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Editorial – Beach erosion at Negril

SIMON F. MITCHELL

Department of Geography and Geology, The University of the West Indies, Mona, Kingston 7, Jamaica.
Email: simon.mitchell@uwimona.edu.jm or barrettia2000@yahoo.co.uk

Beach erosion at Negril has been a serious issue for many years. *The Sunday Gleaner* (3rd August, 1975, p. 9) was already raising concerns noting that wave action continually brings new material onshore and carries it by alongshore drift in the direction of the prevailing winds, whereas the construction of groins disrupts this process leading to leeward erosion of the beach. Hurricane Allen in 1980 caused extensive erosion of the beach at Negril, but the sand was reworked back onto the beach within two weeks (M. Hendry writing in *The Daily Gleaner*, 2nd October, 1985, p. 8). By 1998, a loss of nearly 33 feet of sand at Negril was reported (*The Gleaner*, 7th July, 1998), and each passing hurricane exasperates the problem (*The Sunday Gleaner*, 7th March 2004).

A common misconception is that the sand from the beach is derived from the offshore reefs, yet analyses of the beach sand indicate that it is generated in the seagrass beds between the shoreline and the reefs (M. Hendry writing in *The Daily Gleaner*, 2nd October, 1985, p. 8; Mitchell et al., 2002). That is not to say the reefs do not have a role to play in protecting the beach from incoming waves.

This thematic volume of the *Caribbean Journal of Earth Sciences* draws together five papers dealing with different aspects of the problem.

Robinson and Hendry (2012) deal with the longer-term evolution of the Negril area, describing the geology of the Negril area, its elevation above sea-level some ten million years ago, the development of the river systems and offshore, underwater cliff, and sea-level fluctuations over the last 18,000 years

Mondon and Warner (2012) consider engineering solutions to beach erosion at Negril. They use the coastal process model MIKE21 to simulate the short-term beach response to a swell event if submerged breakwaters are constructed. Using the November 2006 swell event that affected Negril, they conclude that the construction of breakwaters would result in a significant decrease in the alongshore sediment transport rates reducing the amount of beach erosion by up to 50%.

Rhiney (2012) considers the development of tourism in Negril, from a remote fishing village in the 1960s to the modern rapidly expanding tourist town.

Robinson et al. (2012) consider shoreline changes and sea level rise at Negril. They discuss the modern morphology of the beach barrier system and use aerial photographs and satellite imagery from 1971 to 2008 to look at historical shoreline changes demonstrating a mean annual shoreline retreat of 23 cm/yr. They then considered how different scenarios of sea-level rise would affect the beach-barrier system. They suggest the adoption of a Coastal Vulnerability Index (CVI) and an Estimated Hazard Area (EHA) for coastal planning and management of Negril.

McKenzie (2012) documents the history of erosion and recovery due to the passage of hurricanes (Mitch in 1998, Michelle in 2001, Ivan in 2004, Wilma in 2005 and Dean in 2007) on Negril beach, and suggests that the beach requires at least 3-4 years to recover to pre-storm conditions for a category 4 storm.

REFERENCES

McKenzie, A. 2012. Beach Responses to Hurricane Impacts: A Case Study of Long Bay Beach, Negril, Jamaica. *Caribbean Journal of Earth Science*, **43**, 51-58.

Mitchell, S., Khan, S., Maharaj, R. and Robinson, E. 2002. Carbonate beach sediment composition at a tourist beach, Negril, Jamaica. *In:* **O.T. Magoon, L.L. Robbins & L. Ewing, (Eds.)**, *Carbonate Beaches, 2000*, American Society of Civil Engineers: 204-217.

Mondon, E. M. and Warner, P.S. 2012. Evaluation of a proposed solution to beach erosion at Negril. *Caribbean Journal of Earth Science*, **43**, 11-23.

Rhiney, K. 2012. The Negril tourism industry: growth, challenges and future prospects. *Caribbean Journal of Earth Science*, **43**, 25-34.

Robinson, E. and Hendry, M. 2012. Coastal change and

evolution at Negril, Jamaica: a geological perspective. *Caribbean Journal of Earth Science*, **43**, 3-9.

Robinson, E., Khan, S, Coutou, R. and Johnson, M. P.S. 2012. Shoreline changes and sea-level rise at Long Bay, Negril, western Jamaica. *Caribbean Journal of Earth Science*, **43**, 35-49.

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