

What is the impact on the vegetation after the first anthropogenic fire?

This research investigates the effects of fire on the heathlands vegetation in Lygra. The initial goal was to assess if the heathland is a consequence of climate variations or anthropogenic. The impacts on the heathlands vegetation is defined by a variation in species diversity.



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Introduction

- Coring to obtain and assemble samples
- Location of the charcoal layers
- Proxies → the pollen
- Palaeoecology → indirect observations → ability to assess the impact on the vegetation after the first anthropogenic fire

Hypothesis

- Variation between species above and below → 3.30m depth (first anthropogenic fire)

Methods

- Russian corer was used (see figure 3) in a bog in Lygras heathlands to obtain samples
- Coring depth: 4.00 meters
- Analysis of the core every 10cm from 3m to 4m; around the charcoal area every 2cm
- Data was analysed under the microscope (x40); a minimum of 100 pollen were counted

Results

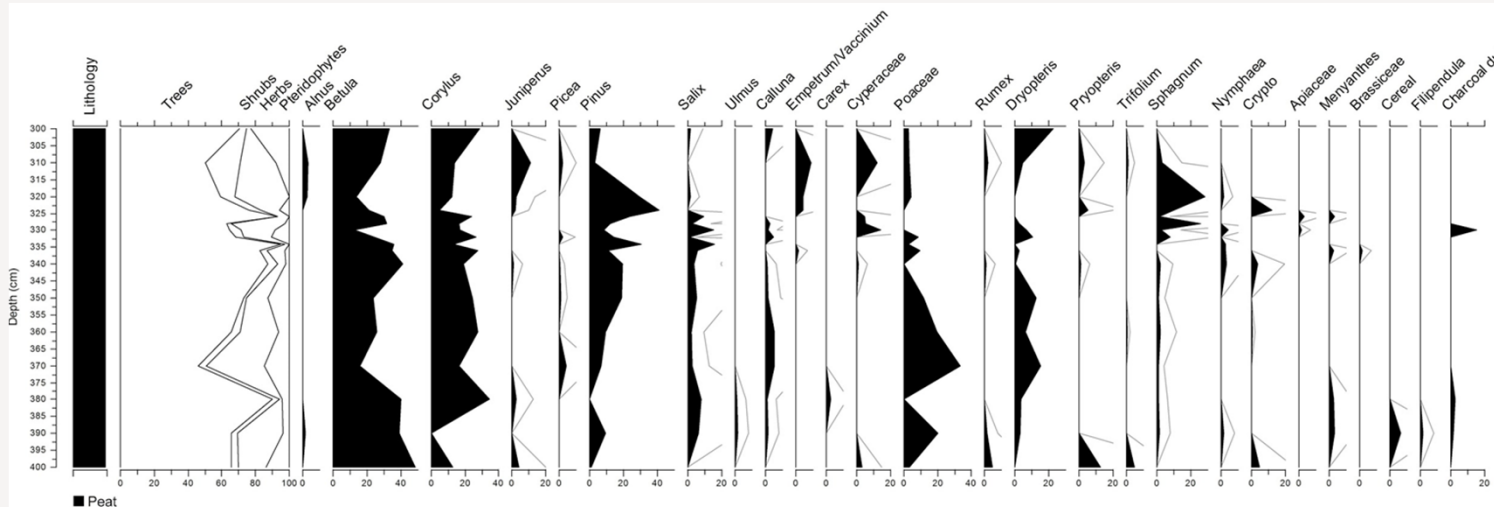


Figure 4: Percentage pollen diagram including charcoal dust, the grey lines show 5x exaggeration of the pollen percentage

REFERENCES

- http://www.aquaticresearch.com/russian_peat_borer.htm
<http://www.lygragjestegard.no/>
 Bergmann, T, Maren, IE & Vandvik, V(2014) Life after fire: smoke and ash as germination cues in ericads, herbs and gramionoids of northern heathlands, Pages 671-678
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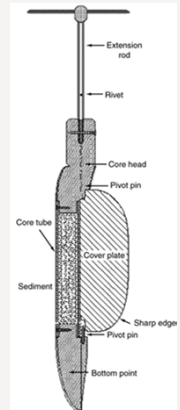


Figure 3: Russian peat corer that was used for coring the samples

Figure 1: Cored sample showing different layers of soil including a maritime layer

Figure 2: Cored sample showing broad charcoal layers and different decomposed layers, as well as part of a decomposed tree at the end of the core

Conclusion

There is a considerable difference between the pollen recovered above and below the 3.30m mark. After the first burning, an increase of plant diversity can be noticed.

Furthermore, there is a decrease of trees at 3.30m, followed by an increase. This fluctuation can be explained by an inaccuracy in the counting, or there is a possibility that the trees had a sufficient amount of time to reestablish.

Concluded, the burnings do have a significant impact on the vegetation.

