Introduction

Pollen analysis is the most common quantitative method in modeling and investigating climate from the past.

We use this method to study the variation of the vegetation in Lygra. We have chosen to focus on five different plant groups: Alnus, Betula, Calluna, Poaceae and Cyperaceae. The trees are an indicator of forest, while the heather, grass and sedges suggest an open landscape.

What can the paleorecords of five different plant groups tell us about the overall vegetation history of Lygra? • Field work at Lygra, using a Russian corer to extract samples

• Analysis of samples from 17 depths, using lightmicroscope with 40X magnification

• Counted pollen grains from 5 different groups, with a minimum of 100 hundred grains per sample

• Made package

Sources

• 2015, « Biodiversity trends within the Holocene », Birks, Felde, Seddon

• 2009, M. Jane Bunting • Kari Loe Hjelle

Lygra

•Kaland, P.E (2014), "Heathlands – land-use, ecology and vegetation history as a source for archaeological interpretations, in Gulløv H.C (red.) Northern Worlds – landscapes, interactions and dynamics. Denmark: University Press of Southern Denmark, 19 - 47 1426 2203.5 3077 3959.5 4794 5505 5977 6700.5 7681.5

Fig 1 : Pollen diagram

Vegetation history What can we tell about the overall vegetation history of Zygra?

pollen sample

Method

• Made a pollen diagram in R 4.2.1 using rioja



BIO250-Paleoecology HILAND Anouk, SCHELL Lara, THORSEN Mari Aarbø

It is possible to see the overall vegetation history using five plant groups. We see a change from a forest dominated by Alnus with features of Betula, to a more open landscape.

The shift in vegetation could have a climatic and/or an anthropogenic cause. The fall in Alnus and Betula increase could be a sign of a colder climate. The decrease happens around the late neolithic/bronze age, which is when the heathland practice expanded (Kaland 2014). Alnus is moisture dependent, and the decrease could point to field drainage. The presence of grasses and sedges points us toward an open and grazed landscape. The increasing presence of Calluna suggests fires, potentially of human origin. The shift is probably a combination of climatic and anthropogenic factors.

The Betula peak at 4420 yBP must be seen as an error and disregarded. We counted two samples from this depth with unchanged results. An error could have been made in the sample lab process.

Beyond the study of vegetation variations during the Holocene at Lygra, this work is also an indicator of the abiotic changes of the site, and can inform about climatic variations over time. Thus, can be extended for studies on the future evolution of current biodiversity, in a context of global warming.



Discussion