

Author's response

P. A. Vignoni, F. E. Córdoba, R. Tjallingii, C. Santamans, L. C. Lupo, A. Brauer

We are very grateful to the Editor Philippa Ascough, the Associate Editor Irka Hajdas, and the two anonymous reviewers for their constructive feedback that improved our manuscript. Below we detail the changes made taking into account the technical corrections specified by the Associate Editor in the “Public justification” file.

Line 158, 193, and 235: “± 1300 BP” maybe a typo

Table 1: “26,500 ± 1300 BP”: just curious why is this 1sig so high, or is this a typo? 130 would make sense but perhaps the sample was so very small (micrograms). This should be then explained.

The ± 1300 BP σ value of the microbial mats from the southern shore hot spring pool is indeed high and there is no typing error. The high σ uncertainty is due to the small amount of carbon available for measurement (0.05 mgC). Nevertheless, despite the σ high value, what is relevant for this study is that the age of this sample is still the oldest.

We have added a footnote for that sample in Table 1: “*The high σ is due to the small sample size (0.05 mgC).”

Table 1: cosmetic correction in the 1sigma significant digits (4) as the F14C and values rounding.

Thank you for pointing out this detail. The σ values of F¹⁴C are now presented as 4 significant digits and rounded where appropriate.

Line 189: insert “high F14C value of 1.1239±0.0031 (Table 1) which corresponds to the atmospheric F14C of year 1994-1996 CE (Hua et al. 2022)”.

Lines 189-193 now read as follows:

“PEI19-P-3, a woody plant of the genus *Adesmia*, was most likely dead at the time of sampling as it had no sprouts (Fig. 2a, the front plant was sampled) explaining the high F¹⁴C value of 1.1239 ± 0.0031 (Table 1) which corresponds to the atmospheric F¹⁴C of year 1994-1996 CE (Hua et al., 2022). PEI19-P-4, a Poaceae possibly *Festuca ortophylla*, dated to 2018-2019 cal CE in agreement with the sampling year (Table 1, Fig. 2b).”

Line 274: replace “stronger” by “larger”

We have replaced “stronger” with “larger” (now line 275).