NIWA National Climate Centre

Seasonal Climate Summary

NIWA Taihoro Nukurangi

National Climate Summary: **Winter 2012** Issued: 5 September 2012

A season of two halves: cold and dry, then wet and warm

Temperature	The first half of winter was colder than usual; the second half of winter was unusually mild. Overall, winter temperatures were above average in the west and south of the South Island, as well as in Nelson, parts of Northland and around Ohakune. Elsewhere, winter temperatures were generally near average.
Rainfall	An extremely wet winter in the north and east of the South Island; unusually dry in the west and south of the South Island. Rainfall generally near normal in the North Island, except western Bay of Plenty and the Wairarapa coast, which were wetter than usual.
Sunshine	An unusually cloudy winter for Otago, south Canterbury, Nelson, Marlborough, and Wellington. Extremely sunny in the west and south of the South Island. It was also a rather sunny winter for western parts of the North Island.
Soil moisture	As at the end of winter, below normal soil moisture levels for the southwest South Island. Above normal levels for the Kaikoura Coast and south Canterbury.

Hold mouse over links and press **ctrl + left click** to jump to the information you require:

Overview

Winter was characterised by much higher pressures than normal to the southeast of New Zealand, and extending across the South Island. However, the season started off with frequent southwest winds over the country, resulting in a cooler and drier than normal start to the winter. In the middle of July, a change to more frequent northeast winds brought relatively mild and rather wet weather to many areas.

Winter was a season of two halves – it started colder than usual but ended unusually warm. Overall, it was a relatively mild winter in the west and south of the South Island, as well as in Nelson, parts of Northland, and around Ohakune (with winter temperatures between 0.5°C and 1.2°C above winter average). The change in pressure patterns mid-season meant that in all other regions winter

temperatures were near average (within 0.5°C of the winter average). The nation-wide average temperature in winter 2012 was 8.7°C (0.4°C above the 1971-2000 winter average), using NIWA's seven-station temperature series which begins in 1909.

It was an extremely wet winter for the north and east of the South Island, being the wettest winter on record for Timaru, and one of the wettest winters on record in the Nelson region. In contrast, it was one of the driest winters recorded in the west and south of the South Island. For the North Island, most regions recorded near normal winter rainfall (between 80 and 120 percent of winter normal rainfall total). Exceptions to this were the western Bay of Plenty and the Wairarapa coast, which were both much wetter than usual.

As at the end of winter, below normal soil moisture levels were evident across the southwest South Island. In contrast, above normal soil moisture levels were observed on the Kaikoura Coast and in south Canterbury.

It was an unusually cloudy winter for Otago, south Canterbury, Nelson, Marlborough, and Wellington. It was the cloudiest winter on record for Takaka. In contrast, it was an extremely sunny winter for the west and south of the South Island. It was also rather sunny over western parts of the North Island. Record-breaking winter sunshine was experienced at Taumarunui, Cheviot, and Queenstown.

Further Highlights:

- The highest temperature was 22.7°C, observed at Christchurch on 26 August.
- The lowest temperature was -11.8°C, at Darfield on 7 June.
- The highest 1-day rainfall experienced was 358 mm at North Egmont on 16 July.
- The highest gust recorded was 161 km/hr at Taiaroa Head on 28 June.
- Of the six main centres in winter 2012, Auckland was the warmest and sunniest, Tauranga the wettest, Christchurch the coolest, Dunedin the driest, and Wellington the cloudiest.

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Temperature: Winter started colder than usual, but ended unusually mild. Overall, above average winter temperatures were experienced on the West Coast, in Nelson, parts of Northland, and around Ohakune. Elsewhere, temperatures were generally near average.

Winter started colder than usual but ended unusually warm. Overall, it was a relatively mild winter in the west and south of the South Island, as well as in Nelson, parts of Northland, and around Ohakune (with winter temperatures between 0.5°C and 1.2°C above winter average). The change in pressure patterns mid-season meant that in all other regions, winter temperatures were near average (within 0.5°C of the winter average).

The nation-wide average temperature in winter 2012 was 8.7°C (0.4°C above the 1971-2000 winter average), using NIWA's seven-station temperature series which begins in 1909[1].

