



SPECIAL CLIMATE STATEMENT 24

Frequent heavy rain events in late 2010/early 2011 lead to widespread flooding across eastern Australia.

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This statement is based on preliminary data available as of 8 February 2011, which may be subject to change as a result of standard quality control procedures.

Frequent heavy rain events in late 2010/early 2011 lead to widespread flooding across eastern Australia

The period from late November 2010 to mid January 2011 was extremely wet through much of eastern Australia. Six major rain events affected large parts of the eastern states during this period, resulting in widespread flooding on many rivers and culminating in severe flooding (including river and flash flooding) in Brisbane and nearby areas of south-east Queensland and northern New South Wales during the second week of January. Other significant floods affected the Fitzroy, Burnett and Condamine-Balonne catchments in Queensland in late December and early January, the Murrumbidgee, Lachlan and Castlereagh catchments in inland New South Wales in early December, and large parts of northern and western Victoria and northern Tasmania in mid-January. The flooding, in terms of extent, impact and severity, was amongst the most significant in Australia's recorded history.

It was the wettest December on record for Queensland and for eastern Australia as a whole, the second-wettest for the Murray-Darling Basin, the sixth-wettest for Victoria and the eighth-wettest for New South Wales. For Australia as a whole it was the third-wettest December on record. This followed an extremely wet spring, the wettest on record for Queensland, New South Wales, eastern Australia and the Murray-Darling Basin, meaning many catchments were already wet before the flooding rain. It was Australia's wettest July to December on record. The continued rains in the first half of January resulted in Victoria exceeding its January monthly record by the halfway point of the month.

The rains of late 2010 have taken place during a strong La Niña event in the Pacific Ocean. The December Southern Oscillation Index (SOI) was +27.1, the highest December value on record and the highest monthly value since 1973, whilst other indicators of La Niña also indicate the strongest event since at least the mid-1970s, and one of the four strongest events of the last century. Previous strong La Niña events, such as those of 1973/74 and 1955, have also been associated with widespread and severe flooding in eastern Australia. Sea surface temperatures off the northern Australian coast in recent months have also been at or near record levels.

Major rain events of the period

There were six major rain events during late November to mid January, concentrated on the periods 28 November to 4 December, 7 to 13 December, 19 to 20 December, 23 to 28 December, 10 to 12 January (in southeast Queensland) and 12 to 15 January (in Victoria, South Australia and Tasmania).

28 November to 4 December. A trough remained over eastern Australia through this period, with the southeast predominantly in a humid northerly airstream for the bulk of the period. Total rainfall for the period (Figure 1a) was widely in the 100-300 mm range on the ranges and western slopes of southern and central New South Wales, as well as in central Queensland in a band extending from Mackay southwards to the Emerald area. Falls exceeded 50 mm over most of the eastern two-thirds of New South Wales and the eastern half of Queensland (except the southeast corner), as well as large parts of central and northern Victoria. Notable daily falls during this period included 118.6 mm at Young on 29 November, 143.6 mm at Mackay and 100.8 mm at Mudgee on 1 December, and 228.0 mm at Mount Charlton (near Mackay) on 3 December.

7 to 13 December. A cold front crossed southeastern Australia at the start of the period, initially reaching South Australia late on the 7th and then continuing eastwards over the next two days. A trough developed associated with the front and moved slowly across northern New South Wales and the southern half of Queensland over the following days, eventually moving off the Queensland

coast on the 13th. Falls for the period 8 to 13 December (Figure 1b) widely exceeded 50 mm in a number of areas, including eastern South Australia and western Victoria, the upland areas of northeast Victoria and southeast New South Wales, northwestern Tasmania, much of the Queensland coast and an inland area in Queensland's central west. Some falls were locally much higher, especially as a result of severe thunderstorms in South Australia on the afternoon of the 7th, with all-time daily records at some sites and December records at many others (Table 1). Mannum received 130.0 mm and Birdwood 128.2 mm for the 24 hours to 9 a.m. on the 8th, while other notable daily falls during the period included 127.8 mm at Blackall (Queensland) on the 8th, 182.0 mm at Rocky Valley (Victoria) on the 9th, 106.1 mm at Cowra (NSW) on the 10th and 128.0 mm at Miriam Vale (Queensland) on the 12th.

19 to 20 December. A trough moved north over Queensland on 19 and 20 December, associated with an intense low east of Tasmania (which also brought snow to relatively low levels in Victoria and southern New South Wales). Whilst no exceptional daily totals occurred, much of southern and central Queensland received a further 50 to 100 mm for the period (Figure 1c).

23 to 28 December. A moist easterly flow covered much of Queensland for the period 23 to 28 December. Further moisture was brought into the region by the circulation associated with Tropical Cyclone *Tasha*, which made landfall south of Cairns on the morning of 25 December. A trough moved northeast across New South Wales and Queensland from the 26th, eventually clearing most of the rain seawards on the 28th. Rainfall totals for the period (Figure 1d) exceeded 200 mm over a large area of central eastern Queensland, roughly bounded by Rockhampton, Carnarvon Gorge and Hervey Bay, with falls exceeding 400 mm in places. Similar falls extended northwards along the Queensland coast as far north as Cairns, as well as near the Gold Coast and far northern New South Wales. Much of the eastern half of Queensland received at least 100 mm. The most widespread intense rainfall was on the 27th, where a number of stations in the Carnarvon Range area set all-time daily records with daily totals in excess of 200 mm, peaking at 273.6 mm at Carnarvon Station. Other very high totals (including 304 mm at Corsis and 294 mm at Babinda) occurred on the north tropical coast on the 25th near the landfall of *Tasha*, while other notable daily totals included 140.2 mm at Rockhampton on the 26th, 148.0 mm at Condamine on the 27th and 165.4 mm at Bundaberg on the 28th. Further south, falls of 50-100 mm in the NSW Central Tablelands on the 26th exacerbated flooding in that region.

10 to 12 January. An upper-level low combined with a humid easterly flow to bring very heavy rain to southeast Queensland and northeast New South Wales. The heaviest falls were in the areas north and west of Brisbane (Figure 1e). Three-day totals exceeded 200 mm over most of the area bounded by Brisbane, Gympie and Toowoomba, including the majority of the Brisbane River Catchment. Further south, totals exceeding 100 mm extended to the coast and adjacent ranges of New South Wales north of Coffs Harbour, locally approaching 200 mm on parts of the Northern Tablelands, and also extended into inland southern Queensland as far west as Dalby. The heavy rain covered a smaller area than was the case in the late December event. The highest daily totals observed in the Bureau's regular network were 298.0 mm at Peachester and 282.6 mm at Maleny on 10 January, while the highest three-day totals were 648.4 mm at Mount Glorious and 617.5 mm at Peachester. Intense short-period falls also occurred during the event, with one-hour falls in excess of 60 mm occurring on both 10 and 11 January at numerous stations in various locations north and west of Brisbane. It is possible that higher short-period falls occurred in areas between observing sites.

12 to 15 January. Tropical air was drawn into a trough near the eastern border of South Australia, placing much of Victoria, Tasmania and western New South Wales in an extremely moist air mass. A low formed on the trough on 12 January near Mount Gambier, moving southwest and then southeast before passing south of Tasmania on the 14th. The heaviest period of general rain in Victoria was on the 13th and the morning of the 14th, but there was also heavy rain in western border

areas of Victoria on the 12th. In Tasmania, very heavy rain affected the northern parts of the east coast, and parts of the northwest, on the 13th, whilst more extensive but less extreme rainfall extended across large parts of the state's north on the 14th. Total rainfalls for the four-day period exceeded 100 mm in most parts of Victoria north and west of Melbourne, most of New South Wales west of Wilcannia, and much of northwestern and northeastern Tasmania, where 200 mm was locally exceeded. In Victoria the highest falls, generally between 150 and 200 mm, were in upland areas between Ballarat and Horsham, including the Grampians. The most extreme daily falls during the event were in Tasmania (see below). In Victoria, the highest four-day total was 270.8 mm at Mount William in the Grampians, including daily totals of 134.6 mm on the 12th and 132.8 mm on the 14th, whilst the highest daily total was 161.2 mm at Jeparit, in the Wimmera, on the 12th.

A noteworthy feature of this event was the exceptionally high moisture content of the atmosphere for such a southern location. The total precipitable water in the atmosphere¹ at Melbourne on the 13th was 65.0 mm, well in excess of the previous record of 54.5 mm on 5 February 1973 and a value more typical of tropical locations such as Darwin. Melbourne's peak dewpoint² was 23.7°C at 1800 on the 13th, falling just short of the city's record of 24.0°C set on 24 January 1982. The dewpoint remained above 21°C continuously for 30 hours and above 22°C for 9 hours, both of which rank second behind an event on 12-14 February 1955.

Extreme daily rainfall totals during the period

Selected daily rainfall records for stations with more than 50 years of record set during December 2010 and January 2011 are listed in Table 1. The Queensland events were more notable for their extent, particularly the extent of heavy falls inland from the coast, and their duration, than for the daily intensity, with only a relatively modest number of daily records set during the month.

The greatest concentration of daily rainfall records during the period was in South Australia and western Victoria on 8 December, mostly as a result of severe thunderstorms on the afternoon and evening of the 7th. December is normally a relatively dry month in this region and many stations exceeded their monthly average in one day. Many daily rainfall records were also set in southeastern Australia between 12 and 14 January. The greatest number of records occurred in Victoria, but the highest daily falls were on the east coast of Tasmania on 13 January, where totals of 282.0 mm at Falmouth, 278.0 mm at Scamander and 250.0 mm at St. Helens (Kellrairie)³ all exceeded the previous Tasmanian January record of 246.9 mm at The Springs (near Mount Wellington) on 30 January 1916.

Averaged over Queensland, the wettest day of the period was 27 December, with a state-wide average of 22.0 mm. This was the second-highest on record for the month of December (after 30.7 mm on 22 December 1956) but fell well short of the all-months record of 31.6 mm set on 2 March 2010 (see Special Climate Statement 20). Whilst no individual day approached record levels in the Murray-Darling Basin, the Basin-wide average daily total exceeded 10 mm on five days during the period (peaking at 13.7 mm on 28 November) and 5 mm on 14 days (this compares with the average daily total of about 1.5 mm).

In Victoria, state-wide daily totals were 40.5 mm on 14 January and 33.2 mm on 12 January, with a three-day total of 85.2 mm from 12-14 January. These daily totals are the two highest on record for Victoria for January and rank third and seventh respectively for any month, while the three-day total is a record for any month, breaking the mark of 76.5 mm set from 4-6 February 1973.

¹ This is a measure of moisture content through the full depth of the atmosphere. Upper-air observations are currently taken at Melbourne Airport; in 1973 they were being taken at Laverton.

² Only 3-hourly data are used to allow consistent comparisons with the available historical data.

³ These sites all have fewer than 50 years of observations and are hence not included in Table 1.

Total rainfalls for the period

For the period from 28 November to 17 January (Figure 2), total rainfall exceeded 300 mm over most of the eastern half of Queensland, except for inland southern border areas. Totals in the 400 to 600 mm range were widespread along most of the Queensland east coast and the NSW coast north of Coffs Harbour, extending inland to cover many areas in the Central Highlands and adjacent areas, as well as most of Cape York Peninsula. The inland penetration of the heaviest falls can be compared with the 1918 event, which led to Rockhampton's record flood peak; that event, associated with a tropical cyclone, was concentrated quite close to the coast. Some stations in the Mackay area and north of Brisbane exceeded 1200 mm, and totals in excess of 800 mm occurred along several parts of the coast, especially around Mackay, between Cairns and Townsville, and in coastal and near-coastal areas from Gladstone southwards to Brisbane.

Totals for the period were less extreme in the southeastern states, but were still between 200 and 400 mm over most of Victoria (except Gippsland), the far west of New South Wales, and most of that state's eastern half except for coastal areas between Sydney and Port Macquarie. Similar totals also occurred in northern and western Tasmania. The only parts of the four eastern states not to receive at least 100 mm for the period were parts of the Channel Country in Queensland and a small area west of Cunnamulla.

December 2010 was the wettest December on record over most of southeastern Queensland, as well as some areas further north (Figure 3a). It was also the wettest December on record in a band through central New South Wales between Canberra and Dubbo, and in a broad region on both sides of the South Australia-Victoria border. All of these regions generally received between three and six times their average December rainfall (Figure 4a). At some stations, particularly in Queensland (Table 2), it was the wettest month (i.e., compared against all calendar months) on record.

