Gerenciando recursos hidricos em tempos de escassez: A experiencia australiana

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Australia

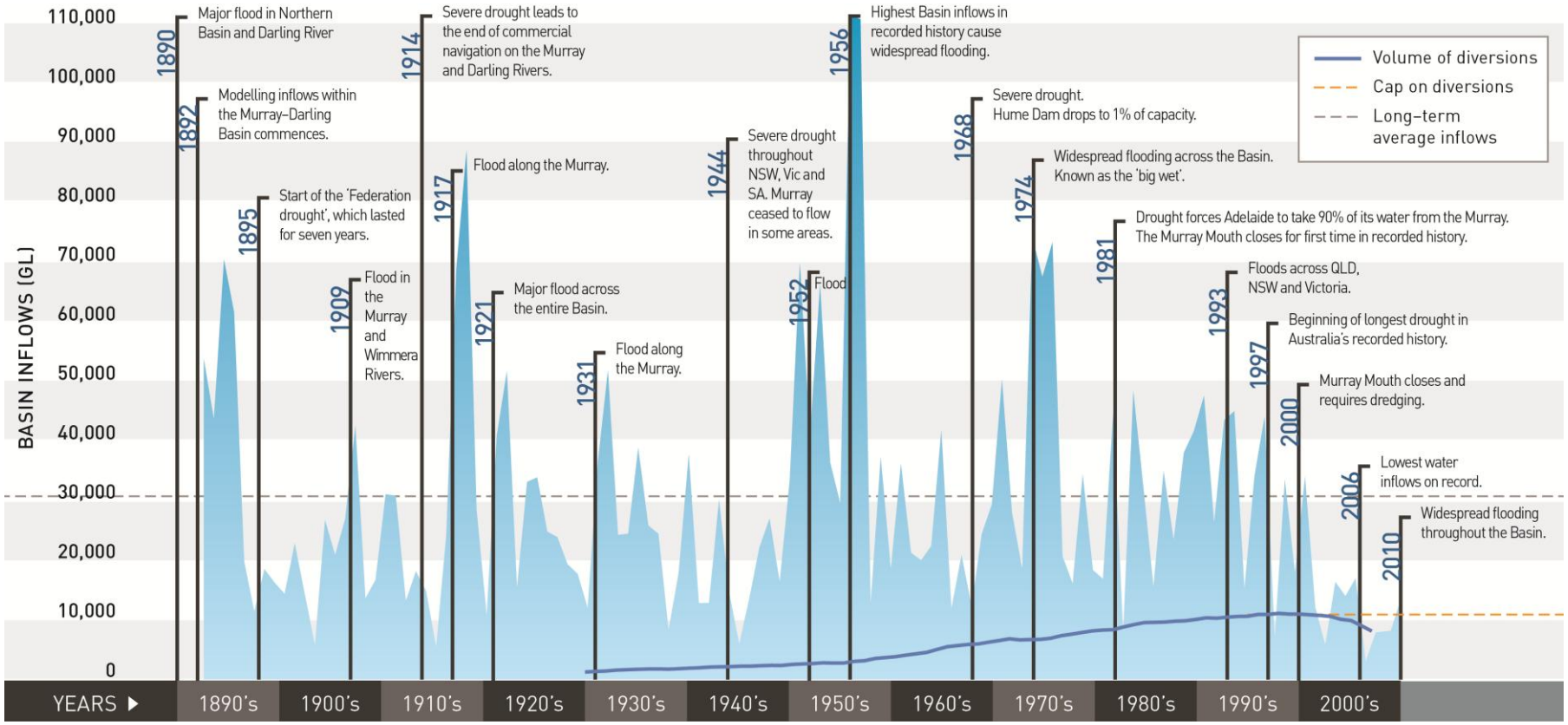
Topicos

