



Met Society Newsletter

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Climate Summary for Spring 2008



Dry in the north and east, mild and sunny for much of the country. Westerly gales at times.

- Rainfall: Below normal for north and east of North Island and east of South Island, with significant soil moisture deficits in eastern areas
- Temperature: Above average in Canterbury and Central Otago, below average on the West Coast and Tararua district
- Sunshine: Above normal for parts of Northland, central and eastern North Island, Mount Cook and coastal Otago

Spring rainfall was below normal in the east with less than 50 percent (half) of normal in parts of Gisborne, Hawkes Bay, and south Canterbury, and between 50 and 80 percent of normal in parts of Northland, Auckland, Bay of Plenty, Marlborough, Canterbury and Otago. As a result significant soil moisture deficits had developed throughout eastern areas from Gisborne to Otago by the end of spring. Other areas received near normal rainfall for spring.

Spring overall was warmer than average in parts of Canterbury and Central Otago, and below average on the West Coast and parts of the Tararua district. The national average temperature of 12.4 °C was 0.3 °C above average for spring.

The overall spring climate pattern was dominated by more anticyclones ('highs') located to the east of New Zealand extending ridges over northern New Zealand. There were stronger than normal northwesterly winds over the South Island, which contributed to the soil moisture deficits in the east, low rainfalls in the north and east, and damaging westerly wind events in the east of the South Island and lower North Island.

Major Highlights

- Heavy rain in Taranaki on 7 October caused flash floods in mountain streams, resulting in the death of a trumper who was swept away attempting to cross the swollen Kaupokonui Stream on Mt Taranaki, hampered by a heavy back-pack. Heavy

rain from a northerly subtropical flow caused floods in Nelson and the West Coast on 24 November.

- The lowest temperature during spring was recorded at Lake Tekapo on the 25th of October, where the minimum temperature was -6.1°C. The maximum temperatures on the 4th, 5th and 6th of September were quite low for many locations, with Hanmer only reaching 2.8°C on the 5th (the lowest maximum for spring).
- The highest temperature during spring 2008 was 33.3°C recorded at Waione (Wairarapa) on the 24th of November. The minimum temperature of 19.2°C at Wanganui on the night of the 23rd/24th of November was the highest minimum for the country for spring.
- Seven damaging westerly wind episodes occurred during spring, impacting the east of the South Island and lower North Island. Winds gusts reached 140 km/hr on 23 September at Swampy Summit above Dunedin, 100 km/hr at Taiaroa Head, 135 km/hr on the Rock and Pillar Range, near Middlemarch. Wind speeds of up to 130 kph were recorded in Wellington and up to 160 kph in some of the surrounding hills on 7 October. Winds of up to 140 km/hour hammered Wellington, lifting roofs, cutting power, and disrupting flights on 1 November.
- There were two major snowfall events in spring. The first occurred on 27 September bringing snow to low elevations in Otago and Southland. The second, on November 5, blanketed inland Southland, Fiordland and Central Otago with snow and hail. Locals said it was the first time since the 1970s that they have seen this much snow in November.
- Of the five main centres, Auckland had the warmest average spring temperature, Wellington was the wettest, and Christchurch was the sunniest and driest. Spring temperatures were near or slightly above average and spring rainfall was near or below normal in all five locations. Spring sunshine was above normal in Auckland and Christchurch and well above normal in Dunedin.

Rainfall

Spring rainfall was less than 50 percent (half) of normal in parts of Gisborne, Hawkes Bay, and south Canterbury and between 50 and 80 percent of normal in parts of Northland, Auckland, Bay of Plenty, Marlborough, Canterbury and Otago. Other areas received near normal rainfall for spring.

Temperature

Seasonal mean temperatures were between 0.5 and 1.5 °C above average in parts of Canterbury and Central Otago. They were below average by about 0.5 °C on the West Coast and by about 1.0 °C around Dannevirke. The national average temperature of 12.4 °C was 0.3 °C above average for spring.

