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THE RESPONSE TO THE 2011 BRISBANE RIVER FLOODS & A NATIONAL PICTURE OF RIVER AND WETLAND ASSESSMENT, MANAGEMENT AND RESTORATION IN AUSTRALIA

Asian River Restoration Network

Alastair McHarg
National Water Commission
Australia

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Presentation Overview

1. Australia's highly variable water resources
2. The role of drought in shaping water policy in Australia
3. Australia's Water Policy Framework
   - National Water Initiative
   - National Water Commissions role in advancing the NWI
4. Project Show Case - FARWH

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Distribution of Australia's surface runoff

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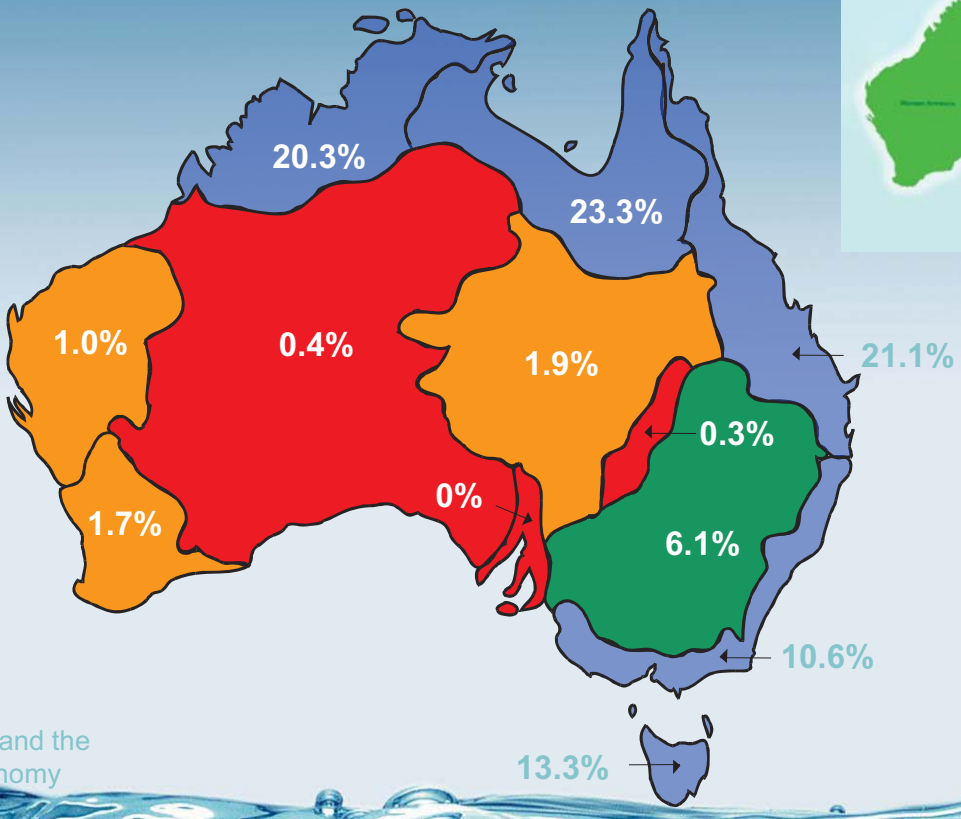

Source: Water and the Australian Economy – April 1999

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Major Australian Droughts 1895-2010

Drought years	Dry years in drought sequence	Comment
1895-1902	1902	Federation Drought
1914-1915		
1937-1945	1940, 1944	
1965-1968		
1982-1983	1982	
1991-1995		
2002-2009	1997, 2002, 2006	Millennium drought

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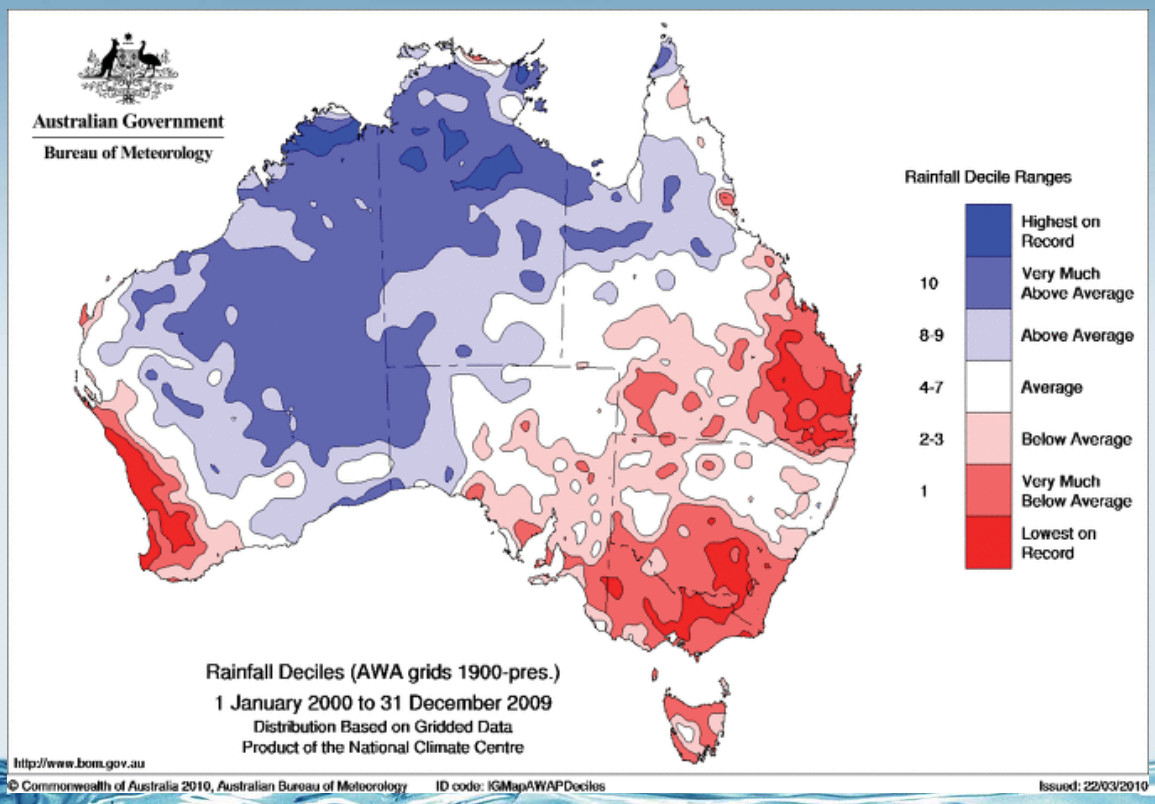
Water scarcity – the last 10 years