On an area-average basis, it was the wettest December on record for eastern Australia⁴, with the total of 167.2 mm (132% above normal) surpassing the 154.8 mm set in 1975. Queensland (209.5 mm, 154% above normal) also set a record for the month of December (previously 200.1 mm in 1975), while the figure for the Murray-Darling Basin (107.0 mm, 119% above normal) ranked second behind the record set in 1992. The December rainfall totals for Victoria (103.9 mm, 118% above normal) ranked fifth, and for New South Wales (98.9 mm, 83% above normal) ranked eighth.

In some parts of the inland southeast the heaviest rain was split between the months of November and December and its extreme nature was thus not fully reflected in monthly totals. The New South Wales township of Young received 346.4 mm in the 13 days from 28 November to 10 December, more than half its annual mean (662 mm), and more than the 262.4 mm they received in all of 2006, and well in excess of their wettest calendar month on record (298.9 mm in March 1950). Whilst such statistics are not extraordinary in the more arid parts of Australia – where a number of stations in recent years have received their average annual rainfall in a single day – they are highly unusual for a location in southeastern Australia. Over the same 13-day period, Burrinjuck Dam received 332.0 mm and Canberra 225.0 mm.

In January the most exceptional area-averaged totals were in southeastern Australia, especially in Victoria, with the western half of the state ranking either highest on record or very much above average for the month. The Victorian state-wide average for January 2011 was 118.6 mm, which far exceeded the January monthly record of 109.3 mm, set in 1941. Some stations in western Victoria received more than 12 times their usual January rainfall, with a large area of the west observing more than 4 times normal (Figure 4b). Numerous stations surpassed their previous January monthly

⁴ In this context eastern Australia is defined as Queensland, NSW, Victoria, Tasmania and the ACT.

records (Table 3) and several experienced their wettest month on record for any calendar month. Queensland, New South Wales, Tasmania and the Murray-Darling Basin all exceeded their January monthly average and consequently the Australia-wide area-averaged total (102.2) was also above the long-term average (79.9), although well short of record levels. In Queensland high rainfalls in January were generally confined to the Cape York Peninsula, southeast and parts of the far west, with most other parts of the state near or below normal (Figure 3b).

A comparison of the 2011 southeast Queensland rainfall with previous events

While all of the data is yet to be compiled, a preliminary comparison can be made between the three-day rainfall totals from the 10-12 January 2011 event with those of 25-27 January 1974 is shown in Figure 5.

Peak rainfalls from the 1974 event were substantially heavier than those in 2011. A number of stations had three-day totals from 25-27 January 1974 in excess of 1000 mm, the highest being 1215.0 mm at Mount Tamborine, compared with the 2011 event peak of 648.4 mm. Many stations in the 1974 event experienced daily totals which exceeded 400 mm; the highest were 563.2 mm at Mount Tamborine and 561.5 mm at Wundurra, in the Gold Coast hinterland, while in the Brisbane area 475.8 mm fell on 26 January at Enoggera Reservoir. 1974 also saw much heavier rainfall in metropolitan Brisbane than 2011, with Brisbane's three-day and peak one-day totals of 600.4 mm and 314.0 mm in 1974 comparing with 166.2 mm and 110.8 mm in 2011. However, in 1974 the heaviest rains were close to the coast, whereas in 2011 heavy falls spread further inland, and on the western fringe of the Brisbane River catchment and on the Great Dividing Range 2011 was the wetter of the two events (Figure 5, right). The weeks prior to the 1974 event, whilst wetter than normal, were also less wet than the equivalent weeks prior to the 2011 event. Over the Brisbane River catchment as a whole, average three-day rainfall in the 1974 event was 348.5 mm, compared with 286.4 mm in 2011, and all four major sub-catchments were also wetter in 1974 than in 2011, although by small margins in the cases of the Bremer (1974 442.1 mm; 2011 417.1 mm) and Lockyer (1974 331.3 mm; 2011 292.0 mm) sub-catchments.

Insufficient rainfall data exist for a comprehensive assessment of the 1893 event. However, the available station data indicate that peak rainfalls in the region during the 1893 event were much heavier than those during either the 1974 or 2011 events. Crohamhurst, in the Glasshouse Mountains inland from the Sunshine Coast, received 907.0 mm on 3 February 1893, which remains an Australian daily record, whilst three-day totals included 1715.0 mm at Mooloolah and 1680.3 mm at Crohamhurst.

Floods resulting from the rainfall

The most destructive floods during the period occurred during the second week of January in the southeast corner of Queensland and adjacent border areas of New South Wales. There was major flooding through most of the Brisbane River catchment, most severely in the Lockyer and Bremer catchments where numerous flood height records were set (Table 4), along with the Toowoomba area just outside the Brisbane catchment. In Brisbane it was the second-highest flood of the last 100 years, after January 1974. The flooding caused substantial loss of life, and thousands of properties were inundated in metropolitan Brisbane and elsewhere. Major flooding with inundation of properties also extended inland to the upper Condamine-Balonne catchment, with Chinchilla and Dalby being severely affected for the second time in less than a month. Other rivers which experienced major flooding during the period included the Mary River around and upstream of Maryborough and Gympie, the Macintyre River around Tenterfield and Goondiwindi, and the Clarence around and downstream of Grafton.

Major flooding also occurred in Victoria as a result of the heavy rains from 12 to 15 January. Initially localised flash flooding occurred in parts of western Victoria following the first significant rainfall on 12 January; this was followed by much more extensive river flooding from the 14th onwards. Most Victorian catchments outside Gippsland experienced at least minor flooding but the most serious flooding occurred in the state's north and west in the Wimmera, Avoca, Loddon and Campaspe catchments. Record flood peaks were observed in all four catchments (Table 4). The records are all the more remarkable because the associated catchments are seasonally dry in summer. Towns to experience inundation across large parts of their urban areas included Charlton, Bridgewater, Carisbrook and Rochester, whilst significant flooding also occurred in the larger centres of Horsham, which had its highest flood on record, and Echuca. In Tasmania, there was significant flash flooding on the east coast around St. Helens and Scamander, and river flooding on several northern rivers with some major flooding.

The rains from 23 to 28 December resulted in exceptional flooding in many parts of central and southern Queensland with many rivers reaching record levels (Table 4). By 23 December, many rivers were already at or near flood level as a result of the rains in the preceding weeks (with some, notably the Dawson, experiencing major flooding). The rains during the following few days, on top of the pre-existing wet conditions, resulted in major flooding over a vast region. Except for the southeast coastal fringe south of Maryborough, almost every river in Queensland that is south of the Tropic of Capricorn and east of Charleville and Longreach reached major flood level at some stage during the period from 26 November to 7 January, mostly between 23 December and 4 January (Figure 6). Properties were inundated in at least 17 towns in Queensland and adjacent border areas of New South Wales, with the largest impacts in the towns of Theodore, Dalby, Chinchilla, Emerald, Bundaberg and Rockhampton.

The most extreme flooding in the late December event occurred in the Fitzroy and Condamine-Balonne catchments. Record flood levels occurred at a number of locations in these catchments (Table 3), including the Dawson River at Theodore, the Nogoa at Emerald, the Comet at Rolleston and Comet Weir, and in the Condamine-Balonne system at Tummaville, Millmerran, Condamine Township and Surat. In some cases these flood peaks broke records which had only just been set during the February-March 2010 event. The Fitzroy at Rockhampton reached its fifth highest level of the last 100 years, and the Burnett at Bundaberg it's highest since 1942. The flooding was prolonged in many areas, with the Dawson at Theodore remaining above major flood level for more than two weeks. Flood hydrographs for selected Queensland towns are shown in Figure 7.

Whilst not reaching the severity of Queensland or Victoria, there was also widespread flooding in various parts of New South Wales, most significantly in the Murrumbidgee, Lachlan and Castlereagh catchments. Eugowra was flooded three times during the month on December 4, 10 and 27. Wagga Wagga experienced its worst flooding since 1974 when the Murrumbidgee peaked at 9.7 metres on 6 December, while major flooding (the highest since 1976) inundated properties in Queanbeyan on 9 December. This caused a secondary peak further down the Murrumbidgee, where floods extended downstream over the following weeks, reaching Hay at the end of December. Total River Murray inflows for December were the highest on record, and in conjunction with floods earlier in the spring in southern inland New South Wales and northern Victoria, these are expected to produce the strongest flows⁵ since mid-December 1993 in the South Australian portion of the Murray during the remainder of February and into March 2011. The January rains in Victoria and Queensland are not expected to result in increased peak flows in South Australia but are expected to prolong the period of high flows in that state.

⁵ From the 14 January 2011 River Murray Flow Advice, SA Government Department for Water (<http://www.waterforgood.sa.gov.au/wp-content/uploads/2011/01/flows-advisory-14-jan-2011.pdf>). Update from 4 February 2011 River Murray Flow Advice, SA Government Department for Water (<http://www.waterforgood.sa.gov.au/wp-content/uploads/2011/02/river-murray-flow-advice-4-feb-2011.pdf>)

Further information

This statement is based on information available as of 8 February 2011.

Separate, more detailed state-based Special Climate Statements are available for both the Tasmanian and Victorian aspects of the event and may be obtained at <http://www.bom.gov.au/climate/current/special-statements.shtml>. The Gascoyne River flooding in Western Australia is not covered in this statement. A separate report on that event is available at <http://www.bom.gov.au/announcements/sevwx/>. This statement does not cover any of the events associated with Tropical Cyclone Yasi. A report specific to that event is expected to be made available via the Bureau of Meteorology website (www.bom.gov.au) in due time.

Separate reports are also expected to be issued in due course on detailed hydrological aspects of the flooding in Queensland, and on flooding in the Murray River system.

The information in this statement is based on preliminary data, and may change as further data are obtained and quality assurance is undertaken.

Further information can be obtained from the following contacts:

For general enquiries on this statement

National – Belinda Campbell (03-9669 4971), Blair Trewin (03-9669 4623),
Karl Braganza (03-9669 4344)

Queensland – Climate Services Centre (07-3239 8700), Flood Warning Services (07-3239 8768)

NSW – Climate Services Centre (02-9296 1555), Flood Warning Services (02-9296 1511)

SA – Climate Services Centre (08-8366 2600), Flood Warning Services (08-8366 2669)

Victoria – Climate Services Centre (03-9669 4956), Flood Warning Services (03-9669 4945)

Tasmania – Climate Services Centre (03-6221 2043), Flood Warning Services (03-6221 2061)

