

R1:

DeCarlo et al promise a very interesting repository that has great potential to transform the field by providing public accessibility to unique coral data. However, at the moment, there are two problems:

First, I could only find a link to a coral dataset (<https://zenodo.org/records/17208911>) and another one (<https://zenodo.org/records/16611348>) for accessing it. This dataset (which has been deposited in the Zenodo repository) is surely significant, but it is not a repository itself. Could the authors please provide a link to the actual CoralCache repository? I searched for it independently but could not find it.

We wish to clarify that the provided links point to the public repository, which includes all scans and band traces that have been tagged by the core owners as publicly accessible. This does not include work-in-progress band traces or pre-publication core images. The reviewer may have trouble accessing the entire repository at once via the first Zenodo link because it is quite a large file (>100 GB). We also wish to reiterate from the manuscript text that the data visible on Zenodo are a snapshot of the current public repository. The repository is “living” (see below justification of repository curation) and the second Zenodo link contains information on how to connect directly to the CoralCache server. Once connected to the server via an FTP client, anyone can browse files or download individual files.

The data provided are a repository. We consider a repository a central storage location where specific types of datasets are stored, managed, and curated. This definition is consistent with CoralCache. It contains organized CT-scan and X-ray datasets of coral cores, coupled with observer interpretation files of the annual banding patterns. The data are managed by the actions within the CoralCT application, which inherently manages access, backups, and organization. The data are effectively curated as a community effort (i.e., the nature of users depositing scans and their interpretations through CoralCT is curation of these data in consistent, organized formats).

Second, the authors make a very good case about the potential uses of the repository, which has already received quite many submissions and registered users, and they provide information about the current state. I would like to see more analytics of the data though, beyond the simple illustration in the map. Perhaps, showcase how many records per region?

This is a good suggestion, and we have added Figure 4 to address this. Figure 4 shows bar charts of numbers of cores and numbers of bands measured broken down by user-defined regions. This gives a current snapshot of progress made in collating cores across regions and analyzing them.

R2:

The manuscript submitted by DeCarlo et al. is a well-prepared paper on the virtual coral core repository "CoralCashe." I have not identified any major issues, and in my opinion, it is acceptable for publication without significant revisions. However, I would like to suggest some minor revisions regarding the following points. While the decision on whether to incorporate these comments is left to the authors' discretion, I believe they would be helpful in ensuring the manuscript is widely utilized by researchers.

1) Introduction

The Introduction begins by citing Knutson et al. (1972) as an early reference in the history of coral sclerochronology research. However, to provide a broader overview of the history of this field, it would be appropriate to also include Ma (1933) or Ma (1934). These works are recognized as the world's first papers to discuss coral growth rings.

Ma, T.Y.H. (1933) On the seasonal change of growth in some Palaeozoic corals. Proceedings of the Imperial Academy, Tokyo, 9, 407–409.

Ma, T.Y.H. (1934) On the growth rate of reef corals and the sea water temperature in the Japanese Islands during the latest geological times. Science reports of the Tohoku Imperial University. 2nd series. Geology 16(3):165–189
<https://tohoku.repo.nii.ac.jp/records/10699#>

In his book, "The Structure and Distribution of Coral Reefs" first published in 1842, Charles Darwin left numerous observational records regarding the shape and growth of coral colonies, but no descriptions of growth rings were found among them.

We thank the reviewer for these suggestions. In particular, we added citation in two places to Ma (1934) to acknowledge the early measurements of growth rates from coral skeletal density variations. We did not cite Darwin for the reason noted by the reviewer, that annual density bands were not described.

2) Chapter 2

I have a small suggestion regarding the structure of Chapter 2. It concerns the sections titled “2.5 Inter-observer agreement scores” and “2.6 Observer confidence scores.” I think it would be helpful to make it clear that these sections describe the methods used to estimate growth rates from coral images. Also, I felt that the illustration in Figure 4 was too abstract and difficult to understand. Wouldn’t an illustration based on coral growth rings be easier to understand?

We added clarification earlier in the manuscript (see lines 116-119) that a previous publication describes the methodologies of growth measurements in CoralCT and that the present manuscript focuses on the data compilation into a public repository. Nevertheless, we agree that a figure showing coral growth bands and the main interface of the application would help provide key context to readers, and we therefore added Figure 1. We also made a few minor text clarification to sections 2.5 and 2.6, but it is important to note that those sections are describing steps to synthesize datasets generated by multiple observers. The methods of the actual growth measurements in 3-D are fairly complicated and described previously (DeCarlo et al., 2025), so the focus here is not to repeat those methods descriptions.