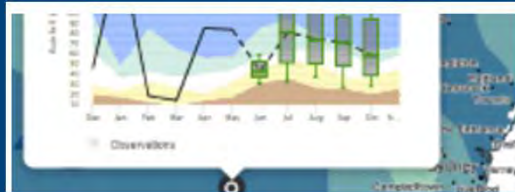
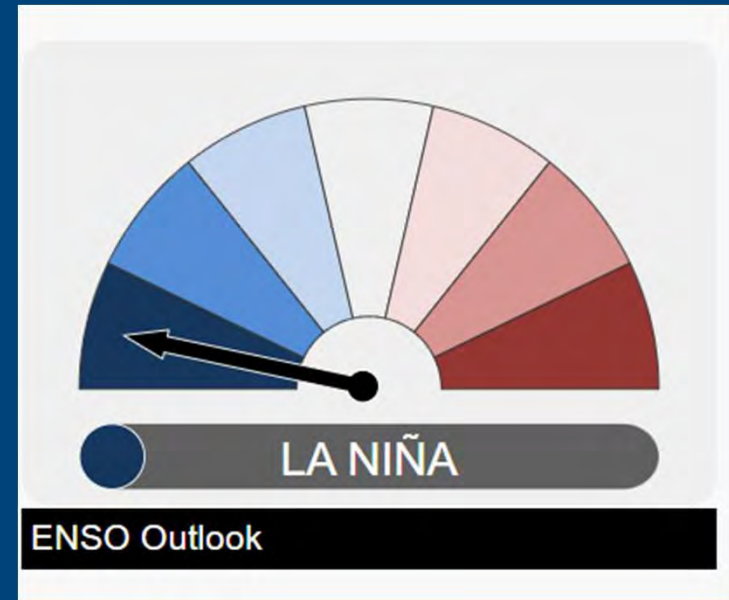


New BoM forecast products to help manage a La Niña summer



Climate outlooks – more outlook maps and graphs
New 'Chance of 3-day totals' maps, and more information for any location.

Peter Hayman
3 November 2022

ABC

[La Niña to drive more possible cyclones, flooding rains across northern Australia as wet season officially begins](#)

Northern Australia is set to see a "warmer and wetter" build up period this year, with "a higher number of tropical cyclones" possible this...

1 day ago



7NEWS

[Third La Nina weather event in three years declared in Australia](#)

Hello, and welcome to the 7NEWS.com.au live and breaking news blog for today, Tuesday September 12. Here is where you can get the latest...

3 weeks ago

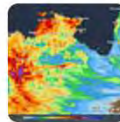


9News

[First sign La Niña and the wet weather it brings is returning](#)

Rain heading for much of Australia this week is consistent with the return of the La Niña weather system, ...

1 week ago



The Guardian

[With another La Niña under way, experts warn Australia's east coast remains at high risk](#)

If the latest event brings flooding, it will be the fourth NSW summer in a row marked by natural disaster; in Queensland, the fifth.

1 week ago



9News

[Australia's east coast set to be smashed by third-consecutive La Nina this summer](#)

A third-consecutive La Niña event has been predicted for Australia, the Bureau of Meteorology [BoM] has indicated, meaning wet conditions...

3 weeks ago



The Guardian

[Bureau of Meteorology declares third La Niña is officially under way for Australia](#)

East coast communities prepare for more rain and floods as they enter relatively rare third year of climate event.

3 weeks ago



Sydney Morning Herald

[Is summer cancelled \(again\)? What La Nina's return means](#)

If you haven't heard the news, you must be living under an umbrella. La Nina is not done with us just yet.

3 weeks ago




The Guardian

[Heavy rain forecast for Australia's east coast as third La Niña brings fears of renewed flooding](#)

Widespread thunderstorms will make Thursday the 'wettest day' for NSW during public holiday honouring the Queen's death.

2 weeks ago

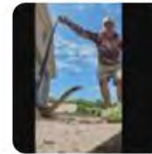


 NBN News

Snakes on the move as La Nina provides food, hiding spots

The weather's getting warmer and wetter – perfect conditions for snakes seeking out their prey. A reptile catcher in Lake Macquarie says...

1 day ago



 The Guardian

Colder early winter in Europe could worsen cost of living crisis, say forecasters

European meteorological agency warns La Niña weather pattern makes cold and dry snap more likely.

2 days ago




 The Guardian

California's three-year drought continues with no relief in sight

Despite some rainfall, state is still suffering from an extreme water shortage driven by the climate crisis – and La Niña may worsen it.

1 day ago

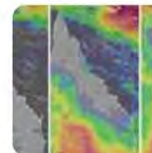


 The Courier Mail

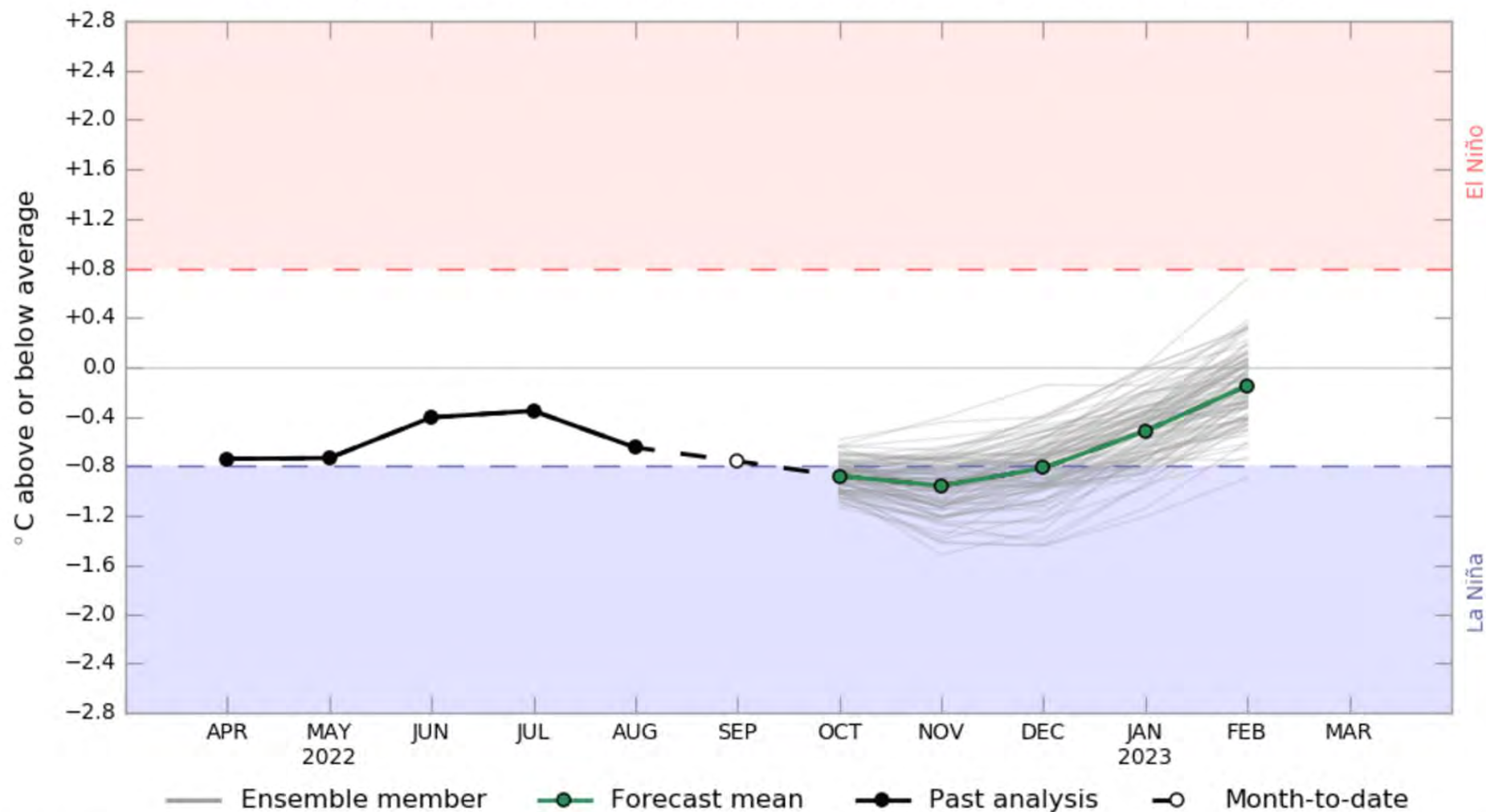
80mm+ falls, hail, big winds: Severe weather hits Queensland

Severe weather, including hail and strong winds, has hit parts of Queensland, as the state faces days of flooding rain.