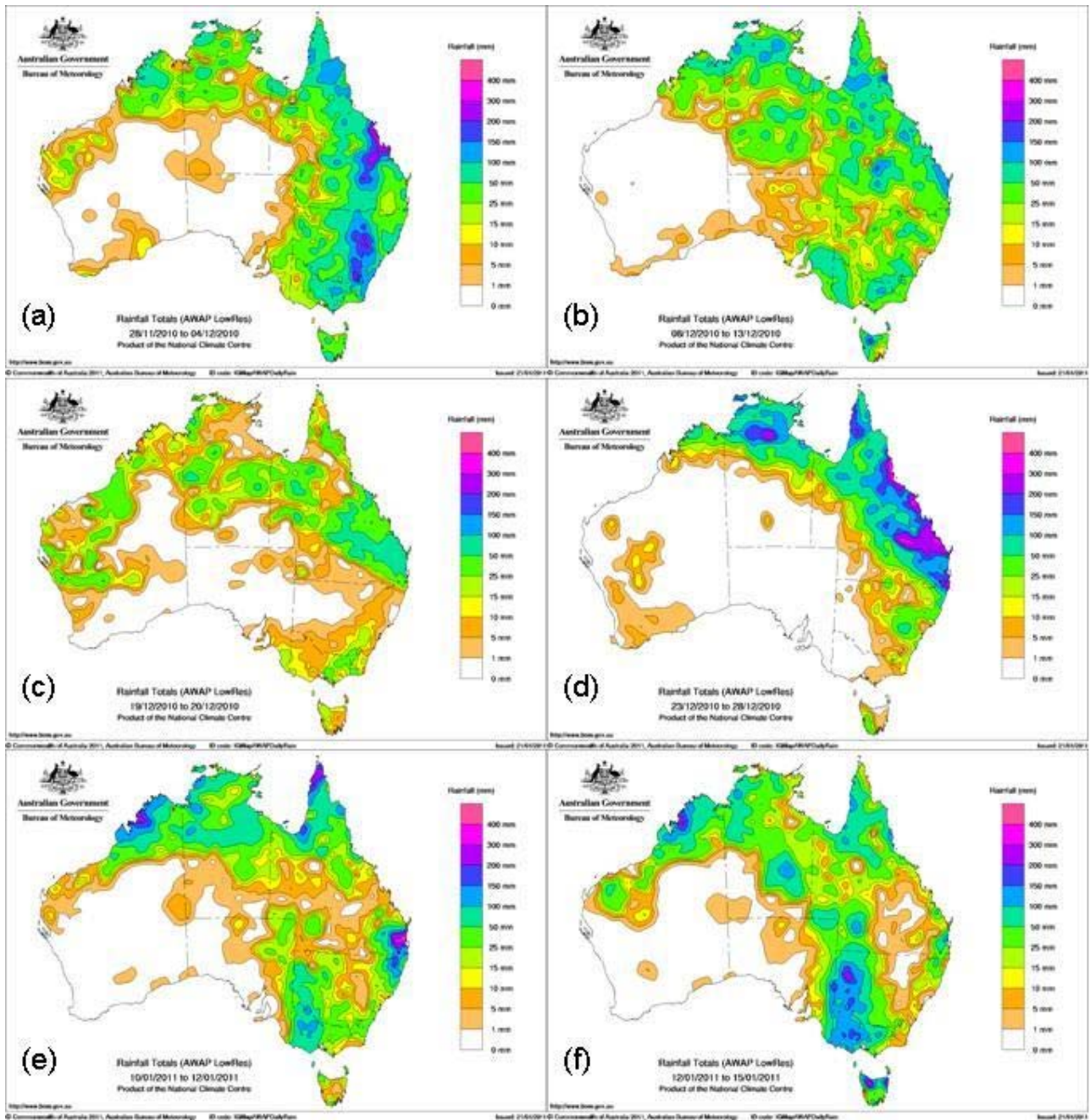


Figure 1. Australian rainfall totals for the periods (a) 28 November to 4 December, (b) 8 to 13 December, (c) 19 to 20 December, (d) 23 to 28 December, (e) 10 to 12 January and (f) 12 to 15 January.

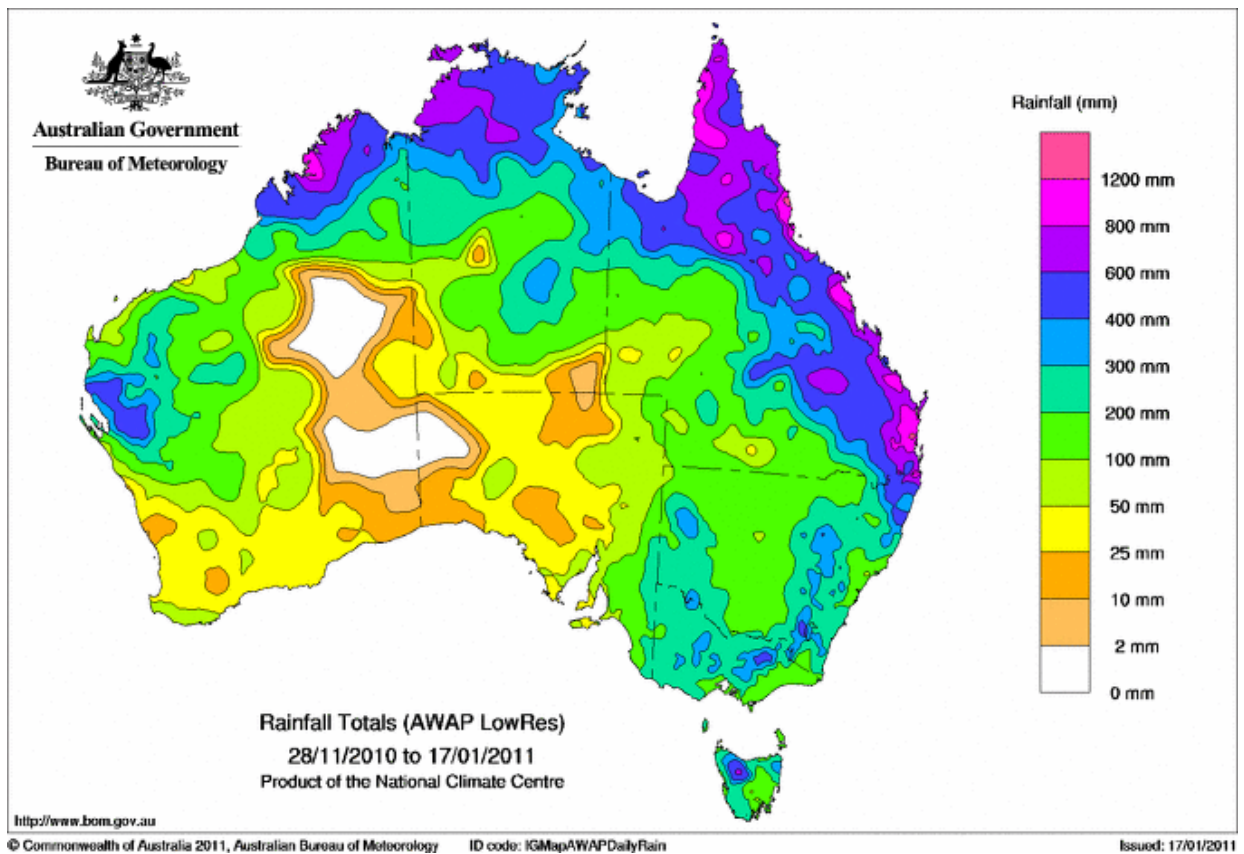


Figure 2. Total rainfall for the period 28 November 2010 – 17 January 2011.

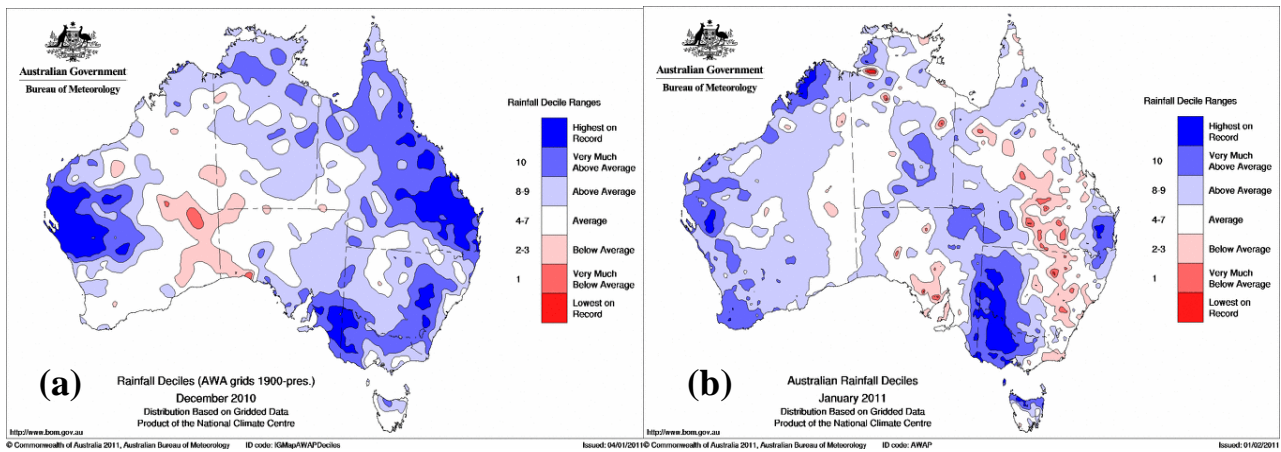


Figure 3. Australian rainfall deciles for (a) December 2010 and (b) January 2011.

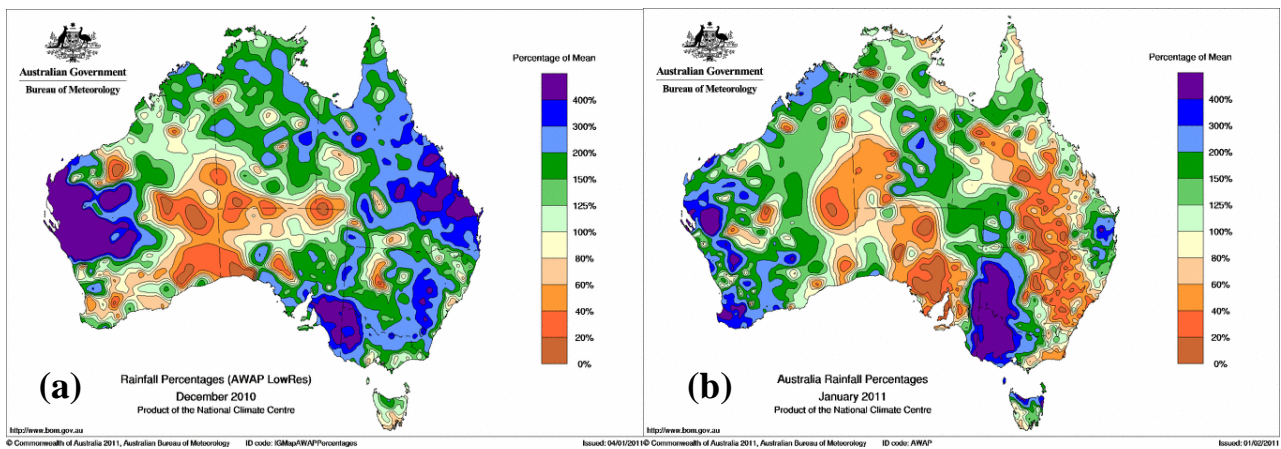


Figure 4. Australian rainfall percentages of normal for (a) December 2010 and (b) January 2011.

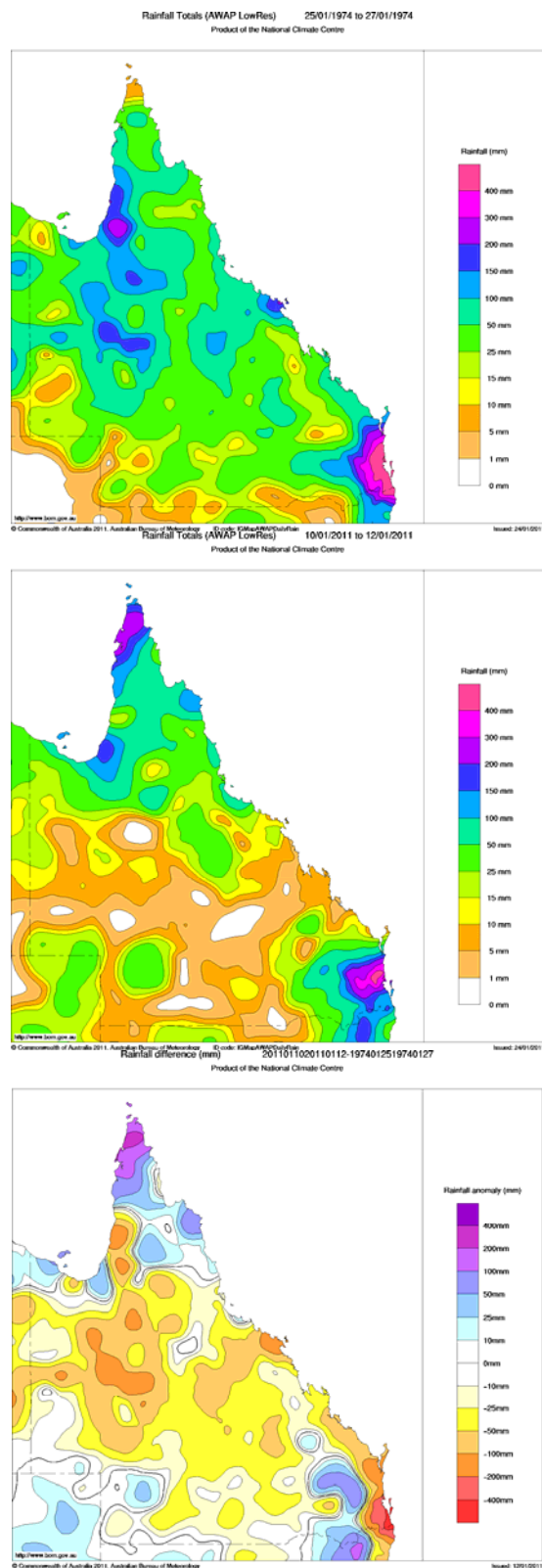


Figure 5. Three-day rainfalls for the periods from 25 to 27 January 1974 (top) and 10 to 12 January 2011 (centre), and the difference between the two (bottom; positive values indicate where 2011 is wetter).

