



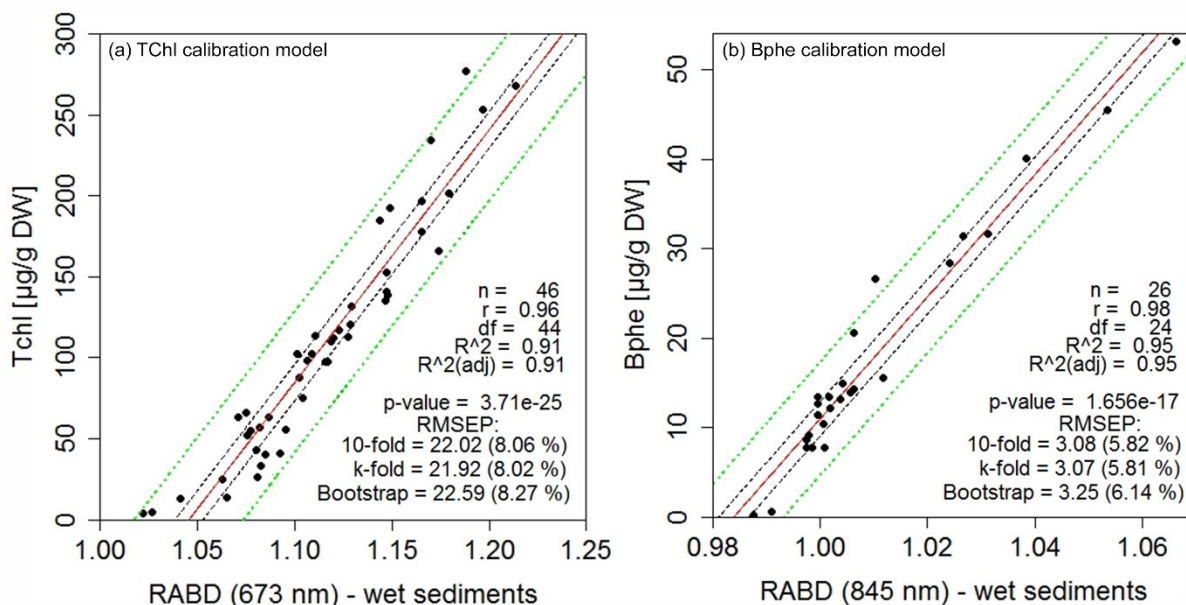
Supplement of

Holocene phototrophic community and anoxia dynamics in meromictic Lake Jaczno (NE Poland) using high-resolution hyperspectral imaging and HPLC data

