

The impact of fire on the forest composition in Lygra, Hordaland

1. Introduction

Fire is known to be shaping environments and being a key regulator in vegetation composition. The aim of this work is to study how the vegetation and mainly the forest composition changed through fire events.

3. Results and Discussion

- The predominant vegetation composition between 7.000 and 5.000 years ago consists mainly of *Alnus sp.* (>50%), *Corylus avellana*, *Betula sp.* and *Dryopteris sp.* This creates a relatively close and wet habitat (Figure 2).
- For both disturbance events occurring at 370cm and 340cm *Alnus sp.* decrease, *Betula sp.*, *Salix sp.* and Poaceae increase. This indicates a wet and more open habitat (Figure 2).
- The disturbance event which peaks at 210cm begun around 270cm with a decline of *Alnus sp.* and a rise of *Dryopteris sp.* and *Betula sp.* This causes a more and more open habitat (Figure 2).
- The observation of charcoal does not seem to explain the entire causes of these events (Figure 3).

2. Material and Method

- Sampling of one core in the center of a bog in Lygra, Hordaland, with a Russian peak corer. (Figure 1)



Figure 1: Core extracted from bog with a Russian peak corer

- Subsampling nearly every 10 cm volumetric samples from 210cm depth to 430cm depth and preparation of these subsamples to remove humic acids, siliceous matter and cellulose.
- Counting the number of pollen of *Alnus sp.*, *Corylus avellana*, *Betula sp.*, *Dryopteris sp.*, *Salix sp.*, Poaceae, *Pinus sylvestris*, *Calluna vulgaris* and Unidentified as well as charcoal.

4. Conclusion

The species composition in the Lygra peatlands changed in the past. There are three main disturbance events which occurred but they can not be correlated clearly to fire occurrence. We hypothesis that other causes may play crucial roles.

