

Referee Report: Revised Manuscript, Reviewer 2

- 1) Scientific significance: excellent (1)
- 2) Scientific quality: excellent (1)
- 3) Presentation quality: excellent (1)

For final publication, the manuscript should be: accepted subject to **technical corrections**

Summary:

The current version of the manuscript and the response to reviewers document nicely address my comments on the original manuscript. The figures are excellent. Below are a few follow-up minor comments (line numbers based on those in the track changes document). I support accepting this paper after these technical corrections are made.

Thank you for the opportunity to review this work.

Minor Line Comments:

- L19: consider listing pigments of interest in parentheses
- L32: consider adding “for paleoclimate reconstructions” or “for these studies” to clarify why Iceland is an “ideal location”
- L105: a key template for what? Being specific here would be good.
- L310: add “are” to “are inversely correlated”
- L317: “be” should be “by”
- L564: “is” should be “are”
- L572: consider including the correlation statistics (p , R^2)
- L766: I think you mean “concomitant” rise in Iceland’s population instead of “contaminant”?

Minor Figure Comments:

Figure 1: it is unclear what the yellow dotted/dashed line indicates, please specify in caption or legend

Figure 2: in the figure legend and caption, are the calibrated ages mean or median? They both indicate mean, but I believe they might be median based upon Table 1.

Figure 4:

- it looks like the highest value in panel f got cut off around 10,000 cal a BP
- TLF is explained as tephra layer frequency, but it is unclear what exactly this is in relation to. Are the units per year? Per hundred years? Same comment for Figure 5

Figure S5 and S6: consider adding the PCoA loadings of different variables onto these plots so that readers can evaluate where datapoints lie in relation to different variables.