The Neotoma Paleoecology Database: Shared Standards, Community Curation, and Active Reanalysis of Paleo Data

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In Memoriam

Very sadly, Eric Grimm passed away as we were working on this volume. Therefore, we are unable to include his video in this publication. From the early days of ROCEEH, Eric played a crucial role in developing a steady connection between the Neotoma Paleobiology Database and ROAD. With the implementation of APIs connecting Neotoma and the ROAD Map Module, a link was established which enables ROAD users to connect directly to the paleobiological and archaeological data of Neotoma. We are and always will be grateful for Eric's generous support and will remember him as an exceptionally helpful and kind person. We also add a few links to articles that speak of his life's work and hope you will read these remembrances in his honor:

https://www.tandfonline.com/doi/full/10.1080/01916122.2020.1870281

https://link.springer.com/article/10.1007/s00334-021-00828-z

https://epdweblog.org/2020/11/17/passing-of-eric-grimm/

https://ecologyofthepast.info/2020/11/16/eric-grimm-rip/

https://www.amqua.org/in-memory-of-eric-grimm.html

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The Neotoma Paleoecology Database is a community-curated data resource that supports interdisciplinary paleoenvironmental and global change research. Neotoma standardizes data structure and metadata across different data types, which facilitates common tool development and lowers data management costs. Neotoma makes paleoecological data openly available and offers a high-quality, curated resource.

Neotoma comprises virtual constituent databases for different types of data or for different regions. The constituent databases appoint data stewards, who are trained to validate and upload data and to help ensure high quality and completeness of data and metadata.

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Neotoma is living database that can be corrected or updated with additional data or metadata. Thus, two aspects of data curation are (1) initial validation and upload and (2) continued data maintenance. Other than correcting errors in original data submissions, examples of data updates include addition of new radiocarbon dates or new age models, which may be based on new radiocarbon dates, new radiocarbon calibration curves, or new age modeling techniques. An important example of new radiocarbon dates are the many new AMS dates that have been obtained on purified collagen from vertebrate specimens already in Neotoma. Various research projects have added many new age models developed with Bayesian methods or with other methods that provide estimates of the error in interpolated ages. Neotoma attempts to store sufficient metadata to replicate these age models.

Neotoma's distributed scientific governance model is flexible and scalable, with many open pathways for participation by new members, data contributors, stewards, and research communities. The Neotoma data model supports, or can be extended to support, any kind of paleoecological or paleoenvironmental data from sedimentary archives.

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