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***Temperature Normals for New Zealand  
for the period 1961 to 1990***

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# TEMPERATURE NORMALS FOR NEW ZEALAND FOR THE PERIOD 1961 TO 1990

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## What are Temperature Normals

Temperature normals are standard period monthly and annual average temperature values. The temperature values in this publication are mean daily maximum, mean daily minimum and mean air temperatures. Since temperature is generally quite variable over time temperature normals allow fair inter-comparisons of the temperature at different places. If temperature normals are not used, it is very easy to inadvertently compare the average temperature over a warm period at one place with that over a cool period at another and thus reach a false conclusion about their relative average temperatures. To ensure that such inter-comparisons are fair it is also necessary that the period of comparison is sufficiently long to make the average value a reasonable estimate of the long period average value. For example, the average temperature over a relatively warm decade throughout New Zealand will be of little value as an indication of the long-term average temperature. However, temperature records at most sites tend to be of quite short duration and accordingly some balance has to be struck in deciding the length of the standard period to be averaged over.

The World Meteorological Organisation (WMO, 1983) recommends 30 consecutive years for the calculation of normals for all the climatological elements including temperature. This is a compromise duration considering all elements, their variability in different parts of the world and the records available to estimate their average values. The thirty year periods should begin on the first day of a new decade. The normals in this publication are for the period 1 January 1961 to 31 December 1990. Under the WMO definition this is also a 'standard normal period'. The other standard normal periods this century have been 1901 to 1930 and 1931 to 1960.

## Temperature Variability and Climate Change

New Zealand temperature, outside the mountainous areas, is generally quite moderate and lacks the extremes found in large continental regions of the world. This, of course, is a reflection of the maritime influence. The average annual temperature varies from around 15°C in Northland to around 9°C in Southland. Other temperatures vary more, up to the extremes of temperatures recorded under standard conditions, which range from 42°C recorded at Rangiora on 7 February 1973 to -19°C recorded at Ophir (Central Otago) on 2 July 1943.

On a month by month basis, temperature variability is not high and it is uncommon for the average monthly maximum, minimum or mean temperatures to be more than 3°C different from the long-term average value.

On a longer term basis the question of climate change impacts significantly on temperatures. This will not be discussed here but the following two publications are recommended for those interested in this topic for the New Zealand context.

The first of these, Salinger et al (1992), gives long-term temperature series from many New Zealand recording sites. The second, Salinger et al (1993) considers, diurnal and seasonal trends of temperature in New Zealand and the Southwest Pacific and puts them in a world context.

The last set of temperature normals computed in New Zealand were for the period 1951 to 1980 (NZ Met. Service, 1983). A comparison of those values with the ones in this publication show variations that would be expected. These variations are larger and more notable in the monthly average values. They arise from the temperature in the 1980s being generally higher than in the previous two decades.

### **Computation of Temperature Normals**

The temperature records used in this publication are archived in the National Climate Database (CLIDB) which is maintained and operated by the Climate Division of the National Institute for Water and Atmospheric Research (NIWA) and funded by the Foundation for Research Science and Technology. The data are subject to quality control procedures that are specified in operations manuals. The total operation of collecting, processing, archiving and supplying data is registered under the ISO 9002 quality system.

The average life of a temperature recording station is relatively short in relation to the 30 year normal period. For stations that are no longer operating the median record length is about 20 years. This means that for many stations calculating the normal temperature involves some estimation of missing values. For the 1961 to 1990 normal period there were 83 stations with completed records or not more than 24 missing months; these were class one stations for the calculation of temperature normals. A further 95 stations had not more than 120 missing months; these were class two stations. The calculation of temperature normals was restricted to just class one and two stations. This is different from earlier normals (NZ Met. Service, 1983) where stations with records as short as three years were used. The practice of using such short records has the advantage of providing a denser geographic coverage of stations (345 for 1951 to 1980) and the disadvantage of producing a lot of estimated normals whose values have a high uncertainty. Since the aim of producing normals is to present average values for reliable station inter-comparisons, it was decided here that estimates of high uncertainty would not be calculated.

Estimated monthly values to fill the missing records in the 1961 to 1990 period for the class one and two stations were calculated from adjacent stations. The adjacent stations were the closest one (or two) stations whose monthly temperatures were most highly correlated with the missing record station. Once the adjacent station was thus identified a simple difference estimate was used for the missing month. At each station the annual temperature normal is the average of the 12 monthly normals. The whole procedure was done separately for the daily maximum and minimum temperatures for each month. The normal for the mean (or average) temperature for each month, is the average of the normals for mean daily maximum and mean daily minimum temperatures. This method of estimating the normal for the mean temperature involves an acceptably low error, as discussed in NZ Met. Service (1988). The procedure of computing temperature normals is described in WMO (1983).

## Further Temperature Information

NIWA has a range of New Zealand and Pacific Island surface air temperature data in its databases. These data are of three main types:

- Daily maximum and minimum temperatures from over 500 climatological stations of which about 150 are currently operating. Some of these records extend back into last century.
- Three or six hour temperatures from synoptic (weather forecasting) stations.
- Hourly temperature values from some of the main centres around New Zealand. Many of these series extend over thirty years.

A catalogue of the temperature data is held within the CLIDB database. There are two means of accessing these data. For CLIDB direct log-in access is available. This is most suitable for people with an on-going need for significant amounts of data. Alternatively data can be supplied by mail, fax, floppy disk or E-mail. This is most suitable for people with less frequent need for data and avoids the task of having to learn about the structure and inquiry techniques of CLIDB.

To request data please contact :

Database Services  
Climate Division  
NIWA Ltd  
P.O. Box 3047  
WELLINGTON

Note: From about January 1995 the above address changes to P.O. Box 31-311, LOWER HUTT.

## Acknowledgments

Mr Paul P Kintanar assisted greatly with the programming required to handle the data and produce estimated values for missing records. Elaine Fouhy assisted with data processing and editing. To all the Temperature Observers who, through fair and foul weather, made the observations that have been used in these temperature normals, we offer a large thank you.

## References

- NZ Met. Service, 1983: Temperature normals for New Zealand, 1951-80. NZ Met. Service Misc. Pub. 185: 36 pp.
- NZ Met. Service, 1988: Meteorological Observations for 1987. NZ Met. Service Misc. Pub. 109 (1987).
- Salinger, M J, R McGann, L Coutts, B Collen, E Fouhy, 1992: "Temperature trends in New Zealand and outlying islands, 1920-1990". NZ Met. Service. 46 pp.
- Salinger, M J, J Hay, R McGann, B Fitzharris, 1993: Southwest Pacific temperatures : diurnal and seasonal trends. Geophys. Res. Letters, Vol 20 (10), 935-38.
- World Meteorological Organisation, 1983: "Guide to Climatological Practices, Chapter 8, CLIMAT Reports." WMO, Geneva.





## STATION IDENTIFICATION

The stations whose temperature values are on the following pages are identified by a station number. It can be used to locate the stations you are interested in, as the following example shows.

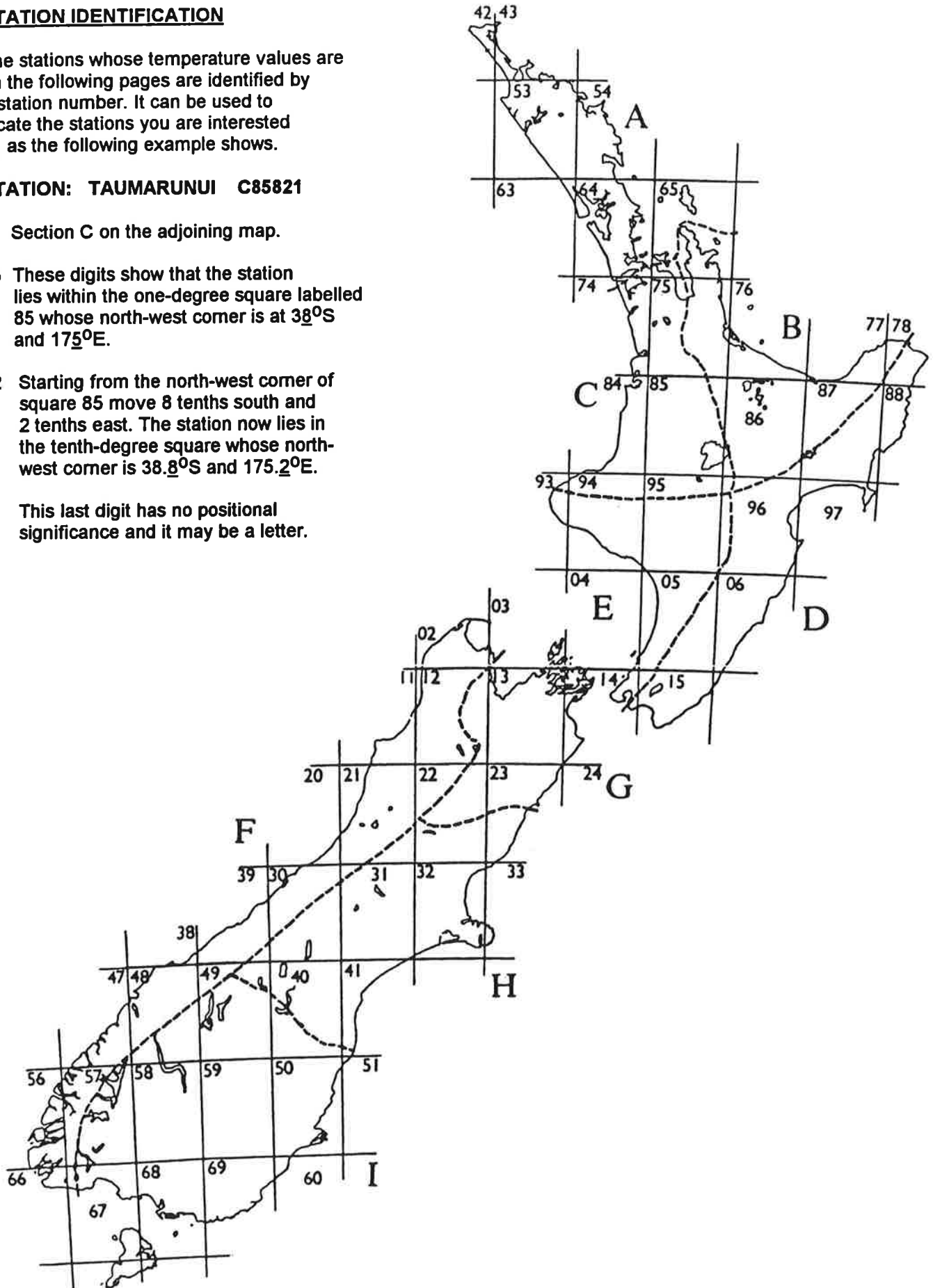
**STATION: TAUMARUNUI C85821**

**C** Section C on the adjoining map.

**85** These digits show that the station lies within the one-degree square labelled 85 whose north-west corner is at  $38^{\circ}\text{S}$  and  $175^{\circ}\text{E}$ .

