

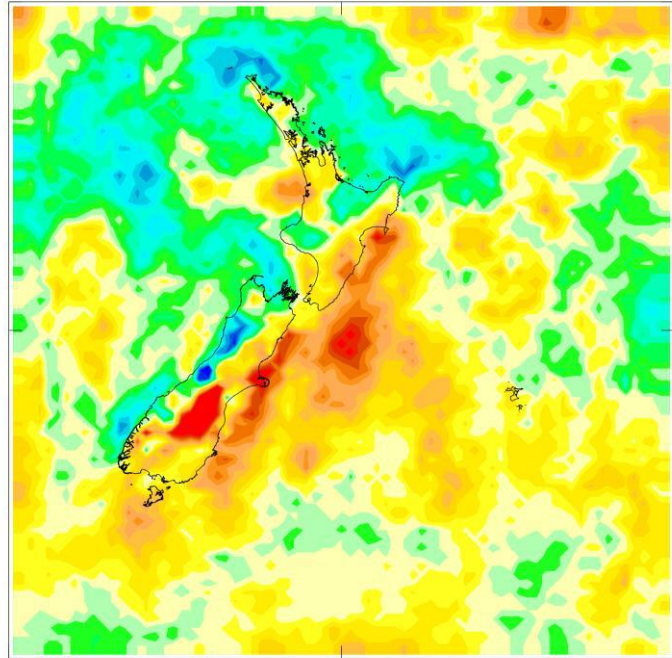
Latest climate change projections for NZ

Andrew Tait, Abha Sood, Brett Mullan, Stephen Stuart - NIWA, Wellington
and
Greg Bodeker, Stefanie Kremser, Jared Lewis - Bodeker Scientific, Alexandra

Research Aim 1: Improved Climate Projections

- Update and improve processes to generate regional-scale projections of New Zealand climate trends & variability to 2100
- Maximise the utility and relevance of update climate projections for impact modelling
- Improved climate projections will be packaged into formats relevant for modelling (Research Aims 2 & 3), enhanced decision-making (Research Aim 4), and scenario development (Research Aim 5)

Updated Climate Model Data



*Domain of the NIWA RCM
(spatial resolution 28km)*

More emissions →

- AR5: 6 GCMs x 4 RCPs

6 AR5 GCMs		4 RCPs			
BCC-CSM1.1	CESM1-CAM5				
GFDL-CM3	GISS-EL-R	2.6	4.5	6.0	8.5
HadGEM2-ES	NorESM1-M				

- 7 Variables

- Maximum Air Temperature
- Minimum Air Temperature
- Total Precipitation
- Relative Humidity
- Solar Radiation
- Wind Speed
- Relative Humidity