Sunshine

- 4th - Cold, wet southerly in Canterbury and Kaikoura Coast. Only 6C maximum in Darfield and 7C maximums in Ashburton and Christchurch. (14C colder than day before!) Fresh snow on inland high country.
- 5th - Cold, damp southerly continues over Canterbury and Marlborough, with snow on the hills and high country. Only 3C maximum in Hanmer; 6C in Kaikoura, and 8C in Blenheim. Some heavy showers in north and west of North Island, including parts of Auckland (15mm recorded in hour in Grey Lynn in afternoon)
- 6th - Heavy overnight rain about Wellington. (51mm recorded at Kelburn) Fresh snow on North Island high country. Only 10C maximum in Wanganui. Frosty morning in the south, e.g. -6C minimum in Alexandra, and -4C minimums in Lumsden, Queenstown and Dunedin Airport.
- 8th - Some heavy falls of rain in the north of the North Island, e.g. 100mm in 12 hours at Golden Cross. (Waihi)
- 9th - Warm day in some northern areas, e.g. 22C maximum in Gisborne, 21C in Whitianga, and 20C in Thames. Warmth triggers a few thunderstorms north of Taupo.
- 10th - Thick fog closes Christchurch Airport during morning.
- 11th - 21C maximum in Napier in a westerly flow. Heavy rain about Marlborough Sounds, e.g. 166mm at Pelorous Sound. (highest 24 hour total there since records began in 1982) Small tornado causes some damage in Bell Block, near New Plymouth.
- 14th - Northwesterly flow brings warm temperatures to east of South Island. 23C maximums in Alexandra and Dunedin Airport. 21C in Oamaru, Timaru, and Ashburton. Nelson also unseasonably warm, with a 20C maximum.
- 16th - Summery 25C maximums in Culverden, Fairlie, Alexandra, and Dunedin. 24C at Christchurch Airport. 21-23C maximums elsewhere in east and south of South Island.
- 17th - 22C maximums in Timaru and Christchurch.
- 18th - Some heavy falls of rain in central North Island, falling as heavy snow on Mt Ruapehu. (Turoa now has a record 5 metre snow-base) A few heavy showers further north. Temperatures at least 10C colder than previous day in Canterbury, under a drizzly southerly. By contrast, mild 17C maximums in sunny Haast and Milford Sound.
- 21st - 21C maximum in Hanmer.
- 22nd - Warm day in Bay of Plenty, e.g. 22C maximums in Kawarau and Whakatane. Record high overnight minimum for September at Paraparaumu. (14C) Northwesterly gales about Wellington, e.g. 65 knot gusts on Mt Kaukau.
- 23rd - Unseasonably warm in eastern areas. 27C maximum in Timaru; 26C maximums in Alexandra, Dunedin and Kaikoura; and 24C maximum at Nugget Point. (all September records at these stations) Also, record high overnight minimums at Lake Rotoiti/St Arnaud (9C) and Blenheim. (15C) severe northwesterly gales in parts of Otago, e.g. 100 kph gusts at Dunedin Airport (disrupting flights there and at Queenstown Airport) and 140 kph recorded on Swampy Summit. Some trees damaged by the winds. Heavy rain about and west of the Alps, e.g. 236mm at Mt Cook. Slip at Milford Sound results in tourists trapped for a while, and the main road closed until the 28th.
- 26th/27th September - Northwesterly gales followed by brief cold snap and snow in South Island. (see details below)
- 28th - Frosty morning in many parts of South Island.

- 29th - -5C minimum in Waiouru. Only 7C maximum in Murchison, due to incoming cloud cover. Northerly gales about Wellington.
- 30th - Overnight snow showers above about 300-400 metres in southern and central South Island, and fresh snow on central North Island above about 1000 metres.

OCTOBER

- 1st - A period of squally thunderstorms in northwest of South island, with some damage in Westport. Some scattered afternoon thunder and hail showers in Canterbury. Snow showers on hills of lower South Island
- 2nd - Frosty morning in the south, e.g. -1C minimum in Alexandra, and 0C minimums in Dunedin and Timaru.
- 3rd - Warm 26C maximum in Timaru, and 25C maximums in Oamaru and Alexandra.
- 4th-9th - Heavy rain and gales in many areas. (see details below)
- 16th - A few afternoon thunderstorms reported about Mackenzie Country and North Auckland. (Kaipara)
- 17th - A period of squally thunderstorms in northern and central North Island overnight in morning. A small tornado causes damage in Cambridge.
- 19th - A few afternoon thunderstorms in western Bay of Plenty, Waikato and Waitomo.
- 20th - A period of heavy rain in Fiordland and Westland. Snow in Fiordland down to Homer Tunnel.
- 25th/26th - Cold southerlies spreading over South Island on 25th and North Island by early 26th. Fresh snow on high country of both islands, as low as about 300 metres in some inland areas of South Island, including upper Canterbury Plains overnight 25th/26th. 55cm snow recorded at Mt Hutt by 26th.
- 27th - Warmer northwesterly flow spreads over South Island, raising temperatures considerably from those recorded during earlier cold snap. 30C maximum in Alexandra and 27C maximum in Timaru.
- 28th - Northwesterly gales in some inland areas of South Island in lee of Southern Alps.

NOVEMBER

- 1st - A period of northwesterly gales in some eastern areas; severe about Wellington. Cold southwesterly change in the South Island brings fresh snow on the southern ranges.
- 3rd - Some sea fog in coastal parts of South Canterbury and eastern Otago.
- 4th-7th - Unseasonably cold outbreak with snow to low levels in South Island. (see details below)
- 8th - Unusually heavy frosts in many areas in wake of previous cold spell. Horticulturalists very busy protecting their crops in many areas, e.g. Central Otago. Minimums recorded include 0C in Martinborough, -2C in Turangi and Queenstown. (Lowest recorded November temperature in latter since records began in 1871), and -1C in Dannevirke.
- 9th - Heavy rain developing on South Island West Coast.

- 15th - Unusually warm in east of South Island. 32C maximums in Alexandra and Ashburton; 31C in Dunedin, Timaru, Darfield (November record) and (in early evening) Christchurch Airport.
- 17th - Some heavy rain and northwesterly gales about central NZ.
- 18th - A period of squally thunderstorms and hail in mid Canterbury in afternoon. Large hail causes damage in and around Ashburton.
- 21st-26th - Heavy rain in northern and western areas. (see details below)
- 30th - Areas of morning fog in many inland South Island valleys and basins.

MAJOR EVENTS

26th/27th September - Northwesterly gales followed by brief cold snap and snow in South Island.

