

NOTES ON THE WEATHER FOR AUGUST 1977

General—Pressures were higher than normal over New Zealand during August, and for the second month in succession exceptionally high to the south of the country. This was the third consecutive month with a marked absence of westerly winds and a predominance of winds from an easterly quarter. It was a cloudy, wet month in most areas east of the main ranges, except for the area south of Banks Peninsula; elsewhere it was generally drier than normal. Cold southerly winds on the 29th/30th brought the coldest spell of weather during the month. Short but heavy falls of snow in the Dunedin area on the 29th stranded several vehicles. In Hawke's Bay and Wairarapa the cold, wet weather at the end of the month killed more than 12,000 lambs, the heaviest losses for many years. Apart from the lamb losses, most farmers reported average to good grass growth and lambing proceeding well, with stock in good condition.

Rainfall—In the North Island rainfall was above normal in Coromandel, Poverty Bay, Hawke's Bay, Wairarapa, Taranaki, and Wellington, in places by as much as 50-100 percent. In Northland, Auckland and parts of Waikato it was below normal by more than 50 percent in some areas. Most of the South Island had below normal rainfall with the exception of northern Canterbury Nelson and coastal Marlborough which were above. Many places in Otago, Southland, Fiordland, Westland, and Buller had less than 25 percent of their normal rainfall. Stations at Clyde and Alexandra recorded less than 0.5 mm for the month. At Clyde the total rainfall of 24 mm for the months June, July and August is the lowest recorded in any winter since 1907. This winter has been very dry in parts of Otago and Southland.

Temperature—Temperatures were above normal over the whole country except in parts of Northland, Wellington, and the Kaikoura Coast. Maximum temperatures were below normal in these latter areas but minimum temperatures were slightly above. During the cold spell at the end of the month low maximum temperatures were recorded at Kaikoura (5.2°C), Kelburn, Wellington (6.1°C), and Masterton (7.2°C) on the 29th.

Sunshine—Sunshine was above normal in the northern half of the North Island, parts of Canterbury, Southland, and the West Coast, elsewhere it was below normal. In Wairarapa, Wellington, Nelson, Marlborough, and the Kaikoura coast it was below normal by up to 35 percent. Kelburn (Wellington) and Masterton recorded their lowest August sunshine totals since 1966 and 1965 respectively, and at Wallaceville the 81 hours recorded was the lowest August total since 1940. Hokitika's total sunshine of 179 hours for the month was 25 percent above normal.

Weather Sequence—August 1977 At the beginning of August the depression that had been moving into the Tasman Sea from south of Tasmania at the end of July weakened considerably, and a ridge of high pressure over New Zealand persisted until the 5th. Temperatures were cold over most of the country for the first five days, with isolated showers in both the North and South Islands. A cold front associated with a depression to the south of the country passed over the South Island on the 6th, and heavy rain was recorded in Fiordland, with lighter falls in Westland and Buller. On the 7th another cold front crossed the country moving northwards, and most areas on the West Coast of New Zealand reported some rain. Temperatures were warmer than usual on the east coast of both Islands.

Late on the 7th a small depression formed on a front in the north Tasman Sea, and another depression was moving south-east towards the South Island. Early on the 8th the situation became complex and a large depression with the main centre to the west of central New Zealand was established, and began to move slowly eastwards across New Zealand. The cold front associated with this depression brought heavy rain to most of central New Zealand, the heaviest falls being recorded in the Wellington region, Nelson, Marlborough, and the Kaikoura Coast. Lighter falls were reported over most of the east coast of the South Island, and the rest of the North Island.

By the 9th two centres had developed in the depression, one east and another west of the country. Rain was recorded in most areas of New Zealand on the 9th, and the northern half of the South Island, and the whole of the North Island on the 10th and 11th. On the afternoon of the 11th the depression had moved to the east of the country and a ridge of high pressure extended from the north Tasman Sea onto the North Island. Pressures were low to the south of the country and near Tasmania.