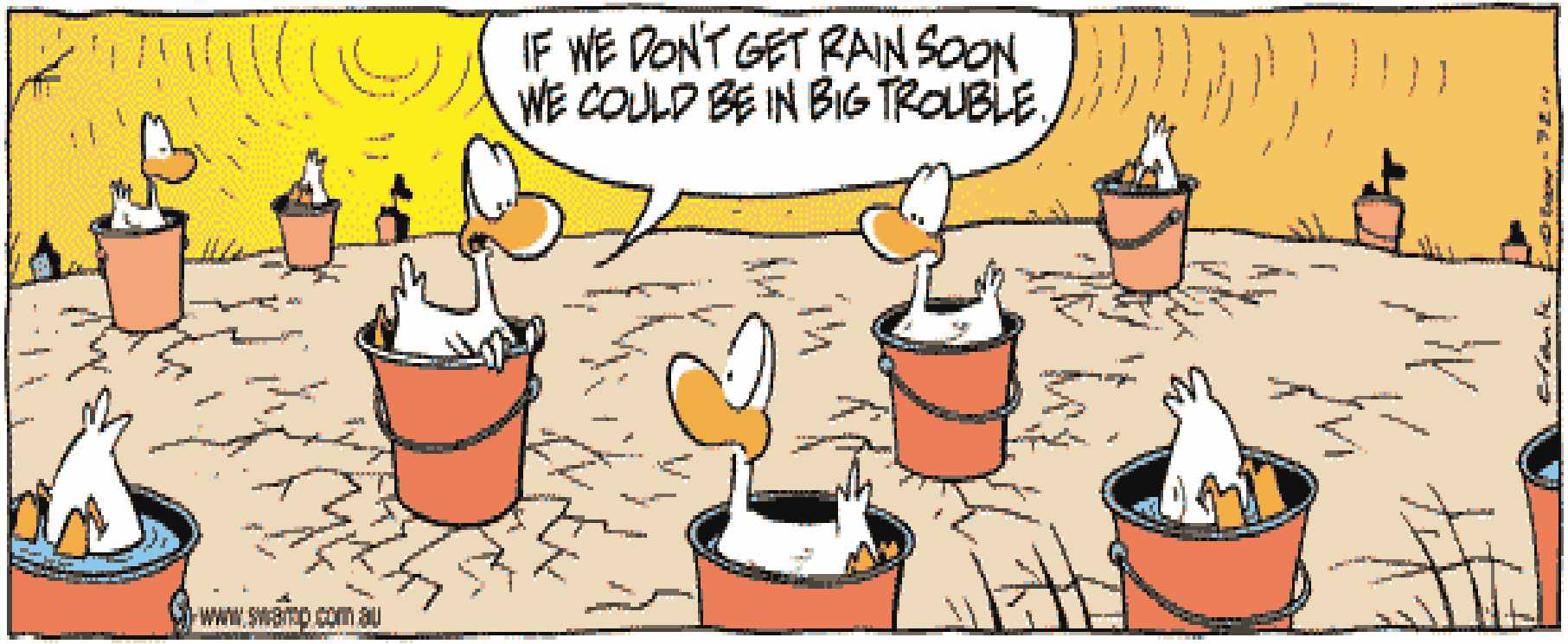
- Contexto
- A experiencia a nivel Federal
- A experiencia a nivel Estadual
- Conclusoes

O Commonwealth of Australia

- Australia, uma Federacao um pouco diferente:

