What is conservation paleobiology?

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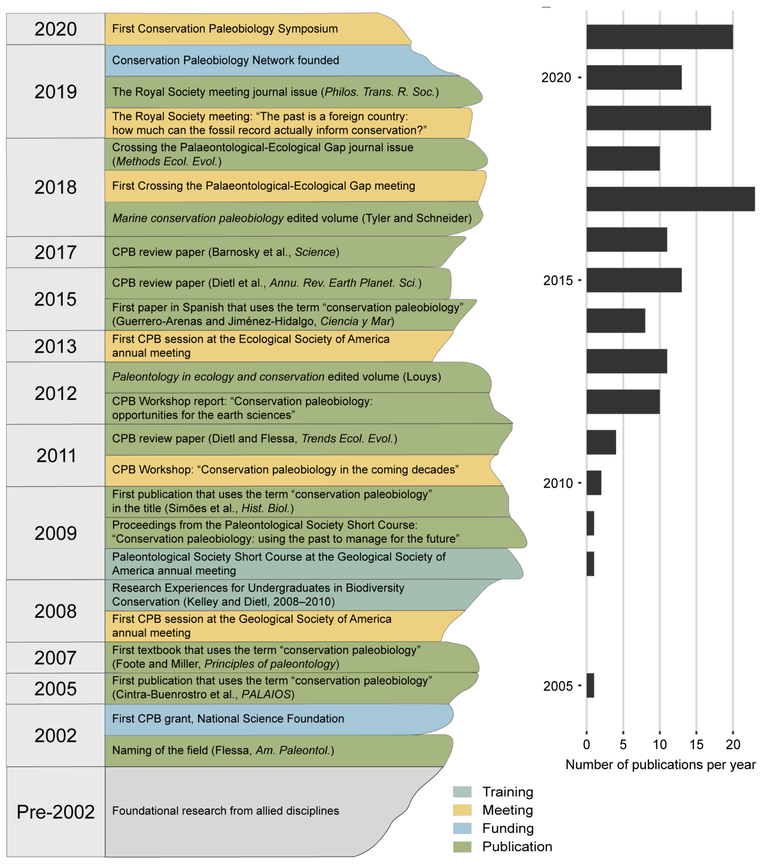
CONSERVATION PALEOBIOLOGY'S DEVELOPMENT



Conservation paleobiology "puts the dead to work" with the goal of guiding conservation, management, and restoration (Dietl and Flessa 2011).

It leverages geohistorical data such as fossil records, tree rings, and sediment cores. These data can deepen the temporal perspective of conservation science by capturing a long-term view of environmental change.

Conservation paleobiology research links our past and future. It can illuminate how species and ecosystems fared under past environmental conditions, contextualize present-day ecosystem states, and inform future scenarios (e.g., anticipating species' responses under different climate projections).

OUR APPROACH

Conservation paleobiology is nearing a crossroads. **We tracked its research and development over the last 20 years.**

Conservation paleobiology has coalesced in the 20 years since its naming in 2002. During this time, community interest and publications in the field have grown, building from foundational work in related disciplines and grassroots efforts to unite paleontologists who strive to engage with conservation practice. **However, conservation paleobiology's identity as an applied area of research is still forming, and it grapples with the research–implementation "gap" when addressing real-world conservation problems.**

Here, we asked a deceptively simple question: **What is conservation paleobiology?**

We used a **community survey** and **systematic literature review** to:

1) describe the scope of conservation paleobiology in terms of its professional membership, research, and applications to conservation practice, and
2) compare perceptions about what conservation paleobiology is and should be as a field of study with literature that is self-described as conservation paleobiology.

Why? Our inventory of the field aimed to encourage discourse about how conservation paleobiology will continue to develop, facilitate coordination among our community's diverse research agendas and training programs, and strengthen connections with conservation practitioners and decision-makers.

Dietl, G. P., & Flessa, K. W. (2011). Conservation paleobiology: putting the dead to work. *Trends in Ecology & Evolution*, 26, 30–37.