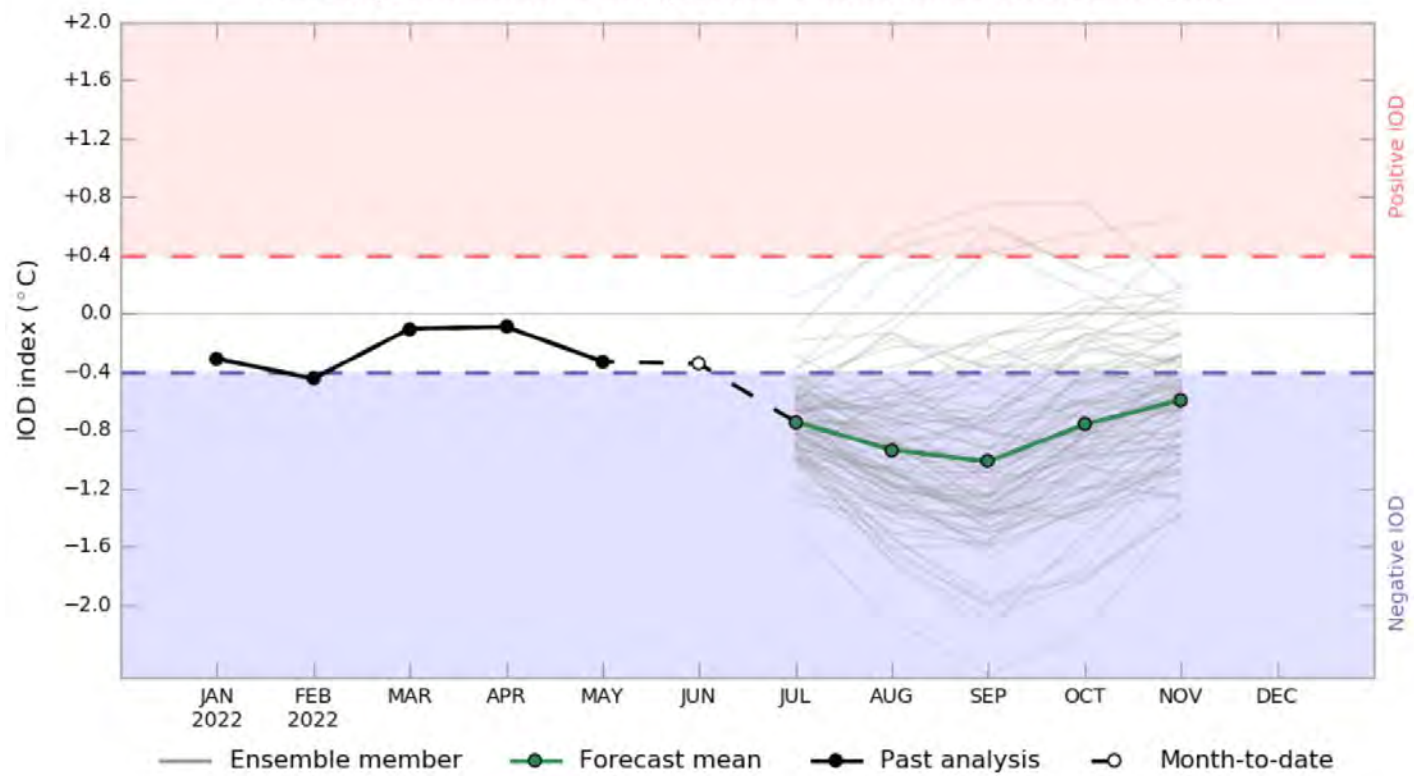
12 hours ago

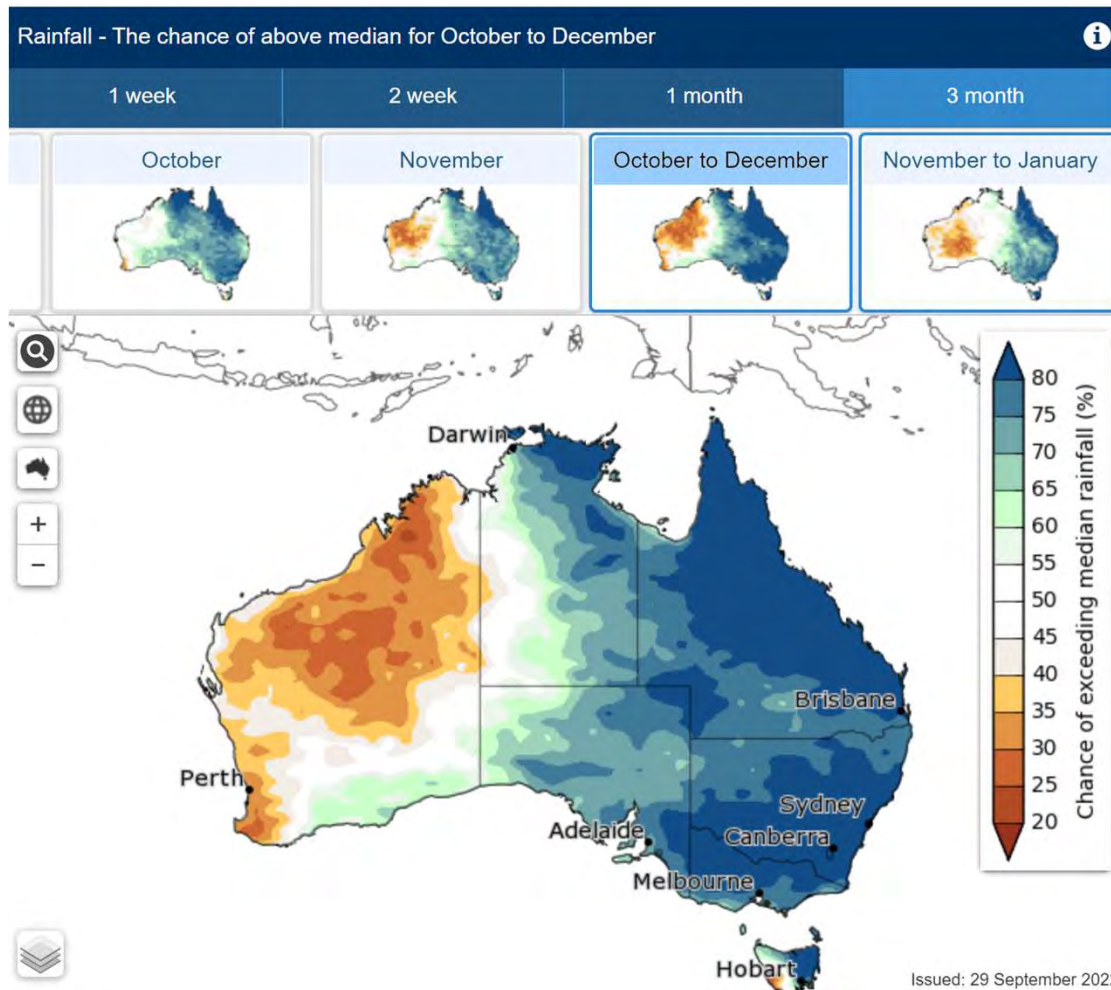


Monthly sea surface temperature anomalies for NINO3.4 region



Monthly sea surface temperature anomalies for IOD region

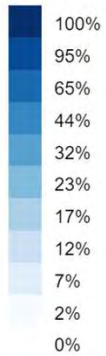




[Overview—Summary - Climate Outlooks \(bom.gov.au\)](https://bom.gov.au)

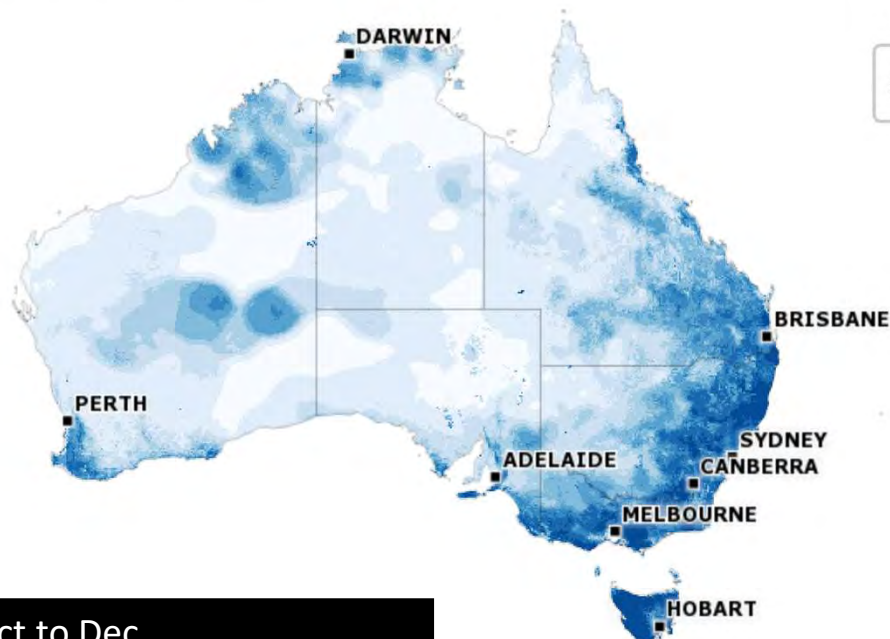
Displaying: Root zone soil moisture, Month-to-date 4 October 2022

Root zone soil moisture

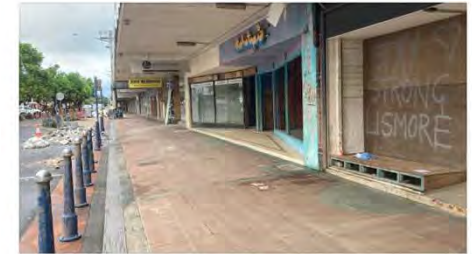
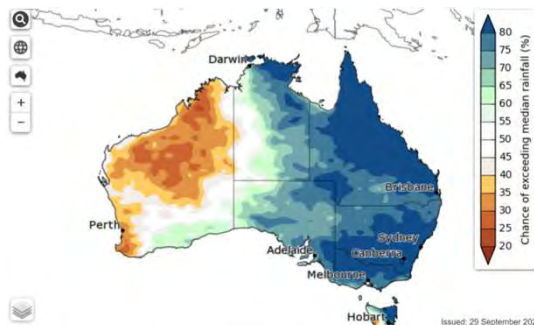


Values

Actual Relative



Oct to Dec



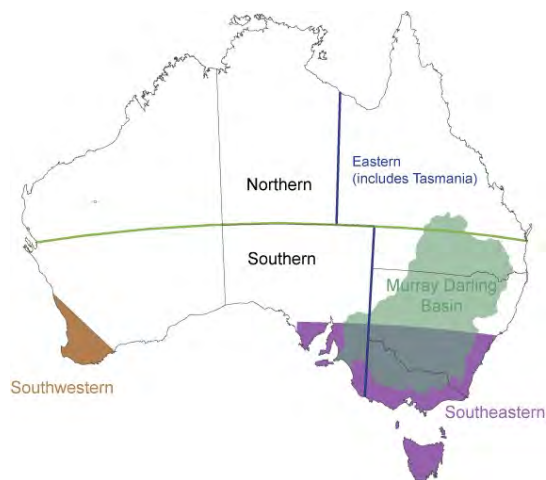
I live in a flood-prone area. The thought of another La Niña makes me want to cry

A third La Niña has been declared for Australia. For the people of the Northern Rivers, a sense of dread has now become a way of life.