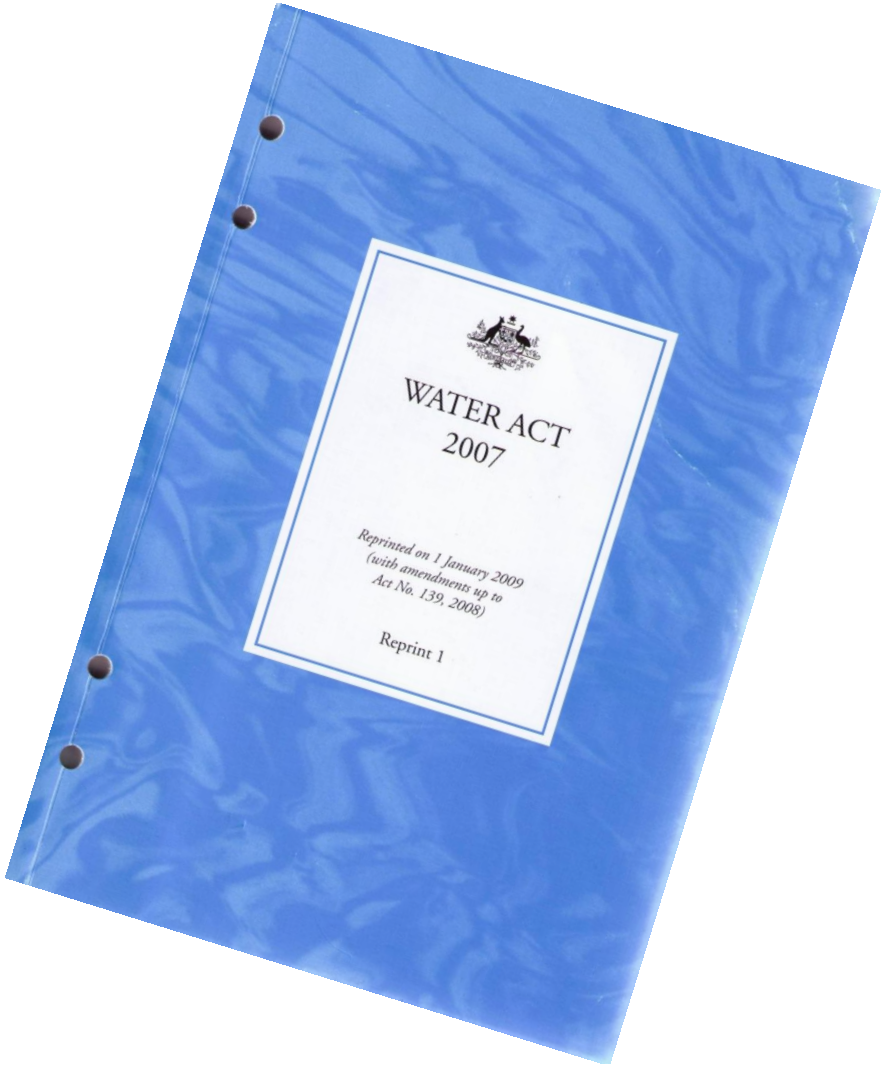
A Seca do Milenio (1997 – 2009)




