HOW OPEN WAS THE POST GLACIAL LANDSCAPE IN THE LYGRA AREA?

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INTRODUCTION

Lygra is characteristic of northern European heathlands (Image 1). To reconstruct the postglacial landscape, soil samples were taken from a bog.

Our aim was to find out if the post-glacial landscape originally consisted of a closed canopy system or was more open.

The findings would suggest the extent to which later anthropogenic fires affected the landscape. The proxy we used was pollen, with particular focus on *Betula* and *Corylus* species.

HYPOTHESIS

H_1: there is an equal distribution of light-demanding plants throughout the core.

H_0: There is a higher abundance of shade tolerant plants before the first anthropogenic fire.

METHOD

A Russian peat corer (image 2) was used at two different spots. Depths ranged from 429 cm to 374 cm. Samples were taken at every colour-changing zone.

The presence of *Calluna* was used to date the start of the anthropogenic fires

ANALYSIS AND CONCLUSION

- *Betula* and *Corylus* were the most dominant species in both samples collected (Figure 1). The high percentage presentations of these two species indicates a more open landscape as neither produce pollen in closed canopy conditions (Vera, 2000).
- A Pearson Product Moment Correlation was used to test if there was variation in abundance of these species at different depths. The results, *Betula* (Correlation Coefficient = 0.724, $P<0.05$) and *Corylus* (Correlation Coefficient = 0.193, $P=0.619$) show that there was strong variation in depth for *Betula* sp. but not for *Corylus*.
- There was no significant correlation between the presence of *Calluna* and both of these shade intolerant species. *Betula:Calluna* (Correlation Coefficient=0.253, $P=0.512$); *Corylus:Calluna* (Correlation Coefficient=-0.172, $P=0.658$).
- These results could indicate that before this site was subjected to anthropogenic fires, the landscape was open, presumably grazed by large herbivores (Vera, 2000; Kirby 2004).
- Other palaeological records need to be consulted such us fungal spores in fossilised dung and invertebrate fossils (Allen, 2009; Alexander,) most usefully, saproxylic beetles.
- In conclusion, the results obtained show that there is a consistency of light-demanding species dominating this particular sediment core.

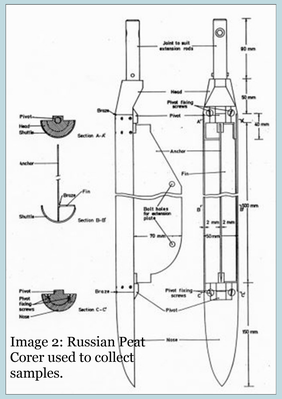
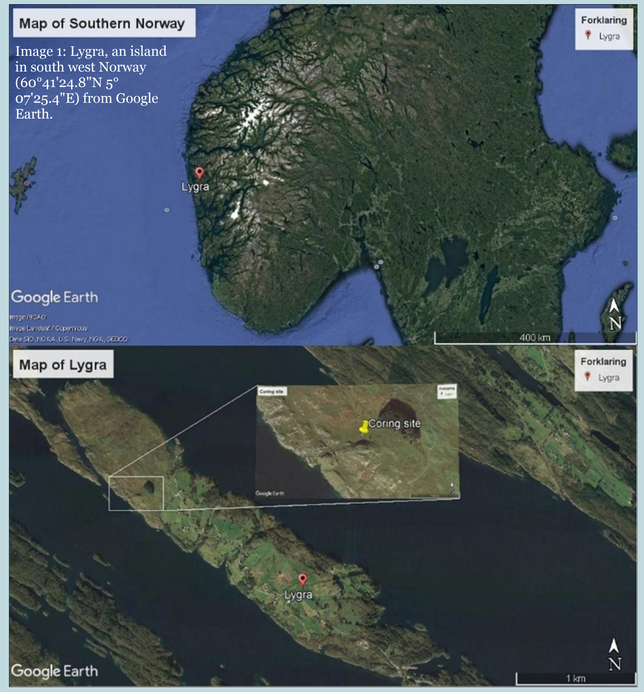
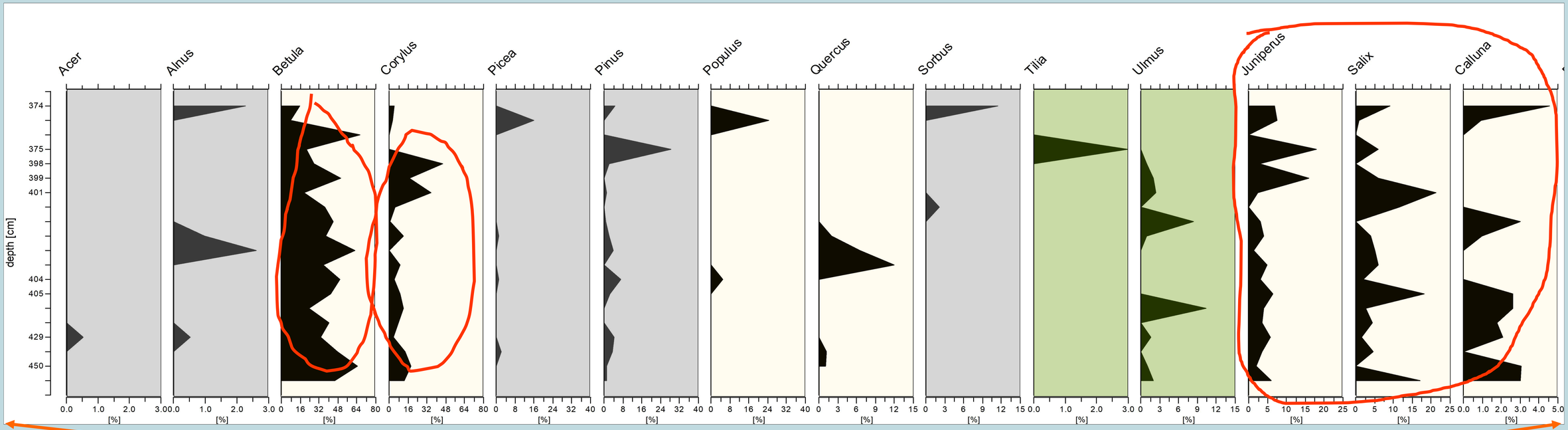


Image 2: Russian Peat Corer used to collect samples.



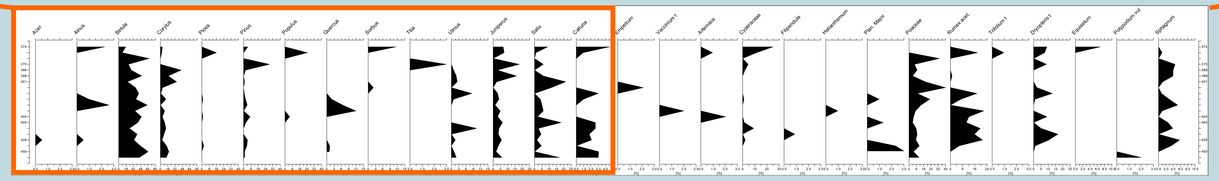


Pollen Graph Key

Shade-tolerant species are species that are able to thrive in the shade and in the presence of natural competition by other plants.

Light-demanding species require full sunlight little or no competition.

Intermediate shade-tolerant trees fall somewhere in between the two.



Reference list:

https://www.google.de/maps/place/Lygra

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