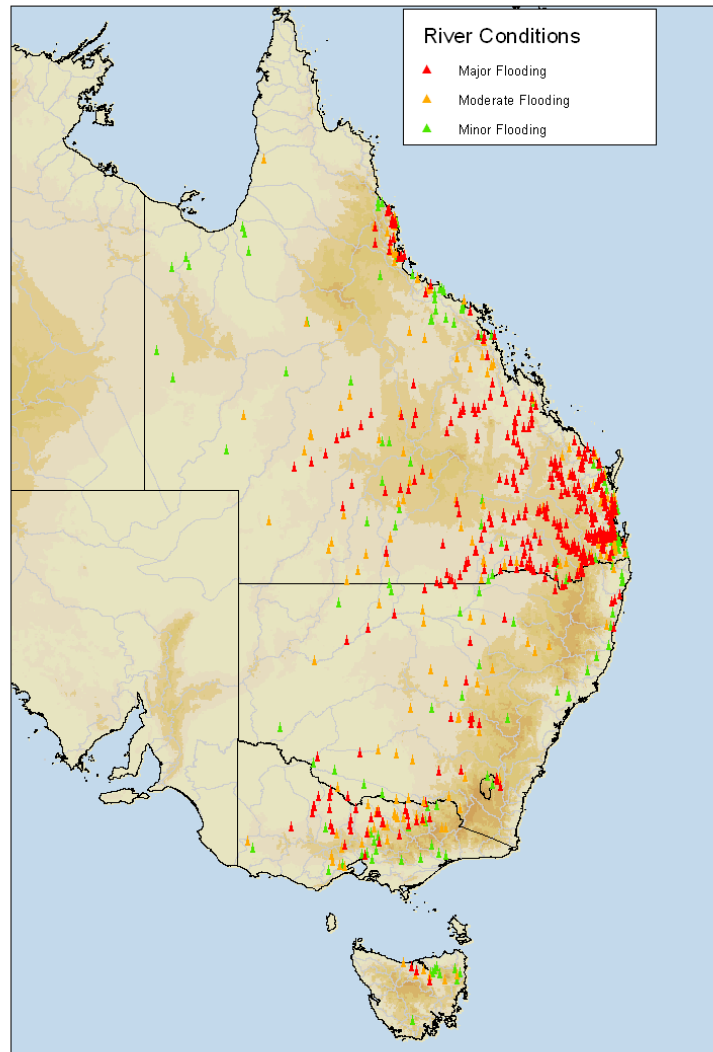


Figure 6. Flood peaks in eastern Australia over the period 26 November 2010 – 20 January 2011.

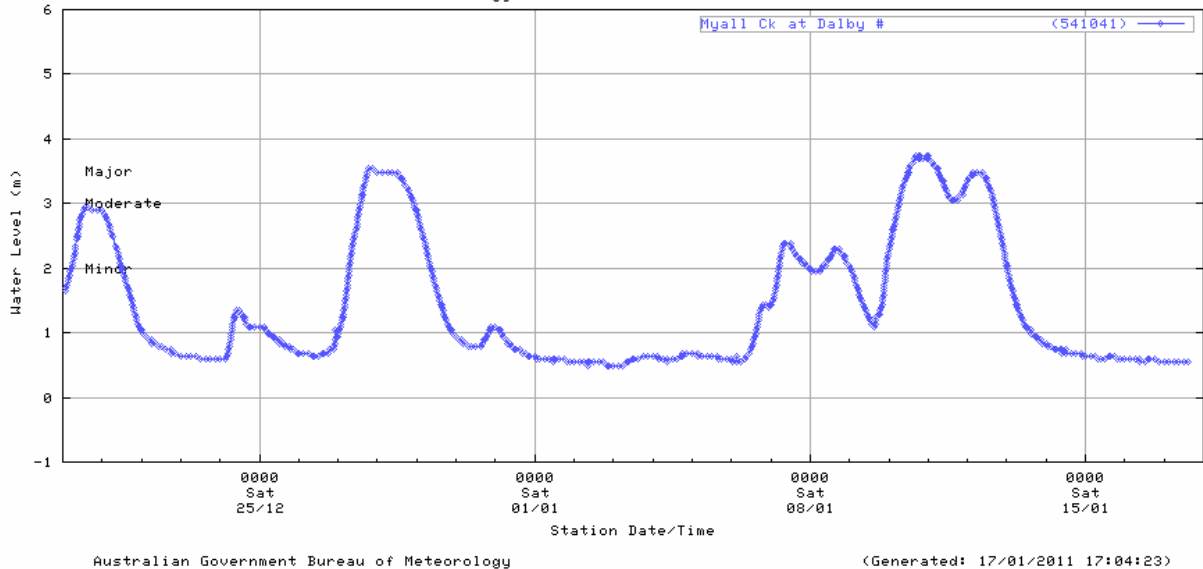
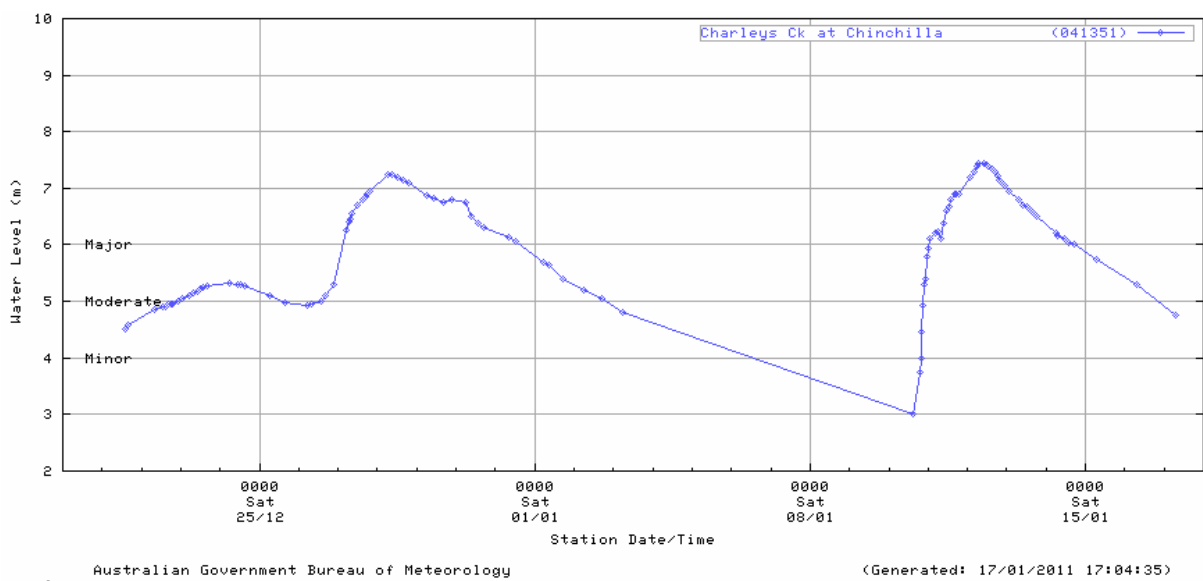
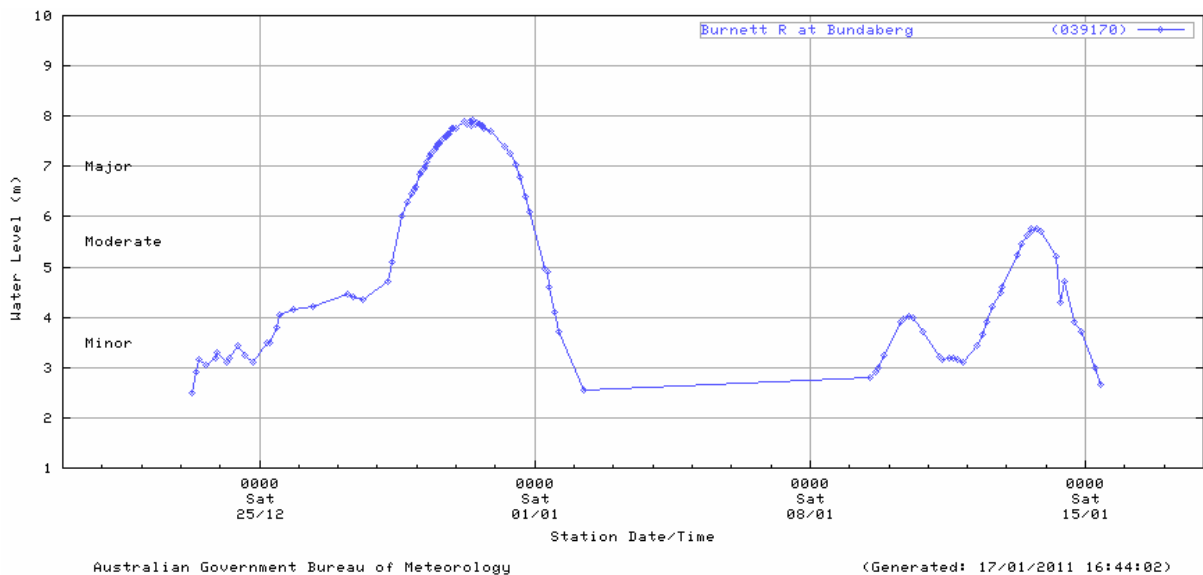


Figure 7(a). Preliminary flood hydrographs at selected Queensland towns: (from top) Bundaberg, Chinchilla and Dalby.

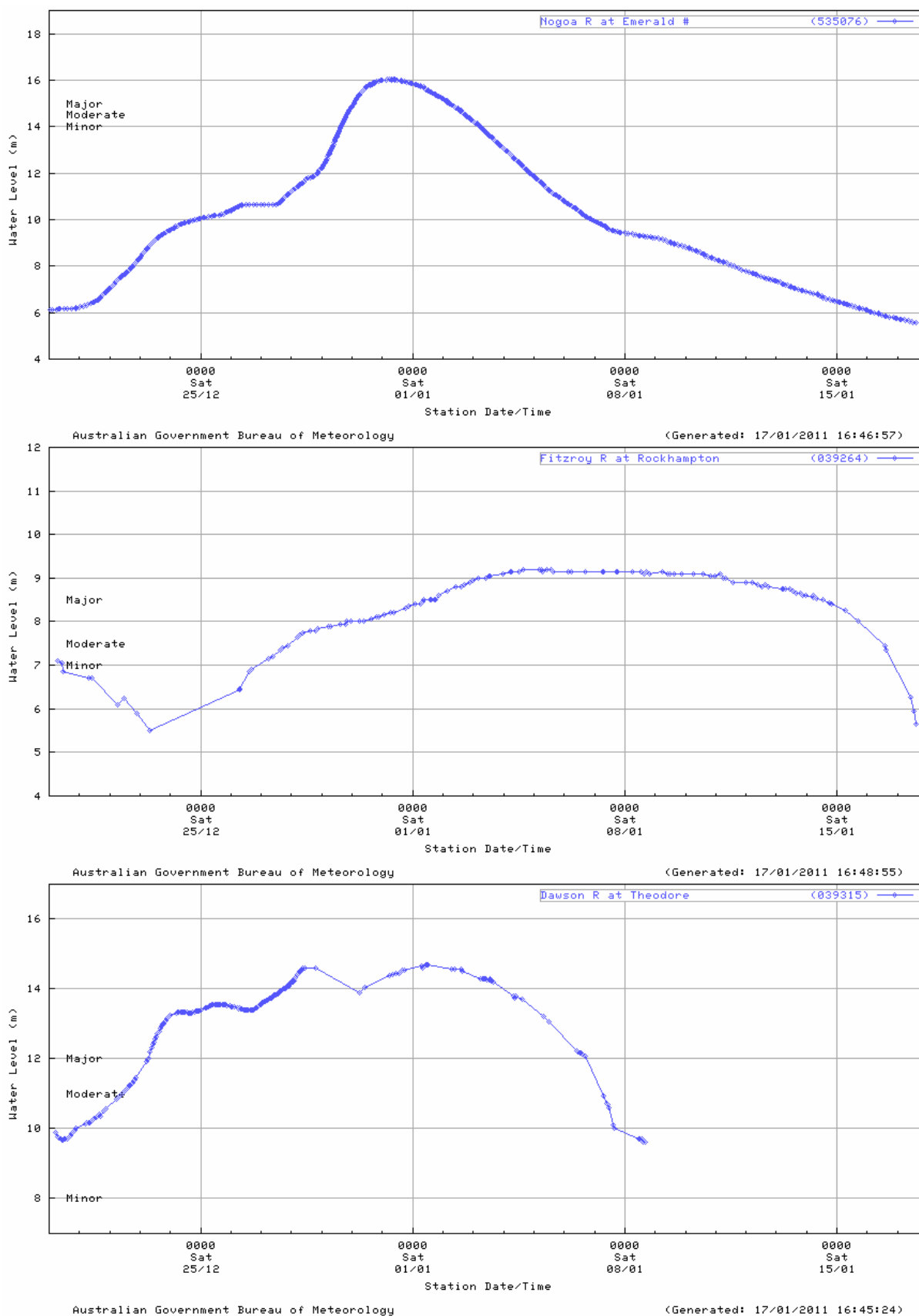


Figure 7(b). Preliminary flood hydrographs at selected Queensland towns: (from top) Emerald, Rockhampton and Theodore

