

Water Security for South Australia

Hon Karlene Maywald MP

Minister for the River Murray

Minister for Water Security

October 2007



Government of South Australia

Department of Water, Land and
Biodiversity Conservation

South Australia - Water Supply

- Adelaide water from two sources –
 - Adelaide Hills (Mt Lofty catchment)
 - River Murray.
- RM supply ranges from 40% in an average year to 90% in drought
- Supply is usually very secure unless in extreme drought
- 2006/07 – Mt Lofty Ranges & the Murray-Darling catchments failed

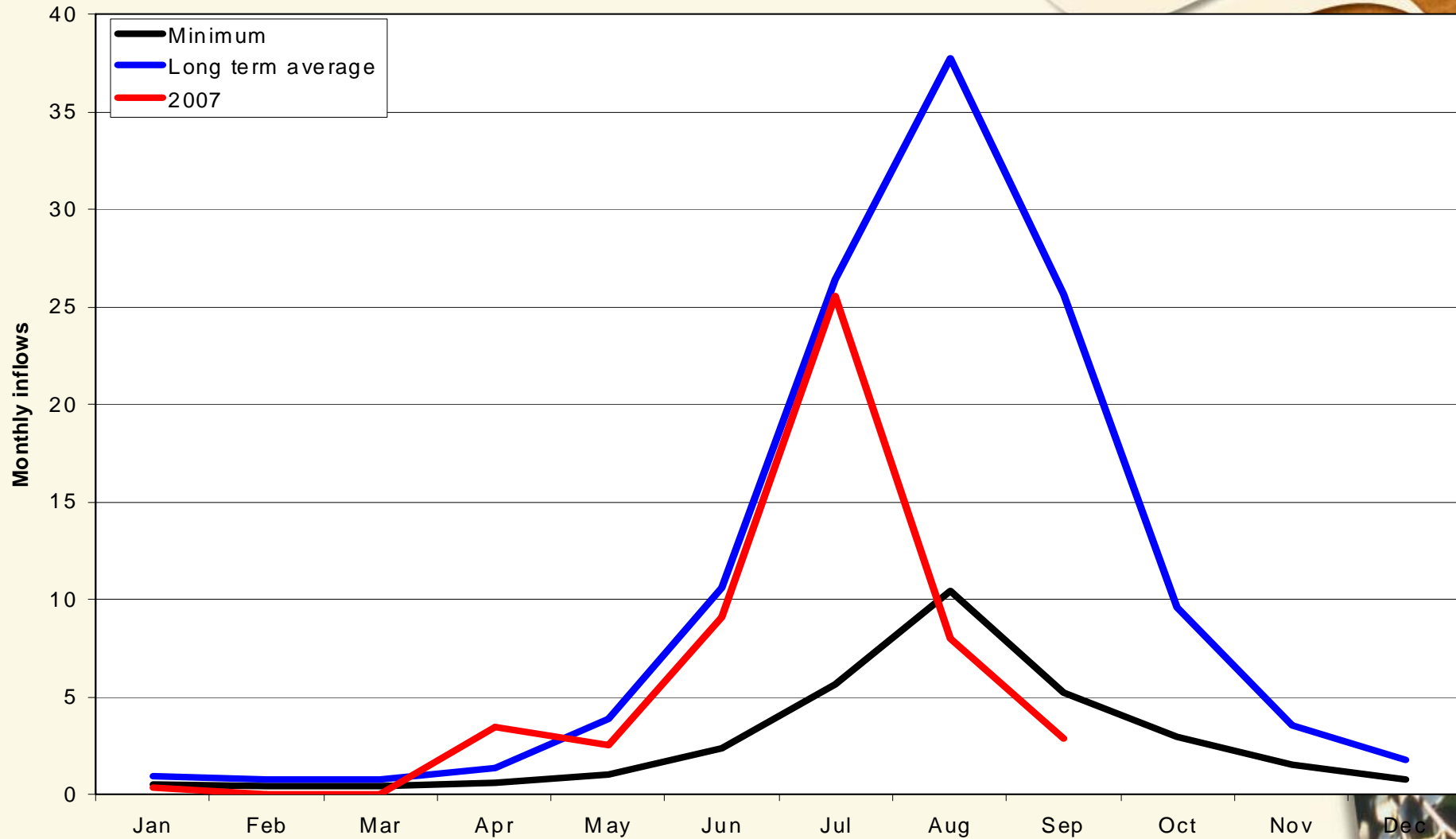


Drought - Mt Lofty Ranges

- Natural intakes from Jan 1 to Oct 16
 - 2007: 52.8 gigalitres
 - 2006: 25.1 gigalitres
 - 2005: 89.8 gigalitres
 - 2004: 148 gigalitres
 - 2003: 152 gigalitres
 - 2002: 46 gigalitres
 - 2001: 138 gigalitres
 - 2000: 140 gigalitres
 - Reservoirs: Now 80%; however $\frac{3}{4}$ of this is River Murray water.