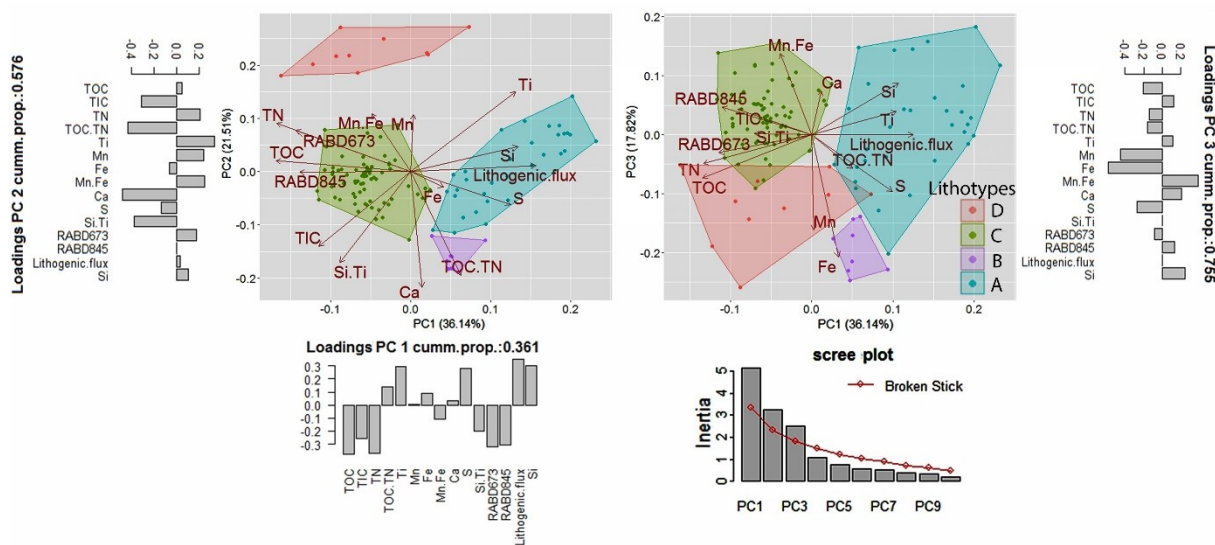
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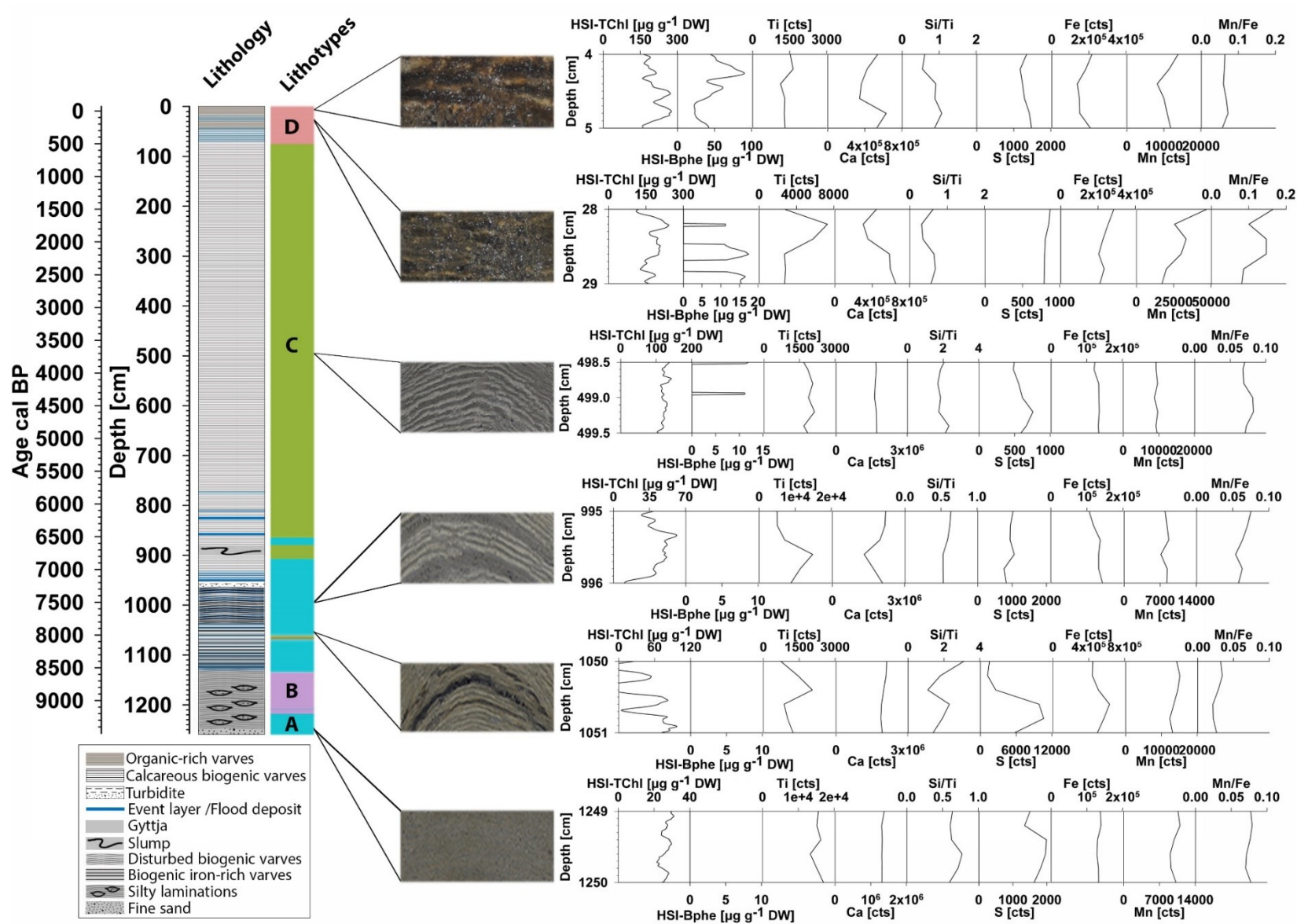
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 2 **Figure S1: Linear regression models for the proxy-to proxy calibration of a) Tchl, and b) Bphe (red lines).**
 3 **The black dots indicate the samples distribution and the dashed lines the 95% confidence intervals of the**
 4 **regression values (in black) and the predicted values (in green).**



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 7 **Fig. S2: PCA analysis on selected biogeochemical proxies (XRF elements Ti, Ca, Si, Si/Ti, Fe, Mn, Mn/Fe;**
 8 **LOI/CNS data TOC,TIC,TN, TOC/TN ratio and lithogenic flux; and HSI-Tchl, Bphe). The scree plot**
 9 **indicated thee significant PCs that explain together more than 75% of the total variability. The PCA**
 10 **analysis combined with the unconstrained clustering on the same dataset defined the four lithotypes A–D**
 11 **(Fig. 3) indicated with different colors.**



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13 Fig. S3: Sediment sequence of Lake Jaczno with the description of the lithology, lithotypes and close-up RGB images with their biogeochemical composition.

14 **Table S1: The results of the permutation test, which assesses the significance of our model by running 999**
 15 **free permutations i.e. all units are considered equivalent and fully exchangeable (Borcard et al., 2011;**
 16 **Legendre and De Cáceres, 2013).**

	Df	Variance	F	Pr(>F)	
RDA1	1	5.2387	13.433	0.001	***
RDA2	1	2.8144	7.2168	0.001	***
RDA3	1	0.7758	1.9893	0.124	
RDA4	1	0.1815	0.4654	0.938	
Residual	41	15.9895			

17 Significant codes: 0 ‘***’

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19 **References**

20 Borcard, D., Gillet, F., Legendre, P., Borcard, D., Gillet, F. and Legendre, P.: Canonical Ordination, in
 21 Numerical Ecology with R, pp. 153–225, Springer, New York, NY., 2011.

22 Legendre, P. and De Cáceres, M.: Beta diversity as the variance of community data: Dissimilarity coefficients
 23 and partitioning, Ecol. Lett., 16(8), 951–963, doi:10.1111/ele.12141, 2013.

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