ABC EVERYDAY / WEATHER

Using forecasts that are too good to ignore, but not good enough to be sure.

- La Nina changes the odds towards a wetter summer, but it is not a guarantee. (1 in 4 La Nina summers but 1 in 10 very wet summers)
- Good reason to follow weather, multiweek and seasonal outlooks
- Wine Australia has been part of a consortium of RDCs to work with Department of Agriculture on Forewarned is Forearmed. There are five new forecast products.
- Climate change impact on La Nina (ongoing research). Air holds 7% more moisture per degree warming.
- Using uncertain forecast information in risky decisions



About 30 La Nina in last 120 years

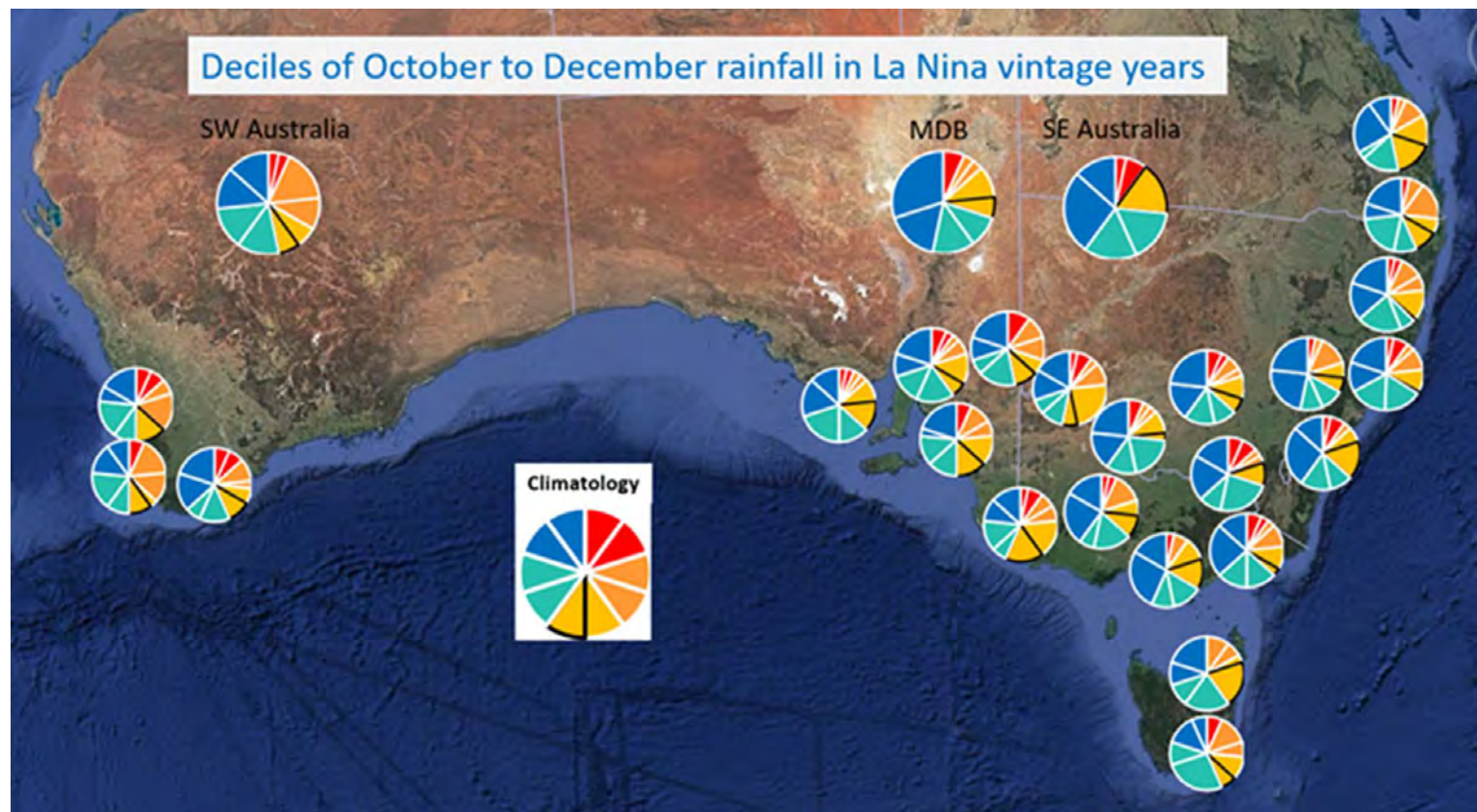


October to December

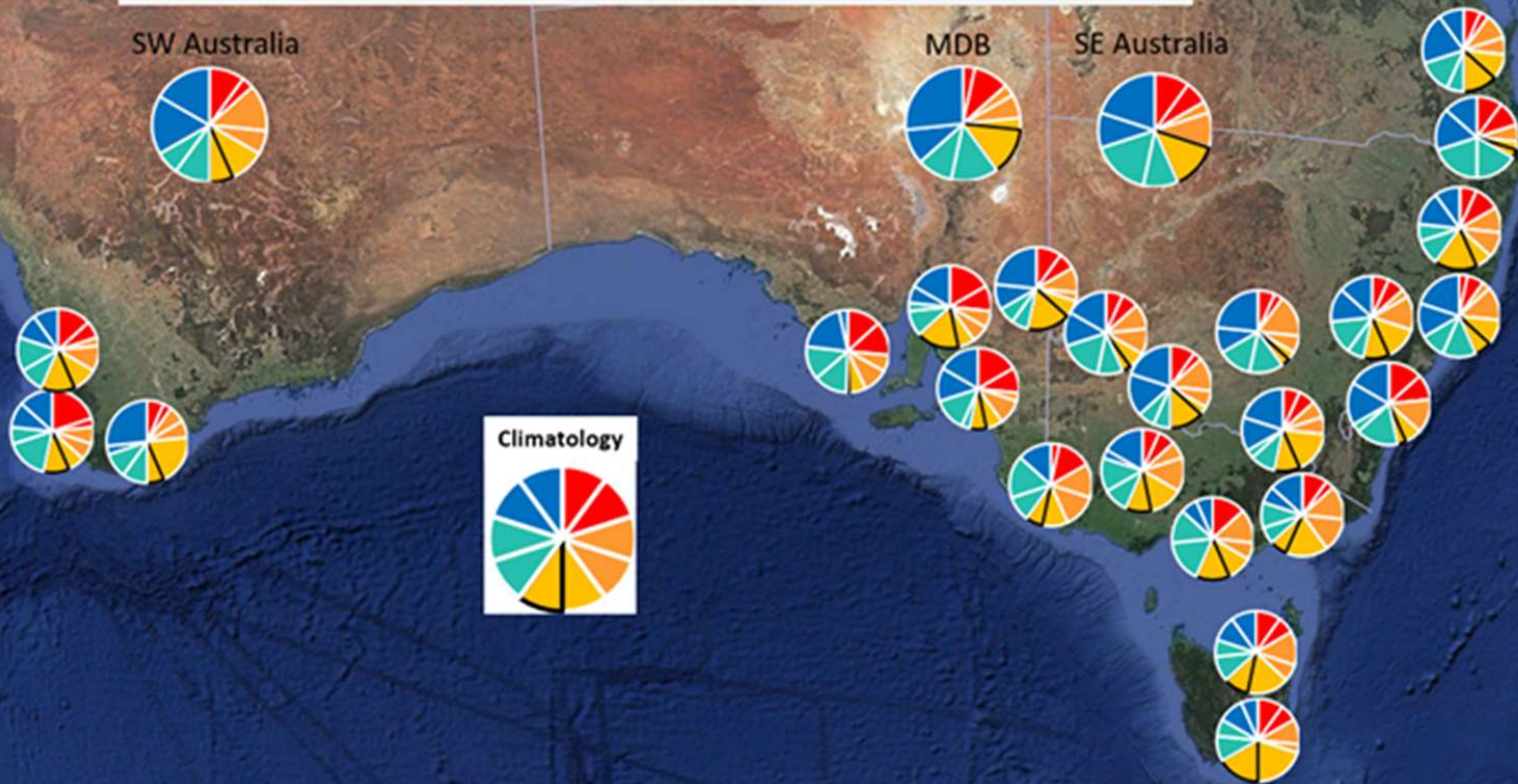
January to March

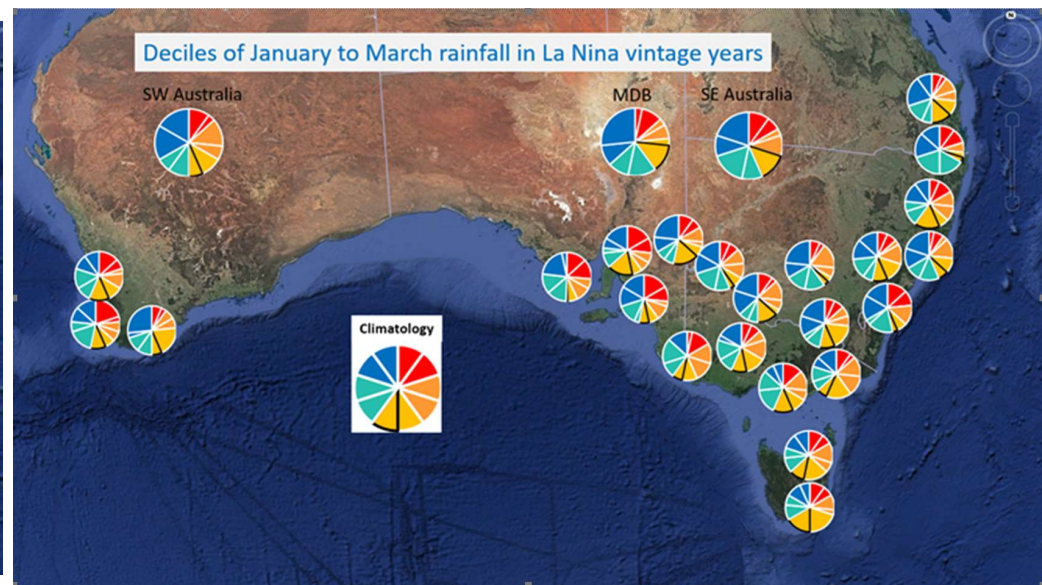
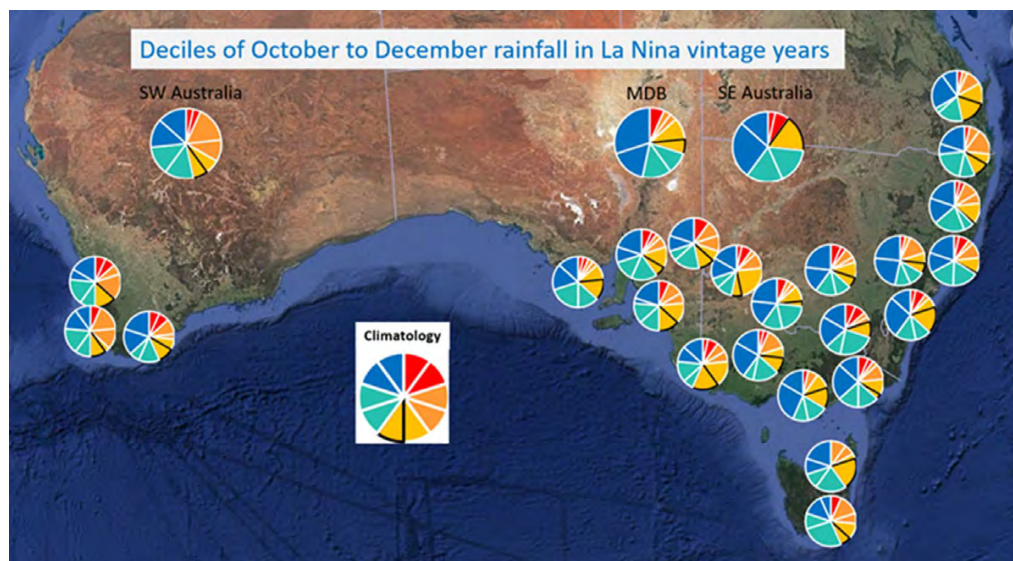
SE Australia	112mm (10%) 149mm (90%) 182mm (40%)		88mm (17%) 119mm (70%) 148mm (30%)	
Southern Australia	68mm (7%) 88mm (80%) 114mm (47%)		76mm (13%) 100mm (67%) 126mm (40%)	
MDB	87mm (7%) 120mm (77%) 162mm (47%)		86mm (13%) 123mm (73%) 180mm (37%)	
SW Australia	64mm (7%) 85mm (60%) 115mm (27%)		26mm (13%) 44mm (57%) 74mm (33%)	

Deciles of October to December rainfall in La Nina vintage years



Deciles of January to March rainfall in La Nina vintage years





La Nina swings the odds to an increased chance of being wetter



Australian Government
Bureau of Meteorology

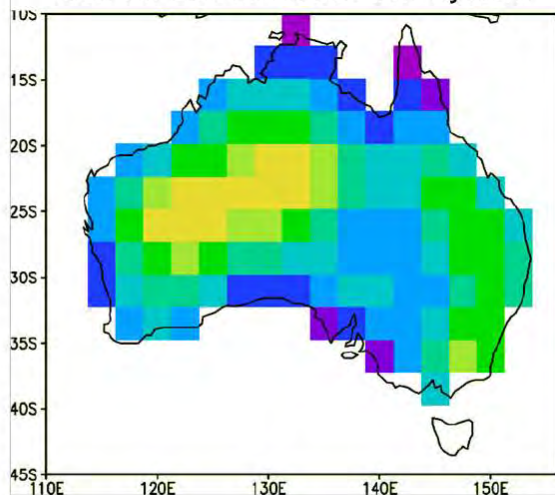
Enhanced resolution for the atmosphere and land with ACCESS-S

Topography

Grid resolution increase from 250 km to 60 km
Able to resolve Dividing Range, Tasmania, coastal zone