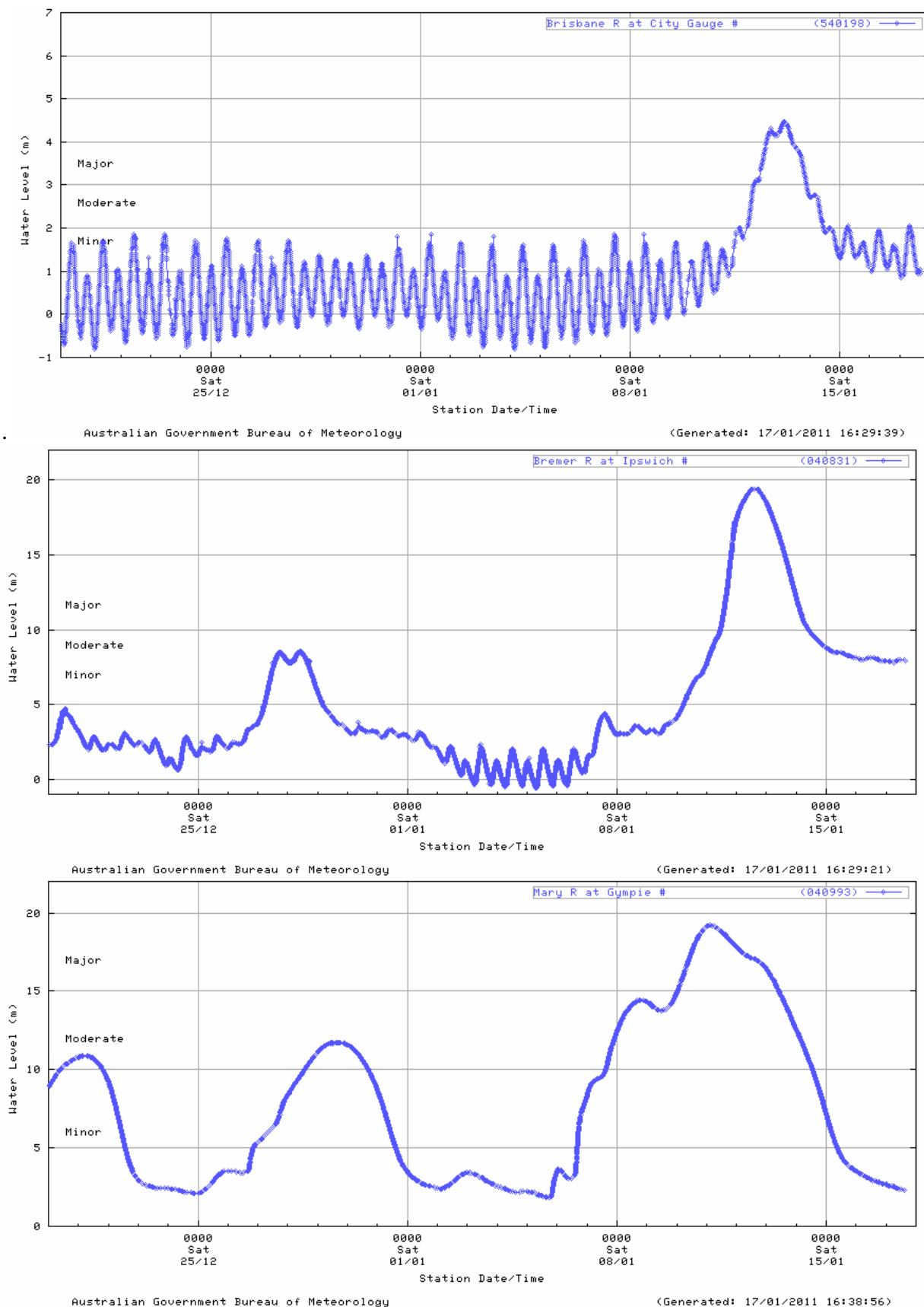


Figure 7(c). Flood hydrographs at selected Queensland towns: (from top) Brisbane, Ipswich and Gympie.

Station number	Name	State	Rainfall (mm)	Date	Previous record (mm)	Date
18058	Whyalla (Mullaquana)	SA	44.8	8/12	39.2	12/12/2008
21001	Auburn	SA	65.8	8/12	50.3	12/12/1917
21002	Balaklava	SA	84.2	8/12	46.0	12/12/1917
21003	Blyth	SA	63.6	8/12	62.5	21/12/1921
21004	Booborowie	SA	71.4	8/12	49.0	1/12/1966
21012	Bute	SA	66.0	8/12	35.0	3/12/1989
21019	Farrell Flat	SA	89.6	8/12	69.3	27/12/1929
21022	Gulnare	SA	61.0	8/12	50.3	1/12/1966
21026	Hoyleton	SA	74.2	8/12	62.0	12/12/2008
21033	Mintaro	SA	66.8	8/12	54.6	12/12/1917
21034	Mount Bryan	SA	76.6	8/12	57.9 (Dec) 62.4 (all)	25/12/1946 27/9/1979
21035	Mount Templeton (Glenalbyn)	SA	61.0	8/12	46.7	12/12/1917
21036	Mundoorra	SA	78.5	7/12	48.0	17/12/1992
21042	Port Broughton	SA	50.4	9/12	44.4	12/12/2008
21047	Spalding	SA	53.0	8/12	52.3	1/12/1966
21050	Terowie	SA	57.4	8/12	52.6	25/12/1919
21075	Clare (Calcannia)	SA	67.8	8/12	47.2	1/12/1966
21076	Manoora (Cooinda)	SA	63.6	8/12	58.8	12/12/2008
23005	Glen Osmond	SA	64.8	8/12	53.1	23/12/1913
23012	Owen	SA	67.2	8/12	43.0	12/12/2008
23013	Parafield	SA	51.2	8/12	47.0	28/12/1929
23021	Roseworthy	SA	75.2	8/12	47.0	24/12/1954
23025	Smithfield	SA	68.8	8/12	45.7	27/12/1920
23078	Gawler	SA	72.8	8/12	35.6	19/12/1922
23090/23000	Adelaide	SA	70.0	8/12	61.5	23/12/1913
23300	Angaston	SA	74.0	7/12	41.7	28/12/1929
23305	Greenock	SA	98.8	8/12	50.5	28/12/1896
23307	Kapunda	SA	85.0	8/12	46.7	18/12/1923
23309	Lyndoch	SA	86.4	8/12	39.9	25/12/1946
23310	Manoora	SA	77.0	8/12	52.8	12/12/2008
23311	Marrabel	SA	70.0	8/12	50.8	12/12/1917
23314	Riverton	SA	90.0	8/12	63.0	12/12/2008
23315	Saddleworth	SA	74.8	8/12	60.5	17/12/1902
23318	Tanunda	SA	94.0	8/12	48.5 (Dec) 87.1 (all)	28/12/1896, 5/12/1966 17/4/1889
23319	Tarlee	SA	109.8	8/12	64.8	24/12/1954
23343	Turretfield	SA	90.0	8/12	28.4	4/12/1911, 25/12/1964
23370	Stockport (Clifton)	SA	88.2	8/12	43.0	12/12/2008
23705	Birdwood	SA	128.2	8/12	62.5 (Dec) 125.5 (all)	25/12/1948 9/2/1969
23709	Cherry Gardens	SA	57.2	8/12	54.9	26/12/1959
23719	Gumeracha	SA	73.4	8/12	58.4	27/12/1920
23725	Keyneton	SA	66.0	8/12	54.6	25/12/1946
23737	Mount Pleasant	SA	73.6	8/12	48.2	1/12/1987
23752	Williamstown	SA	94.6	8/12	45.7	27/12/1920
23756	Williamstown (Glen Gillian)	SA	75.0	8/12	37.0	22/12/2007
23758	Kersbrook (Mabenjo)	SA	126.0	8/12	43.4 (Dec) 81.0 (all)	26/12/1959 9/02/1969
24003	Renmark	SA	86.0	8/12	41.4	27/12/1929

Table 1. Selected record daily rainfall totals which have occurred during December 2010 and January 2011 at locations with 50 or more years of data. Values shown in bold are records for any calendar month.

Station number	Name	State	Rainfall (mm)	Date	Previous record (mm)	Date
24006	Kingston on Murray	SA	85.2	8/12	53.3 (Dec)	17/12/1936
					82.2 (all)	20/2/2000
24008	Lyrup	SA	82.4	8/12	48.0	23/12/1913
24010	Moorook	SA	92.0	8/12	41.1 (Dec)	27/12/1929
					86.4 (all)	17/11/1961
24013	Loxton (Pyap)	SA	93.0	8/12	41.4 (Dec)	27/12/1929
					73.7 (all)	21/2/1917
24017	Taldra	SA	102.0	8/12	49.0 (Dec)	1/12/1911
					71.1 (all)	17/11/1961
24510	Tailem Bend (Woodlands)	SA	64.6	8/12	45.2	25/12/1946
24513	Cambrai (Kongolia)	SA	90.0	8/12	63.4	18/12/1992
24517	Mannum	SA	130.0	8/12	62.2	25/12/1946
24525	Palmer	SA	86.2	8/12	81.0	18/12/1992
24531	Sedan	SA	97.0	8/12	61.7	26/12/1946
24534	Sutherlands	SA	87.0	8/12	83.1	26/12/1946
24535	Swan Reach	SA	86.0	8/12	43.2	18/12/1992
24537	Meningie (Waltowa)	SA	76.6	8/12	72.9 (Dec & all)	4/12/1966
24539	Narrung (Yalkuri)	SA	52.6	8/12	47.8	1/12/1987
			65.0	8/12	53.6	31/12/1983
25000	Alawoona	SA	132.0	14/1	61.0 (Jan)	25/1/1941
					67.0 (all)	12/11/1998
			75.0	8/12	48.0	28/12/1929
25002	Purnong	SA	95.0	8/12	34.3	22/12/1964
25004	Galga	SA	73.6	8/12	57.2	28/12/1929
25006	Karoonda	SA	85.0	8/12	35.6 (Dec)	27/12/1920
25010	Mindarie	SA			79.8 (all)	18/12/1946
			79.0	8/12	74.0	26/12/1999
25013	Parilla	SA	64.6	8/12	40.6	22/12/2000
25014	Paruna	SA	64.0	8/12	38.4	28/12/1962
25015	Pinnaroo	SA	82.0	8/12	36.8	22/12/1964
25017	Sandalwood	SA	71.6	8/12	38.1	27/12/1929
25056	Blanchetown	SA	73.0	8/12	60.0	26/12/1999
25509	Lameroo	SA	86.2	14/1	61.4	20/1/2007
25519	Wolseley	SA	104.0	14/1	56.0	20/1/2007
26007	Frances	SA	74.0	14/1	59.7	25/1/1941
26009	Kalangadoo	SA	59.8	14/1	45.2	25/1/1941
26018	Millicent	SA	82.4	14/1	53.4	15/1/1995
26021	Mount Gambier	SA	190.0	3/12	183.4	24/12/1971
33060	Pleystowe	QLD	104.0	23/12	89.2	21/12/1978
33168	Blenheim Station	QLD	157.0	3/12	134.4	22/12/1956
35002	Arcturus Downs	QLD	273.6	27/12	124.5 (Dec)	28/12/2008
35018	Carnarvon Station	QLD			126.0 (all)	1/6/1981
			148.4	3/12	136.4	30/12/1962
35021	Comet	QLD	153.4	3/12	139.8	28/12/2008
35051	Orion	QLD	210.2	27/12	116.3 (Dec)	22/12/1956
35064	Spring Creek Station	QLD			171.5 (all)	24/11/1950
			157.4	3/12	110.5	22/12/1956
35065	Springsure Comet St	QLD	185.6	27/12	128.0	7/12/1996
35066	Springwood Station	QLD	257.0	27/12	103.1 (Dec)	22/12/1956
35079	Wharton Creek	QLD			184.2 (all)	24/11/1950
			179.4	27/12	135.6 (Dec)	28/12/2008
35088	Birraban	QLD			142.0 (all)	21/5/1977

Table 1 (continued). Selected record daily rainfall totals which have occurred during December 2010 and January 2011 at locations with 50 or more years of data. Values shown in bold are records for any calendar month.

