



## **Wind regimes and the formation of ventifacts along the South African coast**

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The high energy coast of South Africa is characterized by strong onshore winds and swell from the Southern Ocean, and high sediment availability, resulting in sandy beaches and extensive sand dunes that have been dated to multiple periods from the last interglacial onwards. Present sand dynamics along the South African coast (whether dune, beach, microestuary, barrier, lagoon or nearshore are largely unknown, however, and there are very few case studies that have explored on any of these either singly or in combination. This study is based on one element of coastal sediment dynamics, which is the impact of windblown sand on coastal geomorphology. We present morphological evidence on coastal ventifacts developed on sandstone boulders and bedrock outcrops within the upper intertidal zone of a sandy beach near East London, Eastern Cape, South Africa. Wind abraded landforms include classic dreikanter ventifacts with two or three abraded facets separated by sharp keels; tafoni type weathering pits; polished rock surfaces; and elongate grooves. The surfaces showing greatest abrasion are aligned in the direction of the prevailing wind, from southwest to northeast, corresponding to cross-shore transport. In addition, free dunes at the back of the beach also show evidence for migration in the direction of the prevailing wind. Thus, both ventifacts and dunes at this site reflect the same climatic forcing.