Proglacial lake development and outburst flood hazard at Fjallsjökull glacier, southeast Iceland
(Wells et al.)

Point-by-point response to comments. Line numbers refer to the submitted version from 20 December 2024.

Section	Line number (Dec. 2024 version)	Reviewer	Changes made
Title page	28	NHESS	Per journal request, we have deleted the title and authors here due to overlap with the title page.
Abstract	54-55	Reviewer 1	We have removed the sentence "This study also offers a methodology…" and added "…with potential application to other proglacial regions worldwide" to the end of the previous sentence.
Introduction and aims	69	N/A	Added new reference (also to line 1012 in References)
Introduction and aims; Discussion	111-113; 584	Wilfried Haeberli	We have removed the sentence "This study also offers a methodology…" and reworked the previous sentence to include potential application of our results to other regions worldwide. We have also modified the sentence in line 584 to address the same comment.
Study area and background	132 (Fig. 1)	Reviewer 1	Deleted "map of…" in Fig. 1 caption (now reads "Study area and…"). Did the same for Fig. 6 caption (line 309).
Results	244 (Fig. 4)	Reviewer 1	We agree that a panel with images of glacier extents at different time steps and retreat scenarios would be an effective way to visualize glacier change. However, given the uncertainties of our estimated terminus positions, we do not think that our results have a high enough resolution for this to significantly convey the conclusions.
Results	266-267	Reviewer 2	We have edited this explanation to improve clarity and emphasize the various sources of uncertainties in lake surface area and volume calculations. We have similarly modified the uncertainty explanation in lines 291-293 to improve clarity.
Results	273 (Fig. 5)	Reviewer 2	We have made the following edits to the figure: • Deleted labels and arrows for 1945 and 2021 • Combined the legends • Extended lines for double retreat rate past "maximum lake extent" • We have considered extending the graph to 2200 to show the estimated maximum lake extent for the half rate, but we have decided to keep it at its current scale to preserve detail of past lake changes (1945-2021), which would be reduced if we extended the x-axis to 2200.

			• We have decided to keep the "maximum lake extent" labels as we believe this information is essential to the figure's meaning; however, we have modified them to: 1) include "reached" to emphasize that this marks a threshold, not a single point in time (the lake is still at its maximum extent after i.e. 2070); and 2) add identifying lines from the legend key to more clearly link the text to the rate. • We considered replacing the green "future lake estimate" box with a vertical line, but we believe that the colored box better illustrates the difference between past measurements (with higher resolutions) and future projections (with greater uncertainties). • Amended figure caption to reflect changes.
Results	277 (Table 1)	Reviewer 2	We have added depth uncertainties (see explanation at bottom of table for calculation method).
Results	309 (Fig. 6)	Reviewer 1	Edited slope classes to avoid overlap with 50˚ and 70˚ categories.
Results	309 (Fig. 6)	Reviewer 2	Changed the color of <30˚ slopes to improve the clarity of the figure and avoid confusion with the glacier.
Discussion and Conclusion	351 (Table 3); lines 344-350; lines 603-605	Wilfried Haeberli	We accept the reviewer's suggestion that Table 3 does not significantly contribute to the study's results without additional discussion/analysis. We have deleted the table, along with the explanatory text in lines 344-350 (Section 5.1) and lines 603-605 (Section 6), and added a short phrase from the deleted text in line 349 to the end of the sentence in line 343.
Discussion	454 (Fig. 7) and 559 (Fig. 8)	Reviewer 2	We have made the font sizes as uniform as possible given different map sizes. We appreciate the note that not all maps have coordinate systems, which is due to creation in different mapping programs; however, we believe that the maps without coordinates (Figs. 1 and 6) are sufficiently displayed such that their locations are clear.
Discussion	500	Wilfried Haeberli	Thank you for this clarification. We have deleted "paraglacial."
Discussion	559 (Fig. 8)	Reviewer 1	We agree with this suggestion and have deleted the "estimated glacier terminus between ~2070-2200" line on the figure and adjusted the legend accordingly.
Conclusions	611-612	Wilfried Haeberli	We have reworded this sentence to give it a more positive emphasis.
Conclusions	641	Reviewer 1	Changed "…are an emerging hazard" to "pose an increasing risk." Addressing the same comment, we also changed "hazard" to "impact" in line 111 and "hazards" to "threats" in line 595.
Conclusions	599-643	Wilfried Haeberli	We have deleted some sentences to shorten and streamline the conclusion.

Acknowledgements	653	N/A	Added “We thank Wilfried Haeberli and two anonymous reviewers for insightful comments that improved this manuscript.”