

Vegetation changes after deglaciation, focusing on the past 8000 years.

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Aims:

Understanding how deglaciation affects vegetation and therefore making assumptions on climate with cores from Lygra.

Hypothesis:

As the climate became warmer the vegetation adapts.

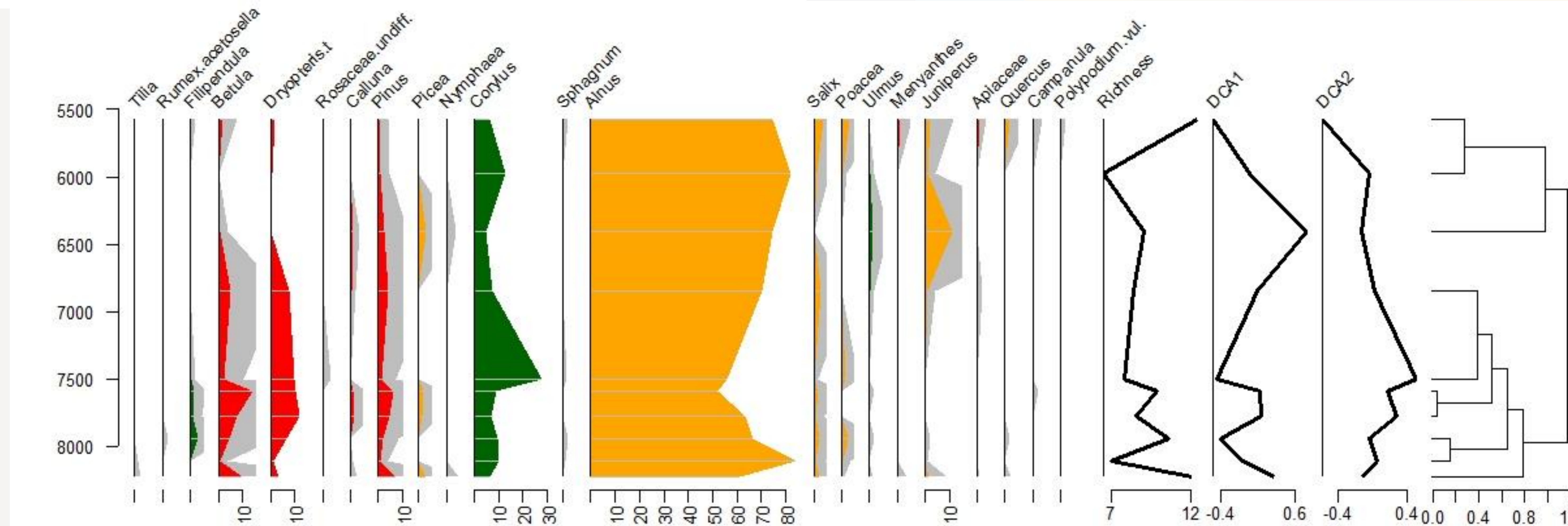
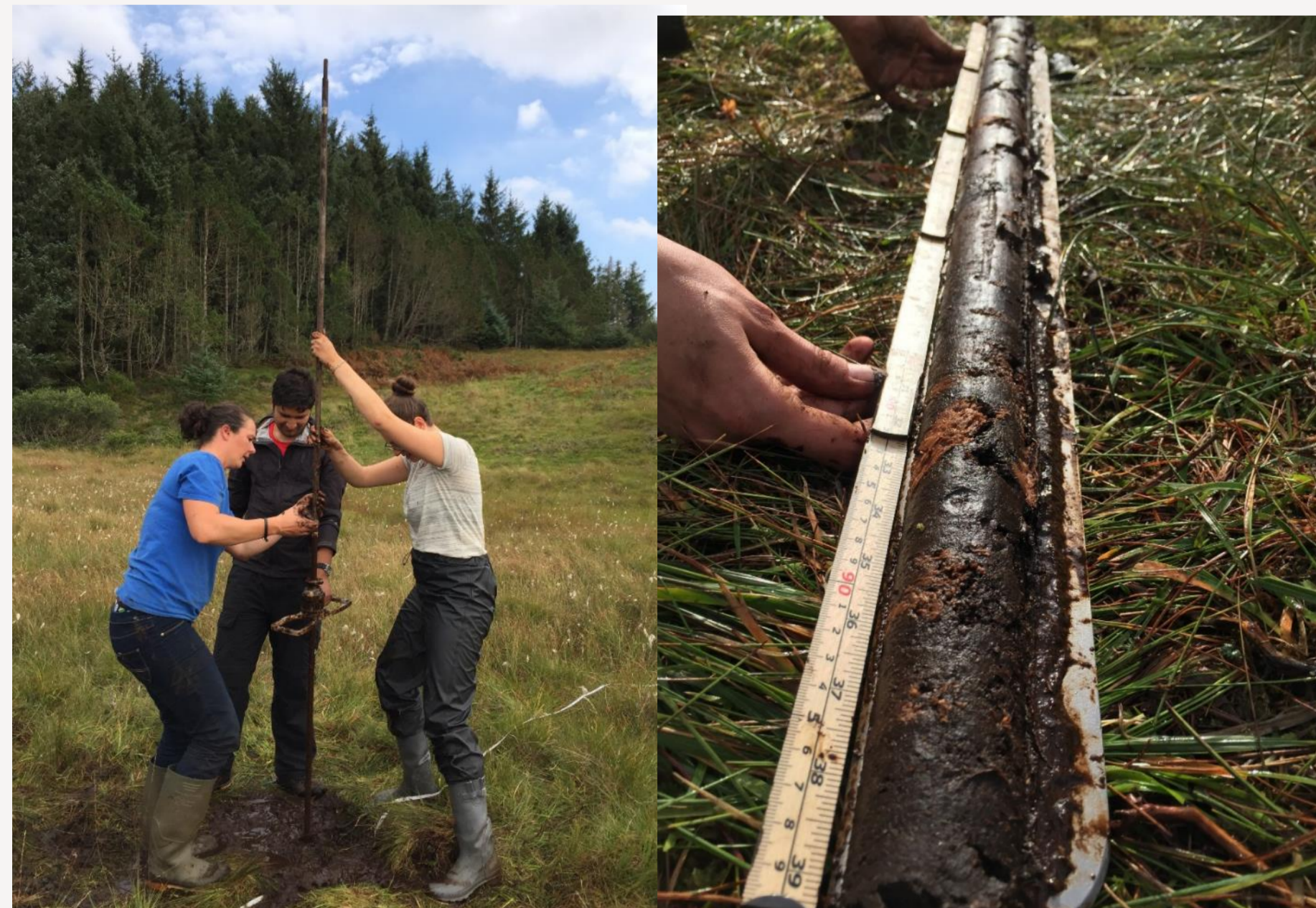
Site Characteristics:

