



Punctuated eustatic sea-level rise in the early mid-Holocene

Submitted by Emmanuel Lemoine on Tue, 09/16/2014 - 11:46

Titre Punctuated eustatic sea-level rise in the early mid-Holocene

Type de publication Article de revue

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Editeur Geological Society of America

Type Article scientifique dans une revue à comité de lecture

Année 2010

Langue Anglais

Date 2010/09

Numéro 9

Pagination 803 - 806

Volume 38

Titre de la revue Geology

ISSN 0091-7613 / 1943-2682

Résumé en anglais

Whether eustatic sea-level rise through the Holocene has been punctuated or continuous has remained controversial for almost two decades. Resolving this debate has implications for predicting future responses of remaining ice sheets to climate change and also for understanding the drivers of human settlement and dispersal patterns through prehistory. Here we present a sea-level curve for the past 8900 yr from Singapore, a tectonically stable location remote from ice-loading effects. We also present critical and unique sedimentation rate, organic $\delta^{13}C$, and foraminiferal $\delta^{13}C$ proxy records of sea-level change derived from a shallow-marine sediment core from the same area over the same time interval. The sea-level curve, corroborated by the independent proxy records, suggests rapid rise at a rate of 1.8 m/100 yr until 8100 cal (calibrated) yr B.P., a near cessation in the rate of sea-level rise between 7800 and 7400 cal yr B.P., followed by a renewed rise of 4-5 m that was complete by 6500 cal yr B.P. We suggest that this period of relatively stable sea level during the early to mid-Holocene enabled modern deltas to advance, providing a highly productive environment for the establishment of coastal sedentary agriculture. Periods of rapid sea-level rise before and after may have catalyzed significant postglacial episodes of human dispersal in coastal regions.

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DOI 10.1130/G31066.1 [8]

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