

CLIMATOLOGICAL TABLE—Summary of the Records of Temperature, Rainfall, and Sunshine for December 1966—continued

Station	Height of Station Above M.S.L.	Air Temperatures in Degrees (Fahrenheit)								Rainfall in Inches					Bright Sunshine
		Means of		Mean of A and B	Difference From Normal	Absolute Maximum and Minimum				Total Fall	No. of Rain Days	Difference From Normal	Maximum Fall		
		A Max.	B Min.			Maximum	Date	Minimum	Date				Amount	Date	
	Ft.	°F.	°F.	°F.	°F.	°F.		°F.		In.			In.		Hrs.
Dunedin Airport ..	4	66.0	44.4	55.2	-1.1	84.3	21	30.5	10	1.33	8	-1.3	0.29	10	167
Musselburgh, Dunedin ..	5	62.6	49.3	56.0	-1.0	82.5	16	38.1	2	2.29	14	-0.6	0.56	10	150
Oamaru ..	47	64.9	49.0	57.0	..	81.5	16	37.0	11	0.54	10	..	0.19	8	110
West Arm, Lake Manapouri	590	62.0	45.6	53.8	-1.8	80.6	31	32.7	11	11.65	22	..	1.93	3	..
Queenstown ..	1,080	67.9	47.6	57.8	-0.5	82.2	31	36.2	10	0.68	10	-1.7	0.25	16	220
Mid Dome ..	1,252	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cromwell ..	720	72.3	49.0	60.6	-0.7	84.9	31	32.5	10	0.68	6	-0.7	0.23	23	..
Ophir ..	1,000	68.6	45.4	57.0	-1.2	81.3	31	31.0	6	1.24	5	-0.5	0.73	22	..
Moa Creek ..	1,400	67.7	42.2	55.0	-0.9	80.2	21	25.5	6	1.27	8	-0.6	0.49	22	..
Earnsclough ..	500	72.0	44.9	58.4	-0.6	84.0	20	30.0	11	1.78	7	+0.5	1.18	22	..
Alexandra ..	461	71.1	49.3	60.2	-0.5	83.5	20	35.7	11	1.03	7	-0.3	0.44	22	215
Roxburgh Hydro ..	350	70.6	47.2	58.9	-0.3	86.0	20	34.8	11	1.80	13	-0.1	0.64	2	..
Moa Flat, West Otago ..	1,345	63.3	42.8	53.0	-0.6	78.8	20	31.8	3	2.39	15	-0.7	0.58	2	..
Lake Mahinerangi ..	1,300	61.1	43.1	52.1	..	77.0	21	31.5	2, 10	3.33	15	-0.6	1.32	2	..
Tapanui ..	740	65.6	45.8	55.7	-0.5	84.8	20	33.2	10	2.92	15	-0.2	1.31	2	..
Rankleburn Forest ..	835	63.8	43.2	53.5	-0.9	81.0	21	32.8	2	3.97	17	..	1.52	2	..
Otautau ..	180	65.5	44.2	54.8	-0.9	77.0	21	32.0	26	4.66	13	+1.1	1.97	2	190
Gore ..	230	65.1	45.8	55.4	-1.8	83.6	21	36.3	2	3.30	15	+0.2	1.18	2	180
Winton ..	150	66.3	45.2	55.8	..	82.7	20	32.0	26	2.64	11	..	1.22	2	202
Pebble Hills ..	138	66.9	46.6	56.8	+0.4	84.0	21	36.0	13	3.37	15	-0.1	1.25	2	..
Invercargill Airport ..	1	63.5	45.7	54.6	-0.3	80.3	21	34.5	10	2.96	15	-0.6	0.85	3	210
Milton ..	60	64.9	45.3	55.1	..	82.9	21	30.1	26	1.50	13	-1.3	0.33	10	..
Balclutha ..	20	64.3	46.6	55.4	..	80.0	14	34.2	26	1.31	14	..	0.20	2	177
Rarotonga ..	15	79.9	70.6	75.2	-1.6	84.0	28	59.6	4	4.06	16	-5.3	1.69	18	219
Raoul Island ..	126	72.5	63.1	67.8	-1.2	74.5	31	56.8	5	0.31	7	-3.5	0.15	29	224
Chatham Islands ..	157	61.9	51.7	56.8	+1.4	68.2	24, 31	40.7	3	2.07	14	-0.2	0.35	9	162
Campbell Island ..	49	51.1	40.9	46.0	..	62.3	20	33.9	2	4.58	22	..	1.05	9	110
Scott Base, Antarctica ..	45	..	..	22.7	..	37.8	23	6.4	19	..	..	..	..	..	..