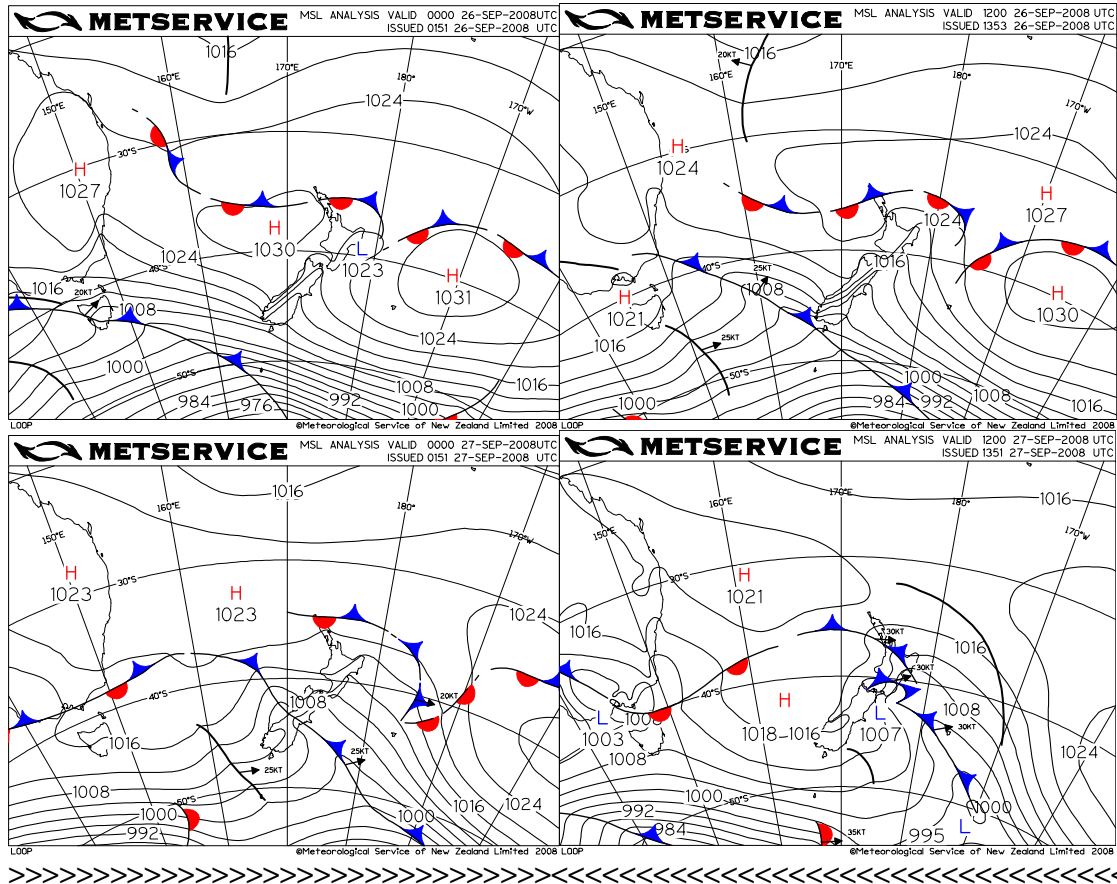
A northwesterly flow strengthened over the lower South Island during the 26th. This brought summery temperatures to eastern areas, with a 25C maximum in Timaru and 24C maximums in Oamaru and Ashburton. However, the winds rose to severe gale in the far south by later in the day, with gusts up to 86 knots at Mid Dome, Southland.

Overnight and into the 27th, the severe northwesterly gales spread north to affect many eastern areas, as a cold front moved onto the South Island, while a ridged persisted over the far north. Castlepoint recorded a maximum gust of 169kph, its strongest for September since records began in 1972. Some damage was reported in inland Canterbury and fires were fanned by the winds near Rakaia and Little River.

Following the gales, the front with a cold southerly change spread over South Island during the day, with a period of rain in eastern areas. Undercutting cold air with the change lowered snow levels to about 200 metres about inland areas from northern Southland to the Canterbury Plains. Falls of 13cm were recorded in St Bathans, and 10cm at Naseby and Arrowtown. Several cyclists had to be rescued from the Otago Rail Trail near Wedderburn, and the Lindis Pass was briefly closed. Power was cut to northern Southland town of Athol, after 9cm snow fell in three hours during the morning.

The front had weakened by the time it moved onto the North Island in the evening, and the southerlies gradually died out over the South Island.

Mean sea-level analyses for 26th and 27th September are shown here.



4th-9th October - Heavy rain and gales in many areas

A number of fronts and troughs brought unsettled and stormy weather to many areas during this period, most notably a spell of severe northwesterly gales and heavy rain to central and northern areas on the 7th.

During the 4th, fronts crossed NZ, preceded by a warm (26C maximums in many eastern places) northwesterly flow. The fronts brought heavy rain to areas about and west of the Southern Alps.

On the 5th, the remains of the frontal system came to a halt over the central North Island, while a weak ridge spread onto the South Island. Heavy rain fell about higher areas of the central and southwest North Island.

During the 6th, the ridge over the South Island collapsed as an active trough developed over the Tasman Sea, connecting with the remnants of the earlier frontal system over the North Island and allowing a northwesterly flow to redevelop over the whole country.

