

CLIMATOLOGICAL TABLE—Summary of the Records of Temperature, Rainfall, and Sunshine for November 1970—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.		In.			In.		Hrs.	
Queenstown ..	1,080	68.1	46.1	57.1	+2.8	77.5	29	36.0	21	1.73	13	-0.8	0.58	17	234
Queenstown Aerodrome ..	1,154	66.4	45.5	56.0	..	76.6	17	36.5	23	2.65	12	..	0.60	28	..
Mid Dome ..	1,268	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cromwell ..	698	71.5	47.2	59.4	+2.4	80.6	29	33.1	21	0.76	7	-0.4	0.47	3	..
Ophir ..	1,000	69.4	43.6	56.5	+2.2	77.8	29	27.0	21	0.37	3	-0.9	0.28	3	..
Moa Creek ..	1,400	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Earnsclough ..	500	70.8	45.4	58.1	+3.1	82.5	29	30.2	21	0.57	4	-0.5	0.40	3	..
Alexandra ..	461	70.3	46.8	58.6	+1.7	81.7	29	33.1	21	0.21	4	-0.9	0.14	3	246
Roxburgh (Power Stn.) ..	360	70.4	46.2	58.3	+2.3	82.0	15	31.0	21	0.39	5	-1.5	0.12	27	..
Moa Flat, West Otago ..	1,345	63.6	42.7	53.2	+2.4	75.9	30	31.5	21	1.44	12	-1.6	0.50	11	..
Mahinerangi Dam ..	1,300	61.2	42.8	52.0	..	75.2	14	31.0	21	1.79	13	-1.4	0.73	11	..
Tapanui ..	740	65.4	44.8	55.1	+1.7	78.0	30	33.2	21	2.06	10	-1.1	1.05	11	..
Rankleburn Forest ..	835	63.3	43.1	53.2	+0.7	78.0	30	33.8	21	2.20	15	-0.4	1.14	11	..
Taieri Mouth ..	50	60.3	46.5	53.4	..	76.6	17	35.6	21	1.32	9	..	0.63	11	..
Otautau ..	180	62.8	44.1	53.4	+0.6	75.0	17	28.8	21	2.56	9	-0.9	0.56	11	188
Winton ..	145	63.5	46.0	54.8	+1.3	76.2	29	34.0	21	2.09	12	..	0.49	1,11	187
Gore ..	235	66.1	46.1	56.1	+1.9	79.0	29	34.0	21	1.62	11	-1.6	0.61	11	189
Hokonui Forest ..	150	64.3	45.9	55.1	+1.1	76.6	29	33.2	21	2.84	14	-0.7	0.73	11	..
Invercargill Airport ..	1	61.3	45.5	53.4	+1.2	74.7	29	31.5	21	2.77	15	-0.6	0.83	1	192
Tiwai Point, Bluff ..	15	60.7	48.3	54.5	..	67.2	14	41.1	1	2.40	14	..	0.53	11	..
Milton ..	60	64.6	45.0	54.8	+1.6	79.8	17	30.0	21	1.65	13	..	0.54	11	..
Finegand, Balclutha ..	20	64.0	46.1	55.0	+2.2	72.0	30	35.8	22	1.66	10	..	0.77	11	203
Rarotonga, Cook Islands ..	15	82.4	72.3	77.4	+2.3	85.5	25	65.5	5	4.45	14	-1.8	1.71	14	182
Raoul Island ..	126	69.6	62.6	66.1	+0.2	73.4	20	57.9	27	3.04	21	+0.2	1.63	21	139
Chatham Islands ..	157	57.2	46.6	51.9	-0.9	63.3	29	37.4	21	0.73	10	-1.5	0.23	4	162
Campbell Island ..	49	50.2	41.5	45.8	..	55.0	27	31.8	20	3.16	24	..	0.74	14	61
Scott Base, Antarctica ..	58	..	..	10.4	+0.2	34.8	30	-16.6	3	..	..	..	..	..	..
Lake Vanda, Antarctica ..	510	26.2	10.9	18.6	..	41.2	30	-5.8	4	..	..	..	..	..	..
Nugget Point ..	430	..	..	..	..	..	..	..	..	1.93	15	-0.7	1.01	11	..
LATE RETURNS															
Whatawhata, Oct. 1970 ..	340	63.2	51.1	57.2	+1.9	72.2	31	39.1	18	5.44	22	-0.4	1.74	29	139
Christchurch, Oct. 1970 ..	22	63.4	44.7	54.0	+0.9	75.8	16	27.9	12	2.24	7	+0.2	0.80	28	..
Adair, Oct. 1970 ..	280	60.0	44.2	53.8	+2.6	71.0	8	35.0	18	1.15	9	-0.9	0.55	15	..

