

15. Mt Jukes Lookout



Key facts about this geosite:

- The eastward trending ridge-line extending from Mt Jukes shows a glacially carved moraine ridge made up of Owen Conglomerate boulders
- The area shows outcrops of the Mount Read Volcanics
- The skyline to the east shows jagged peaks (including Frenchmans Cap) which are made up of resistive, Precambrian quartzite
- The general location of the Darwin Crater, a meteorite impact feature is to the south east of this site

How to get there: From Queenstown drive south along the Mt Jukes Road for approximately 18 kilometres (Figure 1). The lookout is located on the left hand side of the road about 1 kilometre east the Mt Huxley Lookout.

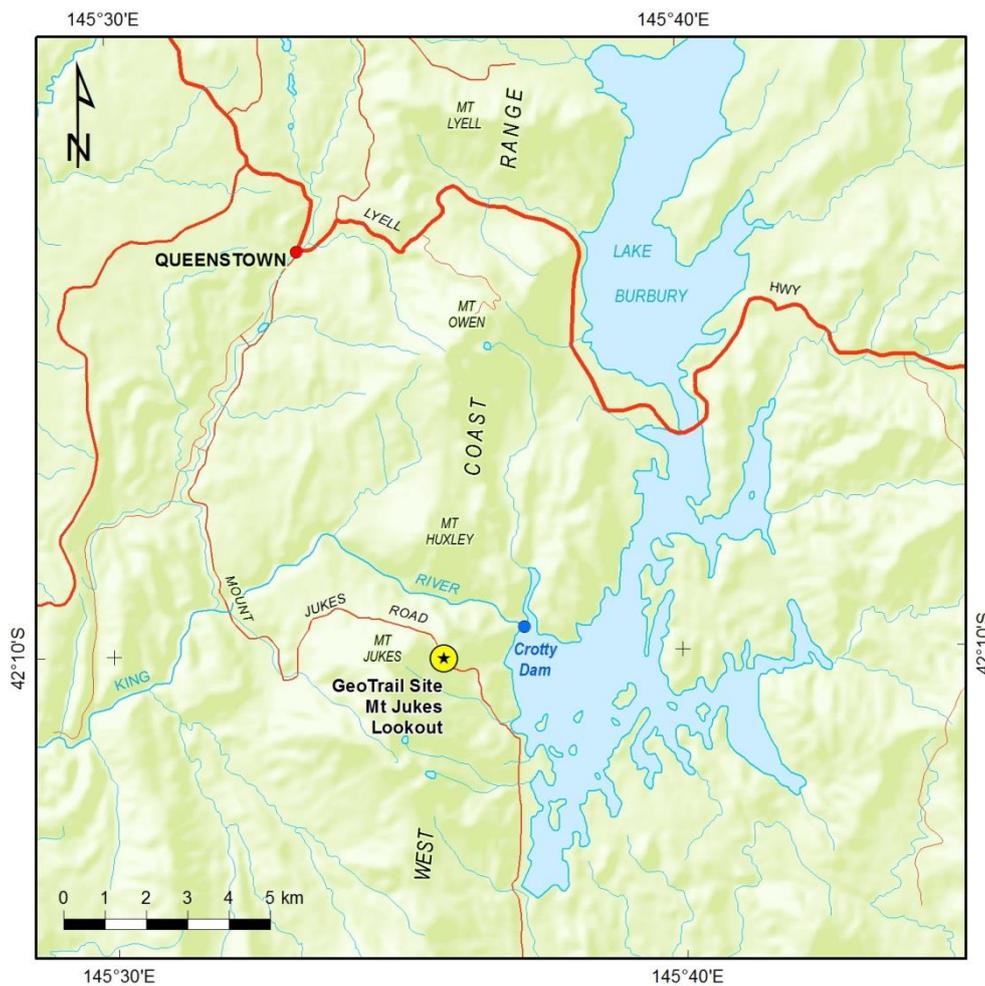


Figure 1. Location of the Mt Jukes Lookout Geosite

Geosite Description: From the Mt Jukes Lookout there are extensive views towards Frenchmans Cap in the east and Mt Jukes to the south. A schematic geological interpretation of the view to the east is shown in Figures 2 and 3.