Lygra is an 2,5 km² island in western Norway

- Highest elevation: 52 m
- Latitude: 60,7°N
- Longitude: 5,1°E
- Mean temperature January: 2 degrees Celsius
- Mean temperature June: 12 degrees Celsius

Methods:

Using pre-Collected Data from the site Lygra which were obtained by using a Russian peat-corer. (see below) Counting Pollen under the microscope and plotting the results (see figure). Comparing Data with scientific Publications.



Key results:

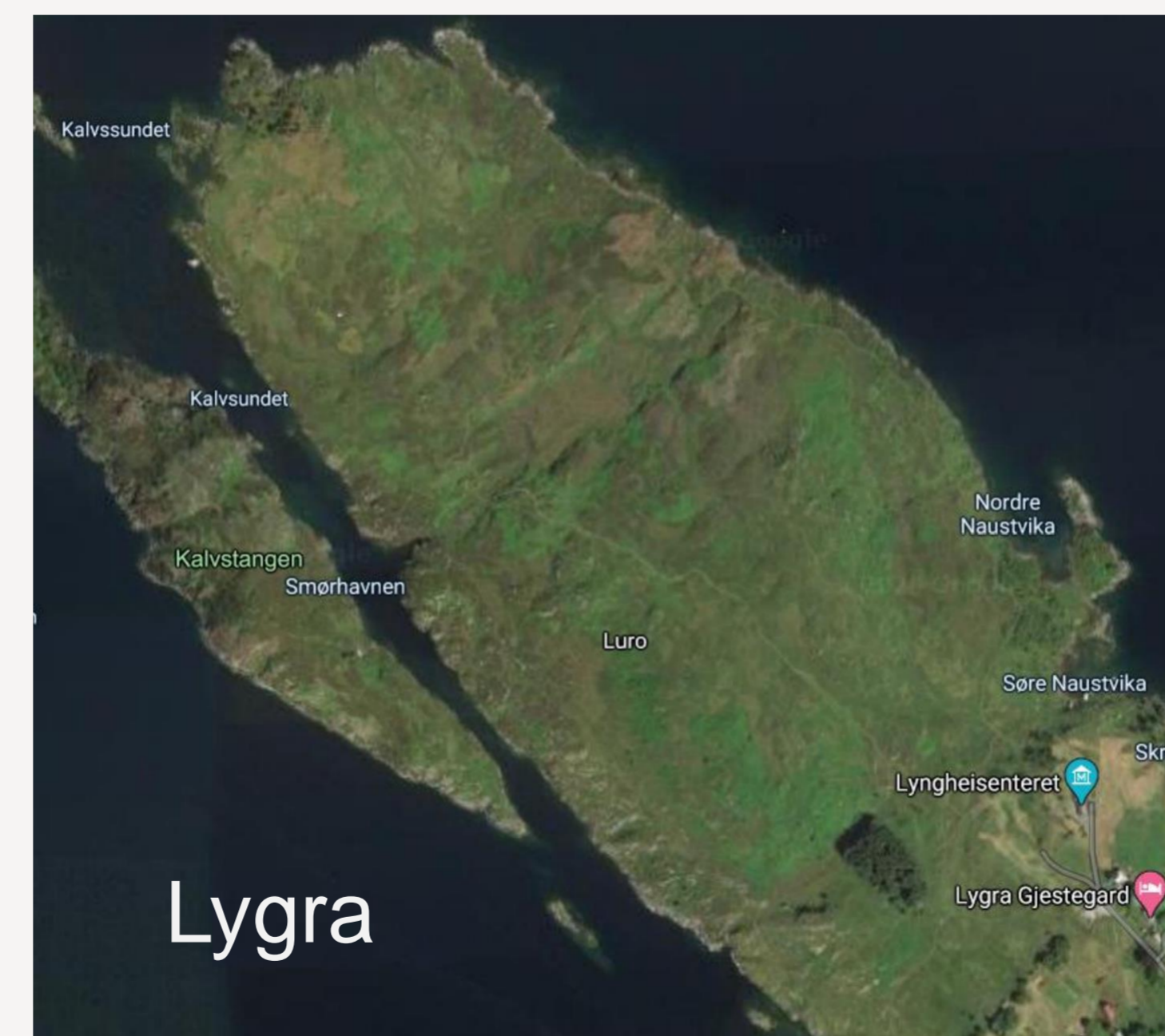
Betula became less prominent from 7500 cal.b.P. *Juniperus* appeared 6500 cal.b.P. *Alnus* has been present throughout. Richness decreased and then increased drastically again. *Dryopteris* became less present from 6500 onwards.

What does this mean for the climate:

Betula is reduced as climate becomes warmer. Therefore we can assume that the climate started to really warm up 6500 years b.P. *Ulmus* grows under certain climate conditions, it appearing at 6500 years b.P is conclusive with the *Betula* reduction as well.

Comparing our results to the literature:

It has to be noted that *Betula* pollen can be transported far by wind, therefore without macrofossils the data is not too conclusive. *Betula's* limiting temperature is 11 degrees Celsius. Therefore we can assume this was approximately the temperature at 8000 years b.P up to 6500 years b.P. Pine can grow once it is shielded by Birch, which is visible in the Pollen diagram in the same time span.



REFERENCES:

Vegetation responses to late-glacial climate changes in western Norway, Hilary H. Birks and H. John B. Birks, Biological responses to rapid climate change at the Younger Dryas–Holocene transition at Kråkenes, western Norway H.J.B. Birks* and Hilary H. Birks, Pollen Records, Last Interglacial of Europe C Tzedakis, Responses of Plant Populations and Communities to Environmental Changes of the Late Quaternary Author(s): Stephen T. Jackson and Jonathan T. Overpeck

Pictures are taken from the lectures by Anne Bjune BIO250, 2020

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