



## **uMdloti, KwaZulu Natal, South Africa**

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**uMdloti, KwaZulu Natal, South Africa.** The coastline is a dynamic environment. Complex nonlinear interactions between waves, weather and currents drive physical processes that occur at a range of temporal and spatial scales. This image is taken with a delayed exposure to reveal some of these processes. Feedback mechanisms between waves, currents and the coastline lead to interesting features. Process-based models that attempt to predict such changes are computationally demanding. Stochastic models are an attractive alternative because they are less computationally demanding. However, many of these models do not retain the physical links between the drivers of shoreline change. Recent advances in stochastic modelling that exploit links between weather and waves present a new method to explore shoreline change due to fluctuations in wave behaviour (Corbella, Pringle, and Stretch, 2015). These modelling advances aid researchers in determining coastal processes, such as the influence of the warm Mozambique current on the subtropical beaches of KwaZulu Natal (Photograph taken April 2016 by Dr. Justin Pringle, University of KwaZulu Natal, KwaZulu Natal, South Africa.)

### LITERATURE CITED

Corbella, S.; Pringle, J., and Stretch, D.D., 2015. Assimilation of ocean wave spectra and atmospheric circulation patterns. *Coastal Engineering*, 100, 1–10.