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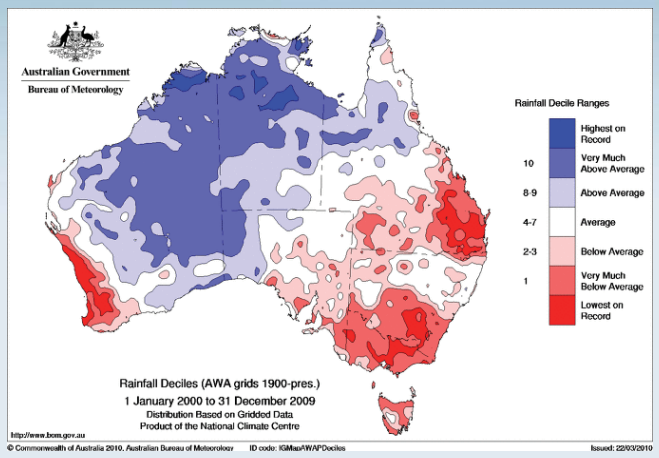
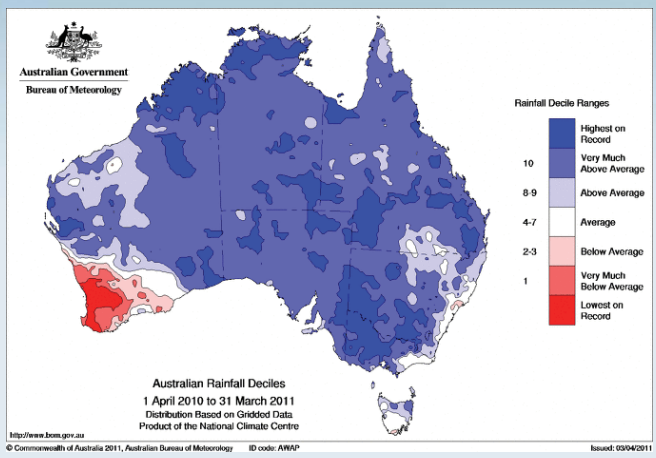
... of droughts and flooding rains

Last 10 years



Last 12 months



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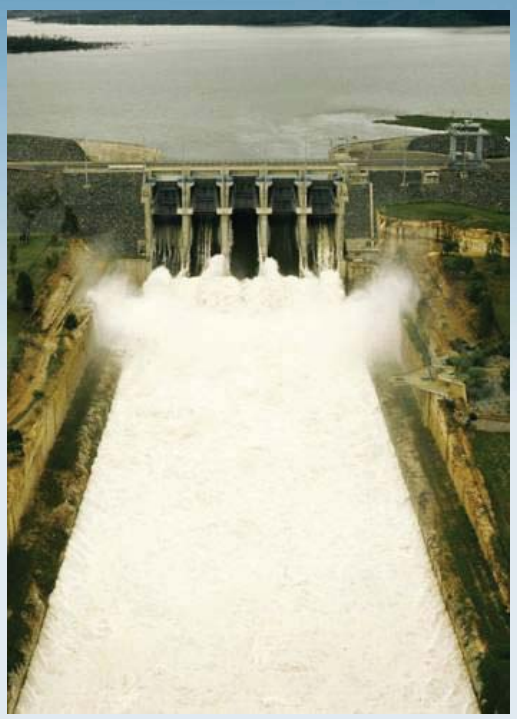
Brisbane River Floods

Brisbane River catchment 13,570 km^2

The major storage on the Brisbane River is the Wivenhoe Dam, which operates as a water supply and flood storage

