



**Manaaki Whenua**  
Landcare Research

## LENZ - Mean minimum temperature of the coldest month

### Title

Mean minimum temperature of the coldest month - LENZ

### Creator

Landcare Research Ltd

### Publisher

Landcare Research Ltd

### Date

2003-01-01

### Description

Mean minimum temperature of the coldest month data layer used in the creation of Land Environments of New Zealand (LENZ) classification. Mean minimum temperature of the coldest month is recorded in °C. The climate station data used in the development of this climate surface were derived from summaries of climate observations published by the New Zealand Meteorological Service, using data collected over the period from 1950-1980. Estimates of the mean minimum temperature in July, the coldest month of winter, were derived from a surface fitted to monthly estimates of mean daily temperatures. The resulting data layer was created by coupling a 100 m DEM with a thin-plate spline surface fitted to an irregular network of 346 meteorological stations. The resulting 100 metre layer was then interpolated to 25 metres using bilinear interpolation. Additional details such as the climate station locations used in the creation of the layer and error maps are defined in the attached LENZ Technical Guide.

### Source

All climate layers used in LENZ were derived either directly or indirectly from mathematical surfaces (thin-plate splines) that use information about the climate, location and elevation of a number of meteorological stations. Locations are described either in terms of their latitude and longitude or their coordinates on a map projection such as the New Zealand Map Grid (NZMG). Each surface is calculated using a process in which data values for each climate station are omitted in turn and its climate is predicted from the surrounding stations. This process is repeated until no further improvement can be made to the fit of the surface to the raw data. Surfaces can be simultaneously fitted to up to 12 variables, typically monthly data for various climate parameters, e.g., monthly estimates of temperature or rainfall. Additional details such as the climate station locations used in the creation of the layer and error maps for this layer are defined in the attached LENZ Technical Guide. Once the surface has been fitted, predictions can be made for any point of known location and elevation. For example, coupling the surface with a digital elevation model, a regular grid of elevation values, allows the generation of digital climate maps as used in the creation of LENZ. Finally, maps that show the standard errors of the predicted values can be derived using results from more sophisticated analyses of the errors associated with the climate surfaces. The majority of the climate station data used in the development of our climate surfaces were derived from

summaries of climate observations published by the New Zealand Meteorological Service. Temperature and rainfall data were collected over the period from 1950 to 1980, while data describing humidity and solar radiation consisted of averages of all data collected up until 1980. Some additional short-duration records of rainfall, including information from storage rain gauges, were used to describe geographic variation in high-rainfall mountainous areas of the South Island.

Coverage

-47.505151 166.122046 -33.959618 179.601635

Format

ESRI Binary Grid Raster Dataset

Identifier

<https://iris.scinfo.org.nz/layer/48092-lenz-mean-minimum-temperature-of-the-coldest-month/>

Type

grid

Language

en

Subject

Environment

Subject

Climatology/Meteorology/Atmosphere

Subject

Temperature

Subject

Climate

Subject

Cold

Subject

New Zealand

Subject

Downloadable Data

Subject

environment

Subject

climatologyMeteorologyAtmosphere