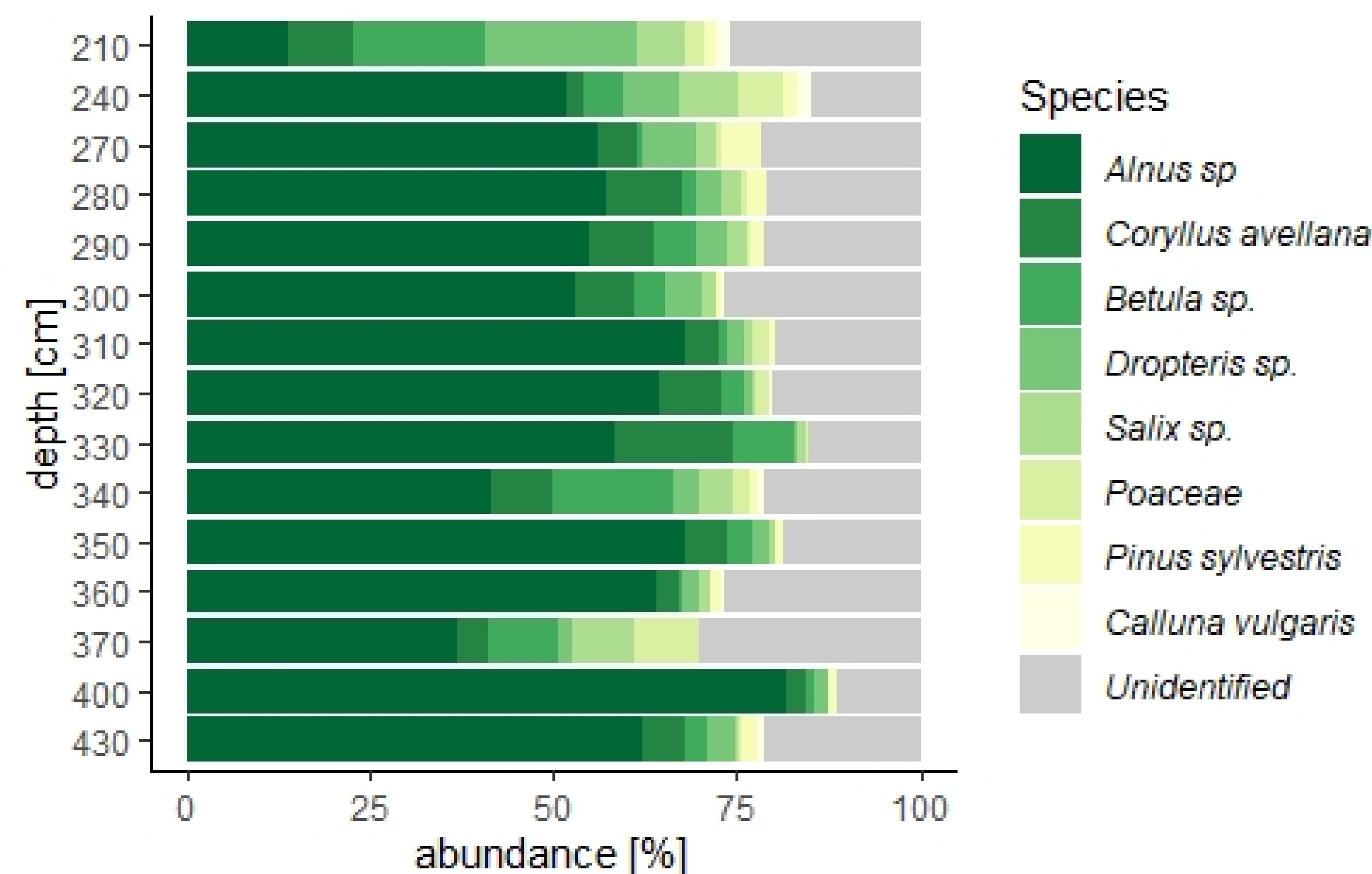


Figure 2: Abundance of species from 430cm to 210cm depth

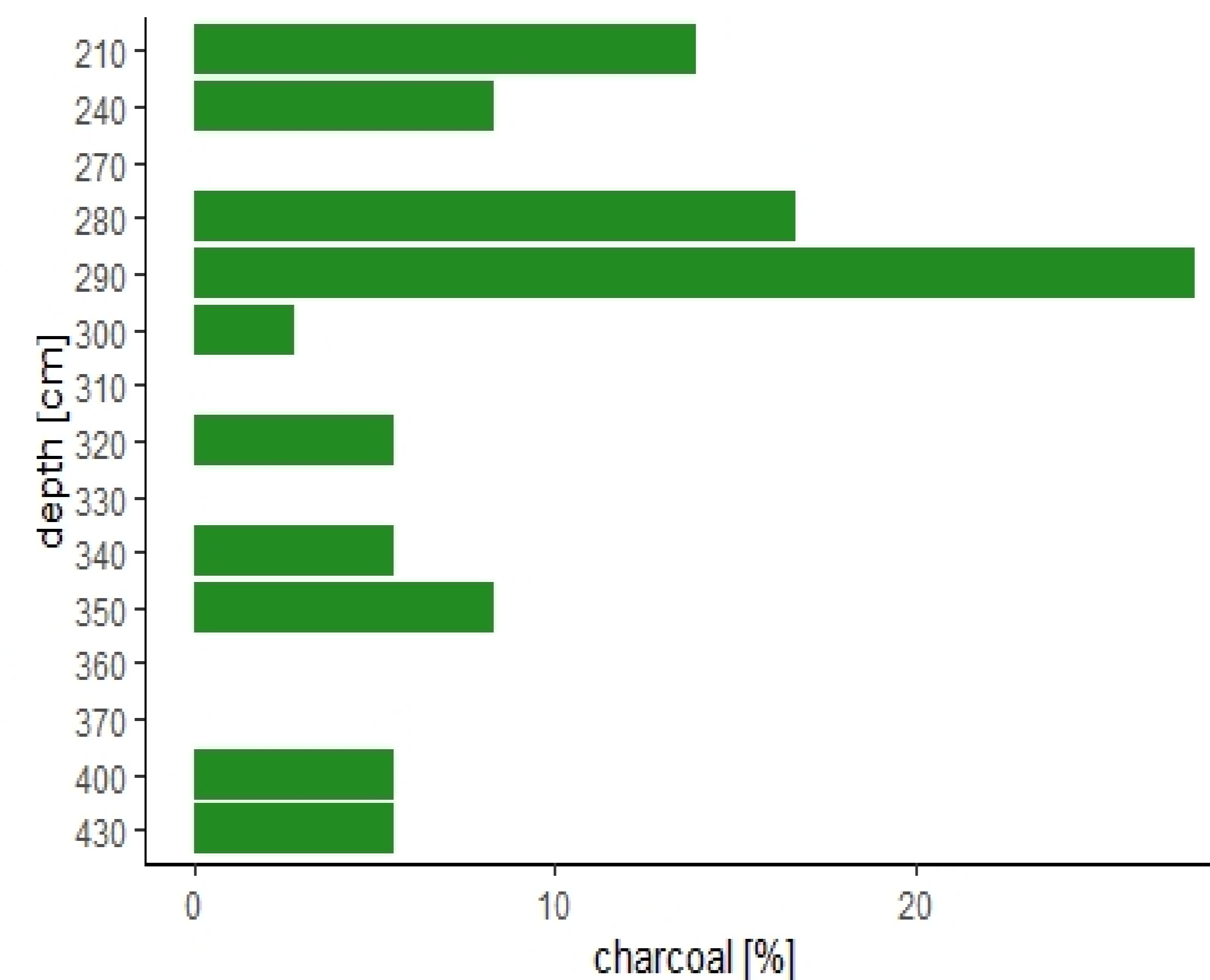


Figure 3: Charcoal abundance from 430cm to 210cm depth

