

Climate or human influence?

What caused the decline in forests around Lygra?

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ABSTRACT

Paleoecological finds show us that in the past the landscape around Lygra was dominated by forests. As it stands today we see a landscape covered with *calluna* as well as birch and beech.

A change in the ecosystem has caused this transition, and through pollen analysis we have attempted to pinpoint the likely cause.

0. Possible reasons for forest decline

- Rising temperature caused a change in species composition and a decline in pine trees
- Human influence affected all tree species by using them for fuel and construction, as well as removal for farmland and grazing.

1. Methods

Core samples were taken in a bog at Lygra. The earliest charcoal layer found was used as an indicator of human influence. Pollen analysis was performed on the samples to determine if the decline in pine trees, happened before human influence or was due to human activity. The results are shown in a pollen diagram.

2. Our findings

Steady decrease in *betula* and *corrylus*
Increase in *Pinus* – supported by other graph

3. Discussion

Could this be due to succession? A decrease in *betula* and *corrylus* could make room for *pinus*.
But we do not have data for a long enough amount of time.

4. Further discussion

Spontaneous colonization and population dynamics suggests a more random change due to human activity.

The reduction in the population of birch trees is more dramatic in comparison with the hazel trees' reduction which is more stable.

5. Concluding statements

The ecological resilience shows with all the evidence that this ecosystem is likely changed by human work.

6. Notes

7. Possible errors

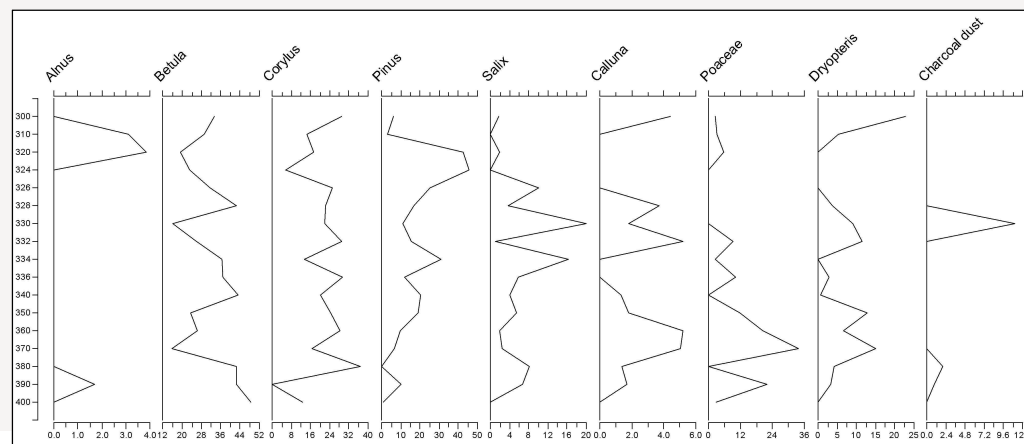
A large team of inexperienced analysts analyzed a small amount of samples, with varying criteria for identification.

No carbon dating or other dating leaves questions about time scale. Sample spacing.

8. Further research

A larger amount of samples with narrower spacing would give us a clearer image of what transpired. Having a uniform code for identification and fewer people doing the actual analysis would give clearer results.

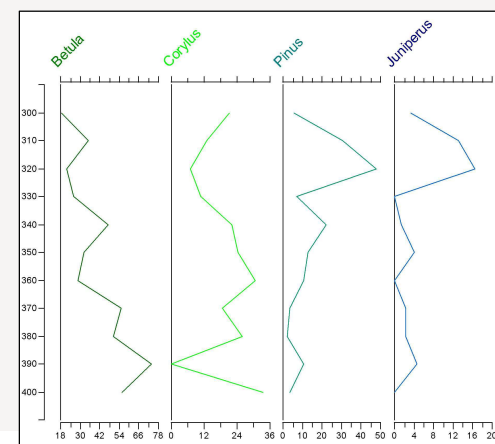
Dating the samples would give an understanding of time scale.



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Image credit: (L to R) Kristina Svare and Diagrams by Hans Anders Thorsen Stokkeland



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REFERENCE:
Kvamme, M., Kaland, P.E., & Brekke, N. G. (2004). Conservation and management of north European coastal heathlands. Case study: The Heathland Centre, Lygra, Western Norway. The Heathland Centre, Llygra. : Culture 2000.

