National Climate and Water Briefing

31 May 2018
Welcome

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Assistant manager, Agriculture program
Bureau of Meteorology
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Assistant manager, Agriculture program
Bureau of Meteorology
Climate conditions and outlook

Joel Lisonbee
Agriculture Program
Bureau of Meteorology

Photo: ABC Rural, supplied by Trevor Wright/William Creek Hotel
Recent conditions and autumn overview

- Autumn overview
- Climate drivers
- Winter outlook
Temperatures—Year to date

- 3rd warmest start to the year on record (mean temperature)
  - 2nd highest maximum temperature
- Warmest January to May on record for New South Wales—2.7°C above average

As at 29 May 2018
Minimum temperature—autumn

As at 29 May 2018

9th warmest autumn minimums for New South Wales

6th warmest autumn minimums for Tasmania

March to May minimum temperature
## Maximum temperature—autumn

March to May minimum temperature

<table>
<thead>
<tr>
<th>Region</th>
<th>Rank</th>
<th>Mean</th>
<th>Actual</th>
<th>Anomaly</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>highest</td>
<td>24.0 °C</td>
<td>26.7 °C</td>
<td>2.8 °C</td>
</tr>
<tr>
<td>MDB</td>
<td>highest</td>
<td>24.5 °C</td>
<td>27.0 °C</td>
<td>2.5 °C</td>
</tr>
<tr>
<td>Vic.</td>
<td>2nd highest</td>
<td>20.3 °C</td>
<td>22.0 °C</td>
<td>1.8 °C</td>
</tr>
<tr>
<td>WA</td>
<td>2nd highest</td>
<td>29.4 °C</td>
<td>31.5 °C</td>
<td>2.0 °C</td>
</tr>
<tr>
<td>SA</td>
<td>2nd highest</td>
<td>26.5 °C</td>
<td>28.6 °C</td>
<td>2.1 °C</td>
</tr>
<tr>
<td>Aust.</td>
<td>4th highest</td>
<td>28.4 °C</td>
<td>30.2 °C</td>
<td>1.8 °C</td>
</tr>
<tr>
<td>NT</td>
<td>8th highest</td>
<td>31.3 °C</td>
<td>32.9 °C</td>
<td>1.6 °C</td>
</tr>
<tr>
<td>Qld</td>
<td>17th highest</td>
<td>29.5 °C</td>
<td>30.5 °C</td>
<td>1.0 °C</td>
</tr>
<tr>
<td>Tas.</td>
<td>20th highest</td>
<td>15.3 °C</td>
<td>15.7 °C</td>
<td>0.4 °C</td>
</tr>
</tbody>
</table>

As at 29 May 2018
Rainfall

As at 29 May 2018

March

April

May

Autumn

Australian Government
Bureau of Meteorology

Lowest on record
Very much below average
Below Average
Above Average
Very much above average
Highest on record
Rainfall

- Lowest Autumn rainfall since 2009 for Australia
  - 33% of seasonal mean rainfall
- 3rd lowest May rainfall on record for Australia
  - Lowest since May 2008
Why is recent rainfall below average?

- Higher pressure than normal over Australia
- Rain bearing fronts pushed further to the south
Meteorological drought

Area that has been in drought (lowest 20%) in the last two years

Rainfall deficiencies January–May 2018
Low rainfall does not mean no rainfall

Rainfall totals for May

- 800 mm
- 600 mm
- 400 mm
- 300 mm
- 200 mm
- 100 mm
- 50 mm
- 25 mm
- 10 mm
- 5 mm
- 1 mm
- 0 mm
Autumn break

Two ways to define the autumn break

1. for pasture growth (top map)
   - 25 mm in 7 days,
   - plus another 25 mm in the next 10 days

2. for crop production (bottom map)
   - 25 mm in 3 days,
   - or 30 mm in 7 days

As of 28 May 2018

Bureau stations that have received sufficient rainfall since 1 March to reach the definition of the Autumn break for pasture growth

Bureau stations that have received sufficient rainfall since 1 March to reach the definition of the Autumn break for crop production
Agricultural impacts

• Qld and NSW:
  – Supplemental feeding for livestock
  – Lower stocking rates through winter

• Rain across the Western Australian grain belt has been sufficient
Forecast rainfall for next 4 days
Climate drivers

• Autumn overview
• Climate drivers
• Winter outlook
Sea surface temperature anomaly: 21–27 May

- Neutral
- Positive for the first time since August
Sea surface temperature anomaly: 21–27 May
Indian Ocean Dipole outlook

IOD outlook

Australian Government
Bureau of Meteorology
Winter outlook

• Autumn overview
• Climate drivers
• Winter outlook
Maximum temperature outlook: winter 2018

Chance of exceeding median maximum temperature

Past accuracy

Australian Government
Bureau of Meteorology
Minimum temperature outlook: winter 2018

Chance of exceeding median minimum temperature

Past accuracy

Past accuracy
Rainfall outlook: winter 2018

Chance of exceeding median rainfall

Australian Government
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Summary

• Autumn amongst the driest and warmest on record in the south
• Dry start of the southern crop and pasture growing season
• Main climate drivers are neutral, and expected to remain so through winter
• Warm, dry winter is likely for much of southern Australia
• A likely continuation of the meteorological drought in southeast Australia
Thank you

Questions?
Joel Lisonbee
Hydrological conditions and outlook

Robert Pipunic
Bureau of Meteorology, Water Forecasting Services
Recent hydrological conditions

- Recent hydrological conditions
- Water storages
- Streamflow outlooks
Rainfall: Autumn 2018

Rainfall

Rainfall minus Evapotranspiration (ET)
Rainfall: Autumn months 2018

March

April

May 1 to 28
Evapotranspiration (ET): Autumn 2018

Potential ET
(evaporative demand of atmosphere)

Actual ET
(depends on water supply)
Lower-layer soil moisture (10–100cm): Autumn 2018

Summer to Autumn moisture change

soil moisture
Lower-layer soil moisture (10–100cm): Autumn months 2018

Monthly change February to March

Monthly change March to April

Monthly change April to May

March soil moisture

April soil moisture

May 1 to 28 soil moisture
Observed streamflow: April 2018

Australia

South West Coast

South East Coast (Vic)

Murray–Darling Basin

South East Coast (NSW)

Tasmania

North East Coast

High flow
Near median flow
Low flow
Water storages

- Recent hydrological conditions
- Water storages
- Streamflow outlooks
Water storage levels

As at 29 May 2018

Australia Government
Bureau of Meteorology
Streamflow outlooks

- Recent conditions
- Water storages
- Streamflow outlooks
Summary

- Dry autumn for most of Australia, except parts of Queensland
- Some soil moisture in Queensland from March rainfall persisted through autumn
- Year on year water storage drops for MDB and southeast mainland coast
- Mostly low streamflows in April – median and high flows concentrated in Queensland
- Low flows likely to dominate May to July (57% of locations) – with low to moderate forecast skill this time of year in southern Australia
Seasonal Streamflow Forecast Registered Users……

New website coming soon! Seasonal Streamflow Forecasts down to monthly scale
Thank you

Questions?
Robert Pipunic
Changes to the National Climate and Water Briefing

• Moving to quarterly briefings
  – partnering with ABARES
  – an agricultural focus, including a commodity report
  – but all still welcome!

• Briefings for your organisation
  – tailored content and timing
  – to meet your information needs
  – routine or ad hoc

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Next briefing
ABARES Commodities Outlook
Thursday, 28 June 2018