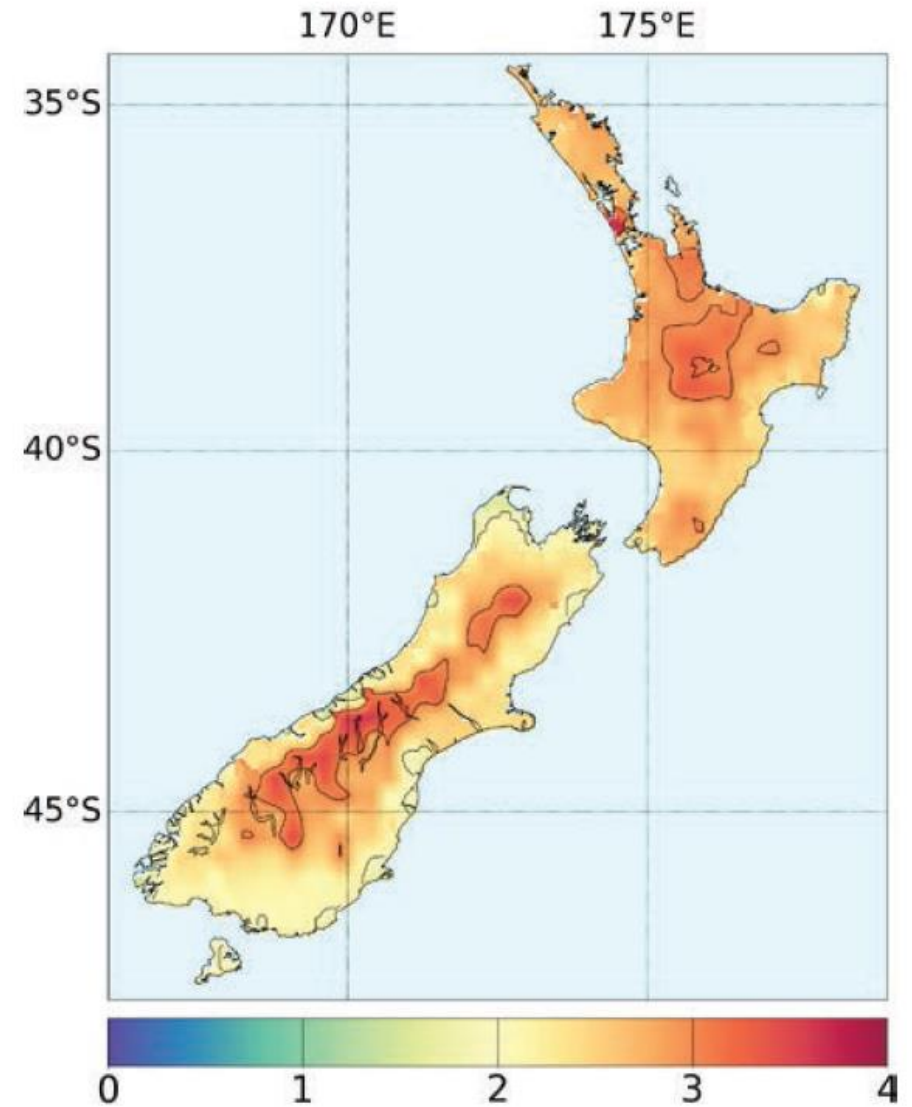
- RCM data downscaled to ~5km spatial grid (VCSN)

- Data at daily, monthly and annual time steps, 1971-2120

Updated MfE Guidance Document

<http://www.mfe.govt.nz/publications/climate-change/climate-change-projections-new-zealand>

