



Growers' Conference 2022

A sustainable future together



Tyson Milne
Director of River Murray Operations
MDBA

River Operations



River Operations

Tyson Milne

Director, River Murray Operations



Australian Government

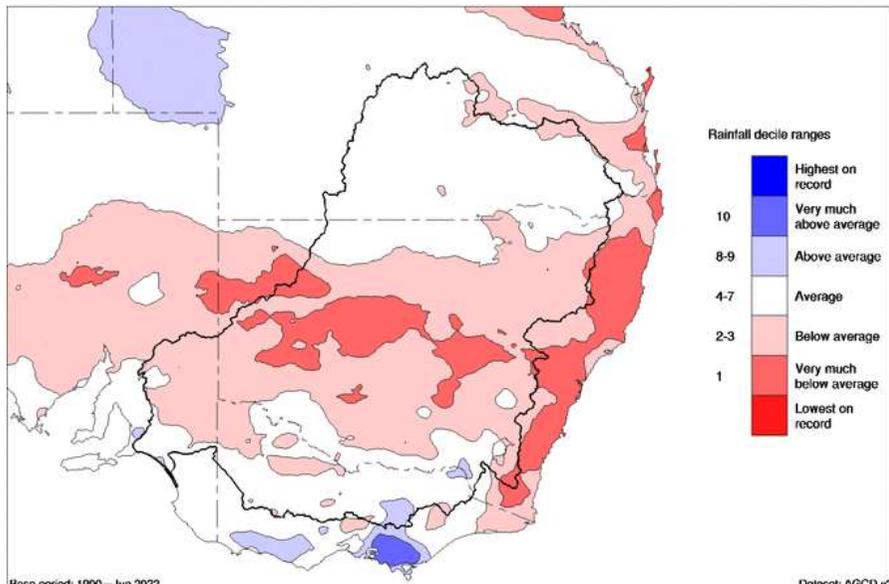


Contents

- River Operations
- Annual Operating Outlook
- Capacity & Shortfall update

Recent rainfall

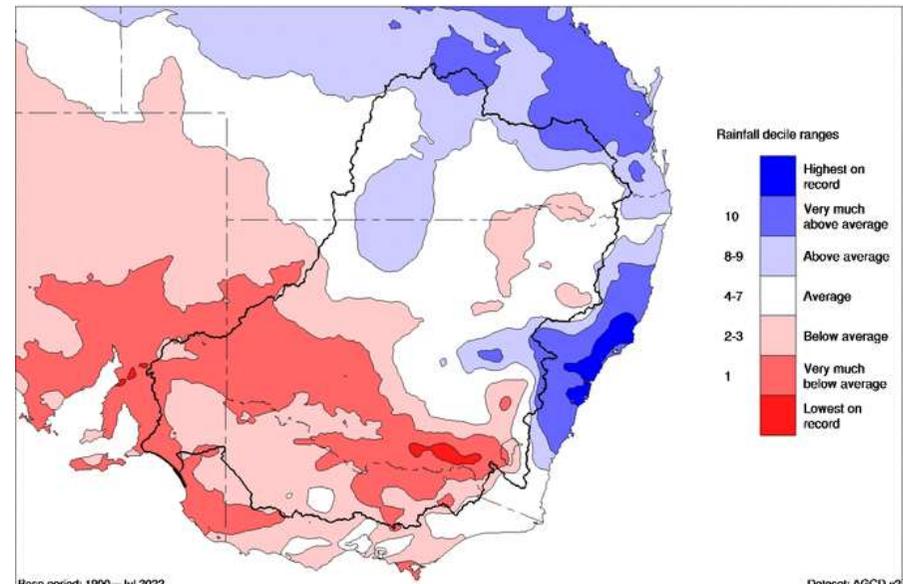
Murray-Darling rainfall deciles June 2022
Australian Gridded Climate Data



Base period: 1900–Jun 2022
© Commonwealth of Australia 2022, Bureau of Meteorology

Dataset: AGCD v2
Issued: 30/06/2022

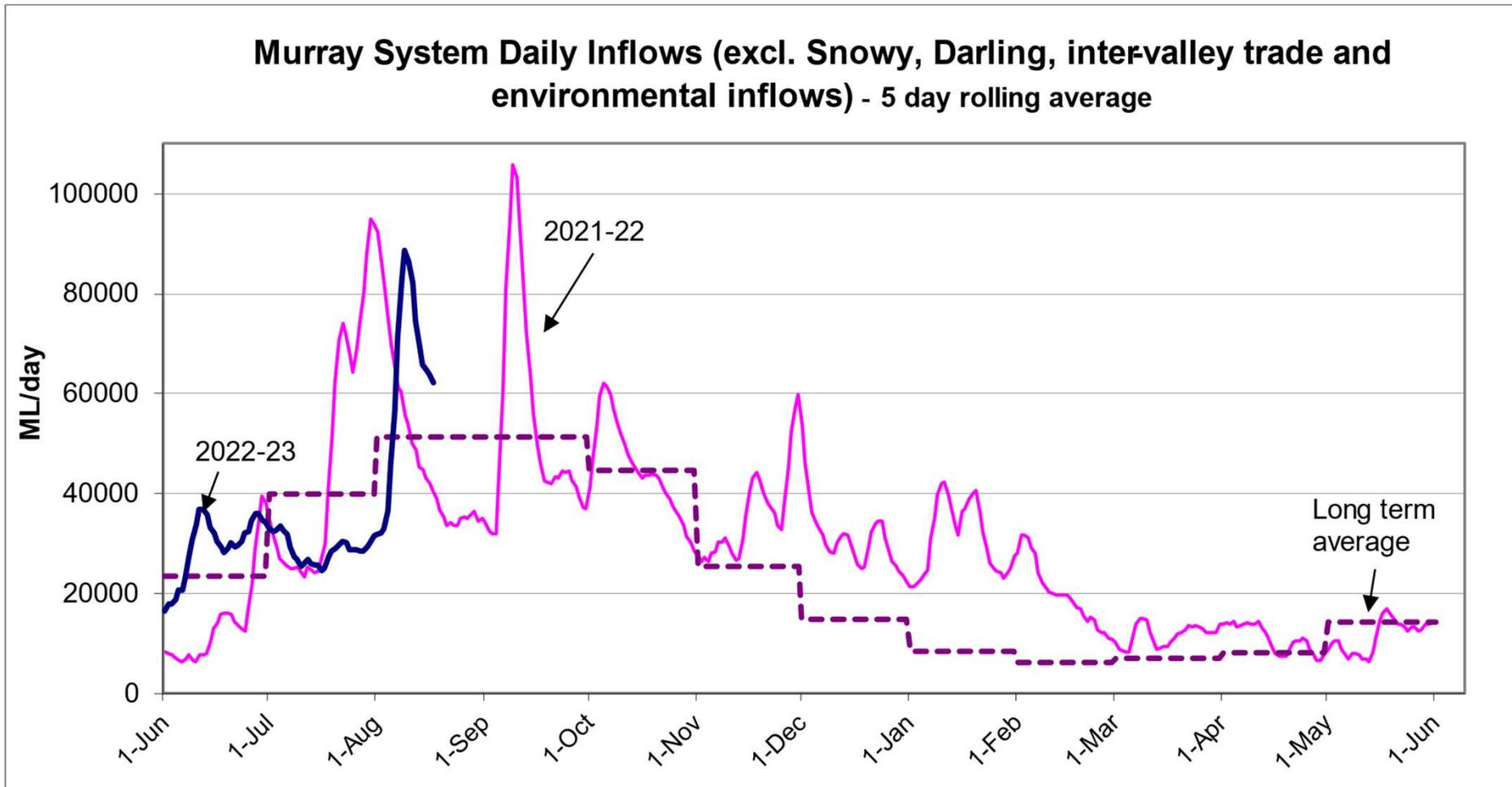
Murray-Darling rainfall deciles July 2022
Australian Gridded Climate Data