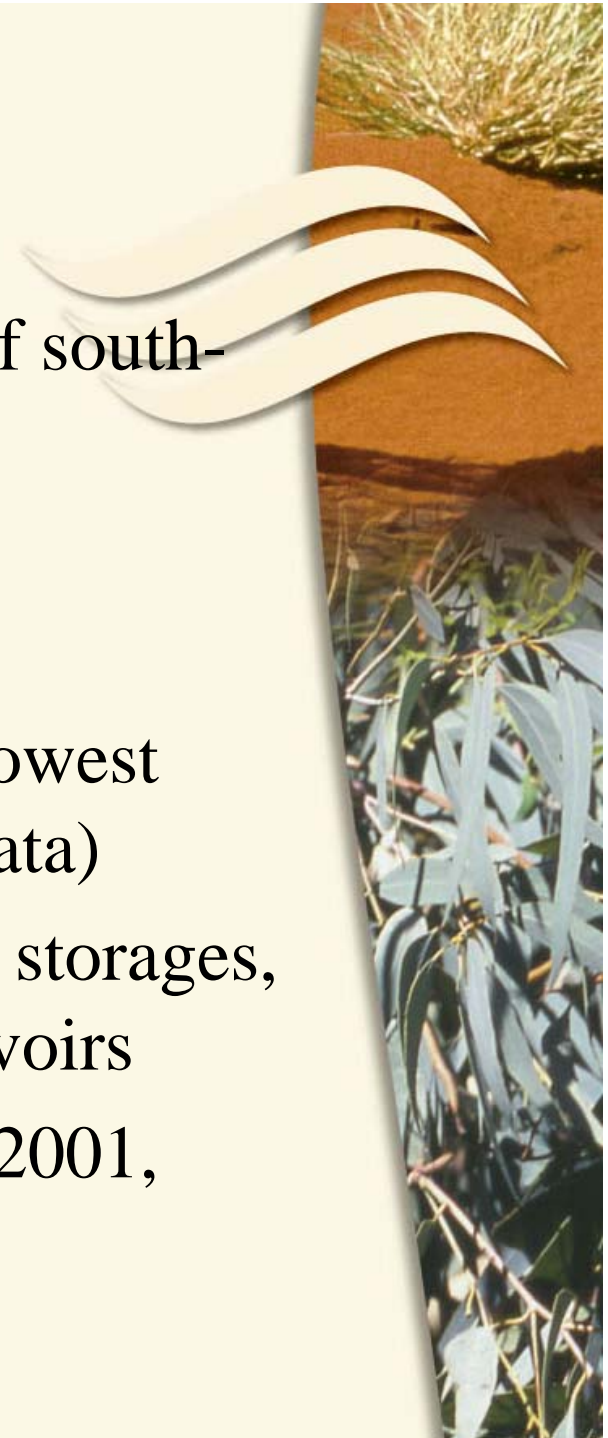


Mt Lofty Ranges Inflows



Murray-Darling Basin

- MDB covers one million square km of south-eastern Australia
- SA – 7% of MDB water
- Adelaide – 1% of MDB water
- 2006-07 - 11 consecutive months of lowest inflows ever recorded (116 years of data)
- Unprecedented fall in interstate MDB storages, including Hume and Dartmouth reservoirs
- Some parts of MDB in drought since 2001, storage levels at an all-time low



Pumping from the Murray



South Australia's dependence on the River Murray below Lock 1

Areas receiving River Murray water:

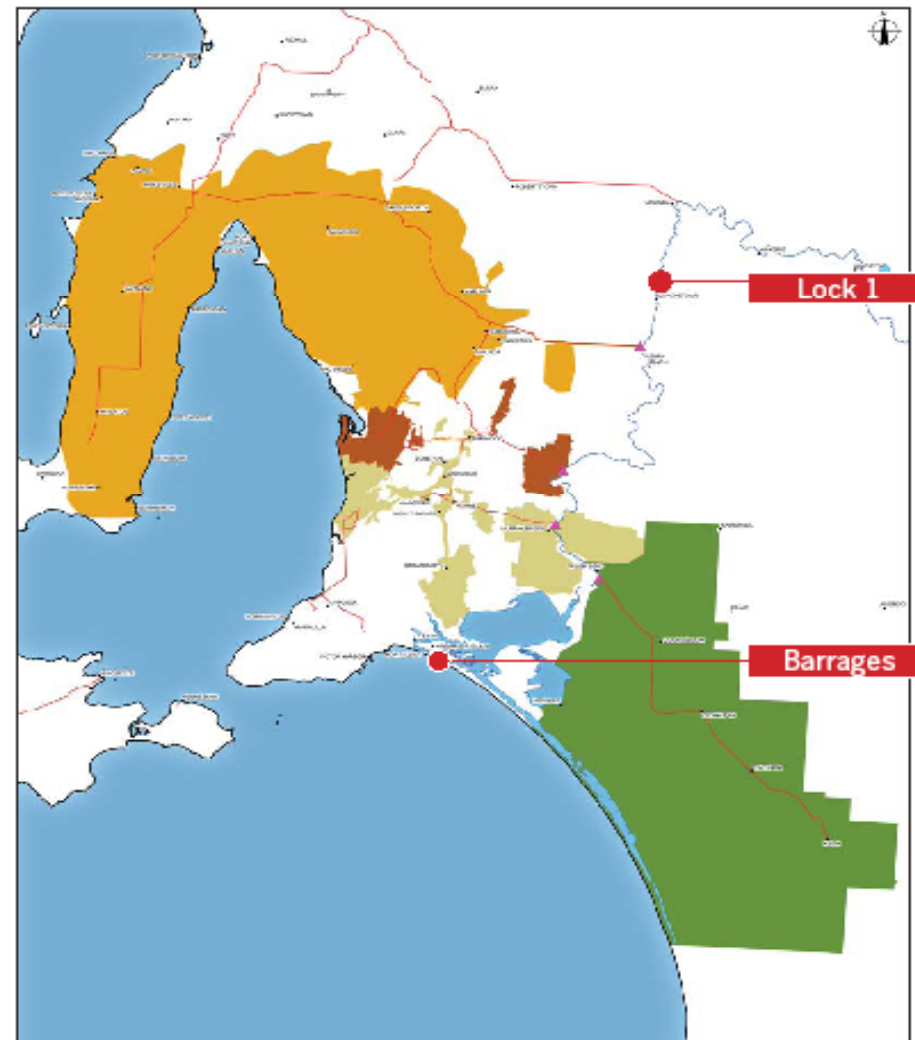
Areas serviced by water from Murray Bridge Pumping Station

Areas serviced by water from Swan Reach Pumping Station

Areas serviced by water from Tailm Bend Pumping Station

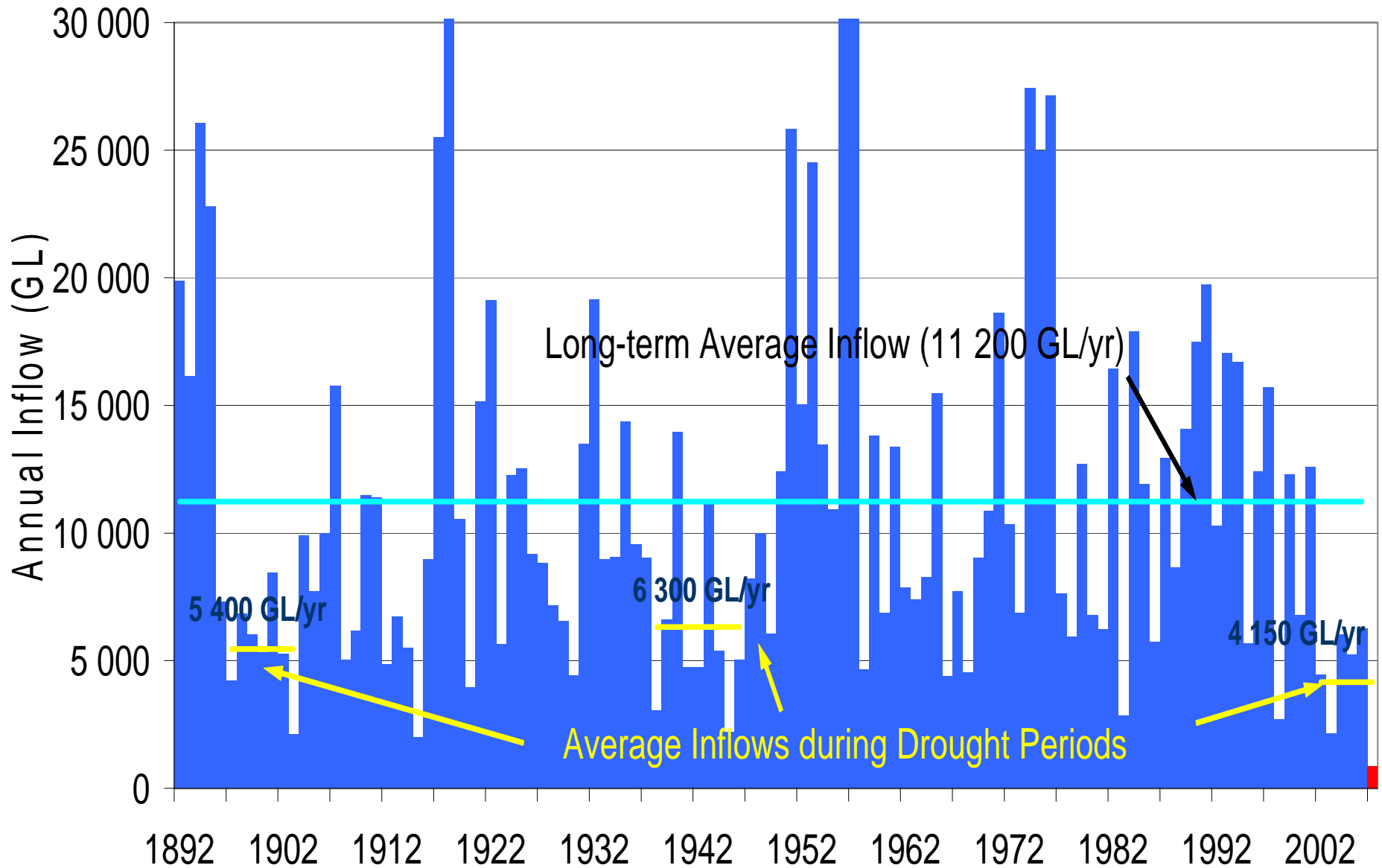
Areas serviced by water from Mannum Pumping Station

