

CLIMATOLOGICAL TABLE—Summary of the Records of Temperature, Rainfall, and Sunshine for November 1977—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	
	Metres	°C	°C	°C	°C	°C		°C		mm		mm	mm		Hrs
Ashley Forest, October 1977	107	16.6	6.3	11.5	+0.1	28.0	28	0.4	1	29	5	-29	14	24	235
Lincoln, October 1977 ..	11	16.6	5.7	11.2	+0.0	28.0	28	-0.9	1	21	8	-27	9	7	224
Otiake Farm, October 1977	183	17.4	4.5	11.0	..	27.2	28	-1.0	31	19	6	..	8	29	..
Ranfurly, October 1977 ..	427	16.2	3.5	9.9	..	26.5	28	-4.6	12	29	12	..	8	29	189
Queenstown Aerodrome, October 1977	349	15.2	4.1	9.7	+0.0	26.0	28	-2.4	1	77	12	+23	46	29	..
Moa Creek, August 1977 ..	427	10.8	-5.3	2.8	-0.7	15.0	13	-8.4	4	1	..	-14	0	..	..
Moa Creek, September 1977	427	11.2	-2.1	4.6	-1.4	19.0	28	-8.0	11	18	..	-5	..	..	..
Moa Creek, October 1977 ..	427	..	..	..	..	..	..	..	..	26	..	-10	9	29	..
Tautuku, October 1977 ..	61	14.7	5.2	10.0	..	27.0	28	0.3	12	167	..	..	..	..	..
Raoul Island, May 1977 ..	38	21.0	15.4	18.2	-0.6	24.1	3	12.4	6	118	21	-27	32	23	131
Raoul Island, June 1977 ..	38	19.9	14.2	17.1	-0.2	22.9	5	11.4	8	77	13	-73	21	11	139
Raoul Island, July 1977 ..	38	18.7	13.4	16.1	-0.1	21.2	29	10.9	23	107	25	-56	46	20	167
Raoul Island, August 1977	38	18.4	13.0	15.7	-0.3	20.7	25	8.8	31	75	18	-62	23	10	154
Raoul Island, September 1977	38	18.6	12.5	15.6	-0.7	21.4	18	9.5	9	46	17	-71	10	9	194
Raoul Island, October 1977	38	20.1	13.4	16.8	-0.7	22.8	30	9.9	14	87	13	+1	27	9	207
Totokoitu, Rarotonga, September 1977	9	24.5	18.5	21.5	..	29.4	22	14.2	15	522	13	..	263	2	..
Scott Base, Antarctica, October 1977	16	-16.8	-29.4	-23.1	-0.3	-0.2	30	-44.9	1	..	..	..	..	..	..

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 NOVEMBER 1977

General—During November pressures were higher than normal over the whole of New Zealand with a predominance of winds from a westerly quarter. Over most of the country this was a cold, dry, sunny month, with occasional spells of warm fine weather. Many farmers in the North Island reported good grass growth and stock in good condition, but in many parts of the South Island grass growth was poor. In Hawke's Bay and Wairarapa farmers in most areas reported that grass growth was not good because of the continuing warm dry weather, and more rain was needed to rejuvenate grass damaged in the August and September wet spell. In some areas of New Zealand berry fruit was not ripening as well as could be expected at this time of year.

On the 9th the fishing boat "Lindberg" was stranded on the rocks near North Cape during a period of gale force winds. Yachts in the One Ton Cup race had to seek shelter in the Hauraki Gulf after being battered by gale force winds and high seas on the 9th.

