

How Can We Identify the Transition between Marine and Terrestrial Sediments At Lygra?

ABSTRACT

The shift from freshwater to marine environments can be estimated by quantifying biological and chemical changes through the sediment. The study aims to map such sediment transitions in a peat bog on the Isle of Lygra, Norway, by using diatom species composition and organic matter as proxies. Using these methods, the study found that a marine regression is present at Lygra.

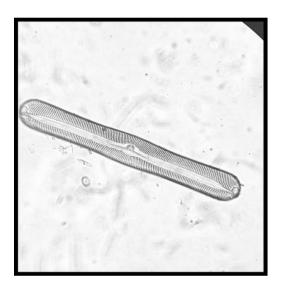


Figure 1: Pinnalaria maior.



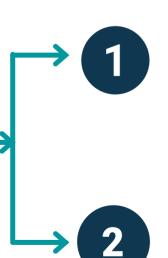
Figure 2: Transition. Core in the depth of 555 cm



Figure 3: One Eunotio serra var. tetraodon (middle left) and some Aulacoseira spp. (scattered across slide).

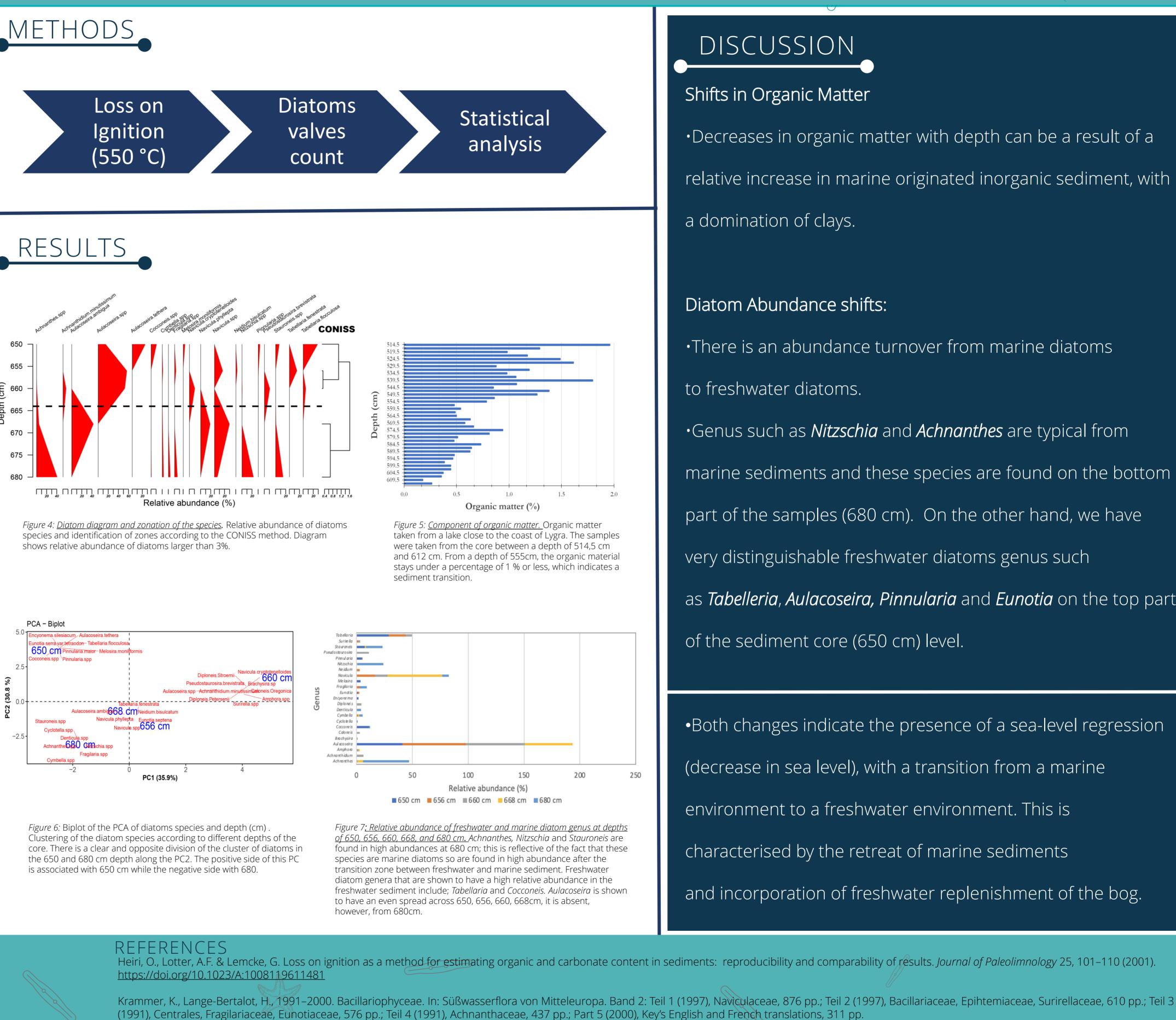
AIM AND OBJECTIVES

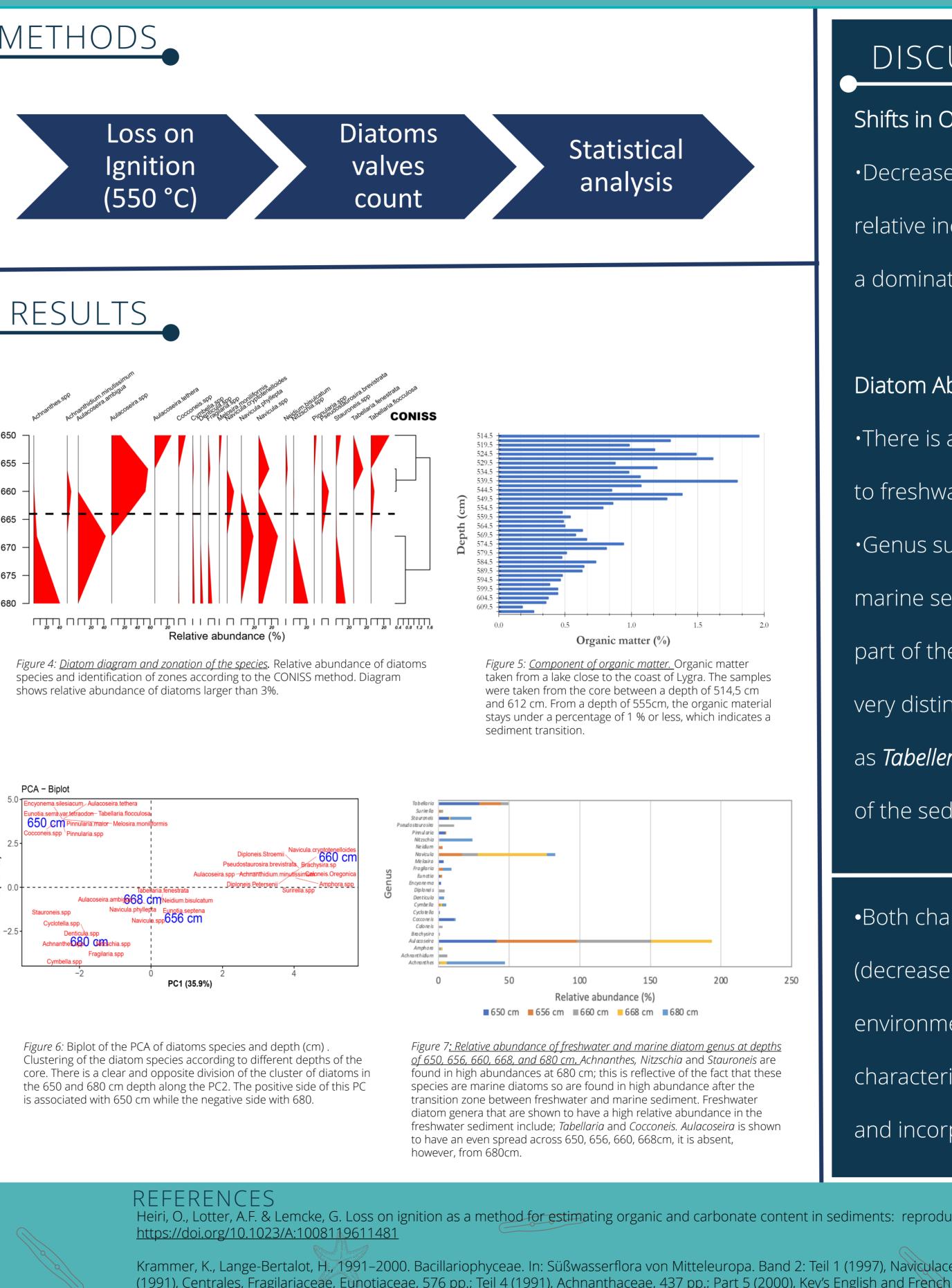
To determine sea-level induced shifts between marine and freshwater environments