An anticyclone became established over the whole country from the 12th to 14th and only a few areas had some isolated showers. Temperatures were warmer on the east coast. A depression formed on a frontal zone in the Tasman Sea and moved slowly south east. The cold front associated with this depression moved onto the North Island early on the 15th, bringing heavy rain to Northland. As the system passed across the country, heavy falls were reported in the North and South Islands, mainly west of the ranges.

From the 16th to the 18th small disturbances in a westerly airstream brought rain to most areas of the country, especially heavy falls being recorded on the West Coast, Taranaki, Wellington, and South Wairarapa. A ridge of high pressure extended from Australia to New Zealand, and an anticyclone moved slowly across the country from the 19th to the 21st.

Fine weather prevailed over most of the country with temperatures slightly warmer than usual. Pressures were low to the north and south of the country.

A complex depression that had developed in the north Tasman Sea on the 20th moved onto the North Island on the 22nd, bringing rain to the northern half of the Island. A cold front associated with a depression in the south Tasman Sea moved towards the South Island and weakened, with only isolated showers being reported. As the depression moved away from the country on the 25th a ridge of high pressure extended onto the South Island, and to the south of New Zealand. Pressures remained low to the north-east of the North Island.

The ridge of high pressure weakened on the 27th, and pressures were low to the south of the country with an anticyclone situated north/south in the Tasman Sea. A cold southerly airstream ahead of this anticyclone covered the country until late on the 30th. Rain was recorded over most of New Zealand on the 28th and 29th and in the North Island on the 30th. Temperatures were very cold on the east coast of both Islands on the 29th, and over most of New Zealand on the 30th, with the exception of the West Coast. A cold front associated with a depression passing to the south of the country brought rain to most places west of the ranges on the 31st.

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J. S. HICKMAN, Director.

Ministry of Works and Development—Schedule of Civil Engineering and Building Contracts of \$20,000 or More in Value

Name of Works	Successful Tenderer	Amount of Tender Accepted \$
Civil Engineering—		
SH 1: Replacement of McLeans Bridge	Hector Busby	77,787.56
Various reseals on SH 1, 8, 88, and 91 in 16 and 17 Road Districts	Fulton Hogan Ltd.	132,852.50
Reseals, second coat seals, etc: Wanganui Residency	Manawatu Asphalts Ltd.	248,577.31
Huntly Power Project: supply and fabrication of steelwork for ash pumphouse and miscellaneous steelwork	Neil Jensen and Son Ltd.	125,273.50
Maintenance sealing Napier South Area 1977/78	J. & J. Walters Ltd.	56,471.73
Huntly Power Project: supply and fabrication of steelwork for bunker cableways and cable bridges	General Maintenance Engineering Ltd.	255,360.00
SH 72: Upper Waihi Bridge approaches, Geraldine	Francis Construction Services Ltd.	134,314.88
Glenfield College: four additional tennis courts	A. J. Callis Ltd.	28,910.55
Resealing of State Highways No. 1, 10, and 12 in Kaikohe Area	Northland Roadbuilders Ltd.	175,814.71
SH 25: RP 143/13.27 construction of Hamilton's Culvert	Winstone Civil Construction Ltd.	49,914.10
Reseals in Te Kuiti Residency 1977/78	Waikato Bitumen Co. Ltd.	63,000.41
SH 6, 6, 67, and 69: sealing various sections in Inangahua and Buller Areas	Tasman Asphalt Ltd.	158,409.74
Building—		
Single staff units for Ministry of Works and Development, Haast: plus garages	John Symonds & Breen	131,930.00
First floor offices on existing garages: McNab Building, Gore	Jones & Cooper Ltd.	37,447.91
Clutha Valley Development: industrial area buildings—core shed	J. T. Randle & Sons Ltd.	61,090.00
Construction of boilerhouse: Wairarapa College	Dixon & McKinlay Ltd.	209,714.00
Winchmore Irrigation Research Station: erect new office building	B. Bower and D. Millar	49,700.60
Education Department: Timaru Girls' High School: cable reticulation and kiosk	City Electrical (Christchurch) Ltd.	24,505.60
Upgrading lightwells: Jean Batten Building	Gunac North Shore (1974) Ltd.	32,744.00

N. C. McLEOD, Commissioner of Works.