CONSERVATION PALEOBIOLOGY'S RESEARCH SCOPE

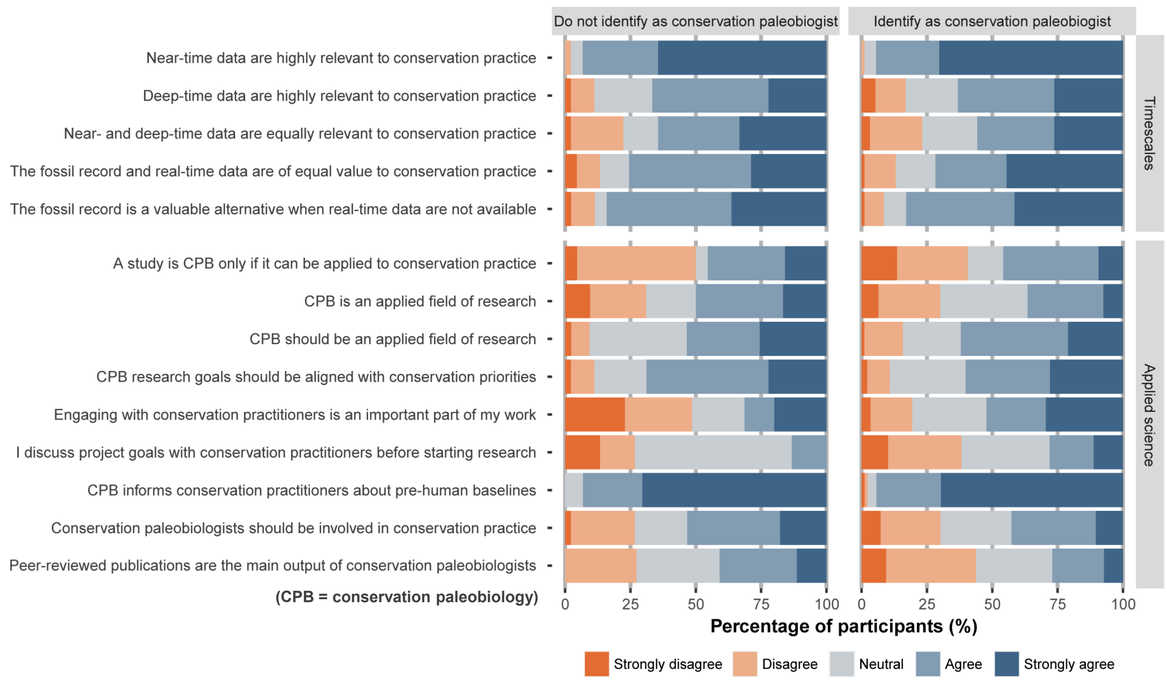
Conservation paleobiologists use a variety of geohistorical data, although research to date is typified by near-time records (last 2.58 million years) of marine molluscs and terrestrial mammals spanning local to regional scales. **There is room to better align conservation paleobiology research with species and regions of conservation concern.**

Scale. Near-time records collected over local to regional spatial scales characterized conservation paleobiology research despite survey participants' perceptions that the field can encompass all time periods and spatial scales.

Taxa. Marine and terrestrial (including freshwater) habitats received similar attention, although marine invertebrates and terrestrial vertebrates were disproportionately studied relative to other taxa. Data from survey participants are shown here, and similar biases were observed in the literature review.

A TOOL IN THE CONSERVATION TOOLBOX

We asked survey participants about **the field's applications to conservation**. We found that conservation paleobiologists value both pure and applied research. Few consistently work with conservation practitioners, but **many desire to strengthen those partnerships.**

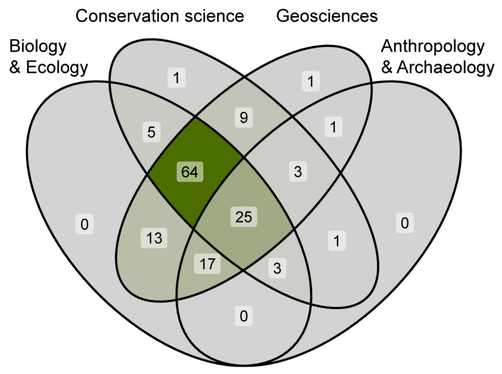


AN EMERGING CROSS-DISCIPLINARY SCIENCE

Conservation paleobiology incorporates information from many allied disciplines, including historical ecology, paleoecology, archaeology, and conservation biology.

Survey participants defined conservation paleobiology using the following themes:

1) Seeks to inform conservation, management, and restoration of biodiversity and ecosystem services
2) Links timescales by combining modern, historical, and fossil data
3) Uses a variety of data types and analyses
4) Measures biotic responses to environmental and anthropogenic stressors
5) Cross-disciplinary



Cross-disciplinarity. Colors in the Venn diagram correspond to the amount of support for each nested combination of disciplines by survey participants.

SHARE YOUR THOUGHTS AND GET INVOLVED!

Join our community:

Conservation Paleobiology Network

SCAN ME

Special thanks to:

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