Half the catchment is upstream of the dam



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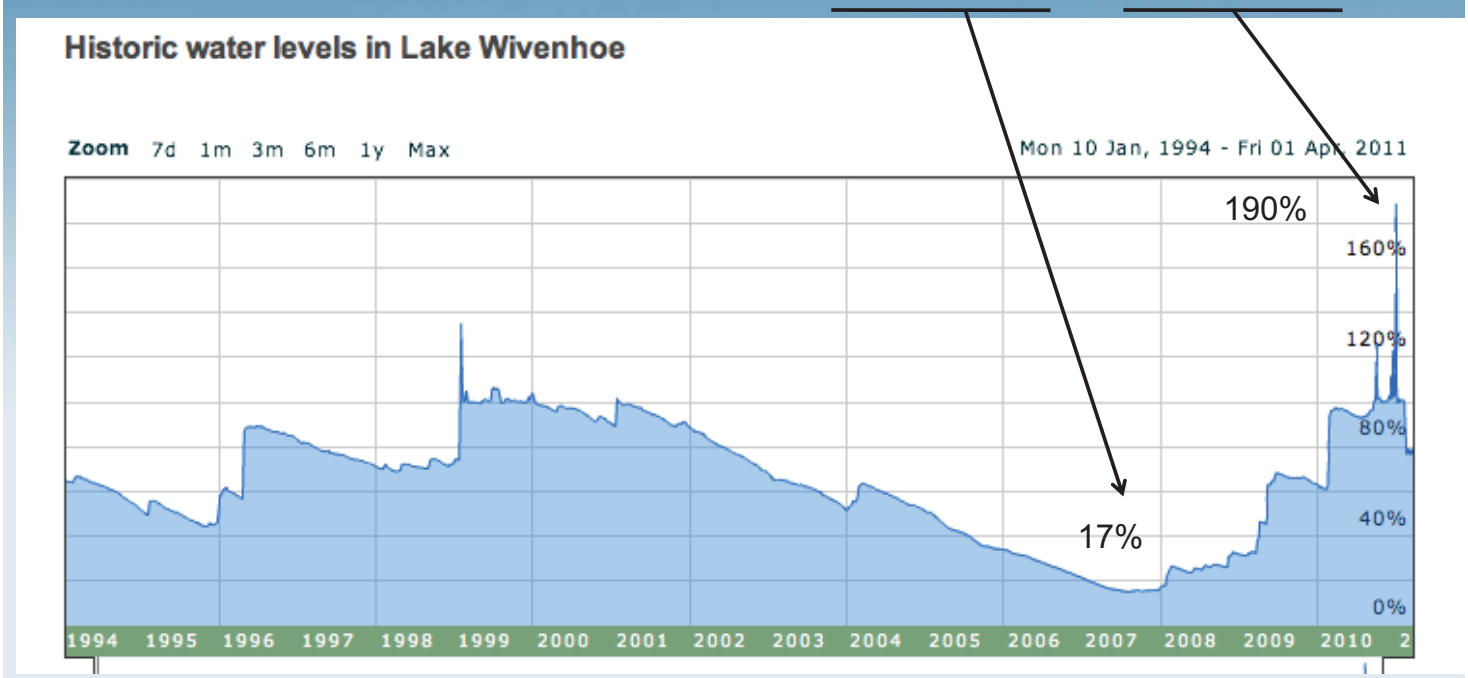
From Drought to Flooding