Near-record[2] mean air temperatures for winter were recorded at:

Location	Mean air temp. (°C)	Departure from normal (°C)[3]	Year records began	Comments
High records or near-records				
Kaikohe	12.6	1.3	1973	4th-highest
Leigh	13.7	0.9	1966	2nd-highest
Ohakune	6.9	0.9	1962	4th-highest
Takaka	9.3	1.0	1978	4th-highest
Westport	10.1	1.0	1937	2nd-highest
Milford Sound	7.0	1.0	1934	3rd-highest
Secretary Island	10.0	0.8	1985	2nd-highest
Puysegur Point	9.1	0.7	1978	3rd-highest
Motueka	8.5	0.9	1956	3rd-highest
Nelson	8.9	0.8	1943	4th-highest
Cheviot	7.1	0.4	1982	4th-highest
Ranfurly	3.7	0.6	1975	4th-highest

[1] Interim seasonal value

[2] The rankings (1st, 2nd, 3rd.etc) in Tables in this summary are relative to climate data from a *group* of nearby stations, some of which may no longer be operating. The current climate value is compared against all values from any member of the group, without any regard for homogeneity between one station's record, and another. This approach is used because of the practical limitations of performing homogeneity checks in real-time.

[3] This climate summary uses the updated 'normal' period, 1981-2010. (A 'normal' period is a 30 year window of time from which the normal (average) and percentage of normal are calculated from).

Rainfall: An extremely wet winter in the north and east of the South Island. Wetter than normal in the western Bay of Plenty and coastal Wairarapa. In contrast, unusually dry in the west and south of the South Island.

It was an extremely wet winter (with more than 150 percent of normal winter rainfall recorded) over much of the north and east of the South Island. It was the wettest winter on record for Timaru, with almost 200 percent (double) of normal winter rainfall recorded, and one of the wettest winters on record in the Nelson region. In contrast, it was an unusually dry winter over the west and south of the South Island, with Fiordland and Southland receiving less than 80 percent of normal winter rainfall. Secretary Island (Doubtful Sound, Fiordland) recorded its driest winter on record, and a number of locations in the southern South Island experienced near-record low rainfall for winter. In the North Island, most regions recorded near normal winter rainfall (between 80 and 120 percent of winter normal). However, it was a wet winter for the western Bay of Plenty and the Wairarapa coast, which received over 120 percent of winter normal rainfall.

As at the end of winter, below normal soil moisture levels were evident across the southwest South Island. In contrast, above normal soil moisture levels were observed on the Kaikoura Coast and in south Canterbury.

Record or near-record winter rainfall totals were recorded at:

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Record high or near-record high				
Takaka	856	147	1976	4th-highest
Nelson	408	162	1941	3rd-highest
Appleby	439	165	1941	3rd-highest
Timaru	245	190	1990	Highest
Record low or near-record low				
Milford Sound	794	58	1929	3rd-lowest
Secretary Island	553	66	1985	Lowest
Manapouri	144	50	1961	2nd-lowest
Lumsden	149	74	1982	3rd-lowest
Tiwai Point	154	60	1970	3rd-lowest
Nugget Point	125	62	1930	4th-lowest

Sunshine: An unusually cloudy winter for much of the north and east of the South Island, as well as Wellington. In contrast, it was an extremely sunny winter for the west and south of the South Island, and rather sunny across the western North Island, too.

It was an unusually cloudy winter for Otago, south Canterbury, Nelson, Marlborough, and Wellington, with less than 90 percent of normal sunshine hours recorded for winter. It was the cloudiest winter on record for Takaka. In contrast, it was an extremely sunny winter for the west and south of the South Island, with sunshine totals exceeding 125 percent of the winter normal in some areas. It was rather sunny over western parts of the North Island, with at least 110 percent of normal winter sunshine hours experienced in most locations. It was a record-breaking sunny winter for Taumarunui, Cheviot, and Queenstown.

Record or near-record winter sunshine hours were recorded at:

Location	Sunshine hours	Percentage of normal	Year records began	Comments
High records or near-records				
Dargaville	423	101	1943	4th-highest
Te Kuiti	391	126	1962	2nd-highest
Taumarunui	389	143	1947	Highest
Paraparaumu	426	114	1953	4th-highest
Greymouth	417	130	1947	2nd-highest
Cheviot	406	125	1983	Highest
Queenstown	471	168	1930	Highest
Cromwell	403	119	1979	3rd-highest
Balclutha	390	134	1964	3rd-highest
Low records or near-records				
Martinborough	297	84	1986	2nd-lowest
Takaka	395	80	1985	Lowest

Winter climate in the six main centres

It was an extremely wet winter for Christchurch, which recorded over 1.5 times its usual winter rainfall total. There were several flooding events in Canterbury during August. It was also a wet winter for Tauranga (nearly 1.5 times normal winter rainfall), which experienced flooding events in July. All of the main centres recorded near average winter temperatures. Winter sunshine was below normal in Wellington, above normal for Auckland and Hamilton, and near normal in Christchurch and Dunedin.