Pumping station location ▲



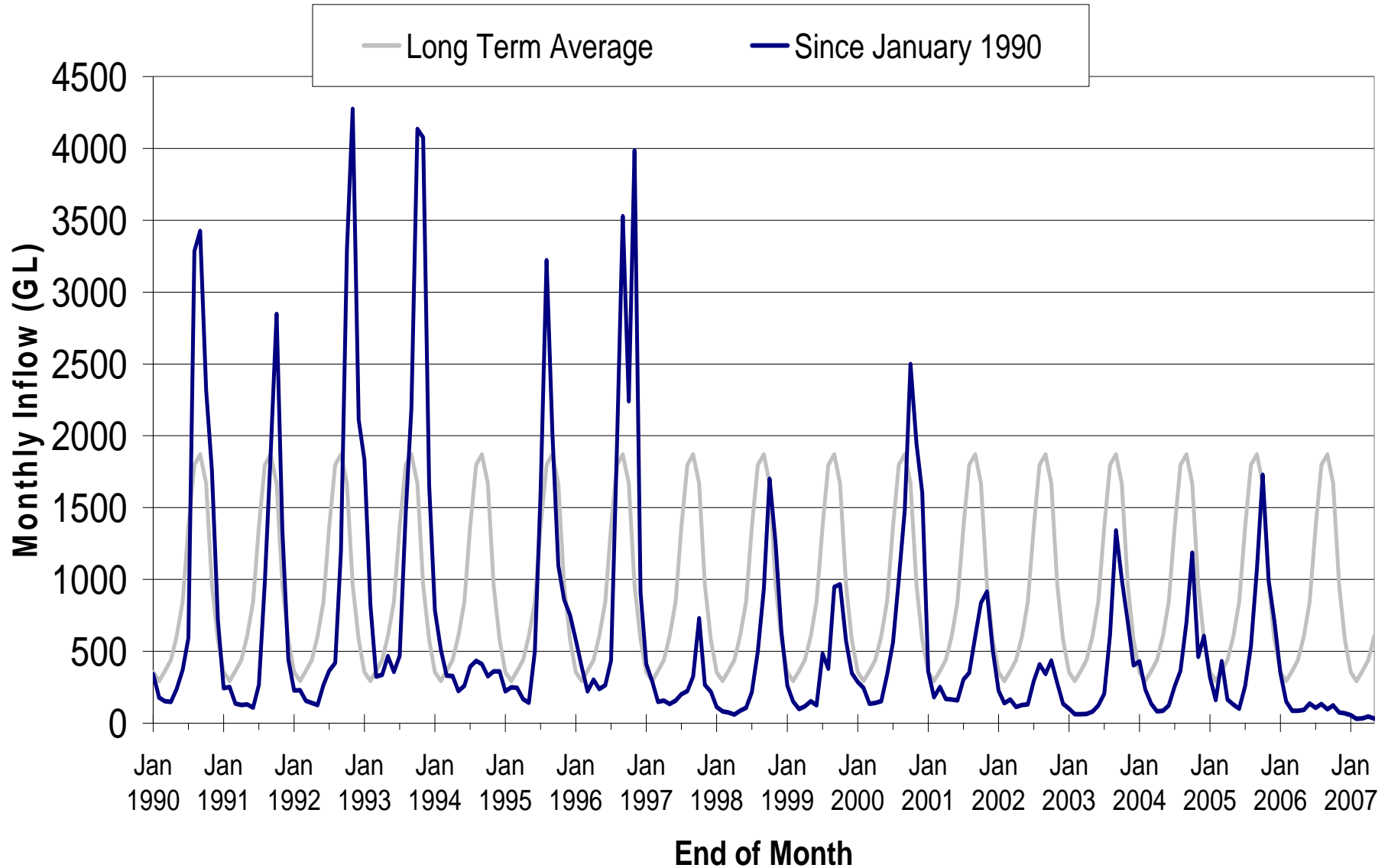
Total River Murray System Inflows (including Darling River)

Modelled Annual Inflows - current conditions



Inflows to the River Murray System

(Excluding Inflows to Menindee Lakes & Snowy Hydro Releases)