2007

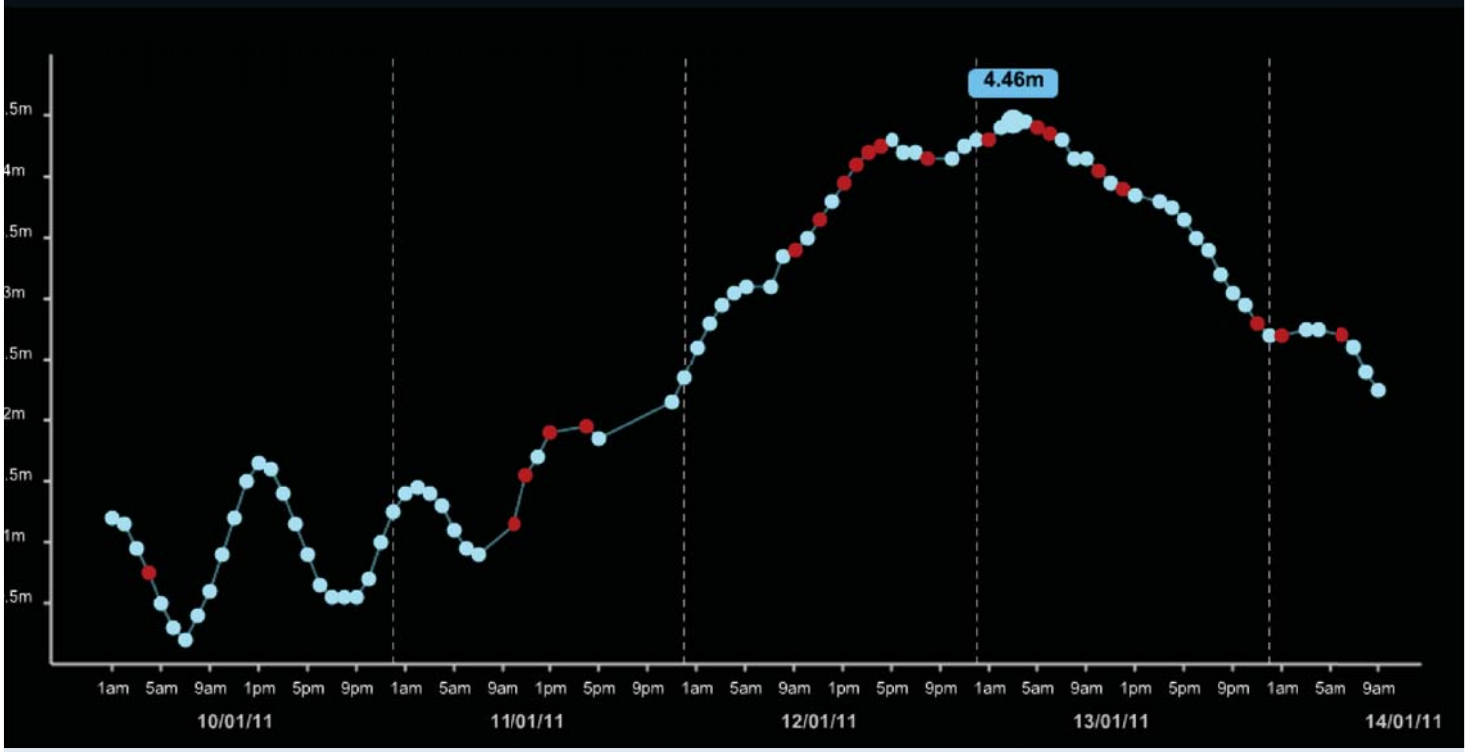
Wivenhoe Dam

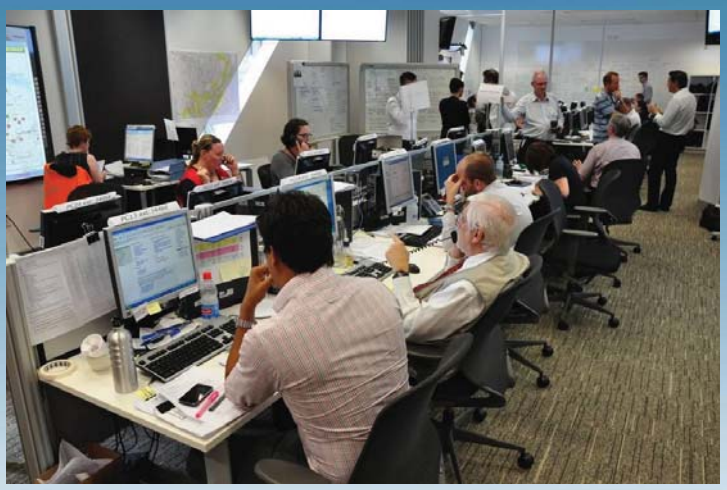
- Water was continuously released from the dam so that its maximum flood storage capacity was not exceeded

The Wivenhoe Dam is at 190 per cent of capacity. *Photo: Dean Saffron*

Controlled releases are aimed to relieve the Wivenhoe Dam's swollen flood storage. *Photo: Dean Saffron*

How the Brisbane River rose





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Local Disaster Coordination Centre

