

CLIMATOLOGICAL TABLE—Summary of the Records of Temperature, Rainfall, and Sunshine for July 1978—continued
LATE RETURNS AND CORRECTIONS—continued

Station	Height of Station Above M.S.L.	Air Temperatures in Degrees Celsius								Rainfall in Millimetres				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
	Metres	°C	°C	°C	°C	°C		°C		mm		mm	mm		Hrs
Arthurs Pass, June 1978 ..	738	5.3	-3.1	1.1	..	10.0	7	-8.8	15	141	..	-149	64	7	..
Ashley Forest, June 1978	107	8.4	2.3	5.4	-1.4	15.5	7	-2.8	16	111	15	+58	28	23	72
Lincoln, June 1978 ..	11	8.6	1.6	5.1	-0.7	12.8	7	-5.0	16	100	19	+42	21	29	71
Akaroa, June 1978 ..	3	9.7	3.6	6.7	..	14.5	7	0.0	12	194	23	..	64	23	..
Lake Pukaki, June 1978 ..	556	5.0	-2.9	1.1	-1.2	13.8	1	-6.3	14	38	12	..	30	8	..
Naseby Forest, June 1978	610	4.2	-4.1	0.1	-2.1	8.6	3	-9.8	15	36	9	-2	15	8	..
Taiari, Invermay, June 1978	30	8.3	0.6	4.5	..	13.1	7	-4.9	15	88	..	..	..	..	..
Queenstown, June 1978 ..	329	6.2	-1.1	2.6	-1.7	9.6	3	-3.9	23	23	7	-43	11	8	77
Otautau, June 1978 ..	55	..	-1.7	..	..	..	..	-7.5	15	75	11	-37	20	27	..
Rarotonga Airport, June 1978	7	26.2	20.5	23.4	+1.0	28.8	25	15.9	21	98	14	+1	29	3	114
Totokoitu, Rarotonga, May 1978	9	26.9	21.9	24.4	..	29.2	5	18.7	1	231	18	..	97	11	..
Totokoitu, Rarotonga, June 1978	9	25.4	20.7	23.1	..	27.5	27	17.0	16	240	14	..	89	2	..

The "normal" refers to the present site of the instruments. Standard period for normals is 1941-1970. No normals are available for stations with only short records.

*Indicates that the sunshine recorder is not located at the station but is in the near vicinity.

A rain day is a day with rainfall equal to or greater than 0.1 mm.

Where the extremes of temperature and rainfall have occurred more than once during the month, the date of the first occurrence is given.

NOTES ON THE WEATHER FOR JULY 1978

General—Over most of New Zealand July was a wet and relatively mild month. Pressures were exceptionally low over the whole country and high to the south. There was a predominance of easterly winds over most of the country, stronger in the south, with lighter westerly winds to the north of New Zealand.

Gale force winds affected many areas in the North Island, and parts of the South Island on the 18/19th, when a deep depression moved slowly southwards over the country. Winds were gusting to 95 knots at Cape Reinga on the 18th and 61 knots in Auckland city on the 19th. The worst affected areas were the Coromandel Peninsula and Hauraki Plains. At Mount Te Aroha a gust of 120 knots was measured on the morning of the 19th, and more than 100 buildings were damaged in the area. Widespread power cuts occurred, and a goods train was blown off the tracks crossing a bridge across the Waitoa River. There was extensive beach front erosion in coastal areas and flood waters and slips disrupted many transport services.

Most farmers throughout New Zealand reported that conditions were very wet with grass growth poor. Stock was in fair to good condition in most areas, but more sun will be needed to dry paddocks before the main lambing begins.

Rainfall—Rainfall was above normal over the whole country apart from some areas on the West Coast, Southland, and Central Otago. In the central North Island and on the east coast of the South Island the monthly totals were more than double the normal July value. In an area along the Canterbury and Otago coast from Geraldine to Palmerston many stations were above normal by 150 to 300 percent. The rainfall station at Hunter (near Waimate) was more than 365 percent above normal.

Canterbury and North Otago recorded heavy rain in many areas on the 8/9th. At Christchurch 32 mm was measured in 12 hours on the 9th, and over a period of 72 hours more than 75 mm. Surface flooding closed the state highway north of Oamaru, and the Picton/Christchurch railway line was closed because the track had been undermined north of Christchurch.

During the period of gale force winds that affected the North Island on the 18/19th, Te Aroha recorded more than 110 mm in 12 hours, and at Paeroa 122 mm was measured in 24 hours.

Temperatures—Temperatures were above normal over most of New Zealand apart from some parts of Northland and Bay of Plenty which were slightly below. In some areas of Nelson, Canterbury, Otago and Southland they were above normal by as much as 1½°C. Night time temperatures were about 1°C above normal and daytime maximum temperatures about ½°C above. There was one cold spell from the 14th to 18th when maximum temperatures were below normal by as much as 3° to 4°C.

Sunshine—Most of the country had below normal sunshine hours for the month. In some areas of Taranaki, Canterbury, and coastal Otago between 20 and 40 hours less sunshine than normal was recorded. The only areas that were slightly above normal were parts of Bay of Plenty, the Wellington area and inland Southland.

WEATHER SEQUENCE JULY 1978

The anticyclone that had been moving onto New Zealand at the end of June moved across the country on the 1st and 2nd and by the 3rd was lying to the northeast of the North Island. Most areas had fine weather at the beginning of the month, apart from some places on the West Coast, where a cold front brought isolated showers. A depression had formed to the south of Australia early on the 1st, and by the 3rd was lying just to the east of Tasmania and moving southeast towards New Zealand. By the 4th the depression was to the west of the South Island and had deepened considerably. Many areas of Fiordland and Westland recorded moderate to heavy rain as a warm front associated with this depression moved across the country.

Late on the 4th the depression had begun to move southwards and two cold fronts started to move across New Zealand to the east. Heavy rain was reported in many areas west of the main ranges, the heaviest falls being in Westland and Fiordland where some stations had 24 hour falls of more than 100 mm. Temperatures were warmer than usual on the east coast of both Islands. By the 6th the cold fronts had crossed New Zealand and a ridge of high pressure extended onto the country from an anticyclone situated over Australia. Another depression had formed to the south of Tasmania and had started to move eastwards towards New Zealand.

Early on the 7th the ridge of high pressure weakened and moved to the north, and the depression continued to move to the south of the South Island. A cold front ahead of the depression crossed onto the country on the 7th, and by the morning of the 8th another centre had developed in the depression, just to the west of the North Island. This complex depression crossed the country on the 8th and 9th bringing heavy rain to parts of the North and South Islands. Some of the heaviest falls were recorded in Hawke's Bay, Wairarapa, Canterbury and coastal Otago. More than 75 mm was recorded in Christchurch over a 3-day period. Temperatures were about normal over the whole of New Zealand, but slightly above on the West Coast.

A ridge of high pressure extended onto the country from an anticyclone to the southeast of the country on the 10th and 11th. A strong southerly airflow covered New Zealand as pressures began to fall with the development of a depression in the south Tasman Sea. A trough of low pressure had become established to the west of New Zealand late on the 11th, and as the ridge moved east the trough moved over the country on the 11th and 12th. Heavy rain was recorded in Northland, Bay of Plenty, Taranaki, Wellington,