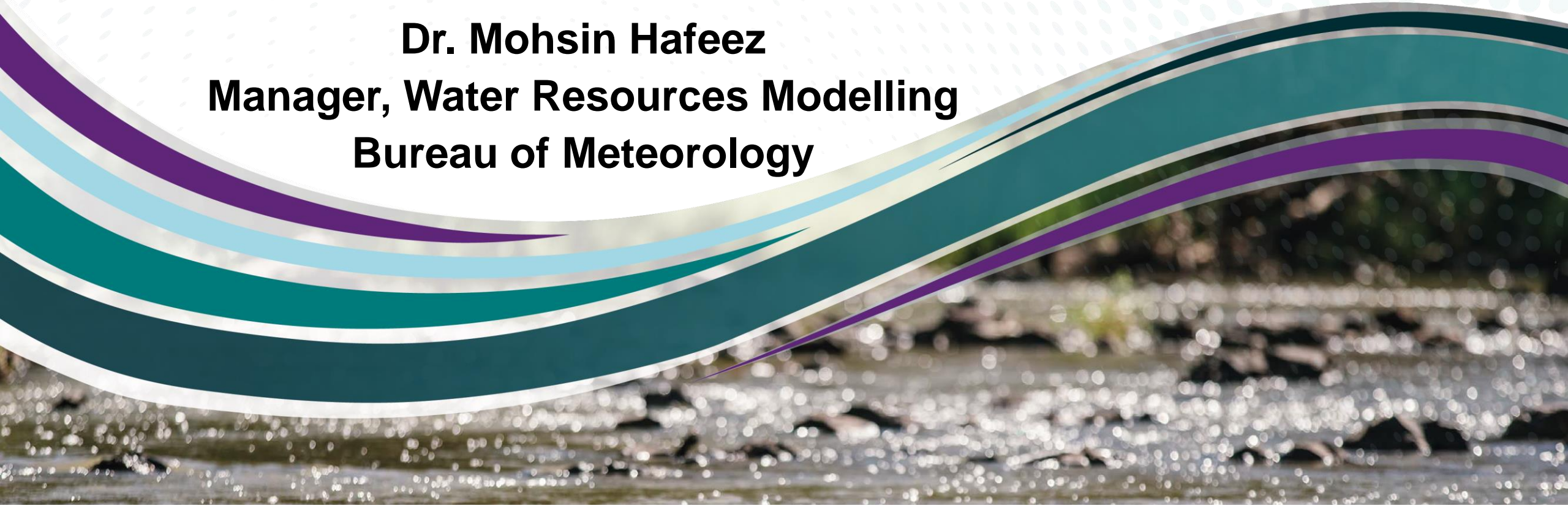


Water and Climate Outlook For Fitzroy

Dr. Mohsin Hafeez
Manager, Water Resources Modelling
Bureau of Meteorology



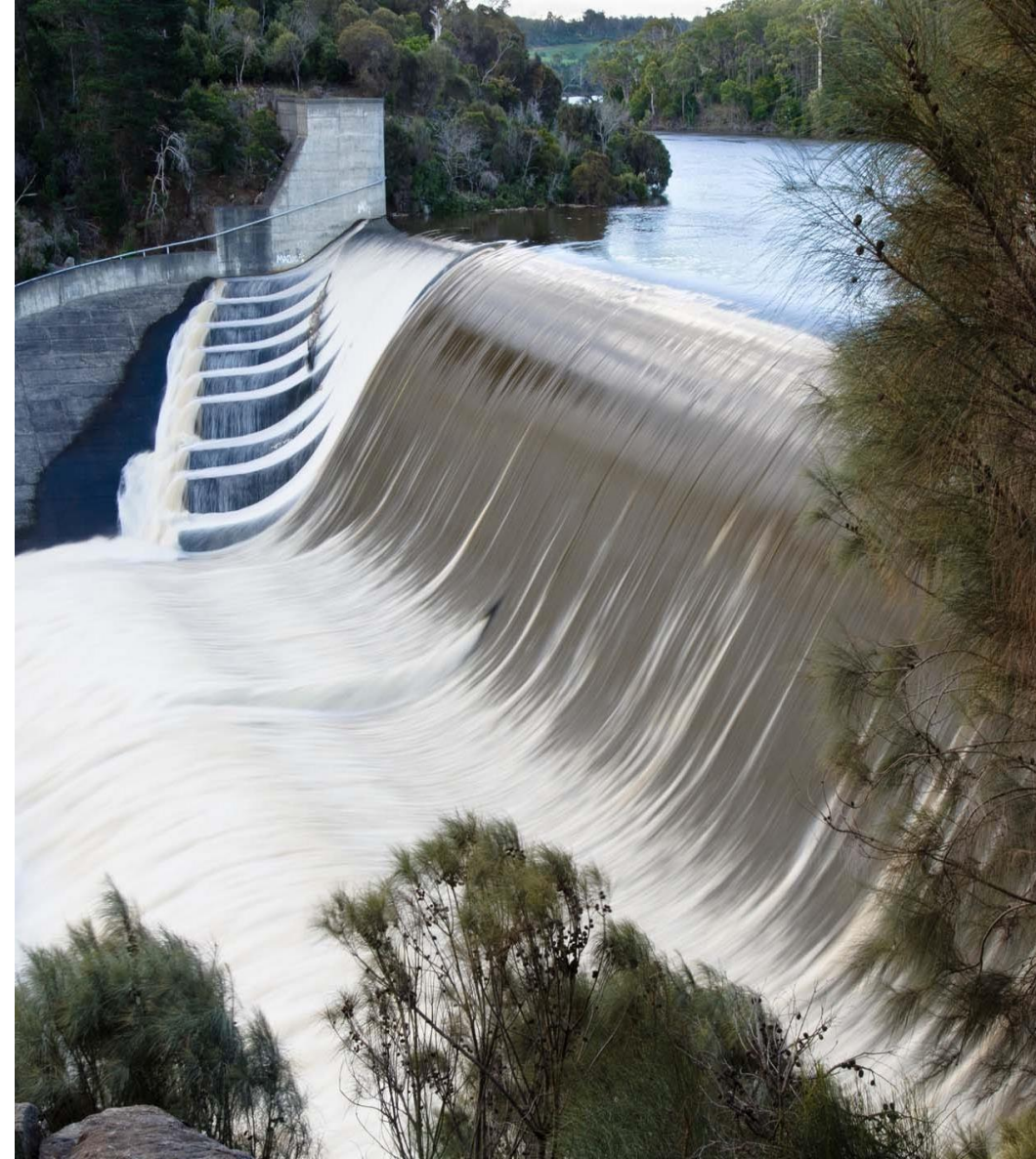
The Bureau's role in water information and assessments