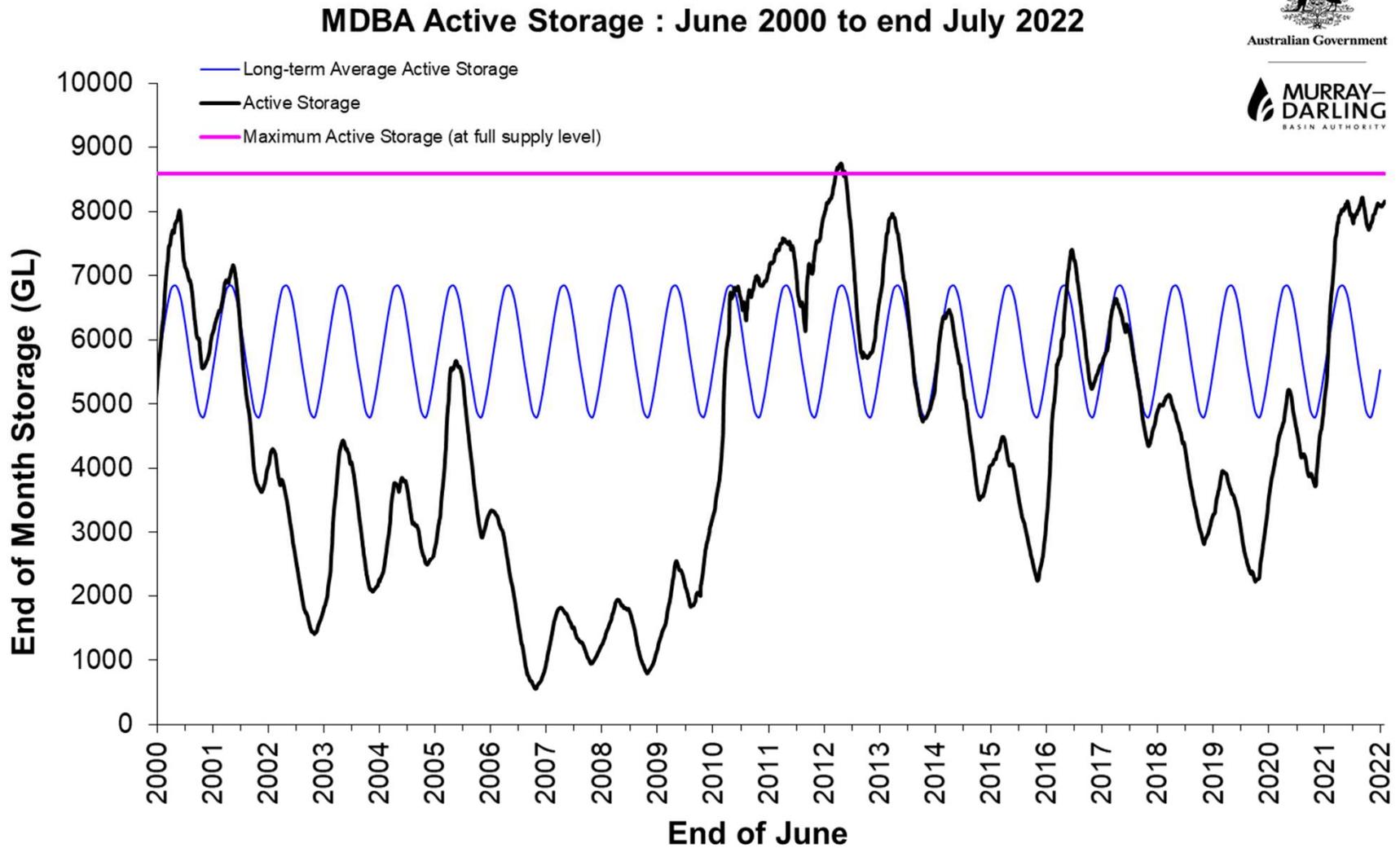
Base period: 1900–Jul 2022
© Commonwealth of Australia 2022, Bureau of Meteorology