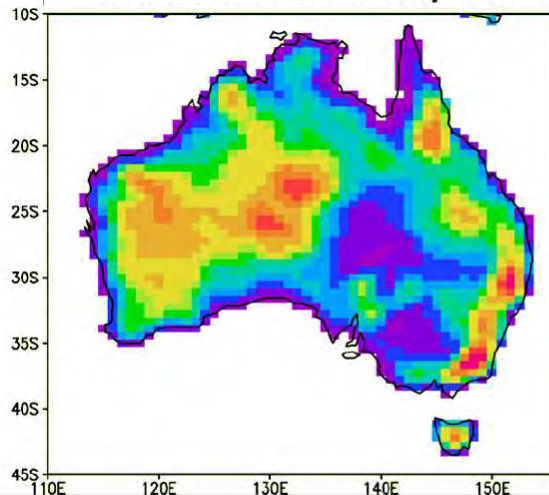
POAMA-2

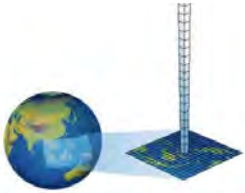
Current 250 km resolution system



ACCESS-S

New 60 km resolution system

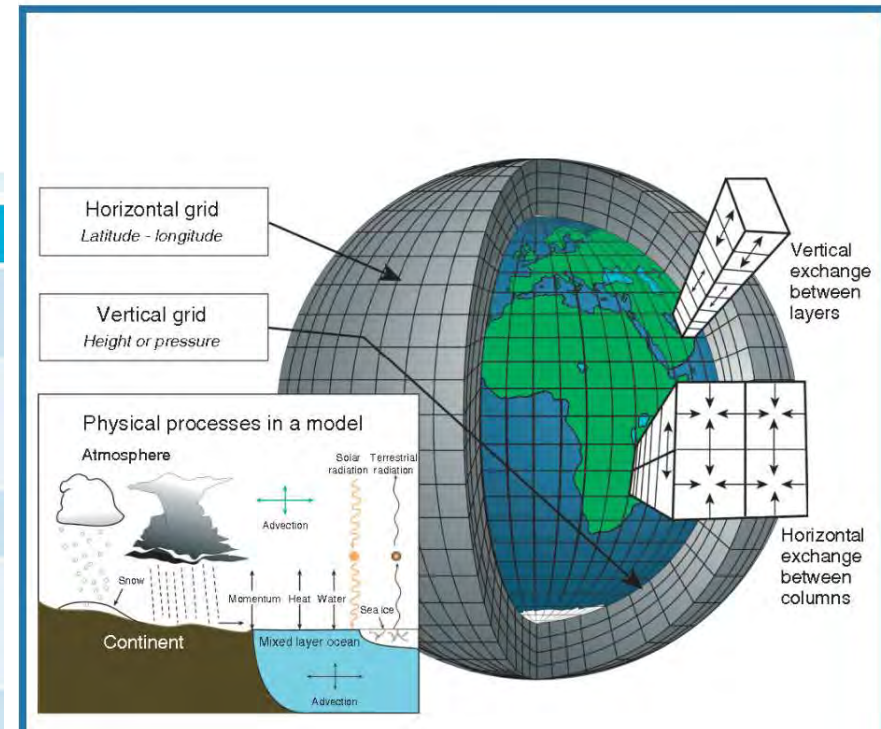




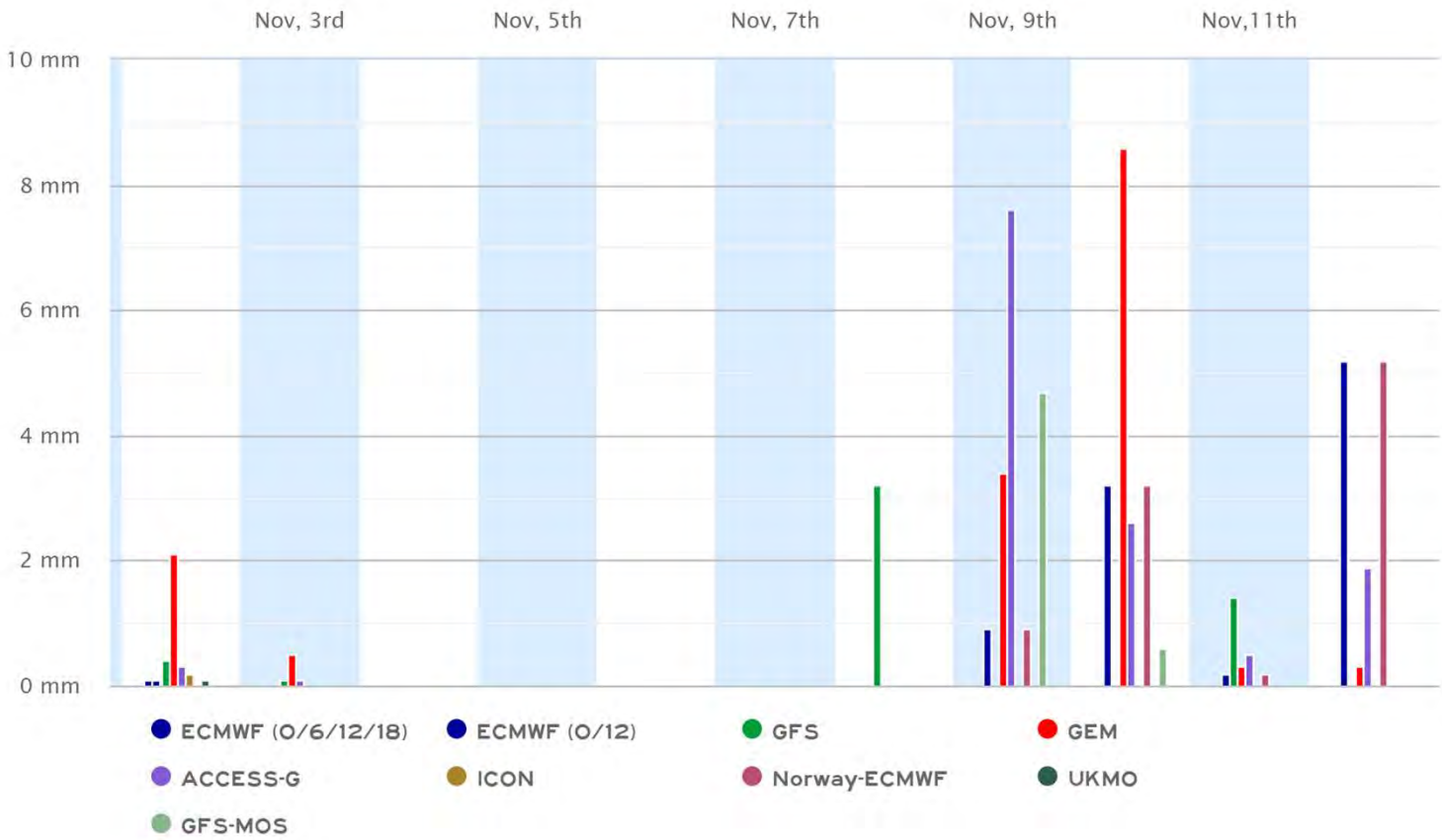
ACCESS-Seasonal

$$\begin{aligned} \frac{D}{Dt} \rho = -\rho \nabla \cdot \mathbf{V} \\ \frac{D}{Dt} \rho \theta = -\rho \nabla \cdot (\theta \mathbf{V}) \\ \frac{D}{Dt} \rho \mathbf{V} = -\rho \nabla \pi - \rho \nabla \Phi \\ \frac{D}{Dt} \rho \mathbf{V} = -\rho \nabla \pi - \rho \nabla \Phi \end{aligned}$$

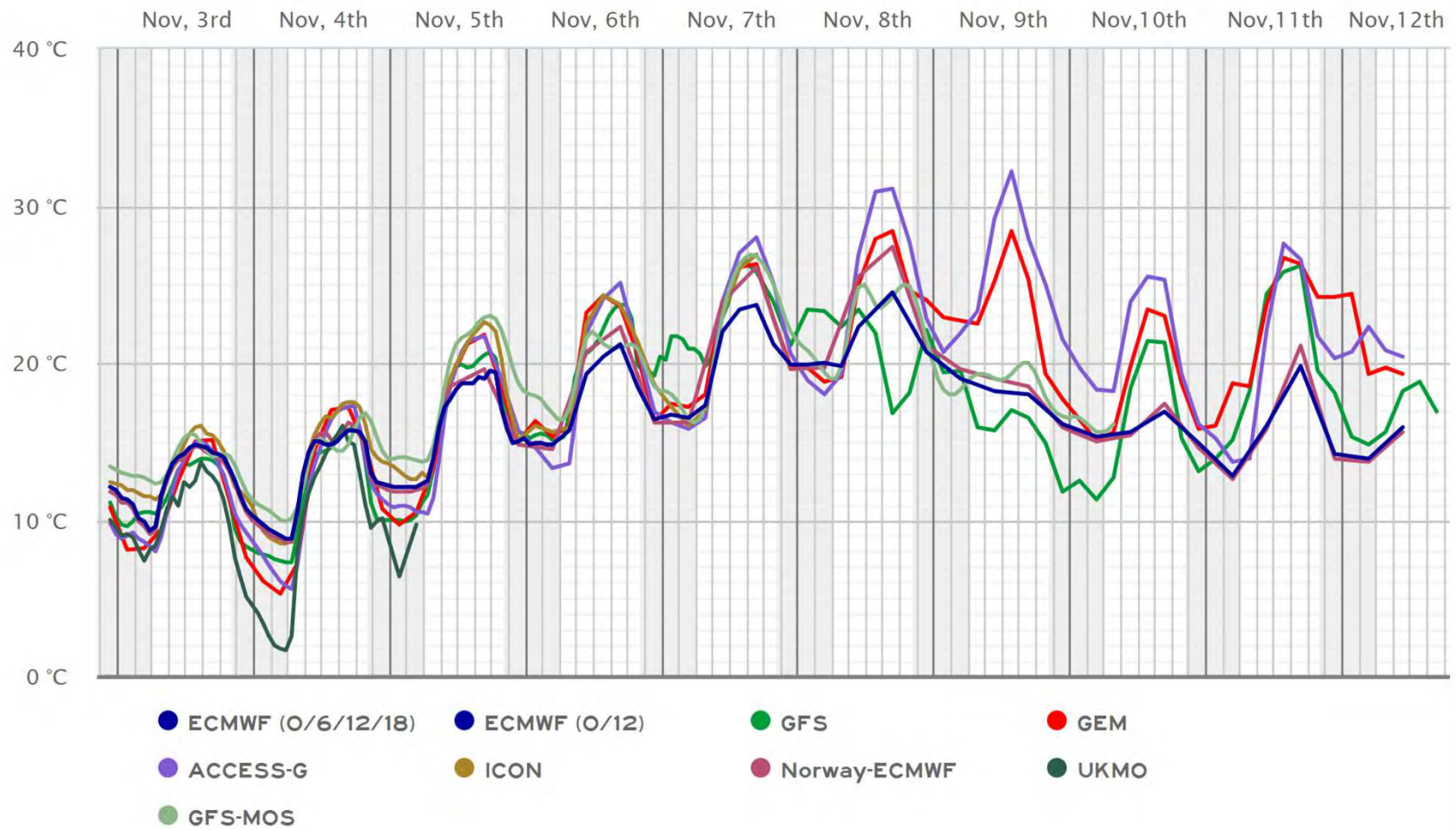
	ACCESS-S1	POAMA-2
Atmospheric model	Latest UKMO atmospheric model (GC2)	Bureau BAM (~10 years old)
Atmospheric resolution	Horizontal: 60 km mid latitudes Vertical: 85 levels	Horizontal: 250 km Vertical: 17 levels
Ocean model	Latest European ocean model NEMO	MOM version 2 (~13 years old)
Ocean resolution	Horizontal: 25 km Vertical: 75 levels	Horizontal: ~200 km x 100 km Vertical: 25 levels
Land surface model	State-of-the-art land surface model JULES	Simple bucket model
Sea ice model	Latest sea ice model CICE (UK & USA)	No sea ice model



Precipitation



Temperature



Windy.com

Search: Kuitpo, Prospect Hill