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.

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

NOTES ON THE WEATHER FOR NOVEMBER 1970

**General**—As in November 1969, barometric pressures were unusually high over New Zealand, and November 1970 was dry, warm, and sunny like the previous November. Western and southern districts of the North Island and northern districts of the South Island received some rain during the first 5 days but very little after that; and parts of these regions needed rain badly by the end of the month. Elsewhere, conditions were mainly favourable for farming.

**Rainfall**—Rainfall was less than half the normal value west of the main ranges of the North Island and south of Kawhia and Lake Taupo; also in southern Wairarapa, Marlborough, Nelson, and the greater part of Otago. Motueka with a total of 0.21 in. had its driest November in 70 years of record.

The main area which was wetter than normal, consisted of Auckland with southern Northland and parts of Waikato. Other areas included South Westland and part of northern Hawke's Bay.

**Temperatures**—Temperatures were above normal by 1°-2° F (1° C) except in northern and eastern districts of the North Island, where they were close to normal. So far, 1970 has been the warmest year since 1962 and one of the warmest on record.

**Sunshine**—The greater part of the country was favoured with about 30 hours above normal sunshine. However, totals were only about normal in most eastern districts and in Bay of Plenty and Northland. From Ashburton to Waimate sunshine was 30-70 hours below normal. Timaru had less than half as much sunshine as Lake Tekapo.

**Weather Sequence**—The first 5 days of the month were the most unsettled. A depression over the South Tasman Sea moved south-eastward past Southland and, the associated trough of low pressure crossed the country, while another centre formed over the Central Tasman Sea. On the 1st and 2nd, rain was general except for Canterbury and Otago. The second centre moved north-eastward and during the next 2 days a further small centre split off it and crossed New Zealand with general rain. On the 5th, pressures were low to the east but an anticyclone was moving on to the South Island from the west. South-easterlies brought rain to most eastern and some northern districts of the North Island.

From the 6th to the 10th an extensive anticyclone moved slowly from the Tasman Sea across New Zealand and to the east, bringing fair weather.

From the 11th to the 14th a deep depression passed far to the south and two associated troughs of low pressure crossed New Zealand. Considerable rain was reported on the West Coast and some also in Southland and Otago, the Canterbury high country, and Nelson, besides some of the North Island ranges, North Taranaki, and also the Taupo district. An anticyclone which moved across the country on the 15th and 16th brought fair weather.

A very deep depression passed far to the south on the 17th and 18th, while the associated troughs of low pressure crossed most of the country. The last of these became slow-moving in the Auckland-Gisborne area on the 19th and 20th. At first, rain affected mainly the West Coast with Southland and parts of Otago and Nelson, but as the winds turned to southerlies the weather cleared on the West Coast and rain was reported over northern and eastern districts of the North Island, besides eastern districts of the South Island. Some considerable falls were reported around Auckland and in Coromandel.

The 21st to the 26th was another period of predominantly settled weather, with the passage of an anticyclone from the South Tasman Sea across New Zealand and to the east. However, showers were reported at times in northern districts with some thunderstorms, especially in the Taupo district and just north of Auckland City.

For the last 4 days of the month, pressures were high over the North Island and to the east, while a series of depressions passed to the south. Considerable rain was once again reported on the West Coast, extending at times to the Canterbury high country and the Southern Lakes District, besides Southland and parts of coastal Otago.

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