Dataset: AGCD v2
Issued: 31/07/2022

Inflows



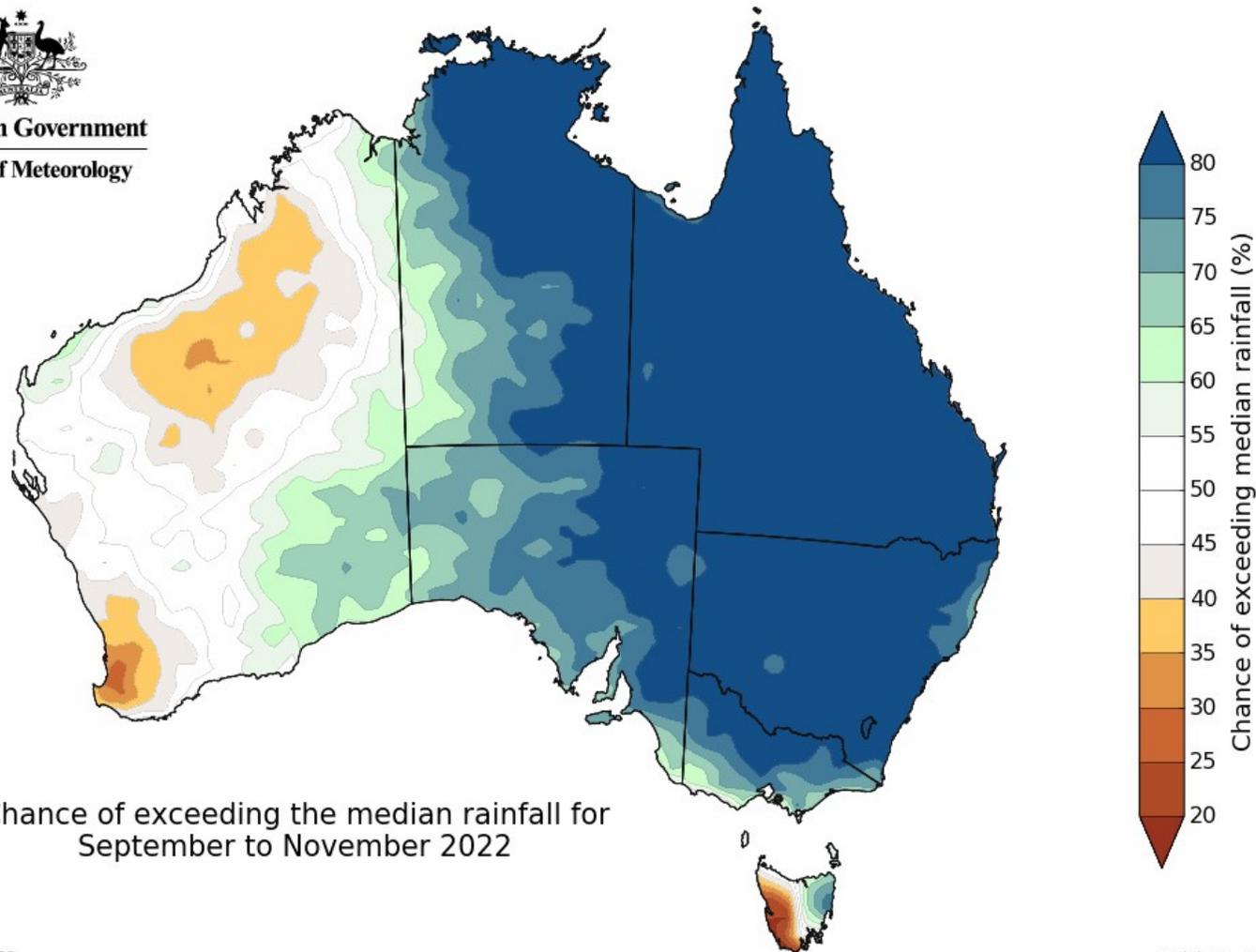
MDBA Active Storage



Rainfall Outlook



Australian Government
Bureau of Meteorology



Chance of exceeding the median rainfall for
September to November 2022

Model: ACCESS-S2
Base period: 1981-2018

Model run: 08/08/2022
Issued: 11/08/2022

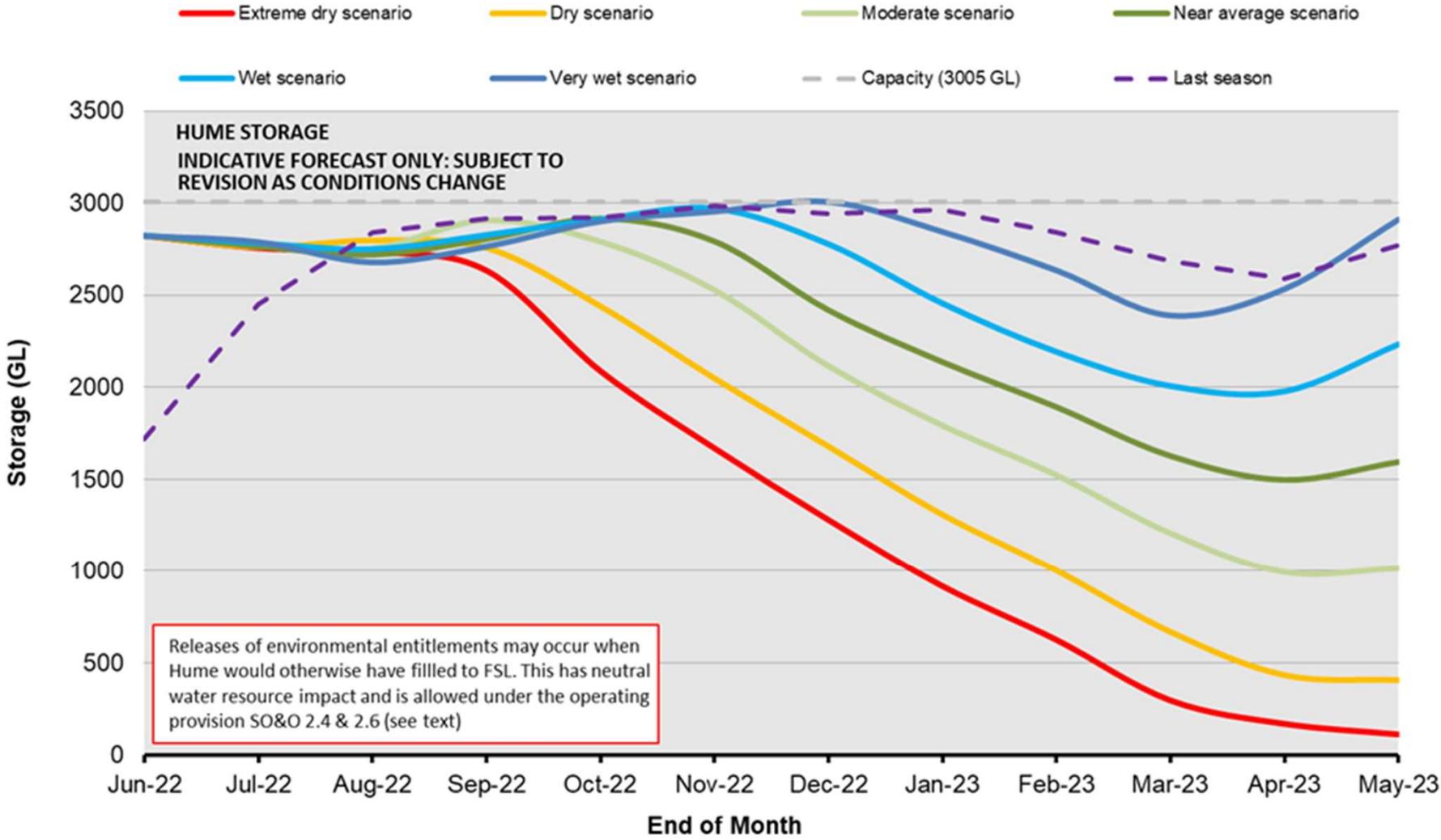
Operations update

- Hume & Dartmouth Dams effectively spilling
- Large releases from Burrinjuck Dam
- Flood operations continue at Menindee
- Lake Victoria to be refilled at the end of unregulated flows