**82** Starting from the north-west corner of square 85 move 8 tenths south and 2 tenths east. The station now lies in the tenth-degree square whose north-west corner is  $38.8^{\circ}\text{S}$  and  $175.2^{\circ}\text{E}$ .

**1** This last digit has no positional significance and it may be a letter.



Mean Daily Temperature Normals 1961-1990. (Celsius)

STATION	Number	Lat	Long	Ht(m)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Cape Reinga	A42461	34 25S	172 41E	191	18.8	19.2	18.9	17.0	15.1	13.4	12.4	12.5	13.2	14.2	15.6	17.3	15.6
Kaitia Aero	A53021	35 04S	173 17E	80	19.4	20.0	19.2	16.8	14.5	12.8	11.7	12.1	13.0	14.3	15.9	17.8	15.6
Waipoua Forest	A53651	35 39S	173 33E	88	18.1	18.5	17.8	15.5	13.2	11.4	10.4	11.0	12.1	13.4	15.0	16.6	14.4
Dargaville	A53982	35 57S	173 50E	15	18.8	19.1	18.3	16.0	13.5	11.8	10.9	11.4	12.5	13.9	15.5	17.3	14.9
Glenbervie Forest	A54631	35 39S	174 21E	107	17.9	18.0	17.2	14.7	12.2	10.5	9.6	10.2	11.4	12.8	14.6	16.3	13.8
Leigh 2	A64282	36 16S	174 48E	27	19.2	19.6	19.1	17.0	14.8	13.0	12.1	12.4	13.2	14.4	16.0	17.7	15.7
Woodhill Forest	A64741	36 45S	174 26E	30	18.5	18.7	17.9	15.5	13.2	11.3	10.4	11.0	12.3	13.7	15.3	17.0	14.6
Riverhead Forest	A64751	36 46S	174 35E	28	18.3	18.6	17.6	15.2	12.6	10.7	9.8	10.5	11.9	13.3	15.0	16.8	14.2
Whenuapai Aero	A64761	36 47S	174 38E	26	18.8	19.1	18.1	15.5	12.9	10.9	10.0	10.8	12.2	13.7	15.4	17.3	14.5
Auckland,Albert Park	A64871	36 51S	174 46E	49	20.0	20.2	19.3	16.9	14.2	12.2	11.3	12.0	13.3	14.8	16.5	18.5	15.8
Auckland City	A64878	36 51S	174 45E	75	19.7	20.0	19.1	16.7	14.2	12.2	11.3	11.9	13.1	14.5	16.2	18.0	15.6
Auckland,Owairaka	A64971	36 54S	174 44E	41	19.2	19.6	18.5	16.0	13.4	11.3	10.5	11.2	12.5	14.0	15.8	17.7	15.0
Port Fitzroy	A65132	36 11S	175 21E	4	19.4	19.6	18.9	16.7	14.5	12.6	11.7	12.1	13.2	14.5	16.3	17.9	15.6
Whangapoua Forest	B65761	36 46S	175 36E	4	19.0	19.1	18.0	15.5	13.0	11.0	10.2	11.0	12.5	14.0	15.7	17.4	14.7
Tairua Forest	B75182	37 10S	175 51E	3	19.1	19.1	18.0	15.3	12.7	10.6	9.8	10.6	12.2	14.0	15.8	17.5	14.6
Paeroa	B75361	37 23S	175 40E	4	19.4	19.4	18.1	15.1	12.0	9.9	9.2	10.4	12.0	13.9	16.0	17.9	14.4
Waihi	B75381	37 23S	175 51E	91	18.9	18.8	17.3	14.6	11.7	9.7	8.9	9.8	11.7	13.6	15.4	17.5	14.0
Te Aroha	B75571	37 33S	175 43E	18	19.8	19.9	18.5	15.5	12.3	10.3	9.6	10.7	12.4	14.5	16.3	18.3	14.8
Tauranga	B76611	37 41S	176 10E	2	19.5	19.6	18.4	16.0	13.1	11.1	10.4	11.1	12.6	14.3	16.1	17.9	15.0
Tauranga Aero	B76621	37 40S	176 12E	4	19.0	19.2	17.9	15.3	12.4	10.3	9.6	10.4	11.9	13.6	15.5	17.5	14.4
Rotoehu Forest	B76951	37 54S	176 31E	72	18.0	18.1	16.8	13.8	10.8	8.8	8.0	9.0	10.7	12.6	14.5	16.5	13.1
Whakatane Mill	B76993	37 58S	176 57E	2	19.3	19.4	18.2	15.4	12.2	10.0	9.3	10.4	12.0	13.9	15.8	17.7	14.4
Kawerau	B86071	38 05S	176 43E	30	19.6	19.7	18.1	15.3	12.0	9.8	9.1	10.2	12.0	14.1	16.1	18.1	14.5
Te Teko	B86083	38 02S	176 49E	8	19.5	19.5	18.2	15.1	11.8	9.7	9.1	10.3	11.9	13.9	16.0	18.0	14.4
Whakarewarewa	B86124	38 10S	176 16E	307	17.8	17.9	16.5	13.6	10.5	8.2	7.6	8.6	10.3	12.4	14.1	16.2	12.8
Rotorua Aero 2	B86131	38 07S	176 19E	287	17.7	17.8	16.5	13.5	10.4	8.3	7.6	8.6	10.3	12.2	14.2	16.2	12.8
Waioapu Forest	B86341	38 19S	176 25E	435	16.8	16.8	15.2	12.0	8.9	6.6	6.1	7.2	9.2	11.3	13.3	15.3	11.6
Kaingaroa Forest	B86451	38 24S	176 34E	544	16.3	16.3	14.6	11.5	8.4	6.2	5.5	6.6	8.4	10.6	12.7	14.8	11.0
Wairapukao Forest	B86551	38 32S	176 34E	437	16.4	16.3	14.4	11.1	7.8	5.8	5.2	6.4	8.2	10.7	12.8	15.0	10.8
Taupo N.Z.E.D.	B86602	38 41S	176 04E	376	17.4	17.4	15.8	12.7	9.5	7.5	6.7	7.6	9.4	11.6	13.7	15.9	12.1
Wairakei Power Stn	B86611	38 38S	176 06E	342	17.6	17.5	15.9	12.8	9.7	7.6	6.9	7.8	9.8	11.9	14.0	16.1	12.3
Wairakei Research Stn	B86612	38 37S	176 07E	402	17.0	17.0	15.5	12.3	9.0	7.0	6.3	7.4	9.2	11.3	13.4	15.5	11.7
Minginui Forest	B86671	38 39S	176 44E	366	17.0	16.8	15.1	11.8	8.4	6.4	6.0	7.0	8.9	11.2	13.3	15.5	11.5
Waimihia Forest	B86821	38 48S	176 15E	743	14.5	14.4	12.9	9.8	6.9	5.0	4.3	5.0	6.7	8.8	10.9	13.1	9.4
Opotiki	B87023	38 00S	177 17E	6	18.6	18.9	17.8	15.1	12.2	10.0	9.3	10.2	11.6	13.4	15.2	17.2	14.1

Mean Daily Temperature Normals 1961-1990. (Celsius)