Map showing weather conditions over Australia, including temperature, wind, and precipitation. Key locations marked include Perth, Sydney, Melbourne, and Brisbane.

Legend:

- 16° Nearest weather stations
- 5kt
- Webcams in vicinity

Forecast summary (Thursday 3 to Monday 7):

Day	Time	Temp (°C)	Rain (mm)	Wind (kt)	Wind Dir
Thursday 3	1 AM	8°		3	SW
	4 AM	8°		4	SW
	7 AM	9°		6	SW
	10 AM	12°	0.2	6	SW
	1 PM	13°	0.4	4	SW
	4 PM	13°		5	SW
	7 PM	11°		6	SW
	10 PM	8°		6	SW
Friday 4	1 AM	7°		5	SW
	4 AM	7°		5	SW
	7 AM	9°		6	SW
	10 AM	14°		2	SW
	1 PM	15°		5	SW
	4 PM	15°		3	SW
	7 PM	13°		6	SW
	10 PM	11°		7	SW
Saturday 5	1 AM	9°		7	SW
	4 AM	10°		7	SW
	7 AM	12°		7	SW
	10 AM	18°		6	SW
	1 PM	19°		6	SW
	4 PM	18°		4	SW
	7 PM	16°		3	SW
	10 PM	13°		7	SW
Sunday 6	1 AM	13°		7	SW
	4 AM	12°		7	SW
	7 AM	15°		6	SW
	10 AM	21°		7	SW
	1 PM	22°		7	SW
	4 PM	22°		6	SW
	7 PM	18°		3	SW
	10 PM	15°		6	SW
Monday 7	1 AM	16°		7	SW
	4 AM	16°		8	SW
	7 AM	17°		7	SW
	10 AM	24°		8	SW
	1 PM	26°		7	SW
	4 PM	26°		5	SW
	7 PM	22°		4	SW
	10 PM	20°		9	SW

Windy.com

Search: Kuitpo, Prospect Hill

Map of Australia showing weather conditions (Temperature, Wind, Rain, Thunder, etc.) and various locations (Perth, Adelaide, Melbourne, Sydney, etc.).