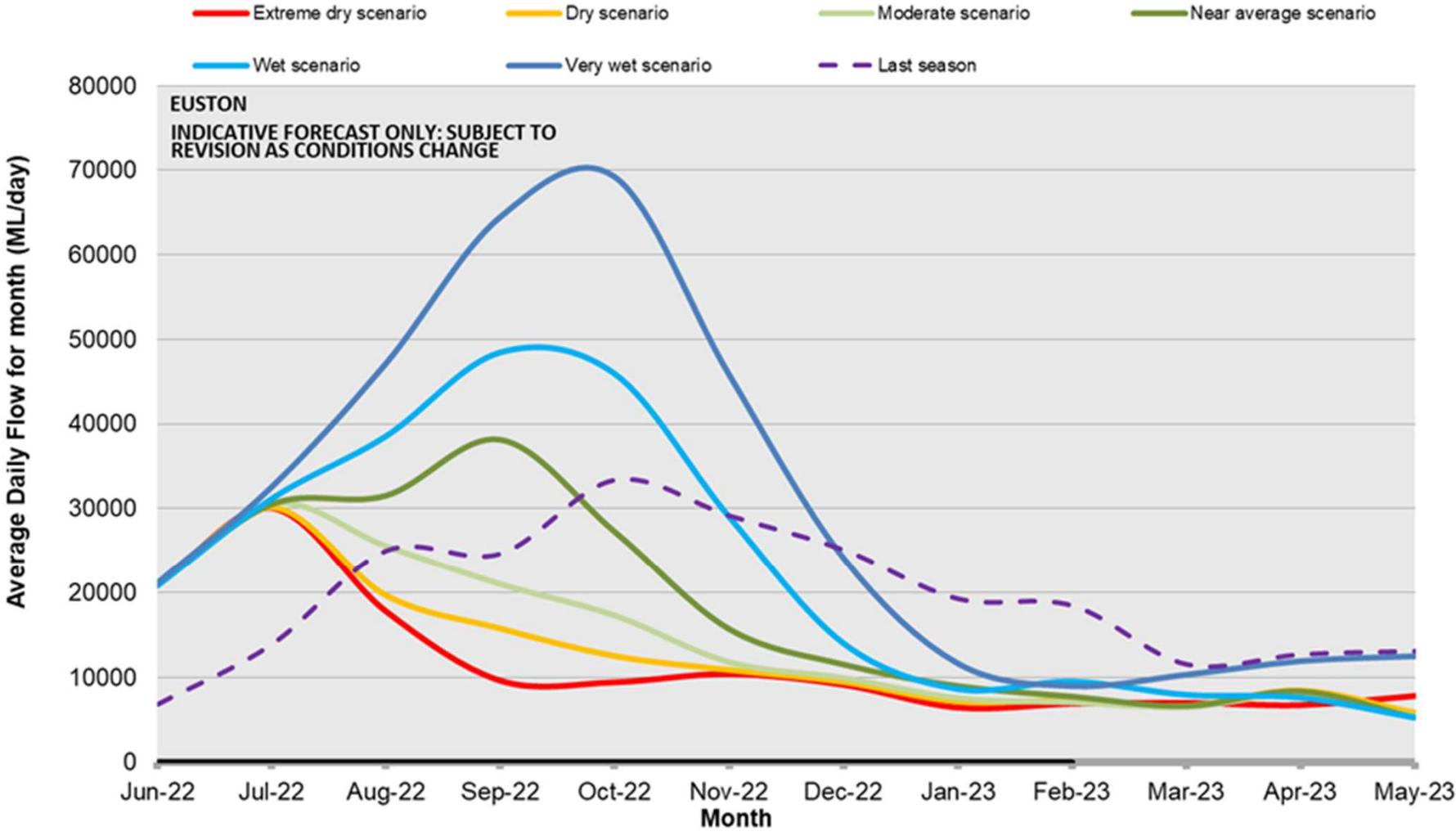
Annual Operating Outlook 2022-23

- The AOO is a key operational planning document
- Provides a series of scenarios for how the water year might play out, from 'extreme dry' to 'very wet'
- Gives an indication of risks that may need to be managed and key operational decisions to consider as the water year progresses

