

WHEN DID THE HUMAN INFLUENCE AT LYGRA BEGIN?

Using data collected from a core at Lygra, Hordaland, we assessed the human impact on the island and came to conclusions about when this influence began, comparing with palaeoecological, historical and archaeological data from the region.

Evelyn Horsfall, Katherine Macpherson, Kristine Birkeli, Lars Erlend Øvrevik, Ricarda Koch
University of Bergen
dem010@uib.no

Method

The core was sampled at 10 cm intervals and a pollen count was conducted. 21 different pollen taxa were found in the samples. This data was plotted on C2 to create a pollen diagram (Figure 1). Another diagram was created to show the vegetation types (Figure 2).

Results

Our results (Figures 1 and 2) show that there was a decline in trees and an increase in ferns at 240 cm. Also at 240 cm, there is a small increase in shrubs and a decline in herbs with a slow increase up to 210 cm. Poaceae increased at 250 cm. *Calluna* was only little present at 250 cm and 200 cm.

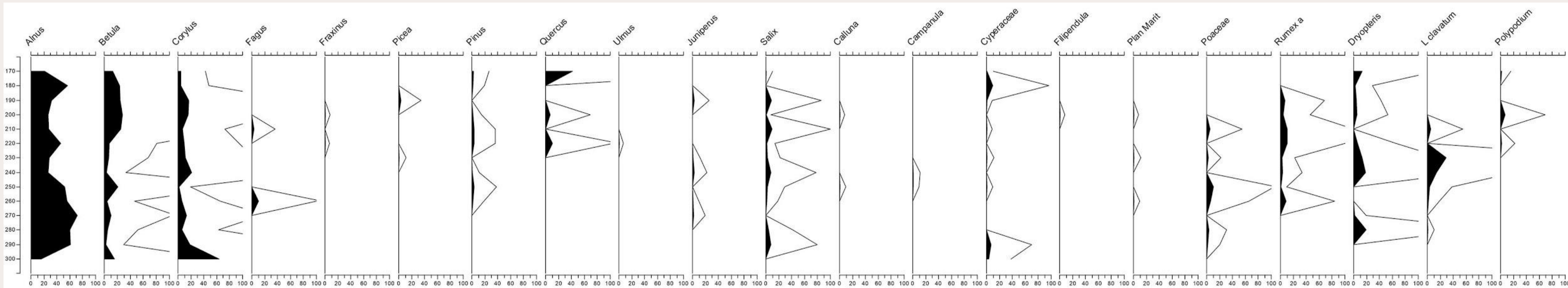


Figure 1: Pollen taxa in core at Lygra site. Data compiled on C2

Discussion

Indicators of human influence include a dip in trees, indicating humans clearing the area, altering the environment for subsistence needs, particularly grazing.

The sudden explosion of ferns is likely to be as a result of the cleared forest. Another human indicator is the increase in Poaceae, this could also indicate an opening up of the landscape. The decline in trees and expansion in ferns, as well as the increase in Poaceae, could be a result of either human influence or climatic variability.

In earlier research *Calluna* was used as a proxy for heathland development¹, which is a human indicator. For this study there was found small amounts of *Calluna*.

This site was compared to others in the region (Figure 3). Other studies have discovered three phases of heathland development in southwest Norway², with radiocarbon dates it will be possible to see if this site links to one of these phases.

Other possible indicators of human presence

- Domesticated animal remains - e.g. sheep
- Charcoal - frequency of burning (every 25 years) suggests human clearance of land using fire
- Archaeological sites - remains of buildings and artefacts
- Historical texts

