

## Holocene volcanism at the Quetrupillán Volcanic Complex (39°30' S, 71°43' W), southern Chile

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### NON-TECHNICAL SUMMARY

Quetrupillán Volcanic Complex is a volcano in Chile about which relatively little has been published. It is important to investigate how volcanoes have acted in the past, in order to understand how they might erupt again in the future. To study past activity at Quetrupillán we conducted fieldwork on the volcano, mapping lava fields and collecting rock samples from lava fields and pyroclastic sequences, which were then analysed in the laboratory to determine their chemistry. We were unable to determine the number of eruptions that have occurred from the summit of Quetrupillán, as glacial erosion has removed much of the volcanic material produced. However, activity has also occurred from sixteen vents on the flanks of the volcano, representing about ten eruptions, which produced lava fields, scoria cones and tuff rings. We identified three tephra layers from Quetrupillán in surrounding valleys, indicating that three explosive eruptions have occurred. Future activity at Quetrupillán may occur either from the summit vent, or from a new vent on the flanks of the volcano. Lava fields or pyroclastic density currents produced by a future eruption are unlikely to reach centres of population, however, there are isolated settlements in the high valleys surrounding Quetrupillán that may be affected by these volcanic hazards.

Keywords: Holocene; Volcanism; Chile; Trachyte; Glacier-volcano interactions;

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