Station number	Name	State	Rainfall (mm)	Date	Previous record (mm)	Date
35090	Rewan	QLD	190.6	27/12	144.8	11/12/1917
35194	Wyseby	QLD	247.2	27/12	119.6 (Dec)	22/12/1975
					213.8 (all)	3/3/1990
36003	Birricannia	QLD	95.0	27/12	87.9	18/12/1944
36143	Blackall	QLD	123.6	8/12	96.4	31/12/2009
39204	Colodan	QLD	89.0	20/12	83.0	12/12/1988
39208	Newlyn – Cynthia	QLD	90.0	27/12	83.1	15/12/1962
39248	Tecoma	QLD	122.0	28/12	101.6	16/12/1962
39253	Rowanlea	QLD	175.6	28/12	148.6	22/12/1975
40020	Blackbutt	QLD	149.2	10/1	113.8	27/1/1974
40120	Lowood	QLD	203.2	12/1	194.0	27/1/1974
40158	Nanango	QLD	183.8	11/1	167.1 (Jan & all)	20/1/1929
40169	Peachester	QLD	298.0	10/1	265.0	27/1/1974
40247	Lindfield	QLD	257.0	10/1	179.8 (Jan)	20/1/1929
					237.8 (all)	9/2/1999
40382	Crows Nest	QLD	162.4	11/1	142.4	27/1/1974
40671	Killara	QLD	109.8	23/12	99.1	13/12/1965
41069	Millmerran	QLD	97.0	27/12	94.0	5/12/2003
41075	Nobby Tooth St	QLD	144.0	26/12	128.3 (Dec)	22/12/1956
					138.6 (all)	11/2/1946
41082	Pittsworth	QLD	114.0	28/12	100.1	22/12/1956
41106	Upper Forest Springs	QLD	129.6	27/12	103.6	19/12/1975
41167	Helenvale	QLD	78.6	28/12	75.8	20/12/1982
41208	Spring Creek	QLD	140.0	27/12	94.2	9/12/1965
41219	Redbank	QLD	76.2	14/12	74.4	8/12/1959
41251	Palgrove	QLD	64.0	27/12	61.5	9/12/1959
41276	Glenrive	QLD	87.0	27/12	75.2	15/12/1965
41310	Kuyura	QLD	100.4	27/12	83.8	28/12/1971
41327	Bairnsdale	QLD	140.0	27/12	132.1 (Dec & all)	9/12/1965
41388	Murrallah	QLD	97.0	27/12	79.5	22/12/1956
42009	Drillham	QLD	81.0	27/12	66.5	26/12/1971
42016	Hannaford	QLD	102.0	27/12	90.2	12/12/1942
42048	Condamine	QLD	148.0	27/12	96.6	22/12/1988
47016	Lake Victoria	NSW	86.0	8/12	49.0	29/12/1957
47093	Burtundy	NSW	49.0	14/1	45.7	9/1/1897
49002	Balranald	NSW	71.8	14/1	70.4	4/1/1941
50045	Yalgogrin North	NSW	68.2	9/12	66.5	17/12/1930
55109	Bendemeer	NSW	79.2	1/12	70.0	12/12/1991
56032	Tenterfield	NSW	144.0	11/1	110.5	10/1/1902
62009	Cassilis (Dalkeith)	NSW	80.0	4/12	77.0	2/12/1940
62017	Kandos	NSW	54.6	4/12	54.0	13/12/2008
62046	Kerrabee	NSW	100.0	4/12	85.1	14/12/1965
63267	Wyangala Dam	NSW	103.4	10/12	102.6 (Dec and all)	25/12/1946
64009	Dunedoo	NSW	77.6	1/12	71.6	13/12/2008
64010	Elong Elong	NSW	121.4	4/12	64.6	26/12/2009
65006	Canowindra	NSW	79.4	26/12	67.3	26/12/1926
65020	Manildra	NSW	63.8	10/12	63.2	14/12/1960
70016	Captains Flat	NSW	74.2	9/12	68.8	30/12/1948

Table 1 (continued). Selected record daily rainfall totals which have occurred during December 2010 and January 2011 at locations with 50 or more years of data. Values shown in bold are records for any calendar month.

Station number	Name	State	Rainfall (mm)	Date	Previous record (mm)	Date
70032	Fairlight Station	NSW	89.8	3/12	88.9	23/12/1921
70069	Crookwell	NSW	67.0	10/12	60.0	13/12/2008
70071	Goulburn	NSW	99.0	10/12	85.6	30/12/1948
70083	Tharwa	ACT	85.0	9/12	80.3	18/12/1961
70093	Huntly	NSW	76.0	3/12	69.9	15/12/1961
70097	Breadalbane	NSW	136.4	9/12	77.0 (Dec) 121.9 (all)	5/12/1911 26/7/1922
70131	Woodhouselee	NSW	108.4	9/12	78.7	9/12/1886
70351/70014	Canberra	ACT	87.0	3/12	86.6	30/12/1948
72004	Batlow	NSW	99.6	9/12	94.0	28/12/1919
72050	Wymah	NSW	71.2	9/12	58.4	11/12/1963
72150	Wagga Wagga	NSW	67.6	9/12	65.2	26/12/1988
73007	Burrinjuck Dam	NSW	111.0	3/12	87.6	18/12/1961
74026	Urana (Butherwah)	NSW	64.0	9/12	54.9	19/12/1902
74064	Lockhart	NSW	53.2	9/12	45.7	3/12/1960
74071	Matong	NSW	78.0	9/12	77.6	3/12/1980
74087	Urana (Nowranie)	NSW	61.6	9/12	58.7	15/12/1924
74110	Urana Post Office	NSW	69.0	9/12	60.0	9/12/2004
75042	Maude	NSW	54.0	12/1	51.8	17/1/1962
76000	Annuello	VIC	76.6	14/1	60.0	1/1/1988
76012	Manangatang	VIC	57.4	7/12	57.0	31/12/1983
76031	Mildura	VIC	61.6	12/1	37.6	17/1/1962
76038	Murrayville	VIC	70.0	8/12	41.1	25/12/1919
76043	Nulkwyne Kiamal	VIC	94.0	8/12	71.6 (Dec) 79.2 (all)	21/12/1992 20/1/1979
76047	Ouyen	VIC	50.0	14/1	49.5	3/1/1921
76063	Walpa	VIC	71.0	9/12	48.3	5/12/1966
76052	Red Cliffs	VIC	83.4	12/1	57.9 (Jan) 82.3 (all)	26/1/1959 24/3/1969
76064	Walpeup Research	VIC	78.0	8/12	41.0	21/12/1992
76065	Walpeup	VIC	84.2	8/12	41.2	21/12/1992
76067	Werrimull	VIC	71.0	8/12	58.8	31/12/2002
77005	Berriwillock	VIC	63.8	14/1	54.0	14/1/1974
77008	Birchip	VIC	90.2	14/1	68.1	11/1/1962
77023	Lalbert	VIC	57.0	14/1	55.8	17/1/1974
77030	Narraport	VIC	70.0	14/1	53.0	27/1/1993
77033	Patchewollock	VIC	67.0	8/12	58.4	1/12/1987
77041	Speed	VIC	80.0	8/12	77.7	14/12/1961
77035	Rainbow	VIC	131.0	12/1	56.4 (Jan) 118.4 (all)	25/1/1941 7/3/1910
77048	Ultima	VIC	64.4	14/1	61.4	22/1/1979
78000	Warracknabeal	VIC	71.8	8/12	43.9	22/12/1898
78010	Dimboola	VIC	104.2	12/1	95.0	14/1/1974
78086	Jeparit	VIC	161.2	12/1	119.0 (Jan) 127.3 (all)	14/1/1974 6/3/1910
79008	Clear Lake	VIC	71.6	8/12	62.5	27/12/1946
79021	Harrow	VIC	72.0	7/12	66.3	13/12/2008
79023	Horsham (Polkemmet)	VIC	98.0	12/1	75.4	7/1/1886
79028	Longerenong	VIC	97.0	12/1	72.9	25/1/1863
79036	Natimuk	VIC	54.2	8/12	52.1	28/12/1929
79046	Wartook	VIC	74.4	8/12	73.7	2/12/1933
79071	Apsley	VIC	48.4	8/12	38.6	10/12/1971

Table 1 (continued). Selected record daily rainfall totals which have occurred during December 2010 and January 2011 at locations with 50 or more years of data. Values shown in bold are records for any calendar month.

Station number	Name	State	Rainfall (mm)	Date	Previous record (mm)	Date
79075	Rupanyup	VIC	90.0	14/1	71.0 (Jan)	27/1/1993
79082	Horsham	VIC	88.0	8/12	76.5 (all)	28/12/1929
80061	Wedderburn	VIC	84.0	14/1	43.6 (Dec)	13/12/2008
					81.3 (all)	6/2/1973
					62.0 (Jan)	15/1/1974
					78.8 (all)	22/3/1983
81038	Natte Yallock	VIC	81.8	14/1	68.0	16/1/1984
81051	Tungamah	VIC	83.4	9/12	57.7	15/12/1894
82009	Carboor	VIC	75.6	9/12	70.6	7/12/1930
82024	Koetong	VIC	78.8	9/12	71.1	4/12/1886
82055	Whorouly	VIC	66.0	9/12	65.8	7/12/1930
83038	Tawonga	VIC	144.2	9/12	69.0 (Dec)	22/12/2007
					95.4 (all)	26/3/1993
83043	Rocky Valley	VIC	182.0	9/12	128.6	14/12/1993
87029	Lancefield	VIC	92.0	14/1	71.1	2/1/1970
88043	Maryborough	VIC	90.4	14/1	83.8	2/1/1961
88051	Redesdale	VIC	78.6	14/1	76.0	1/1/1988
88059	Trentham	VIC	110.8	14/1	101.6	1/1/1921
89002	Ballarat	VIC	95.0	14/1	83.1	29/1/1963
89003	Balmoral	VIC	103.2	8/12	56.4	13/12/2008
89005	Beaufort	VIC	96.8	14/1	85.6	21/1/1904
89009	Cavendish	VIC	106.8	8/12	65.0 (Dec)	13/12/2008
					101.6 (all)	7/2/1957
89011	Dunkeld	VIC	78.4	8/12	64.0	13/12/2008
89019	Mirranatwa	VIC	86.6	8/12	72.6	5/12/1933
89022	Moutajup	VIC	91.8	8/12	76.7	15/12/1973
89033	Wickliffe	VIC	76.8	13/12	67.1	4/12/1937
89034	Willaura	VIC	98.0	8/12	64.8 (Dec)	13/12/1966
					91.4 (all)	6/2/1973
89043	Gatum	VIC	80.0	7/12	65.0	12/12/2008
90005	Beeac	VIC	66.2	14/1	52.6	21/1/1904
90008	Birregurra	VIC	52.0	14/1	48.0	22/1/1997
90026	Coojar	VIC	62.0	8/12	60.0	13/12/2008
90059	Nelson	VIC	113.2	14/1	77.4 (Jan)	24/1/1991
					90.2 (all)	18/2/1946
90060	Nullawarre	VIC	70.2	8/12	61.6	3/12/1985
90062	Penshurst	VIC	86.4	8/12	76.0	13/12/2008
91009	Burnie	TAS	87.2	13/1	51.8	17/1/1979
91109	Yolla	TAS	131.0	14/1	70.1	20/1/1946

Table 1 (continued). Selected record daily rainfall totals which have occurred during December 2010 and January 2011 at locations with 50 or more years of data. Values shown in bold are records for any calendar month.

