

Editor Morse-

May 31, 2021

The most recently uploaded version of the paper addresses all the edits and comments. We have provided below our response to the earlier version to ensure those comments of ours are seen.

Tom Douglas

Thank you again for another thorough reading of the paper.

I incorporated all your edits/suggestions, however, I wanted to comment about the use of the word “talik.” In the previous version, you requested we remove all use of the word “talik” and instead say “residual thaw layers” or “unfrozen zones between the bottom of the active layer and the top of near-surface permafrost.”

I request that we add back some application of the word “talik” in a few locations as our drilling confirms that these are taliks and I would like to use proper terminology instead of a long explanation. I have spoken with a few other researchers working at or near our sites (Torre Jorgenson and Vladimir Romanovsky) and all confirm that yes indeed there are taliks forming throughout the area.

The locations where I request we add back “talik” are:

In the abstract, line 25:

“Thermokarst features, residual thaw layers, and taliks have been identified at all sites.”

My sense is that in some winters the active layer does not always refreeze completely at all sites.

However, the areas with thaw confirmed from drilling or where that is greater than the ~1.2 to 1.5 m maximum depth of winter freeze taliks are no doubt forming.

At line 287:

“These thawed zones are located above the typical permafrost table for those locations and indicate the active layer did not completely freeze back and taliks are likely forming.”

I also would like to add this at the end of the acknowledgements:

“We appreciate comments about yedoma studies from Jens Strauss and acknowledge two diligent reviewers and Editor Morse for their constructive comments on multiple versions of the manuscript.”