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Climate of the Past Discussions

Interactive comment on "Late Glacial to Holocene environments in the present-day coldest region of the Northern Hemisphere inferred from a pollen record of Lake Billyakh, Verkhoyansk Mts, NE Siberia" *by* S. Müller et al.

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At your request, I have reviewed the article entitled “Late Glacial to Holocene environments in the present-day coldest region of the Northern Hemisphere inferred from a pollen record of Lake Billyakh, Verkhoyansk Mts, NE Siberia” by S. Müller, P. Tarasov, B. Diekmann, and A. Andreev, for the Climate of the past special issue (Data/model interactions: the biological perspective of understanding past global changes).

I think this paper is well written and concise, and sufficiently interdisciplinary in content to be published in this special issue of Climate of the Past. This study is mainly a palynological study which focuses on the links between the vegetation (especially in terms of biome changes), and the climate changes during the last 15,000 years in North-East Siberia, a poorly documented area. The study (fig 3) combines the analysis of a high-resolution pollen record, biome reconstruction, non-pollen-palynomorphs, and chironomids (see comment 4).

However, some precisions should be added before publication. My comments are listed below.

Main points

Title is appropriate. The abstract could be more informative, especially on the biomes results and their interpretation.

- Could you add a map with all the other sites mentioned in your discussion for comparison with Lake Billyakh? And also if possible, a table will be welcome including the major trends and patterns of the climate changes inferred from these different sites. The comparison with the Lake Billyakh results will be easier.

-At the end of you introduction, could you be more precise on which scientific questions you will answer with your study, especially on the lateglacial context?

- Why the pollen percentages (fig. 3) are illustrated with unusual histogram bars, and not classical curves? A choice of curves-representation should be more appropriate, in particular to depict the short-term events of the Lateglacial in the curves. Also in Fig 3, could you add directly the Lateglacial different events (Younger Dryas, Bolling/Allerod, Holocene…) mentioned in the text on the pollen diagram?

- In this pollen diagram (Fig3), the authors also show the NPP and Chironomids variations, which is quite exciting to compare with pollen changes. However, they not mention in the text how they did these analyses, why, the protocol, and the most im-

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portant, how do they interpret these results? The NPP and the Chironomids taxa have been determined of not? The chironomids could help to the interpretation in terms of climate changes. Please could you add more information on these results, in the text and the discussion?

- In the table 1, the same taxa seem to define the biomes TAIGA and COCO. How do you distinguish between these 2 biomes?

- In your text, you only mention the Allerod period as the first Lateglacial warming. Could you check you chronology, and mention better the Bolling/Allerod as in other terrestrial sequences?

Technical points: -In the abstract, could you remove (1 kyr = 1000 cal.yr)? This precision is already mentioned in your introduction. -p1241, line13, please check your sentence (181 mm? not clear). -p.1250, line 25: BP and not PB

Interactive comment on Clim. Past Discuss., 4, 1237, 2008.