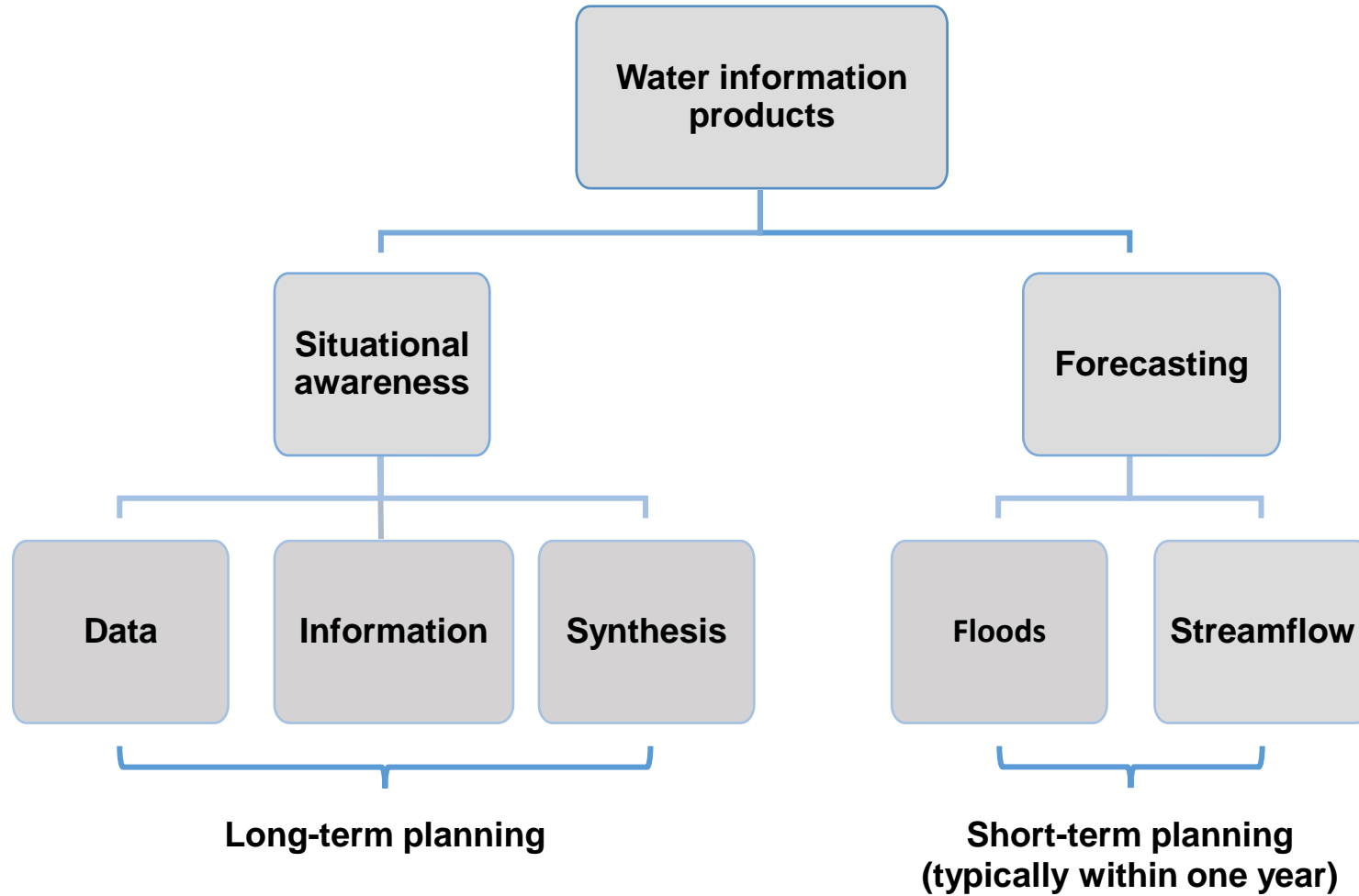
Australian Government
Bureau of Meteorology

The Bureau's role

- Provide water data needed for decision-making by governments and industry
- Integrate and convey information about weather, climate and water
- Build on data collected by State/Territory water managers
- Provide products to help governments, water managers and irrigators better manage uncertainty