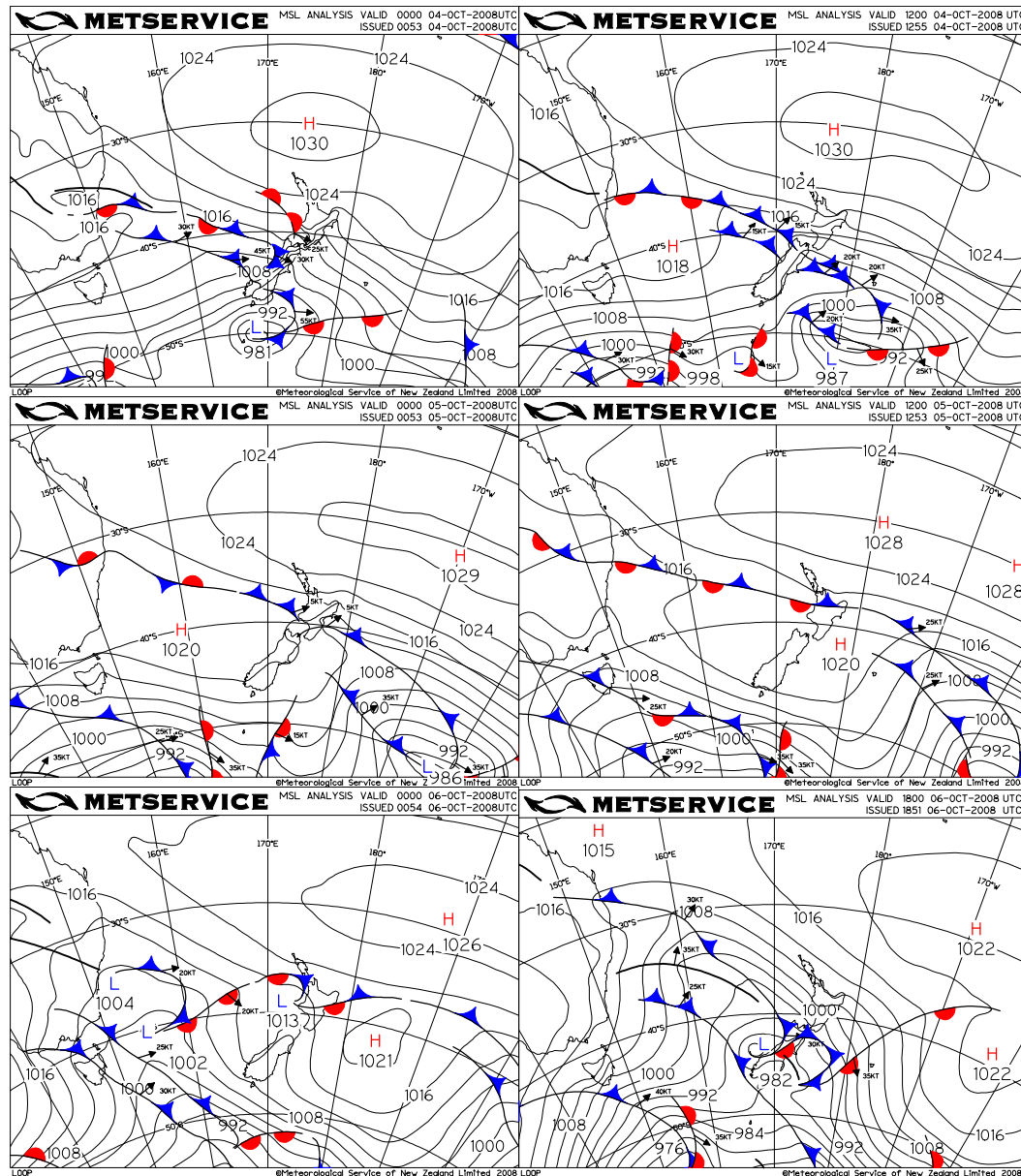
A low formed in the Tasman trough and with the trough, crossed NZ during the 7th. The northwesterlies ahead of it rose to severe gale-force about central NZ and later the north of the North Island, and combined with heavy rain to cause damage in many areas.