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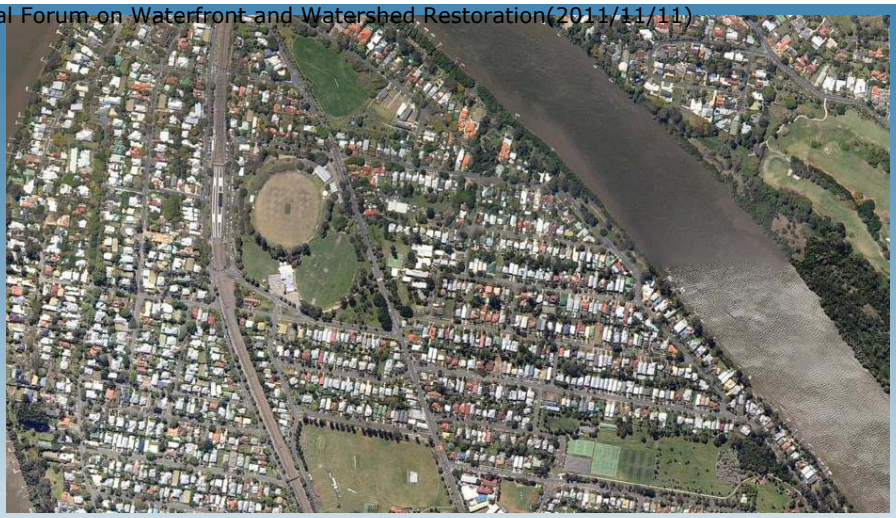
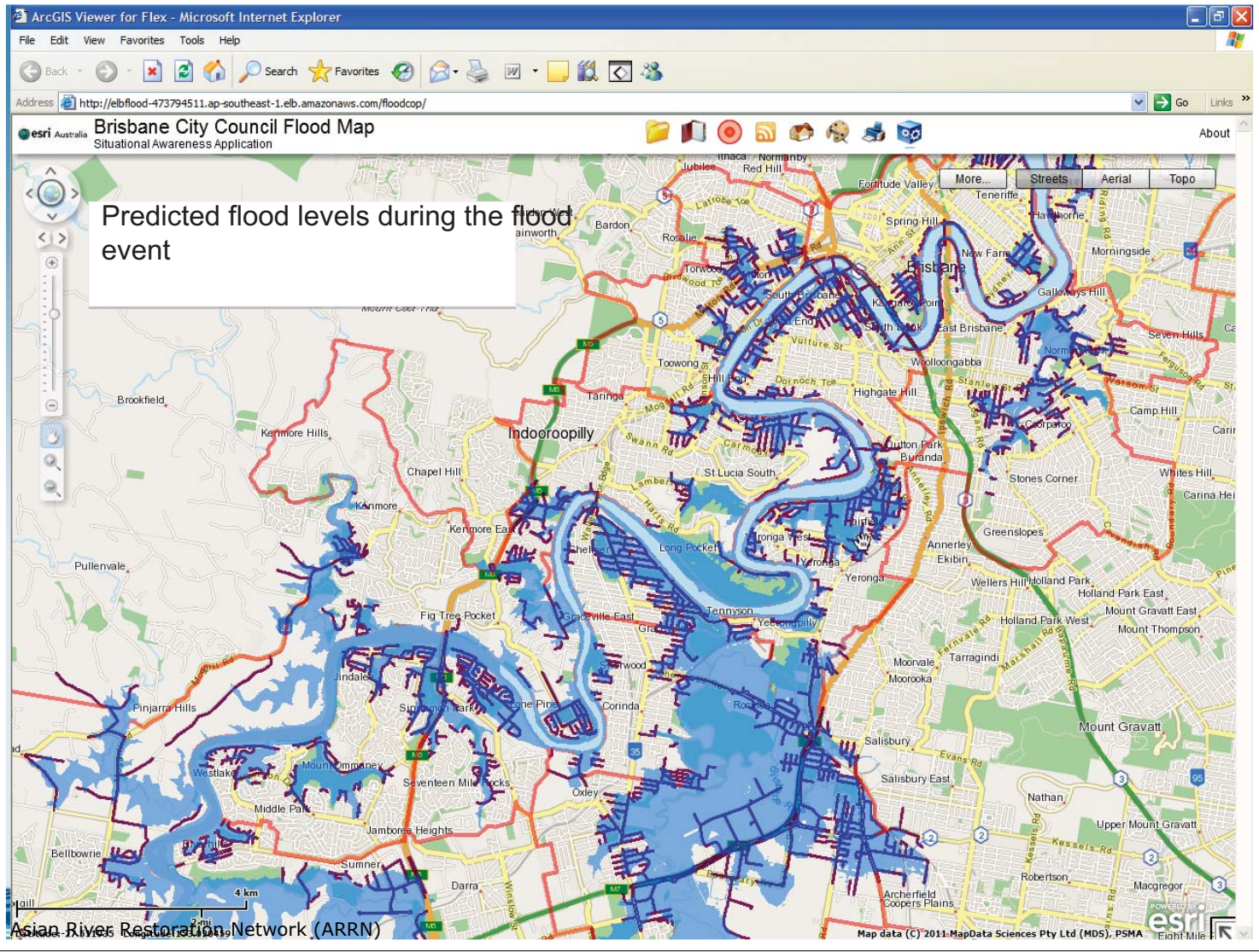


Before Flood

During Flood



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Sewage Treatment Plant

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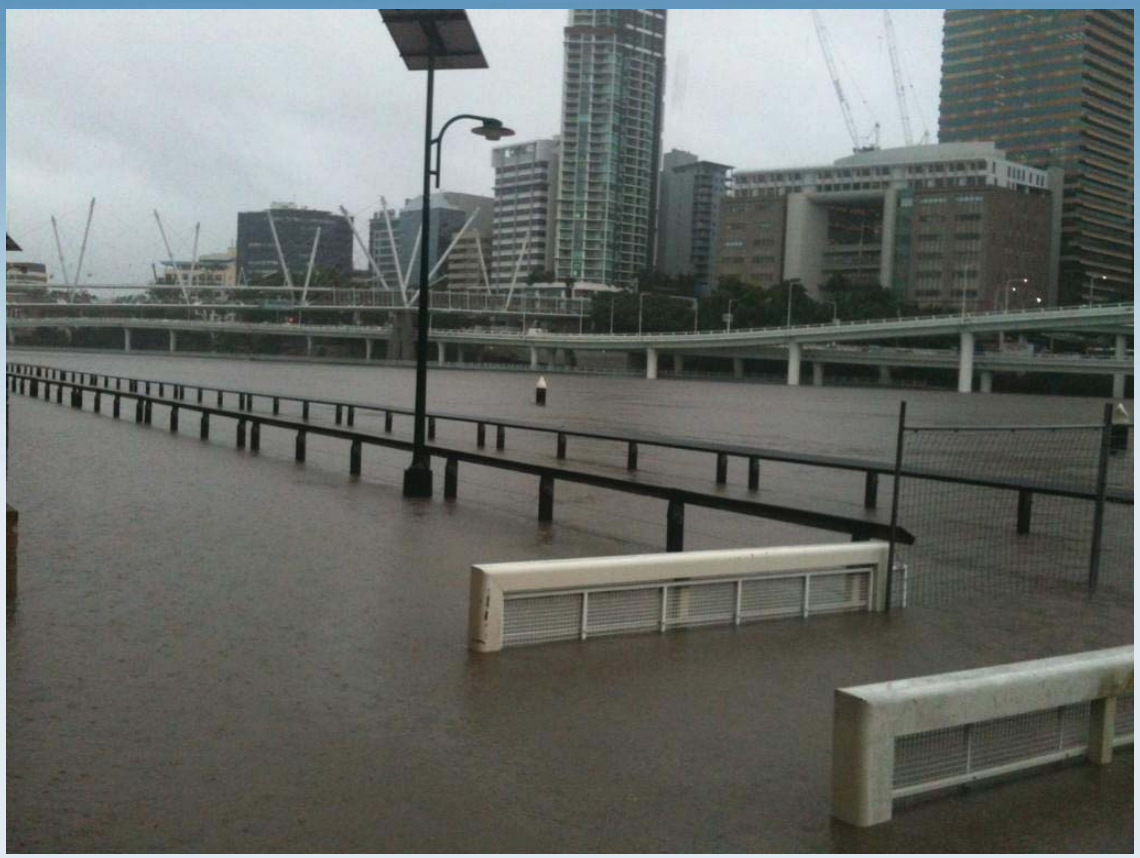