STATION	Number	Lat	Long	Ht(m)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Waimana	B87103	38 09S	177 05E	37	18.8	18.7	17.5	14.2	10.8	8.7	7.8	9.3	11.1	13.3	15.2	17.2	13.5
Auckland, Māngere	C64971	36 58S	174 47E	2	19.5	19.6	18.6	16.1	13.4	11.4	10.5	11.3	12.7	14.4	16.1	18.0	15.1
Auckland, Otara	C64981	36 57S	174 52E	12	19.0	19.3	18.3	15.6	12.9	10.9	9.9	10.8	12.2	13.7	15.6	17.5	14.6
Auckland Aero	C74082	37 00S	174 48E	7	19.5	19.8	18.7	16.2	13.4	11.4	10.5	11.3	12.7	14.3	16.1	18.0	15.1
Ardmore	C74091	37 02S	174 58E	30	18.7	18.9	17.9	15.3	12.4	10.6	9.6	10.6	11.9	13.4	15.4	17.2	14.3
Waikou Forest	C74371	37 21S	174 43E	52	18.7	18.9	18.1	15.7	13.2	11.0	10.2	10.9	12.3	13.7	15.4	17.2	14.6
Maramarua Forest	C75321	37 18S	175 15E	38	18.2	18.5	17.2	14.4	11.6	9.5	8.7	9.7	11.2	13.0	14.9	16.7	13.6
Te Kauwhata M.A.F.	C75412	37 25S	175 08E	32	18.8	19.1	17.9	15.1	12.1	10.0	9.4	10.4	12.0	13.7	15.5	17.4	14.3
Ruakura	C75731	37 47S	175 19E	40	18.2	18.5	17.3	14.5	11.4	9.3	8.6	9.8	11.4	13.1	14.9	16.8	13.6
Whatawhata	C75801	37 49S	175 05E	104	18.0	18.4	17.2	14.6	11.7	9.7	9.0	9.9	11.5	13.0	14.7	16.6	13.7
Rukuhia	C75831	37 50S	175 18E	66	18.4	18.9	17.6	14.8	11.6	9.5	8.8	10.0	11.5	13.1	15.1	16.9	13.9
Mokau, Mohakatino Stn	C84761	38 43S	174 37E	46	18.0	18.4	17.5	15.2	12.5	10.5	9.7	10.4	11.8	13.0	14.9	16.7	14.1
Arapuni Power Stn	C85061	38 04S	175 39E	123	18.7	18.8	17.3	14.2	11.0	8.9	8.1	9.3	11.3	13.1	15.2	17.2	13.6
Te Kuiti	C85314	38 20S	175 09E	61	18.3	18.5	17.2	14.2	11.1	9.0	8.3	9.5	11.2	13.0	15.0	16.8	13.5
Pureora Forest	C85551	38 31S	175 33E	549	15.5	15.7	14.2	11.3	8.4	6.3	5.6	6.3	8.1	10.1	12.0	14.0	10.6
Taumarunui	C85821	38 53S	175 16E	171	18.4	18.4	16.7	13.4	10.2	8.0	7.3	8.7	10.7	12.8	14.9	17.0	13.0
New Plymouth Aero	C94011	39 00S	174 10E	27	17.5	17.8	16.9	14.5	12.0	10.1	9.3	10.0	11.3	12.6	14.2	16.1	13.5
Te Wera Forest	C94262	39 14S	174 36E	180	16.4	16.5	15.3	12.5	9.7	7.7	7.0	8.2	9.7	11.5	13.1	15.1	11.9
Lower Retaruke	C95022	39 04S	175 12E	223	17.5	17.6	16.1	12.9	9.6	7.7	6.8	8.1	9.9	12.1	14.3	16.2	12.4
Turangi	C95085	38 60S	175 49E	375	17.2	17.1	15.6	12.3	9.1	7.2	6.3	7.4	9.4	11.3	13.7	15.7	11.9
Pahiataua, Mangamutu	D05481	40 27S	175 49E	116	17.0	17.0	15.9	13.0	10.1	7.9	7.3	8.4	10.1	11.7	13.4	15.6	12.3
Mt Bruce Res	D05765	40 43S	175 38E	305	16.1	15.9	14.8	12.0	9.2	7.1	6.4	7.3	9.1	10.7	12.7	14.7	11.3
Waingawa	D05964	40 59S	175 37E	114	17.6	17.5	16.1	13.1	10.3	8.0	7.4	8.3	10.2	12.1	13.9	16.1	12.5
Kopua	D06022	40 05S	176 17E	311	16.8	16.7	15.3	12.5	9.7	7.5	6.9	7.7	9.5	11.3	13.3	15.2	11.9
Waipukurau Aero	D06051	40 00S	176 32E	137	17.9	17.7	16.1	13.0	10.0	7.8	7.2	8.3	10.1	12.0	14.1	16.3	12.5
Dannevirke	D06212	40 13S	176 07E	207	17.3	17.2	15.8	13.0	10.2	8.0	7.5	8.3	10.1	12.1	13.8	15.8	12.4
Ngaumu Forest	D15081	41 02S	175 53E	244	16.5	16.4	15.1	12.1	9.4	7.2	6.5	7.5	9.3	11.3	13.1	15.1	11.6
Tauherenikau	D15134	41 07S	175 23E	43	17.7	17.5	16.3	13.5	10.6	8.4	7.7	8.7	10.5	12.2	14.1	16.1	12.8
Wairongomai	D15211	41 16S	175 09E	21	17.2	16.9	15.8	13.1	10.6	8.7	8.1	8.7	10.5	12.0	13.8	15.8	12.6
Ruatoria	D78931	37 54S	178 19E	61	19.3	19.0	17.8	15.3	12.5	10.4	9.6	10.4	12.0	13.9	15.8	17.7	14.5
Mangatu Forest	D87284	38 17S	177 51E	182	18.6	18.3	16.9	14.1	11.0	8.9	8.2	9.2	10.9	12.8	15.1	17.0	13.4
Gisborne, Manutuke	D87683	38 41S	177 53E	9	18.7	18.5	17.3	14.6	11.8	9.8	9.1	10.0	11.6	13.6	15.5	17.4	14.0
Gisborne Aero	D87692	38 39S	177 59E	4	19.1	18.8	17.4	14.8	12.0	9.9	9.2	10.1	11.7	13.8	15.8	17.7	14.2
Waikaremoana Onepoto	D87811	38 48S	177 07E	643	16.4	16.3	15.1	12.2	9.3	7.0	6.2	7.0	8.6	10.9	12.9	14.9	11.4
Esk Forest	D96272	39 15S	176 42E	427	17.0	16.6	15.4	12.7	10.0	7.8	7.0	7.8	9.6	11.7	13.6	15.4	12.1

Mean Daily Temperature Normals 1961-1990. (Celsius)

STATION	Number	Lat	Long	Ht(m)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Kaweka Forest	D96444	39 26S	176 28E	416	17.4	17.0	15.9	13.1	10.5	8.4	7.7	8.3	10.1	12.1	14.0	15.9	12.5
Napier Nelson Pk	D96591	39 30S	176 55E	2	19.4	19.1	17.8	14.9	12.0	9.6	9.1	9.9	12.0	14.1	16.1	18.1	14.3
Havelock Nth D.S.I.R. 1	D96689	39 40S	176 53E	9	18.1	17.8	16.5	13.5	10.5	8.3	7.9	8.8	10.7	12.6	14.6	16.6	13.0
Gwavas Forest	D96743	39 44S	176 27E	335	16.3	16.0	14.6	11.9	9.1	6.9	6.2	7.0	8.9	10.9	12.9	14.8	11.3
Makaretu	D96931	39 57S	176 19E	335	17.1	16.8	15.5	12.6	9.7	7.6	7.1	8.0	9.8	11.6	13.6	15.6	12.1
Mohaka Forest	D97004	39 04S	177 02E	286	17.7	17.3	16.2	13.5	10.7	8.5	7.7	8.7	10.5	12.5	14.5	16.2	12.8
Wairoa, Frasertown	D97042	39 00S	177 24E	8	19.2	18.7	17.5	14.7	11.8	9.7	9.0	10.0	11.9	13.8	15.9	17.8	14.2
Kapiti Island	E04891	40 51S	174 56E	16	17.6	17.7	16.9	14.5	12.0	10.1	9.3	9.9	11.1	12.6	14.3	16.3	13.5
Paraparumu Aero	E04991	40 54S	174 59E	5	17.3	17.2	16.2	13.7	11.2	9.2	8.4	9.3	10.8	12.4	14.1	16.0	13.0
Bulls, Flockhouse	E05221	40 14S	175 16E	9	17.5	17.2	16.4	13.7	11.0	9.0	8.1	9.1	10.8	12.4	14.1	16.0	13.0
Ohakea Aero	E05231	40 12S	175 23E	48	17.8	18.0	16.9	14.2	11.3	9.3	8.4	9.4	11.0	12.7	14.5	16.4	13.3
Palmerston N Kairanga	E05343	40 20S	175 28E	15	17.4	17.5	16.3	13.5	10.6	8.6	8.0	9.0	10.8	12.4	14.1	15.9	12.8
Palmerston N Aero	E05361	40 20S	175 37E	45	17.5	17.6	16.5	13.7	10.7	8.6	8.0	9.0	10.7	12.1	14.0	16.1	12.9
Palmerston N	E05363	40 23S	175 37E	34	17.9	18.0	16.8	14.1	11.2	9.1	8.3	9.3	11.0	12.6	14.5	16.5	13.3
Waitarere Forest	E05521	40 33S	175 12E	3	17.4	17.1	16.2	13.5	10.7	8.7	8.0	9.0	10.7	12.4	14.1	16.0	12.8
Levin M.A.F.	E05622	40 39S	175 16E	46	17.4	17.5	16.4	13.9	11.3	9.3	8.4	9.5	10.9	12.5	14.1	16.0	13.1
Lower Hutt, Taita	E14192	41 11S	174 58E	65	17.0	17.1	16.1	13.6	10.9	8.8	8.1	8.9	10.4	11.9	13.6	15.6	12.7
Lower Hutt, Avalon	E14195	41 11S	174 56E	15	17.6	17.5	16.2	13.8	11.2	9.3	8.6	9.2	10.9	12.4	14.2	16.0	13.1
Wellington, Kelburn	E14272	41 17S	174 46E	125	16.9	17.0	15.9	13.7	11.2	9.3	8.5	9.1	10.5	12.0	13.5	15.5	12.8
Lower Hutt, Gracefield	E14290	41 14S	174 55E	34	17.3	17.3	16.3	13.9	11.4	9.6	8.7	9.4	11.0	12.4	14.1	15.9	13.1
Wainuiomata Coast Rd	E14296	41 17S	174 57E	82	16.8	16.6	15.5	13.0	10.4	8.7	7.9	8.5	10.1	11.6	13.5	15.2	12.3
Wellington Aero	E14387	41 20S	174 49E	6	17.8	17.7	16.6	14.3	11.9	10.1	9.2	9.8	11.2	12.8	14.5	16.4	13.5
Kaitoke	E15011	41 05S	175 11E	223	15.8	15.6	14.7	11.9	9.3	7.4	6.6	7.5	9.1	10.7	12.4	14.4	11.3
Wallaceville	E15102	41 08S	175 03E	56	17.0	16.8	15.6	12.8	10.2	8.3	7.5	8.4	10.1	11.8	13.5	15.5	12.3
Stratford Mtn House	E94313	39 18S	174 07E	846	13.1	13.2	12.1	9.3	6.6	4.7	3.8	4.5	5.9	7.6	9.6	11.5	8.5
Stratford Dem Farm	E94333	39 20S	174 18E	311	15.9	16.1	14.9	12.5	10.0	8.1	7.2	8.0	9.4	10.8	12.6	14.3	11.7
Manaia Dem Farm	E94512	39 32S	174 09E	98	16.6	16.7	15.9	13.5	11.3	9.5	8.6	9.2	10.5	12.0	13.5	15.3	12.7
Karioi 2	E95451	39 29S	175 31E	648	15.3	15.2	13.9	10.9	7.9	5.9	5.1	6.1	7.7	9.8	11.7	13.9	10.3
Waiouru M.W.D.	E95464	39 28S	175 40E	823	14.0	14.0	12.6	9.7	6.8	4.8	4.1	5.0	6.5	8.4	10.4	12.4	9.1
Waiouru Military Camp	E95465	39 28S	175 41E	823	13.7	13.8	12.5	9.4	6.5	4.5	3.7	4.7	6.3	8.1	10.4	12.3	8.8
Wanganui, Cooks Gdns	E95902	39 56S	175 03E	22	18.1	18.2	17.2	14.6	11.9	9.9	9.0	10.0	11.5	13.2	15.0	16.8	13.8
Westport Aero	F11752	41 44S	171 35E	2	16.2	16.4	15.6	13.3	11.0	9.1	8.5	9.2	10.5	11.7	13.2	15.0	12.5
Cobb Dam	F12162	41 06S	172 41E	823	13.3	13.6	12.2	9.5	6.4	4.1	3.2	4.0	5.8	7.8	9.7	11.7	8.5
Lake Rotoiti	F12882	41 48S	172 51E	634	14.6	14.6	13.0	9.6	6.2	3.8	3.2	4.6	6.6	8.8	11.0	13.1	9.1
Hokitika Aero	F20793	42 43S	170 59E	39	15.4	15.8	15.0	12.6	9.8	7.9	7.3	8.3	9.8	11.1	12.8	14.4	11.7