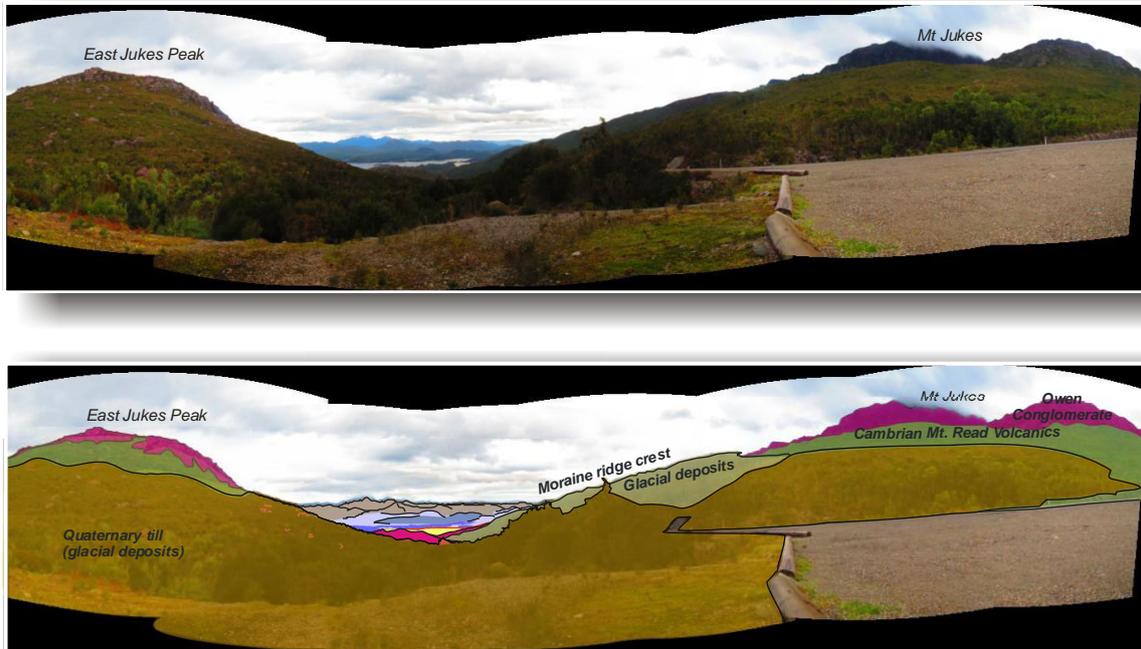


Figure 2. The photograph above looking east from the car park has a schematic geological interpretation of the view below it.

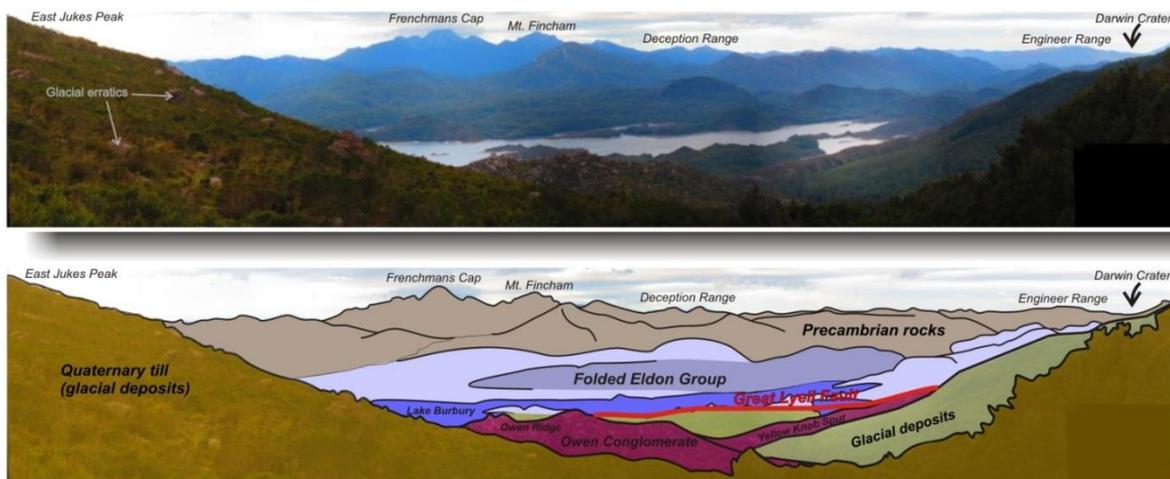


Figure 3. The photograph above looking south east across man-made Lake Burbury to Frenchmans Cap with a schematic geological interpretation of the view below.

