

CLIMATOLOGICAL TABLE—Summary of the Records of Temperature, Rainfall, and Sunshine for October 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.			Maxi- mum	Date	Mini- mum	Date				Amount	Date	
Kaweka Forest, September 1978	Metres 414	°C 13.2	°C 5.9	°C 9.6	°C -0.6	°C 19.2	29	°C 1.0	7	mm 95	18	mm ..	mm 29	20	Hrs ..
Kapiti Island, September 1978	16	14.3	8.9	11.6	+0.6	16.8	18	4.3	4	190	15	+106	77	14	..
Wharite Peak, September 1978	914	7.9	2.6	5.3	+0.5	14.4	24	-0.6	2	127	23	-15	29	25	..
Avalon, Lower Hutt, September 1978	15	14.3	6.7	10.5	-0.3	17.8	18	0.7	3	140	16	+26	38	14	..
Kahui, Taihape, September 1978	518	13.7	4.8	9.3	+0.4	18.0	24	-0.7	7	43	14	..	18	25	..
Franz Josef, September 1978	122	14.5	4.6	9.6	+0.6	18.0	18	1.1	5	582	16	+143	162	23	..
Puysegur Point, September 1978	43	12.6	6.4	9.5	..	17.0	28	2.7	25	97	19	-94	18	14	..
Mount John, September 1978	1,027	7.9	1.1	4.5	-0.8	13.0	7	-2.3	27	58	14	+12	16	10	149
Lincoln, August 1978	11	13.8	2.9	8.4	+1.7	20.9	10	-1.8	20	63	8	+7	25	24	162
Lincoln, September 1978	11	13.1	5.3	9.2	+0.3	21.1	14	0.0	2	74	13	+28	20	24	139
Herbert Forest, September 1978	61	12.9	2.7	7.8	-0.2	20.4	14	-0.7	5	70	13	+19	18	9	..
Alexandra, September 1978	141	14.0	2.3	8.2	-0.6	18.2	22	-2.6	2	45	16	+25	12	14	143
Mahinerangi Dam, September 1978	396	11.2	1.9	6.6	+0.3	16.0	7	-2.0	4	64	10	+8	15	19	..
Tautuku, September 1978	61	12.5	3.7	8.1	..	17.4	6	-0.9	21	58	13	..	14	18	..
Rarotonga Airport, September 1978	7	25.5	19.8	22.7	+0.6	27.9	25	16.9	1	216	22	+107	89	4	145
Totokoitu, Rarotonga, September 1978	9	24.9	20.0	22.5	..	27.4	5	18.1	11	257	21	..	93	4	..

The "normal" refers to the present site of the instruments. Standard period for normals is 1941-70. 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.

#### WEATHER NOTES FOR OCTOBER 1978

**General**—During October pressures were higher than normal over the whole of New Zealand, and slightly below to the north of the country. Winds were predominantly westerly with a period of strong winds about the middle of the month. Most areas had above normal sunshine hours apart from the east coast of the North Island, Otago and Southland. It was a cold month over most of the country, and drier than usual except in parts of the South Island. This was the fifth consecutive month that parts of Canterbury and Otago have had above normal rainfall. Farmers in the North Island reported that feed was short and rain was needed to promote grass growth. On the West Coast grass growth was good and stock in excellent condition with lambing percentages above usual. Some heavy stock losses were reported during the heavy rain in Southland and Otago on the 13th/14th.

**Rainfall**—Rainfall was below or near normal over the whole of New Zealand apart from Otago, Southland, parts of Canterbury and the West Coast. Conditions were very dry in Northland and Auckland where some stations recorded less than half their normal monthly totals. During the 24-hour period from the morning of the 13th almost continuous heavy rain was recorded in many areas in Southland and Otago. Civil emergencies were declared at Maitaia and Riversdale as rivers burst their banks, and extensive flooding and land slips isolated other towns and blocked the main highway from Dunedin to Invercargill. The town of Kelso and parts of Alexandra were evacuated. Jet boats and helicopters were used to rescue people and stock, but stock losses were reported to be heavy.

The highest 24-hour falls were recorded in an area south of Queenstown to Invercargill. At Tapanui, which is situated in the area of highest rainfall, 119 mm was recorded in the 24 hours to 9 a.m. on the 14th. This has never been exceeded since the station began in 1897, the previous maximum of 110 mm being recorded in June 1935. The following stations also recorded high 24-hour rainfalls in this period: Clinton 125 mm, Roxburgh 117 mm, Balclutha 116 mm, Inch Clutha 107 mm, Owaka 99 mm, Queenstown 87 mm and Alexandra 70 mm.

**Temperature**—Temperatures were below or near normal over the whole country. In parts of Northland, Auckland, Bay of Plenty, Poverty Bay and Hawke's Bay they were below normal by 1° to 1½°C. In other areas of the North Island cooler night time temperatures reduced the mean temperature to ½° to 1°C below normal. In the South Island colder day time temperatures caused a drop in

the monthly mean temperature of approximately ½°C. There was a warm spell of 3 days at the beginning of the month, and another from the 12th to 14th inclusive, the rest of the month having cooler temperatures in most areas.

**Sunshine**—Most areas had above normal sunshine hours for the month, the only areas below being Poverty Bay, Hawke's Bay, Wairarapa, Otago and Southland. Many stations on the west coast of both Islands recorded 40 hours more than usual. The sunshine total of 234 hours at Wellington was the highest recorded there in October since 1937.

#### WEATHER SEQUENCE OCTOBER 1978

The ridge of high pressure that covered New Zealand at the end of September moved slowly east, and an anticyclone became established over the country until early on the 3rd. Pressures were low to the north and south of the country. Fine weather prevailed in most areas, with only isolated showers being reported in some eastern districts of the North Island. Temperatures were slightly colder than usual at the beginning of the month. By the afternoon of the 3rd the anticyclone had weakened, and a depression that had formed to the north of the country had started to move slowly south. A cold front moved across the South Island bringing isolated showers to Fiordland, Westland and Southland.

On the 4th the depression was centred to the northeast of the North Island and moving slowly southeast. A cold front associated with a depression to the south of the country moved onto the South Island. Early on the 5th a wave depression formed on a front in the Tasman Sea and this started to move eastwards towards New Zealand. Heavy rain was recorded in Fiordland and Westland. During the morning of the 6th the situation became complex with one depression moving slowly down the east coast of the country; the wave depression in the Tasman Sea moving towards Northland and a further small depression moving to the south of New Zealand. An active cold front associated with the depression to the south crossed onto the South Island and moved northeast. Most districts of New Zealand had light to moderate falls of rain, the heaviest being in Poverty Bay, Hawke's Bay and West Coast. Temperatures were colder than usual in most areas.

From the 7th to the 10th a ridge of high pressure extended onto New Zealand from an anticyclone centred to the east of Australia. A few areas in both the North and South Islands reported some showers, as small disturbances in the southerly flow ahead of the