Climate of the Past Discussions

Clim. Past Discuss., community comment CC3
https://doi.org/10.5194/cp-2021-132-CC3, 2021

Comment on cp-2021-132

Jessey Rice

Community comment on "Was there a glacial outburst flood in the Torngat Mountains during Marine Isotope Stage 3?" by Tamara Pico et al., Clim. Past Discuss., https://doi.org/10.5194/cp-2021-132-CC3, 2021

Pico et al. present an interesting discussion regarding a glacial lake reconstruction and outburst flood they attribute to a pre-LGM (MIS3) period. This reconstruction is supported by ^{10}Be age calcualations from a bedrock upland and glacial lake volume calculations. As previous commenters have mentioned this region is of critical importance for freshwater forcing and represents a region where many outstanding questions regarding ice sheet dynamics and deglaciation persist.

As other commenters have presented detailed disucssions, I will keep my comment brief, however, I do share the concerns of the previous commenters and support the issues they have highlighted. Specifically, there needs to be more evidence to convince the reader that the wave-cut bench shorelines are indeed shorelines and that the rounded, imbricated cobbles are indeed the result of an outburst flood and not simply from subglacial meltwater flow, which could have removed any till cover on the bedrock (i.e., a vanished protector: Veillette and Roy, 1995; https://doi.org/10.4095/202923) which would affect the inheritance of the bedrock sample. Additionally, as previously mentioned, a more discussion on how the glacial lake was reconstructed and possible inheritance from the ^{10}Be should be explored as other suggested hypotheses seem plausible.

I can appreciate the limited dataset available to the authors, which they fully acknowledge, calling for additional fieldwork in the region. However, until additional data is available, either other hypotheses should be explored, or additional discussions to address the issues presented by other commenters is needed. Again, I fully appreciate the difficulty of this type of investigation and I do hope this discussion sparks future work in this remote region of Canada where little fieldwork has been conducted.

Jessey Rice- Geological Survey of Canada, Ottawa