IF WE DON'T GET RAIN SOON WE COULD BE IN BIG TROUBLE.
www.swamp.com.au

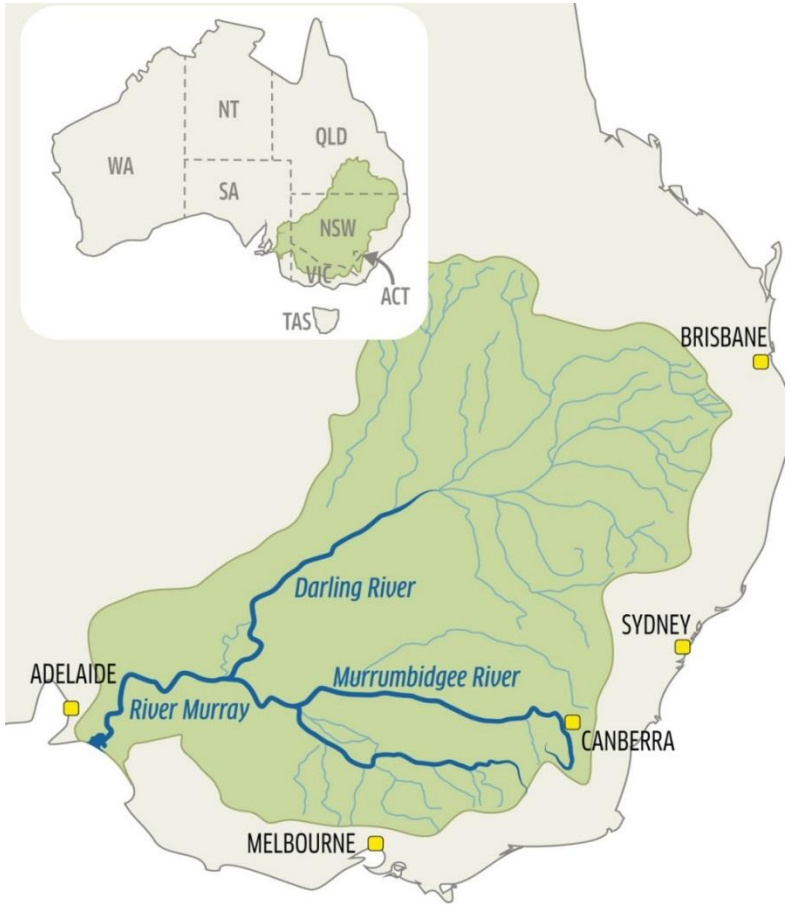
A experiencia a nivel Federal

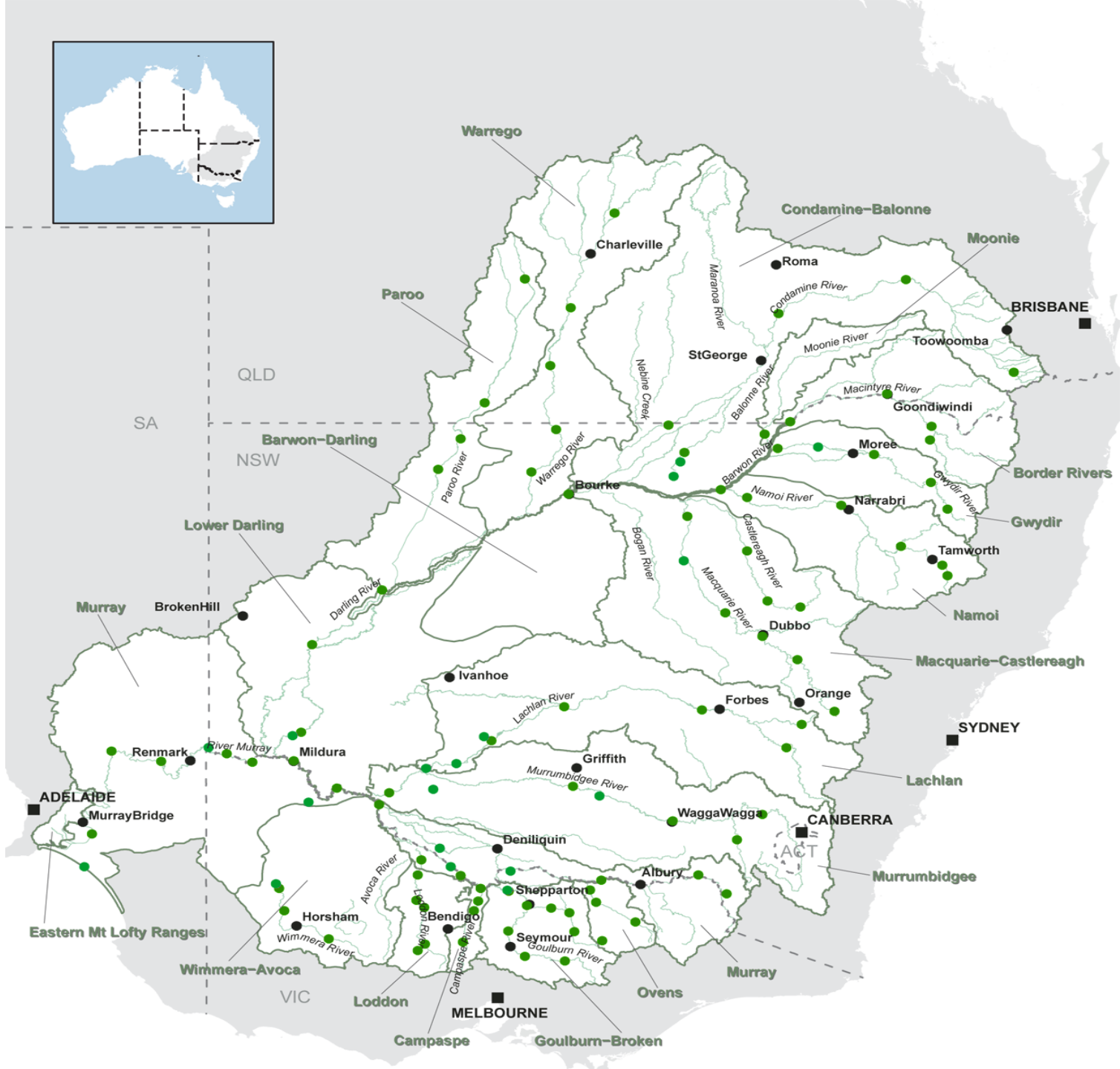
- Poder constitucional
- Legislando a nivel nacional



