Summary of key issues

- During the week ending 13 November 2019 rainfall was restricted to small parts of south-eastern and northern Australia.

- Across cropping regions, rainfall totals of between 1 to 5 millimetres were recorded in parts of southern New South Wales, and much of Victoria and South Australia. Little to no rainfall was recorded across cropping regions in Queensland and Western Australia, and remaining cropping regions in New South Wales.

- While weekly temperature anomalies were not significantly above average, parts of north-eastern New South Wales and south-eastern Queensland have recorded daily maximum temperature anomalies in excess of 10°C above average for this time of year during the past week.

- This recent hot weather coupled with dry and gusty conditions has led to very high fire danger levels, and have sparked numerous dangerous bushfires over the past week.

- The positive Indian Ocean Dipole (IOD) continues and while the influence of IOD events on climatic conditions in Australia typically reduces in summer, this event could persist until mid-summer as it weakens.

- A negative Southern Annular Mode (SAM) event is also forecast to persist for the remainder of November. This negative SAM is likely to intensify dry and warm conditions across eastern Australia for the remainder of spring.

- The rainfall outlook for December to February 2019 indicates that a drier than average three months is more likely across parts of eastern Australia. In contrast, a wetter than average December to February is more likely for the north-west of Western Australia.

- Following below average October 2019 rainfall across much of Australia, 10-month deficiencies have increased slightly over south-eastern New South Wales, central and eastern Victoria, and the south of South Australia and Western Australia.

- Over the next eight days, a series of high-pressure systems are expected to persist over southern Australia, restricting the movement of rain-bearing systems across the continent.

- Across Australia’s cropping regions, the 8-day rainfall forecast indicates that 1 to 5 millimetres are expected across parts of northern Queensland and southern Western Australia.

- Water storage levels in the Murray-Darling Basin (MDB) decreased between 6 November and 13 November 2019 by 55 gigalitres (GL). Current volume of water held in storage is 9,843 GL which represents 39 per cent of total capacity. This is 24 percentage points or 3,128 GL less than at the same time last year.

- Allocation prices in the Victorian Murray below the Barmah Choke decreased from $950 per ML on 7 November 2019 to $940 per ML on 14 November 2019.
1. Climate

1.1. Rainfall this week

During the week ending 13 November 2019 rainfall was restricted to small parts of south-eastern and northern Australia.

Across cropping regions, rainfall totals of between 1 to 5 millimetres were recorded in parts of southern New South Wales, and much of Victoria and South Australia. Little to no rainfall was recorded across cropping regions in Queensland and Western Australia, and remaining cropping regions in New South Wales.

Rainfall for the week ending 13 November 2019

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Issued: 13/11/2019

Note: The rainfall analyses and associated maps utilise data contained in the Bureau of Meteorology climate database, the Australian Data Archive for Meteorology (ADAM). The analyses are initially produced automatically from real-time data with limited quality control. They are intended to provide a general overview of rainfall across Australia as quickly as possible after the observations are received. For further information go to http://www.bom.gov.au/climate/rainfall/
1.2. Temperature anomalies this week

For the week ending 12 November 2019, maximum temperatures were 2°C to 8°C above average across large areas of Western Australia and parts of northern and eastern Australia. In contrast, maximum temperatures were 2°C to 6°C below average across parts of south-eastern Australia and minimum temperatures were 2°C to 8°C below average across large areas of eastern and northern Australia.

While weekly temperature anomalies were not significantly above average, parts of north-eastern New South Wales and south-eastern Queensland have recorded daily maximum temperature anomalies in excess of 10°C above average for this time of year during the past week. This recent hot weather coupled with dry and gusty conditions has led to very high fire danger levels, and have sparked and fuelled numerous dangerous bushfires over the past week.

