

CLIMATOLOGICAL TABLE—Summary of the Records of Temperature, Rainfall, and Sunshine for September 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.	
Musselburgh, Dunedin	5	54.8	40.7	47.8	-0.8	72.0	10	31.0	25	3.17	13	+1.0	0.86	23	108
Oamaru	99	56.3	39.8	48.0	-0.4	72.2	10	29.4	25	2.83	10	+1.4	1.20	8	110
West Arm, Lake Manapouri	590									22.50		+9.5	3.24	23	
Borland Saddle	3,250														
Queenstown	1,080	52.9	35.8	44.4	-2.1	66.5	10	25.1	26	8.71	17	+6.1	2.30	23	137
Queenstown Aerodrome	1,154	51.7	35.4	43.6		67.1	10	24.2	25	6.74	15		1.86	23	
Mid Dome	1,268	52.4	32.3	42.4	-3.7	65.8	5	11.2	25	4.31	12	+1.5	1.15	16	
Cromwell	698	55.2	36.8	46.0	-1.7	70.0	10	24.6	25	4.70	13	+3.6	1.10	16	
Ophir	1,000	54.2	34.4	44.3	-0.9	69.2	10	15.2	25	3.71	6	+2.6	1.20	24	
Moa Creek	1,400														
Earnsclough	500	56.3	34.5	45.4	-1.1	72.3	10	24.5	25	2.95	9	+2.1	1.03	23	
Alexandra	461	55.3	36.2	45.8	-1.8	72.0	10	23.8	25	2.38	12	+1.6	0.75	16	158
Roxburgh (Power Stn.)	360	56.2	36.3	46.2	-2.2	71.5	10	23.0	26	3.04	12	+1.7	1.07	16	
Moa Flat, West Otago	1,345	50.8	34.1	42.4	-2.2	66.4	10	19.2	26	3.90	18	+1.9	1.59	16	
Mahinerangi Dam	1,300	50.6	33.2	41.9		66.0	10	19.8	25	2.85	16	+0.1	0.90	16	
Tapanui	740	52.8	36.4	44.6	-2.2	69.0	10	22.0	25	4.47	20	+1.9	1.34	16	
Rankleburn Forest	835	52.4	35.9	44.2	-1.6	70.2	10	23.0	26	4.34	19	+2.0	1.42	16	
Taiari Mouth	50	54.7	37.7	46.2		71.8	10	27.1	26	2.32	12		0.79	16	
Otautau	180	53.0	35.7	44.4	-2.1	62.0	10	23.0	26	5.99	21	+2.7	0.91	23	120
Winton	145	53.3	37.0	45.2	-2.0	64.5	10	29.0	25	5.43	20		1.41	23	121
Gore	235	53.8	36.5	45.2	-2.5	69.0	10	25.1	25	5.26	22	+2.8	1.12	23	125
Hokonui Forest	150	53.8	36.6	45.2	-1.9	65.0	5	26.0	26	5.87	23	+3.0	1.15	23	
Invercargill Airport	1	53.5	36.8	45.2	-1.1	65.0	5	26.7	26	5.56	22	+2.3	0.94	23	119
Milton	60	54.5	36.2	45.4	-2.1	71.3	10	36.2	26	2.31	16	+0.3	0.81	16	
Finegand, Balclutha	20	54.5	36.9	45.7	-1.0	71.0	10	28.0	26	2.87	18		0.79	23	137
Rarotonga, Cook Islands	15	78.8	67.7	73.2	+1.8	83.5	4	61.8	8	3.89	12	-0.6	1.64	15	133
Raoul Island	126	66.6	58.4	62.5	+1.2	69.2	26	53.9	28	4.99	14	+0.7	1.28	18	116
Chatham Islands	157	54.1	45.1	49.6	+1.4	58.9	11	35.6	10	3.86	18	+1.4	1.40	25	134
Campbell Island	49	44.3	35.1	39.7		51.2	5	24.9	28	4.90	29		0.67	9	41
Scott Base, Antarctica	58			-15.5	+3.4	11.5	22	-60.2	16						
Lake Vanda, Antarctica	510	-8.0	-27.8	-17.9		36.7	23	-59.3	17						
Tiwai Point, Bluff	15	53.3	39.3	46.3		64.8	5	29.8	26	5.75	21		1.10	23	

LATE RETURNS

Takatu, Matakana, August 1970	230	59.9	48.8	54.4	+1.8	65.2	4	38.3	25	9.96	15	+5.1	3.48	13	
Mohaka Forest, August 1970	938														
Christchurch, August 1970	22	58.3	40.2	49.2	+4.5	73.8	30	27.2	25	1.64	7	-0.7	0.52	21	
Moa Creek, August 1970	1,400	53.4	31.0	42.2	+4.9	64.3	29	17.0	26	1.58	10	+0.9	0.40	30	

ERRATUM—

The Hermitage, Mt Cook, August 1970	2,500									27.08		+11.7			
Gisborne Aerodrome, August 1970	17														131

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 SEPTEMBER 1970

General—September was marked by an unusually high frequency of north-westerly winds. It was the wettest September over the country as a whole since 1943 and also stormy and very cloudy. Pasture growth was good early in the month but in many districts, especially in the west, conditions were too wet by the end of the month. A particularly cold southerly change on the 24th brought snow to many inland districts of the South Island, causing considerable losses of lambs. Severe frosts which followed in the south on the 25th and 26th proved disastrous to the Central Otago fruit crop.

Unusually strong north-westerly gales buffeted Central Otago and the Canterbury high country on the 10th, reaching an average wind speed over 10 minutes at Mount John Observatory (Lake Tekapo) of 134 miles per hour. Strong north-westerly gales also buffeted Wellington and Hawke's Bay on the 24th.

Small local tornadoes were reported in Mangere (Auckland) on the 11th and in New Plymouth on the 17th.

Rainfall—Rainfall was above normal over nearly the whole country. It was more than double the normal value over the greater part of the South Island, in an area extending eastward from Nelson and the West Coast, including the Marlborough Sounds, the high country, and Central Otago. In parts of the Southern Lakes district it was more than four times the normal value. In the North Island it was more than double the normal from Waitomo and Taranaki to eastern Bay of Plenty, and also in Manawatu.

Flooding was reported on the West Coast, in Nelson, and in North Otago, after considerable rain from the 14th to the 17th. The 29th and 30th brought falls of 3-4 in. in Bay of Plenty, Taupo, and Waikato, causing flooding around Whakatane and later in the Waipa and lower Waikato rivers.

Temperatures—Temperatures were warmer than normal by 1-3 degrees over the North Island and in most of Marlborough and Canterbury. They were cooler than normal by 1-2 degrees in Otago, Southland, and Fiordland.

At Mid Dome, in western Southland, the thermometer dropped to 11° F on the 25th, the lowest temperature ever recorded in New Zealand in September below an altitude of about 3,000 ft. On the following day the minimum temperature there was still only 13° F.

Sunshine—Sunshine was below normal over the whole country, mainly by 30-60 hours. Waihi had its cloudiest September in 43 years of observation, with only 84 hours of sunshine.

Weather Sequence—At the beginning of September the slow-moving trough which had caused excessive rain in Nelson and in the Alps and on the West Coast at the end of August, was still active but weakening, and moving northward over the North Island. On the 1st rain affected the southern half of the North Island and also the greater part of the South Island but on the two following days it affected mainly northern and eastern districts of the North Island and was only light. On the 4th the weather was fine, under the influence of an anticyclone centred to the east.