

CLIMATOLOGICAL TABLE—Summary of the Records of Temperature, Rainfall, and Sunshine for July 1968—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.		Hr.
Adair	280	47.8	34.2	41.0	-1.2	57.7	15	28.9	20.31	1.43	9	-0.3	0.52	23	..
Timaru	56	48.2	32.3	40.2	-0.6	55.8	15	25.9	20	1.81	10	+0.3	0.88	11	141
Waimate	200	49.0	32.6	40.8	-1.4	56.0	29	26.5	6	1.90	12	+0.2	0.96	11	137
Otematata	920	39.5	27.1	33.3	-4.8	49.5	15	17.0	8	0.89	9	-0.1	0.30	23	..
Oamaru Aerodrome	99	46.7	32.4	39.6	..	55.0	29	29.0	20.31	1.12	7	..	0.50	11	..
Tara Hills, Omarama	1,600	33.3	13.2	23.2	-11.2	47.1	15	-0.2	6	0.65	5	-0.7	0.23	15	143
Lake Hawea	1,147	42.6	28.6	35.6	-2.3	52.9	15	23.8	5	1.00	8	-1.1	0.40	15	..
Naseby Forest	2,000	40.4	23.6	32.0	-2.8	51.6	28	11.5	13	2.05	9	+0.9	0.61	23	..
Herbert Forest	200	49.1	..	..	..	58.5	29	22.8	22	1.18	9	..	0.47	12	..
Cherry Farm, Waikouaiti	21	49.4	32.9	41.2	+1.1	57.6	21	25.2	20	1.08	12	-0.6	0.36	23	..
Taieri	80	48.2	30.9	39.5	-1.2	60.5	29	21.2	31	1.75	13	-0.1	0.66	23	..
Berwick Forest	60	47.7	30.2	39.0	-1.2	57.4	21	21.8	20	1.40	11	-0.6	0.41	23	..
Dunedin Airport	4	43.2	28.8	38.5	-1.8	57.1	27,28	20.6	20	1.12	10	-0.6	0.42	23	118
Musselburgh, Dunedin	5	47.8	34.4	41.1	-2.1	56.0	29	28.4	19	2.31	14	-0.2	0.69	23	119
Oamaru	99	46.2	35.2	40.7	..	55.4	27	29.0	31	1.13	5	..	0.60	11	141
West Arm, Lake Manapouri	590	39.1	31.2	35.2	-2.6	49.7	29	23.0	10	8.44	18	-0.7	2.67	15	..
Queenstown	1,080	41.7	26.4	34.0	-4.3	55.8	27	18.0	8	0.90	7	-1.3	0.33	15	90
Mid Dome	1,252	41.3	25.5	33.4	-4.3	58.6	28	14.0	10	2.62	14	+0.2	0.73	1	..
Cromwell	698	42.2	27.2	34.7	-2.0	55.0	29	18.6	6	0.68	9	-0.2	0.19	15	..
Ophir	1,000	40.2	22.6	31.4	-2.8	54.0	28	13.0	9	0.98	7	+0.2	0.37	23	..
Moa Creek	1,400	36.6	21.4	29.0	-3.8	51.9	29	4.1	9	0.80	4	+0.1	0.42	2	..
Earnsclough	500	42.2	22.9	32.6	-3.4	56.0	29	11.2	6	0.78	5	+0.1	0.24	2	..
Alexandra	461	42.4	26.1	34.2	-2.1	55.6	28	18.9	9	0.72	8	0.0	0.17	23	104
Roxburgh Hydro	350	43.0	30.0	36.5	-3.0	56.5	28	22.0	8	1.07	8	0.0	0.47	3	..
Moa Flat, West Otago	1,345	40.1	28.0	34.0	-3.3	51.9	29	17.1	10	2.14	11	+0.2	0.40	1	..
Lake Mahinerangi	1,300	43.8	27.5	35.6	..	55.6	29	21.5	20	2.33	14	-0.3	0.45	23	..
Tapanui	740	43.3	31.2	37.2	-3.0	56.0	29	23.0	8	2.88	14	+0.3	0.68	3	..
Rankleburn Forest	835	44.4	30.4	37.4	-1.4	53.4	27	22.2	10	1.98	12	..	0.49	15	..
Taieri Mouth	50	47.6	32.8	40.2	..	56.5	21	26.0	20	2.18	12	..	0.65	3	..
Otautau	180	45.5	29.6	37.6	-2.2	57.0	29	20.0	9	5.00	15	+2.3	1.13	1	103
Winton	145	46.0	30.7	38.4	..	56.0	29	21.9	9	2.81	16	..	0.53	1	132
Gore	235	44.1	30.3	37.2	-2.8	55.5	29	22.1	9	2.17	16	+0.1	0.36	2	118
Pebble Hills	150	46.6	29.0	37.8	-2.3	60.0	29	19.0	10	3.11	16	+0.6	0.66	1	..
Invercargill Airport	1	45.7	29.7	37.7	-2.7	56.2	29	21.1	9	3.78	16	+1.0	0.56	1.2	96
Milton	60	46.4	29.6	38.0	..	57.9	29	21.8	7	1.62	9	-0.4	0.35	3	..
Balclutha	20	44.5	31.6	38.0	..	56.6	29	24.8	8	2.11	14	..	0.31	15	106
Rarotonga	15	30.6	68.5	74.6	+3.6	82.0	16	58.0	22	2.01	12	-2.4	0.52	13	208
Raoul Island	126	65.4	57.2	61.3	+1.4	68.7	10	50.9	20	10.39	24	+3.7	1.62	9	140
Chatham Islands	157	51.6	41.4	46.5	+0.9	56.9	25	34.6	26	2.87	21	-0.7	0.57	23	110
Campbell Island	49	44.8	37.4	41.1	..	48.5	28	20.9	25	3.01	28	..	0.33	24	11
Scott Base, Antarctica	45	..	..	-21.6	0.0	7.9	..	-49.4	..	..	..	..	..	..	..