A Bacia Hidrografica dos Rios Murray-Darling

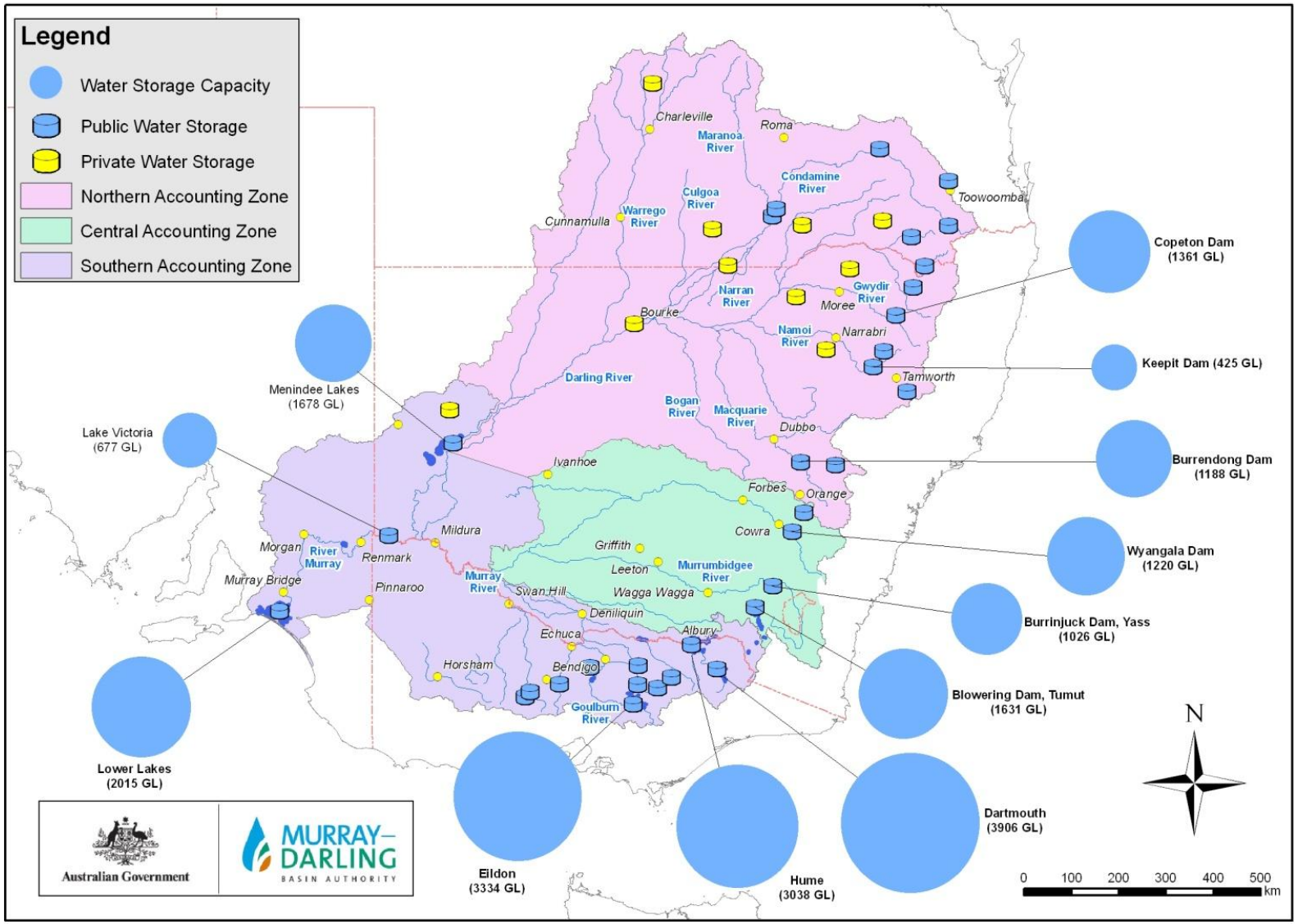
- Populacao: 2 milhoes
- Cobre 14% do territorio da Australia (1 059 000 Km2)
- Significante valor ambiental
- 40% das fazendas da Australia
- Produz alimentos para aproximadamente 20 milhoes de pessoas
- Exporta aproximadamente $10 bilhoes/ano
- 34 grupos Indigenas



