



BRIEF BACKGROUNDS

DIAMOND CLIFFS –THE MARLING SPIKES

HOMEVALE NATIONAL PARK, NEBO DISTRICT

The Diamond Cliffs, Marling Spikes, and Sydney Heads are scenically spectacular cliffs, peaks and spires rising 600m above the surrounding landscape in the east of Homevale National Park, which is north of Nebo and southwest of Mackay.

They are composed of volcanic rocks and intrusions which were erupted in the Oligocene epoch of the Tertiary period about 30 million years ago, covering much older volcanic rocks of Permian age.

The first rocks erupted were basalt lavas. They were followed shortly after by trachyte and rhyolite lavas and pyroclastics (magma fragmented during eruption and then re-consolidated).

The spectacular scenery derives from differential erosion between the resistant trachytes and rhyolites and the more easily eroded basalts. Cliffs, lava-topped ridges and spires rise as much as 100m above surrounding scree slopes.

The *Diamond Cliffs* are a 4 km-long, east-west trending series of escarpments consisting of rhyolite breccias (coarse fragmental rocks). They rise sheer 80m to around 900m in elevation, but rise more gently to reach 1085m at their probable source, a hill just north of the cliffs (at GR 630 360). The breccias consist of fragments of massive to flow-banded rhyolite, pitchstone (volcanic glass) and welded tuff up to several metres across. They are likely to have

been erupted from multiple-source vents, including some now occupied by dykes and plugs.

The breccias of the cliffs descend southward along a ridge to *Sydney Heads*, where they overlie basalt at an elevation 300m lower than in the Diamond Cliffs themselves. Nearby the basalt is intruded by rhyolitic plugs which form the *Marling Spikes*. These plugs show well-developed columnar joints, steep or vertical flow banding, and have steep, brecciated margins.

The *Mount Britton 'Volcano'* 4km south of the Marling Spikes is smaller than the Diamond Cliffs, but again consists of a thick sequence of pyroclastics (including ash flows) capped by rhyolite lavas, which overlie basalt lavas lower down. Dykes and plugs intrude both parts of the sequence.

The Diamond Cliffs area probably evolved when rhyolitic volcanoes erupted violently through a landscape previously filled relatively quietly with basalt lavas, and deposited large volumes of breccias. Dykes and plugs which intrude the breccias may have been the source of later volcanics perhaps stripped off by erosion and no longer outcropping.

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