Station No.	Name	State	Rainfall (mm)	Previous record (mm)	Year
21001	Auburn	SA	140.0	120.8	1966
21002	Balaklava	SA	129.2	80.9	1894
21004	Booborowie	SA	122.2	99.6	1966
21012	Bute	SA	96.0	66.7	1922
21019	Farrell Flat	SA	141.6	122.4	1894
21026	Hoyleton	SA	109.6	104.2	2008
23025	Smithfield	SA	129.8	109.5	1966
23081	Gawler	SA	118.8	109.7	1861
23305	Greenock	SA	152.4	94.8	2008
23307	Kapunda	SA	132.2	103.1	1902
23309	Lyndoch	SA	160.0	107.2	1992
23310	Manoora	SA	135.4	104.4	1992
23311	Marrabel	SA	126.0	110.6	1992
23314	Riverton	SA	197.0	123.7	1902
23315	Saddleworth	SA	139.0	112.1	1902
23318	Tanunda	SA	177.4	120.4	1875
23319	Tarlee	SA	183.6	121.0	1992
23343	Turretfield	SA	153.7	91.8	1992
23705	Birdwood	SA	199.2	177.8	1992
23707	Bridgewater	SA	160.5	148.6	1992
23752	Williamstown	SA	167.0	115.4	1992
24003	Renmark Irrigation	SA	139.4	88.4 (Dec) 138.5 (all)	1992 Apr 1974
24008	Lyrup	SA	134.6	88.4 (Dec) 133.2 (all)	1966 Feb 1950
24010	Moorook	SA	140.2	84.1 (Dec) 116.7 (all)	1966 Feb 1950
24013	Loxton (Pyap)	SA	134.6	78.0 (Dec) 123.3 (all)	1929 Oct 1973
24513	Cambrai (Kongolia)	SA	142.0	141.5	1992
24517	Mannum	SA	173.0	138.6	2004
24526	Point Pass	SA	175.4	99.6	1946
24535	Swan Reach	SA	145.2	118.2 (Dec) 134.9 (all)	1992 Feb 1973
25002	Purnong	SA	142.0	87.7	1929
25004	Galga	SA	146.4	104.2 (Dec) 105.3 (all)	1992 Feb 1973
25006	Karoonda	SA	142.4	103.6 (Dec) 113.1 (all)	1992 Feb 1969
25010	Mindarie	SA	132.4	84.0 (Dec) 127.3 (all)	1992 Feb 1973
25013	Parilla	SA	140.6	100.4	1937
25014	Paruna	SA	91.6	87.6	1992
25015	Pinnaroo	SA	86.0	71.6	1992
25017	Sandalwood	SA	123.3	92.8 (Dec) 119.1 (all)	1937 Mar 1921
25507	Keith	SA	137.8	78.1	1937
25509	Lameroo	SA	107.8	88.1	1962
25513	Peake	SA	107.9	107.0	1929
25519	Wolseley	SA	129.6	106.0	1894
28000	Laura	QLD	410.4	406.6	1976
30082	Gregory Springs	QLD	350.2	315.4	2000
30137	Hillgrove	QLD	399.4	254.6	2000
31029	Herberton	QLD	446.2	416.0	1950
31046	Mount Garnet	QLD	337.4	327.0	1997
33008	Byfield	QLD	770.0	651.9	1962
33013	Collinsville	QLD	425.9	410.4	1956
34000	Balfes Creek	QLD	297.5	260.3	1906

Table 2. Selected record monthly rainfall totals which have occurred during December 2010 at locations with 50 or more years of data. Values shown in bold are records for any calendar month.

Station No.	Name	State	Rainfall (mm)	Previous record (mm)	Year
35007	Bauhinia Downs	QLD	475.2	270.6	1988
35014	Wandoan	QLD	409.0	357.8	1970
35018	Carnarvon Station	QLD	535.8	238.9 (Dec)	1927
				340.2 (all)	Feb 1997
35021	Comet	QLD	383.0	273.5	1956
35049	Gillespie	QLD	268.6	213.1	1916
35051	Orion	QLD	380.1	350.0	1975
35065	Springsure	QLD	470.2	316.6	1975
35079	Wharton Creek	QLD	452.0	307.0 (Dec)	1956
				414.3 (all)	Feb 1954
35088	Birraban	QLD	596.0	310.7 (Dec)	1956
				484.2 (all)	Feb 2010
35109	Booroondarra	QLD	390.4	277.6 (Dec)	1990
				354.6 (all)	Jan 1974
35117	La Palma	QLD	463.8	274.6 (Dec)	1942
				431.9 (all)	Feb 1954
35194	Wyseby	QLD	603.2	339.0 (Dec)	1970
				511.6 (all)	Feb 2010
35225	Cardbeign	QLD	489.6	280.5 (Dec)	1956
				411.0 (all)	Feb 1954
36143	Blackall	QLD	254.0	246.8	1965
39000	Abercorn	QLD	483.6	281.2 (Dec)	1959
				306.8 (all)	Feb 2003
39004	Baralaba	QLD	461.2	353.9	1973
39027	Cordalba	QLD	723.2	542.2 (Dec)	1956
				723.0 (all)	Feb 1928
39040	Gin Gin	QLD	803.7	411.0	1970
39059	Lady Elliot Island	QLD	510.0	383.4	1962
39066/39039	Gayndah	QLD	380.8	321.2	1942
39070	Mount Perry	QLD	584.8	365.4	1956
39073	Mundubbera	QLD	428.6	321.7 (Dec)	1959
				364.4 (all)	Feb 1956
39089	Thangool	QLD	374.4	344.4	1973
39092	Miara	QLD	573.0	467.0 (Dec)	1962
				564.1 (all)	Feb 1947
39097	Wateranga	QLD	579.0	426.5 (Dec)	1942
				491.0 (all)	Feb 1928
39103	Bancroft	QLD	514.2	294.0 (Dec)	1984
				423.1 (all)	Feb 1971
39104	Monto	QLD	499.0	248.5 (Dec)	1970
				434.2 (all)	Feb 1971
39128/39015	Bundaberg	QLD	573.2	490.3	1962
39177	Glenwood	QLD	412.4	257.3 (Dec)	1956
				386.1 (all)	Feb 1956
39204	Colodan	QLD	493.0	266.3 (Dec)	1973
				345.0 (all)	Feb 1971
39248	Tecoma	QLD	503.0	261.7 (Dec)	1959
				373.1 (all)	Feb 1971
39278	Glenhaven	QLD	411.8	256.3 (Dec)	1956
				366.5 (all)	Feb 1954
40021	Biggenden	QLD	558.9	441.4	1942
40043	Cape Moreton	QLD	375.8	372.5	1965
40059	Cooroy	QLD	559.5	521.0	1926
40071	Lanark	QLD	462.0	328.2	1947
40078	Eumundi	QLD	615.8	516.7	1926
40082	UQ Gatton	QLD	317.0	278.7	1942
40098	Howard	QLD	631.4	543.0	1926
40099	Imbil	QLD	575.6	454.6	1926

Table 2 (continued). Selected record monthly rainfall totals which have occurred during December 2010 at locations with 50 or more years of data. Values shown in bold are records for any calendar month.

Station No.	Name	State	Rainfall (mm)	Previous record (mm)	Year
40106	Kenilworth	QLD	547.1	481.1	1926
40135	Moogerah Dam	QLD	363.8	308.8	1921
40144	Mount Joseph	QLD	521.8	477.0	1926
40152	Murgon	QLD	376.5	360.2	1947
40158	Nanango	QLD	365.9	333.1	1970
40160	Nerang	QLD	481.2	392.8	1897
40166	Oxenford	QLD	542.2	493.8	1897
40170	Pechey	QLD	326.0	307.2	1942
40177	Proston	QLD	399.0	282.3 (Dec)	1970
				301.4 (all)	Feb 1971
40183	Rosevale	QLD	516.6	440.9 (Dec)	1991
				445.0 (all)	Jan 1927
40198	Tarome	QLD	523.4	449.9	1965
40231	Manly	QLD	467.0	397.1	1970
40251	Wondai	QLD	374.0	330.7	1921
40255	Wooroolin	QLD	451.2	356.4	1970
40428	Brian Pastures	QLD	485.3	256.1 (Dec)	1970
				307.4 (all)	Jan 1959
40455	Dunollie	QLD	393.2	249.5 (Dec)	1955
				300.9 (all)	Jul 1954
40671	Killara	QLD	486.4	188.6 (Dec)	1970
				342.9 (all)	Feb 1971
41011	Cambooya	QLD	325.6	298.9	1895
41018	Clifton	QLD	359.0	261.8 (Dec)	1928
				350.7 (all)	Feb 1893
41019	Condamine Plains	QLD	370.4	265.1 (Dec)	1965
				360.7 (all)	Feb 1893
41050	Jandowae	QLD	376.6	268.5 (Dec)	1921
				356.4 (all)	Mar 1941
41061	Kurrowah	QLD	413.4	361.9	1970
41069	Millmerran	QLD	312.0	264.0	1970
41075	Nobby	QLD	423.9	260.9 (Dec)	1970
				361.0 (all)	Apr 1988
41082	Pittsworth	QLD	433.6	297.5 (Dec)	1965
				359.7 (all)	Feb 1893
41106	Upper Forest Springs	QLD	422.8	278.2 (Dec)	1975
				296.6 (all)	Jan 1933
41110	Turallin	QLD	333.5	333.4	1975
41120	Yangan	QLD	374.4	292.0	1975
41191	Victory Downs	QLD	292.0	278.8	1970
41202	Talgai	QLD	352.2	251.7 (Dec)	1970
				312.8 (all)	Jan 1974
41242	Little Ridge	QLD	360.8	255.2 (Dec)	1970
				304.7 (all)	Jan 1974
41250	Pampas	QLD	318.0	256.6 (Dec)	1965
				309.8 (all)	Mar 1963
41291	Ehlma Park	QLD	270.2	261.0	1970
41306	Tosari	QLD	349.0	209.8 (Dec)	1965
				288.2 (all)	Mar 1963
41314	Brookstead	QLD	370.2	218.0 (Dec)	1980
				309.6 (all)	Mar 1963
41327	Bairnsdale	QLD	346.6	323.7 (Dec)	1965
				326.4 (all)	Apr 1988
41504	Glen Royal	QLD	385.6	264.8 (Dec)	1965
				289.6 (all)	May 1996
42012	Glenmorgan	QLD	301.7	222.6 (Dec)	2007
				268.4 (all)	Feb 2010

Table 2 (continued). Selected record monthly rainfall totals which have occurred during December 2010 at locations with 50 or more years of data. Values shown in bold are records for any calendar month.

Station No.	Name	State	Rainfall (mm)	Previous record (mm)	Year
42016	Hannaford	QLD	254.5	242.6 (Dec)	1942
				242.8 (all)	Jan 2004
42033	Shelbourne	QLD	371.8	344.8	1970
43015	Injune	QLD	349.9	280.4	1931
43020	Mitchell	QLD	319.4	253.9	1931
43093	Waverley Downs	QLD	304.4	203.4 (Dec)	2007
				286.0 (all)	Mar 2010
47016	Lake Victoria	NSW	140.1	98.7	1975
51049	Trangie Research	NSW	145.2	137.4	1992
55006	Blackville	NSW	244.4	208.9	1926
55023	Gunnedah Pool	NSW	232.4	185.8	2004
59040	Coffs Harbour	NSW	395.4	383.2	1991
62013	Gulgong	NSW	241.1	212.8	1958
63005	Bathurst Ag Station	NSW	219.4	194.5	1947
63035	Hill End	NSW	257.6	220.4	1926
63119	Crooked	NSW	304.2	231.8 (Dec)	1988
	(Wingadeena)			244.2 (all)	Jan 1978
64004	Binnaway	NSW	272.0	233.4	2007
64008	Coonabarabran	NSW	293.8	289.6	2007
64009	Dunedoo	NSW	279.4	194.8	1926
64024	Gilgandra	NSW	282.2	219.8 (Dec)	2007
	(Wallumburrawang)			274.5 (all)	Jul 1920
65011	Cumnock	NSW	283.0	200.2	1992
65018	Geurie	NSW	198.0	190.4	2007
65020	Manildra	NSW	252.6	204.5	1920
65023	Molong	NSW	241.4	214.8	1947
65026	Parkes	NSW	212.8	171.9	1947
65034	Wellington	NSW	184.6	173.2	2009
70025	Crookwell	NSW	270.8	212.4	1947
70083	Tharwa	ACT	220.4	159.6	1961
70097	Breadalbane	NSW	279.6	140.7 (Dec)	1920
				268.8 (all)	May 1925
70111	Biala (Alvison)	NSW	231.4	211.4	1947
70117	Dalton (Rose Valley)	NSW	241.6	174.5 (Dec)	1962
				238.8 (all)	Apr 1974
70171	Rugby (Carovale)	NSW	353.4	158.0 (Dec)	1968
				267.7 (all)	Apr 1990
73007	Burrinjuck Dam	NSW	260.5	243.5	1947
76038	Murrayville	VIC	122.8	82.0	1966
76064	Walpeup	VIC	141.6	121.6 (Dec)	1992
				139.0 (all)	Feb 2000
76067	Werrimull	VIC	132.2	74.4	1983
77026	Lascelles	VIC	143.2	103.6 (Dec)	1992
				127.2 (all)	Mar 1996
77033	Patchewollock	VIC	97.2	96.8	2004
77041	Speed	VIC	128.5	95.6 (Dec)	1992
				124.5 (all)	Oct 1956
77052	Woomelang	VIC	119.6	101.7	1930
78010	Dimboola	VIC	141.0	111.8	1992
79010	Drung Drung	VIC	142.6	137.8	1930
79023	Horsham	VIC	150.2	145.8	1930
79036	Natimuk	VIC	130.6	116.5	1930
79075	Rupanyup	VIC	148.2	124.7	1930
83038	Tawonga	VIC	247.8	212.0	1988
89003	Balmoral	VIC	222.2	122.7 (Dec)	1902
				197.4 (all)	Jul 1947
89034	Willaura	VIC	169.4	162.3	1966
90057	Merino	VIC	176.0	149.4	1986

Table 2 (continued). Selected record monthly rainfall totals which have occurred during December 2010 at locations with 50 or more years of data. Values shown in bold are records for any calendar month.

