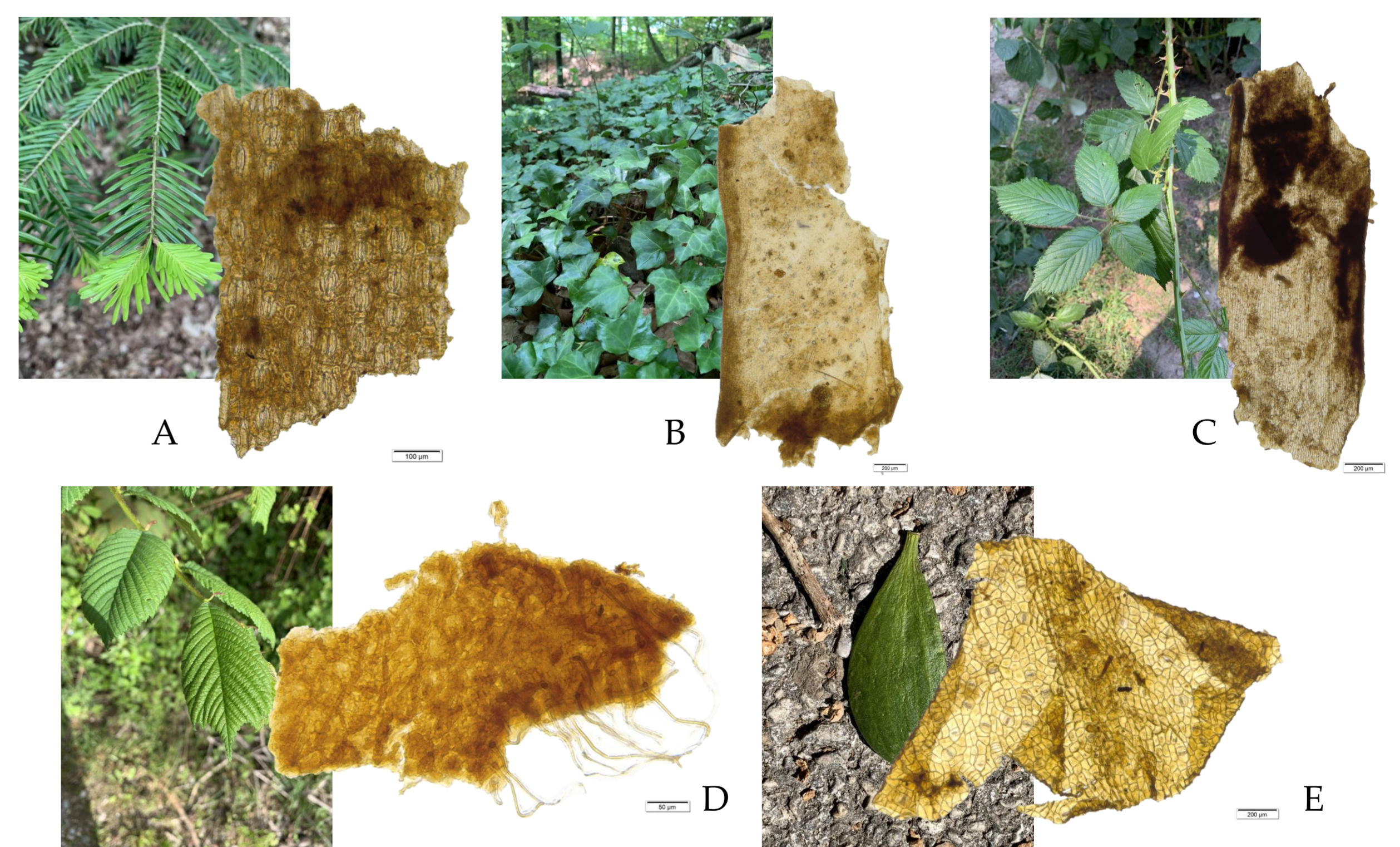
### Preliminary results

The fodder management for domestic animals has already been studied in detail. Epidermal fragments of leaves in animal dung showed that animals were fed during winter with leaves of evergreen species like ivy (*Hedera helix*), mistletoe (*Viscum album*), bramble (*Rubus fruticosus*) and conifers (*Abies alba*, *Picea abies*). Leaf-hay from mainly elm trees (*Ulmus* sp.) and beech (*Fagus sylvatica*) was collected in summer and stored for feeding in winter, together with grassy- and herbaceous-hay. In early spring, catkins (= male flowers) of hazel (*Corylus avellana*) and alder (*Alnus* sp.) were given as a protein-rich food.

### Outlook

Data from 2 previous projects will be included: One project was an investigation of a pile dwelling at lake Attersee from the same period. The second project is an analysis of plant remains from settlements in the vicinity of the lake. From these settlements, which are on mineral dry soils, plant remains are only preserved in a charred state. Nevertheless, they are helpful to reconstruct vegetation and subsistence in the hinterland of the lakes.

To support the data gained by the archaeobotanical analysis, a pollen sample will be studied to gain insight in the vegetation around the lake settlement Mooswinkel.



Plant epidermal remains found in animal dung:  
A) fir (*Abies alba*), B) ivy (*Hedera helix*), C) bramble (*Rubus cf. fruticosus*), D) elm (*Ulmus* sp.), E) mistletoe (*Viscum album*)