Of the six main centres, Auckland was the warmest and sunniest, Tauranga the wettest, Christchurch the coolest, Dunedin the driest, and Wellington the cloudiest.

Winter 2012 main centre climate statistics:

Temperature			
Location	**Mean temp. (°C)**	**Departure from normal (°C)**	**Comments**
Auckland[a]	11.3	-0.1	Near average
Tauranga[b]	11.1	+0.4	Near average
Hamilton[c]	9.3	+0.1	Near average
Wellington[d]	9.5	+0.2	Near average
Christchurch[e]	6.7	+0.2	Near average
Dunedin[f]	7.4	+0.2	Near average
Rainfall			
Location	**Rainfall (mm)**	**% of normal**	**Comments**
Auckland[a]	344	93%	Near normal
Tauranga[b]	512	145%	Above normal
Hamilton[c]	463	124%	Above normal
Wellington[d]	429	110%	Near normal
Christchurch[e]	297	161%	Well above normal
Dunedin[f]	222	130%	Above normal
Sunshine			
Location	**Sunshine (hours)**	**% of normal**	**Comments**
Auckland[a]	448	113%	Above normal
Tauranga[b]	*315**	*Missing*	*Missing*
Hamilton[g]	420	116%	Above normal
Wellington[d]	320	88%	Below normal
Christchurch[e]	366	92%	Near normal
Dunedin[f]	338	103%	Near normal

[a] Mangere [b] Tauranga Airport [c] Hamilton Airport [d] Kelburn [e] Christchurch Airport [f] Musselburgh [g] Ruakura

**June sunshine data for Tauranga is missing, so the total of July and August sunshine hours is shown.*

Highlights and extreme events

Rain and slips

The highest 1-day rainfall experienced was 358 mm, recorded at North Egmont on 16 July.

On 5 June, the northwest South Island was affected by record-breaking rain, associated with a rapidly deepening low over the Tasman Sea. In the case of Greymouth Airport, this event produced the 3rd highest daily rainfall total at this site, and the highest winter total there (see Table overleaf).

On 6 June, SH94 was closed by a slip between the Lower Hollyford Valley turn-off and The Cavern. Heavy rain caused surface flooding on SH1 at Johnsonville, and SH2 at Petone, and further south in Christchurch. Murchison was flooded, with businesses and homes affected. SH6 from Greymouth to Runanga was closed by flooding, as were many local roads in the region. Families were evacuated from flooded homes. A slip closed one lane of SH60 between Takaka and Collingwood. The heavy rain caused all Tranz Metro trains in the Wellington region to run late in the afternoon.

A severe thunderstorm crossed the Auckland region on 3 July, bringing torrential rain for a short time and causing surface flooding. The storm also caused power outages in parts of Browns Bay, Beachlands, Clevedon, Maraetai, Rotoroa Island, Whitford, Warkworth, and Waiheke Island. During the storm, a fur seal was found in a building in South Auckland 200 m from the harbour, and another seal was found inland in Devonport. Auckland Zoo was also flooded but no animals were harmed. In the Bay of Plenty, flooding closed SH2 north of Katikati. Both Waihi Beach and Katikati suffered flooding, with homes evacuated, and cars under water.

On 4 July, heavy overnight rain in the Gisborne area brought down the roof of a petrol station's car wash and caused surface flooding on many roads in the district. Many sports grounds were closed.

On 6 July, heavy rain washed away a temporary road, closing SH56 at the Manawatu Gorge. Flooding also closed SH56 at the Manawatu River Bridge.

On 15 July, flooding and slips closed SH6 between Inangahua and Westport, and SH65 from Spring's Junction to O'Sullivan's Bridge. The Takaka-Collingwood Highway in Golden Bay was closed by flood debris on the road at the Waitapu Bridge, following record-high 1-day winter rainfall totals (see Table overleaf). Many Nelson city roads were also closed by flooding.

