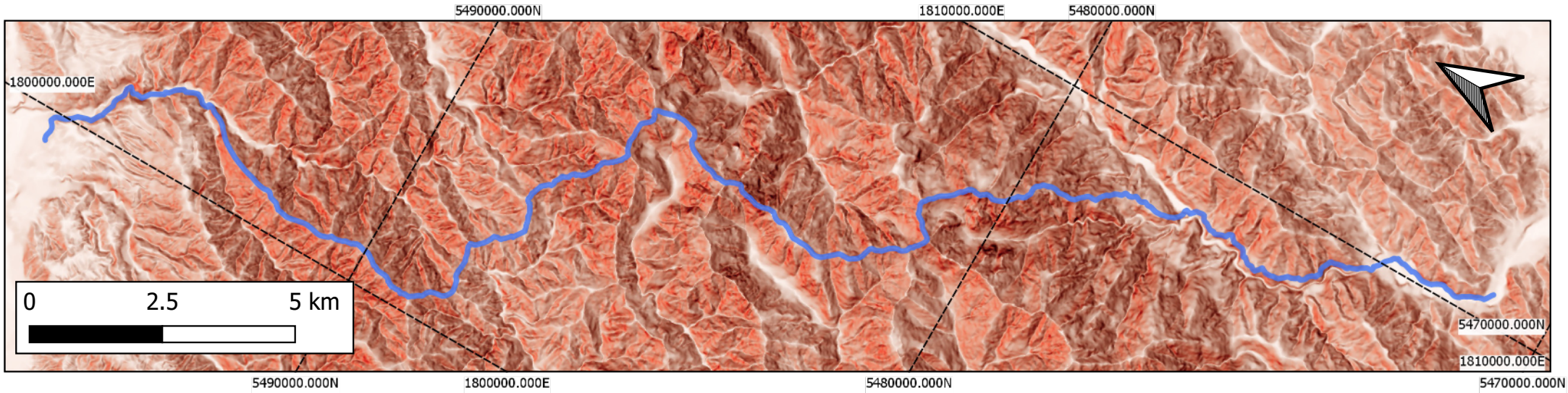
Ruggedness of the Tararua Northern Crossing

By Zade Viggers

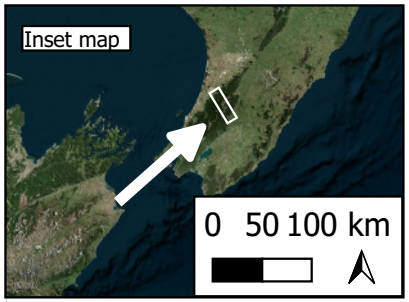


Northern Crossing Route

Ruggedness index

36

0



The Tararua Northern Crossing is a classic multi-day tramping route through the rugged Tararua Range, typically running from Poads Road to The Pines. Depending on weather conditions it can take between three to five days to complete.

The Northern Crossing covers some famous Tararua peaks such as Pukematawai (1432 m), Arete (1505 m), Waiohine Pinnacles (1400 m), Girdlestone (1546 m) and Mitre (1571 m), which is the highest peak in the park.

This map shows the route of the Northern Crossing, displayed over the Terrain Roughness Index of the surrounding mountains.

The Terrain Ruggedness Index is here combined with a hillshade to better visualise the shape of the mountains.

Below, a profile of the Terrain Ruggedness Index across the length of the track is displayed. It varies a lot over the course of the route, but often changes rapidly, and a lot of the terrain covered is in the higher values.

The Terrain Ruggedness Index (TRI) quantifies the variation in elevation within a landscape. It was introduced by Riley et al. (1999) as a means to measure terrain heterogeneity, particularly for habitat studies.

The TRI is computed from a Digital Elevation Model by calculating the difference in elevation between each cell and its surrounding neighbors, typically within a 3x3 moving window. The roughness value is the sum of the absolute differences between the central cell and its adjacent cells, with higher values indicating more rugged terrain. TRI values can vary depending on DEM resolution.

For a rough idea of what TRI values mean, ~0-5 is flat gentle terrain, ~10-15 is more moderate and could get into some scrambling, and ~30-40 could have near vertical areas.

Ruggedness index profile