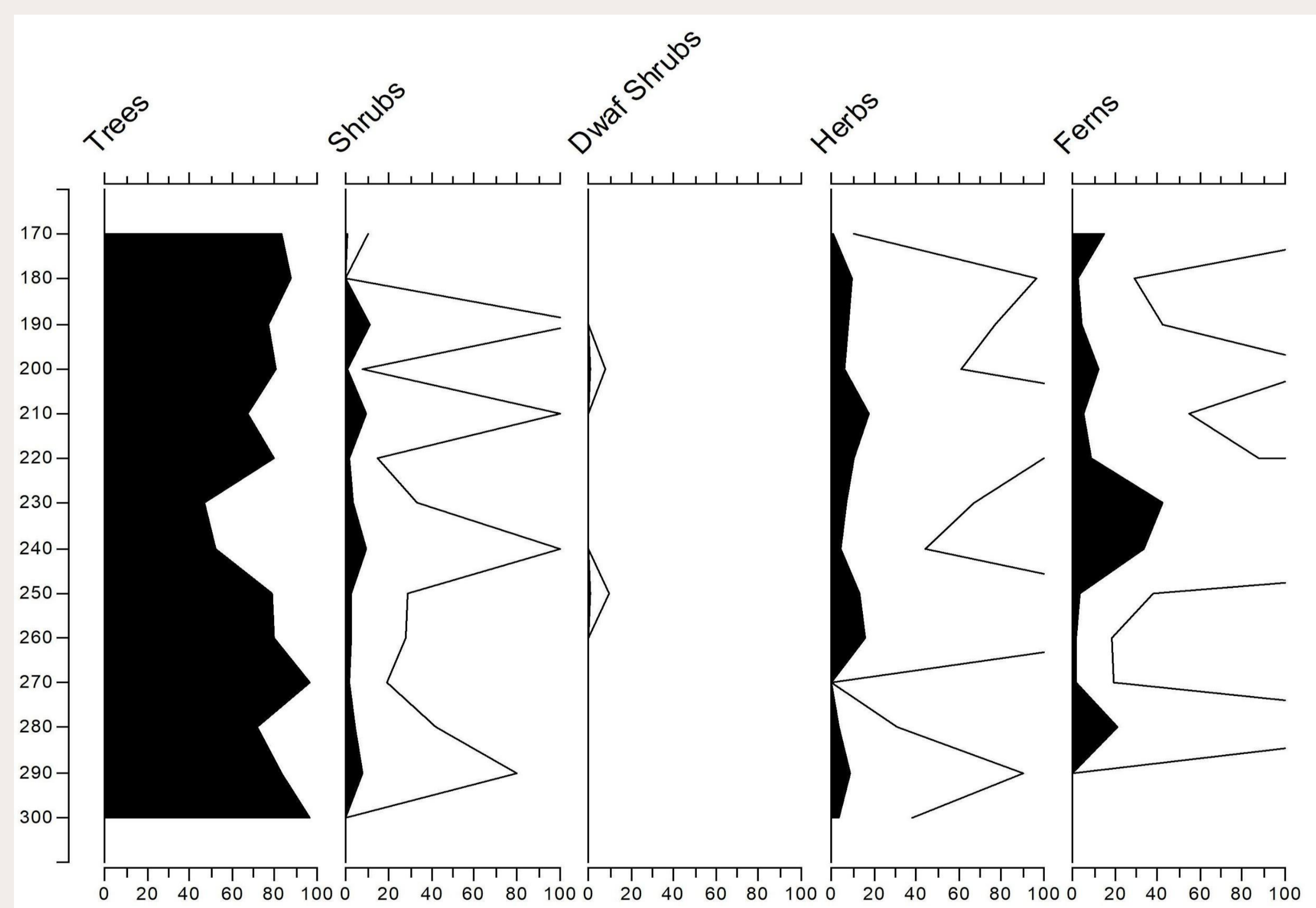


Figure 2: Vegetation type in core at Lygra site. Data compiled on C2

Conclusion

Although it can be determined that there was a drop in trees which occurred at 240cm into the core, the core has not been radiocarbon dated therefore it is difficult to draw conclusions of whether the changes were due to climatic factors, for example Bond events, or human interference.

Furthermore, greater analysis of the core will result in more data which would be more accurate and reliable. Sampling more of the core will also identify whether changes in different taxa were sudden or gradual as the sampling intervals will be shorter.