On 16 July, SH73 was closed by a slip between Springfield and Arthurs Pass. Westport suffered surface flooding in the town, and was isolated by severe flooding and slips on SH67 from Westport to Greymouth, SH6 from Westport to Inangahua, SH67 from Westport to Karamea, and SH69 to Reefton. In Marlborough, the Wakamarina River overflowed its banks in several areas, and SH6 from Havelock to Wangamoa was closed by severe flooding. In Upper Hutt, a woman was rescued from her vehicle attempting to cross the Akatarawa River, which had risen rapidly after the heavy rain.

On 17 July, floodwaters isolated the King Country township of Ohura after the swollen Ohura River burst its banks. On 18 July, a large slip closed Gladstone Road, east of Levin, isolating 20 to 30 properties.

On 23 July, SH2 was closed by a slip in the Athenree Gorge and flooding in the Karanagahake Gorge, and reduced to one lane by surface flooding in the Papamoa area. Waihi Beach was isolated after both roads heading into the town were closed. In the Coromandel, the Tapu-Coroglen Road was blocked by land slips.

On 24 July, slips closed SH2 near Apata, and SH25 between Thames and Coromandel, and between Coromandel and Whitianga. In Gisborne, pupils were sent home from Kaiti School after flash floods entered classrooms and a toilet block. In the Waikato, flash floods inundated Cambridge homes, and a large slip left a 2 m high mound on Te Puroa Road, cutting off 24 properties, and isolating about 80 residents.

On 30 July, heavy rain caused a slip on SH29 near the summit on the Matamata side of the Kaimai Ranges, surface flooding on SH1 near the SH29 turnoff, SH26 between Paeroa and Te Aroha, and between Paeroa and Hikutaia, SH25 at the Thames Coast Road and further north at Manaia, and minor slips at Ruamahanga, Tapu and Kereta. In the Tauranga area, the heavy rain flooded roads, and the accompanying strong winds, brought down trees and power lines.

On 31 July, heavy rain caused surface flooding on SH8 between Fairlie and Lake Tekapo, SH79 between Fairlie and Geraldine, and SH83 between Duntroon and Kurow. Surface flooding closed many other roads in South Canterbury, including Dansey's Pass. In Christchurch, the Heathcote River burst its banks after two days of heavy rain, flooding the surrounding area. In Tauranga, heavy overnight rain caused the sewer system to overflow into the Waikareao Estuary.

On 1 August in Blenheim, the Opawa River burst its banks, and two young people had to be rescued when their car became stranded in the floodwaters. Many roads in Marlborough were closed by flooding and slips, including Queen Charlotte Drive, and the Awatere Valley Road. Flooding closed SH3 between Fairlie and Lake Tekapo.

On 12 August, flooding closed SH70 between Fairlie and Geraldine. The heavy rain caused a lahar from Tongariro's northern slopes, closing a section of SH46 near Lake Rotoaira. Flooding closed SH2 both north and south of Katikati.

On 13 August, there was widespread surface flooding in Christchurch, particularly in eastern suburbs, with many roads closed. The Ashley River bridge was closed by flooding, and the Heathcote River, Dudley Creek, and streams at Akaroa and Duvauchelle burst their banks. In Lyttelton, the heavy rain caused a retaining wall to collapse, blocking stormwater drains and creating a flash flood which damaged property. A slip isolated Okains Bay, and slips on The Summit Road trapped some motorists.

On 14 August, a mud slide forced the evacuation of properties in Lyttelton, and one cottage was inundated with mud up to a metre deep. Further north in Tauranga, two landslides occurred in the suburb of Matua, about 10-15 m away from houses.

On 15 August, after heavy rain overnight, many more roads in Otago were closed by flooding and slips, isolating rural properties. SH1 was flooded between Oamaru and Waitaki Bridge. All rural roads in Waitaki were effectively off-limits to motorists, after the Waitaki District Council issued a no non-essential travel notice.

Record or near record winter extreme 1-day rainfall totals were recorded at:

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Karangahake Gorge	162	Jul-23rd	1981	2nd-highest
Morrinsville	80	Jul-23rd	1978	2nd-highest
Raglan	67	Jul-15th	1983	Highest
Karapiro	105	Jul-24th	1948	2nd-highest
Glenorchy	103	Jul-15th	1956	3rd-highest
Otorohanga	84	Jul-15th	1957	2nd-highest
Taumarunui	74	Jul-15th	1913	2nd-highest
New Plymouth	88	Jul-15th	1990	2nd-highest
North Egmont	358	Jul-16th	1981	2nd-highest
Takaka	204	Jul-14th	1976	Highest*
Greymouth	151	Jun-5th	1947	Highest**
Appleby	87	Jun-18th	1941	4th-highest
Lake Tekapo	53	Jul-30th	1976	4th-highest

*This is the highest winter daily rainfall on record at Takaka, and the 7th highest daily rainfall for Takaka for any month.
**This is the highest winter daily rainfall on record at Greymouth Airport, and the 3rd highest daily rainfall for Greymouth for any month.