Maximum temperature anomalies for the week ending 12 November 2019

Minimum temperature anomalies for the week ending 12 November 2019

Note: Spatial temperature analyses are based on historical weekly temperature data provided by the Bureau of Meteorology. These temperature anomaly maps show the departure of the maximum and minimum temperatures from the average over the 1961 to 1990 reference period. For further information go to: http://www.bom.gov.au/jsp/awap/temp/index.jsp.
1.3. National Climate Outlook

The rainfall and temperature outlooks presented here show the likelihood, represented as a percentage, of experiencing wetter or drier (and warmer or cooler) than median climatic conditions for the given outlook periods. These climate outlooks are generated by ACCESS–S (Australian Community Climate Earth-System Simulator–Seasonal). ACCESS–S is the Bureau of Meteorology’s dynamical (physics-based) weather and climate model used for monthly, seasonal and longer-lead climate outlooks.


The El Niño-Southern Oscillation is currently neutral and expected to remain neutral until at least early 2020. The positive Indian Ocean Dipole (IOD) continues and while the influence of IOD events on climatic conditions in Australia typically reduces in summer, this event could persist until mid-summer as it weakens. A positive IOD typically brings below average spring rainfall and warmer days to southern and central Australia. A negative Southern Annular Mode (SAM) event is also forecast to persist for the remainder of November. This negative SAM in spring is likely to intensify dry and warm conditions across eastern Australia, bring wetter than average conditions to western Tasmania and increase the chance of spring heatwaves across southern and eastern Australia.

The latest rainfall outlook released by the Bureau of Meteorology suggests that a drier than average December is more likely for most of the country. In contrast, a wetter than average December is more likely across parts of the north-west of Western Australia (Bureau of Meteorology ‘National Climate Outlook’, 7 November 2019).

![Chance of exceeding the median rainfall December 2019](image)

**Chance of exceeding the median rainfall December 2019**
The Bureau of Meteorology’s climate outlooks are given as a probability (or chance) of exceeding a specified rainfall or temperature threshold. In the case of the Bureau’s rainfall outlook, it is represented as the chance of rainfall being above median, expressed as a percentage. While this probabilistic forecast indicates that there is no strong shift towards a wetter or drier than average three months for much of Australia, several months of above average rainfall would be needed to ease current long-term deficiencies.

The rainfall outlook for December to February 2019 indicates that a drier than average three months is more likely across parts of eastern Australia. In contrast, a wetter than average December to February is more likely for the north-west of Western Australia. Across much of Australia, there is no strong shift towards a wetter or drier than average three months (Bureau of Meteorology ‘National Climate Outlook’, 7 November 2019).

**Chance of exceeding the median rainfall December 2019 to February 2020**
The temperature outlook for December to February 2019 indicates that daytime temperatures are more likely to be warmer than average for much of the country. Night-time temperatures are also likely to be warmer than average for much of Australia, with the exception of Tasmania and isolated parts of north-eastern Queensland where the chances of warmer or cooler nights are roughly equal (Bureau of Meteorology ‘National Climate Outlook’, 7 November 2019).

**Chance of exceeding the median maximum temperature December 2019 to February 2020**

![Map showing the chance of exceeding the median maximum temperature](image1)

**Chance of exceeding the median minimum temperature December 2019 to February 2020**

![Map showing the chance of exceeding the median minimum temperature](image2)
1.4. Rainfall deficiencies

The rainfall deficiencies presented below are sourced from the Bureau of Meteorology’s monthly ‘Drought Statement’. As short to longer-term deficiencies become evident the Bureau of Meteorology monitors these events through their lifecycle—from emergence through to their dissipation—with the time-period of analysis each month increasing from a fixed starting point to the easing of the deficiencies.

For further information, go to http://www.bom.gov.au/climate/drought

Following below average October 2019 rainfall across much of Australia, 10-month deficiencies have increased slightly over south-eastern New South Wales, central and eastern Victoria, and the south of South Australia and Western Australia. For the 10-month period ending October 2019, north-eastern New South Wales, south-eastern Queensland, large areas of southern and eastern Western Australia, and much of South Australia and the Northern Territory recorded rainfall totals in the lowest 5 to 10 per cent of the historical record (serious or severe rainfall deficiencies).

Areas recording rainfall totals in the lowest 5 to 10 per cent of the historical record are also evident at longer timescales. For the 18-months ending October 2019 serious to severe rainfall deficiencies persist across much of New South Wales, South Australia, parts of Victoria and south-eastern Queensland, much of northern and parts of southern Western Australia and much of the Northern Territory (Bureau of Meteorology ‘Drought Statement’, 8 November 2019).

