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Uplift of Southern Africa commenced with the split of the Gondwana continent and formation of the proto-Indian and proto-Atlantic Oceans. Further uplift and headward erosion by coastal rivers into the high standing interior plateau has created the Great Escarpment landscapes. These vary depending on the rock type being eroded. Along the eastern sector, resistant quartzites of the Wolkberg and Transvaal Supergroup dominate and have resulted in dramatic scarp faces, waterfalls and canyons (Figs. 1 and 2). To the southeast, a 1500m succession of resistant basaltic lava flows of the Karoo Supergroup have given rise to the highest and most dramatic Drakensberg sector of the Great Escarpment, with elevations of well over 3000m. The more than 900m high Tugela waterfall, the second highest in the world, cascades over the scarp face. Along the southern sector, resistant dolerite dykes, sills and sheets dominate the scenery, and have given rise to a ragged escarpment edge with sills forming columnar jointed, flat-topped mesas (Fig. 3). The geologically-based scenic features of the Great Escarpment are the foundation of a hugely important tourism industry in which geotourism is becoming increasingly important.

Figure 1: The Eastern escarpment edge at Blydepoort dam, dominated by resistant Wolkberg quartzite, and with an active cavernous calcareous tuffa waterfall (green slope to the right) and extinct tuffa in centre.

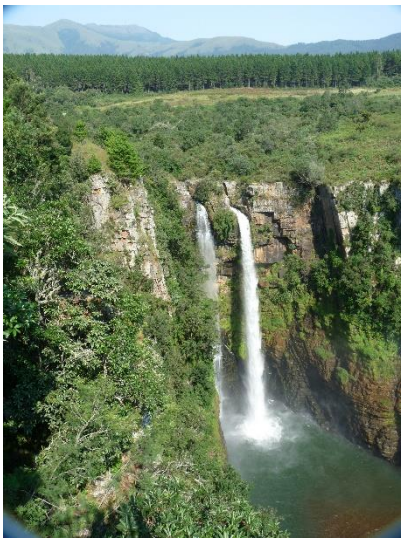

Figure 2: Macmac Waterfall on resistant quartzite and controlled by an east – west trending vertical joint set.

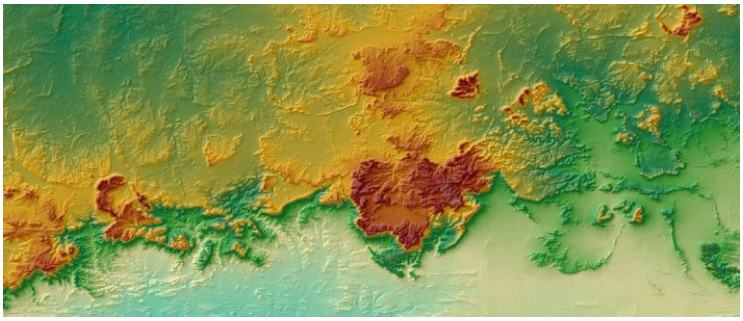

Figure 3: Digital terrain image of the southern sector of part of the escarpment region highlighting the ragged landscape features controlled by resistant dolerite intrusions.

References:

[1] McCarthy T and Rubidge B (2005) The Story of Earth and Life: Struik Publishers, 334

[2] Whitfield G (2015) 50 Must-see Geological Sites: Struik Nature, 320