

# A 1000-year Silver fir (*Abies alba* [Miller]) chronology for East-Austria

## Introduction

Pollen studies have shown that in the early medieval ages Silver fir has had a share over 60% of the East-Austrian forests (fig. 2). This proportion went down continuously due to anthropogenic influences and reached 30% in 1900. Today, only 1-2% of the forests in Lower Austria are covered with Silver fir. Because of its dominance in the past, a standard chronology for fir is essential for successful dating of historical wooden samples. In addition, it has to be investigated if a regional fir chronology connects with other regional curves in Europe.

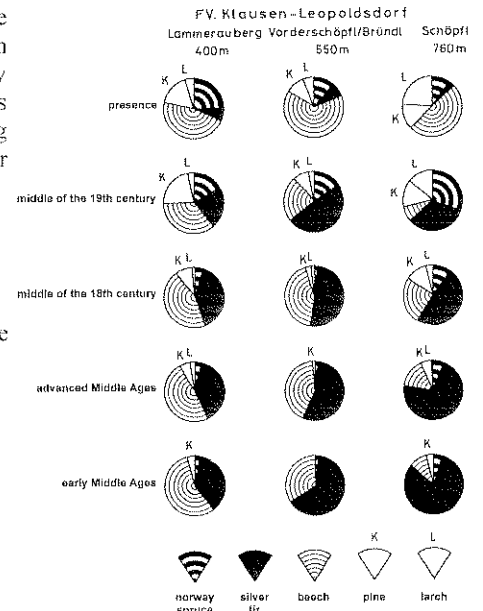


Fig. 2: Results of pollen analysis in the south-western areas of Vienna

## Results

- ⇒ We successfully completed an over 1000-year chronology for Silver fir (fig. 1).
- ⇒ The Ottoman siege of Vienna 1683 has destroyed a major proportion of the medieval (Romanesque / Gothic) structure - reflected in the sample depth (fig. 1).
- ⇒ The newly established fir chronology crossdates well with other chronologies.

	East-Austrian Silver fir chronology				
	Ovl	Glk	TBP	TH	DI
South-German Silver fir chronology Stuttgart Hohenheim	1009	74	21.1	21.9	508
Slovenian Silver fir chronology University Ljubljana	492	68	8.9	10.4	177
East-Austrian Black pine chronology Wood Biology and Tree Ring Research Group, Vienna	677	82	10.4	10.4	124
East-Austrian Oak chronology Wood Biology and Tree Ring Research Group, Vienna	807	67	11.8	12.0	202

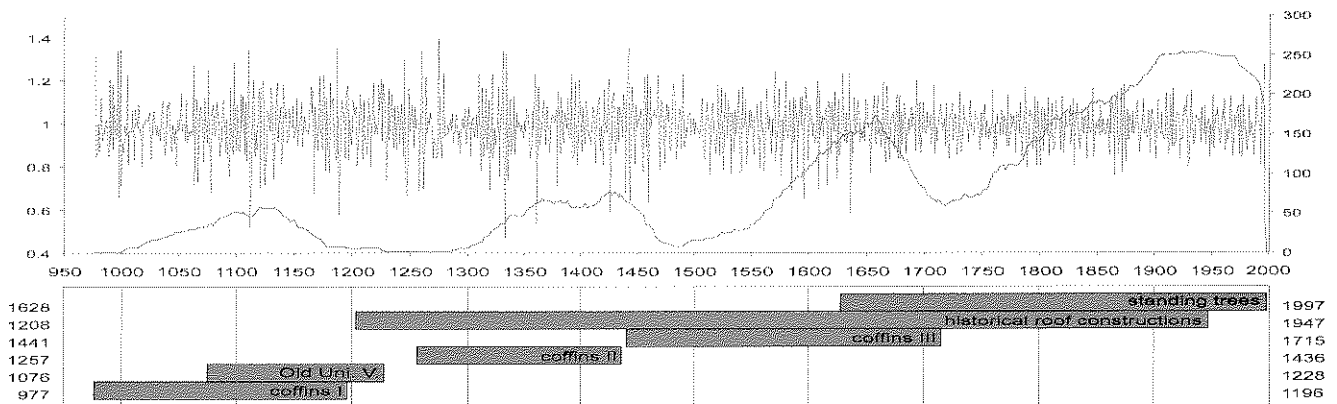


Fig. 1: Standardised Silver fir chronology for East-Austria (blue line) - sample depth (yellow area) - dated positions of the sample blocks (red beams)

## Samples (fig. 1)

### Standing trees

- ⇒ South-western areas of Vienna (fig. 3 - green marked area)
- ⇒ Nationalpark Kalkalpen - Upper Austria (fig. 3 - yellow marked area)

### Historical buildings

- ⇒ Churches
- ⇒ Former imperial or noble buildings
- ⇒ Ruins of castles

### Archaeological excavations

- ⇒ Coffins from Klein Mariazell - Lower Austria (fig. 3 - green marked area)
- ⇒ Carbonised logs from the Old University of Vienna



Fig. 3: Map of Austria