

Reviewer 1:

We thank the reviewer for his/her comments. We have addressed the technical corrections in a revised version of the manuscript. In the following, we give a point-by-point reply to the two points raised (in bold):

Comments The subject of this paper is appropriate to the Cryosphere Journal. The paper contains original material on importance of studies on changes (decrease in area) of palsas and peat plateaus in northern Norway since 1950s in order closer understand of possible way of the evolution of palsas and peat plateaus. Most of this material is new for the investigated area, illustrates more precisely data and analysis of this material and the results discussed in the manuscript could bring the new knowledge to the existing concept of the sequence of palsa evolution. Using high-resolution aerial imagery, authors quantified the lateral changes of the extent of palsas and peat plateaus in northern Norway. Combining the change rates with the areal mapping authors report on widespread receding of palsas and peat plateaus area since the 1950s in northern Norway. The methodology is sound, the assumptions and objectives are clearly identified. It is a good paper and the publication of this kind of paper could be timely and beneficial for researchers working in the same field, as well as for many other researchers conducting a wide spectrum of environmental studies. From my point of view, the paper in review could be published as it is, but I have a few minor comments and questions to authors before the manuscript will be published in the Cryosphere Journal.

1. Page 7, block 30. Open the acronym LIA.

Done.

2. Conclusion. The first sentence. It is not clear to me what exact high-resolution aerial images are providing? 250 m? If so, how did you estimate that “newly formed palsas of diameter of more than 10 m were not observed”? (The last sentence at the page 10 and spatial scale at the Figure 2a).

In the revised version, we have added the spatial resolution of the aerial images to the first sentence in Sect 6, conclusion. We write: *Using high-resolution (0.2-0.5 m²) aerial imagery, we systematically map the occurrence of palsas and peat plateaus on 250 m grids in the sporadic permafrost zone in northern Norway.* Using images with a spatial resolution of 0.2-0.5 m, it is generally unproblematic to visually detect palsas with a diameter approximately larger than 10 m. The second last sentence at page 10, in Sect. 6, conclusion, is reformulated to clarify that this statement is only valid for the four study areas. We write: *Newly formed palsas of diameter of more than 10 m were not observed in the study areas.*

On behalf of the authors,

Amund F. Borge