Water Information Products



Situational Awareness Products



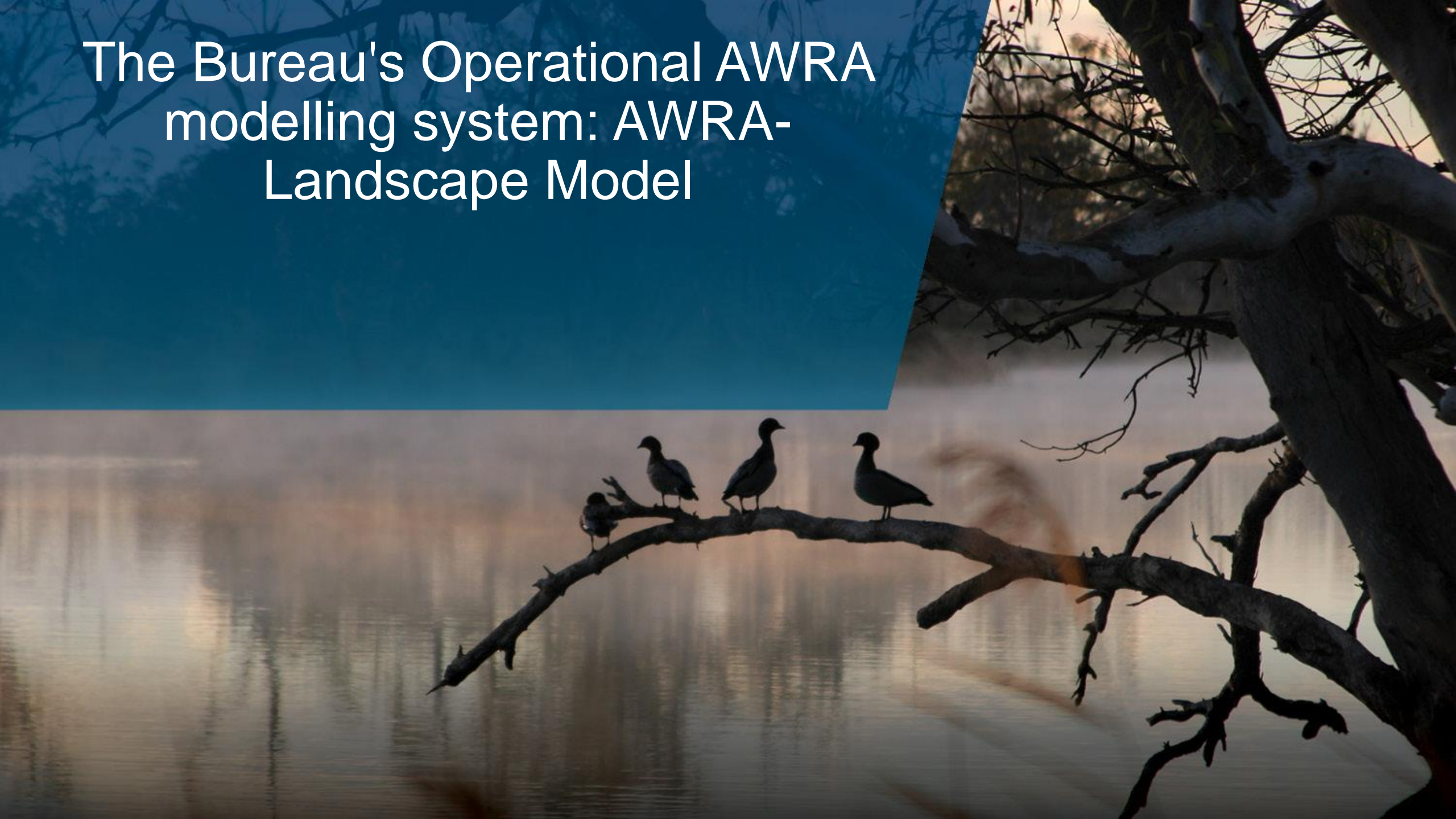
- [Australian Groundwater Explorer](#)
- [Climate Resilient Water Sources](#)
- [Geofabric](#)
- [National Groundwater Information System](#)
- [Water Data Online](#)
- [Water Storage](#)
- [Water Restrictions](#)

- [Australian Groundwater Insight](#)
- [Australian Landscape Water Balance](#)
- [Hydrological Reference Stations](#)
- [Monthly Water Update](#)
- [National Water Account](#)
- [Urban national performance report](#)
- [Water Markets](#)

- [Regional Water Information](#)
- [Water in Australia](#)

<http://www.bom.gov.au/water/>

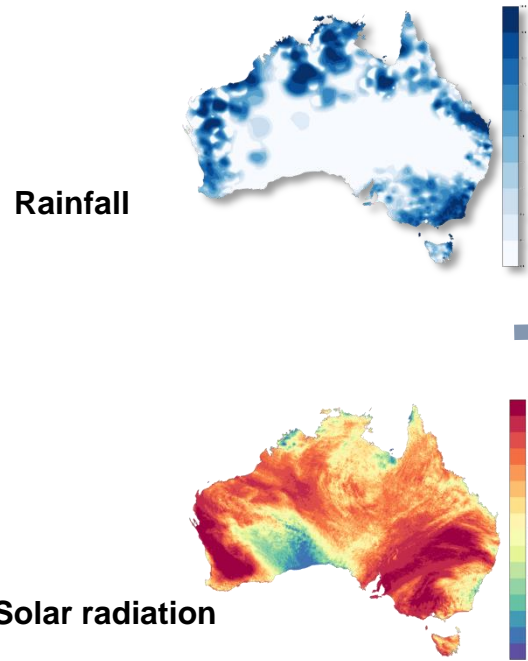
The Bureau's Operational AWRA modelling system: AWRA- Landscape Model



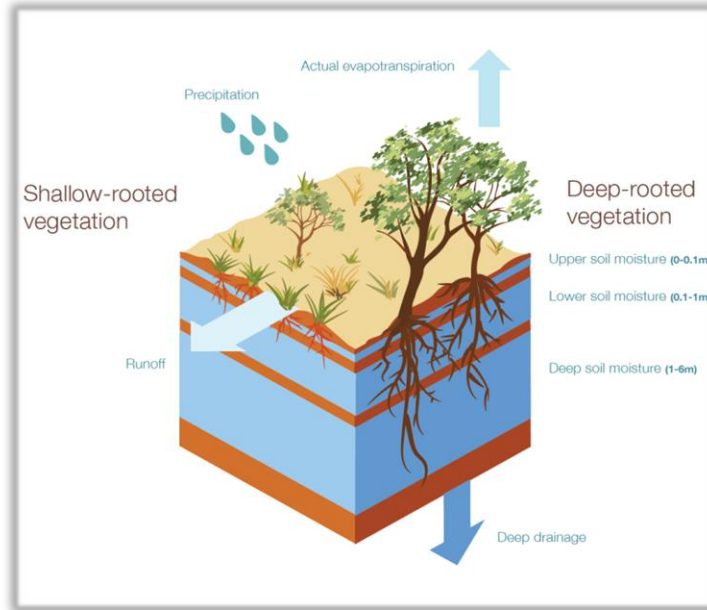
Operational continental landscape water balance model