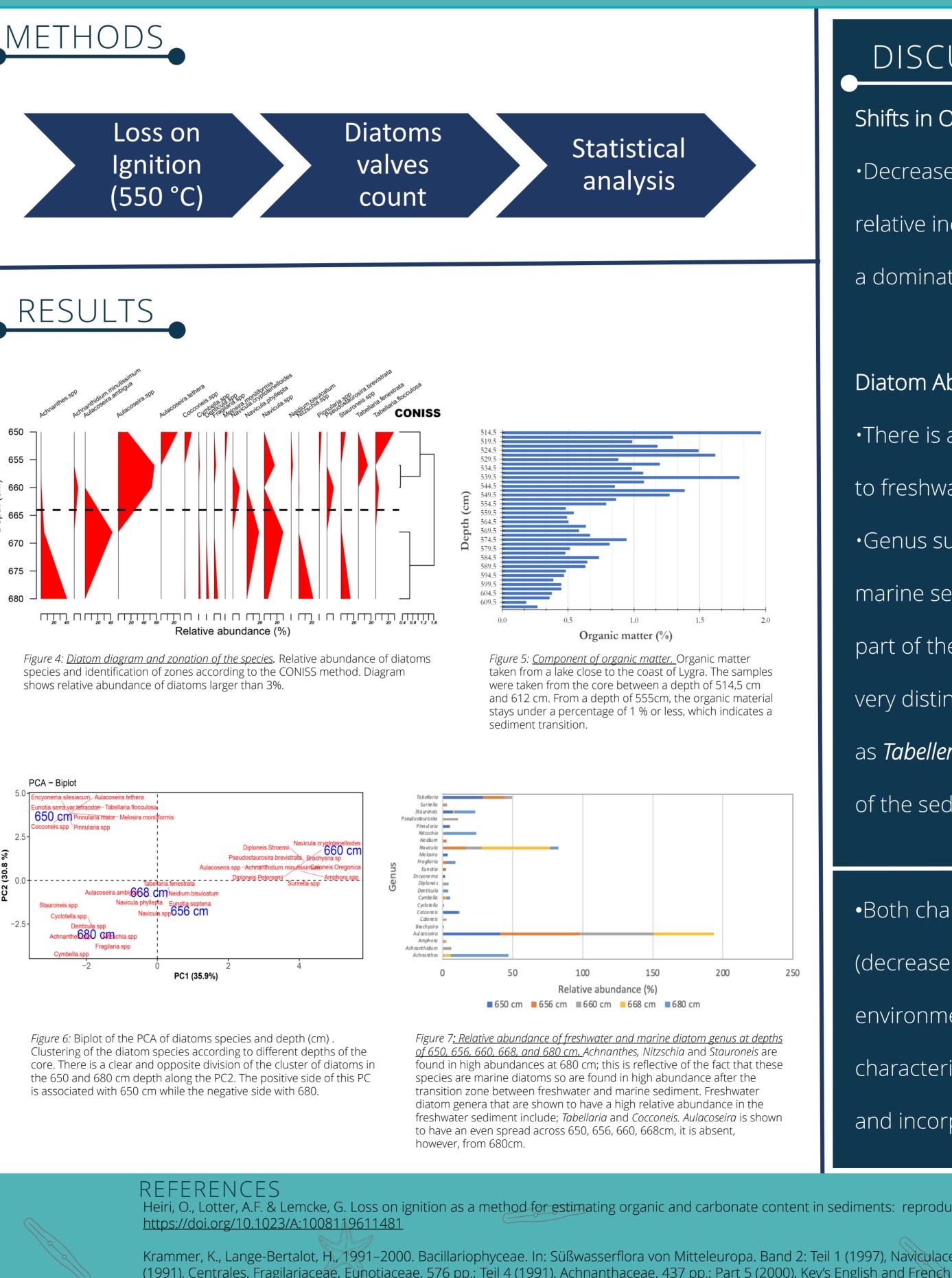


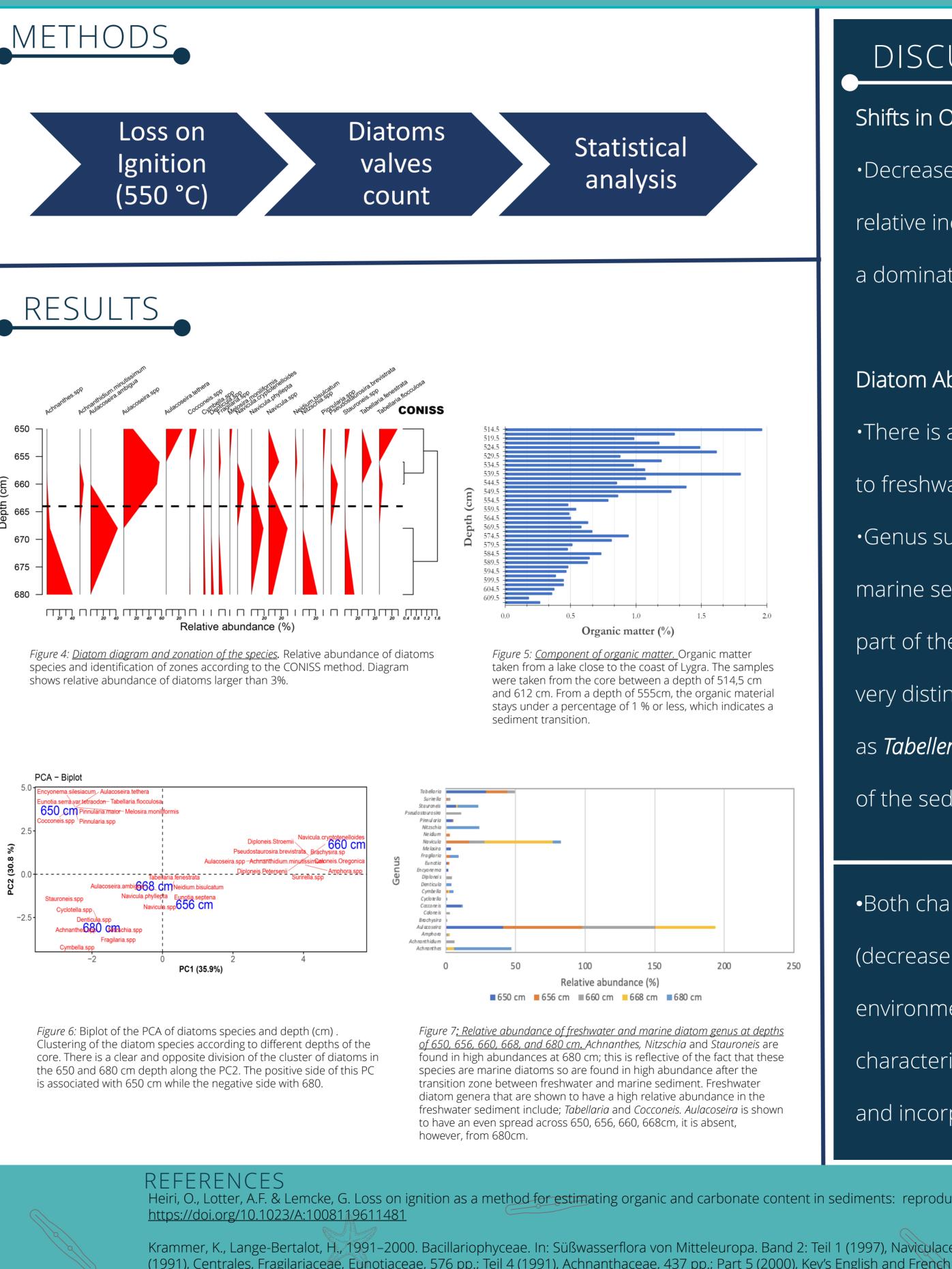
Analyse how organic matter and the species composition of diatoms changes with increasing depth