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STATION	Number	Lat	Long	Ht(m)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Reefton	F21182	42 07S	171 52E	198	16.6	16.7	15.1	11.7	8.1	5.3	4.9	6.8	9.2	11.3	13.2	15.2	11.2
Totara Flat	F21361	42 18S	171 37E	77	16.3	16.3	15.0	11.8	8.6	6.1	5.7	7.3	9.5	11.3	13.3	15.2	11.4
Greymouth Aero	F21422	42 27S	171 11E	4	16.1	16.3	15.4	13.1	10.6	8.7	8.1	9.1	10.4	11.7	13.2	15.0	12.3
Harihari N.Z.F.S.	F30153	43 09S	170 33E	45	15.4	15.8	14.9	12.0	8.7	6.4	6.1	7.4	9.2	10.7	12.5	14.5	11.1
Franz Joseph T.H.C.	F30311	43 23S	170 11E	122	15.0	15.4	14.5	12.1	9.3	7.1	6.6	7.5	9.0	10.5	11.9	14.0	11.1
Milford Sound	F47691	44 40S	167 55E	3	14.6	14.9	13.8	11.3	8.2	5.7	5.5	6.9	8.5	10.1	11.7	13.6	10.4
Motueka	G12191	41 06S	172 58E	8	17.4	17.4	16.0	13.0	10.0	7.6	7.0	8.1	10.2	12.3	14.3	16.3	12.5
Appleby	G13211	41 17S	173 06E	17	17.6	17.6	16.3	13.4	10.4	8.1	7.3	8.4	10.4	12.3	14.2	16.2	12.7
Nelson Aero	G13222	41 17S	173 14E	2	17.6	17.5	16.1	13.0	9.9	7.4	6.7	7.9	10.1	12.2	14.2	16.2	12.4
Rai Valley	G13251	41 13S	173 34E	55	16.8	16.6	15.5	12.6	9.5	6.9	6.4	7.8	9.9	11.8	13.5	15.5	11.9
Moutere Hills	G13301	41 22S	173 05E	110	17.7	18.0	16.7	13.9	10.9	8.7	8.0	8.8	10.5	12.4	14.2	16.2	13.0
Blenheim Aero	G13581	41 31S	173 52E	27	18.0	17.6	16.3	13.3	10.1	7.5	7.0	8.2	10.3	12.4	14.4	16.5	12.6
Blenheim	G13592	41 31S	173 57E	4	18.2	17.9	16.7	13.6	10.4	7.9	7.4	8.6	10.8	12.9	14.9	16.9	13.0
Blenheim, Wither Hills	G13595	41 33S	173 58E	32	18.3	17.9	16.7	13.6	10.6	8.0	7.3	8.5	10.5	12.6	14.6	16.8	13.0
Waihopai Power Stn	G13651	41 40S	173 34E	262	17.3	17.1	15.5	12.3	8.9	6.4	5.8	7.0	9.3	11.6	13.5	15.7	11.7
Grassmere Salt Works	G14711	41 44S	174 09E	2	17.9	17.6	16.3	13.7	10.8	8.3	7.7	8.7	10.7	12.7	14.6	16.5	13.0
Hammer Forest	G22581	42 31S	172 51E	387	15.9	15.7	14.1	10.9	7.4	4.6	4.0	5.6	8.0	10.5	12.3	14.5	10.3
Molesworth	G23021	42 04S	173 15E	893	14.0	14.0	12.2	8.8	5.3	2.5	1.6	3.1	5.7	8.2	10.2	12.5	8.2
Kaikoura Weather Stn	G23471	42 25S	173 42E	108	16.6	16.3	15.4	13.2	10.7	8.6	7.9	8.4	10.0	11.6	13.3	15.3	12.3
Balmoral Forest	H22871	42 52S	172 45E	198	17.0	16.8	15.0	11.6	7.9	5.1	4.7	6.3	8.7	11.2	13.3	15.4	11.1
Mt Cook, The Hermitage	H30711	43 44S	170 06E	765	14.3	14.6	12.6	9.4	5.8	3.0	2.1	3.7	6.5	8.9	10.8	12.8	8.7
Mt John	H30941	43 59S	170 28E	1027	13.7	14.0	11.9	8.9	5.2	2.6	1.5	2.7	5.2	7.7	9.7	11.8	7.9
Craigieburn Forest	H31172	43 09S	171 43E	914	13.4	13.7	12.0	8.9	5.3	2.7	2.0	3.4	5.7	7.7	9.8	11.9	8.1
Lake Coleridge	H31352	43 22S	171 32E	364	15.9	15.8	14.1	11.2	7.6	4.8	4.4	5.9	8.4	10.8	12.5	14.5	10.5
Highbank Power Stn	H31572	43 35S	171 44E	230	15.8	15.5	14.2	11.6	8.6	6.3	5.8	6.7	8.7	10.8	12.4	14.4	10.9
Hororata Substation	H31593	43 33S	171 59E	192	16.7	16.3	14.6	11.5	8.1	5.4	5.1	6.4	8.8	11.0	13.0	15.2	11.0
Winchmore	H31883	43 48S	171 48E	160	16.3	16.0	14.4	11.5	8.3	5.8	5.4	6.7	8.8	11.0	12.9	14.9	11.0
Ashburton Council	H31971	43 54S	171 45E	101	17.4	16.9	15.2	12.1	8.6	6.0	5.6	7.1	9.5	12.0	13.9	16.0	11.7
Ashley Forest 1	H32252	43 15S	172 35E	107	16.4	16.1	14.9	12.4	9.4	7.0	6.5	7.4	9.4	11.5	13.2	15.1	11.6
Rangiora	H32352	43 19S	172 34E	46	16.7	16.3	15.0	12.1	8.8	6.3	5.8	7.1	9.4	11.4	13.5	15.5	11.5
Darfield	H32412	43 29S	172 08E	195	17.3	16.9	15.1	12.2	8.7	6.1	5.6	7.1	9.4	11.7	13.6	15.8	11.6
Eyrewell Forest	H32424	43 24S	172 17E	158	16.8	16.3	14.6	11.6	8.3	5.8	5.3	6.5	8.9	11.2	13.3	15.5	11.2
Christchurch Aero	H32451	43 29S	172 32E	30	17.2	16.7	15.2	12.2	8.8	6.2	5.8	7.1	9.4	11.8	13.9	15.9	11.7
Christchurch Gardens	H32561	43 32S	172 37E	7	17.4	17.0	15.6	12.7	9.4	6.8	6.4	7.7	10.0	12.3	14.1	16.2	12.1
Christchurch, Bromley	H32573	43 32S	172 42E	9	17.5	17.0	15.8	13.0	9.8	7.3	6.8	8.0	10.2	12.2	14.2	16.1	12.3