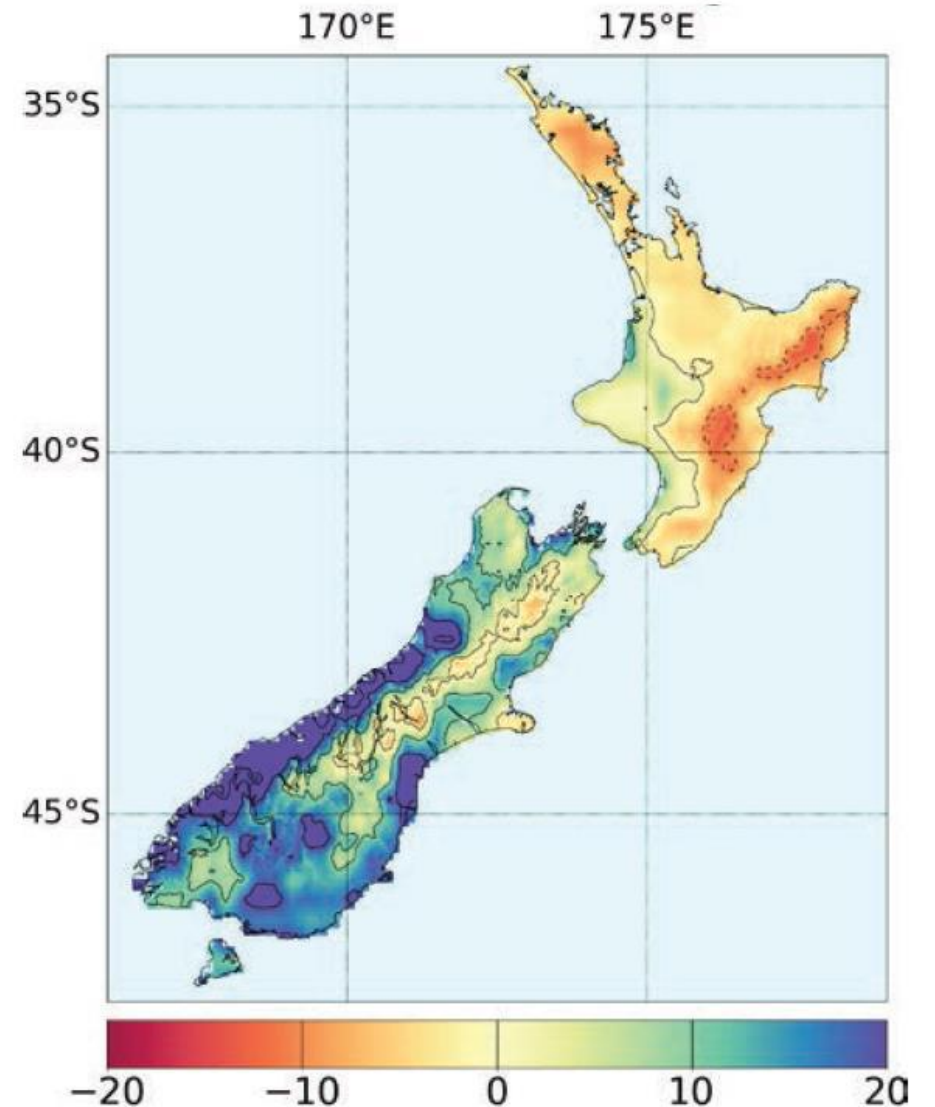
Average change in temperature (°C) by 2090 under RCP8.5



Updated MfE Guidance Document

<http://www.mfe.govt.nz/publications/climate-change/climate-change-projections-new-zealand>

Annual average change in rainfall (%) by 2090 under RCP8.5



Updated MfE Guidance Document

[http://www.mfe.govt.nz/
publications/climate-
change/climate-change-
projections-new-zealand](http://www.mfe.govt.nz/publications/climate-change/climate-change-projections-new-zealand)

Canterbury Region highlights (2090, RCP8.5)

- Increase in mean temperature (°C): Summer 3.0; Autumn 3.0; Winter 3.3; Spring 2.6
- Change in mean precipitation at Tekapo (%): Summer +5; Autumn -2; Winter +28; Spring +13
- Increase in “hot days” (Tmax ≥ 25°C): Present 27.3 days/yr; Future 62.3 days/yr
- Decrease in “cold nights” (Tmin ≤ 0°C): Present 46.7 nights/yr; Future 8.8 nights/yr
- “Dry days” at Tekapo increase by 5-10 days/yr
- 99th percentile rainfall amount increase by 10-15%
- 99th percentile wind speed increase by 5-10%
- Increase in PED (amount of water needed for irrigation) by 50-100mm/yr (25-35%)

Latest climate projections (maps and charts)

<http://ofcnz.niwa.co.nz>

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Our Future Climate New Zealand

Welcome to Our Future Climate New Zealand. This interactive website has been designed to give you the ability to look at a number of climate change projections for New Zealand.

National Maps

WESTPORT NELSON WELLINGTON

Explore a range of temperature and rainfall projections for New Zealand.

