

Clim. Past Discuss., community comment CC1
<https://doi.org/10.5194/cp-2021-133-CC1>, 2022
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Comment on cp-2021-133

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Community comment on "Spring onset and seasonality patterns during the Late Glacial period in the eastern Baltic region" by Leeli Amon et al., Clim. Past Discuss., <https://doi.org/10.5194/cp-2021-133-CC1>, 2022

The manuscript "Spring onset and seasonality patterns during the Lateglacial in the eastern Baltic region" by Leeli Amon and co-authors draws the attention with an original proxy applied, which allows the reconstruction of the features of the spring season. This gives us new information about the palaeoenvironment, namely the spring onset, something that we cannot extract from other proxies (analysis of pollen and chironomid remains). Furthermore, this manuscript includes meaningful discussion in which the findings are compared with similar data obtained earlier for the nearby regions of Scandinavia. Thus the discussion shows the spatio-temporal variability of the spring onset during the Lateglacial period. I believe this manuscript deserves to be published in the journal Climate of the Past. Although I have a few critical comments that will help improve the structure of the manuscript and make it easier to read.

Lines 70-75 Description of the study area – I suggest to show modern climate conditions for the two coring lakes in a uniform way. I do not understand is it make sense to show mean temperature of the coldest and of the warmest month for the one coring site if you did not show these figures for the second coring site. Next, if you show snow cover duration in months and in days for the one coring site, then, I think, you should show snow cover duration in months and in days for the second coring site. But in the manuscript, for Latvia you marked snow cover duration in months only. Please, add also the number of days for Latvia. I understand that you took this information from the different literary sources that cited heterogeneous figures. But it is easy to calculate by yourself. As example, I calculated that snow cover duration from December 8th and 29th to March/April corresponds to 93-143 days (minimum-maximum) for Latvia. And now I can see that this number of days exceeds the number of days (75-130) that you pointed for Estonia.

Line 87-89 – you described what proxies were applied to the sediments from the L. Svetinu Lake. Please, add the information with what proxies the Lake Kosilase was investigated –uniformly as you did for the first one.

Line 114 – you used IntCal13 curve for calibration. Why did not you use IntCal20 curve, which is newer?

Line 137 – you wrote "During the Allerød, warming permitted the migration of various tree

species to eastern Latvia...". Please, clarify from where tree species migrated to Latvia.

Lines 177-178 – you wrote "similar to the modern tundra greening process and earlier spring dates reported by modern phenological observations". Could you add reference to these modern phenological observations? Next, in the Introduction section (Lines 26-28) you mentioned "The earlier unfolding of leaves has been observed since the mid-20th century all over the Northern Hemisphere (links), although the rate of change has decelerated during the last few decades (link)". I consider, that this phrase (Lines 26-28) contradicts to the phrase from Lines 177-178. Could you explain why the rate of leaf unfolding has decelerated during the last decades? And, next, how does this fact compare to "earlier spring dates", which you wrote in Lines 177-178?

Lines 137, 142 and further – in the Discussion you mentioned the names of the known phases (Younger Dryas, Allerød) of the Lateglacial period. Please add to them the age range in brackets. It would be easier to read.

Figures 2 and 3 – it would be easier to read if you also point the boundaries of the known phases (as example, Younger Dryas, Bølling, Allerød) of the Lateglacial period in these figures.

Figure 2 – please, could you add scale to the photo of *B. nana* leaves?

Caption to the Figure 1 – why did you select the time slice of 13300 cal yr BP to show the vegetation zones? Probably you should add a short explanation (as example, it was the warmest phase in the Lateglacial or something like that).