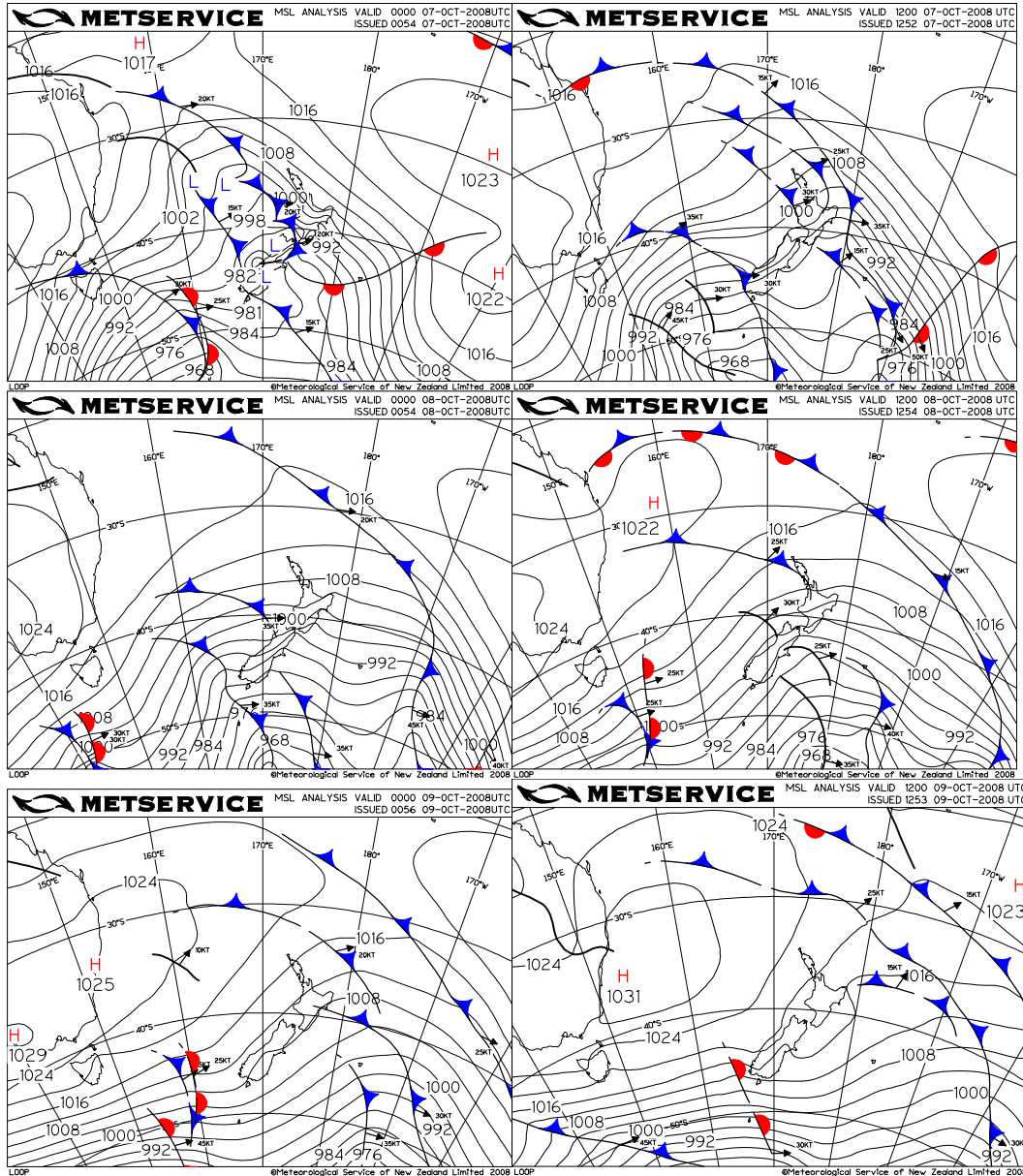
Further south, some heavy rain also fell in South Canterbury during the day, while cold air resulting snow falling in and around Queenstown in the morning.

By the 8th, the trough had moved away, with a cold west to southwest flow over NZ, bringing snow to high country of both islands.

This flow weakened on the 9th, as a high moved into the western Tasman Sea.

Mean sea-level analyses for midday NZST 4th October to end of 8th October in 12 hour steps are shown here.





4th-7th November - Unseasonably cold outbreak with snow to low levels in South Island

This event was notable for a very cold airmass from near Antarctica sweeping onto NZ, bringing conditions more reminiscent of a cold outbreak in mid winter, with snow to low levels in many parts of the South Island.

During the 4th, a strong disturbed northwesterly flow spread over the country ahead of a deep trough moving in from the Tasman Sea, with several fronts moving over. A low formed to the west of Fiordland by the end of the day, with cold air arriving in the far south, with snow to low levels in Southland in the evening.

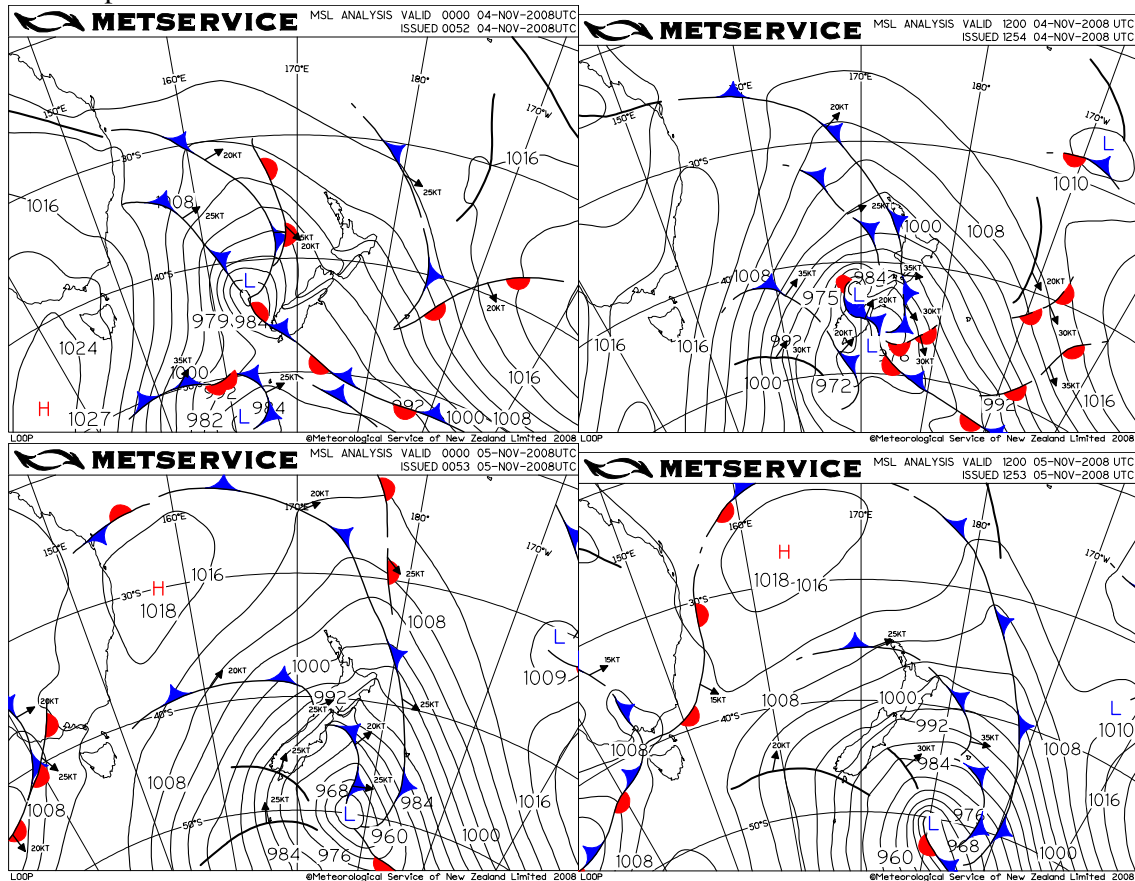
On the 5th and 6th, as the system moved away to the southeast, a strong westerly flow covered the North Island, while cold fronts brought very cold southwesterlies to the South Island. Snow settled to sea-level for a time in Southland, a very unusual event for November.