AWRA-L: national, daily time-step, 5 km resolution

Inputs

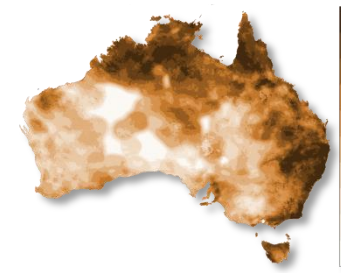


Model analysis



Outputs

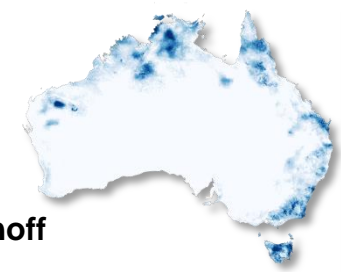
Actual evapotranspiration



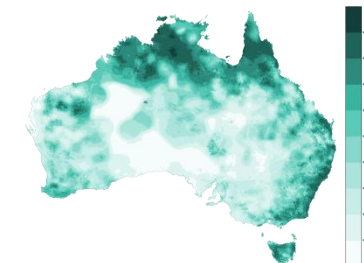
Deep drainage



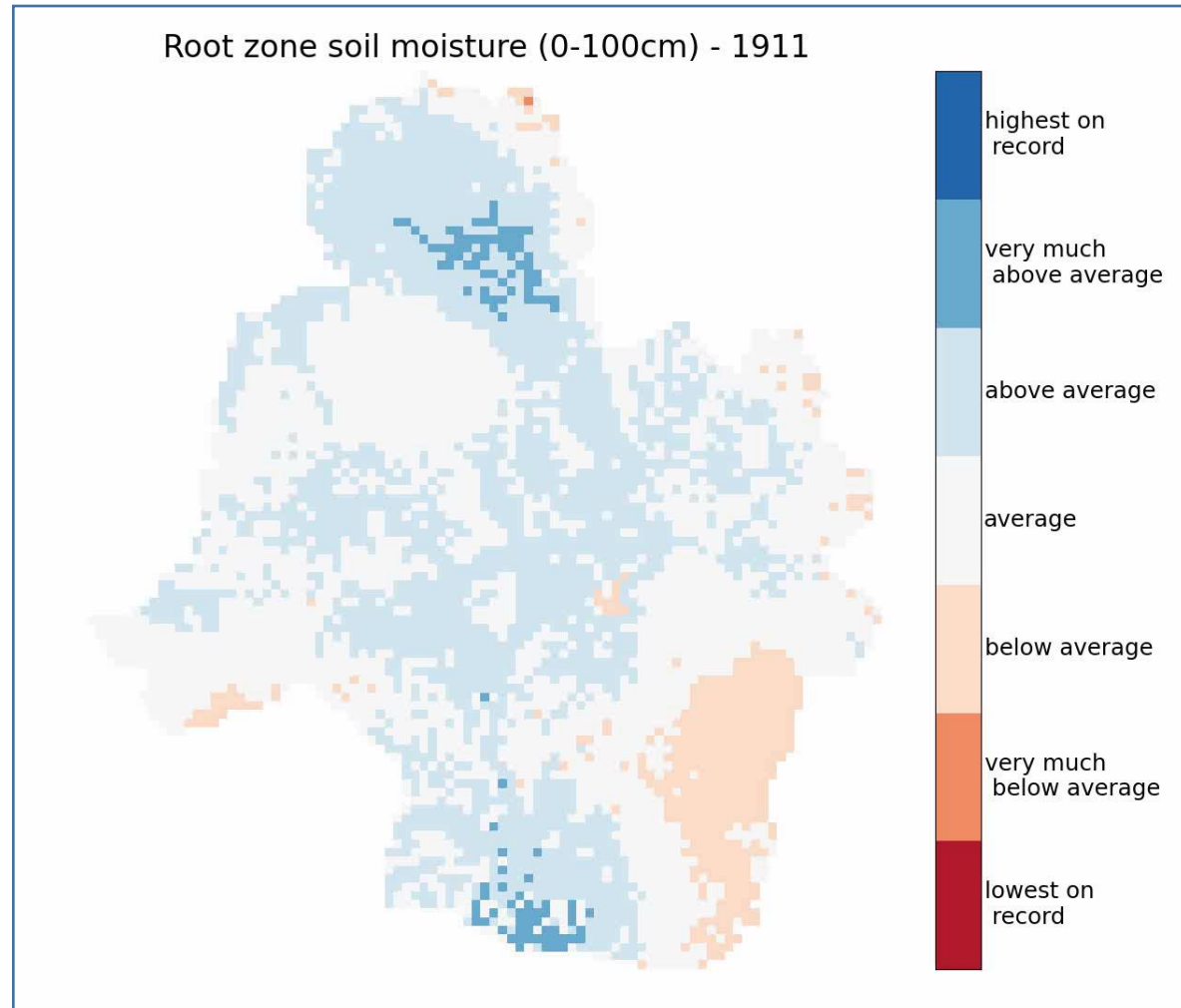
Runoff



Soil moisture

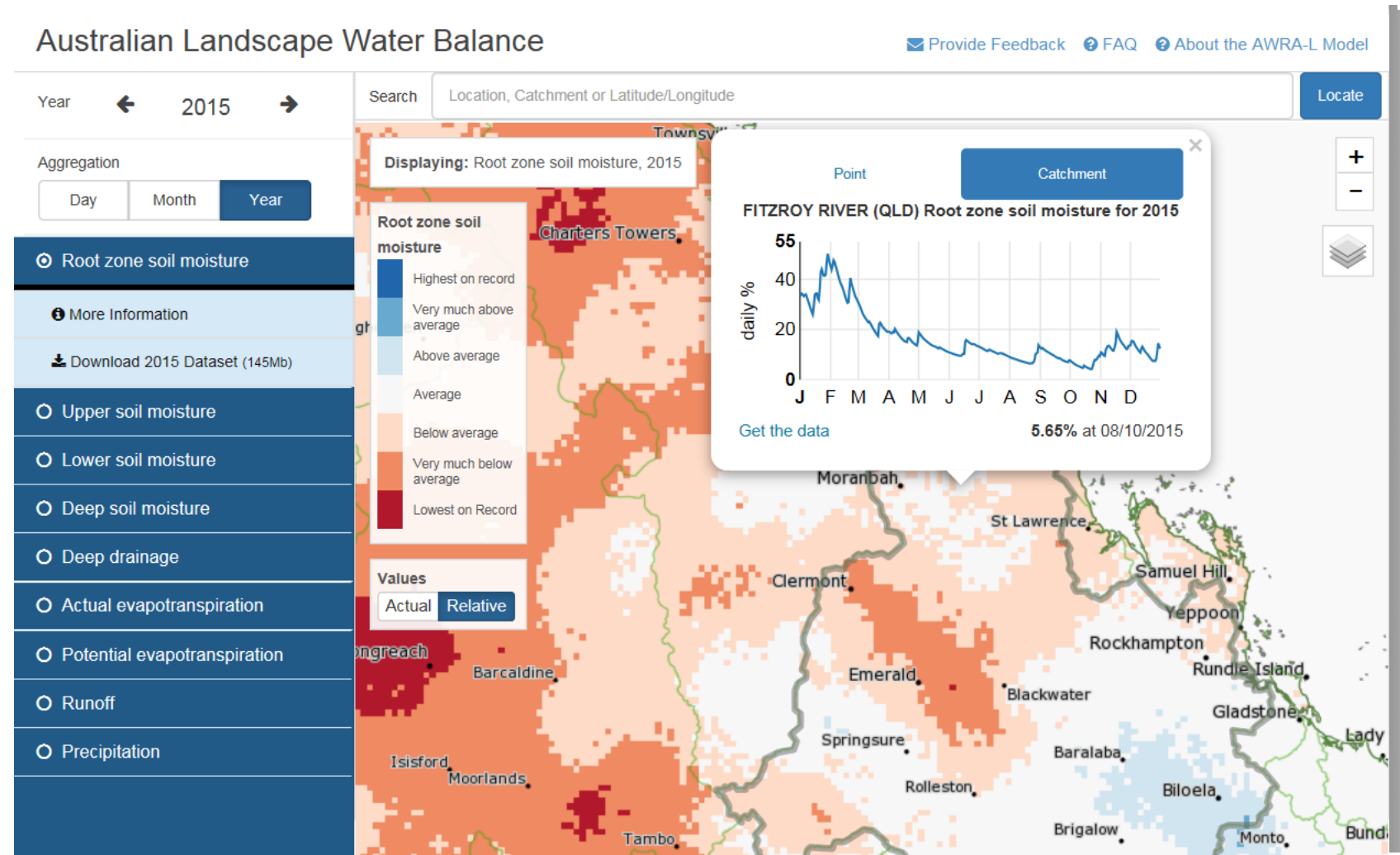