Hume Storage



Euston flow

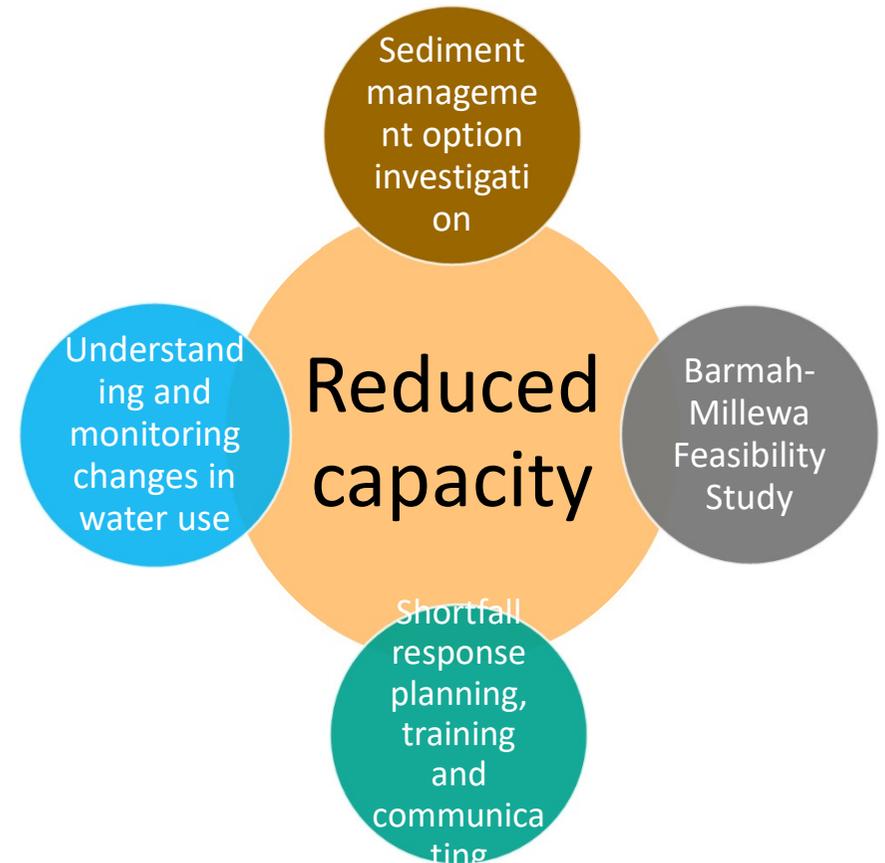


Capacity & Shortfall



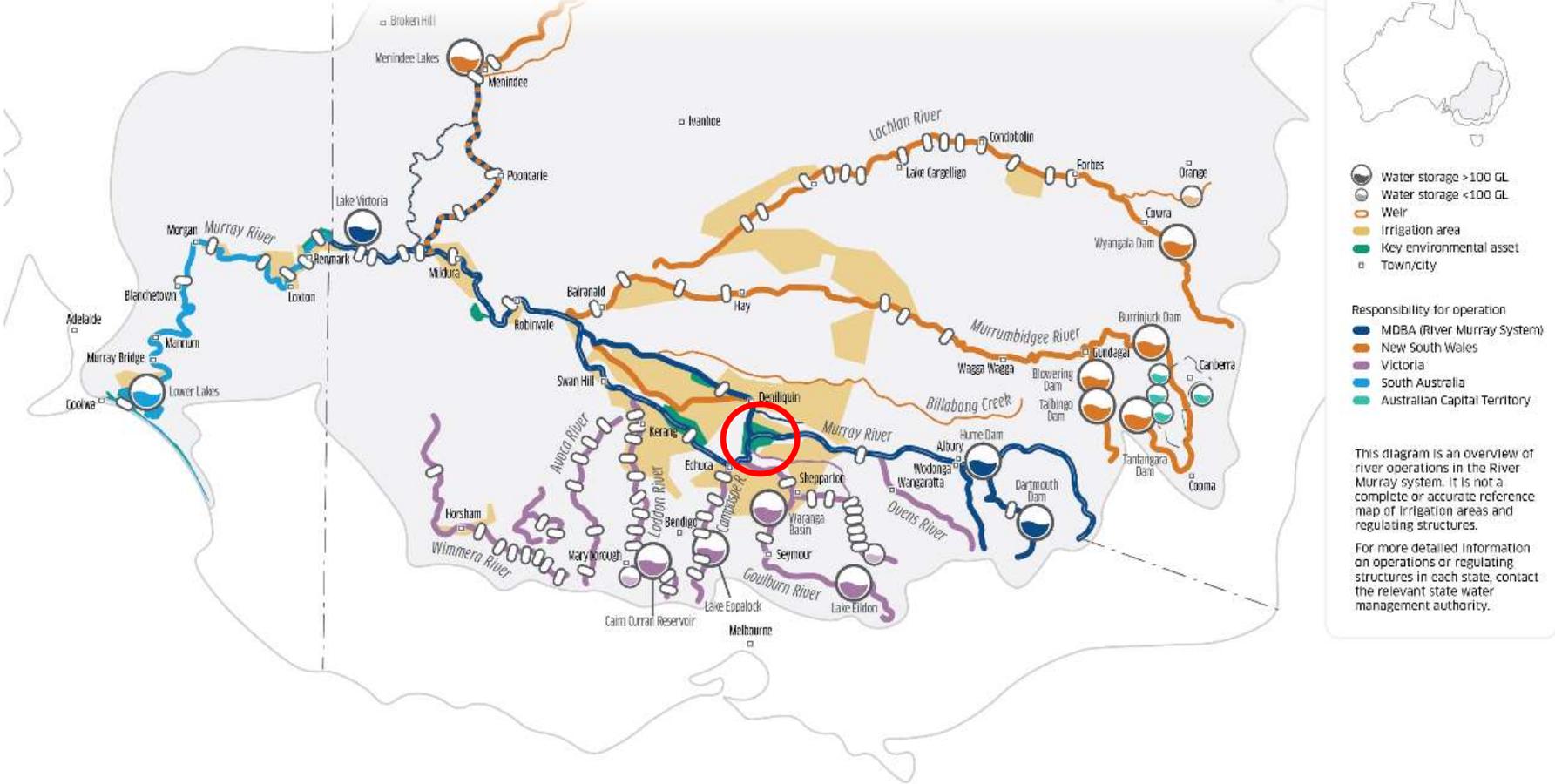
To recap... the issue with the river

- Significant areas of new horticultural development – perception of growth and change in demands
- Capacity of the flows through the Barmah-Millewa reach have reduced significantly
- Ministerial Council has asked the MDBA to :
 - Investigate how water use has changed and continues to change and cumulative impacts on the whole system
 - Develop options to maintain or, if possible, reinstate capacity through the Barmah-Millewa reach
 - Work with the states to have a response plan should a shortfall occur



The Barmah-Millewa Reach

Overview of River Murray system and tributaries



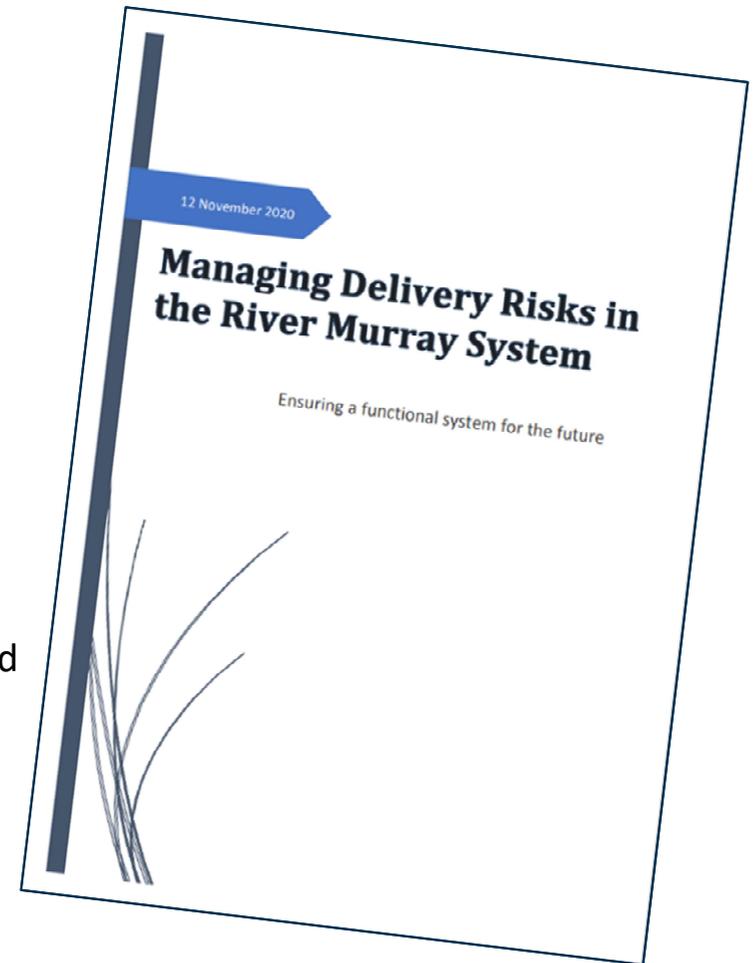
- Water storage > 100 GL
 - Water storage < 100 GL
 - Weir
 - Irrigation area
 - Key environmental asset
 - Town/city
- Responsibility for operation
- DBA (River Murray System)
 - New South Wales
 - Victoria
 - South Australia
 - Australian Capital Territory

This diagram is an overview of river operations in the River Murray system. It is not a complete or accurate reference map of irrigation areas and regulating structures.

For more detailed information on operations or regulating structures in each state, contact the relevant state water management authority.

