The transition from marine to freshwater environment in a coastal bog at Lygra UNIVERSITETET I BERGEN

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Introduction



Analysing palaeoecological proxies, like pollen grains and diatoms, can gain an understanding of past ecosystems. This is useful for predicting future changes in current ecosystems.

This study analysed these proxies from sediment cores taken on Lygra island in western Norway. The core ages overlap, where the age of the proxies from 660cm in the diatom core corresponds with the age of proxies at 420cm in the pollen core.

The aim of the study was to figure out when the area developed from a marine ecosystem into a bog.



diatoms, gold indicates marine

Methods



Diatoms and pollen grains were used as proxies to reconstruct the change in environmental conditions Data was counted, collected and used to generate pollen/diatom diagrams for analysis



shrubs, blue indicates freshwater algae





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Figure 01: Diatom diagram showing diatom % across core depth (650 – 680cm). Blue indicates freshwater

Figure o2: Pollen diagram showing pollen % across core depth (348 – 430cm). Green indicates trees, gold indicates

Figure o1 shows the percentage of marine diatoms increasing with depth, with a decrease in abundances of freshwater diatoms. This represents the gradual change from a marine to freshwater environment. This is supported by figure o2 which shows a higher species richness above 352cm. This indicates that the aquatic environment gradually changed into terrestrial environment.

At the same time as the increase of freshwater diatoms and decrease of marine diatoms, there was an increase in trees, shrubs and freshwater algae.

By looking at the diatom and pollen data, it can be concluded that the change from marine to freshwater environment happened at approximately 656cm in the diatom core and 430cm in the pollen core.

References/acknowledgments

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Diatom photo top right: <u>https://www.smithsonianmag.com</u>

Discussion & Conclusion