105 year simulation of landscape water balance (1911-2016)



Australian Landscape Water Balance web application

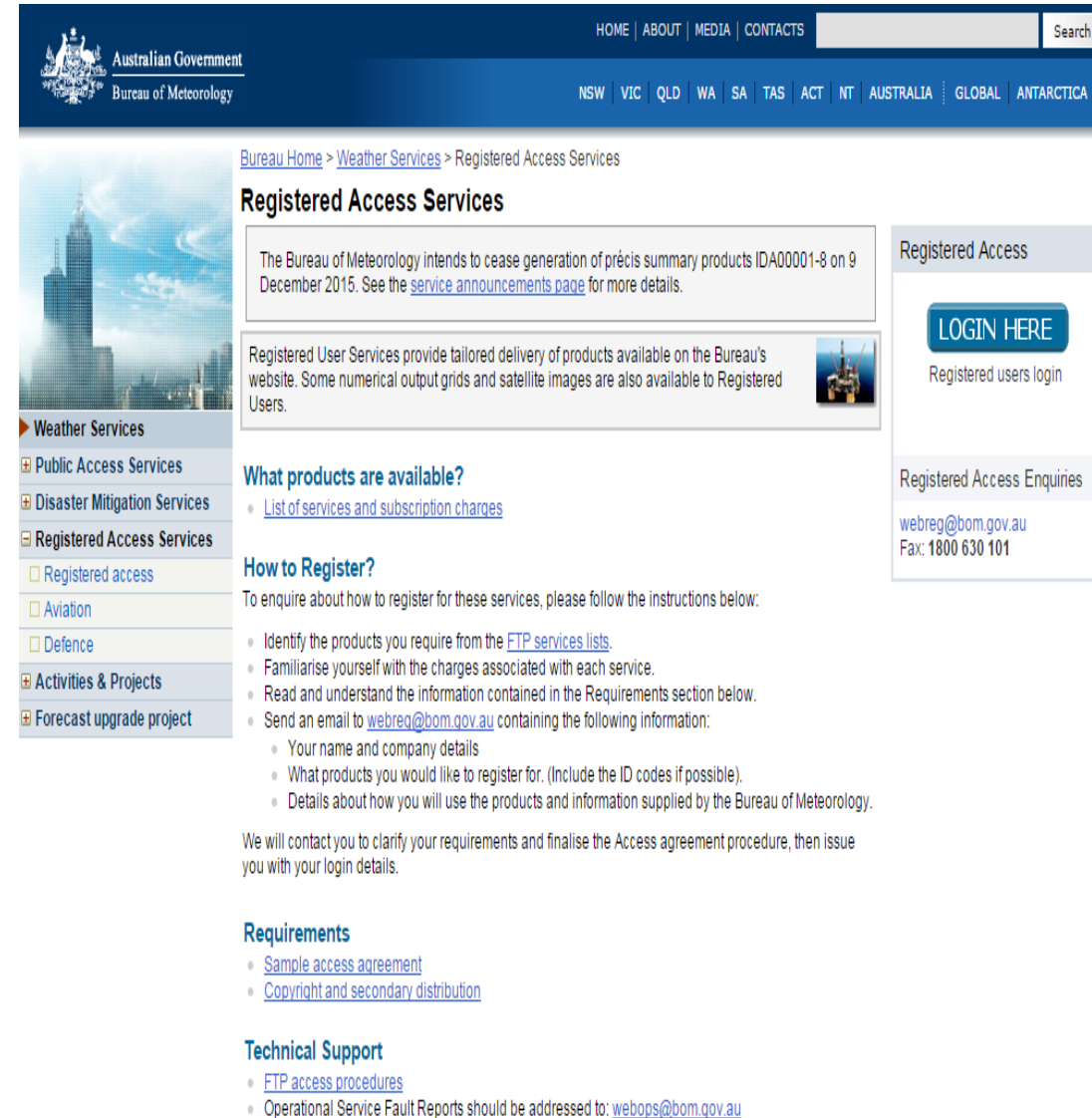
- A unique service!
- Updated daily
- See all variables at daily, monthly or annual time slices
- Download the grids at a resolution of 5km x 5km
- Past 10 years data available to all
- Registered users access >100 years and tailored products