Early findings

- No growth in entitlements – just a change in crop type and location
 - Cap on diversions since 1996
- Significant movement in irrigated agriculture d/s Barmah
 - Less pasture and annual crops
 - Move to horticultural plantings
 - Demand moved further downstream – but was already delivered d/s Barmah-Millewa reach
- Water recovered for the environment
 - More recovered d/s Barmah-Millewa reach than above
 - Has not increased summer demand



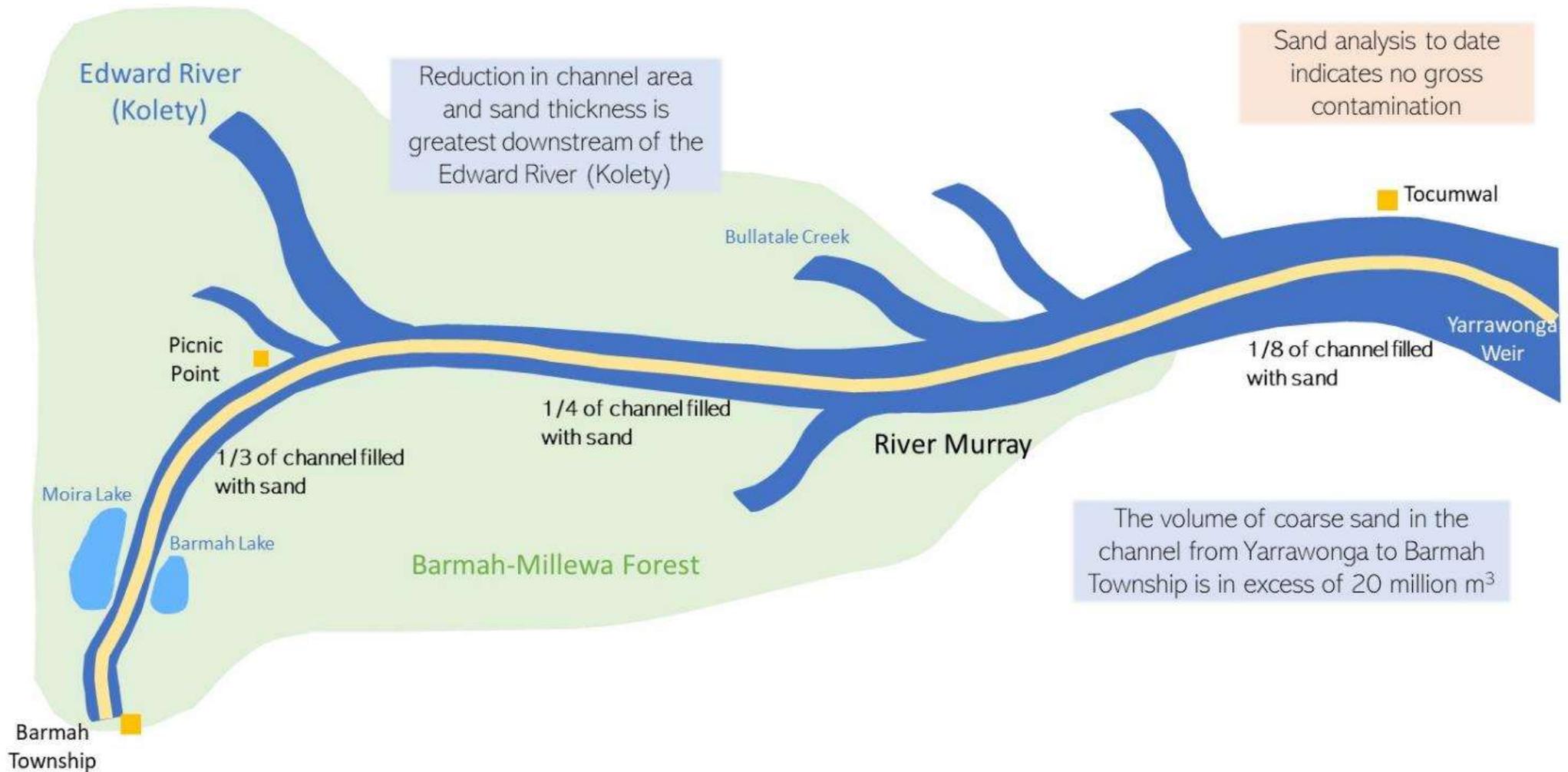
Why is horticulture focused in the Sunraysia region?

**Almonds, citrus, and table grapes
can all be grown more
profitably below the Barmah-
Millewa reach**

- ✓ Optimum temperatures and sunlight during the growing season
- ✓ Less rainfall during the harvest period
- ✓ Better trafficability after rain
- ✓ Proximity to processing infrastructure
- ✓ Proximity to services
- ✓ Proximity to labour
- ✓ Amenity to attract skilled managers
- ✓ Regulatory and financial approvals processes
- ✓ Water trade, reliability

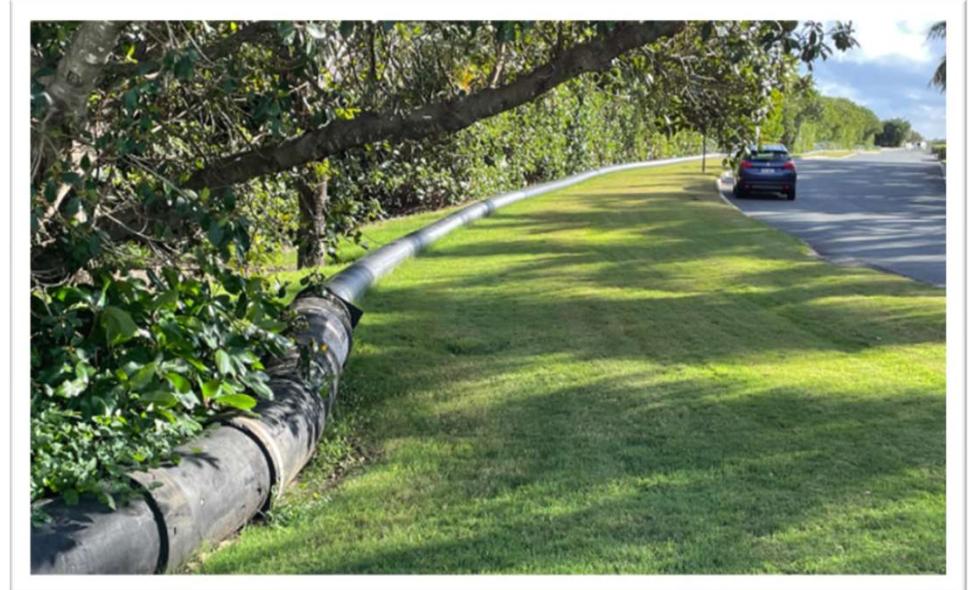
Further reading
"An Investigation into the Location of Horticultural Water Demands - Drivers of Horticultural Development in the Murray-Darling Basin"
MDBA website

