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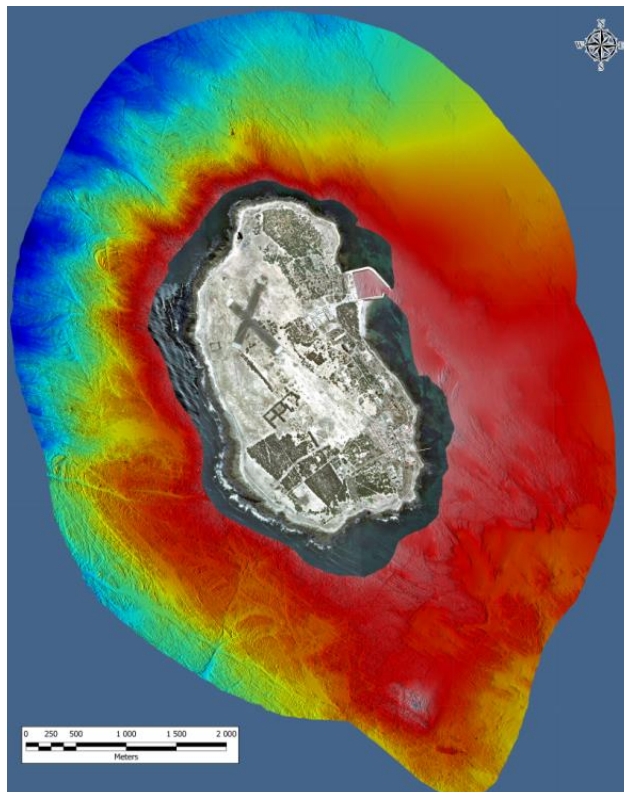
The marine geology of the 1 nautical mile exclusive zone around Robben Island, South Africa

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Robben Island is situated in the Western Cape Province of South Africa approximately 7 km due west of Big Bay Beach in Table Bay, Cape Town. The island is comprised of predominantly Neoproterozoic rocks of the Malmesbury Group at its base, mantled by Pleistocene deposits. Intruded into the basal lithologies are Cretaceous dolerite dykes that are related to the break-up of Gondwana and the opening of the Atlantic Ocean.

The Malmesbury rocks which comprise the island's base form part of the Neoproterozoic/ Early Cambrian Pan-African Saldania Belt. This margin has been described as being poorly understood owing mainly to the fact that for the large majority of its occurrence it is primarily buried under the thick siliciclastic sediments of the Early Palaeozoic Cape Supergroup [1]. Outcrops are generally small or deeply weathered. The total area encompassing the one nautical mile zone around Robben Island and everything exposed above sea-level is approximately 34.4 km². Rowe *et al.* [2] used the exposed Malmesbury rocks around the island's margin to deduce the structural and tectonic setting under which these rocks formed. This area is approximately 0.6 km². The mapped seafloor for this study is almost exclusively, exposed Malmesbury rocks, accounting for approximately 90% of the area (26.0 km²).



The seafloor within this zone has been mapped by the Marine Geoscience Unit of the Council for Geoscience using multibeam echosounder, sidescan sonar, marine magnetometer and various sub-bottom profiling systems. These data have been used to better constrain the tectonic regime that deformed the basal rocks, chart previously uncharted magnetic lineations and infer sediment dynamics for the region. Through the mapping campaign marine archaeological sites have been constrained and new sites identified. A new chapter in the island history has been opened in the form of its marine geological heritage.

References:

[1] Frimmel, H et al. (2013) *Precambrian Research* 231:218-235

[2] Rowe C et al. (2010) South African Journal of Geology 113:57-7

Figure 1. Multibeam bathymetric chart of the one nautical mile zone around Robben Island, South Africa