Rainfall deficiencies for the 10-month period 1 January to 31 October 2019
Rainfall deficiencies for the 19-month period 1 April 2018 to 31 October 2019
1.5. Rainfall forecast for the next eight days

Over the next eight days, a series of high-pressure systems are expected to persist over southern Australia, restricting the movement of rain-bearing systems across the continent. Rainfall totals of between 5 and 15 millimetres are forecast for isolated parts of coastal south-eastern Australia and the far north of the Northern Territory. Higher rainfall totals up to 100 millimetres are forecast for western Tasmania.

In cropping regions, rainfall of between 1 and 5 millimetres are expected across parts of northern Queensland and southern Western Australia. Little to no rainfall is expected across remaining cropping regions.

Total forecast rainfall (mm) for the period 14 November to 21 November 2019

Note: This rainfall forecast is produced from computer models. As the model outputs are not altered by weather forecasters, it is important to check local forecasts and warnings issued by the Bureau of Meteorology.
2. Water

2.1. Water markets – current week

Water storage in the Murray–Darling Basin (MDB) decreased by 55 gigalitres (GL) between 6 November and 13 November 2019. The current volume of water held in storage is 9,843 GL, which represents 39% of total capacity. This is 24% or 3,128 GL less than at the same time last year. Water storage data is sourced from the BOM.

![Water storages in the Murray-Darling Basin, 2013–2019](chart)

Allocation prices in the Victorian Murray below the Barmah Choke decreased from $950 per ML on 7 November 2019 to $940 per ML on 14 November 2019. Binding trade limits, maturing almond trees and dry seasonal conditions, have left the catchments below the Barmah Choke exposed to high water prices. Prices in other catchments in the southern Murray-Darling Basin remain lower (see table).

<table>
<thead>
<tr>
<th>Region</th>
<th>$/ML</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW Murray Above</td>
<td>639</td>
</tr>
<tr>
<td>NSW Murrumbidgee</td>
<td>740</td>
</tr>
<tr>
<td>VIC Goulburn-Broken</td>
<td>650</td>
</tr>
<tr>
<td>VIC Murray Below</td>
<td>940</td>
</tr>
</tbody>
</table>

Surface water trade activity, Southern Murray–Darling Basin

The trades shown reflect estimated market activity and do not encompass all register trades. The price is shown for the VIC Murray below the Barmah Choke. Historical prices (before 1 July 2019) are ABARES estimates after removing outliers from BOM water register data. Prices after 1 July 2019 and prior to the 30 October 2019 reflect recorded transaction prices as sourced from Ruralco. Prices after the 30 October 2019 are sourced from Waterflow. Data for volume traded is sourced from the BOM water register. Data shown is current at 14 November 2019.