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Mt Pleasant	H32574	43 34S	172 43E	137	16.8	16.7	15.7	13.5	10.5	8.4	7.7	8.5	10.3	12.0	13.8	15.6	12.5
Lincoln	H32641	43 39S	172 28E	11	16.9	16.6	15.1	12.1	8.9	6.3	6.0	7.2	9.2	11.4	13.3	15.5	11.5
Lake Tekapo, Air Safaris	H40041	44 01S	170 28E	762	15.3	15.3	13.2	9.9	6.0	2.6	1.8	3.7	6.8	9.4	11.5	13.8	9.1
Ikawai	H40892	44 52S	170 56E	70	15.6	15.1	13.7	11.2	8.0	5.5	5.3	6.6	8.8	10.6	12.6	14.2	10.6
Temuka	H41224	44 15S	171 17E	24	16.0	15.7	14.3	11.5	8.4	5.7	5.3	6.7	8.8	10.9	12.8	14.7	10.9
Timaru Aero	H41323	44 18S	171 14E	25	15.9	15.4	14.1	11.1	7.9	5.4	5.0	6.2	8.5	10.5	12.6	14.4	10.6
Adair	H41411	44 26S	171 10E	85	15.9	15.7	14.3	11.8	8.9	6.6	6.0	7.1	9.1	11.0	12.8	14.4	11.1
Timaru Gardens	H41421	44 25S	171 15E	17	16.6	16.2	14.9	11.9	8.7	6.0	5.6	7.0	9.5	11.7	13.5	15.5	11.4
Waimate	H41701	44 44S	171 02E	64	16.3	16.0	14.6	12.1	9.2	6.7	6.2	7.3	9.4	11.5	13.2	15.0	11.5
Omararama, Tara Hills	I49591	44 32S	169 54E	488	15.8	15.9	13.7	9.8	5.7	2.3	1.7	4.0	7.1	9.9	12.0	14.5	9.4
Lake Hawea	I49621	44 36S	169 15E	350	16.6	16.5	14.5	11.2	7.3	4.2	3.9	5.5	8.0	10.5	12.8	15.2	10.5
Nasebury Forest 1	I50012	45 01S	170 06E	610	13.8	13.9	12.0	8.7	5.2	2.2	1.7	3.5	6.1	8.6	10.3	12.6	8.2
Herbert Forest	I50272	45 15S	170 46E	61	15.0	14.6	13.5	11.0	8.1	5.8	5.4	6.6	8.4	10.2	11.7	13.6	10.3
Palmerston	I50471	45 29S	170 43E	21	15.0	14.6	13.2	10.8	7.8	5.6	5.4	6.4	8.4	10.1	12.2	13.9	10.3
Cherry Farm Hospital	I50662	45 37S	170 37E	6	14.8	14.5	13.4	11.1	8.3	6.2	5.7	6.8	8.6	10.5	12.0	13.5	10.5
Taiaroa Head	I50771	45 47S	170 44E	72	14.2	14.1	13.3	11.6	9.3	7.5	7.0	7.6	8.7	10.1	11.4	13.0	10.6
Berwick Forest	I50901	45 58S	170 04E	18	14.8	14.8	13.6	11.0	7.8	5.4	5.1	6.6	8.6	10.5	12.1	13.8	10.3
Dunedin Aero	I50921	45 55S	170 12E	1	14.9	14.7	13.2	10.6	7.5	5.2	5.0	6.5	8.6	10.4	12.1	13.8	10.2
Dunedin, Musselburgh	I50951	45 54S	170 31E	2	15.2	15.1	14.0	11.8	9.1	7.1	6.5	7.6	9.3	11.0	12.5	14.0	11.1
Te Anau	I57473	45 25S	167 44E	204	14.4	14.5	13.1	10.3	7.0	4.7	4.4	5.7	7.8	9.5	11.4	13.4	9.7
Manapouri, West Arm 2	I57522	45 31S	167 16E	232	14.0	14.1	12.4	9.5	6.5	4.2	3.7	4.8	6.9	9.1	11.2	12.9	9.1
Queenstown	I58061	45 02S	168 40E	329	16.3	16.3	14.4	11.0	7.3	4.4	4.0	5.7	8.3	10.7	12.9	15.0	10.5
Queenstown Aero	I58074	45 01S	168 44E	349	15.4	15.1	13.3	9.9	6.2	3.3	3.0	4.8	7.3	9.5	12.1	14.1	9.5
Cromwell M.W.D.	I59021	45 02S	169 12E	213	17.6	17.5	15.2	11.0	6.7	3.2	3.1	5.3	8.7	11.5	13.8	16.3	10.8
Ophir 2	I59161	45 07S	169 37E	305	15.7	15.6	13.6	9.7	5.5	2.1	1.9	4.3	7.4	10.2	12.3	14.7	9.4
Earnsclough D.S.I.R.	I59232	45 14S	169 20E	152	16.5	16.3	14.3	10.3	6.2	2.5	2.5	4.9	8.3	11.0	13.1	15.4	10.1
Alexandra	I59234	45 16S	169 23E	141	17.2	17.0	15.0	11.0	6.8	3.1	3.0	5.5	8.8	11.6	13.7	16.1	10.7
Roxburgh Power Sta	I59431	45 29S	169 19E	110	16.4	16.1	14.3	11.1	7.7	4.9	4.6	6.4	8.8	11.3	13.2	15.3	10.8
Mahinerangi Dam	I59891	45 53S	169 58E	396	13.1	13.1	11.9	9.4	6.3	4.2	3.6	4.7	6.6	8.5	10.2	11.8	8.6
Tapanui	I59921	45 57S	169 15E	180	14.6	14.3	13.0	10.4	7.5	5.3	5.0	6.3	8.2	10.1	11.6	13.5	10.0
Taiari Mouth	I60021	46 05S	170 12E	15	13.9	13.8	13.0	10.9	8.4	6.4	5.8	6.8	8.2	9.7	11.4	12.8	10.1
Otautau N.Z.F.S.	I68102	46 10S	168 00E	55	14.0	13.9	12.8	10.3	7.5	5.2	4.8	6.1	8.2	10.0	11.4	13.1	9.8
Winton	I68133	46 09S	168 20E	44	14.5	14.3	13.0	10.7	7.7	5.6	5.4	6.7	8.5	10.1	11.8	13.5	10.1
Hokonui Forest	I68252	46 13S	168 35E	46	14.7	14.4	13.3	10.8	7.8	5.5	5.2	6.5	8.6	10.4	11.9	13.7	10.2
Invercargill Aero	I68433	46 25S	168 20E	0	14.0	13.7	12.6	10.3	7.7	5.5	5.3	6.4	8.3	9.9	11.4	13.0	9.9

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					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Tiwai Point	I68533	46 35S	168 23E	5	14.3	14.3	13.3	11.3	8.7	6.6	6.3	7.2	8.8	10.3	12.0	13.5	10.5
Milton	I69191	46 07S	169 58E	18	14.5	14.7	13.4	10.5	7.4	5.1	4.7	6.3	8.4	10.2	12.1	13.7	10.1
Baldutha, Finegand	I69273	46 16S	169 44E	6	14.9	14.7	13.5	10.8	7.8	5.6	5.1	6.5	8.6	10.4	12.2	13.8	10.3

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					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Cape Reinga	A42461	34 25S	172 41E	191	21.7	22.3	21.7	19.6	17.4	15.7	14.7	14.9	15.7	16.9	18.4	20.2	18.3
Kaitaia Aero	A53021	35 04S	173 17E	80	23.9	24.3	23.2	20.7	18.1	16.1	15.3	15.6	16.6	18.1	19.9	22.0	19.5
Waipoua Forest	A53651	35 39S	173 33E	88	23.2	23.6	22.7	20.3	17.8	15.8	15.0	15.4	16.4	17.9	19.7	21.6	19.1
Dargaville	A53982	35 57S	173 50E	15	23.6	24.0	23.0	20.5	17.8	15.8	15.0	15.4	16.3	17.8	19.7	21.9	19.2
Glennervie Forest	A54631	35 39S	174 21E	107	23.6	23.4	22.3	19.8	17.3	15.3	14.4	15.0	16.3	18.0	20.0	21.9	18.9
Leigh 2	A64282	36 16S	174 48E	27	22.5	22.7	22.1	20.1	17.8	15.8	14.9	15.2	16.1	17.5	19.1	21.0	18.7
Woodhill Forest	A64741	36 45S	174 26E	30	22.7	23.1	22.3	19.9	17.3	15.4	14.5	15.0	16.1	17.5	19.3	21.2	18.7
Riverhead Forest	A64751	36 46S	174 35E	28	23.5	23.8	22.7	20.2	17.5	15.3	14.6	15.1	16.3	17.9	19.8	21.8	19.0
Whenuapai Aero	A64761	36 47S	174 38E	26	23.6	24.0	22.7	20.1	17.3	15.2	14.4	15.0	16.2	17.8	19.8	21.9	19.0
Auckland,Albert Park	A64871	36 51S	174 46E	49	23.8	23.9	22.9	20.4	17.6	15.4	14.7	15.3	16.6	18.3	20.1	22.2	19.3
Auckland City	A64878	36 51S	174 45E	75	22.8	23.1	22.1	19.7	17.2	15.1	14.3	14.8	15.9	17.4	19.2	21.1	18.6
Auckland,Owairaka	A64971	36 54S	174 44E	41	23.1	23.5	22.3	19.9	17.2	15.0	14.3	14.8	16.1	17.7	19.6	21.6	18.7
Port Fitzroy	A65132	36 11S	175 21E	4	23.5	23.8	22.8	20.6	18.1	16.1	15.3	15.8	16.9	18.4	20.1	21.9	19.4
Whangapoua Forest	B65761	36 46S	175 36E	4	24.4	24.3	23.0	20.7	18.1	15.8	15.2	15.9	17.2	19.0	20.8	22.8	19.8
Tairua Forest	B75182	37 10S	175 51E	3	23.7	23.6	22.4	20.0	17.3	15.1	14.5	15.1	16.7	18.6	20.4	22.1	19.1
Paeroa	B75361	37 23S	175 40E	4	25.1	25.1	23.6	20.7	17.2	14.8	14.3	15.2	16.9	19.0	21.3	23.4	19.7
Waihi	B75381	37 23S	175 51E	91	23.9	23.5	22.0	19.3	16.2	14.0	13.3	14.2	15.9	18.0	20.0	22.2	18.5
Te Aroha	B75571	37 33S	175 43E	18	25.0	25.3	23.5	20.6	17.2	14.8	14.1	15.2	16.7	18.9	21.0	23.2	19.6
Tauranga	B76611	37 41S	176 10E	2	23.5	23.5	22.2	19.9	16.9	14.8	14.2	14.8	16.3	17.9	19.8	21.6	18.8
Tauranga Aero	B76621	37 40S	176 12E	4	23.7	23.7	22.4	19.9	17.0	14.8	14.2	14.8	16.3	18.0	20.0	21.9	18.9
Rotochu Forest	B76951	37 54S	176 31E	72	23.5	23.5	22.1	19.4	16.4	14.2	13.6	14.4	16.1	18.0	19.9	21.6	18.6
Whakatane Mill	B76993	37 58S	176 57E	2	24.0	24.1	23.0	20.6	17.5	15.1	14.5	15.3	16.8	18.6	20.5	22.2	19.4
Kawerau	B86071	38 05S	176 43E	30	25.4	25.3	23.6	20.9	17.5	15.0	14.4	15.4	17.2	19.4	21.6	23.4	19.9
Te Teko	B86083	38 02S	176 49E	8	25.7	25.6	24.2	21.2	17.6	15.0	14.6	15.8	17.7	19.8	22.0	23.9	20.3
Whakarewarewa	B86124	38 10S	176 16E	307	23.0	23.0	21.4	18.5	15.1	12.6	12.0	13.0	14.7	17.1	19.0	21.1	17.5
Rotorua Aero 2	B86131	38 07S	176 19E	287	22.9	23.0	21.3	18.4	15.0	12.6	12.0	13.0	14.7	16.7	19.0	21.0	17.5
Waioapu Forest	B86341	38 19S	176 25E	435	23.0	23.0	21.1	17.8	14.3	11.6	11.2	12.4	14.3	16.9	19.1	21.2	17.2
Kaingaroa Forest	B86451	38 24S	176 34E	544	21.9	21.8	19.9	16.7	13.2	10.7	10.1	11.2	13.2	15.7	18.0	20.1	16.0
Wairapukao Forest	B86551	38 32S	176 34E	437	23.0	23.0	20.8	17.5	14.0	11.5	10.9	12.1	14.1	16.9	19.2	21.2	17.0
Taupo N.Z.E.D.	B86602	38 41S	176 04E	376	23.4	23.4	21.3	17.9	14.3	11.8	11.2	12.2	14.2	16.8	19.2	21.6	17.3
Wairakei Power Stn	B86611	38 38S	176 06E	342	23.8	23.6	21.6	18.3	14.6	12.2	11.6	12.7	14.7	17.2	19.6	21.9	17.6
Wairakei Research Stn	B86612	38 37S	176 07E	402	23.6	23.7	21.7	18.4	14.5	11.9	11.4	12.6	14.3	16.8	19.3	21.6	17.5
Minginui Forest	B86671	38 39S	176 44E	366	23.5	23.2	21.3	18.1	14.6	12.1	11.6	12.7	14.7	17.3	19.6	21.8	17.6
Waimihia Forest	B86821	38 48S	176 15E	743	19.9	19.6	17.7	14.4	11.1	8.8	8.0	9.1	10.9	13.5	15.9	18.2	13.9
Opotiki	B87023	38 00S	177 17E	6	22.9	23.1	22.2	20.0	17.1	14.9	14.2	14.9	16.1	17.7	19.4	21.2	18.6