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After the Flood

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Brisbane River Flood Cleanup

- 8,300 stormwater gully inlets and 450 km stormwater pipes to be de-silted
- Road pavements to be repaired
- Thousands of tonnes of rubbish to landfill
- Structures, parks, ferry terminals to be repaired
- Cost to Council = $440 Million
- PLUS all the private assets, e.g. houses, buildings, cars, businesses
- Cost = $3 Billion

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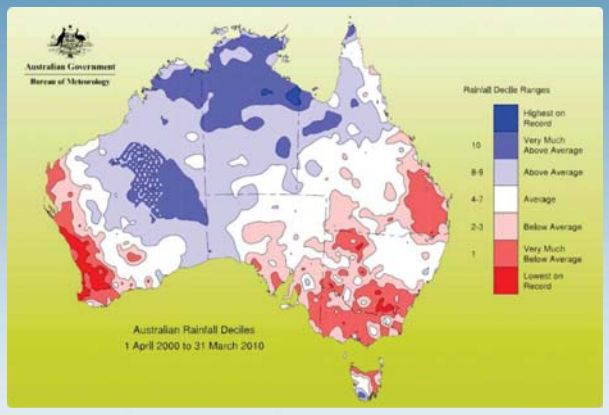
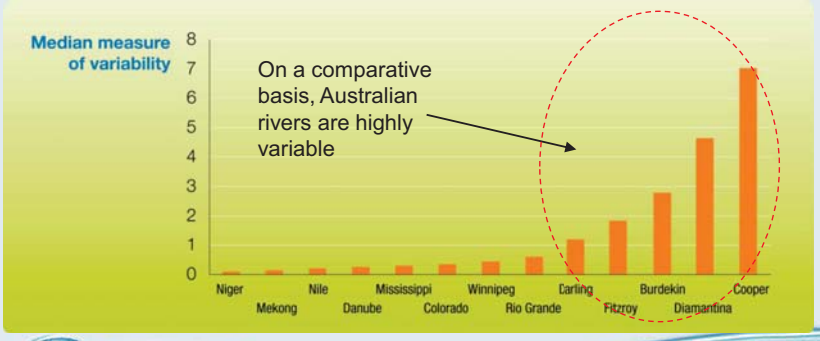
Australia's variable water landscape

- Scarcity, variability, drought and climate change
- Highly urbanised and increasing population in major coastal centres
- Irrigation development particularly in the Murray Darling Basin
- Internationally important water dependent ecosystems

Rainfall distribution from 2000 to 2010



Flow variability - Australian and international rivers



National Water Initiative

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Objective to achieve a nationally compatible market, regulatory and planning based system of managing surface and groundwater resources for rural and urban use that optimises economic, social and environmental outcomes.

8 interrelated elements of water managment

- Water access entitlements and planning
- Best practice water pricing
- Water markets and trading
- Integrated management of environmental water
- Water resource accounting
- Urban water reform
- Knowledge and capacity building
- Community partnership and adjustment

Outcomes

- clear and nationally-compatible characteristics for secure water access entitlements
- transparent, statutory-based water planning
- statutory provision for environmental and other public benefit outcomes, and improved environmental management practices
- complete the return of all currently over-allocated or overused systems to environmentally-sustainable levels of extraction
- progressive removal of barriers to trade in water and meeting other requirements to facilitate the broadening and deepening of the water market, with an open trading market to be in place
- clarity around the assignment of risk arising from future changes in the availability of water for the consumptive pool
- water accounting which is able to meet the information needs of different water systems in respect to planning, monitoring, trading, environmental management and on-farm management
- policy settings which facilitate water use efficiency and innovation in urban and rural areas
- addressing future adjustment issues that may impact on water users and communities
- recognition of the connectivity between surface and groundwater resources and connected systems managed as a single resource.