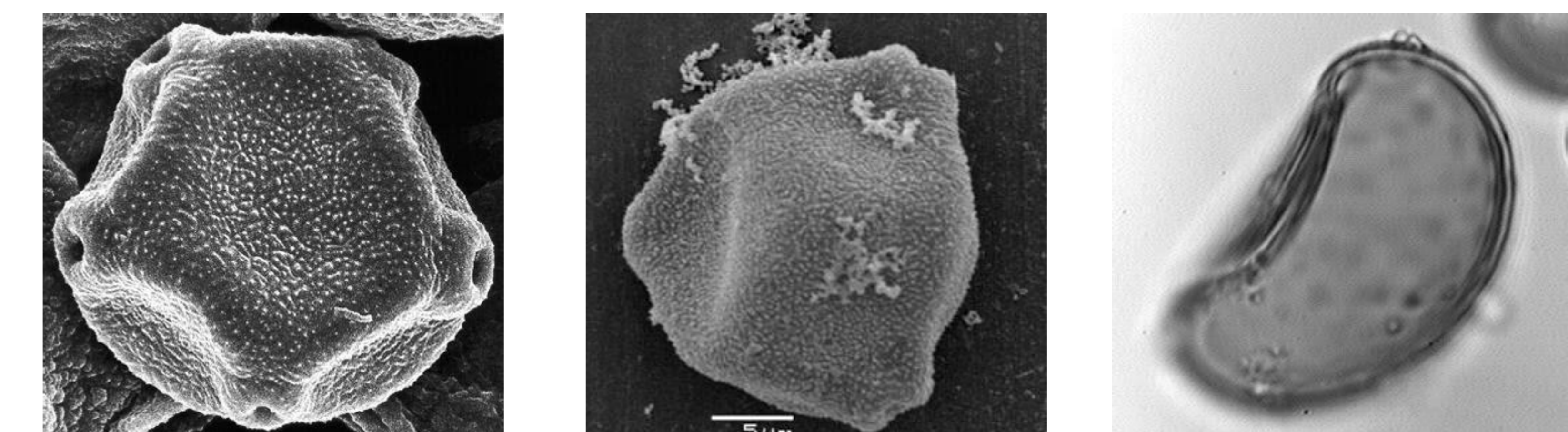


Figure 4: Microscopic images of *Alnus sp.* (left), *Betula sp.* (middle) and *Dryopteris sp.* (right)

References:

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