### 3. Commodities

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Week ended</th>
<th>Unit</th>
<th>Latest price</th>
<th>Price week prior</th>
<th>Weekly change</th>
<th>Price 12 months prior</th>
<th>Year on year change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Selected World Indicator Prices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian Dollar – AUD/USD Exchange Rate</td>
<td>13-Nov</td>
<td>US$/A$</td>
<td>0.68</td>
<td>0.69</td>
<td>-1%</td>
<td>0.72</td>
<td>-6%</td>
</tr>
<tr>
<td>Wheat – US no. 2 hard red winter wheat, fob Gulf</td>
<td>12-Nov</td>
<td>US$/t</td>
<td>219</td>
<td>216</td>
<td>1%</td>
<td>235</td>
<td>-7%</td>
</tr>
<tr>
<td>Coarse Grains – US no. 2 yellow corn, fob Gulf</td>
<td>13-Nov</td>
<td>US$/t</td>
<td>168</td>
<td>170</td>
<td>-1%</td>
<td>162</td>
<td>4%</td>
</tr>
<tr>
<td>Canola – Rapeseed, Europe, fob Hamburg</td>
<td>12-Nov</td>
<td>US$/t</td>
<td>422</td>
<td>425</td>
<td>&lt;1%</td>
<td>431</td>
<td>-2%</td>
</tr>
<tr>
<td>Cotton – Cotlook ‘A’ Index</td>
<td>13-Nov</td>
<td>USc/lb</td>
<td>75.3</td>
<td>75.3</td>
<td>0%</td>
<td>87.1</td>
<td>-14%</td>
</tr>
<tr>
<td>Sugar – Intercontinental Exchange, nearby futures, no.11 contract</td>
<td>07-Nov</td>
<td>Ac/kg clean</td>
<td>1,555</td>
<td>1,594</td>
<td>-2%</td>
<td>1,776</td>
<td>-12%</td>
</tr>
<tr>
<td>Wool – Eastern Market Indicator</td>
<td>01-Nov</td>
<td>Ac/kg clean</td>
<td>1,687</td>
<td>1,672</td>
<td>&lt;1%</td>
<td>1,931</td>
<td>-13%</td>
</tr>
<tr>
<td>Wool – Western Market Indicator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Selected domestic crop indicator prices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milling Wheat – ASW1, track quote, Port Adelaide, SA</td>
<td>12-Nov</td>
<td>A$/t</td>
<td>295</td>
<td>287</td>
<td>3%</td>
<td>375</td>
<td>-21%</td>
</tr>
<tr>
<td>Feed Wheat – General purpose, Sydney, NSW</td>
<td>13-Nov</td>
<td>A$/t</td>
<td>380</td>
<td>380</td>
<td>0%</td>
<td>440</td>
<td>-14%</td>
</tr>
<tr>
<td>Feed Barley – Sydney, NSW</td>
<td>13-Nov</td>
<td>A$/t</td>
<td>360</td>
<td>360</td>
<td>0%</td>
<td>435</td>
<td>-17%</td>
</tr>
<tr>
<td>Grain Sorghum – Sydney, NSW</td>
<td>13-Nov</td>
<td>A$/t</td>
<td>345</td>
<td>345</td>
<td>0%</td>
<td>410</td>
<td>-16%</td>
</tr>
<tr>
<td><strong>Selected domestic livestock indicator prices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef – Eastern Young Cattle Indicator</td>
<td>07-Nov</td>
<td>Ac/kg cwt</td>
<td>522</td>
<td>511</td>
<td>2%</td>
<td>519</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Mutton – Mutton indicator (18–24 kg fat score 2–3), Vic</td>
<td>08-Nov</td>
<td>Ac/kg cwt</td>
<td>607</td>
<td>582</td>
<td>4%</td>
<td>415</td>
<td>46%</td>
</tr>
<tr>
<td>Lamb – Eastern States Trade Lamb Indicator</td>
<td>07-Nov</td>
<td>Ac/kg cwt</td>
<td>759</td>
<td>760</td>
<td>&lt;1%</td>
<td>678</td>
<td>12%</td>
</tr>
<tr>
<td>Pig – Eastern Seaboard (60.1–75 kg), average of buyers &amp; sellers</td>
<td>01-Nov</td>
<td>Ac/kg cwt</td>
<td>411</td>
<td>409</td>
<td>&lt;1%</td>
<td>280</td>
<td>47%</td>
</tr>
<tr>
<td>Goat – Eastern States (12.1–16 kg)</td>
<td>11-Nov</td>
<td>Ac/kg cwt</td>
<td>852</td>
<td>874</td>
<td>-3%</td>
<td>538</td>
<td>58%</td>
</tr>
<tr>
<td>Live cattle – Light steers ex Darwin to Indonesia</td>
<td>09-Nov</td>
<td>Ac/kg lwt</td>
<td>315</td>
<td>315</td>
<td>0%</td>
<td>310</td>
<td>2%</td>
</tr>
<tr>
<td>Live sheep – Live wether (Muchea WA saleyard) to Middle East</td>
<td>21-Oct</td>
<td>$/head</td>
<td>86</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td>Indicator</td>
<td>Week ended</td>
<td>Unit</td>
<td>Latest price</td>
<td>Price week prior</td>
<td>Weekly change</td>
<td>Price 12 months prior</td>
<td>Year on year change</td>
</tr>
<tr>
<td>-----------</td>
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<td>---------------------</td>
</tr>
<tr>
<td>Dairy – Whole milk powder</td>
<td>05-Nov</td>
<td>US$/t</td>
<td>3,254</td>
<td>3,133</td>
<td>4% ⇧</td>
<td>2,655</td>
<td>23% ⇧</td>
</tr>
<tr>
<td>Dairy – Skim milk powder</td>
<td>05-Nov</td>
<td>US$/t</td>
<td>2,924</td>
<td>2,743</td>
<td>7% ⇧</td>
<td>1,997</td>
<td>46% ⇧</td>
</tr>
<tr>
<td>Dairy – Cheddar cheese</td>
<td>05-Nov</td>
<td>US$/t</td>
<td>3,609</td>
<td>3,636</td>
<td>&lt;1% ⇩</td>
<td>3,250</td>
<td>11% ⇧</td>
</tr>
<tr>
<td>Dairy – Anhydrous milk fat</td>
<td>05-Nov</td>
<td>US$/t</td>
<td>5,191</td>
<td>5,065</td>
<td>2% ⇧</td>
<td>5,044</td>
<td>3% ⇧</td>
</tr>
</tbody>
</table>