Temperatures

The highest winter temperature was 22.7°C, observed at Christchurch on 26 August. The lowest temperature in winter 2012 was -11.8°C, at Darfield on 7 June.

Afternoon (maximum) temperatures on 6 June in Canterbury, Blenheim, around Arthurs Pass, and on the West Coast set new low records. Maximum temperatures on 6 June in Canterbury struggled to reach even 1 degree, with heavy snow falling throughout the daylight hours. At several stations, the maximum temperatures recorded were both record low for winter *and* an all-time (any month) new record low. This was the case at Hokitika, Cheviot, and Waipara West (with climate records of approximately 50 years, 30 years, and 40 years, respectively), as well as at Christchurch Airport. On 6 June, Christchurch Airport reached a maximum temperature of only 0.4 °C, a new all-time lowest maximum temperature record at this site since records began there in 1954. Another notable record was at Lincoln, which recorded a maximum temperature of only 0.7 °C on 6 June, the second lowest maximum temperature at that site ever, in records which began in 1881.

Frosts during the period 1 July to 5 July were particularly severe (see Tables overleaf). In contrast, the last week of August was unusually warm, with some sites in Nelson and Southland showing near-record high winter temperatures.

Record or near-record daily maximum air temperatures for winter were recorded at:

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Winter ranking
High records or near-records				
Leigh	20.2	Jun-4th	1966	Equal 4th-highest
Port Taharoa	19.9	Jul-26th	1973	Equal 2nd-highest
Hawera	18.7	Jun-6th	1977	2nd-highest
Secretary Island	17.8	Aug-1st	1985	Equal 3rd-highest
Motueka	20.6	Aug-27th	1956	4th-highest
Cheviot	22.3	Jul-15th	1982	2nd-highest
Ranfurly Ews	17.9	Aug-31st	1975	3rd-highest
Gore Aws	17.5	Aug-25th	1971	4th-highest
Low records or near-records				
Hamilton	6.4	Jul-5th	1940	4th-lowest
Hokitika	5.1	Jun-6th	1964	Equal lowest (*Equal lowest)
Reefton	1.6	Jun-27th	1972	Equal 3rd-lowest
Greymouth	5.2	Jun-6th	1972	Lowest (*2nd lowest)
Blenheim	5.6	Jun-6th	1947	Equal 2nd-lowest (*Equal 3rd lowest)
Hanmer Forest	1.0	Jun-15th	1972	Equal 3rd-lowest
Kaikoura	4.0	Jun-6th	1972	3rd-lowest
Arthurs Pass	-1.2	Jun-6th	1973	Equal 2nd-lowest (*=4th lowest)
Cheviot	1.3	Jun-6th	1982	Lowest (*Lowest)
Waipara West	2.3	Jun-6th	1973	Lowest (*Lowest)
Christchurch (Airport)	0.4	Jun-6th	1954	Lowest (*Lowest)
Lincoln	0.7	Jun-6th	1881	Lowest (*2nd lowest)
Orari	2.8	Jun-6th	1972	3rd-lowest

*indicates an all-time/any month ranking

Record or near-record daily minimum air temperatures for winter were recorded at:

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Winter ranking
Low records or near-records				
Te Kuiti	-3.9	Jul-2nd	1959	Equal 4th-lowest
Paraparaumu	-4.0	Jul-2nd	1953	Equal 4th-lowest
Wanganui	-1.5	Jul-27th	1987	Equal 2nd-lowest
Arthurs Pass	-11.2	Jun-7th	1973	Lowest
Culverden	-10.2	Jun-8th	1928	4th-lowest
Le Bons Bay	0.0	Jun-6th	1984	Equal 4th-lowest
Orari	-6.7	Jul-2nd	1972	Equal 4th-lowest
Timaru	-6.8	Jul-24th	1990	4th-lowest
Ranfurly	-11.3	Jul-2nd	1975	4th-lowest

Lumsden	-8.0	Jul-4th	1982	2nd-lowest
Alexandra	-8.9	Jul-2nd	1983	4th-lowest
Balclutha	-6.0	Jul-2nd	1964	Equal 4th-lowest
High records or near-records				
Ohakune	10.9	Jul-16th	1972	4th-highest
Takaka	13.1	Jul-15th	1978	2nd-highest
Westport	13.0	Jul-15th	1966	Equal 2nd-highest
Puysegur Point	12.7	Jul-29th	1978	Highest

Wind

The highest gust recorded was 161 km/hr at Taiaroa Head on 28 June.