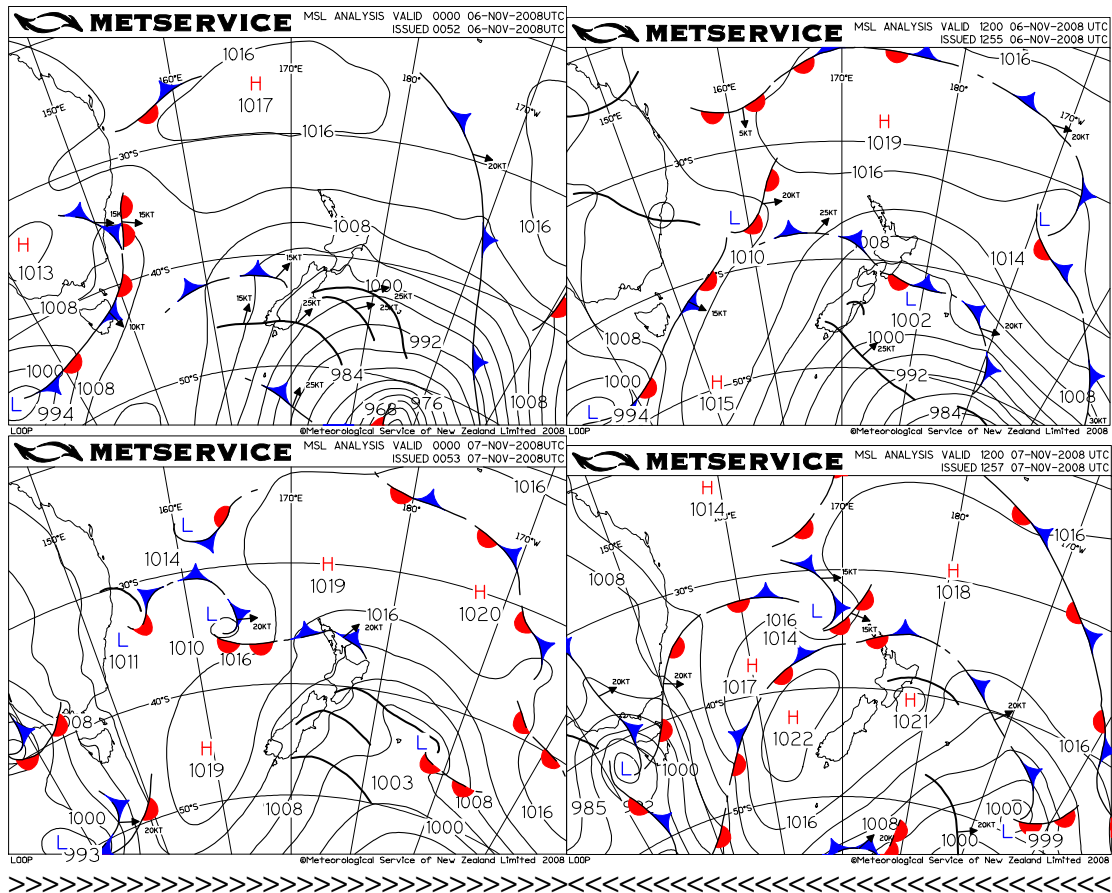
Snow showers also fell to low levels further north during the day - the Port Hills above Christchurch were dusted in late afternoon, while overnight 5th/6th, falls were even reported to low levels on the West Coast and on the hills and high country of the Nelson area. Reefton reported its first November snowfall since 1976. A severe wind squall (or small tornado?) was also reported in the northern suburb of Parklands, Christchurch on the afternoon of the 5th, damaging some properties.

