

# Managing volcanic unrest on the Tongariro Alpine Crossing

The Tongariro Alpine Crossing traverses an active volcano – Ngāuruhoe, Red Crater and Te Maari vents have all erupted in the last 100 years. The Department of Conservation actively manages volcanic risk on the track and responds decisively to changes in volcanic unrest.

The main methodology for managing volcanic risk on the Tongariro Alpine Crossing and Tongariro Northern Circuit is identifying closure points based on the GeoNet Volcanic Alert Level (VAL).

See the GeoNet website for more info on the system: <https://www.geonet.org.nz/about/volcano/val>

The three active vents on Mt Tongariro – Ngāuruhoe, Red Crater and Te Maari normally sit at VAL 0 (no volcanic unrest). When the VAL increases to 1 (minor volcanic unrest), DOC closes the track and assesses the risk of an eruption occurring. The length of this initial VAL 1 closure period is determined by the data available, risk assessments and input from GNS and/or other subject matter experts. If DOC is confident that the probability of an eruption is low, and the level of risk is tolerable, then the track is reopened.

At VAL 2 and above, the track is closed until the activity has deescalated to VAL 1 or VAL 0. Again, the assessment to reopen would involve risk assessments and expert input.

The primary learning from the Te Maari eruptions in August and November 2012 was the need for DOC to be decisive in its risk management actions and respond quickly to increasing unrest. This is why DOC closes the track at VAL 1 and assesses the situation.



Te Maari after the 6 August 2012 eruption

## Volcanic light signs

The light signs are deployed at Ketetahi and Mangatepōpō road ends when increasing volcanic unrest is detected (increased seismicity, gas emissions, etc), but is not enough to trigger a change in VAL. The light signs enable DOC to quickly and remotely close the track by setting them to red if the VAL suddenly increases to 1. DOC would then formally close the track, ensure everyone is off the mountain, lock the road gates and notify the public and concessionaires.