



Paleoclimates: Understanding Climate Change Past and Present

By Thomas M. Cronin

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The field of paleoclimatology relies on physical, chemical, and biological proxies of past climate changes that have been preserved in natural archives such as glacial ice, tree rings, sediments, corals, and speleothems. Paleoclimate archives obtained through field investigations, ocean sediment coring expeditions, ice sheet coring programs, and other projects allow scientists to reconstruct climate change over much of earth's history.

When combined with computer model simulations, paleoclimatic reconstructions are used to test hypotheses about the causes of climatic change, such as greenhouse gases, solar variability, earth's orbital variations, and hydrological, oceanic, and tectonic processes. This book is a comprehensive, state-of-the art synthesis of paleoclimate research covering all geological timescales, emphasizing topics that shed light on modern trends in the earth's climate. Thomas M. Cronin discusses recent discoveries about past periods of global warmth, changes in atmospheric greenhouse gas concentrations, abrupt climate and sea-level change, natural temperature variability, and other topics directly relevant to controversies over the causes and impacts of climate change. This text is geared toward advanced undergraduate and graduate students and researchers in geology, geography, biology, glaciology, oceanography, atmospheric sciences, and climate modeling, fields that contribute to paleoclimatology. This volume can also serve as a reference for those requiring a general background on natural climate variability.

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Editorial Review

Review

Sheds light on modern trends on modern trends in the Earth's climate.

(*Bulletin of the American Meteorological Society*)

A promising overview of the science of paleoclimatology... recommended.

(*Choice*)

Everyone curious about the climate system, its history and current state of understanding... would be well-advised to acquire a copy of this erudite and elegantly written book.

(D.Q. Bowen *Quarternary Science Reviews*)

I strongly recommend this book as essential background material for graduate students, an up-to-date review for researchers in the field and an important resource for anyone with a general interest in climatic change.

(Iain Robertson *The Holocene*)

an excellent review and stimulating discussion of the state of art and current hot topics in this socio-economically important discipline to the scientific community of palaeoclimate researchers and students in this field.

(*Polar Research*)

There is much to be recommended, and the book will serve well in many libraries, both institutional and personal.

(A. Townsend Peterson *Quarterly Review of Biology*)

Review

Encyclopedic in its coverage, *Paleoclimates* features a truly incredible breadth of topics.

(Benjamin P. Flower, University of South Florida)

Paleoclimates is a most useful reference. Thomas M. Cronin's command of such a broad scope is impressive.

(Tom Johnson, University of Minnesota, Duluth)

About the Author

Thomas M. Cronin is an adjunct professor in the Science, Technology, and International Affairs Program at Georgetown University's Walsh School of Foreign Service, where he teaches a course on oceans, climate, and world policy. Since earning his Ph.D. in geology at Harvard University, Cronin has been a leading researcher in the field of paleoclimate and sea-level change. He has published numerous papers and one textbook. He currently serves as coeditor of the journal *Global and Planetary Change*.

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