The rocks behind you, on Mt Jukes and West Jukes Peak (Figure 4), comprise a sequence of pink coloured conglomerate, sandstone and siltstone, which geologists have named the [Owen Conglomerate](#). The pebbles which make up the conglomerate include quartz, quartzite, quartz sandstone, pale pink mudstone and chert, embedded in a matrix of sand. They were deposited in the Late [Cambrian](#) to Early [Ordovician](#) periods. Boulders, sand and silt were eroded, mainly from older Precambrian rocks to the east, and deposited in [alluvial fans](#), [deltas](#) and in shallow marine environments. The conglomerate was derived from the highlands of the uplifted Tyennan Block and is up to 1500 meters thick.



Figure 4. View to Mt. Jukes as seen from below.

The Owen Conglomerate includes coarse-grained quartz rich sandstone ([siliciclastics](#)) and conglomerate which were deposited in a [rift](#) during Late Cambrian extension (Noll and Hall, 2007).

Evidence for ancient volcanoes: Below the Owen Conglomerate (shown in pink in the diagram above), there is a general abrupt contact with the slightly older Middle Cambrian [Mount Read Volcanics](#) (in green), derived from submarine volcanoes about 500 million years ago. Many western Tasmanian ore deposits, notably Mt Lyell (copper, silver and gold) and Rosebery (zinc, lead, gold and silver) formed at this time. Where the underlying volcanics are bedded, the contact can be seen to be an [angular unconformity](#).

The Mount Read Volcanics are a 250 km long belt that is 10 to 20 km wide along the western edge of the [Tyennan Block](#) or eastern side of the Dundas Element. The volcanics were erupted under water and are interbedded with (commonly pumice rich) sediment. A range of compositions are present along with intrusions, lavas and volcanic derived sedimentary rocks. The massive sulphide were formed by hot springs on the sea floor. These have become ore deposits for copper, lead, zinc and silver.

Ancient Seas: Across the lake, the ranges in the near distance are composed of Silurian to Devonian sedimentary rock units ([Eldon Group](#)) deposited in ancient seas. These rocks span a large open fold called a [syncline](#). The Silurian to Lower Devonian Eldon Group is locally [disconformable](#) and erosional on the Gordon Group in western Tasmania but elsewhere the contact is conformable and transitional. Up to five kilometres thickness of Eldon Group rocks are preserved in the axial parts of major Devonian synclines (Calver et al, 2014). The extent of these rocks are outlined in Figure 5.