<http://www.bom.gov.au/water/landscape>

External Users of AWRA-L Modelled Data

- Agriculture, environment and infrastructure professionals working in Commonwealth government water and agriculture agencies (**ABARES, MDBA**)
- Agriculture, environment and infrastructure, professionals working in state government water and agriculture agencies (**NSW DPI, DEDJTR (VIC DPI), WaterNSW, QLD DEWS, SeqWater, WA Dept. of Ag. and Food, Vic DELWP, TAS DPIPWE, SA DEWNR**)
- Water and Environment Consulting companies (**DHI, GHD**)
- Industry professionals (Water utilities)
- Water Corporations (**Melbourne Water, SA Water, Sydney Water**)
- Research and University Sector (**CSIRO, Uni. of Melbourne, Monash Uni., UNSW, ANU, USQ and Sydney Uni.**)



The screenshot shows the Bureau of Meteorology website's 'Registered Access Services' page. The page header includes the Australian Government logo and navigation links for HOME, ABOUT, MEDIA, CONTACTS, and a search bar. A secondary navigation bar lists states and territories: NSW, VIC, QLD, WA, SA, TAS, ACT, NT, AUSTRALIA, GLOBAL, and ANTARCTICA. The main content area features a breadcrumb trail: Bureau Home > Weather Services > Registered Access Services. A prominent announcement states that the Bureau intends to cease generating précis summary products IDA00001-8 on 9 December 2015, with a link to the service announcements page. Below this, a section titled 'Registered Access Services' explains that these services provide tailored delivery of products available on the Bureau's website, including numerical output grids and satellite images. A 'LOGIN HERE' button is visible, with the text 'Registered users login' underneath. To the right, contact information for Registered Access Enquiries is provided: webreg@bom.gov.au and Fax: 1800 630 101. The page also includes sections for 'What products are available?' (with a link to a list of services and subscription charges), 'How to Register?' (with instructions on how to register and a list of required information), and 'Requirements' (with links to sample access agreement and copyright/secondary distribution). A 'Technical Support' section at the bottom provides links to FTP access procedures and a contact email for Operational Service Fault Reports: webops@bom.gov.au.

Australian Landscape Water Balance website publicity

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GROW QLD



Harvest best practice urged

Cotton Australia has provided some tips on best practice this harvest...



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Cane growers face 'mountains of paperwork'

Cane growers have been



Former Southern Downs councillor found dead

Former Southern Downs Regional



New era of Nats leaders

New England MP Barnaby Joyce is



Kilkivan cattle business being destroyed by

Cotton Market Bearish

Auscott's Rod Gordon says the

Saleyards in legal claim

PCAS delivers flexibility

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NEWS MARKETS BEEF SHEEP DAIRY CROPPING MULTIMEDIA WEATHER CLASSIFIEDS

Beef



Kilkivan cattle business being destroyed by Palaszczuk Government

A Kilkivan grazing family will see their cattle business cut by two-thirds when they are locked out of country it has used for grazing since 1878.

1 day, 5 hours



Cows and casinos? He's Miles from the truth

Opposition environment spokesman Stephen Bennett says landholders grazing cattle on park lands have lost their basic rights of appeal under the Palaszczuk Government.

2 days, 3 hours



Values firm and demand on the up

Queensland saleyards reported firm to dearer values across descriptions and a rising demand for slaughter and feeder cattle.

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What our team's tweeting

Tweets from a list by FarmOnline

Lisa Herbert @MsLisaHerbert 7m

First prize goes to KNITTED MINIONS! #minions pic.twitter.com/JsETr74VD

Retweeted by Andrew Miller

Show Photo

Charlie McCaig @NZSharemilker 50m

Our bank just dropped 16/17 expected payout to \$4.65. A lot of people's equity eroding already. Hard 24 months coming I think. #agchatnz