Station number	Name	State	Rainfall (mm)	Previous record (mm)	Year
25000	Alawoona	SA	163.0	135.4	1941
25519	Wolseley	SA	116.0	92.6	2007
26007	Frances	SA	124.8	93.2	2007
40095	Hattonvale	QLD	447.6	337.9	1974
40120	Lowood	QLD	642.6	588.4	1974
40158	Nanango	QLD	534.6	448.9 (Jan)	1890
				517.9 (all)	Feb 1893
40247	Lindfield	QLD	631.0	581.9 (Jan)	1968
				610.5 (all)	Mar 1955
40258	Yarraman	QLD	533.8	435.0 (Jan)	1974
				438.4 (all)	Feb 1950
47008	Cockburn (Burta)	NSW	209.5	136.6 (Jan)	1974
				197.8 (all)	Feb 1911
47029	Pooncarie	NSW	162.0	149.6	1941
47040	Wentworth (Wamberra)	NSW	144.4	128.3	1941
47093	Burtundy	NSW	138.8	110.0	1991
49111	Euston (Turlee)	NSW	172.7	115.6	1984
				136.8	Mar 1989
56032	Tenterfield	NSW	361.2	352.8	1887
75003	Barham	NSW	143.0	129.6	1984
75042	Maude	NSW	157.4	135.4	1984
76000	Annuello	VIC	261.4	95.9 (Jan)	1979
				133.7 (all)	Feb 1969
76031	Mildura	VIC	127.0	92.2	1984
76047	Ouyen	VIC	130.6	111.1	1941
76052	Red Cliffs	VIC	145.6	100.9 (Jan)	1941
				131.6 (all)	Oct 1975
77004	Beulah	VIC	160.4	127.8	1974
77005	Berriwillock	VIC	155.2	113.3	1974
77008	Birchip	VIC	180.6	105.3	1962
77014	Culgoa	VIC	103.4	84.0	1979
77023	Lalbert	VIC	150.0	124.1	1962
77025	Lake Bolga	VIC	133.6	98.3	1928
77030	Narraport	VIC	186.4	79.2	1984
77033	Patchewollock	VIC	134.3	97.0	1979
77035	Rainbow	VIC	181.8	82.7	1941
77039	Sea Lake	VIC	157.0	101.8	1974
77048	Ultima	VIC	172.8	73.5	1998
77052	Woomelang	VIC	130.4	109.8	1974
78010	Dimboola	VIC	155.0	125.2	1974
78086	Jeparit	VIC	202.2	142.9 (Jan)	1974
				181.4 (all)	Dec 1930
79023	Horsham (Polkemmet)	VIC	145.9	116.6	1941
79028	Longerenong	VIC	159.6	129.8	1863
79040	St. Arnaud	VIC	225.8	146.9	1897
79075	Rupanyup	VIC	200.6	93.6 (Jan)	1993
				189.0 (all)	Oct 1975
80002	Boort	VIC	202.8	99.6	1974
80004	Canary Island	VIC	270.7	174.3	1928
80009	Coonooer Bridge	VIC	174.2	128.4	1974
80023	Kerang	VIC	154.2	144.2	1928
80027	Korong Vale (Burnbank)	VIC	205.2	117.6 (Jan)	1974
				161.0 (all)	Oct 1975
80061	Wedderburn	VIC	168.0	166.8	1974
80067	Charlton	VIC	178.6	128.4	1974

Table 3. Selected stations with 50 or more years of data where January month-to-date rainfall totals (as of 17 January 2011) have already exceeded January monthly records. Values shown in bold are records for any calendar month.

Station number	Name	State	Rainfall (mm)	Previous record (mm)	Year
81002	Bealiba	VIC	214.8	121.4 (Jan)	1984
81020	Inglewood	VIC	218.2	195.7 (all)	Oct 1975
81038	Natte Yallock	VIC	215.8	174.6 (Jan)	1974
81085	Dunolly	VIC	266.6	209.2 (all)	Nov 2010
87009	Bannockburn	VIC	108.2	114.0 (Jan)	1984
87017	Blackwood	VIC	211.0	213.5 (all)	Apr 1939
87029	Lancefield	VIC	220.0	123.0 (Jan)	1928
88002	Avenel	VIC	156.2	204.8 (all)	Oct 1975
88009	Cairn Curran	VIC	189.6		
88015	Clunes	VIC	217.2	139.5 (Jan)	1928
88020	Daylesford	VIC	237.5	197.4 (all)	Dec 1933
88043	Maryborough	VIC	240.7	162.7	1904
88048	Newstead	VIC	191.6	132.5 (Jan)	1928
88051	Redesdale	VIC	176.2	195.0 (all)	Oct 1975
88059	Trentham	VIC	237.0	112.6	1928
88067	Yea	VIC	137.8	139.1	1928
88109	Mangalore	VIC	172.0	212.1	1904
89002	Ballarat	VIC	206.0	130.2	1904
89011	Dunkeld	VIC	171.8	116.2	1984
89068	Wurrook South	VIC	142.5	188.6	1963
90008	Birregurra	VIC	155.6	136.3	1963
90059	Nelson	VIC	196.4	114.9	1970
91009	Burnie	TAS	177.0	131.8	1991
91048	Latrobe	TAS	173.8	107.3	1963
91065	Mole Creek	TAS	240.0	126.6	1996
91102	Ulverstone	TAS	144.0	162.4	2004
91109	Yolla	TAS	326.0	208.6	1996
98013	Yambacoon	TAS	146.8	114.6	1902, 1904
				211.6	1996
				124.0	1997

Table 3 (continued). Selected stations with 50 or more years of data where January rainfall totals exceeded January monthly records. Values shown in bold are records for any calendar month.

River	Location	Peak height (m)	Date	Previous record (m)	First year of data
Dawson	Utopia Downs	14.25	28 December	12.82 (27/4/1989)	1970
Dawson	Tanara Crossing	12.50	28 December	12.09 (26/5/1983)	1983
Dawson	Windamere	10.52	27 December	10.28 (3/5/1983)	1975
Dawson	Chilgerrie Hill	10.85	27 December	10.60 (28/8/1998)	1983
Dawson	La Palma	7.70	28 December	7.39 (23/2/1971)	1956
Dawson	Glebe Weir TW	18.81	31 December	15.19 (6/5/1983)	1983
Dawson	Glebe Weir HW	9.62	31 December	6.15 (6/5/1983)	1983
Dawson	Gyrandra Weir	4.80	27 December	3.94 (7/3/2010)	1988
Dawson	Theodore	14.70	1 January	14.07 (14/2/1956)	1924
Dawson	Woodleigh	18.45	2 January	13.97 (17/1/1996)	1986
Dawson	Redcliff	9.01	28 December	7.36 (22/2/1971)	1958
Dawson	Beckers	19.47	30 December	15.75 (4/5/1983)	1965
Nogoa	Raymond	12+	28 December	11.41 (25/11/1950)	1947
Nogoa	Craigmore	18.16	29 December	16.25 (20/1/2008)	1972
Nogoa	Emerald	16.05	31 December	15.70 (27/11/1950)	1950
Comet	Rewan	11.3+	27 December	10.97 (19/4/1990)	1987
Comet	Rolleston	8.2 (approx.)	28 December	5.87 (19/2/2010)	1958
Comet	Comet Weir	13.94	29 December	13.19 (11/2/1954)	1922
Mackenzie	Bingegang	17.45	2 January	17.23 (6/2/1978)	1974
Barker	Glenmore	4.45	28 December	4.11 (10/2/1999)	1988
Boyne	Boondooma Dam	3.46	28 December	1.30 (28/7/1984)	1983
Auburn	Glenwood	14.70	29 December	13.11 (5/2/1971)	1971
Burnett	Monto	6.49	28 December	5.96 (9/1/1996)	1990
Burnett	Lands End	6.81	27 December	6.45 (7/2/2003)	1987
Burnett	Wuruma Dam	3.38	28 December	0.59 (10/2/1971)	1971
Burnett	Eidsvold	14.28	28 December	12.36 (8/2/2003)	1963
Burnett	Gayndah Flume	16.34	28 December	14.20 (5/2/1971)	1971
Burnett	Coringa	10.09	27 December	8.47 (16/3/1992)	1986
Burnett	Walla	20.10	29 December	18.07 (5/2/1971)	1968
Condamine	Clydesdale	4.78	27 December	4.65 (3/5/1996)	1971
Condamine	Centenary Bridge (Millmerran)	8.30	28 December	8.20 (February 1976)	1976
Condamine	Loudoun Bridge	11.20	29 December	10.89 (13/2/1976)	1956
Condamine	Warra-Kogan Road Bridge	15.00	30 December	14.00 (1956)	1956
Condamine	Brigalow Bridge	14.84	30 December	13.99 (14/2/1976)	1972
Condamine	Beruna	7.95	28 December	7.20 (8/2/1981)	1962
Condamine	Chinchilla Weir	15.38	31 December	13.97 (8/4/1988)	1956
Condamine	Condamine	15.25	1 January	14.25 (13/2/1942)	1924
Condamine	Cotswold	17.82	2 January	16.13 (8/5/1983)	1967
Balonne	Warkon	12.03	3 January	11.88 (13/1/1996)	1941
Balonne	Surat	12.75	4 January	12.40 (3/3/2010)	1910
Moonie	The Deep Crossing	5.65	27 December	4.45 (10/1/1996)	1970
Moonie	Tartha	7.00	28 December	6.75 (1956)	1956
Weir	O'Connor	14.58	28 December	14.57 (January 1956)	1956
Boyne	Awoonga Dam	4.16	28 December	1.74 (7/1/1991)	1987
Kolan	Fred Haigh Dam	3.85	29 December	1.73 (12/3/1977)	1977
Campaspe	Redesdale	6.30	14 January	5.80 (September 2010)	1953
Campaspe	Barnadown	7.59	15 January	6.15 (September 1983)	1977
Campaspe	Rochester Syphon	9.17	15 January	9.15 (September 1983)	1963
Loddon	Newstead	5.86	14 January	5.35 (July 1990)	1967
Loddon	Appin South	3.52	17 January	3.19 (October 1996)	1927
Avoca	Archdale Junc.	5.32	14 January	5.15 (September 1988)	1966
Avoca	Charlton	8.05	15 January	7.30 (September 2010)	1989
Avoca	Quambatook	3.01	18 January	2.50 (September 1983)	1967
Wimmera	Glenorchy	5.04	15 January	4.97 (September 1988)	1950

Table 4. A selection of record flood peak heights (preliminary data) reached during the event at sites with 20 or more years of observations. (HW – headwater/lake level; TW – tailwater/outflow level).