LATE RETURNS

Glentanner, June 1968 ..	2,800	39.9	28.0	33.6	..	50.0	11	19.0	10	4.77	7	..	1.77	29	..
Moa Creek, June 1968 ..	1,400	44.4	23.7	34.0	+0.2	54.5	12	..	..	2.26	4	+1.4	1.20	26	..
Whatawhata, June 1968 ..	340	57.3	44.6	51.0	+2.8	62.9	14	29.0	11	10.29	24	+3.5	1.26	3	78

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 JULY 1968

General—July was marked by an unusually high frequency of winds from an easterly quarter. Excessive rain in eastern districts was not welcome. In Gisborne and Hawke's Bay after two very wet months the ground was waterlogged in some areas, adversely affecting the health of stock. On the other hand, many western North Island districts found the comparatively low rainfall favourable for growth and for stock.

There was an excessive accumulation of snow in parts of Southland, Otago, and South Canterbury, especially the high country. This was followed by heavy frosts in the same areas, isolating stock and necessitating the use of helicopters to keep them fed.

Rainfall—East of the main ranges and in the Waimea Plains of Nelson, also in Coromandel and parts of Northland, rainfall was mainly 50 percent above average. The greatest excesses were recorded just inland from Gisborne and around Kaikoura, where totals were more than double the normal value. West of the main ranges, in the Southern Lakes district and in parts of Southland, Otago, and inland Canterbury, it was below average, mainly by about 30 percent. In North Taranaki, Waitomo, and parts of Waikato it was less than half the average and some stations in this area enjoyed their driest July for many years. In the Southern Lakes district rainfall was also less than half the average value.

Temperatures—In Southland, Otago, and inland South Canterbury temperatures were mainly 2-5 degrees below average, with greatest departures in the high country, where this was the coldest month since July 1938. Elsewhere temperatures were mainly close to average.

The snowfalls on the last four days of June on the high country of both islands and to low levels in the South Island persisted for the first four days of July, and there were further falls about 10-12 July and on the 25th. Frosty conditions, especially during the first half of the month, allowed little opportunity for the snow to melt over the greater part of the South Island. On the hills to the southwest of Mossburn at an altitude of about 2,000 ft the depth was reported as 2 ft, and 10 ft in the drifts, and it remained frozen there for 3 weeks.

Very severe conditions were experienced, even at quite low altitudes where a continuous snow cover persisted. For example, Tara Hills, Omarama (altitude 1,600 ft) had snow lying on the ground the whole month, never less than 5½ in. in depth. The mean temperature was 23°F the lowest ever recorded in New Zealand for a month below an altitude of 3,000 ft. On 8 days the maximum temperature failed to reach 32°F, the lowest maximum being 20°F on the 14th. The air temperature fell just below 0°F on the 6th, 7th, and 14th.

Sunshine—The West Coast and inland Canterbury were especially favoured, with 30-80 hours more sunshine than usual. Haast received 182 hours, the highest for July in 26 years of observation. Other areas with sunshine somewhat above average were western North Island districts, most of Marlborough and Nelson, and parts of Otago and Southland.

The only areas which received appreciably less sun than usual were northern Northland and parts of northern Hawke's Bay.

Weather Sequence—The month began with 4 days of cold south-westerly weather, a continuation of that experienced on the last 4 days of June. Pressures remained very low to the south-east and a small depression crossed Northland, while an anticyclone moved eastward across the South Tasman Sea. There were further falls of snow on the high country of both islands and down to low levels in the south; and many other districts received some rain. By the 5th the anticyclone had moved on to the South Island and the weather was mainly fine, though still very cold.

The anticyclone soon moved to the east of the South Island, and a depression from the North Tasman Sea moved close to Northland. In the moist north-easterlies rain was reported on the 6th and 7th in Northland, and in all eastern districts as far south as Christchurch, including Coromandel and Bay of Plenty. Conditions remained rather similar during the next 2 days as the depression crossed the North Island, but there was scattered rain in some other districts. As the depression moved away to the Chatham Islands on the 10th it was mainly western districts which were affected. However, a southerly change on the 11th and 12th brought further rain to districts east of the main ranges, with snow on the