Age of Established *Calluna* Vegetation in the Area Surrounding Lygra

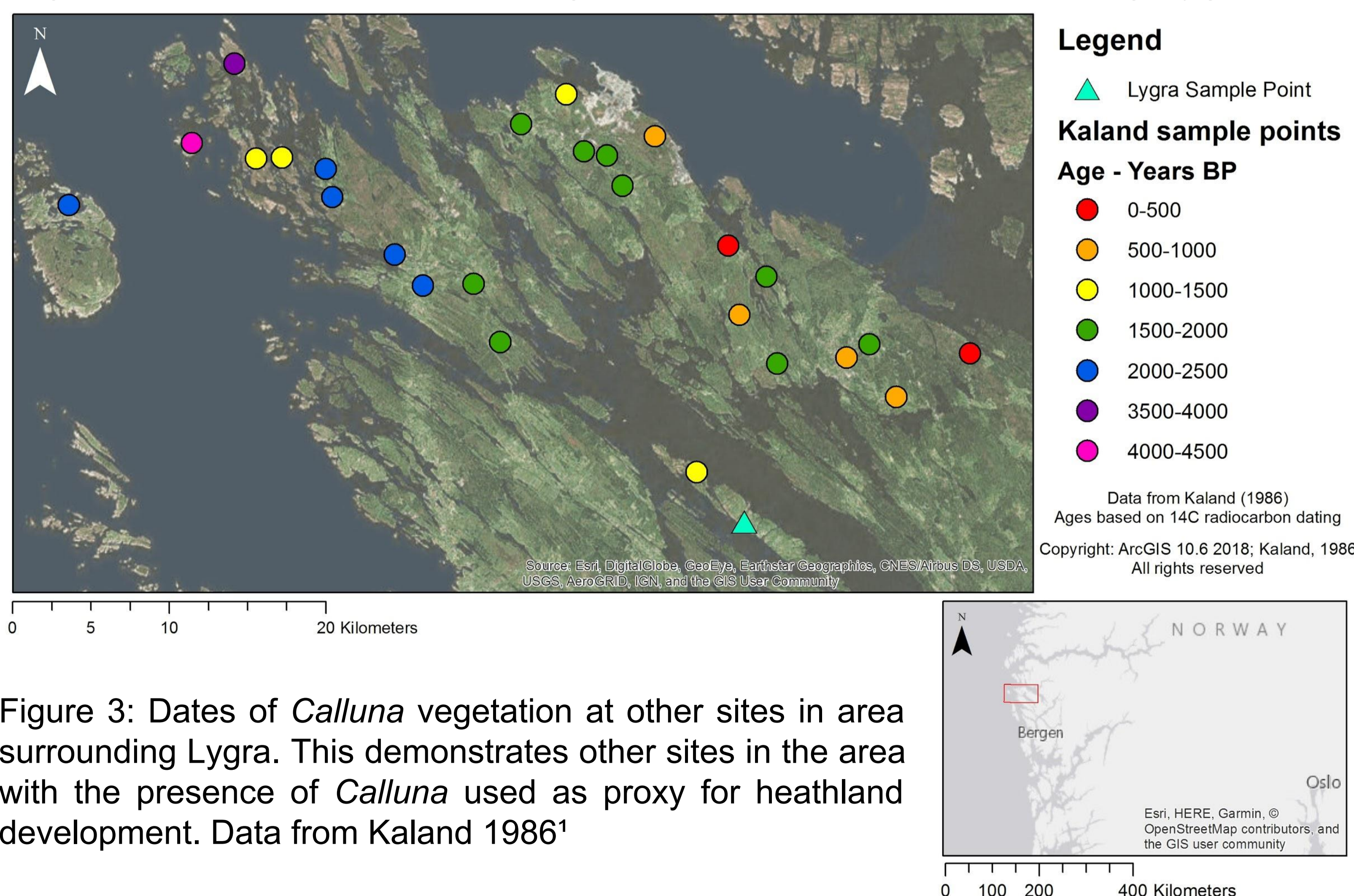


Figure 3: Dates of *Calluna* vegetation at other sites in area surrounding Lygra. This demonstrates other sites in the area with the presence of *Calluna* used as proxy for heathland development. Data from Kaland 1986¹

References

- ¹ Kaland, P.E., 1986. The origin and management of Norwegian coastal heaths as reflected by pollen analysis. Anthropogenic indicators in pollen diagrams. Balkema, Rotterdam, pp.19-36.
² Hjelte, K.L., Halvorsen, L.S. and Overland, A., 2010. Heathland development and relationship between humans and environment along the coast of western Norway through time. Quaternary International, 220(1-2), pp.133-146.