As the cold air moved onto the North Island, snow fell on the central high country, including the Desert Road. Further lighter snow showers fell to low levels in the south of the South Island on the 6th. Further north, there were unseasonably heavy frosts in Canterbury early in the day, with Christchurch Airport recording its lowest November temperature (-2.6C) on record. Scattered thunder and hail showers were also reported in parts of Canterbury, as well as further north later in the day.

During the 7th, a weak anticyclone moved into the South Tasman Sea, and the flow tended lighter southerly over the country. However, the air over NZ was still unseasonably cold for the time of year. One last disturbance affected some eastern areas, with snow to low levels in Canterbury in morning, including yet another dusting on the Port Hills and even flurries in some Christchurch suburbs. As this disturbance moved north, it delivered thunderstorms and hail to Marlborough, Wellington and parts of the Wairarapa in the afternoon.

Mean sea-level analyses for midday NZDST 4th November to end of 7th November in 12 hour steps are shown here.





21st-25th November - Heavy rain in northern and western areas

A warm humid northerly flow covered NZ during this period, bringing heavy falls of rain to many northern and western areas. The heaviest falls were in the north of the South Island, with extensive flooding reported.

On the 21st, an anticyclone slowly moved away the northeast of the North Island, allowing a northerly flow to strengthen over the country ahead of a trough developing in the Tasman Sea. Rain set in on the South Island West Coast during the day.

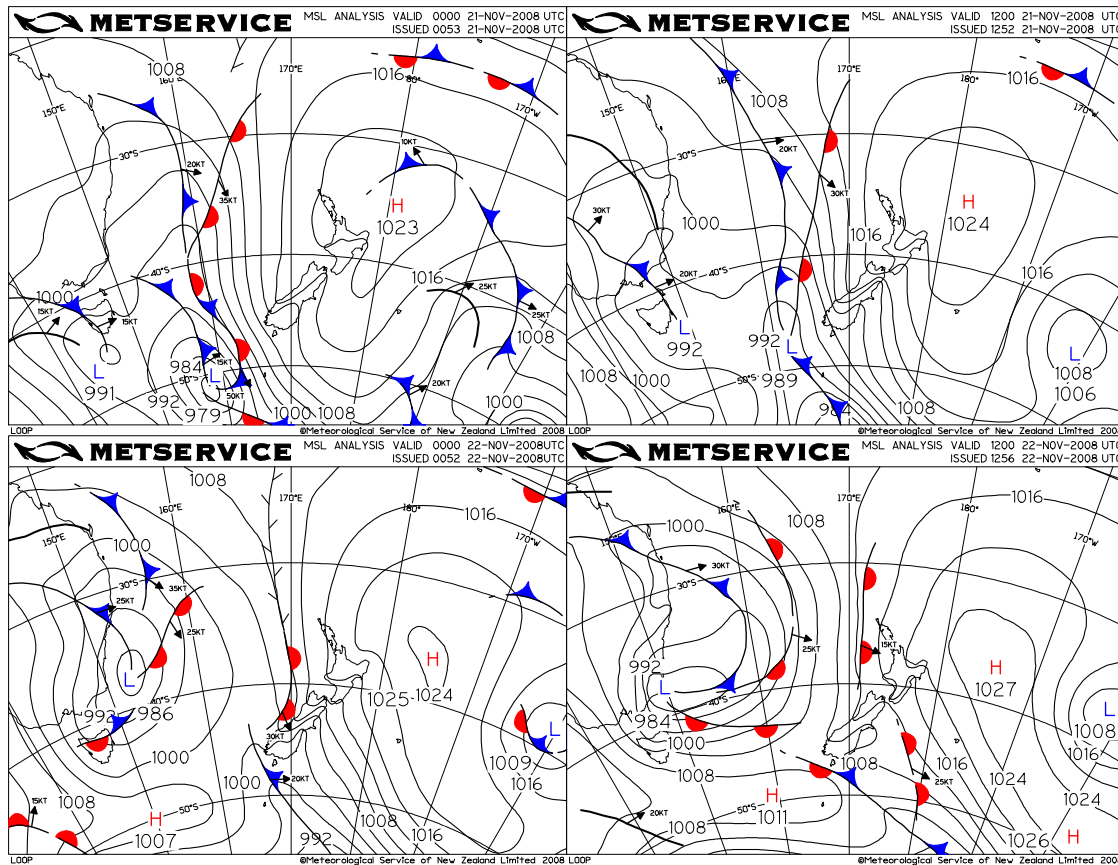
Over the next three days, the high moved only slowly away to the east, while a large low gradually moved across the Tasman Sea. Between these two systems, a strong, warm and moist northerly flow covered NZ, with several fronts crossing the country. Heavy rain fell in many northern and western parts of the South Island, and (from the 23rd) some western areas of the North Island.

