

Lee, J.R.; Thomas, R.J.; Burke, H.F.; Farrant, A.R.; Price, S.J.; Goodenough, K.M.. 2012 *Geology of the Ghayathi 1:100 000 map sheet, 100-29, United Arab Emirates*. Nottingham, UK, British Geological Survey, 55pp.

This Sheet Description describes the Quaternary and solid geology of the Ghayathi 1:100 000 scale geological map. The Ghayathi district is situated within the Western Region of the Emirate of Abu Dhabi, and represents a transitional area in terms of its physiography and geology between the coastal zone to the north around Ruwais, and the Liwa desert situated to the south. In the north of the district, the geology is dominated by Miocene-age sandstones and limestones of the Baynunah Formation that form a series of deflation surfaces and occasional mesas across the northern part of the sheet. Pavements of calcareous siltstone and limestone in the upper part of the Baynunah Formation (Hamra Member) host several Proboscidean trackways. The Miocene rocks are overlain by the Pleistocene quartzose aeolianite facies of the Madinat Zayed Formation and to a lesser extent, the carbonate-rich Ghayathi Formation aeolianites. Both the Miocene rocks and the Madinat Zayed Formation have undergone extensive erosion and deflation, and much of this sand has been transported south to create the extensive dune fields that occupy much of the southern part of the district. These dune fields are predominantly composed of fields of low dunes separated by areas of sand sheet and sand veneer. The trend of the modern dune fields demonstrates migration towards the south-east and south-south-east and this mirrors the streamlined form of many of the eroded mesas and deflation surfaces in the north of the district that are aligned parallel to the northern 'Shamal' wind.

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