Response to reviewer's comments (round 2)

Loisel et al: C-PEAT's Global Peatland Carbon Database (v.2025)
(https://doi.org/10.5194/essd-2026-222)
Earth System Science Data

The reviewer's new comments are presented in grey, bolded text.

The responses to those comments are presented in black, indented text.

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1. Point 14 by reviewer 1 (Anonymous Reviewer 2026): "We have added the missing parameters to Table 3." The version of the manuscript with highlighted changes suggests that only one new row was added to Table 3. Specifically, the full list of parameters that I could extract from the uncalibrated ages and that contain many parameters not yet listed in Table 3 is:

Activity [pMC]
Activity std dev [±]
Age [a AD/CE]
Age [a AD/CE] (#0 = below detection, Age, 210Pb)
Age [a AD/CE] (Age, 210Pb)
Age [a AD/CE] (Age, tephra-chronostratigraphy)
Age [a AD/CE] (see Method comment)
Age [a] (years ago)
Age dated [ka]
Age dated [ka] (14C-uncalibrated, Age, 14C AMS)
Age dated [ka] (Age, 14C uncalibrated)
Age dated [ka] (calculated, 1 sigma)
Age dated [ka] (converted age)
Age dated std dev [±]
Age dated std dev [±] (1 sd, Age, 14C AMS)
Age dated std dev [±] (calculated, 1 sigma)
Age dated unc [±]
Age e [±]
Age max [a AD/CE] (see Method comment)
Age min [a AD/CE] (see Method comment)
Age model [ka]
Age std dev [±] (1 sd, Age, 14C AMS)
Age unc [±]
Age unc [±] (14C age, calculated, 1 sigma)
Age unc [±] (Age AD, 210 Pb, calculated, 1…)

Age unc [±] (Age AD, Age, 210Pb, calculate…)
Age unc [±] (Age AD, Age, tephra-chronostr…)
Age unc [±] (Age AD, calculated, 1 sigma)
Age unc [±] (see Method comment)
Cal age [ka BP]
Cal age [ka BP] (Age, 210Pb)
Cal age [ka BP] (see Method comment)
Cal age std dev [±]
Comm
Comment
Dated material
Dated material (Type of material (bulk, wood,…)
Depth bot [m]
Depth sed [m]
Depth sed [m] (Sample midpoint depth (rounded))
Depth sed [m] (Sample midpoint depth of OxCa…)
Depth sed [m] (Sample midpoint depth)
Depth top [m]
F14C
F14C e [±]
Lab label
Lab label (Radiocarbon lab code)
Method comm
Method comm (Dating method)
Method comm (Further information)
Samp thick [cm]
Sample label
Δ14C [‰]
Δ14C std dev [±]

The reviewer appears to have extracted the parameters for the "Age determination..." datasets using a script, but might not have examined the PANGAEA parameter structure in detail. Here, the reviewer lists many identical parameter abbreviations that differ only by the additions in parentheses. The text in parentheses specifies the method and comments used to describe the parameters in more detail. This combination results in more parameters than are listed in Table 3 of the manuscript.

For Table 3, we have re-reviewed the parameters, their meanings, and their use in the datasets. We confirm that all the parameters that are used in the C-PEAT database are presented in the Table. We have made slight updates/improvements to the descriptions that were provided in the previous revisions (highlighted in yellow in the tracked text).

2. Table 3, parameter Sample thickness []: The measurement unit is still missing.

Thank you for catching this! Updated.

3. The text repeatedly refers to the original data publications (e.g., in Table 3 in the description of parameter Age, dated, uncertainty [±]). Do you mean the papers that analyzed the original data or publications of data (in machine readable form) or both (depending on the specific event)?

I am asking because I think that it may be difficult to extract such information at scale if "original data publication" refers to articles, in particular if these are paywalled or if there are several values that could match a parameter — for example, parameter Age, dated, uncertainty [±] refers to the uncertainty of ages as reported in the "original data publication", but if this is a paper where there are several reported uncertainties for dated ages (such as standard deviation and some confidence interval)?

While I think that harmonizing such data is necessary in the future (if progress is to be made), I completely understand that this may demand too much from the authors, especially with historical data. However, I think it would be useful for users to understand exactly where they may find the definition of a parameter (what the authors mean by "original data publication"), whether this may include paywalled resources, whether it is always possible to find out what the exact definition of parameters with dataset-specific meaning is (for example Age, dated, uncertainty [±]) or whether the authors know that for some datasets, there is ambiguity.

Good news: every time we refer to "original data publication", we mean that the data that we report in our database were extracted from the original datasets (original publications). In other words, we have already done the extraction work! In Table 3, which deals with chronological constraints, we chose to be explicit about data provenance because the age data could have been calibrated many years or decades ago and it is important for the data user to know this. We also provide the uncalibrated datasets, so any user can download the data and develop a new age-depth relationships.

To clarify the matter, we added a note to the caption of Table 3: "Descriptions that pertain to "original age-depth curve or publications" mean that the data that we report in our database were directly extracted from the original datasets and may have been calibrated a long time ago. The user is advised to use the uncalibrated datasets and run their own calibrations." (line 265)