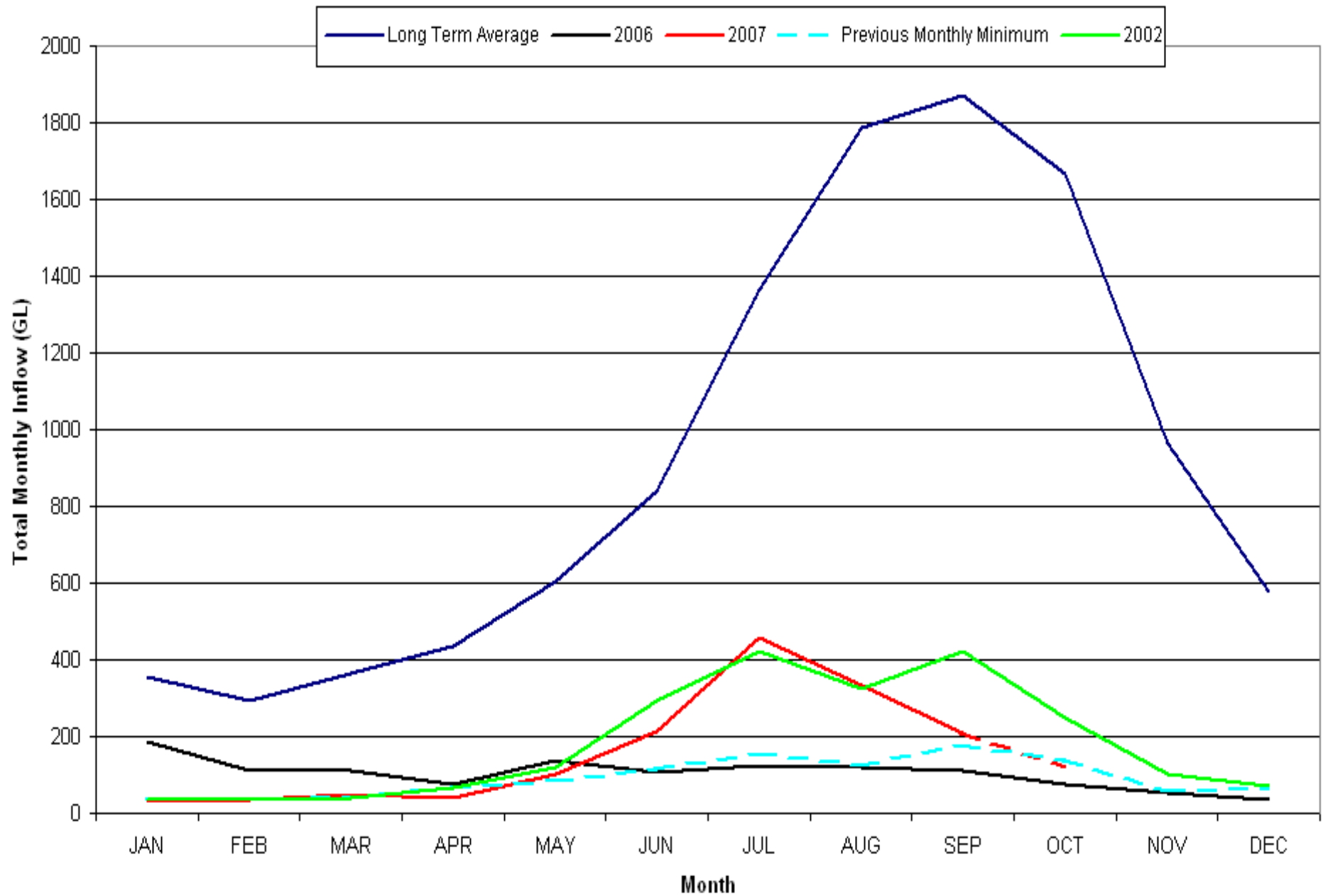


River Murray Drought in 2006-07

- MDB - most severe one-year drought on record, on top of extended period of low flows
- Impacts exacerbated by 'man-induced' drought
- Total Murray system inflows for 2006-07 were less than 1000 GL. New record lows set every month.
- Inflows rewritten the record book – natural variation or climate change?
- Irrigators – 60% of entitlement
- Adelaide was placed on Level 2 restrictions on Oct 23, 2006 and then enhanced Level 3 on Jan 1 2007. Over 23GL have been saved so far this year

