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Highlights:

- 1) The summit ridgeline of Tongariro volcano forms a glacial cirque, constructed and shaped by volcanism in close association with a substantial ice cap during MIS 4 and 5.
- 2) The basal unit is a thick hyaloclastite formed within a subglacial lake, beneath relatively thick ice.
- 3) South-trending ridgelines are composed of lava-volcaniclastic sequences, indicating emergence of the edifice where heated meltwater carved channels through the ice.
- 4) Lava flows and lobes were either restricted to high topography or confined within subglacial channels and cavities.
- 5) Eruption-fed, waterlain flow deposits located at the top of the cirque are among the few documented examples of andesitic primary clastic material in glaciovolcanic settings. These formed by drainage of explosively erupted material mixed with meltwater.

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