On 6 June in Golden Bay and the Nelson region, wind brought down power lines, cutting power across Tasman region, and closing some roads. At Runanga on the West Coast, wind lifted the roof from a house, and trees were blown on to power lines at Barrytown. In Richmond, high winds lifted roofing iron from a line of stables at the Richmond Park race track, blew out windows in the stand, and knocked over the winning post.

On 28 June, a campervan was blown off SH1 near Balclutha, injuring the driver.

On 12 August, a tornado ripped out trees and deposited them on SH10 near Taipa, northeast of Kaitaia, closing the road. Property and crops were damaged, and a dinghy's flight was stopped only when its anchor was caught in a tree. A power pole and lines near Lake Ohia were brought down, cutting off power to about 1200 properties.

Near-record high extreme wind gusts for winter were recorded at:

Location	Extreme wind gust (km/h)	Date of extreme gust	Year records began	Comments
Hawera	96	Jun-27th	1986	4th-highest

Lightning and hail

A thunderstorm passed over Wellington in the early hours of 6 June. In Owhiro Bay, lightning struck a power pole knocking out electricity and internet junctions, and closing the local primary school for the day. Lightning and hail were also reported in Marlborough, with the lightning causing intermittent problems with power transmission.

On 3 July, Waihi Beach was blanketed in hailstones.

On 20 August, Wellington experienced thunder and lightning, particularly in the southern and eastern suburbs. Marble-sized hailstones covered the Miramar Peninsula, as the storm passed from the airport to Eastbourne, leaving surface flooding in its wake.

Snow and ice

On 6 June, snow closed SH1 between Greta and Waipara, SH7 between Culverden and Springs Junction (the Lewis Pass), SH8 between Fairlie and Twizel, SH73 at both Porter's Pass and Arthur's Pass, and Dansey's Pass. Snow fell on the Canterbury Plains, including in Christchurch, Oxford, Rangiora and Ashburton, and further south in Oamaru, Dunedin and Twizel. Many local roads were closed. Power was cut to thousands of homes, mainly because snow-laden trees fell on to power lines. In Hanmer Springs the power cuts closed many businesses, including the hot pools. Pupils were sent home early from schools in Kaikoura and St Arnaud. Flights in and out of Christchurch airport were delayed by the storm, but it was closed for only a short time when power was lost. Buses in Christchurch did not go into the hill suburbs. Christchurch Polytechnic Institute of Technology and the Southern Institute of Technology (Christchurch campus) closed, the University of Canterbury closed at midday, and schools all over central Canterbury closed for the day. A New Zealand Symphony Orchestra concert planned for Christchurch was cancelled because of disrupted flights. New Zealand Post suspended deliveries in Greymouth and central Canterbury, with delays in Westport, Gore and Balclutha. Flights at Dunedin Airport were disrupted by significant black ice on the runway with 10 flights affected. Early morning bus services to Dunedin's hill suburbs were also affected by ice. In Marlborough, snow blocked road access to Wairau Valley, and brought down trees, partially blocking SH6.

On 7 June, the following roads were still closed by snow and ice, or chains were required: SH65 from O'Sullivan's to Shenandoah, SH63 from St Arnaud to Wairau Valley, SH7 from Reefton via Springs Junction to the Hanmer Springs turn-off, SH75 from Springfield via Arthur's Pass to Otira, SH1 from Pukerau to Arthurton and from Greta to Waipara, SH6 from Athol to Five Rivers, and SH73 from Te Anau to Milford. Two trampers were rescued by helicopter after two days in a hut in the Lewis Pass.

On 8 June, the Lewis Pass, Porter's Pass and Arthur's Pass roads remained closed by snow. Chains were required on SH94 from Te Anau to Milford Sound. Some properties in north Canterbury were still without electricity after two days. In Christchurch, morning bus services did not operate in the hill suburbs, and most city schools did not open until mid-morning. Several rural schools remained closed, and Amberly Golf Club was closed.