Rainfall—The only areas with above normal rainfall for the month were parts of Waikato, Taranaki, Manawatu, Wellington, and Marlborough. The largest departures above normal were in the Wellington region, where nearly half the month's total rainfall fell from the 20th to 22nd. At Kelburn (Wellington) more than 40 mm was recorded in 6 hours on the 20th, and at Taita (Lower Hutt) nearly 50 mm was recorded in 6 hours on the 22nd, and more than 70 mm in 12 hours on the 21st/22nd. Roads and railway lines were blocked by land slips and floodwaters at Petone and Porirua, and some houses in the Hutt Valley were evacuated. At Cape Reinga (Northland) more than 80 mm was recorded in the 48 hours to 9 a.m. on the 10th.

Areas with rainfall totals appreciably below normal were Poverty Bay, Hawke's Bay, parts of Wairarapa, Nelson and the east coast of the South Island.

Temperatures—The monthly mean temperatures were below normal throughout New Zealand, in many areas of the North Island by more than 1°C, and in the South Island by at least ½°C. The coldest spell occurred during the first three days of the month with maximum temperatures well below normal. The longest warm spell was from the 19th to 22nd.

Sunshine—Most areas of New Zealand had sunshine hours near or above normal for the month, many places being above by 25 to 35 hours. At Christchurch Airport the total of more than 250 hours was about 20 percent above normal. Parts of Auckland and Southland were slightly below normal.

WEATHER SEQUENCE

The depression lying to the southeast of New Zealand at the end of October continued to move east, and the cold front associated with the depression moved across the North Island. Pressures were high to the north of the country on the 1st, with a small low pres-

sure area near Tasmania. Temperatures were cold on the east coast of the North Island and Canterbury. By the 2nd the depression near Tasmania had moved to the south of the country, and its associated cold front had passed onto New Zealand bringing rain to Westland and Fiordland, and showers to most of the country. Temperatures continued to be cold on the east coast of both Islands.

On the 3rd a small wave depression had formed on a cold front in the Tasman Sea, and by the afternoon had moved onto central New Zealand moving northeast. Heavy rain was recorded in Northland, Bay of Plenty, Taranaki and Poverty Bay. Following the passage of this depression a ridge of high pressure extended into the Tasman Sea from Australia, with pressures low to the south of New Zealand. As an anticyclone moved onto the country on the 4th a strong westerly airflow became established over the South Island. Small disturbances in this flow brought showers to the West coast, occasionally heavy.

Early on the 5th the anticyclone had started to move east away from the country, with a trough of low pressure moving into the Tasman Sea. Between these two systems a strong northwest airflow persisted until the evening of the 6th, with winds of near gale force being reported in the Wellington and Marlborough areas. As the trough of low pressure crossed the country most areas of New Zealand reported rain, heavier in Westland, Fiordland, Southland and Otago. Temperatures were colder than usual in Wellington, Wairarapa, Hawke's Bay, Otago and Southland. An anticyclone moved onto New Zealand early on the 7th, but by the 8th had started to move quickly east. Pressures were low in the north and south Tasman Sea.

A small depression in the north Tasman Sea moved onto Northland early on the 9th, and heavy rain and gale force winds were reported at Cape Reinga lighthouse. A fishing vessel was stranded on the rocks at North Cape, and more than 80 mm of rain was recorded in 48 hours at the lighthouse. Heavy rain was also reported in other parts of Northland and the Coromandel peninsula. Gale force winds were also recorded in the Hauraki Gulf on the 10th. A ridge of high pressure extended onto New Zealand from the north Tasman Sea, but had weakened early on the 11th. A complex trough of low pressure had started to move east onto the country late on the 11th.

Small disturbances in the flow ahead of the low pressure trough brought showers to most areas west of the main ranges. Temperatures were warm in Canterbury, Otago and Southland. As the cold front associated with the trough passed over New Zealand on the 12th and 13th heavy rain fell in the South Island with lighter falls elsewhere in the country. By the 14th an anticyclone had become established in the Tasman Sea and had begun to move east onto New Zealand. Pressures were low to the southeast of the country near Tasmania. As the anticyclone moved across the country on the 15th it was replaced by a cold front associated with a depression to the south, which moved quickly onto the country. By the 16th