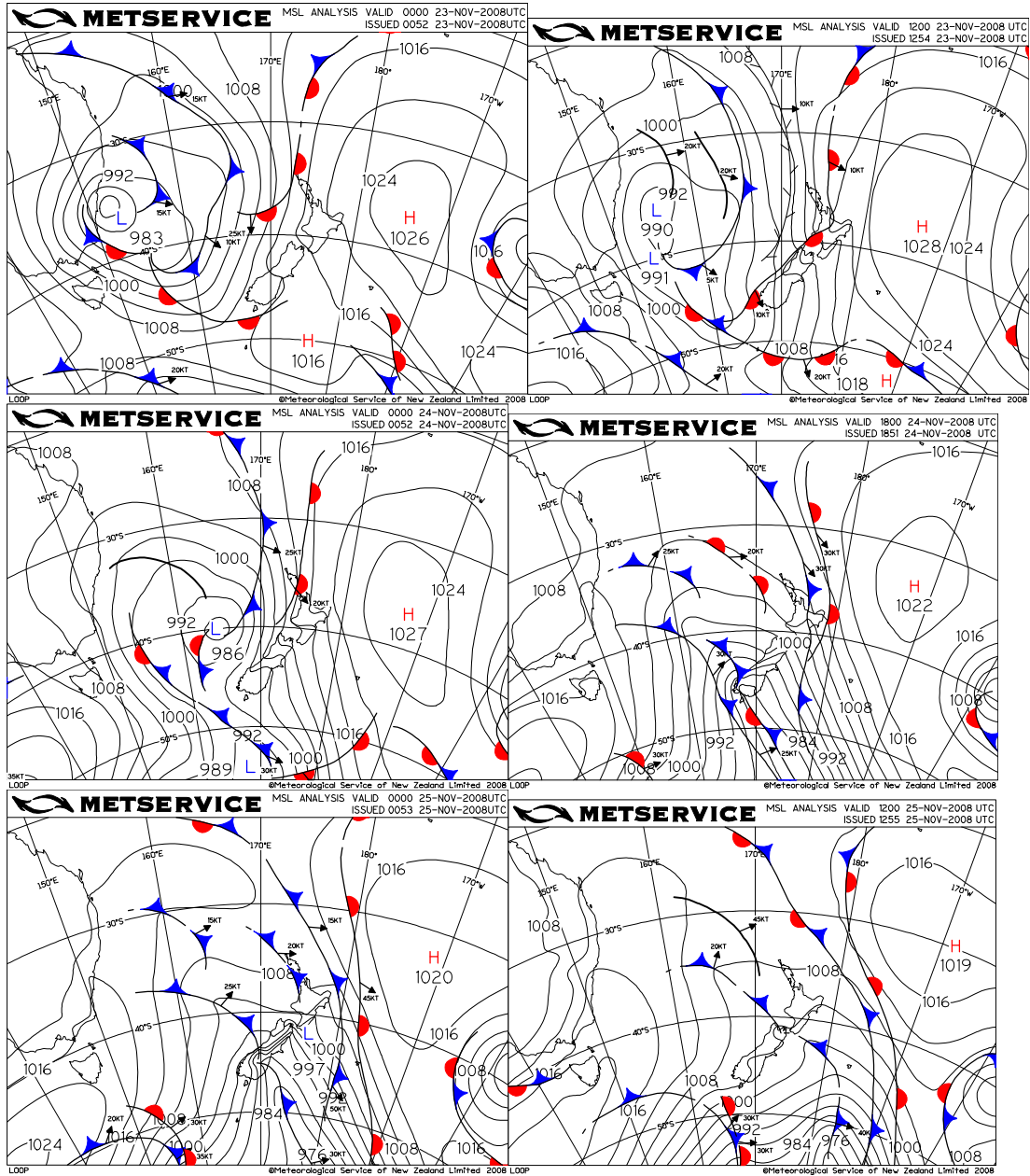
The rain was particularly heavy the Nelson/Golden Bay area, resulting in widespread flooding. A man was carried 100 metres down a flooded river at Okiwi Bay, northeast of Nelson on the 24th, though the city escaped serious flooding. However the Golden Bay area fared worse, with many schools and roads being closed and stock having to be rescued. Totals during this period included 328mm at a station in hills behind Golden Bay on 24th, 59mm at Nelson Airport (also 24th), and 128mm in Takaka on 23rd. Elsewhere, 90mm fell in Reefton on the 24th (November record), while Cropp recorded 1000mm over the three day period.

Elsewhere in NZ, in areas not hit by the heavy rain, the northerly flow brought much warmer than normal temperatures. Culverden recorded a maximum of 31C on the 23rd and Timaru reached the same temperature the next day. Dannevirke and Palmerston North both recorded record 28C maximums on the 24th. Night-time minimums were also unusually high, with Ohakune (14C on 24th), Wanganui (19C on 24th) and Kaikoura (17C on 23rd) having November records broken.

Overnight on the 24th/25th, the low finally crossed the South Island and the flow tended westerly, with the rain easing to showers in northern and western areas. However, there was a brief blast of northwesterly gales in North Canterbury and the Kaikoura Coast during the day, causing some damage (especially in Hanmer), before a cold front brought a southwesterly change later in the afternoon.

Mean sea-level analyses for midday NZDST 21st November to end of 25th November in 12 hour steps are shown here.





MONTHLY WEATHER IN CHRISTCHURCH - SPRING 2008

SEPTEMBER

After the storms of winter, September was much less eventful, though still changeable at times. After a warm day on the 3rd (in a northerly flow), cold, wet southerlies prevailed during the next two day, with maximums in single figures and snow on the high country. Thereafter, some low pressure systems brought light rain and drizzle on occasion, but these spells alternated with some warm days in north or northwesterly flows. However, a more active cold front crossed Canterbury during the afternoon of the 27th; with undercutting cold air bring a period of rain to Christchurch and brief snow flurries to the upper plains.

OCTOBER