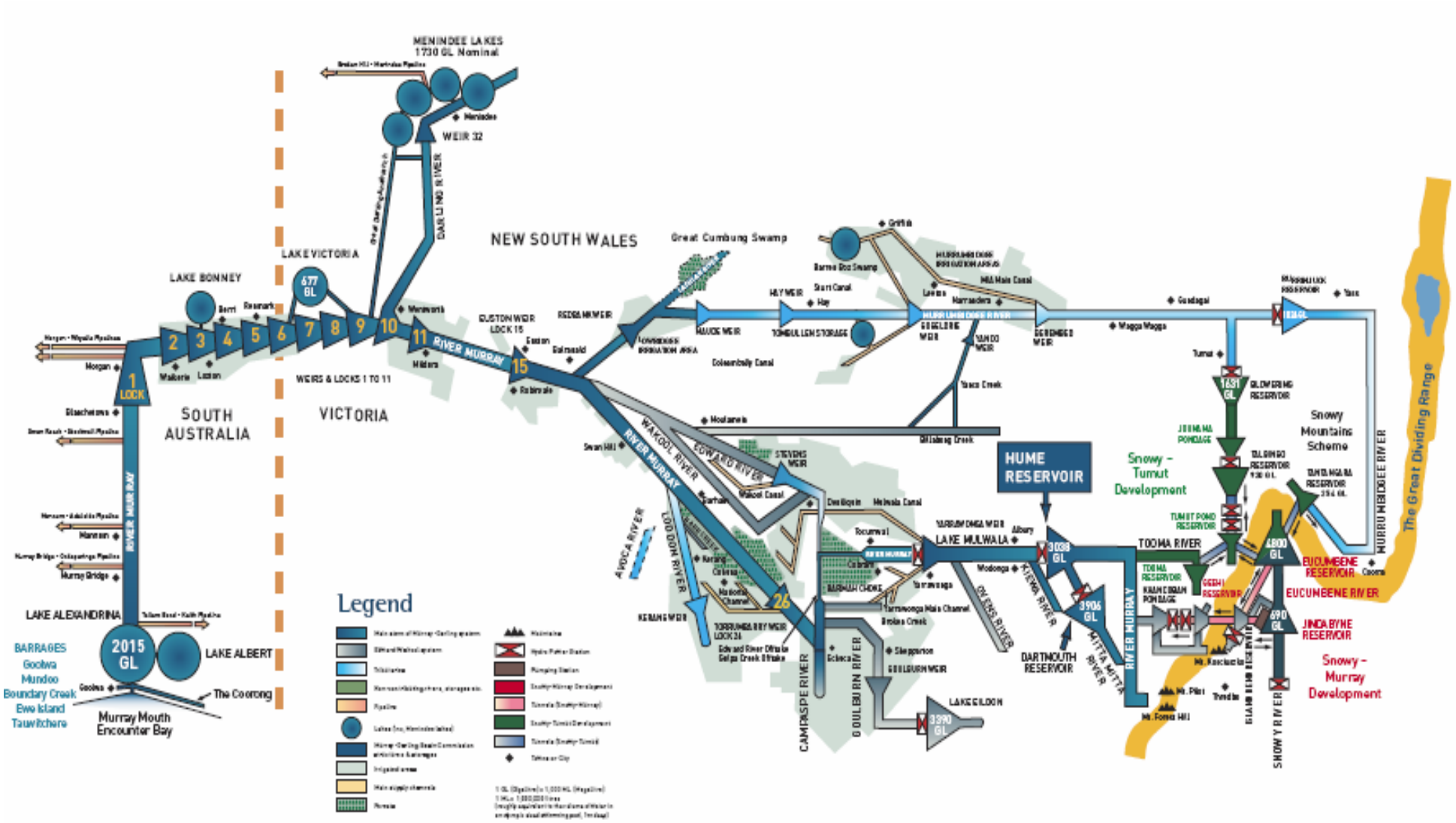


106 hydrological indicator sites

