



## Soil moisture PED annual average 1972-2014

Title	Soil moisture PED annual average 1972-2014
Creator	Environmental Reporting, Ministry for the Environment and Statistics New Zealand
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Description	"Soil moisture is important for plant growth. A lack of moisture content over a growing season is a good indicator of drought, which can have social, environmental, and economic impacts. Increasing temperatures and changes in rainfall patterns are expected to increase the frequency and intensity of drought in many regions. Growing season soil moisture deficits are estimated by the potential evapotranspiration deficit, the difference between rainfall and evapotranspiration. This dataset shows annual average soil moisture (potential evapotranspiration deficit (PED)) across New Zealand for years 1972 to 2014. Evapotranspiration is the loss of water by evaporation and plant transpiration. PED is the difference between estimated evapotranspiration and rainfall. We produced maps of the annual PED total (in millimetres) for every growing season (calculated as July-June years) from 1972 to 2013. Care should be taken when comparing maps from year to year - days may be missing from the PED GIS data, and data may have been interpolated to complete the dataset. The interpolation accuracy is lowest in areas of high elevation, where there are fewer climate stations and complex terrain affects accuracy. Climate stations may also open and close, affecting the accuracy of the data provided. This dataset relates to the ""Soil moisture and drought"" measure on the Environmental Indicators, Te taiao Aotearoa website. Geometry: raster catalogue Unit: mm/yr"
Source	Source: National Institute for Water and Atmospheric Research Method: "Potential evapotranspiration deficit (PED) is the difference between potential evapotranspiration and actual evapotranspiration. Maps of the annual PED total (mm) were produced for every growing-season, July to June year, from 1972 to 2013. Soil needs to be moist enough to allow plants to grow. Evapotranspiration is the process whereby water held in the soil is gradually released to the atmosphere through a combination of direct evaporation and transpiration from plants. Over the course of a growing season, the amount of water lost from the soil through evapotranspiration typically exceeds rainfall. This causes an increase in soil moisture deficit. As soil moisture decreases, pasture production becomes constrained, and evapotranspiration decreases. The amount of evapotranspiration falls below what could potentially occur if there were sufficient soil moisture (potential evapotranspiration) (Porteous et al., 1994). Some areas of the country always have an annual PED total of 0. These areas are high elevation regions (e.g., in the Southern Alps). At these locations, it is not possible to generate a standardised annual PED value because the standard deviation is 0 (i.e., there is a 'divide-by-0' problem). The Geographic Information Systems (GIS) datasets show 'No Data' for these grid cells. Care should be taken when comparing maps from year to year. There may be days missing from the PED GIS data. As a result, data may have been interpolated to complete the data set. The interpolation accuracy is lowest in areas of high elevation, where there are fewer climate stations and the complex terrain affects accuracy. Also, climate stations may open and close over time, which will affect the accuracy of the data provided. The accuracy of the data source is of high quality. References: Porteous, AS, Basher, RE, & Salinger, MJ (1994). Calibration and performance of the single-layer soil water balance model for pasture sites. New Zealand Journal of Agricultural Research, 37(1), 107-118, DOI: 10.1080/00288233.1994.9513047. Available from www.tandfonline.com."
Coverage	-47.3872810785 164.87562896 -34.1529060945 179.99254331
Identifier	<a href="https://data.mfe.govt.nz/layer/53315-soil-moisture-ped-annual-average-1972-2014/">https://data.mfe.govt.nz/layer/53315-soil-moisture-ped-annual-average-1972-2014/</a>
Language	eng
Subject	New Zealand
Subject	CLIMATE-AND-WEATHER
Subject	CLIMATE-AND-WEATHER-Rainfall
Subject	SOIL
Subject	HAZARDS-Drought

Subject

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