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Waimana	B87103	38 09S	177 05E	37	24.4	24.3	23.1	20.4	17.2	14.7	14.2	15.2	16.8	18.8	20.6	22.5	19.4
Auckland, Mangere	C64971	36 58S	174 47E	2	23.2	23.5	22.5	19.9	17.1	15.0	14.2	14.8	16.0	17.7	19.6	21.6	18.8
Auckland, Otara	C64981	36 57S	174 52E	12	23.5	23.9	22.9	20.3	17.4	15.2	14.4	15.0	16.2	17.8	19.7	21.8	19.0
Auckland Aero	C74082	37 00S	174 48E	7	23.3	23.6	22.5	19.8	17.0	14.8	14.0	14.8	16.0	17.6	19.6	21.6	18.7
Ardmore	C74091	37 02S	174 58E	30	24.0	24.5	23.2	20.4	17.4	15.2	14.5	15.2	16.3	17.9	20.2	22.2	19.3
Waikuku Forest	C74371	37 21S	174 43E	52	22.7	23.2	22.4	19.9	17.1	14.9	14.2	14.9	15.9	17.3	19.2	21.1	18.6
Maramarua Forest	C75321	37 18S	175 15E	38	24.0	24.4	22.9	20.0	16.9	14.5	13.9	14.8	16.3	18.1	20.2	22.3	19.0
Te Kawwhata M.A.F.	C75412	37 25S	175 08E	32	24.0	24.3	22.9	20.0	16.7	14.4	13.8	14.7	16.2	18.2	20.2	22.3	19.0
Ruakura	C75731	37 47S	175 19E	40	23.9	24.3	22.8	20.0	16.6	14.1	13.6	14.6	16.2	18.0	20.1	22.1	18.9
Whatawhata	C75801	37 49S	175 05E	104	23.0	23.6	22.3	19.5	16.2	13.9	13.3	14.2	15.5	17.1	19.1	21.3	18.2
Rukuhia	C75831	37 50S	175 18E	66	23.7	24.4	22.7	19.8	16.3	13.9	13.3	14.3	15.9	17.7	19.7	21.9	18.6
Mokau, Mohakatino Stn	C84761	38 43S	174 37E	46	21.5	22.1	21.2	18.7	15.9	13.8	13.2	13.8	15.0	16.2	18.2	20.0	17.5
Arapuni Power Stn	C85061	38 04S	175 39E	123	24.9	24.8	23.0	19.8	16.0	13.5	12.9	14.3	16.3	18.4	20.7	23.0	19.0
Te Kuiti	C85314	38 20S	175 09E	61	24.0	24.4	22.8	19.8	16.2	13.7	13.2	14.3	16.0	17.9	20.1	22.2	18.7
Pureora Forest	C85551	38 31S	175 33E	549	20.9	21.1	19.3	16.1	12.7	10.4	9.8	10.6	12.3	14.6	16.8	19.0	15.3
Taumarunui	C85821	38 53S	175 16E	171	24.8	25.0	23.0	19.6	15.7	12.9	12.5	14.0	15.9	18.3	20.7	23.0	18.8
New Plymouth Aero	C94011	39 00S	174 10E	27	21.7	22.2	21.1	18.7	15.9	13.9	13.1	13.7	14.9	16.3	18.0	20.1	17.5
Te Wera Forest	C94262	39 14S	174 36E	180	22.1	22.5	21.1	18.2	14.9	12.7	12.0	12.9	14.3	16.3	18.2	20.4	17.1
Lower Retaruke	C95022	39 04S	175 12E	223	23.8	24.2	22.3	18.8	14.8	12.4	11.9	13.1	14.9	17.1	19.9	21.9	17.9
Turangi	C95085	38 60S	175 49E	375	23.0	23.0	21.0	17.6	14.0	11.7	11.0	12.0	14.0	16.2	19.0	21.1	17.0
Pahiatua, Mangamutu	D05481	40 27S	175 49E	116	22.0	22.4	20.9	17.8	14.6	12.1	11.6	12.6	14.2	16.0	18.0	20.5	16.9
Mt Bruce Res	D05765	40 43S	175 38E	305	21.3	21.2	19.9	16.6	13.3	11.0	10.4	11.3	13.2	15.1	17.5	19.4	15.9
Waingawa	D05964	40 59S	175 37E	114	23.8	23.8	21.9	18.6	15.1	12.6	11.9	12.9	15.0	17.5	19.5	21.9	17.9
Kopua	D06022	40 05S	176 17E	311	22.0	21.9	20.2	17.0	13.8	11.2	10.6	11.6	13.6	15.9	18.1	20.0	16.3
Waipukurau Aero	D06051	40 00S	176 32E	137	24.1	23.8	21.8	18.6	15.2	12.5	11.9	12.9	14.9	17.5	20.0	22.2	18.0
Dannevirke	D06212	40 13S	176 07E	207	22.3	22.6	20.9	17.7	14.3	11.9	11.3	12.3	14.2	16.5	18.5	20.6	16.9
Ngaumu Forest	D15081	41 02S	175 53E	244	22.6	22.7	21.1	17.8	14.4	11.8	11.0	12.2	14.4	16.9	18.7	20.9	17.0
Tauheremikau	D15134	41 07S	175 23E	43	23.4	23.5	22.0	18.9	15.4	13.0	12.2	13.2	15.2	17.3	19.4	21.6	17.9
Waiorongomai	D15211	41 16S	175 09E	21	21.6	21.7	20.2	17.5	14.5	12.4	11.7	12.4	14.3	15.8	17.8	19.7	16.6
Ruatoria	D78931	37 54S	178 19E	61	24.7	24.3	22.9	20.4	17.7	15.3	14.4	15.1	16.9	19.0	21.1	23.0	19.6
Mangatu Forest	D87284	38 17S	177 51E	182	24.5	24.0	22.2	19.2	15.9	13.5	12.8	13.8	15.9	18.1	20.4	22.7	18.6
Gisborne, Manutuke	D87683	38 41S	177 53E	9	24.2	23.9	22.6	20.1	17.3	14.8	14.0	14.9	16.7	19.0	20.9	22.7	19.2
Gisborne Aero	D87692	38 39S	177 59E	4	24.7	24.3	22.7	20.0	17.1	14.7	14.0	14.8	16.6	19.1	21.4	23.2	19.4
Waikaremoana Onepoto	D87811	38 48S	177 07E	643	21.4	21.1	19.6	16.2	12.8	10.1	9.4	10.4	12.6	15.4	17.7	19.6	15.5
Esk Forest	D96272	39 15S	176 42E	427	22.0	21.4	19.9	16.9	13.9	11.4	10.6	11.5	13.8	16.4	18.5	20.2	16.4