Retweeted by Andrew Miller

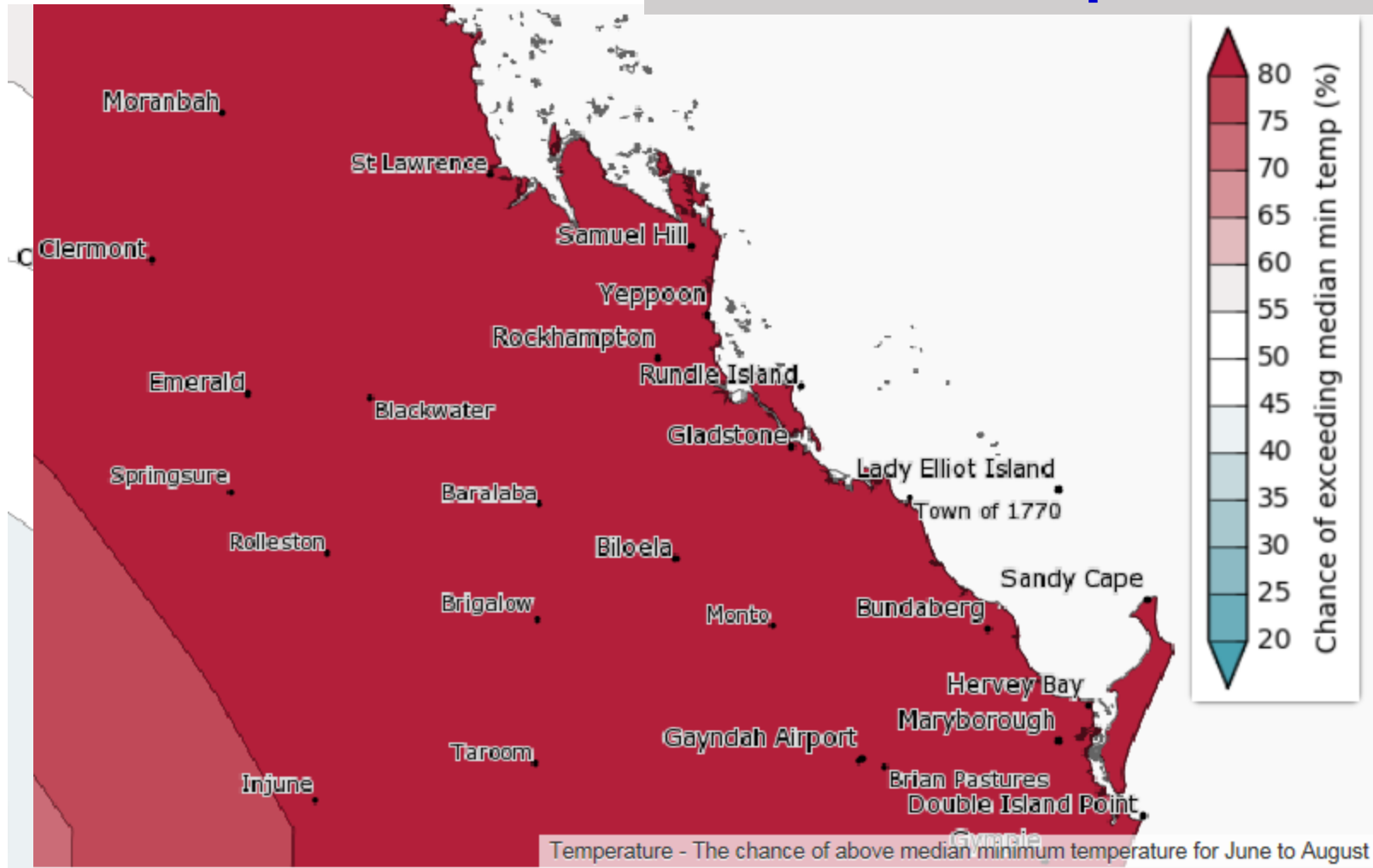
Expand

Climate Outlook & Return of La Niña?



Current Climate Outlook

Minimum Temperature



Outlook for June to August at Rockhampton

Maximum temperature

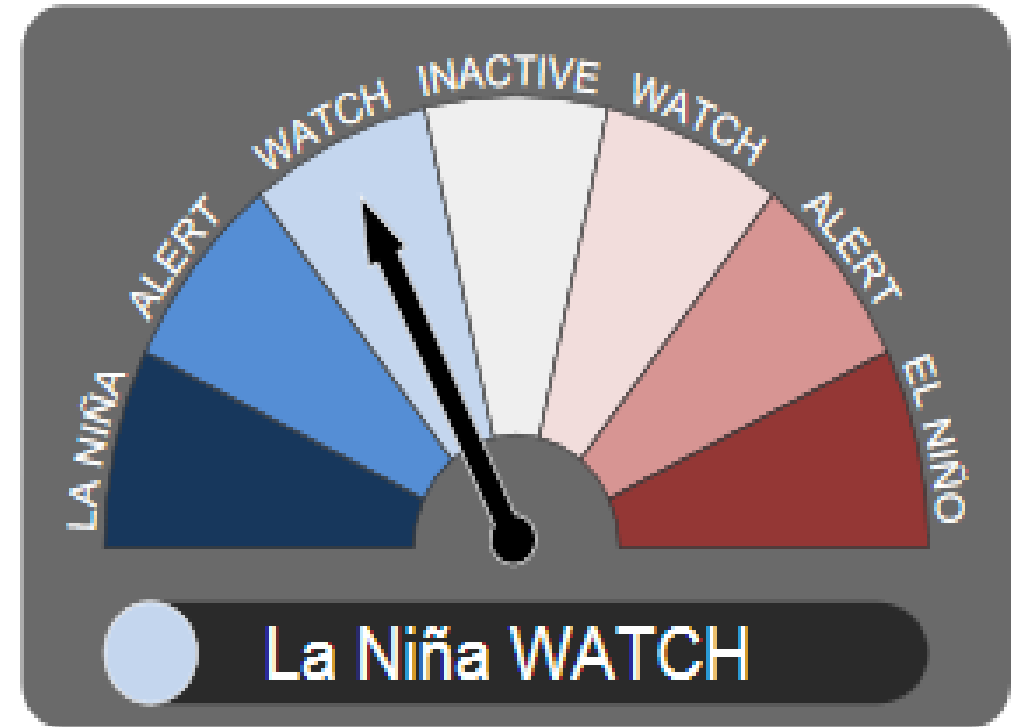
Median	23.7 °C
Chance of above median	Likely
Past accuracy	Moderate

Minimum temperature

Median	11.0 °C
Chance of above median	Very likely
Past accuracy	High

ENSO Outlook

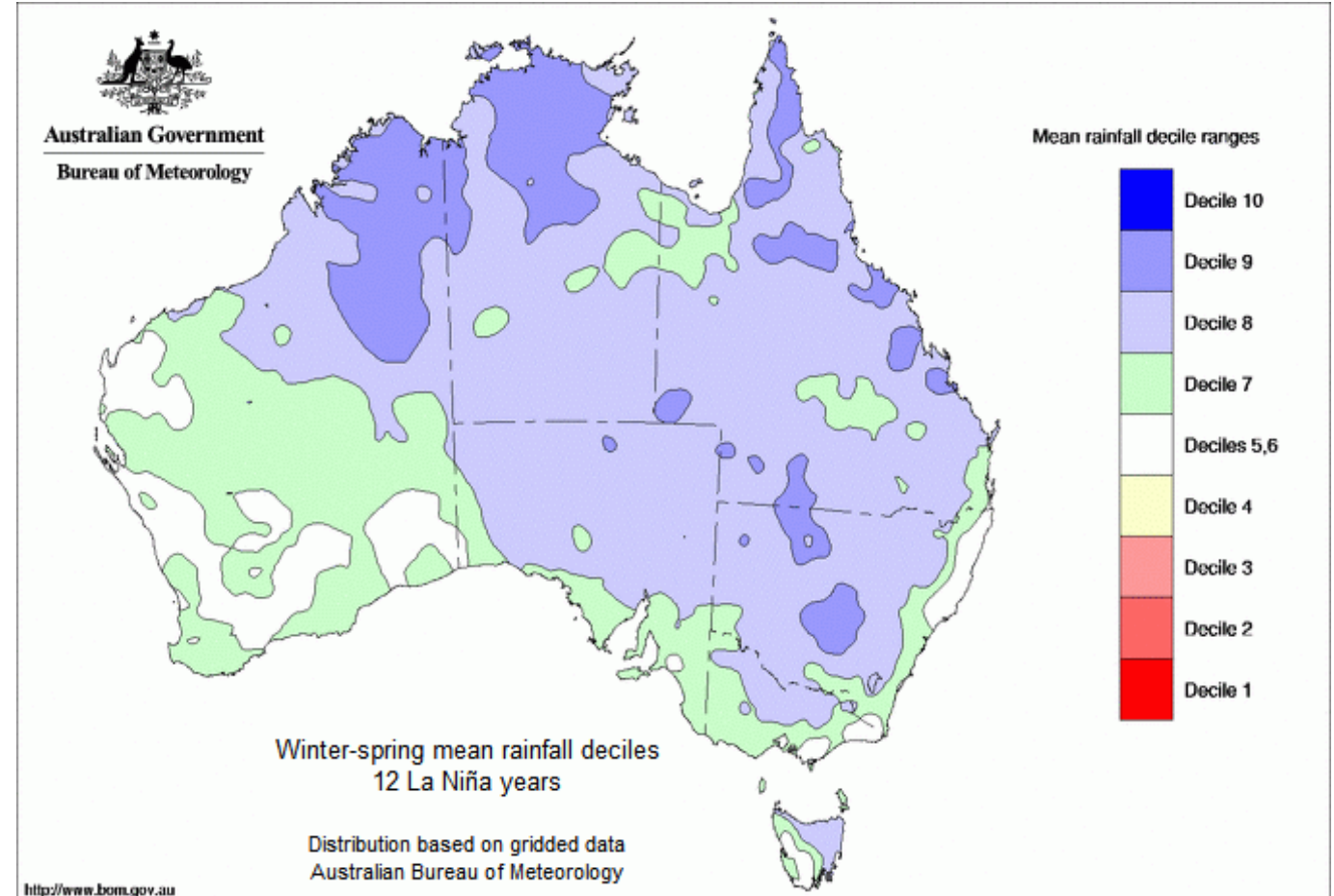
- ENSO phase is currently neutral
- Historically La Niña events have occurred about every 3 to 5 years
- In any year there is a 20-25% chance of a La Niña event
- About 40% of the time, a La Niña comes directly after an El Niño
- A La Niña WATCH means there is approximately a 50% chance of a La Niña in 2016 (this means there is currently around double the normal chance)



