Vegetation in a warmer world

How did the vegetation on Lygra change when the climate shifted from a colder period into a warmer period?

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Introduction

- 8000–4000 yr BP the annual mean temperature, in northern latitudes, was 2.0-2.5°C higher than today.
- As an ecological consequence, temperate animals and plants expanded northward.
- Palaeopollen has been used as a proxy to reveal how plant distribution changes with the temperature.
- With this knowledge we might be able to predicted the vegetation change due to today's climate warming (Seppä et al. 2015).

Methods

- A Master core was taken from the bog on Lygra using a Russian corer (see fig. 1).
- Eight samples correlating with a time relevant to our subject were taken (see fig. 2).
- Counting and determining of the pollen samples using a microscope (x400), with a minimum of 100 pollen per sample.
- Processing data with the use of C2 and analyzed.

Figure 1: Coring site on Lygra

Sample	Depth (cm)	Corresponding time (b.p.)
#1	140	3416
#2	220	5368
#3	260	6344
#4	300	7320
#5	350	8540
#6	353	8613
#7	385	9394
#8	402	9808

Figure 2: The taken samples with correlating depth and age.

Results

- Increase in *Alnus*, *Corylus*, *Drypoteris* pollen around 300 cm depth.
- Decrease of *Salix* pollen around 300 cm.
- Decrease of *Dryopteris*, *Corylus* and *Alnus* pollen around 240 cm.

Conclusion

- The increase of *Alnus*, *Corylus* and *Dryopteris* pollen indicate an increase of temperature in this specific period.
- This statement is supported by the fact that in the same period there is a decrease of *Salix* pollen.
- Transition into colder period around 160 cm according to literature. However, no strong evidence found in pollen diagram that shows a change in vegetation.

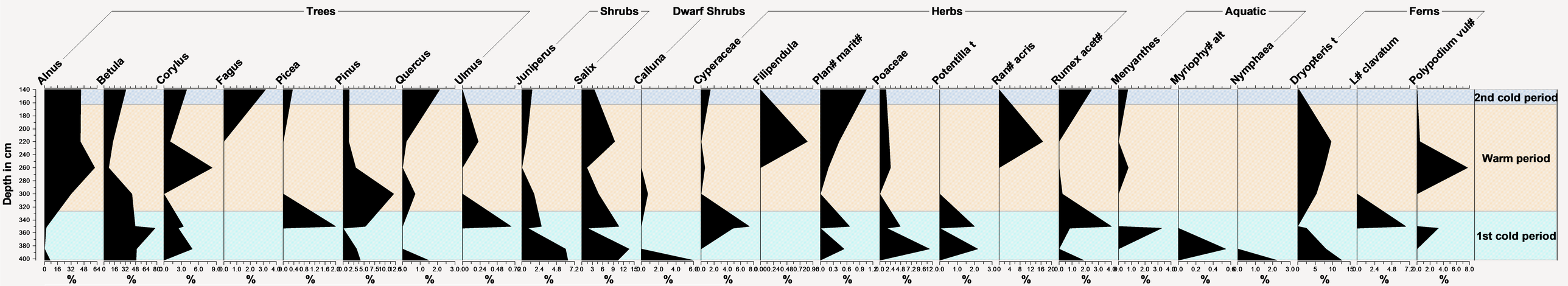

Figure 3: Pollen diagram constructed in C2.

REFERENCES
Seppä et al, 2015. Trees tracking a warmer climate: the Holocene range shift of hazel (*Corylus avellana*) in northern Europe. *The Holocene,* p53 - 63

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