

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.

#### NOTES ON THE WEATHER FOR APRIL 1977

**General**—During April pressures were lower than normal over the whole country, with a predominance of winds from a southerly quarter. Temperatures were comparatively warm during the first half of the month but there were some cold wintry spells during the latter half of the month. Conditions were dry in Northland, Bay of Plenty, and parts of Canterbury, but farmers in the North Island reported good grass growth until cold temperatures checked growth later in the month. In parts of Nelson, Marlborough, and Canterbury, growth was poor owing to dry conditions and farmers were feeding hay to stock.

**Rainfall**—Rainfall was below normal over most of the country with the exception of parts of Taranaki, Poverty Bay, Hawke's Bay, Wairarapa, and Wellington in the North Island. In the South Island it was above normal in some areas of Westland, Canterbury, Otago, and most of Fiordland and Southland. Milford Sound recorded nearly double its normal rainfall for the month. A small complex depression passed eastwards over the Wellington area on the 10th and 11th and very heavy rainfalls were recorded in a narrow band from Titahi Bay to the Lower Hutt area. 134 mm was recorded at Linden in 48 hours, and falls of more than 125 mm at Maungaraki during the same period. The majority of the rain fell between 11 p.m. on the 10th and 5 p.m. on the 11th. On the 16th and 17th heavy rain in northern Hawke's Bay caused major flooding in Wairoa. The town was isolated when slips, washouts, and flood waters closed main highways and cut off communications for 24 hours. Similar conditions were experienced to those which caused major flooding in this area on the 23rd and 24th of February this year. More than 290 mm was recorded at Wairoa in a 48 hour period up to 9 a.m. on the 17th, and at Glenfarg Station, situated in the inland high country, more than 310 mm was recorded during the same period.

**Temperatures**—Mean temperatures were close to normal for the month over most of the country. Some areas in Bay of Plenty, Poverty Bay, and the central North Island were slightly below normal, but coastal Otago and Southland were as much as 1°C above normal. There were two cold spells during the month, the 21st/22nd and 27th/28th, when maximum temperatures were well below normal. Several inland Canterbury stations recorded temperatures below freezing on the 27th.

**Sunshine**—Most of New Zealand had above or near normal sunshine hours for the month. Parts of Auckland, Waikato, and Southland were slightly below normal, the only area significantly below was inland Otago where some stations recorded 20 hours less than normal.

**Weather Sequence**—The anticyclone that had become established over most of the country at the end of March had begun to move eastwards at the beginning of April. A complex trough of low pressure, with associated cold fronts, had started to move onto New Zealand, during the afternoon of the 1st. As the low pressure centre moved south of the country on the 2nd a cold front passed over the country bringing heavy rain to the West Coast and showers in most areas west of the main ranges. Temperatures were warm over the whole of New Zealand, with very warm temperatures being recorded in Otago, Canterbury, Hawke's Bay, and Poverty Bay.

On the 3rd a ridge of high pressure had moved onto the North Island, with a strong westerly airflow to the south of the country. A depression to the south of Tasmania moved south-eastwards and by the 4th the cold front associated with this depression was lying across the South Island. As this front moved northwards over New Zealand, on the 4th and 5th, heavy rain was recorded on the West Coast and showers in most areas of both islands.

The front had moved away to the east late on the 5th and an anticyclone moved onto the country from the Tasman Sea. This anticyclone persisted for two days with pressures falling near Tasmania. There was a strong northwest airflow in the Tasman Sea.

Late on the 7th a depression had formed on a cold front in the Tasman Sea and had started to move southeast. The anticyclone was now situated over the North Island and central New Zealand but had begun to weaken and move eastwards. Small disturbances in a strong north-west flow brought isolated showers to Fiordland and Southland on the 8th. By the 9th the low pressure area had moved into the central Tasman Sea and a warm front passed over the South Island. Rain was reported in Southland and the West Coast with heavy falls recorded in Fiordland.

Early on the 10th the cold front associated with the depression off the west coast of New Zealand had begun to move eastwards over the country. Later the same day the depression had developed two centres, one to the east of the South Island and the other over central New Zealand. This latter centre moved east across the country and had begun to weaken on the afternoon of the 11th. Rain was reported over the whole of New Zealand on the 10th with especially heavy falls on the West Coast. On the 11th heavy falls were recorded in the Marlborough, Wellington, and Coromandel areas. Temperatures were cool over the whole of the country.

A ridge of high pressure extended from the Tasman Sea onto the North Island on the 12th and 13th with pressures low to the south of the country. A strong westerly airflow covered the lower half of the South Island and disturbances in this flow brought heavy rain to Fiordland and isolated showers over most of the country west of the ranges. A depression formed near the Kermadec Islands early on the 14th and moved slowly south. The ridge of high pressure had weakened considerably late on the 15th, and early on the 16th the depression to the north had moved further towards the east coast of the North Island and had deepened. Most of the North Island recorded rain and in Hawke's Bay and Poverty Bay there were very heavy falls on the 16th and 17th as the depression moved down the east coast of the North Island.

On the 18th this depression moved south-eastwards away from the coast and a ridge of high pressure extended onto New Zealand. Temperatures were cold on the east coast of the North Island. On the 20th a cold front passed onto the South Island and a small depression formed on this front but dissipated fairly quickly. By the 21st a cold southerly airflow, ahead of a ridge of high pressure, covered the country and temperatures were very cold over the whole of New Zealand on the 21st and 22nd.

By the 23rd a depression near Tasmania had moved southeast and pressures were low to the south of the country. A succession of cold fronts passed over the country on the 23rd, 24th and 25th bringing rain to most areas west of the ranges. Early on the 25th a small depression formed to the west of the North Island and moved to the east across the country on the same day. A cold front approached the South Island late on the 25th and moved northwards eventually passing to the east of the North Island on the 27th.

On the 28th a ridge of high pressure extended onto New Zealand from the Tasman Sea and pressures were low to the south of the country. A small depression developed in the south Tasman Sea and moved eastwards onto the South Island. This depression and associated cold front brought heavy rain to the West Coast and lighter falls to the rest of New Zealand. This trough of low pressure moved away on the 30th but a depression near Tasmania was moving southeast towards the South Island.

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