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Kaweka Forest	D96444	39 26S	176 28E	416	22.4	21.8	20.4	17.2	14.1	11.7	11.1	11.9	14.1	16.6	18.9	20.7	16.7
Napier Nelson Pk	D96591	39 30S	176 55E	2	24.4	23.9	22.7	19.9	16.9	14.4	13.8	14.6	16.7	19.1	21.2	22.9	19.2
Havelock Nth D.S.I.R. 1	D96689	39 40S	176 53E	9	24.0	23.7	22.4	19.6	16.7	14.0	13.5	14.3	16.4	18.8	20.7	22.3	18.9
Gwawas Forest	D96743	39 44S	176 27E	335	22.6	22.2	20.4	17.4	14.2	11.7	10.9	11.8	14.2	16.8	19.0	20.6	16.8
Makaretu	D96931	39 57S	176 19E	335	23.0	22.8	21.2	17.9	14.5	12.0	11.4	12.4	14.5	16.8	19.1	21.1	17.2
Mohaka Forest	D97004	39 04S	177 02E	286	23.0	22.3	21.0	18.2	15.1	12.6	12.0	12.9	15.1	17.4	19.6	21.3	17.5
Wairoa, Frasertown	D97042	39 00S	177 24E	8	24.7	24.1	22.8	19.9	16.8	14.4	13.8	14.7	16.9	19.1	21.3	23.1	19.3
Kapiti Island	E04891	40 51S	174 56E	16	21.2	21.2	20.1	17.3	14.4	12.4	11.8	12.5	14.0	15.7	17.6	19.8	16.5
Paraparaumu Aero	E04991	40 54S	174 59E	5	21.3	21.4	20.3	17.8	15.0	13.0	12.3	13.0	14.4	15.9	17.7	19.8	16.8
Bulls, Flockhouse	E05221	40 14S	175 16E	9	22.0	22.1	21.2	18.4	15.6	13.4	12.6	13.5	14.9	16.4	18.5	20.5	17.4
Ohakea Aero	E05231	40 12S	175 23E	48	22.4	22.7	21.4	18.6	15.4	13.0	12.4	13.3	14.9	16.6	18.7	20.8	17.5
Palmerston N Kairanga	E05343	40 20S	175 28E	15	22.6	23.0	21.7	18.8	15.4	13.2	12.6	13.6	15.1	16.8	18.9	20.8	17.7
Palmerston N Aero	E05361	40 20S	175 37E	45	22.5	22.9	21.6	18.5	15.3	12.9	12.2	13.2	14.9	16.6	18.8	21.0	17.5
Palmerston N	E05363	40 23S	175 37E	34	22.4	22.8	21.3	18.4	15.2	12.9	12.2	13.2	14.8	16.7	18.8	20.9	17.5
Waitare Forest	E05521	40 33S	175 12E	3	21.7	22.0	20.8	18.3	15.3	13.1	12.5	13.4	14.8	16.3	18.2	20.2	17.2
Levin M.A.F.	E05622	40 39S	175 16E	46	21.7	22.0	20.8	18.1	15.2	13.1	12.4	13.3	14.7	16.2	18.0	20.1	17.1
Lower Hutt, Taika	E14192	41 11S	174 58E	65	21.1	21.4	20.2	17.5	14.6	12.3	11.8	12.4	13.9	15.6	17.3	19.4	16.5
Lower Hutt, Avalon	E14195	41 11S	174 56E	15	21.7	21.8	20.3	17.8	14.9	12.9	12.2	12.9	14.5	15.9	18.0	19.8	16.9
Wellington, Kelburn	E14272	41 17S	174 46E	135	20.4	20.5	19.2	16.6	13.9	11.9	11.2	11.8	13.5	15.2	16.8	18.8	15.8
Lower Hutt, Gracefield	E14290	41 14S	174 55E	34	21.1	21.2	20.0	17.4	14.7	12.7	11.9	12.6	14.2	15.7	17.5	19.4	16.5
Wainuiomata Coast Rd	E14296	41 17S	174 57E	82	21.2	21.2	19.6	17.2	14.3	12.3	11.5	12.1	13.7	15.4	17.4	19.2	16.3
Wellington Aero	E14387	41 20S	174 49E	6	21.3	21.1	19.8	17.3	14.8	12.8	12.0	12.7	14.2	15.9	17.8	19.6	16.6
Kaitoke	E15011	41 05S	175 11E	223	20.6	20.7	19.5	16.6	13.5	11.4	10.6	11.5	13.1	14.8	16.8	18.8	15.7
Wallaceville	E15102	41 08S	175 03E	56	21.7	22.0	20.5	17.7	14.7	12.6	11.9	12.7	14.3	16.0	17.8	20.0	16.8
Stratford Mtn House	E94313	39 18S	174 07E	846	18.2	18.1	16.4	13.1	9.9	7.7	6.8	7.6	9.4	11.9	14.1	16.2	12.4
Stratford Dem Farm	E94333	39 20S	174 18E	311	20.8	21.0	19.6	16.8	14.0	11.7	11.0	11.8	13.4	15.1	17.0	19.1	15.9
Manaia Dem Farm	E94512	39 32S	174 09E	98	20.9	21.2	20.1	17.6	15.1	13.1	12.3	12.9	14.2	15.8	17.6	19.5	16.7
Karioi 2	E95451	39 29S	175 31E	648	21.3	21.5	19.7	16.3	12.6	10.1	9.3	10.6	12.2	15.0	17.2	19.6	15.4
Waiouru M.W.D.	E95464	39 28S	175 40E	823	19.5	19.6	17.8	14.5	11.0	8.5	7.7	9.0	10.7	13.1	15.5	17.6	13.7
Waiouru Military Camp	E95465	39 28S	175 41E	823	19.2	19.3	17.5	14.0	10.5	8.2	7.4	8.6	10.3	12.7	15.4	17.4	13.4
Wanganui, Cooks Gdns	E95902	39 56S	175 03E	22	22.3	22.5	21.3	18.7	15.8	13.6	12.8	13.8	15.2	16.9	19.0	20.8	17.7
Westport Aero	F11752	41 44S	171 35E	2	20.0	20.3	19.3	17.1	14.7	12.9	12.4	13.0	14.1	15.2	16.8	18.6	16.2
Cobb Dam	F12162	41 06S	172 41E	823	18.4	18.9	16.8	14.0	10.8	8.4	7.5	8.4	10.0	12.3	14.2	16.3	13.0
Lake Rototiti	F12882	41 48S	172 51E	634	20.7	20.9	18.5	15.0	11.3	8.8	8.3	9.7	11.8	14.2	16.5	18.7	14.5
Hokitika Aero	F20793	42 43S	170 59E	39	19.3	19.8	18.9	16.7	14.1	12.3	11.9	12.7	13.9	15.0	16.7	18.3	15.8

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Reefton	F21182	42 07S	171 52E	198	22.5	22.7	20.6	17.1	12.7	9.6	9.6	12.1	14.3	16.5	18.6	20.9	16.4
Totara Flat	F21361	42 18S	171 37E	77	22.2	22.4	20.7	17.4	13.6	10.9	10.8	12.6	14.7	16.5	18.6	20.9	16.8
Greymouth Aero	F21422	42 27S	171 11E	4	19.6	19.8	19.1	16.8	14.2	12.3	11.8	12.8	14.0	15.1	16.5	18.4	15.9
Harihari N.Z.F.S.	F30153	43 09S	170 33E	45	20.3	21.0	19.9	17.4	14.5	12.5	12.2	13.2	14.2	15.3	17.2	19.3	16.4
Franz Joseph T.H.C.	F30311	43 23S	170 11E	122	19.6	20.1	19.0	16.8	14.0	11.8	11.6	12.5	13.5	14.7	16.3	18.6	15.7
Milford Sound	F47691	44 40S	167 55E	3	18.7	19.2	18.1	15.5	12.2	9.4	9.3	11.5	13.0	14.2	15.8	17.7	14.6
Motueka	G12191	41 06S	172 58E	8	23.1	23.2	21.5	18.7	15.7	13.3	12.6	13.5	15.6	17.7	19.8	21.7	18.0
Appleby	G13211	41 17S	173 06E	17	22.4	22.6	21.0	18.3	15.4	13.0	12.3	13.2	15.1	17.0	18.9	20.8	17.5
Nelson Aero	G13222	41 17S	173 14E	2	22.2	22.2	20.7	18.0	15.0	12.8	12.1	12.9	14.8	16.7	18.6	20.6	17.2
Rai Valley	G13251	41 13S	173 34E	55	22.7	23.0	21.1	18.4	15.1	12.2	11.9	13.3	15.3	17.3	19.0	20.9	17.5
Moutere Hills	G13301	41 22S	173 05E	110	22.2	22.5	20.8	17.7	14.4	12.1	11.6	12.3	14.3	16.3	18.2	20.4	16.9
Blenheim Aero	G13581	41 31S	173 52E	27	23.9	23.6	21.8	18.9	15.6	13.1	12.5	13.6	15.7	18.1	20.0	22.0	18.2
Blenheim	G13592	41 31S	173 57E	4	23.8	23.6	22.1	19.0	15.8	13.3	12.8	13.9	16.0	18.4	20.2	22.2	18.4
Blenheim, Wither Hills	G13595	41 33S	173 58E	32	24.0	23.7	22.0	18.9	15.7	13.2	12.5	13.5	15.6	18.0	20.1	22.4	18.3
Waihopai Power Stn	G13651	41 40S	173 34E	262	23.5	23.5	21.4	18.0	14.3	11.6	11.0	12.5	14.7	17.4	19.3	21.7	17.4
Grassmere Salt Works	G14711	41 44S	174 09E	2	21.9	21.5	20.3	17.7	14.8	12.3	11.6	12.3	14.4	16.7	18.5	20.4	16.9
Hanmer Forest	G22581	42 31S	172 51E	387	22.9	22.8	20.7	17.5	13.2	10.0	9.4	11.3	14.1	16.8	18.7	21.0	16.5
Molesworth	G23021	42 04S	173 15E	893	21.2	21.5	18.9	15.2	11.0	7.8	6.6	8.4	11.3	14.4	16.5	19.1	14.3
Kaikoura Weather Stn	G23471	42 25S	173 42E	108	20.4	20.0	18.9	16.5	13.8	11.6	10.8	11.4	13.5	15.3	17.0	19.0	15.7
Balmoral Forest	H22871	42 52S	172 45E	198	23.6	23.6	21.4	18.2	14.0	11.1	10.5	12.3	14.9	17.6	19.5	21.8	17.4
Mt Cook, The Hermitage	H30711	43 44S	170 06E	765	19.9	20.4	17.9	14.5	10.3	7.3	6.2	8.4	11.4	13.9	16.0	18.2	13.7
Mt John	H30941	43 59S	170 28E	1027	19.2	19.6	16.9	13.2	8.9	5.9	4.7	6.4	9.6	12.6	14.8	17.2	12.4
Craigieburn Forest	H31172	43 09S	171 43E	914	19.7	20.2	17.9	14.5	10.1	7.2	6.5	8.3	11.1	13.3	15.6	17.9	13.5
Lake Coleridge	H31352	43 22S	171 32E	364	21.9	21.9	19.9	16.9	13.1	9.9	9.5	11.3	13.9	16.4	18.1	20.2	16.1
Highbank Power Stn	H31572	43 35S	171 44E	230	21.2	21.0	19.1	16.3	12.8	10.3	9.5	10.8	13.1	15.5	17.2	19.4	15.5
Hororata Substation	H31593	43 33S	171 59E	192	23.2	22.9	20.7	17.7	14.0	11.1	10.5	12.0	14.6	17.1	19.2	21.4	17.0
Winchmore	H31883	43 48S	171 48E	160	22.2	21.7	19.7	16.9	13.2	10.6	10.1	11.5	14.0	16.5	18.5	20.6	16.3
Ashburton Council	H31971	43 54S	171 45E	101	23.7	23.0	21.0	17.9	13.9	11.2	10.7	12.3	15.2	18.0	19.9	22.0	17.4
Ashley Forest 1	H32252	43 15S	172 35E	107	21.4	21.2	19.6	17.1	13.7	11.1	10.5	11.7	14.1	16.5	18.2	20.0	16.3
Rangiora	H32352	43 19S	172 34E	46	22.4	22.1	20.5	17.9	14.1	11.5	10.9	12.3	15.1	17.3	19.2	21.1	17.0
Darfield	H32412	43 29S	172 08E	195	24.0	23.5	21.1	18.0	13.7	10.6	10.1	12.2	15.0	17.8	19.9	22.3	17.4
Eyrewell Forest	H32424	43 24S	172 17E	158	23.1	22.6	20.5	17.6	13.8	11.1	10.4	12.0	14.7	17.4	19.5	21.6	17.0
Christchurch Aero	H32451	43 29S	172 32E	30	22.3	21.8	20.1	17.4	14.0	11.3	10.7	12.1	14.5	17.1	19.1	21.0	16.8
Christchurch Gardens	H32561	43 32S	172 37E	7	22.5	22.1	20.4	17.9	14.3	11.7	11.1	12.5	15.0	17.5	19.4	21.3	17.1
Christchurch, Bromley	H32573	43 32S	172 42E	9	21.8	21.2	20.0	17.3	14.0	11.6	10.9	12.0	14.5	16.7	18.6	20.4	16.6

