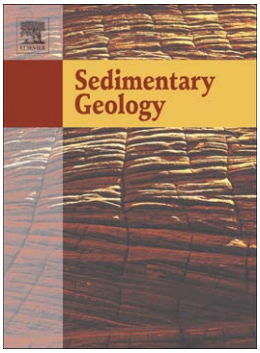

Sedimentary Dynamics and High-Frequency Sequence Stratigraphy of the southwestern slope of Great Bahama Bank

Marco Wunsch, Christian Betzler, Gregor P. Eberli, Sebastian Lindhorst, Thomas Lüdmann, John J.G. Reijmer

PII: S0037-0738(17)30240-3
DOI: doi:10.1016/j.sedgeo.2017.10.013
Reference: SEDGEO 5256

To appear in: *Sedimentary Geology*

Received date: 4 July 2017
Revised date: 26 October 2017
Accepted date: 27 October 2017

Please cite this article as: Wunsch, Marco, Betzler, Christian, Eberli, Gregor P., Lindhorst, Sebastian, Lüdmann, Thomas, Reijmer, John J.G., Sedimentary Dynamics and High-Frequency Sequence Stratigraphy of the southwestern slope of Great Bahama Bank, *Sedimentary Geology* (2017), doi:10.1016/j.sedgeo.2017.10.013

Sedimentary Dynamics and High-Frequency Sequence Stratigraphy of the southwestern slope of Great Bahama Bank

Marco Wunsch[1*], Christian Betzler[1], Gregor P. Eberli[2], Sebastian Lindhorst[1], Thomas Lüdmann[1], John J. G. Reijmer[3]

[1] *Institut für Geologie, Universität Hamburg, Bundesstr. 55, 20146 Hamburg, Germany*

[2]*Center for Carbonate Research, University of Miami, 4600 Rickenbacker Causeway, Miami, FL 33149, USA*

[3]*College of Petroleum Engineering and Geosciences, King Fahd University of Petroleum & Minerals, KFUPM Box 2263, Dhahran 31261, Saudi Arabia*

*Corresponding author: Institut für Geologie, Universität Hamburg, Bundesstrasse. 55, 20146 Hamburg, Germany, Email: marco.wunsch@uni-hamburg.de

Abstract

New geophysical data from the leeward slope of Great Bahama Bank show how contour currents shape the slope and induce re-sedimentation processes. Along slope segments with high current control, drift migration and current winnowing at the toe of slope form a deep moat. Here, the slope progradation is inhibited by large channel incisions and the accumulation of large mass transport complexes, triggered by current winnowing. In areas where the slope is bathed by weaker currents, the accumulation of mass transport complexes and channel incision is rather controlled by the position of the sea level. Large slope failures were triggered during the Mid-Pleistocene transition and Mid-Brunhes event, both periods characterized by changes in the cyclicity or the amplitude of sea-level fluctuations. Within the seismic stratigraphic framework of third order sequences, four sequences of higher order were identified in the succession of the upper Pleistocene. These higher order sequences also show