Barmah-Millewa Sediment - What we know



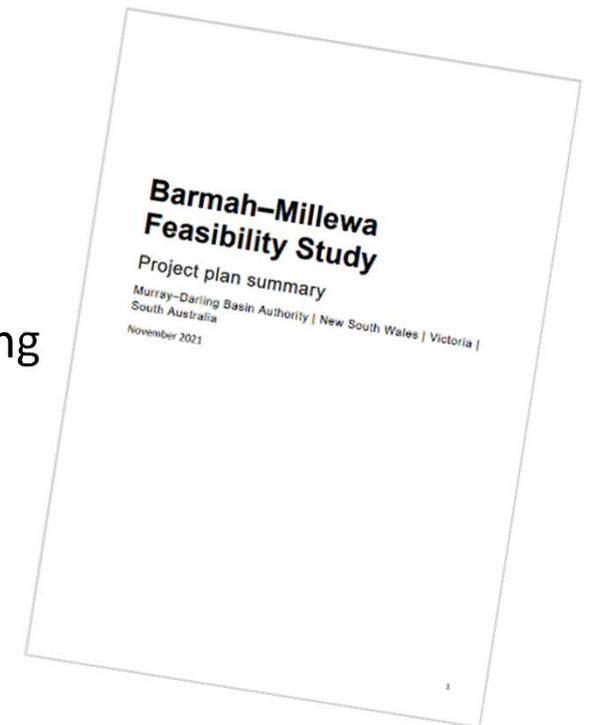
Physically removing the sand

- How much would we need to remove?
 - Where is the most effective place?
 - Is this an acceptable location?
 - How do we get the sand out of the river bed?
 - What are the impacts of removal?
- What do we do with the sand?
 - in the middle of 2 National Parks – both RAMSAR listed wetlands
 - Does it have commercial value?
 - Is there any gold left in it?



Barmah-Millewa Feasibility Study

- Directive from Ministerial Council
 - Funded in late 2021
 - Due for completion December 2022
- Has incorporated a number of parallel projects MDBA had running
 - River works program
 - Barmah-Millewa Sediment investigation
 - Tar-Ru (Lake Victoria) study
- Working on 6 options
 - To be brought together into suites to be presented back to Ministerial Council



Current status of each option

Bank protection	Ongoing work undertaken led by Water Infrastructure NSW Priority given to 71 kms area of greatest damage 5-year interim program underway
Sediment work	Investigating the feasibility of targeted removal of the sand Can it be done ? What are the impacts of doing this?
Tar-Ru /Lake Victoria	Desktop study. Investigating changing the transfers from Jan- April to winter months
Murray Irrigation Limited	Investigations into the use of moving water around the Murray Irrigation escapes – what are the risks?
Victorian Infrastructure	Investigating optimizing use of Mid Murray Storages, bypassing the reach via new or existing infrastructure and changed Goulburn Valley to Murray transfers
Murray River Flows via Snowy Hydro	Desktop study. Investigating the current IVT (intervalley trade rule) Can it be changed to move more water through Snowy Hydro Limited to the Murray via the Murrumbidgee?

Bringing the options together

No one option can resolve this issue

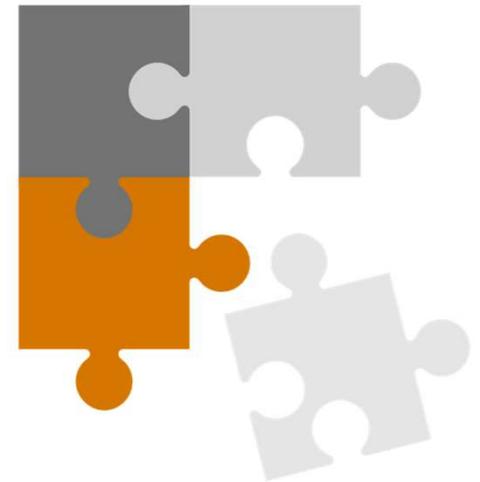
- They work over different time scales
- Some only contribute under specific river conditions
 - For example - does MDBA have access to water in Menindee lakes?

Need a suite of options for a southern basin solution

- Will need to assess which options work when and how much they can contribute
- Working with the States to assess the options
- Developing a method to assess how much, and when, each could contribute
- Use this method to develop suites of options

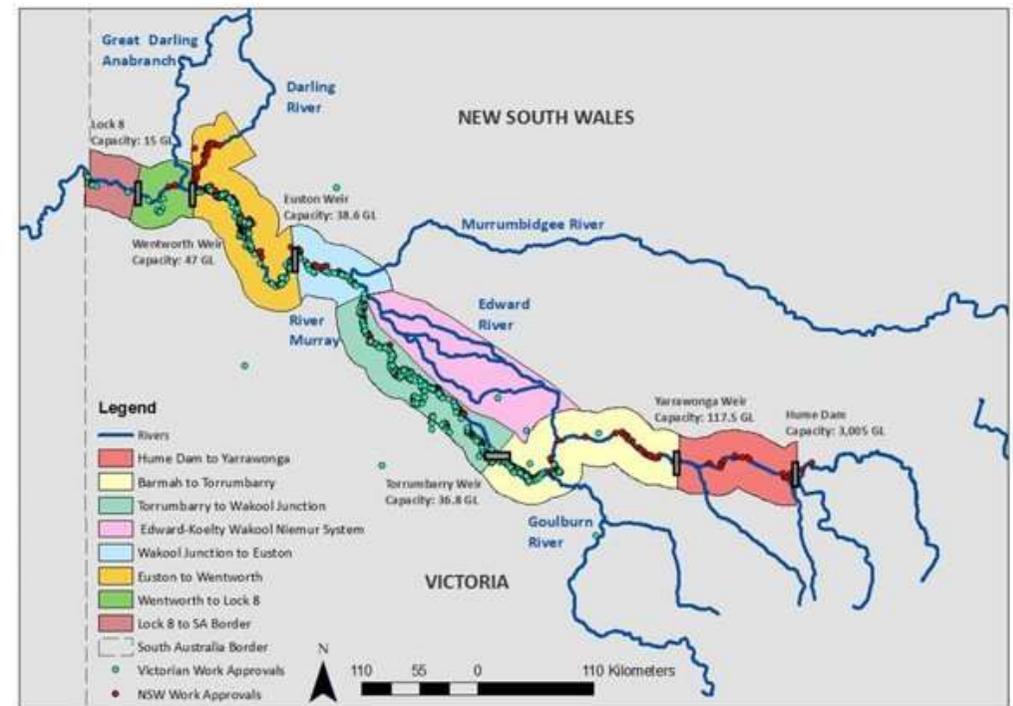
Choosing a suite of options

- The suite will be assessed and the findings presented to BOC & Ministerial Council
- BOC & Ministerial Council decide which suite (if any) are progressed