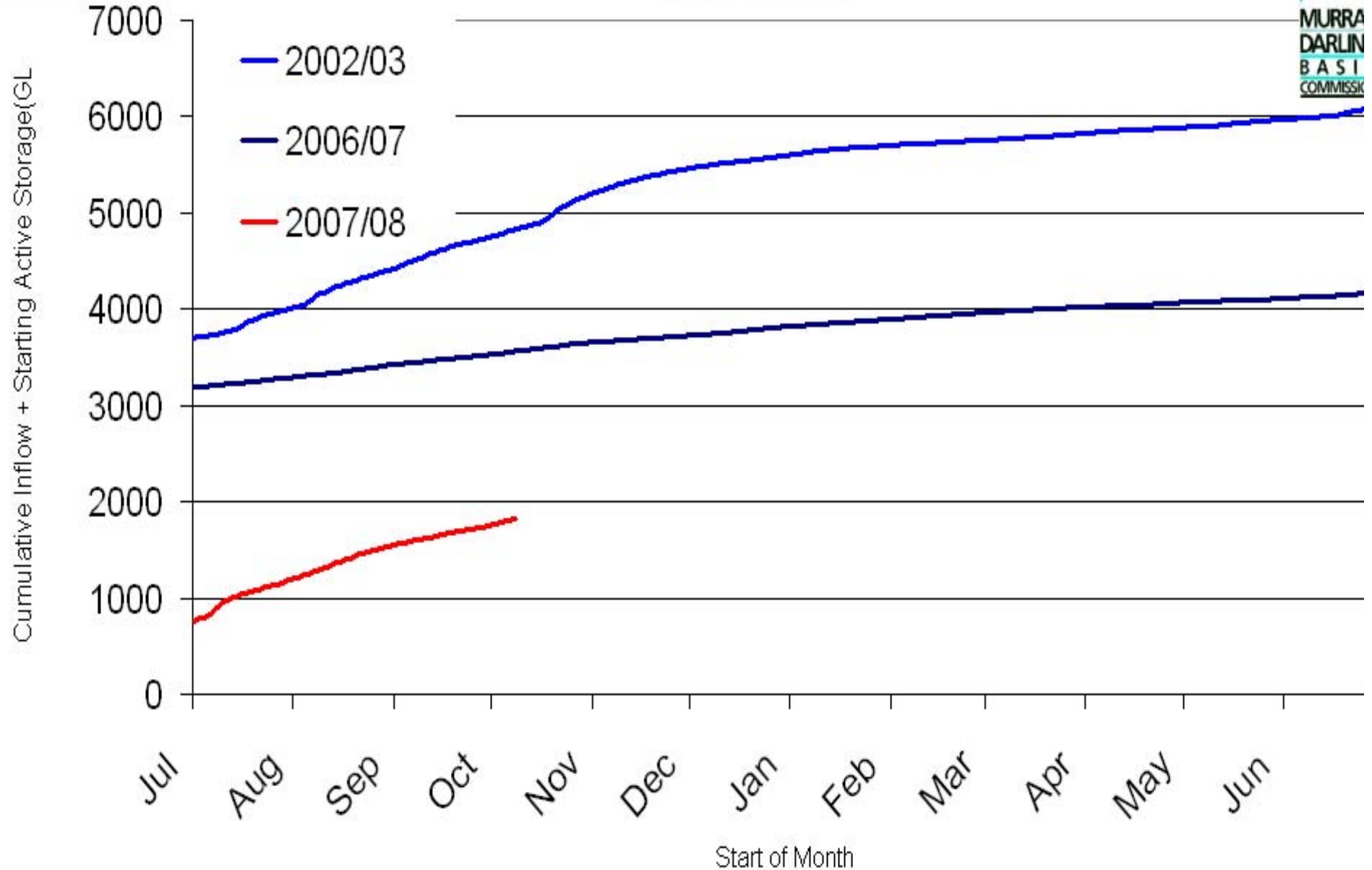


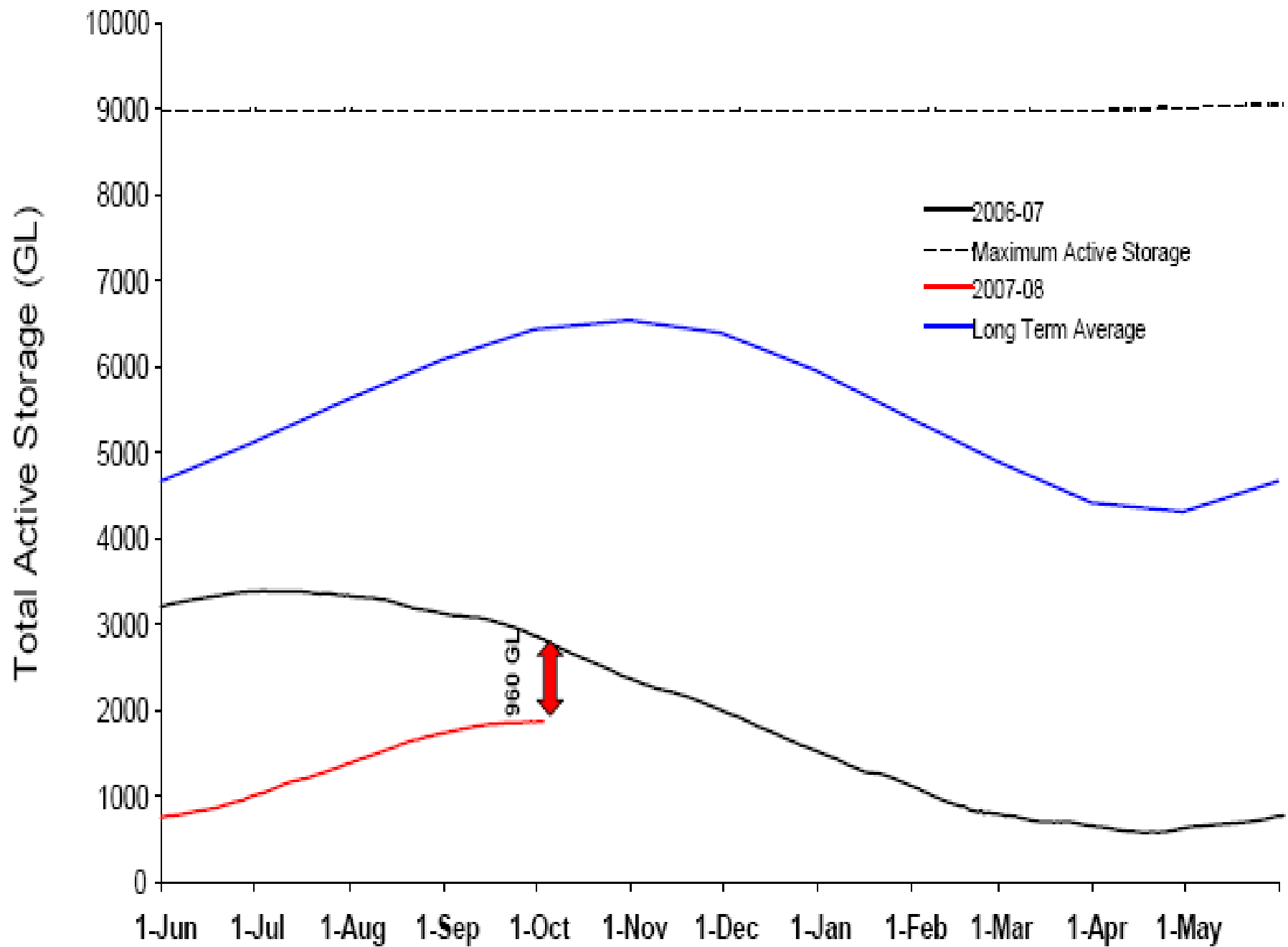
Inflows to the River Murray (Excluding Snowy)



Update

Murray System Inflows Excluding Menindee & Snowy Plus 1 June Active storage (approx.)
(as at 8/10/2007)





Murray-Darling Basin Commission October 2007

River operations

- MDB water sharing rules first developed – 1915 River Murray Waters Agreement
- Severity of 2006-07 drought forced a re-thinking of sharing rules
- MDB Govts agreed to share all available resources between SA, VIC and NSW to meet critical human needs and implement ‘measures’ to conserve water
- River levels maintained with the exception of below Lock 1
- October daily flow ~ 2 600 ML/day including 700 ML/day salinity dilution flow. Salinity forecasts currently being revised based on updated flow to SA predictions
- Irrigators - 16 % of entitlement for 2007-08, by far lowest allocation ever received. Will severely impact production