Explore Maps

Local Charts

mm

2.0K
1.8K
1.6K
1.4K
1.2K
1.0K
800
600

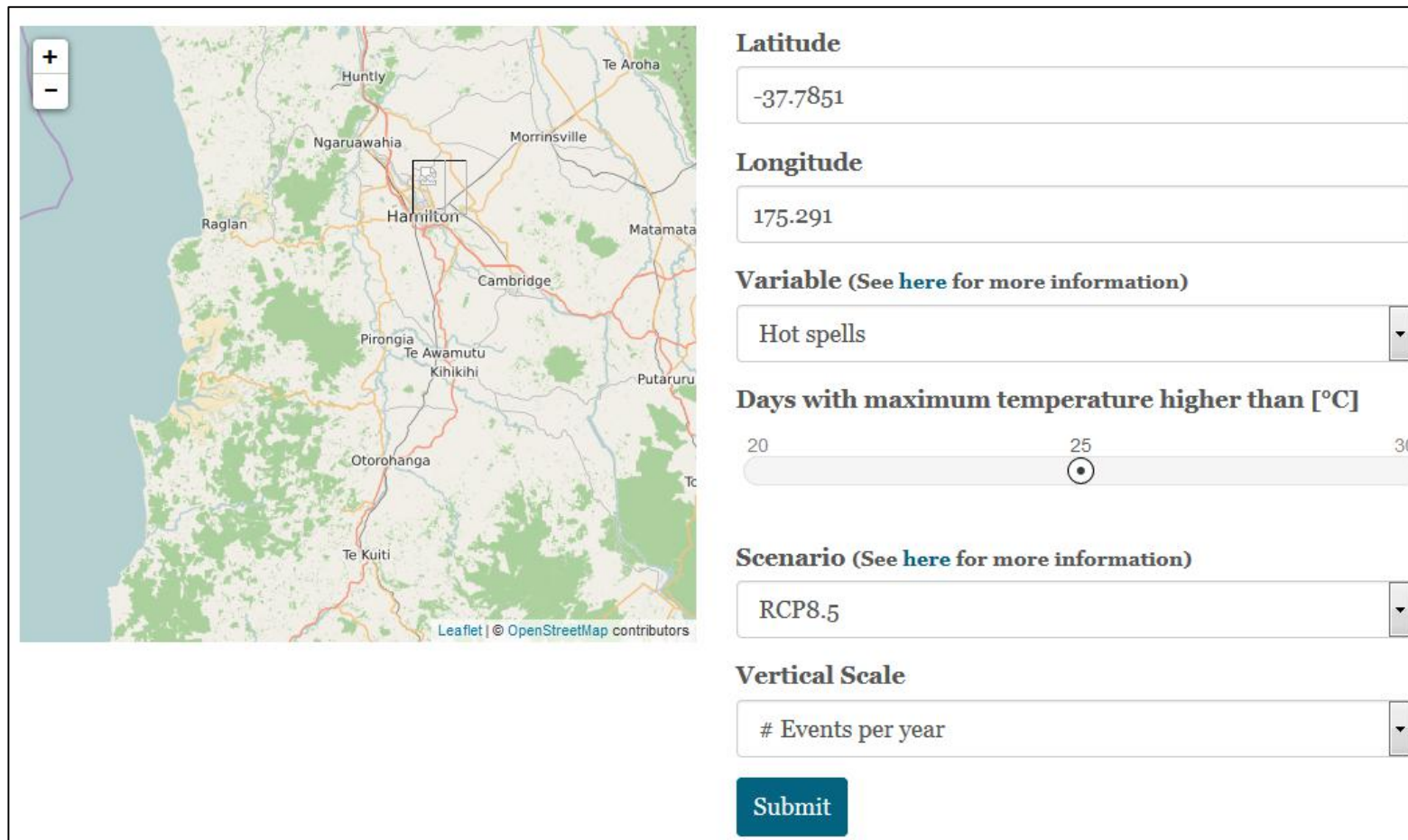
Explore temperature and rainfall projections over time for a selection of locations around New Zealand.

Explore Charts

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Future Extremes web tool

<http://futureextremes.cci.org.nz/>



Latitude
-37.7851

Longitude
175.291

Variable (See [here](#) for more information)
Hot spells

Days with maximum temperature higher than [°C]
20 25 30

Scenario (See [here](#) for more information)
RCP8.5

Vertical Scale
Events per year

Submit

Thanks very much!

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