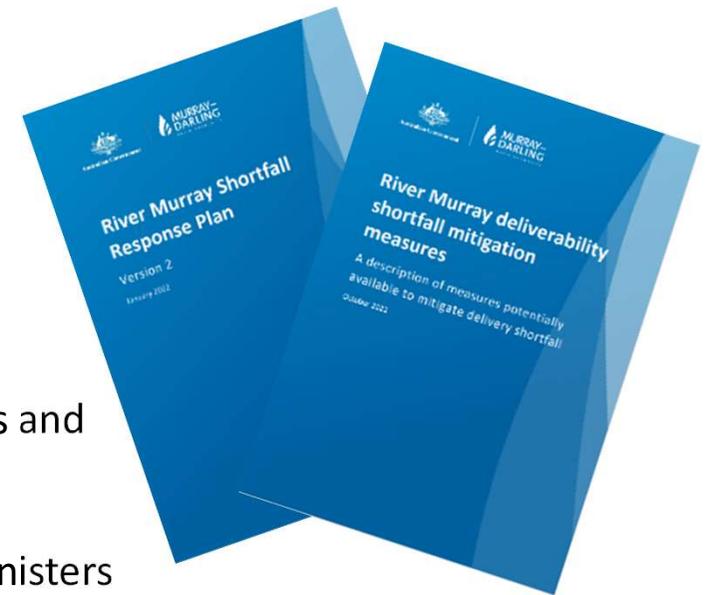
Cumulative impacts – Assessing changes in water demands

- Are peak diversions changing?
 - Are they in a different place?
 - Has the timing changed?
 - Has the volume changed?
- The MDBA and states are working together to compile and analyse data
- Inform river operations and manage shortfall risk
- Data availability and suitability is the challenge
 - we need daily diversion data for each extraction point
 - data collection methods vary between states, and the intended use of the data



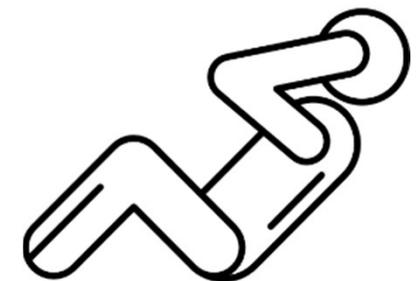
Shortfall Response Plan

- River Murray Shortfall Response Plan – published
 - This plan covers "delivery" shortfall
 - MDBA is now developing "system" shortfall response plan – expected first testing in late 2022
 - Defines how we work together to assess the risk, communicate this and mitigate the impacts
 - Does not define how a shortfall is shared – that is a decision for Ministers
- NSW, Vic and SA are currently developing their own plans
 - Does not mean they expect a shortfall – it is like a fire safety plan in an office
 - If there is a shortfall, and Ministers agree that their state needs to restrict use, they are ready

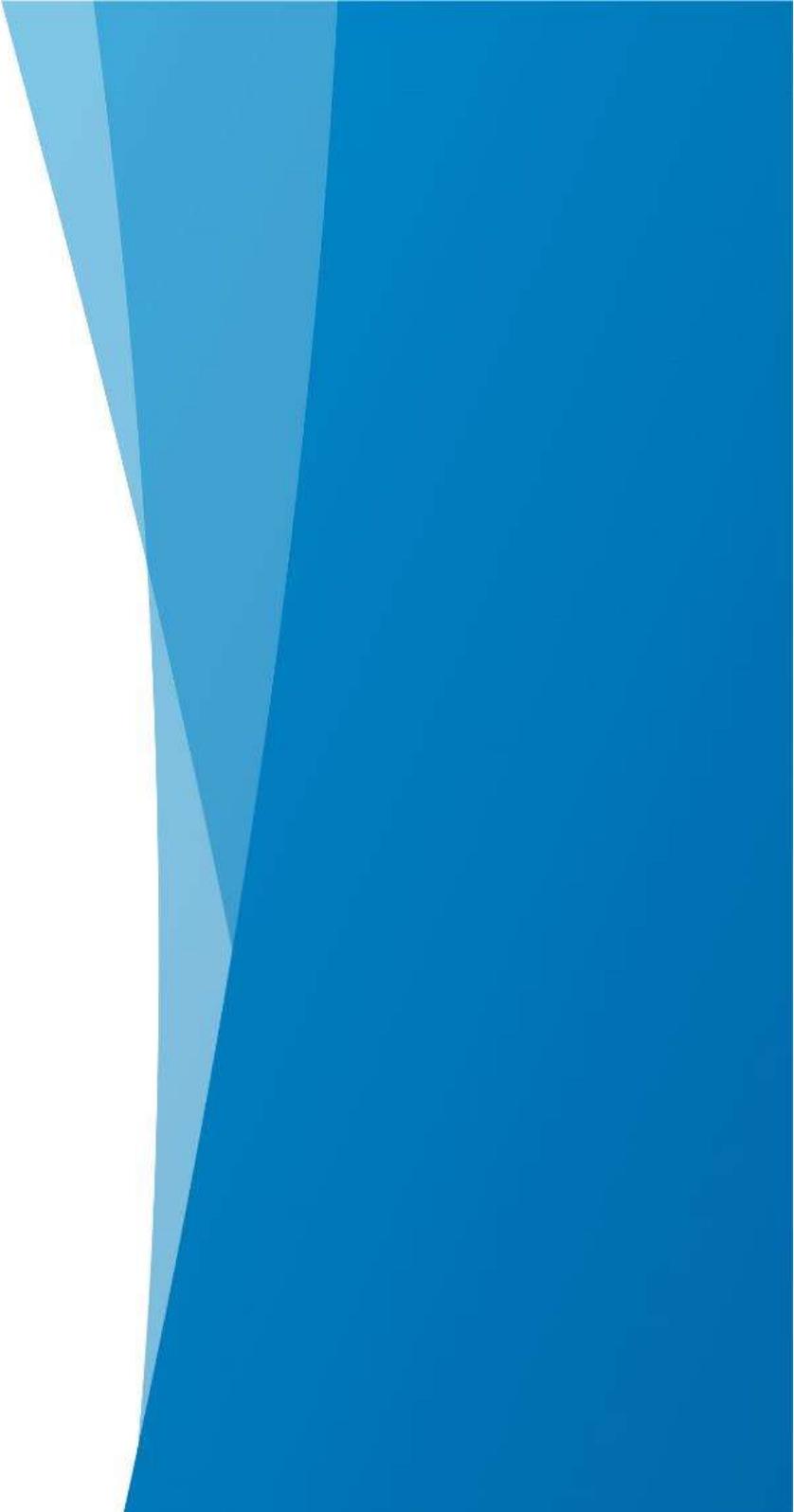


Exercising the shortfall plan

- Simulation of shortfall done with the States in 2020 and 2021
- Will do another exercise in 2022
- Aim is for shortfall exercise to become like flood and dam safety exercise – a part of routine business
- Exercises have demonstrated the need for good datasets of historic and real time diversions for all large offtakes
- This data will help plan the use once the restriction comes off – how much water might be taken – will there be enough?



Thank you

The right side of the slide features a decorative graphic consisting of several overlapping, semi-transparent blue shapes. These shapes are primarily triangular and trapezoidal, creating a layered, abstract effect. The colors range from a light sky blue to a deep, solid blue. The shapes are positioned on the right side of the white background, extending from the top to the bottom of the frame.