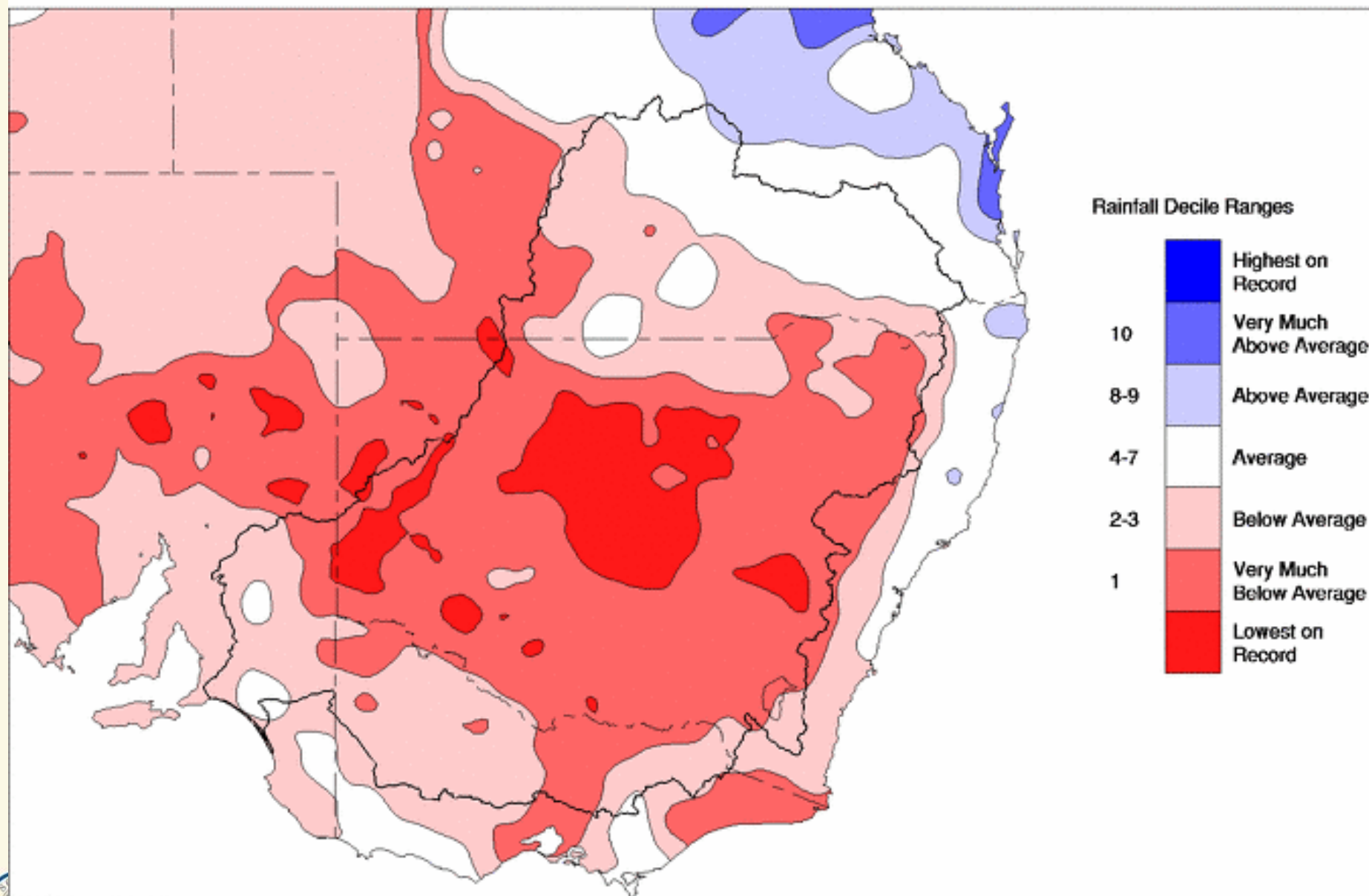
SA current outlook

- South Australia's normal entitlement flow = 1 850 GL – absolute minimum
- Long-term median flow to South Australia = 4 800 GL. The last time SA received this was 2000-01
- Flows received in 2006-07 = 1470 GL
- Under worst case scenario, flows to SA could be as little as 990 GL for 2007-08



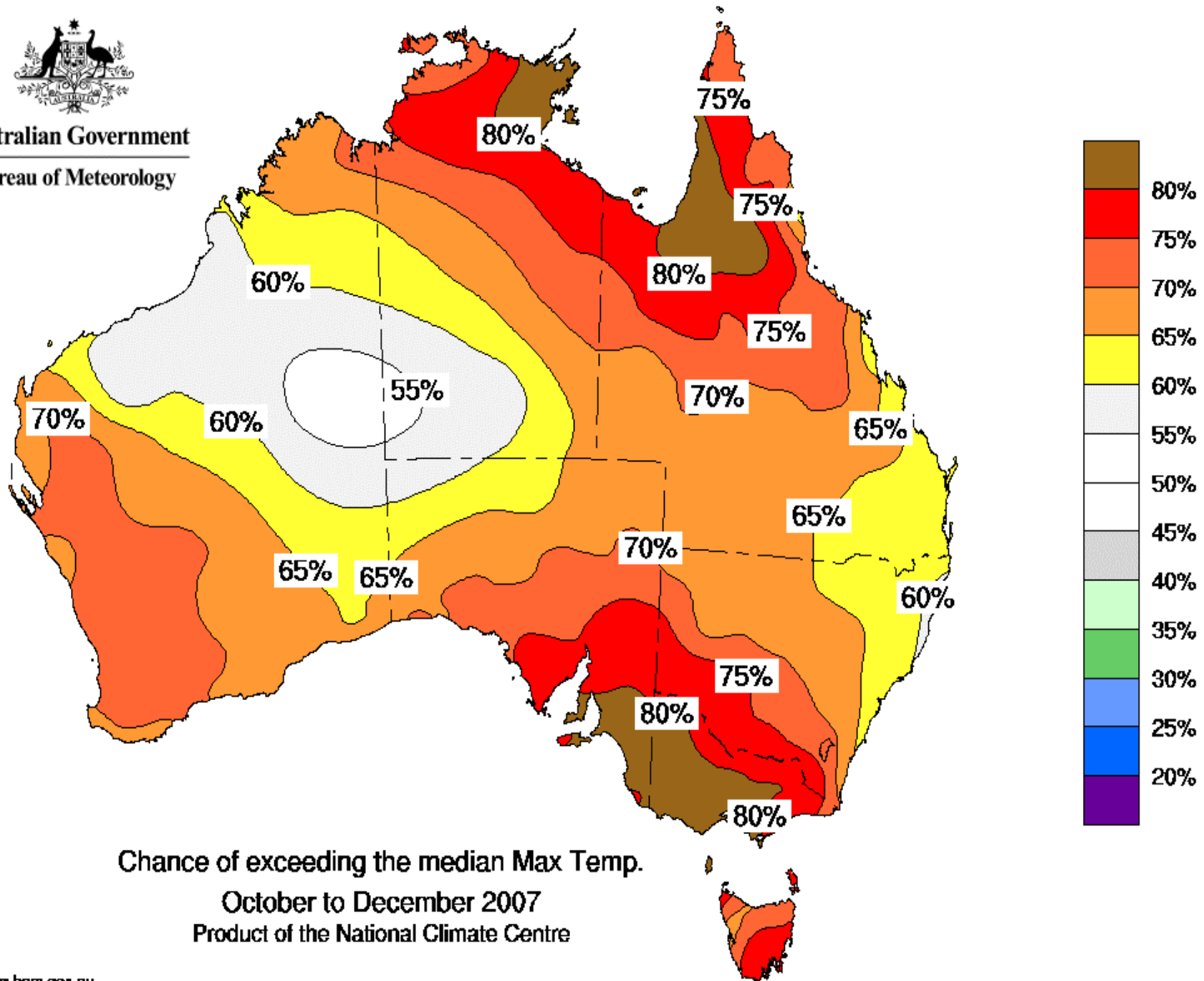
Murray Darling Rainfall Deciles September 2007