On 19 June, black ice affected many roads in inland Otago and Southland. Poolburn and Omakau schools closed for the day because of the dangerous roads, and bus services to Maniototo, Alexandra and Clyde schools could not run until after 10 am.

On 27 June, snow closed SH1 between Waiouru and Rangipo, SH94 from Te Anau to Milford Sound, SH93 from Clinton to Mataura, SH87 from Outram to Kyeburn, SH73 from Arthurs Pass to Otira, and SH7 at the Lewis Pass. In Southland, some flights into and out of Invercargill Airport were cancelled. Snow fell down to sea level on the West Coast, and settled further inland, with 15 cm reported at Reefton.

On 9 July, Frankton Marina on Lake Wakatipu was frozen, with the ice firm enough to allow curling. Jet boats could not be taken out because of ice in the Shotover River.

On 14 August, snow closed the access road to Mt Cheeseman ski-field, trapping about 40 people on the mountain overnight.

Cloud and fog

On 19 June, thick fog over Christchurch caused delays for aircraft into and out of Christchurch Airport.

On 5 July, thick fog forced the cancellation of outgoing and incoming flights at Auckland Airport. Many other flights were delayed. Warnings were issued for SH1 in the Auckland region. On 6 July, fog again caused the cancellation or delay of flights at Auckland Airport. Fog also caused the cancellation of flights at Hamilton Airport and Christchurch Airport.

On 19 July, heavy fog blanketed parts of Auckland, causing the delay or cancellation of several domestic flights into and out of the airport.

On 24 July, heavy fog again caused the cancellation or delay of many domestic flights into and out of Auckland Airport.

From 16 to 19 August, fog caused cancellations and delays to flights into and out of Dunedin Airport every day, and on the 19th the fog prevented a container ship entering Dunedin Harbour.

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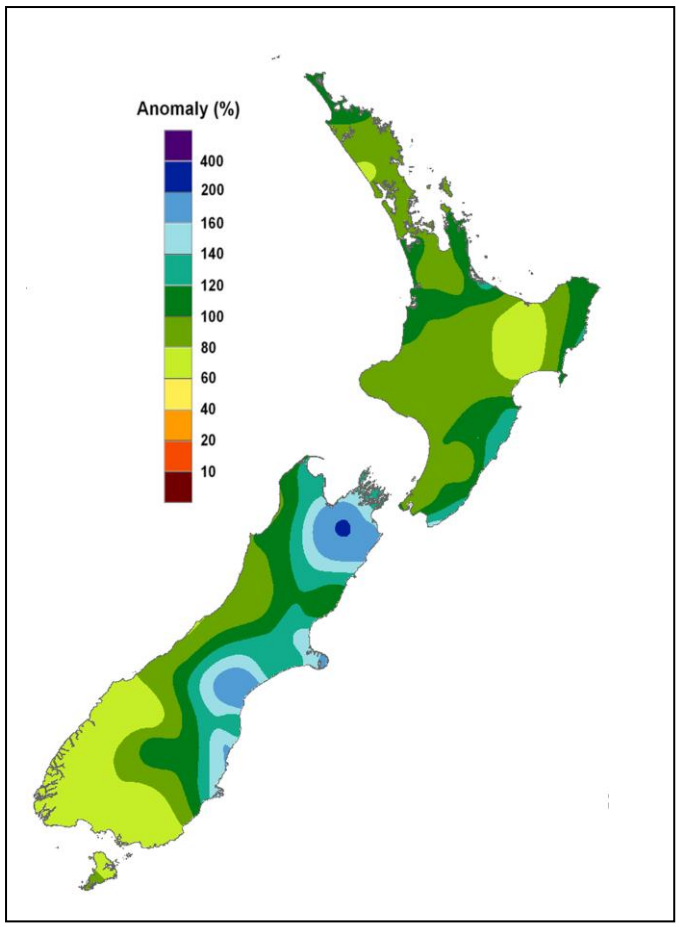

Winter 2012 rainfall, expressed as an anomaly from normal winter conditions (% of winter normal rainfall). Areas that received below normal rainfall are shown in light green colours (west and south of South Island). Areas which were unusually wet (experiencing more than one and a half times the usual winter rainfall) are shown in blue shades; namely the north and east of the South Island, as well as western Bay of Plenty and Wairarapa coast.