Nearest weather stations: 16° 5kt

Webcams in vicinity

Hours: Thursday 3, Friday 4, Saturday 5, Sunday 6, Monday 7

Temperature: °C

Hours	Thursday 3	Friday 4	Saturday 5	Sunday 6	Monday 7
1 AM	8°	7°	9°	13°	16°
4 AM	8°	7°	10°	12°	16°
7 AM	9°	9°	12°	15°	17°
10 AM	12°	14°	18°	21°	24°
1 PM	13°	15°	19°	22°	26°
4 PM	13°	15°	18°	22°	26°
7 PM	11°	13°	16°	18°	26°
10 PM	8°	11°	13°	15°	22°

Climate outlooks—weeks, months and seasons

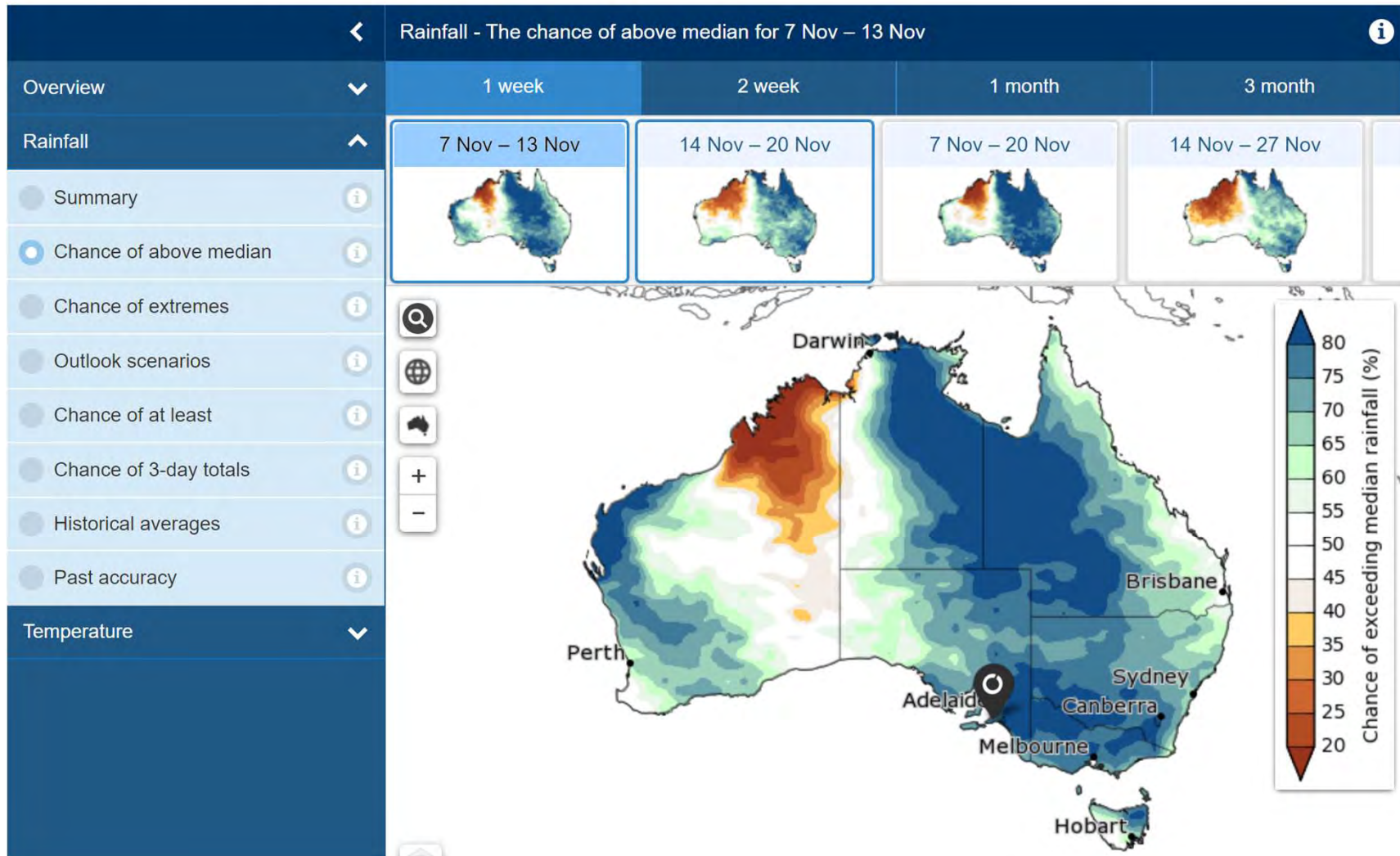
Issued Thursdays, one and two week outlooks also issued Mondays

Archive

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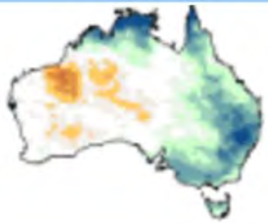
Feedback



Climate outlooks—weeks, months and seasons

Issued Thursdays, one and two week outlooks also issued Mondays

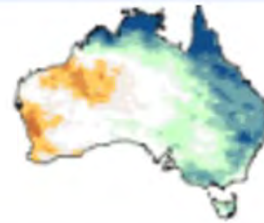
8 Oct – 14 Oct



15 Oct – 21 Oct



8 Oct – 21 Oct



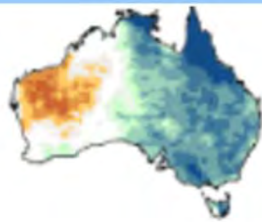
15 Oct – 28 Oct



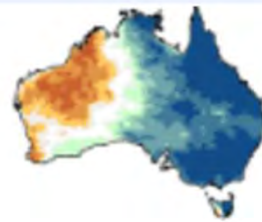
October



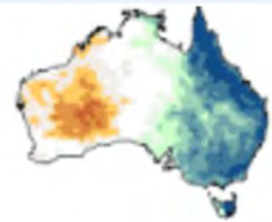
November



October to December



November to January



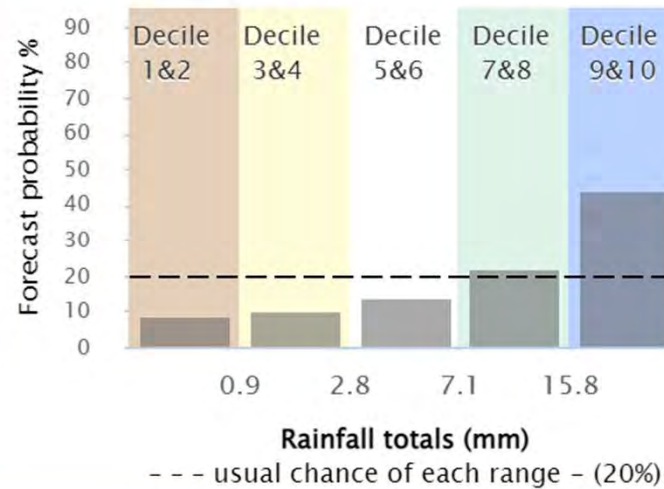
Outlook for 6 Nov – 12 Nov at 35.29°S, 138.55°E

