

## Response to Reviewer Reports

**Reviewer comments are provided in black.**

**Author responses are provided in blue**

### Reviewer 1

The authors have substantially revised the manuscript, and I find the revised version satisfactory. However, I noticed that another reviewer also raised concerns about the representativeness of the study area. To further highlight this aspect, the authors could consider processing the HydroLAKES dataset (Messenger et al., 2016) to provide statistics on the number of small (e.g.,  $<5$  km<sup>2</sup>) and shallow (e.g.,  $<10$  m) lakes in Canada's Northwest Territories (NWT), thereby emphasizing the prevalence and significance of such lakes. Including this information in the introduction would strengthen the manuscript. Aside from this minor point, I have no further comments.

Messenger, M. L., Lehner, B., Grill, G., Nedeva, I., & Schmitt, O. (2016). Estimating the volume and age of water stored in global lakes using a geo-statistical approach. *Nature Communications*, 7(1), 13603. <https://doi.org/10.1038/ncomms13603>

We thank the Reviewer for the constructive feedback throughout the peer-review process. As recommended in this Reviewer's Report, we processed the HydroLAKES dataset and identified ~138,000 small ( $< 5$  km<sup>2</sup>) and shallow ( $<5$ m mean depth) lakes and ponds within the border of the Northwest Territories (NWT), Canada with a minimum size of 0.1 km<sup>2</sup>. This accounted for ~86% of all lakes and ponds within the NWT contained within the HydroLAKES dataset. We have added this information to the manuscript.

### Reviewer 2

I see authors have made a major revision of the manuscript. Authors have responded adequately to the comments from both reviewers. I am satisfied with the rebuttal letter and the revised manuscript. I don't have further scientific comments to the manuscript. I think authors still need to comply with the TC data policy. However, this is a technical issue, and I leave it to the handling editor to discuss with the authors. Otherwise, I am pleased to recommend this manuscript for publication in TC. Congratulations!

We appreciate the comments of this Reviewer throughout the review process. We have amended the Code and data availability statement to include a published dataset in an appropriate repository to comply with the data policy. <https://doi.org/10.5683/SP3/QZJVYD>