Distribution Based on Gridded Data
Product of the National Climate Centre





Australian Government
Bureau of Meteorology

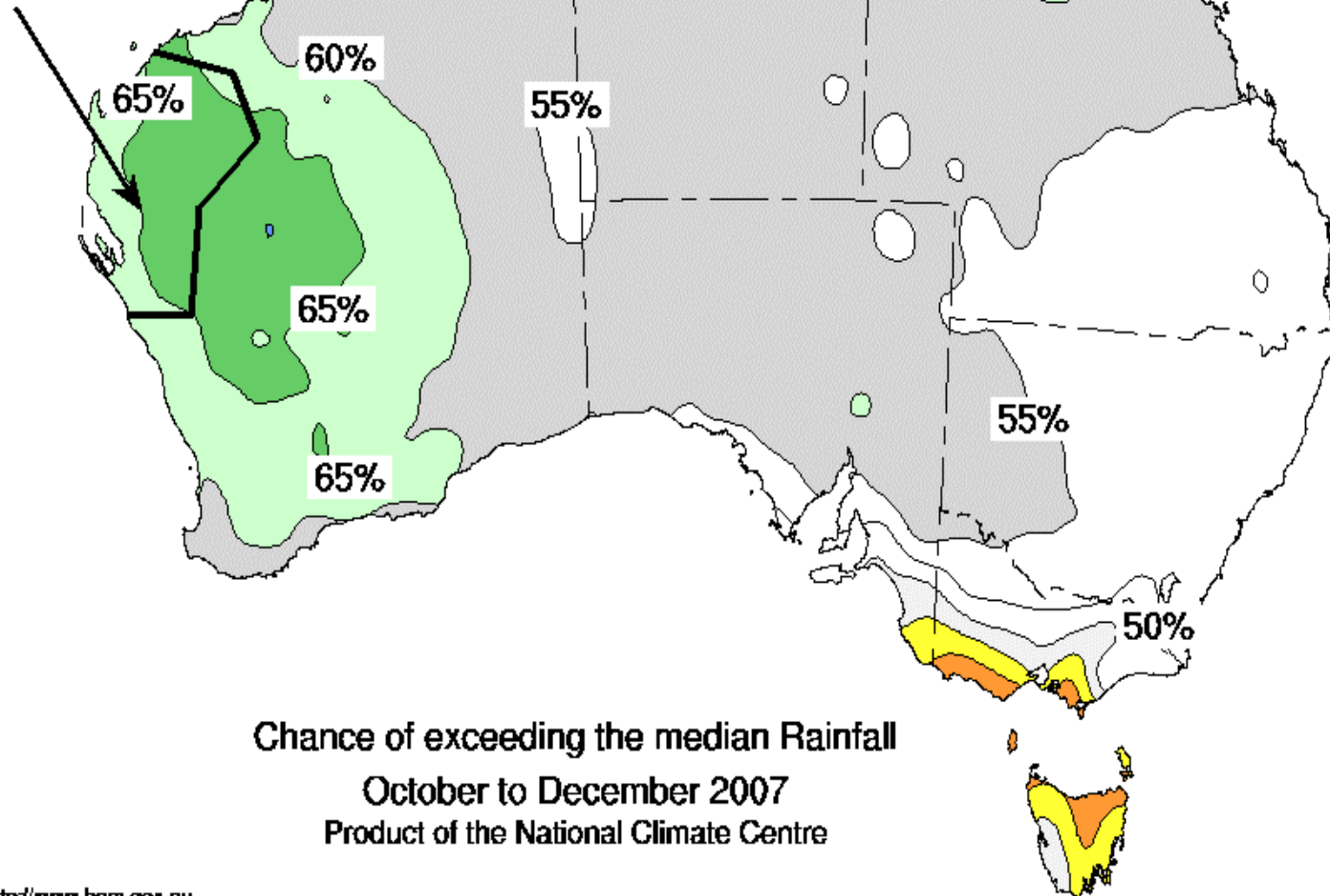




Australian Government

Bureau of Meteorology

For that area of WA within the thick line, October to December rainfall is commonly low and contributes only a small fraction of the annual total.

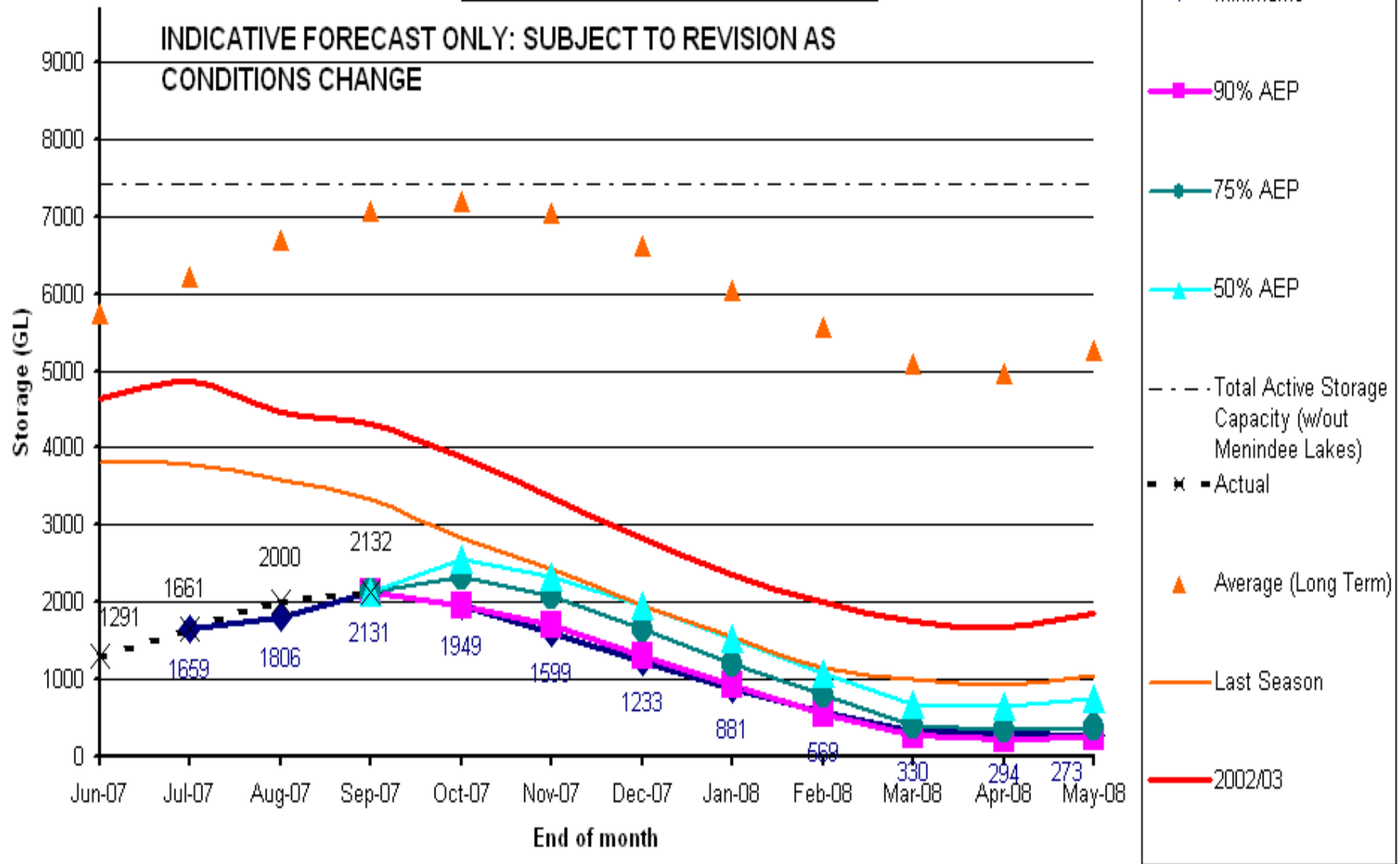


**Chance of exceeding the median Rainfall
October to December 2007
Product of the National Climate Centre**

Total System Storage (This Season)

