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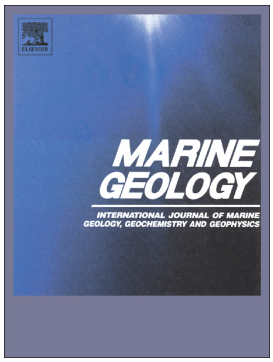


# The role of deep-water sedimentary processes in shaping a continental margin: The Northwest Atlantic

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PII: S0025-3227(17)30407-3
DOI: doi: 10.1016/j.margeo.2017.08.018
Reference: MARGO 5679

To appear in: *Marine Geology*

Received date: 31 October 2016
Revised date: 19 August 2017
Accepted date: 24 August 2017

Please cite this article as: D.C. Mosher, D.C. Campbell, J.V. Gardner, D.J.W. Piper, J.D. Chaytor, M. Rebesco , The role of deep-water sedimentary processes in shaping a continental margin: The Northwest Atlantic, *Marine Geology* (2017), doi: 10.1016/j.margeo.2017.08.018

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ACCEPTED MANUSCRIPT

**The role of deep-water sedimentary processes in shaping a continental margin: the Northwest Atlantic**

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**Abstract**

The tectonic history of a margin dictates its general shape; however, its geomorphology is generally transformed by deep-sea sedimentary processes. The objective of this study is to show the influences of turbidity currents, contour currents and sediment mass failures on the geomorphology of the deep-water northwestern Atlantic margin (NWAM) between Blake Ridge and Hudson Trough, spanning about 32 degrees of latitude and the shelf edge to the abyssal plain. This assessment is based on new multibeam echosounder data, global bathymetric models and sub-surface geophysical information.

The deep-water NWAM is divided into four broad geomorphologic classifications based on their bathymetric shape: graded, above-grade, stepped and out-of-grade. These shapes were created as a function of the balance between sediment accumulation and removal that in turn were related to sedimentary processes and slope-accommodation. This descriptive method of classifying continental margins, while being non-interpretative, is more informative than the

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