<http://www.bom.gov.au/climate/enso/outlook/#tabs=Outlook>

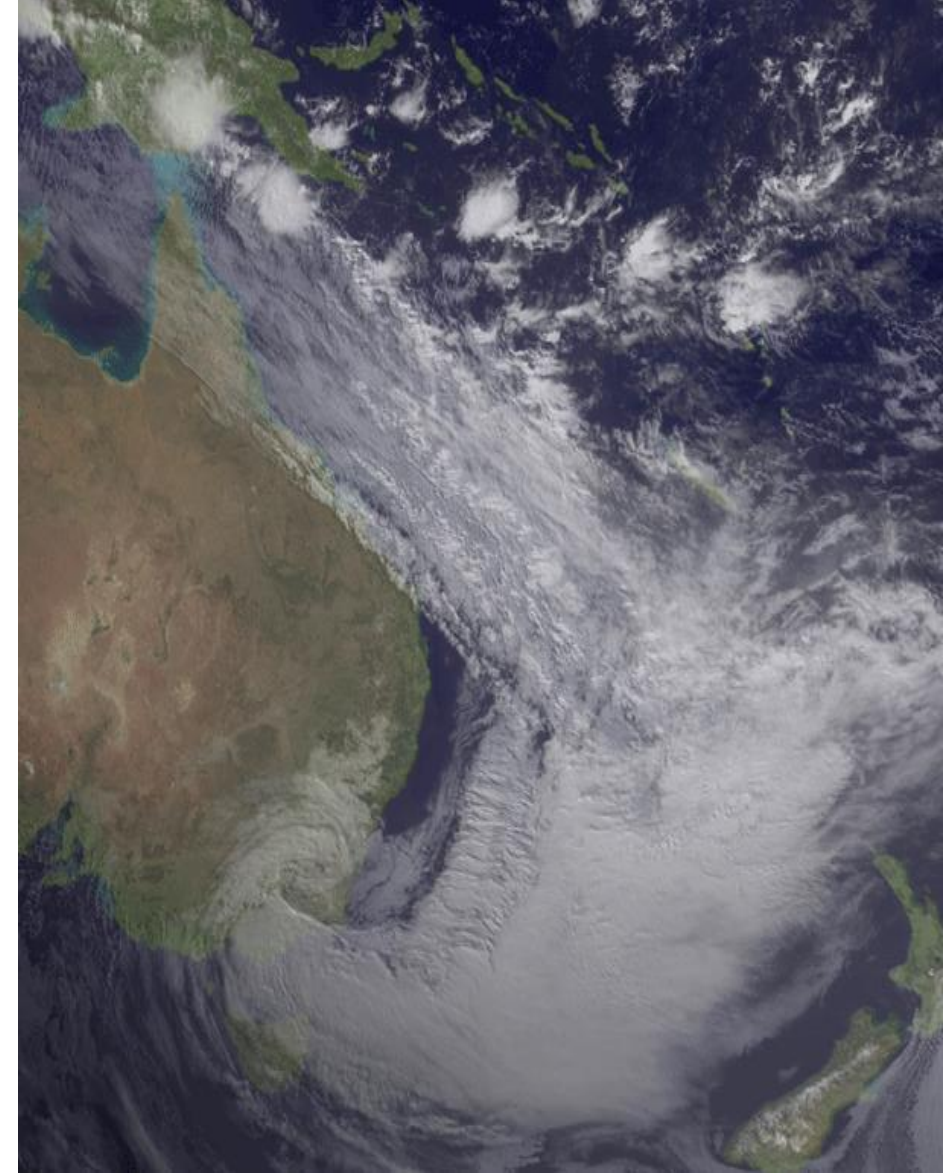
What does it mean for rainfall?

- Every La Niña is different, but unlike for El Niño, the strength of a La Niña is usually associated with its impacts
- Typically winter-spring rainfall is above average over northern, central and eastern Australia



Summary

- Climate variability and change make water management tough
- Mandated to provide weather, climate and water information
- The Water Information Initiative has introduced a suite of new water products
- Integrating weather, climate and water information
- Agricultural and water stakeholders to promote awareness and use of the modelled outputs, with positive feedback and some adoption received to date.
- Critical for water resources management including responding to extremes such as floods and droughts
- Translating science into services that support decisions



Thank you and questions...

For Water and Climate Queries

m.hafeez@bom.gov.au



Australian Government
Bureau of Meteorology