

<p>Title of dataset</p> <p>Variables</p>	<p>Rainfall, 1960–2016</p> <ul style="list-style-type: none"> • Date • Rainfall_mm • site
<p>Title of dataset</p> <p>Variables</p>	<p>Winter rainfall trends, 1960–2016</p> <ul style="list-style-type: none"> • name • start • end • intercept • slope • p_value • trend
<p>Title of dataset</p> <p>Variables</p>	<p>Summer rainfall trends, 1960/1–2015/6</p> <ul style="list-style-type: none"> • name • start • end • intercept • slope • p_value • trend
<p>Title of dataset</p> <p>Variables</p>	<p>Autumn rainfall trends, 1960–2016</p> <ul style="list-style-type: none"> • name • start • end • intercept • slope • p_value • trend
<p>Title of dataset</p> <p>Variables</p>	<p>Spring rainfall trends, 1960–2016</p> <ul style="list-style-type: none"> • name • start • end • intercept • slope • p_value • trend
<p>Title of dataset</p> <p>Variables</p>	<p>Annual rainfall trends, 1961–2016</p> <ul style="list-style-type: none"> • name • start

	<ul style="list-style-type: none"> • end • intercept • slope • p_value • trend
Title of dataset	Seasonal rainfall, summer, 1981–2010
Variables	<ul style="list-style-type: none"> • Average (normal) summer rainfall (mm)
Projection	GD_1949_New_Zealand_Map_Grid
Title of dataset	Seasonal rainfall, winter, 1981–2010
Variables	<ul style="list-style-type: none"> • Average (normal) winter rainfall (mm)
Projection	GD_1949_New_Zealand_Map_Grid
Title of dataset	Seasonal rainfall, autumn, 1981–2010
Variables	<ul style="list-style-type: none"> • Average (normal) autumn rainfall (mm)
Projection	GD_1949_New_Zealand_Map_Grid
Title of dataset	Seasonal rainfall, spring, 1981–2010
Variables	<ul style="list-style-type: none"> • Average (normal) spring rainfall (mm)
Projection	GD_1949_New_Zealand_Map_Grid
Title of dataset	Average annual rainfall, 2014
Variables	<ul style="list-style-type: none"> • Average annual rainfall (mm)
Projection	GD_1949_New_Zealand_Map_Grid
Title of dataset	Average annual rainfall, 2015
Variables	<ul style="list-style-type: none"> • Average annual rainfall (mm)
Projection	GD_1949_New_Zealand_Map_Grid
Title of dataset	Average annual rainfall, 2016
Variables	<ul style="list-style-type: none"> • Average annual rainfall (mm)
Projection	GD_1949_New_Zealand_Map_Grid
Title of dataset	Average annual rainfall, 1972–2016
Variables	<ul style="list-style-type: none"> • Average annual rainfall (mm)
Projection	GD_1949_New_Zealand_Map_Grid
Environmental reporting topic	Climate
Environmental reporting category	National Indicator

Environmental report	Our atmosphere and climate 2017
Relevant measure on the Environmental Indicators, Te taiao Aotearoa website	Annual and seasonal rainfall
Methodology (collection & analyses)	<p>Daily (9am – 9am) rainfall data were extracted from CLIDB from the “RAIN” table for all the 30 selected representative climate stations, for each station’s period of record.</p> <p>NIWA interpolated annual rainfall totals, measured at climate station locations across the country, to create a regular 500m resolution grid of average annual (from 1972 to 2016) rainfall and average seasonal rainfall for each year from 1981 to 2010. Missing data were infilled using Virtual Climate Station Network data (NIWA, nd).</p> <p>For more information on methodology please see Macara (2017), Macara and Tait (2015), and Tait et al (2014).</p> <p>Trend direction was assessed using the Theil-Sen estimator and the Two One-Sided Test (TOST) for equivalence at the 95% confidence level.</p>
Limitations to data & analysis	Although the interpolations cover the entire land area of New Zealand, accuracy is lowest where station density is low and terrain is complex.
Changes to time series	The recent closure of the primary stations originally used for temperature and rainfall data in Dannevirke and Napier required the selection of a new primary station at each location. Regression analyses were performed to assess compatability with earlier data. The starting year of observations may vary from 1960 for some sites.
References	<p>Macara, G (2017) Updated datasets for atmosphere and climate domain report. Client report no. 2017054WN. Prepared for the Ministry for the Environment, 11p. Available from www.mfe.govt.nz</p> <p>Macara, G, & Tait, A (2015). Infilling of missing climate data for the 2015 Environmental Synthesis Report: Temperature, Rainfall and Wind. Client report no. WLG2015-33. Prepared for the Ministry for the Environment, 37p. Available from https://data.mfe.govt.nz/</p> <p>NIWA (nd). Virtual climate station data and products. Retrieved 29 May 2017 from www.niwa.co.nz.</p> <p>Tait, A, Henderson, R, Turner, R, & Zheng, X (2006). Thin plate smoothing spline interpolation of daily rainfall for New Zealand using a climatological rainfall surface. <i>International Journal of Climatology</i>, 26(May 2006), 2097–2115.</p> <p>Tait, A, Macara, G, & Paul, V (2014) Preparation of climate datasets for the 2015 Environmental Synthesis Report: temperature, rainfall, wind, sunshine and soil moisture. Client report no. WLG2014-91. Prepared for</p>

	<p>the Ministry for the Environment, 27p. Available from https://data.mfe.govt.nz/</p> <p>Tait, A, Sturman, J, & Clark, M (2012). An assessment of the accuracy of interpolated daily rainfall for New Zealand. <i>Journal of Hydrology New Zealand</i>, 51(1), 25–44.</p> <p>Tait, A & Turner, R (2005). Generating multiyear gridded daily rainfall over New Zealand. <i>Journal of Applied Meteorology</i>, 44(9), 1315–1323. http://doi.org/10.1175/JAM2279.1.</p>
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