

RESPONSE TO REVIEWER #1

We would like to thank Reviewer #1 for reviewing the revised manuscript, testing the database and the example scripts, and provided constructive feedback. We followed the reviewer's recommendation to include links to the NOAA Study Page and GitHub repository as we agree that this would greatly improve accessibility to the CoralHydro2k database.

Hussein Sayani and Rachel Walter,
On behalf of all authors

Review #1

The PAGES CoralHydro2k database of coral $\delta^{18}\text{O}$ and Sr/Ca records for the Common Era will be a welcome addition to the paleoclimate community. The writing remains excellent, and the figures and tables are high-quality. I recommend publication.

The authors thoroughly addressed all my comments. They did this by clarifying sections of the main text, revising the descriptions for metadata fields, and expanding the amount of sample code to include examples in MATLAB, Python, and R. I greatly appreciate the authors' efforts to develop a GitHub repository and provide examples in all three programming languages because this will make the database accessible to more users.

I was also pleased that the authors updated the usage notes in Section 4.2 to clarify how to search the database. I also appreciated the revised text in Section 4.4 that encourages database users to cite the original publications for the coral records whenever possible.

I was able to access the NOAA Study Page and successfully download the database. I also cloned the CoralHydro2k MATLAB and Python GitHub repositories and successfully tested all the MATLAB and Python example scripts. The example code is helpful and easy to follow.

Minor note about accessing the database:

In the point-by-point response to reviews the authors note that there are limitations on the customizability of the NCEI landing page for the data DOI, and therefore, recommend visiting the NOAA Study Page to find the 'Submit New Data' link and access the code repository. This was a helpful comment, and I suggest including this recommendation in Section 4.3 of the manuscript. Another option is to include a direct link to the main study page (<https://www.ncei.noaa.gov/access/paleo-search/study/35453>) in addition to the data DOI. I also think it would be beneficial to include a direct link to the CoralHydro2k GitHub repository in the manuscript.

Response: We have followed this recommendation and added links to the NOAA Study Page and GitHub in section 4.3. Currently, there is no way to edit the NCEI landing page as it is automatically generated. We are hoping that the landing page will be improved by NOAA in the near future. In the meantime, we are exploring the possibility of having the DOI point directly to the NOAA Study Page. If this is possible, it likely will not be completed at the time of this submission. We will link to the NOAA Study Page and direct users there and adjust these instructions in the final proof if warranted.

RESPONSE TO REVIEWER #2

We would like to thank Reviewer #2 for reviewing the revised manuscript and providing constructive feedback. We respond to each comment below. To address the main feedback regarding database accessibility, we have followed Reviewer #1's suggestion for adding a direct link to the NOAA Study Page in the manuscript and directing readers there as the NCEI Landing Page cannot be edited at this time. We have also followed Reviewer #2's suggestion of archiving the original code for version 1.0 of the database on the NOAA NCEI repository. This code will be updated, if needed, and archived with each new release of the database.

Hussein Sayani and Rachel Walter,
On behalf of all authors

Review #2

Dear authors, dear editor,

I would like to thank the authors for so thoroughly addressing the referees' comments.

I focused my new assessment on the question, whether I feel that the authors addressed prior comments regarding availability and usability of the data and the answer is yes.

Due to personal constraints, I did not check the manuscript in detail.

I have two small points to make.

1. I would just like to nitpick that putting code on Github is not a persistent way to store it. To ensure persistence, the authors could, for example, provide a current versioned copy in their NCEI repository.

Response: We have archived the original code for version 1.0 of the database on the NCEI repository. We will update this code and archive as needed with future releases of the database.

2. My other point is a technicality that probably requires the authors to get in contact with NOAA/WDS. While the paleo-search entry for the CoralHydro2k database (<https://www.ncei.noaa.gov/access/paleo-search/study/35453>) appears to correctly label all the entries, the geoportal entry (<https://www.ncei.noaa.gov/metadata/geoportal/rest/metadata/item/noaa-coral-35453/html>), which is connected to the DOI, still appears to contain potentially wrong links. That is, the form for new entries as well as the Github repository are both labeled as "NCEI Direct Download".

Response: This is unfortunately a limitation of the current NCEI Landing Page, which is automatically generated and cannot be edited. Following the recommendation of reviewer #1, we have added a link to the NOAA Study Page to the manuscript and will direct readers there. We are also exploring some potential solutions with NOAA. If these are implemented before the final proof stage, we will adjust the text as needed.

Technical notes:

Table 6 also includes the italicization-comment but has no italicized elements. Could the comment be replaced by something like: "There are no standardized elements in this table."

Response: Thank you for catching this. We've followed your suggested and added a note that indicates there are no standardized metadata fields on this table.

Page 22, line 26: Should the first part of this line be part of the list of items above?

Response: Thank you for catching this. We've fixed the formatting issue.

In case of questions, I invite the editor and the authors to contact me.

Best regards

Oliver Bothe