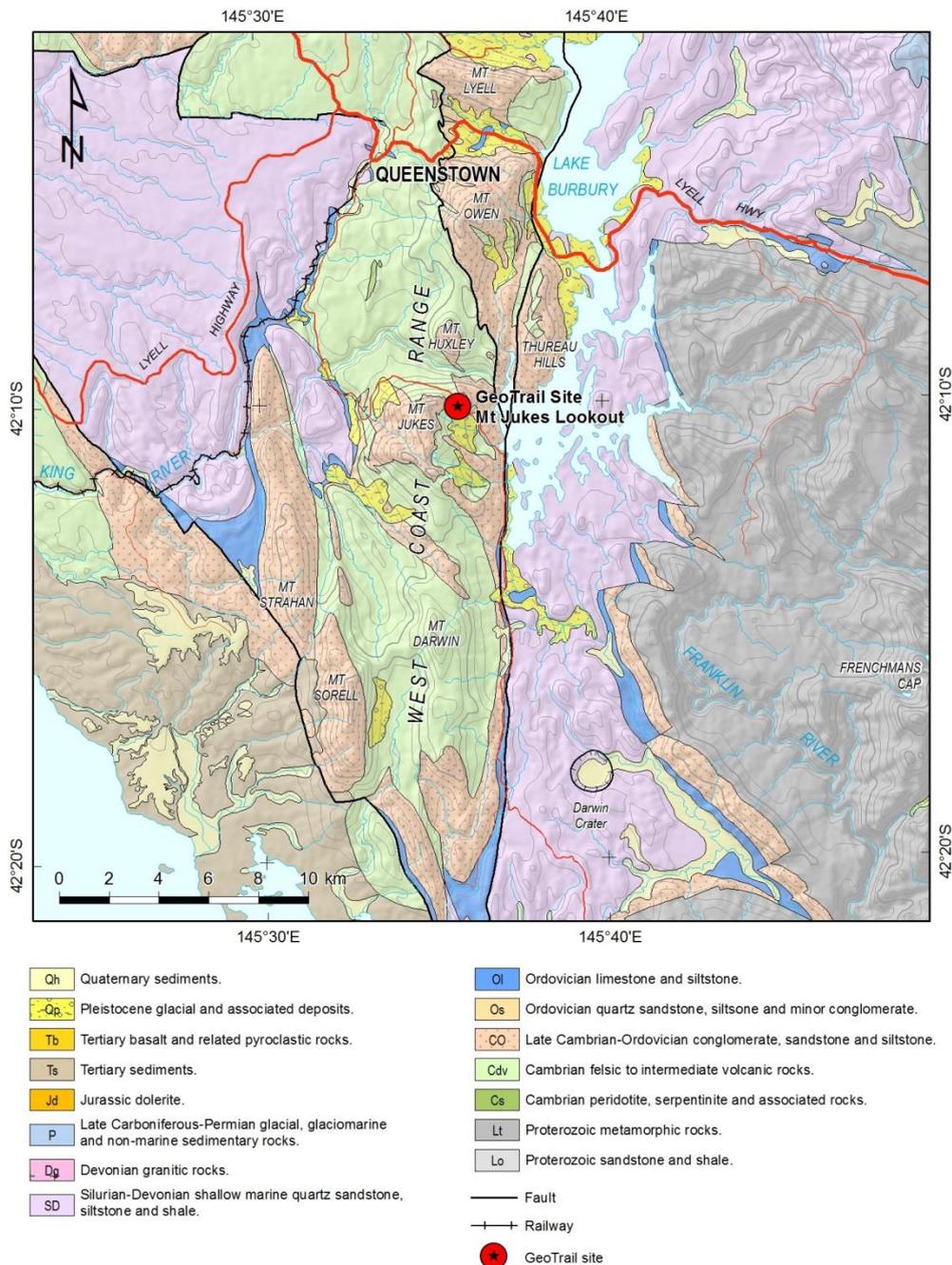


Figure 5. Geological map of the West Coast Range and Lake Burbury showing distribution of major rock sequences near Mt Jukes including the Mount Read Volcanics (Cdv; Cambrian felsic to intermediate volcanic rocks) and the Owen Conglomerate (CO; Late Cambrian-Ordovician conglomerate, sandstone and siltstone) and the Eldon Group (SD; Silurian-Devonian shallow marine quartz sandstone, siltstone and shale).

The mountains in the far distance (Frenchmans Cap, Deception and Engineer Ranges) are composed of older, folded [Precambrian](#) sequences and form part of the Tyennan region of western and southern Tasmania. In the Tyennan region, the Precambrian basement is largely composed of [metamorphic rocks](#) including schist, phyllite and quartzite.

Glaciers: In front of you much younger [Cenozoic](#) deposits, mainly glacially derived till, rest on all these older rocks. Glaciers scoured out this valley during the [Pleistocene](#) epoch. The crest of a [moraine](#) ridge is directly to the east of Mt Jukes.

During the Pleistocene epoch a 1000 km² ice cap developed and glaciers scoured the valleys along the ice cap's outer perimeter and during glacier retreat (Corbett and Brown, 1976). The ice cap on the Central Plateau was around 65 km in diameter. Its western limit was the Du Cane Range and Lake St Clair. Significant areas of till are found in the central highlands and these areas are arranged roughly in a circular zone around the former ice cap. Glaciers flowed out into the Franklin River, the Canning Valley, and north into Forth and Mersey Rivers (Corbett and Brown, 1976). Glaciers were also common on the west coast - at Mount Murchison, Mount Tyndall and the Eldon Range. Glaciers flowed into the Henty River and King River. Moraines were deposited at Crotty and the Henty Road. Ice pushed out from the King River Glacier into Linda, Comstock and Nelson Valleys. There are also [cirques](#) on Frenchmans Cap, the West Coast Range, the Denison Range, and King William Range (Corbett and Brown, 1976).

The [Darwin Meteorite Crater](#): Figure 5 shows the general location of the Darwin Crater, a **meteorite impact crater** which was discovered by the geologist Ramsay J. Ford in 1972. He was looking for the source of Darwin glass, formed when rocks were melted by the impact and scattered over more than 400 square kilometres of south-western Tasmania. The Darwin glass is approximately 816,000 years old (Colhoun et. al., 2014).

References:

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