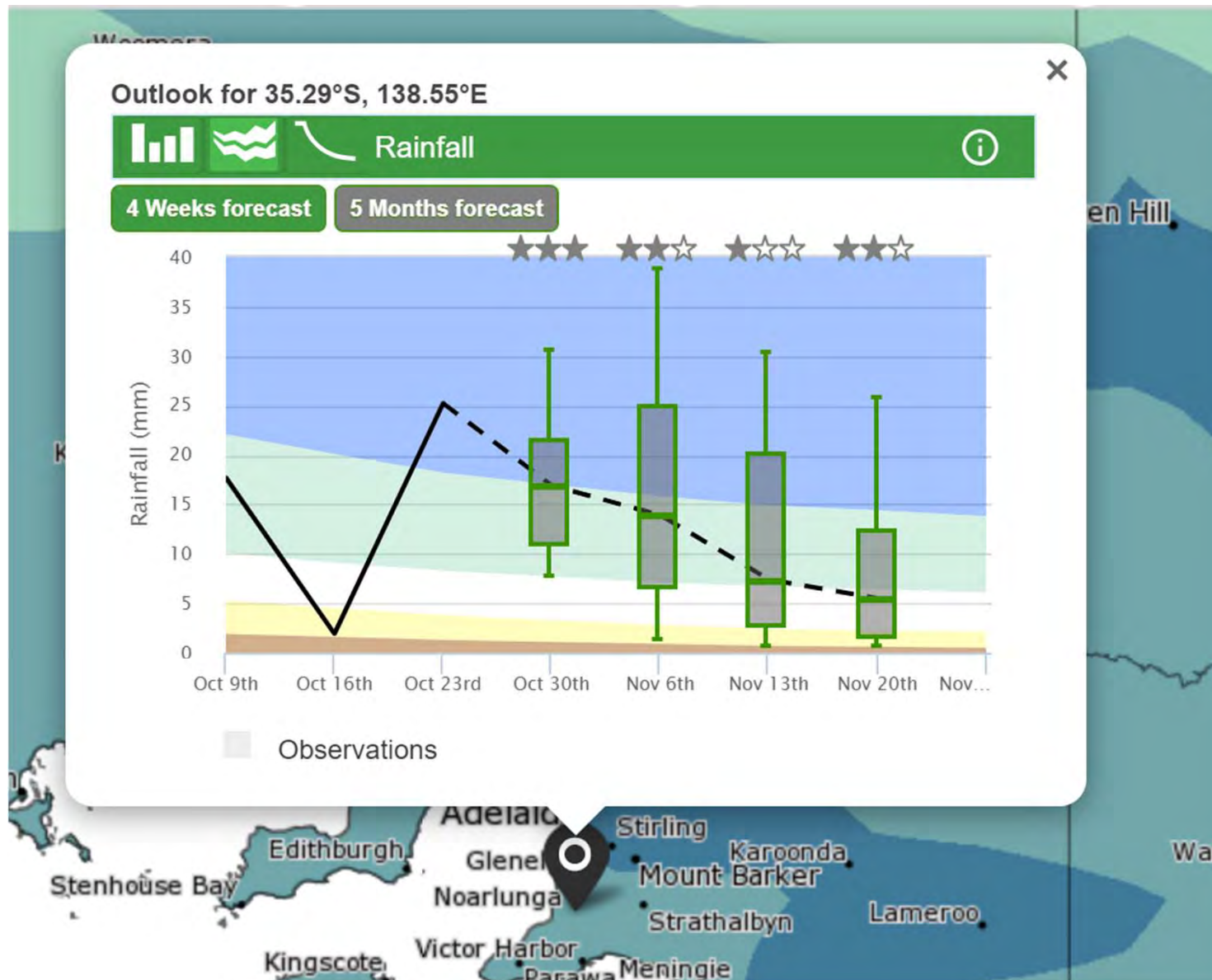


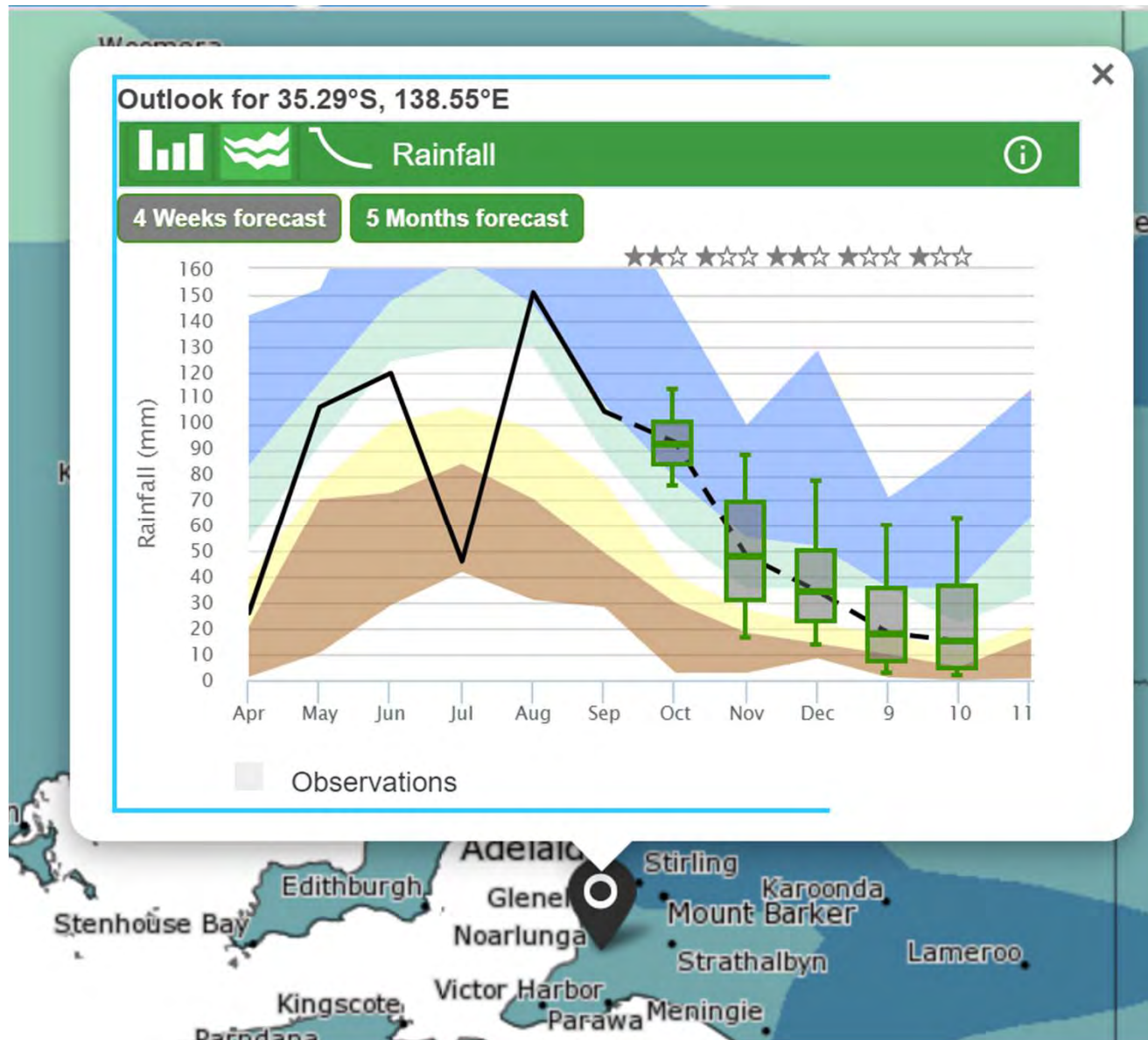
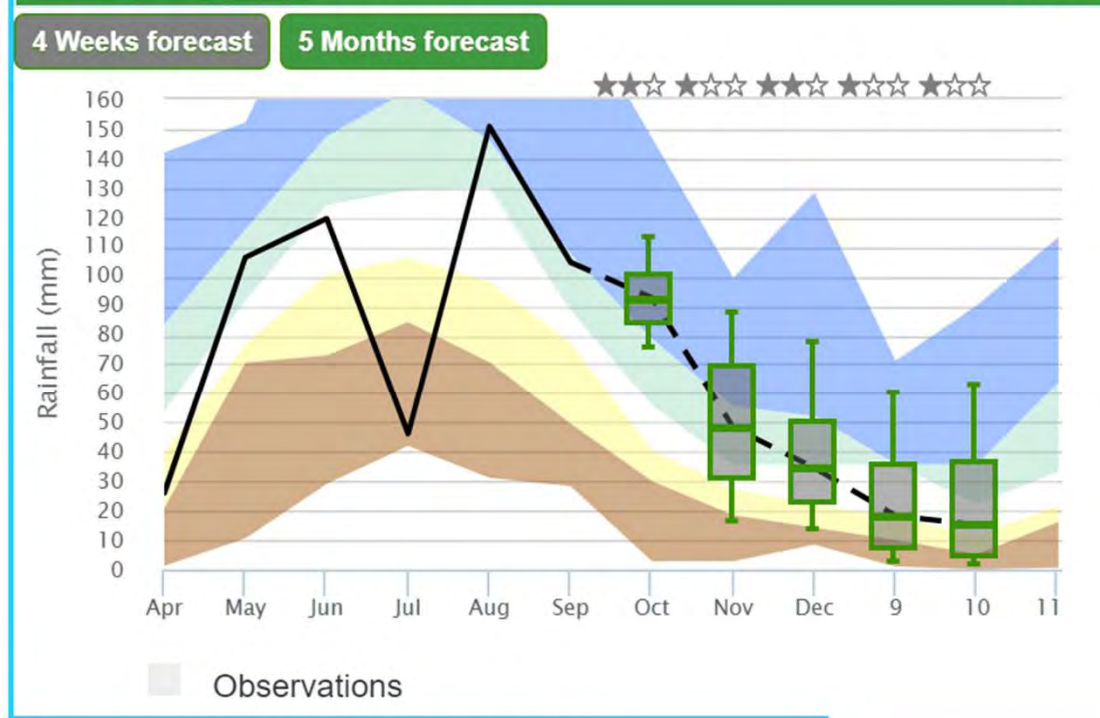
Rainfall