The Commission's functions

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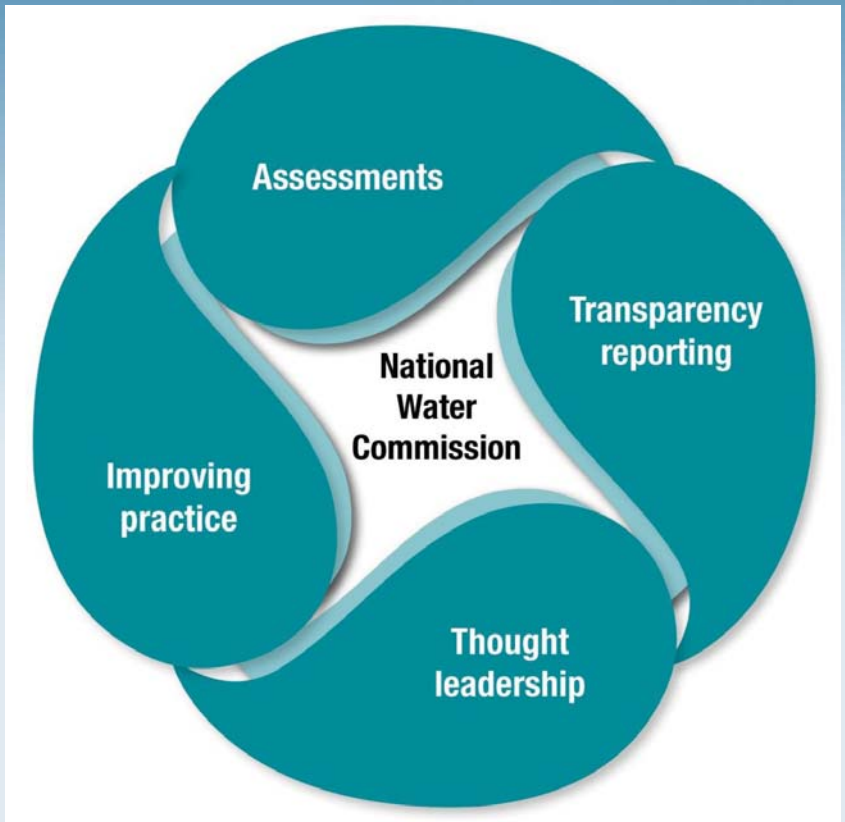
"Role: To provide advice on national water issues and, in particular, to assist with the effective implementation of the National Water Initiative (NWI) Agreement."

—extract from Schedule C, National Water Initiative



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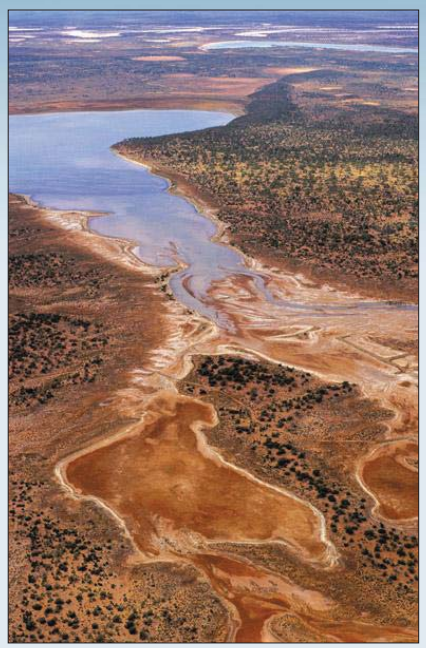
Raising National Water Standards Program

- **Target Areas**
  - Water accounting
  - Water markets
  - Irrigation
  - ***Water dependent ecosystems***
  - Urban water management
  - Groundwater
  - Northern rivers
  - National assessment of water resources
  - Knowledge & capacity building
  - Northern futures



(CSIRO)

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RNWS Projects

Key RNWS Projects associated with river restoration.

1. Watering floodplain wetlands in the Murray-Darling Basin for native fish
2. Source Hydrologic Modelling
3. **Framework for the Assessment of River and Wetland Health (FARWH)**

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Framework for the Assessment of River and Wetland Health (FARWH)

Why monitor river and wetland health?

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If you can't measure it, you can't manage it.

Indicators of success for investments in better water management

Bechin wetland Mid Murray 2009. Paula D'Santos, OEH

River and Wetland Health Assessments in Australia

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- Traditionally undertaken by jurisdictions.
- While achieving specific objectives and good environmental outcomes at a local to state scale – minimal capacity to compare results between jurisdictions
- *FARWH* provides a framework for consistency.

6 components

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Catchment Disturbance

Physical Form

Hydrological Disturbance

Fringing Zone

Water Quality & Soils

Aquatic Biota

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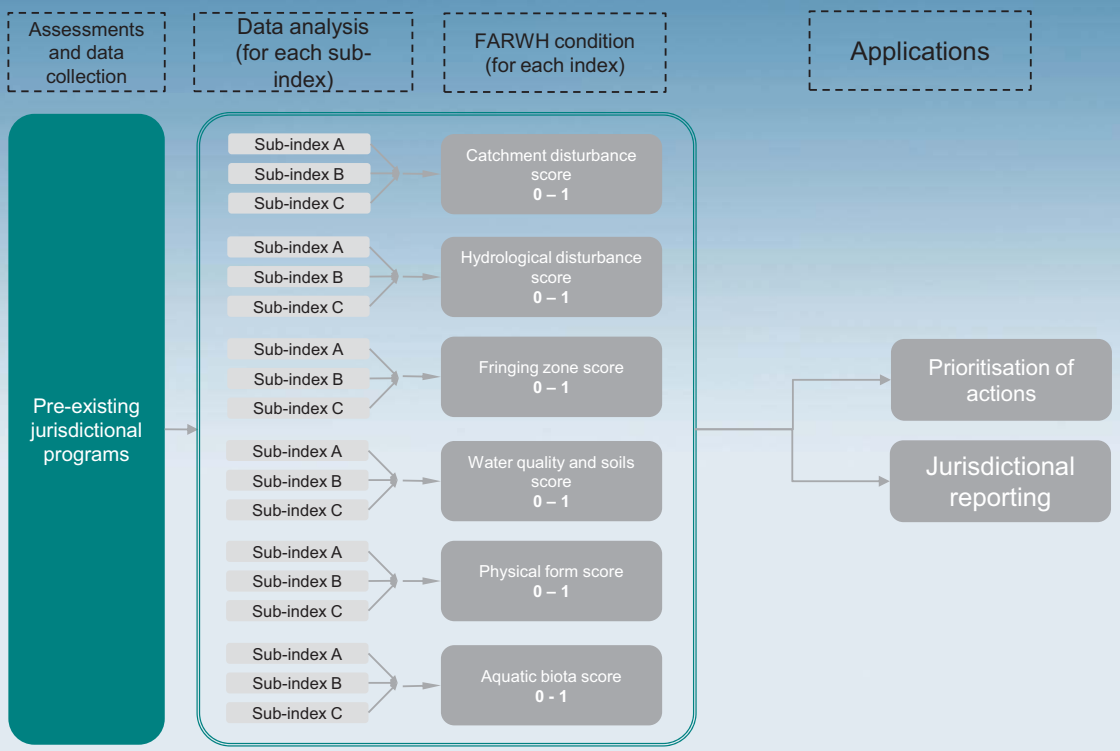
The original FARWH model