Mean Daily Maximum Temperature Normals 1961–1990. (Celsius)

STATION	Number	Lat	Long	Ht(m)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Mt Pleasant	H32574	43 34S	172 43E	137	20.8	20.6	19.4	17.0	13.7	11.4	10.6	11.7	13.9	15.9	17.8	19.6	16.0
Lincoln	H32641	43 39S	172 28E	11	22.4	22.0	20.2	17.5	13.9	11.2	10.6	11.9	14.3	16.9	18.9	20.9	16.7
Lake Tekapo, Air Safaris	H40041	44 01S	170 28E	762	21.5	21.6	19.0	15.4	10.7	7.0	6.0	8.5	12.0	14.9	17.3	19.7	14.5
Ikawai	H40892	44 52S	170 56E	70	21.2	20.8	19.2	17.2	13.8	11.1	10.7	12.1	14.5	16.2	18.2	19.5	16.2
Temuka	H41224	44 15S	171 17E	24	21.6	21.2	19.5	17.1	13.9	11.2	10.6	12.0	14.3	16.5	18.3	19.9	16.3
Timaru Aero	H41323	44 18S	171 14E	25	21.4	20.8	19.3	16.8	13.5	11.0	10.4	11.7	14.1	16.2	18.2	19.8	16.1
Adair	H41411	44 26S	171 10E	85	20.8	20.4	18.6	16.1	13.0	10.7	9.9	11.2	13.5	15.5	17.5	18.9	15.5
Timaru Gardens	H41421	44 25S	171 15E	17	21.6	21.2	19.6	16.8	13.4	10.7	10.1	11.7	14.4	16.8	18.7	20.4	16.3
Waimate	H41701	44 44S	171 02E	64	21.4	21.1	19.4	17.3	14.2	11.7	11.1	12.2	14.5	16.6	18.3	19.9	16.5
Omarama, Tara Hills	I49591	44 32S	169 54E	488	22.8	23.2	20.1	15.9	11.1	7.2	6.5	9.4	13.0	16.3	18.7	21.4	15.5
Lake Hawea	I49621	44 36S	169 15E	350	22.1	22.1	19.6	16.0	11.6	8.0	7.8	10.1	12.7	15.4	17.8	20.5	15.3
Nasebury Forest 1	I50012	45 01S	170 06E	610	20.9	21.2	18.6	14.7	10.4	6.9	6.4	8.8	12.0	14.8	16.8	19.5	14.2
Herbert Forest	I50272	45 15S	170 46E	61	20.7	20.5	19.1	17.1	13.7	11.4	10.7	12.3	14.4	16.1	17.8	19.1	16.1
Palmerston	I50471	45 29S	170 43E	21	20.5	20.2	18.8	16.9	13.5	11.2	10.8	11.9	14.0	15.6	17.6	18.9	15.8
Cherry Farm Hospital	I50662	45 37S	170 37E	6	19.8	19.7	18.4	16.4	13.3	11.2	10.5	11.7	13.7	15.8	17.2	18.4	15.5
Taiaroa Head	I50771	45 47S	170 44E	72	17.4	17.1	16.1	14.3	11.9	10.0	9.4	10.1	11.4	13.0	14.5	15.8	13.4
Berwick Forest	I50901	45 58S	170 04E	18	20.4	20.5	19.0	16.4	12.6	10.1	9.8	11.9	14.2	16.0	17.6	19.2	15.7
Dunedin Aero	I50921	45 55S	170 12E	1	20.7	20.6	19.0	16.6	12.9	10.4	10.2	12.0	14.2	16.0	17.7	19.3	15.8
Dunedin, Musselburgh	I50951	45 54S	170 31E	2	19.0	18.9	17.5	15.4	12.5	10.4	9.9	11.1	13.0	14.9	16.4	17.6	14.7
Te Anau	I57473	45 25S	167 44E	204	20.0	20.4	18.6	15.1	11.3	8.5	8.1	10.1	12.8	14.7	16.9	18.9	14.6
Manapouri, West Arm 2	I57522	45 31S	167 16E	232	18.5	18.5	16.1	12.5	9.1	6.6	5.9	7.5	10.4	13.0	15.6	17.4	12.6
Queenstown	I58061	45 02S	168 40E	329	22.2	22.2	19.8	15.9	11.5	8.3	7.9	10.2	13.2	16.0	18.4	20.7	15.5
Queenstown Aero	I58074	45 01S	168 44E	349	21.5	21.3	18.8	15.1	10.9	7.9	7.5	9.8	12.6	14.9	17.9	19.9	14.8
Cromwell M.W.D.	I59021	45 02S	169 12E	213	24.3	24.5	21.6	17.4	12.2	7.9	7.9	11.1	14.7	17.7	20.2	22.9	16.9
Ophir 2	I59161	45 07S	169 37E	305	22.9	23.1	20.6	16.6	11.6	7.7	7.4	10.7	13.9	16.8	19.0	21.5	16.0
Earnsclough D.S.I.R.	I59232	45 14S	169 20E	152	23.9	23.9	21.7	17.6	12.6	7.9	8.0	11.7	15.3	18.1	20.3	22.6	17.0
Alexandra	I59234	45 16S	169 23E	141	23.5	23.6	21.3	17.2	12.3	7.7	7.8	11.5	15.0	17.8	20.0	22.3	16.7
Roxburgh Power Stn	I59431	45 29S	169 19E	110	23.0	22.8	20.5	17.1	12.5	9.0	8.7	11.6	14.7	17.4	19.5	21.5	16.5
Mahinerangi Dam	I59891	45 53S	169 58E	396	18.2	18.3	16.6	14.0	10.2	8.0	7.5	9.1	11.5	13.4	15.3	16.7	13.2
Tapannui	I59921	45 57S	169 15E	180	20.2	20.1	18.3	15.2	11.6	9.0	8.6	10.6	13.1	15.2	17.0	18.9	14.8
Taieri Mouth	I60021	46 05S	170 12E	15	18.4	18.4	17.2	15.2	12.3	10.2	9.8	11.0	12.7	14.2	15.8	16.9	14.3
Otautau N.Z.F.S.	I68102	46 10S	168 00E	55	19.3	19.5	18.0	15.4	12.1	9.6	9.3	11.2	13.4	15.1	16.6	18.4	14.8
Winton	I68133	46 09S	168 20E	44	19.8	19.9	18.3	15.5	12.2	9.8	9.6	11.4	13.4	15.1	17.0	18.6	15.0
Hokonui Forest	I68252	46 13S	168 35E	46	20.1	20.3	18.6	15.7	12.2	9.6	9.4	11.2	13.5	15.5	17.3	19.1	15.2
Invercargill Aero	I68433	46 25S	168 20E	0	18.5	18.6	17.3	14.9	12.0	9.7	9.5	11.2	13.0	14.4	16.0	17.6	14.4

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						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Tiwai Point	I68533	46 35S	168 23E	5	17.8	18.1	16.8	14.7	11.8	9.8	9.6	11.0	12.5	13.9	15.5	17.1	14.1
Milton	I69191	46 07S	169 58E	18	19.9	20.4	18.8	15.8	11.9	9.5	9.1	11.2	13.5	15.4	17.4	18.9	15.2
Balclutha, Finegand	I69273	46 16S	169 44E	6	19.9	19.9	18.4	15.8	12.1	9.6	9.2	11.2	13.6	15.4	17.2	18.8	15.1