

Interactive comment on “The transformation of the forest steppe in the lower Danube Plain of south-eastern Europe: 6000 years of vegetation and land use dynamic” by Angelica Feurdean et al.

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Received and published: 20 August 2020

The manuscript titled “The transformation of the forest steppe in the lower Danube Plain of south-eastern Europe: 6000 years of vegetation and land use dynamic” by Feurdean et al. presents a multi-proxy approach to investigate the history of European forest expansion in the Lower Danube Plain over the last 6000 years. It is a well written and encompasses a detailed comparison to other regions and a comparison to the output of the REVEALS model. Generally, there are no major issues with this manuscript as it is already well organized. I have only minor suggestions and comments which will hopefully help with the data interpretation, particularly of the n-alkane results.

C1

Line 68: It would be interesting to know how far in time human occupation in this area has been detected.

Line 178: “To determine the climate conditions and the predominant vegetation type...”. I would suggest to rephrase this sentence and be a little bit more careful with the interpretation value of n-alkanes. n-alkanes are commonly used to distinguish different origins of organic matter sources based on their chain-length and their delta-Deuterium values can help to identify past environmental conditions.

Line 183: N2 subscript

Chapter 3.3 Regime disturbances by fire and herbivores: Since you aim to reconstruct past fires, have you considered analyzing levoglucosan as a proxy for biomass burning?

Line 280: Please explain how shorter chain lengths of n-alkanes correlate to moister climate conditions.

Line 290: Since you discuss climate dynamics in your study region, you should add a short paragraph about the current climate regime/atmospheric systems effecting the studied lake in section 2. Study area.

Line 317: “As climate conditions remained relatively moist during this decline, anthropogenic rather than climatic causes are likely” How did you infer moist conditions?

Line 326: “The proportion of Cerealia is significantly greater in the REVEALS estimate (40%) than in the raw pollen percentages (5%)” Interesting, why is that?

Line 367: “Our quantitative record of vegetation indicates a higher than present tree cover across the landscape of the eastern Lower Danube Plain between 6000 and 4200 cal yr BP with an absolute maxima of 50% (60% raw pollen percentages) between 4200 and 2500 cal yr BP (Fig. 6, see Table 3 for reference and Fig. 1 for locations).” Does the concentration of n-alkanes also increased between 6000 and 4200 cal yr BP?

C2

Line 380: You compare your results to a various other locations. However, did you also consider altitude variations?

Figures

Figure 3: I would suggest to delete the number 850 and possibly 950 from the y axis of the depth [cm] since they are too close to the previous and subsequent depth numbers and thus nearly illegible.

Figure 4: The numbers on the x axis and y axis are a little bit hard to read due to the small font size.

Interactive comment on Biogeosciences Discuss., <https://doi.org/10.5194/bg-2020-239>, 2020.