

# Cambridge Elements

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## THE STRATIGRAPHIC PALEOBIOLOGY OF NONMARINE SYSTEMS

Steven M. Holland  
*University of Georgia*

Katharine M. Loughney  
*University of Michigan*



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# The Stratigraphic Paleobiology of Nonmarine Systems

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Steven M. Holland  
*Department of Geology, University of Georgia*

Katharine M. Loughney  
*Department of Ecology and Evolutionary Biology, University of Michigan*

Author for correspondence: Steven M. Holland, [stratum@uga.edu](mailto:stratum@uga.edu)

**Abstract:** The principles of stratigraphic paleobiology can be readily applied to the nonmarine fossil record. Consistent spatial and temporal patterns of accommodation and sedimentation in sedimentary basins are an important control on stratigraphic architecture. Temperature and precipitation covary with elevation, causing significant variation in community composition, and changes in base level cause elevation to undergo predictable changes. These principles lead to eight sets of hypotheses about the nonmarine fossil record. Three relate to long-term and cyclical patterns in the preservation of major fossil groups and their taphonomy, as well as the occurrence of fossil concentrations. The remaining hypotheses relate to the widespread occurrence of elevation-correlated gradients in community composition, long-term and cyclical trends in these communities, and the stratigraphic position of abrupt changes in community composition. Testing of these hypotheses makes the stratigraphic paleobiology of nonmarine systems a promising area of investigation.

**Keywords:** continental, sequence stratigraphy, vertebrates, plants, invertebrates

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## Contents

1	Introduction	1
2	The Nonmarine Stratigraphic Record	2
3	Nonmarine Ecological Gradients	6
4	Expression of Nonmarine Ecological Gradients in the Stratigraphic Record	12
5	Stratigraphic Architecture of Nonmarine Strata	21
6	Sequence-Stratigraphic Architecture of Nonmarine Basins	34
7	Predictions for the Nonmarine Fossil Record	46
8	Closing Comments	59
9	Conclusions	60
	References	62