*Global Dairy Trade prices are updated twice monthly on the first and third Tuesday of each month.*
3.1. Selected world indicator prices

- **World wheat indicator price**
  - US No. 2, hard red winter wheat, fob Gulf
  - Week ended 12 November 2019

- **World coarse grains indicator price**
  - US corn No. 2, fob Gulf
  - Week ended 13 November 2019

- **World canola indicator price**
  - Europe fob Hamburg
  - Week ended 12 November 2019

- **World cotton indicator price**
  - Cotlook ‘A’ index
  - Week ended 13 November 2019
3.2. Global Dairy Trade (GDT) weighted average prices

Whole milk powder price
5 November 2019

Skim milk powder price
5 November 2019

Cheddar cheese price
5 November 2019

Anhydrous milk fat price
5 November 2019
3.3. Selected domestic crop indicator prices

Grain sorghum indicator price
Sydney, NSW
Week ended 13 November 2019

Feed barley indicator price
Sydney, NSW
Week ended 13 November 2019

Feed wheat indicator price
General Purpose, Sydney, NSW
Week ended 13 November 2019

Milling wheat indicator price
ASW1, track quote, Port Adelaide, SA
Week ended 12 November 2019
3.4. Selected domestic livestock indicator prices

Eastern Young Cattle Indicator
Week ended 7 November 2019

Mutton indicator price in Victoria
(18–24 kg fat score 2–3)
Week ended 8 November 2019

Eastern States Trade Lamb Indicator
Week ended 7 November 2019

Pig indicator price Eastern Seaboard
(60.1–75 kg)
Week ended 1 November 2019
Goat indicator price Eastern States
(12.1–16 kg)
Week ended 11 November 2019

Live cattle indicator price
light steers ex Darwin
Week ended 9 November 2019

Live sheep indicator price
wether ex Western Australia
Week ended 21 October 2019
3.5. Selected fruit and vegetable prices – week ended 14 November 2019
4. Data attribution

Climate
Bureau of Meteorology

Water
New South Wales
Queensland
- Sunwater: www.sunwater.com.au
- Seqwater: http://seqwater.com.au
South Australia
- South Australian Department of Environment, Water and Natural Resources: www.environment.sa.gov.au
Victoria
- Goulburn–Murray Water: www.g-mwater.com.au

Commodities
Fruit and vegetables
- Datafresh: www.freshstate.com.au
Pigs
- Australian Pork Limited: www.australianpork.com.au
Dairy
World wheat, canola
- International Grains Council
World coarse grains
- United States Department of Agriculture
World cotton
- Cotlook: www.cotlook.com/
World sugar
- New York Stock Exchange - Intercontinental Exchange
Wool
Milling wheat
- ProFarmer
Domestic wheat, barley, sorghum
- The Land: hardcopy or online at www.theland.farmonline.com.au/markets
Domestic canola
- The Weekly Times: hardcopy
Cattle, beef, mutton, lamb, goat and live export