LATE RETURNS

Umawera, Nov 1966 ..	380	66.2	51.5	58.8	..	74.7	28	42.3	11	3.74	13	..	1.00	14	..
Auckland Airport, Mangere, Nov 1966 ..	25	..	..	..	..	..	..	..	..	..	..	..	..	..	183
Franz Josef, Oct 1966 ..	420	59.4	43.9	51.6	+1.0	64.8	10	38.0	14	7.97	17	-4.6	1.94	5	..
Franz Josef, Nov 1966 ..	420	60.3	44.9	52.6	-0.8	66.3	11	38.7	19	22.04	21	+4.2	3.82	2	..
Tara Hills, Nov 1966 ..	1,600	64.4	49.9	52.2	-1.4	79.5	24	25.0	4	1.70	14	0.0	0.68	7	161

The "normal" refers to the present site of the instruments. The standard periods for normals are: for temperature 1931-60, for rainfall 1921-50, and for sunshine 1935-60. No normals are available for stations with only short records.

\*Sunshine recorder is not located at the station but is in the near vicinity.

NOTES ON THE WEATHER FOR DECEMBER 1966

**General:** Over the greater part of the country December was wetter, cooler, and more cloudy than usual. A particularly unpleasant cold spell, accompanied by considerable rain and persistent cloud, spoilt the last week of the month in many districts, especially Wairarapa, Wellington, Manawatu, and parts of Hawke's Bay. In these areas farmers found the weather rather too wet. Elsewhere in the North Island the weather was more favourable for farming; but in Otago and parts of Canterbury it was considered too dry.

**Rainfall:** In the North Island, south of a line from Wanganui to Wairoa, rainfall was mainly more than double the average value; and on the coast of Southern Hawke's Bay and Northern Wairarapa it was as high as 4½ times the average. In these areas more than half the rain fell during the last four days of the month, and totals were the highest for many years.

Over the remainder of the North Island and also in Nelson, Marlborough, North Canterbury, the West Coast, and parts of Southland, rainfall was somewhat above average. However, in other South Island districts it was somewhat below average. In parts of Central and North Otago it was only half the average.

A squall-line, which crossed the country during the 10th and 11th, was accompanied by thunderstorms and heavy hail in widely separated areas from Canterbury to Hawke's Bay and Waikato. In parts of Banks Peninsula some of the hailstones were the size of golf balls.

**Temperatures:** Mean temperatures were more than a degree below average in three main areas: Waikato, with Rotorua and Taupo; Manawatu, Wellington, and Wairarapa; South Canterbury and North Otago. Elsewhere temperatures were close to average.

**Sunshine:** Sunshine was below average by 20-80 hours over about half the country, in an area extending from Wanganui and Dannevirke to Hokitika and Oamaru. Nelson, with only 166 hours, received far less than had ever previously been recorded there in December; and Wellington also had its cloudiest December on record, with only 175 hours.

Elsewhere sunshine was close to average.

**Weather Sequence:** During the first four days an anticyclone moved over the North Island, while depressions passed far to the south and south-east. Westerly to south-westerly conditions prevailed, with rain in the west and south of the South Island.

From the 5th to the 7th a trough moving rather slowly brought rain mainly to the North Island, with some considerable falls in central districts. During this period there was also a cool southerly change. Pressures were high over the South Island on the 7th as an anticyclone passed over it. However, a depression from the north Tasman Sea soon moved across northern districts of the South Island, bringing rain there, besides further considerable rain over the North Island and some falls also on the West Coast and in Southland. This occurred during the 8th and 9th; and for the next two days some further rain was reported in many districts, with a change to south-westerlies. This change was accompanied in some districts by a thunderstorm with heavy hail.

From the 12th to the 15th an anticyclone moved slowly across the North Island and to the east. The weather was settled, apart from some rain at first on the West Coast and in Manawatu. With the anticyclone far to the east, during the next three days a depression from the north Tasman Sea moved past western Southland. Temperatures became warmer in the northerlies, and some very heavy rain was reported on the West Coast and in the Alps. From the 19th to the 22nd pressures remained high to the east, while a small depression formed and moved on to the North Island. The warm northerlies persisted, with rain in western and northern districts of both islands.

The 23rd and 24th were marked by a change to cold southerlies as the depression moved away and an anticyclone moved into the south Tasman Sea. Rain was now reported over almost the whole country. As pressures rose during the next two days the weather improved temporarily in most districts. However, another depression soon moved on to the country, while the first one was still east of the Chatham Islands, causing a deterioration in western districts on the 27th. Pressures rose to the south, and this second depression moved to the east of Gisborne and remained almost stationary there for the last four days of the month. Unusually cold southerlies set in again, with gales in Cook Strait. Some very heavy rain was reported in Wairarapa and southern Hawke's Bay with flooding. Most places received rain, except for the south-western half of the South Island.

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