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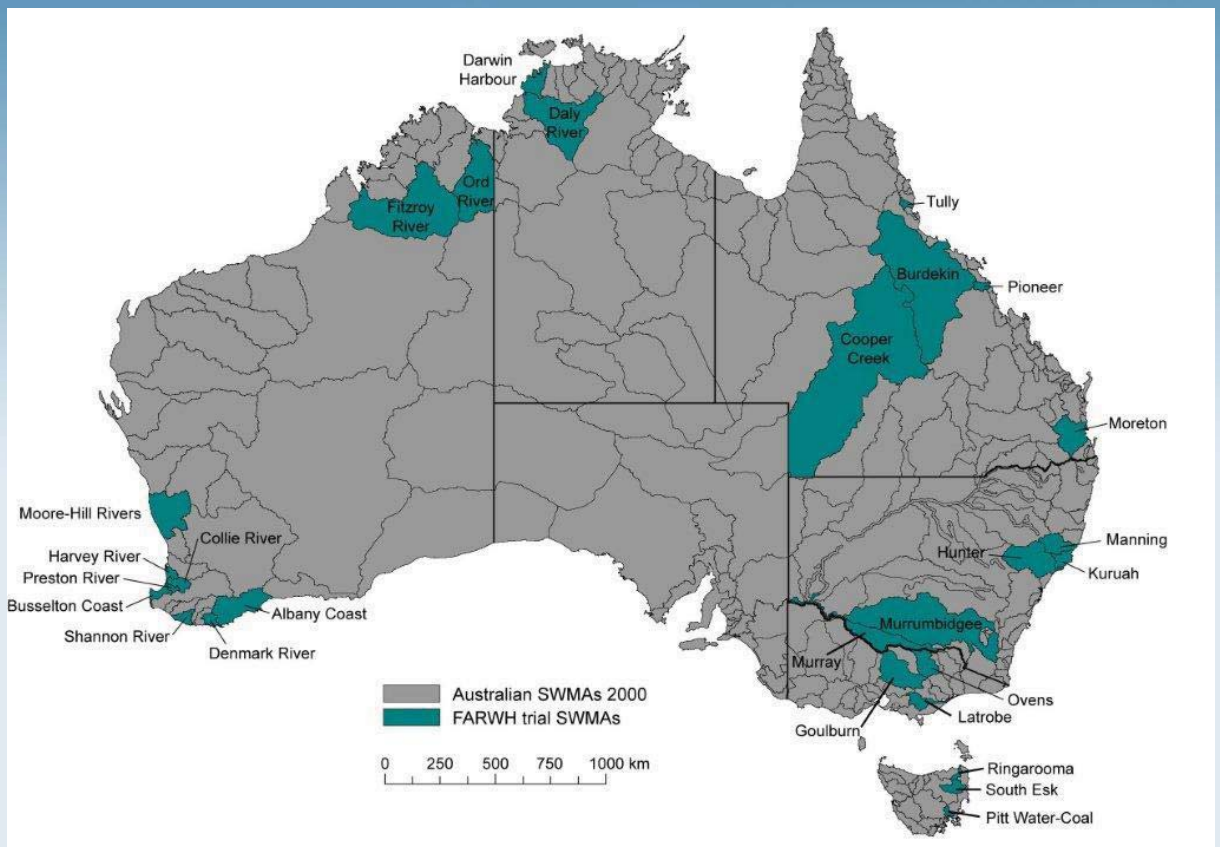
Study area of the FARWH trials



Summary

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- The FARWH provides a consistent reporting framework within and across Jurisdictions.
- The framework allows more comparable reporting of river and wetland health across all parts of Australia.
- The FARWH trials demonstrated that an effective approach to river and wetland assessments is possible.

Conclusion

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- Through projects run by the RNWS Program, the National Water Commission continues to advance Australia's progress towards the National Water Initiative.
- There is still much work to be done to advance Water Reform in Australia.
- For more information:

www.nwc.gov.au

Acknowledgments

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- Thank-you to the Asian River Restoration Network for the opportunity to present at the 8th Annual Forum.

www.nwc.gov.au

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