This Season Next Season

COMMERCIAL - IN - CONFIDENCE



Water Security Actions

- Water Proofing Adelaide
- Pumping to Mt Lofty Ranges storages
- Lowering pumping station offtakes
- Temporarily disconnecting wetlands and backwaters
- Fast-tracking filtration plants
- Micro-managing weir pools
- Possible temporary weir
- Water restrictions



Long-term water security

- Four Ways to Water Security
 - Desalination
 - Catchments
 - Recycling
 - Managing Use
- The Living Murray Initiative
- National Plan for Water Security
- Improved irrigation efficiencies
- Pumps off backwaters



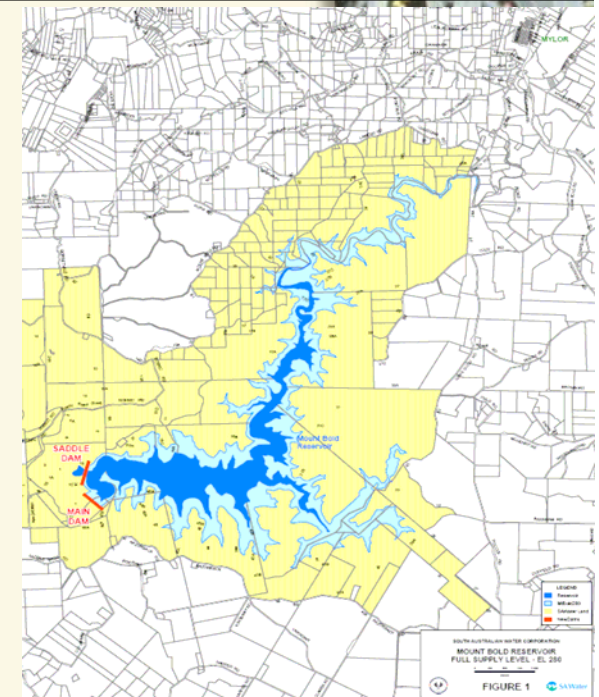
Four Ways to Water Security

- Desalination – *‘drinkable water from the sea’*
 - Detailed environmental study of Gulf St Vincent - \$3 million.
 - Potential locations for plant are under current consideration, and the best options for linking to the water supply system.
 - Decision by mid-November.
 - A separate plant to supply the Upper Spencer Gulf and Eyre Peninsula will reduce the draw on the River Murray.



Four Ways to Water Security

- Catchments – *‘Improved catchment health and efficiency’*
 - Investigating a significant upgrade of the Mt Bold Reservoir to double the water storage capacity in the Adelaide Hills.
 - Prescription of Eastern & Western Mt Lofty Ranges
 - Independent authority to manage future of Murray
 - \$20m/year from Save the River Murray Levy for projects to improve health of river

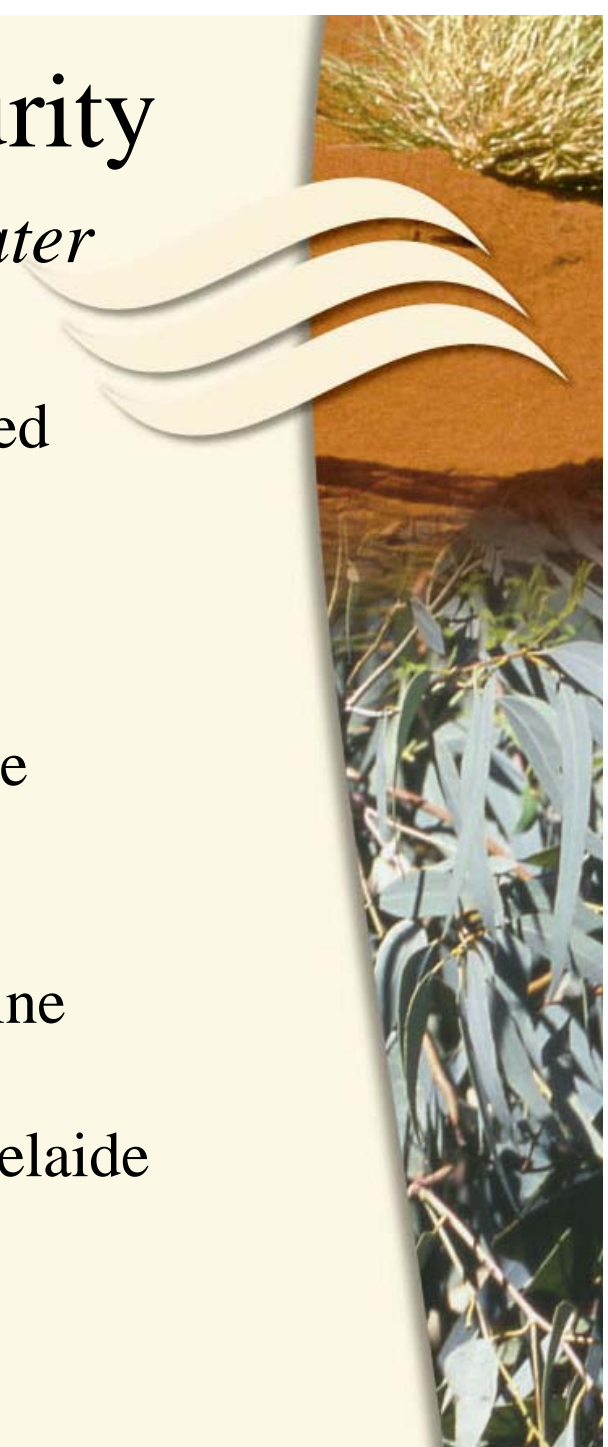


Four Ways To Water Security

- Recycling – *‘almost half our wastewater re-used’*
 - Adelaide is a national leader – 20% reused
 - New projects will increase this to 45%

Projects include:

- \$60 million Glenelg to Parklands pipeline
- \$150 million upgrade to Christies Beach wastewater treatment plant
- \$4.7 million expansion of Virginia pipeline
- Industrial and irrigation use of treated stormwater drawn from the Northern Adelaide Plains aquifer



Four Ways to Water Security

- Managing Use – *‘everyone contributes through wise water use’*
 - Permanent water conservation measures introduced in 2003
 - New incentives package to encourage wise water use both inside and outside the home
 - Home water audits
 - Low flow showerheads
 - Garden smart products
 - Washing machine rebates
 - Dual-flush toilet rebates
 - Industry water efficiency plans
 - Mandatory installation of rainwater tanks for new homes
 - Water restrictions, when required, based on constant monitoring of our water supplies



Questions?



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