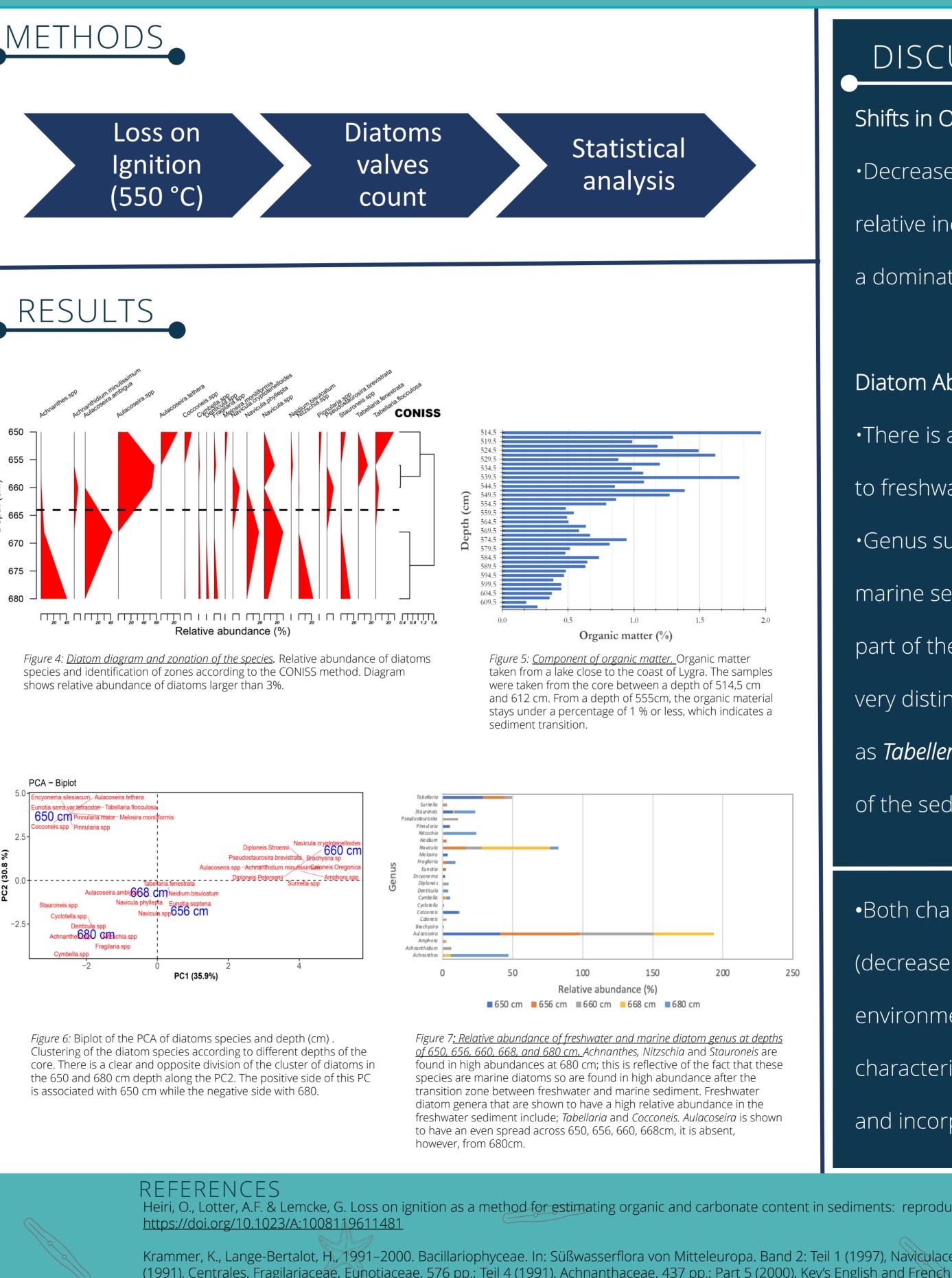
Analyse how diatom species composition and organic matter content can be used to determine sea-level induced shifts between marine and freshwater sediment











Books, 358 pp.





Palaeoecology BIO250

Christian Zagaceta, Olivia Hilton, Marianne Williams-Kerslake and Shari Siewertsen

DISCUSSION

Shifts in Organic Matter

•Decreases in organic matter with depth can be a result of a relative increase in marine originated inorganic sediment, with a domination of clays.

Diatom Abundance shifts:

•There is an abundance turnover from marine diatoms to freshwater diatoms.

•Genus such as *Nitzschia* and *Achnanthes* are typical from

marine sediments and these species are found on the bottom

part of the samples (680 cm). On the other hand, we have

very distinguishable freshwater diatoms genus such

as Tabelleria, Aulacoseira, Pinnularia and Eunotia on the top part of the sediment core (650 cm) level.

•Both changes indicate the presence of a sea-level regression

(decrease in sea level), with a transition from a marine

environment to a freshwater environment. This is

characterised by the retreat of marine sediments

and incorporation of freshwater replenishment of the bog.

Lange-Bertalot, H., Külbs, K., Lauser, T., Nörpel-Schempp, M., Willmann, M., 1996. Dokumentation und Revision der von Georg Krasske beschriebenen DiatomeenTaxa. Iconographia Diatomologica, Vol. 3. Koeltz Scientific