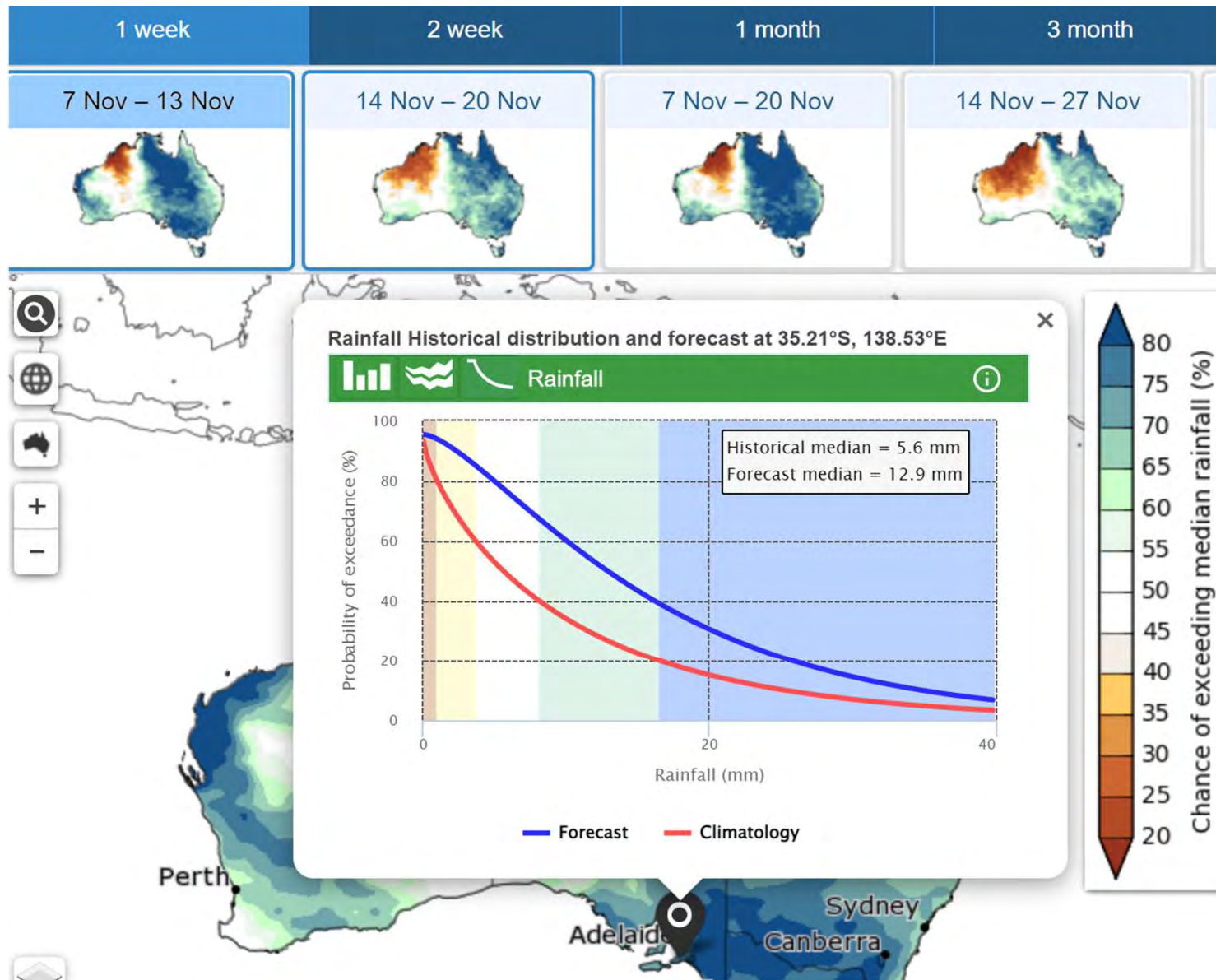


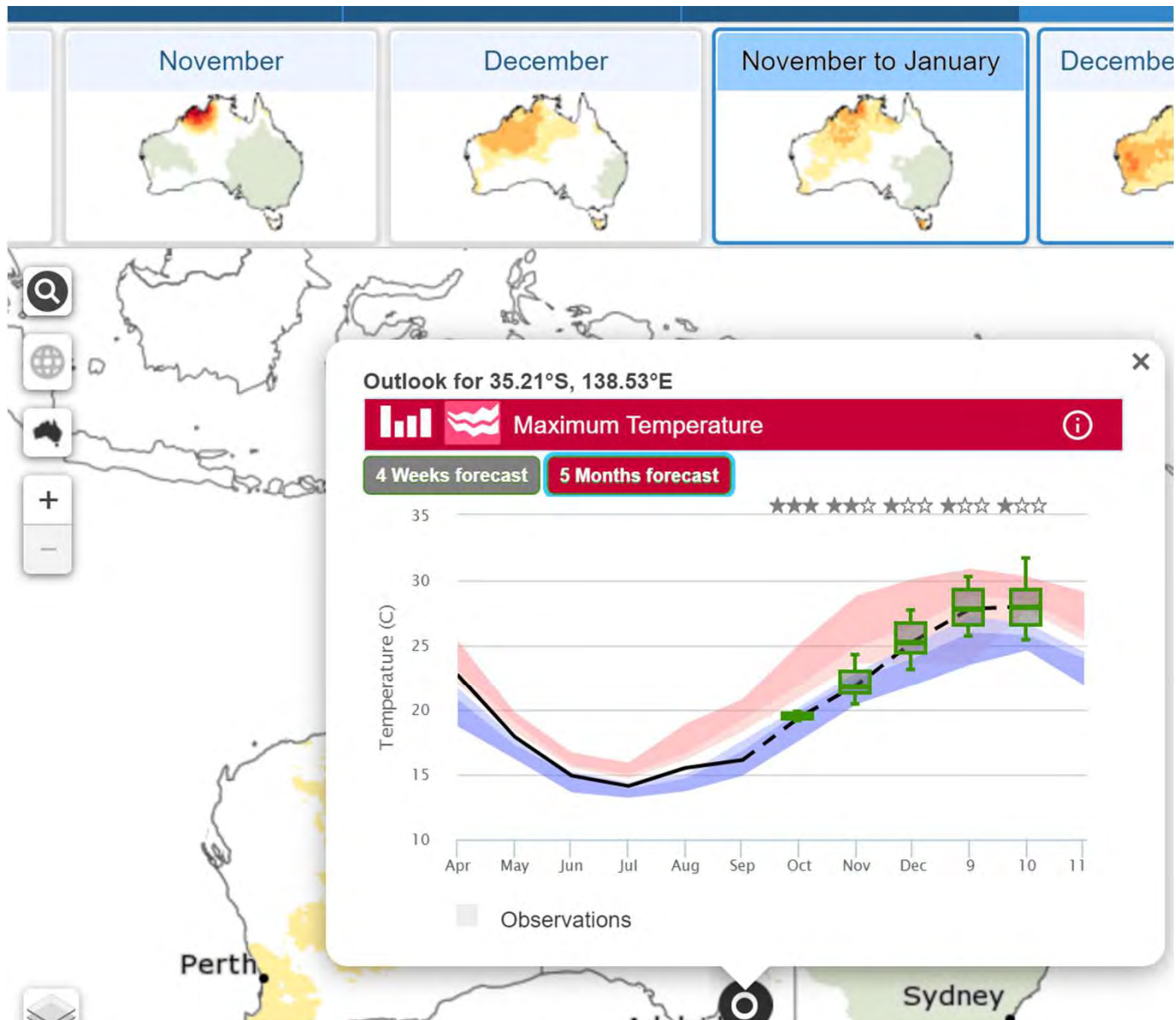
Historical median	4.6 mm	
Chance of unusually dry (< 0.9 mm)	9 %	★★★★
Chance of above median (> 4.6 mm)	74 %	★★★☆☆
Chance of unusually wet (> 15.8 mm)	44 %	★★★☆☆

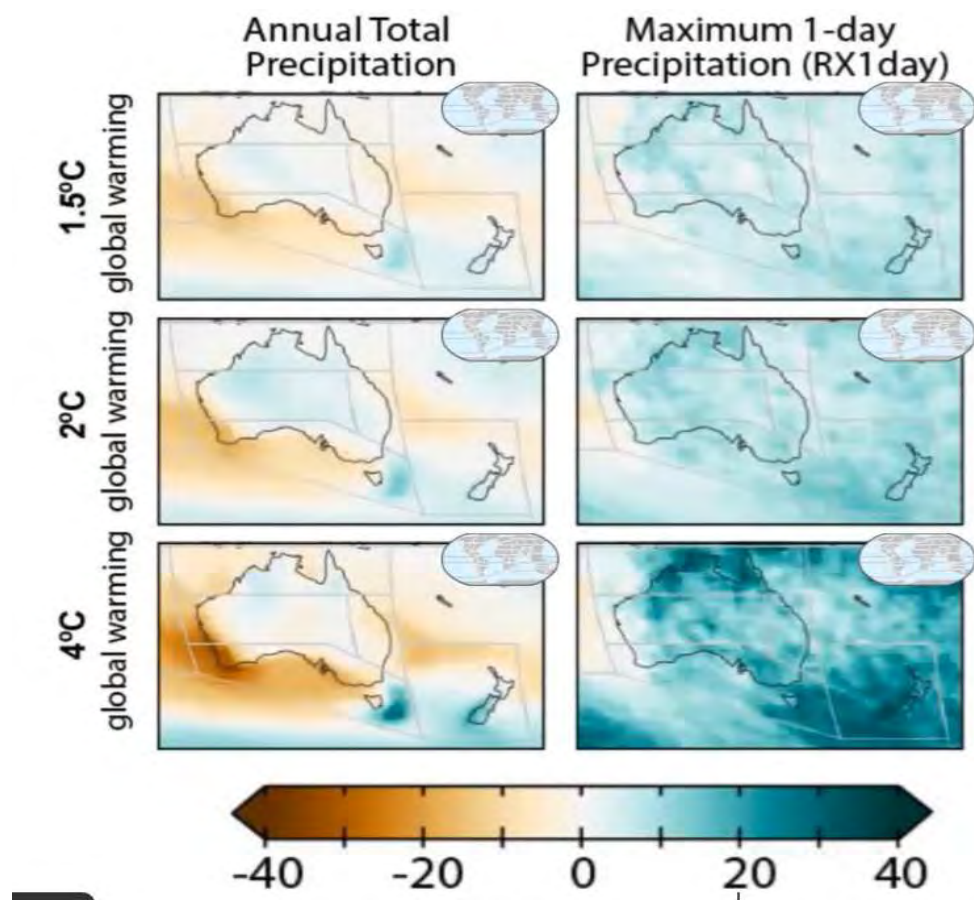




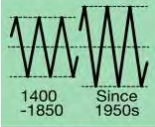
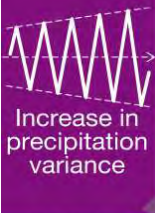









IPCC WG1 Report

	ENSO	IOD
Past changes since the start of observations	 {2.4.2}	Within proxy inferred variability range {2.4.3}
CMIP5 and CMIP6 model performance	Medium performance {3.7.3}	Medium performance {3.7.4}
Human influence on the observed changes	Low agreement {3.7.3}	Not detected {3.7.4}
Near-term future changes (2021–2040)	Internal variability dominates {4.4.3.2}	No robust evidence {4.4.3.3}
Mid-to-long-term future changes (2041–2100)	 {4.3.3.2; 4.5.3.2}	 {4.5.3.3}

low confidence

medium confidence

high confidence

more likely than not

likely

very likely

Adverse climate condition

1 in 5 wet summer

Easier to manage climate

condition Driest 80% of summers

Decision

Caution extra chemicals

Optimism Business as
usual program

