

Author Responses to Associate Editor for

GCHRON-2023-16 | Research article

Early Holocene ice retreat from Isle Royale in the Laurentian Great Lakes constrained with ^{10}Be exposure-age dating

Eric W. Portenga, David J. Ullman, Lee B. Corbett, Paul R. Bierman, and Marc Caffee

Dear Dr. Portenga and coauthors,

Thank you for submitting your revised manuscript. I think you have sufficiently addressed the reviewers comments in your revision. There are a handful of small things that came up upon a final reading of your manuscript that I would like to see addressed, which are summarized below. I am recommending that the manuscript be published subject to technical revisions, meaning I will not need to review the manuscript again.

Additional technical edits requested:

Figure 2: Would it be possible to include a scale for the elevation shading, rather than describing it in the caption? Then you could also just state that the elevation shading is the same as in Figure 2 in your caption to Figure 7. This was the request of one of the reviewers, I'm sorry I didn't catch it in reviewing the response to reviews before. Also, the reddish transparent rectangle south of Isle Royale in panel B appears to be carried over from Figure 7, but it's not described in the legend or caption for Figure 2. I recommend either removing the rectangle from Figure 2B or explaining its significance in the legend and/or caption.

Author Response: Scale bars for both elevation above sea level and water depth below lake level are added to the figure Key in panel A. The text in figure captions for Figure 2 and Figure 7 were adjusted to reflect this. The reddish transparent rectangle is where Colman et al. (2020) mapped out red varves relative to the position of IR1 and IR2, which is referred to in the Introduction, so it is important to keep here. We added a description of this in the Figure Caption.

Figure 3 (and elsewhere): Wherever possible, citing personal communications should be avoided. It appears that the person who is cited here, Seth DePasqual, is employed by the National Park Service, in which case I would anticipate that the LIDAR data, if collected by/for the NPS, would be in the public domain and therefore does not require citation. Can the authors confirm if this is the case? And if so, it would be more appropriate to move this information to the acknowledgements, i.e., "We thank Seth DePasqual of Isle Royale NP for providing LIDAR data used in Figures X and Y..."

Author Response: We removed all instances of Personal Communication and clarify in the Acknowledgements and Data Accessibility sections that it was through Seth DePasqual at Isle Royale National Park that we obtained access to the (yet publicly inaccessible) LiDAR data for

Isle Royale.

Figure 4: I recommend making panels A and D cover a smaller horizontal distance so that the topographic features of interest are more easily highlighted.

Author Response: We stretched the profiles in Panels A and D to cover 1,000 m.

Line 182: "...are indicated gray dashed lines" need to add the word "with" here.

Author Response: Done

Thank you very much,

Marissa Tremblay
September 23, 2023