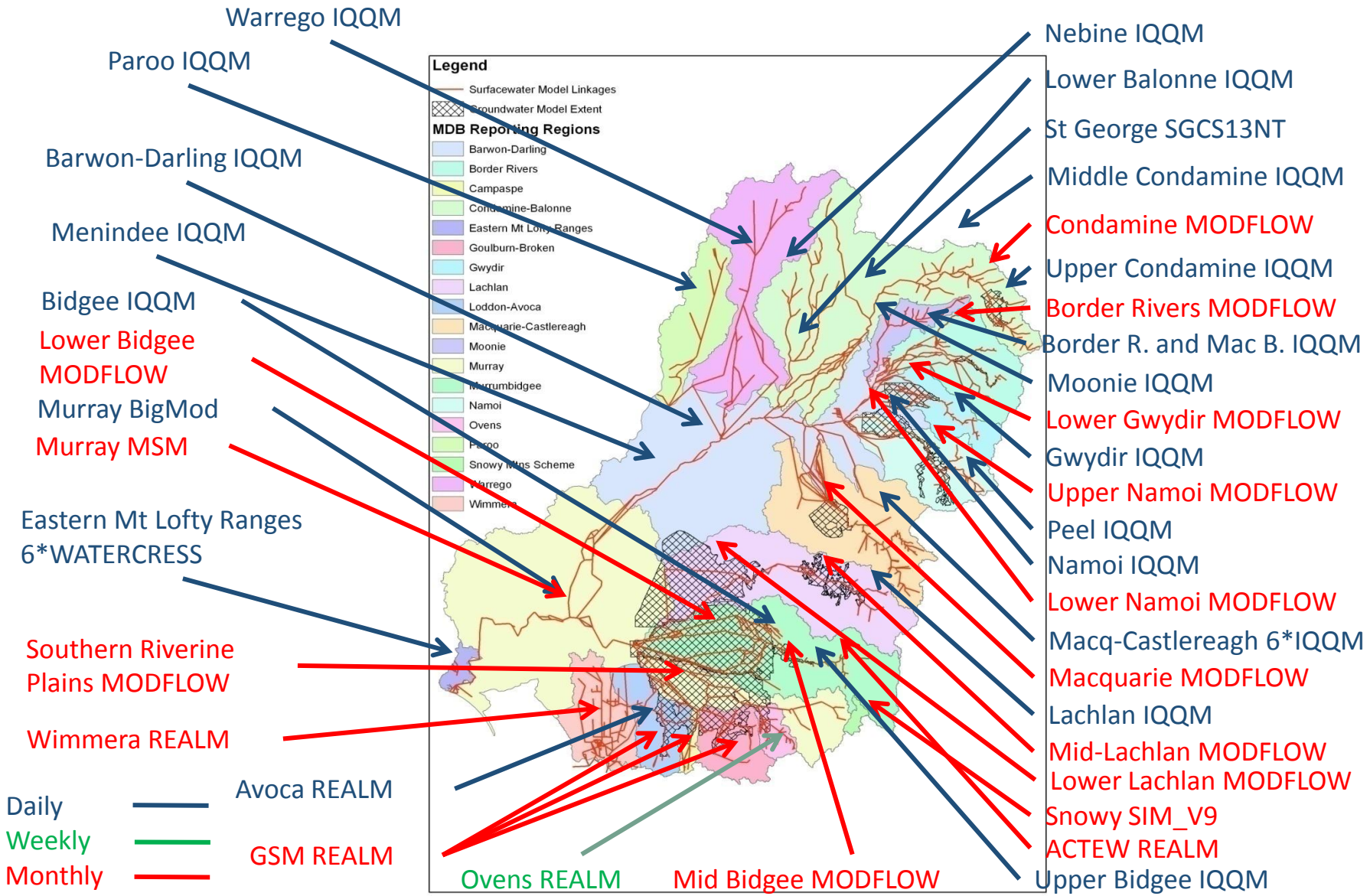
Reservatorios existentes



Um sistema bastante regularizado

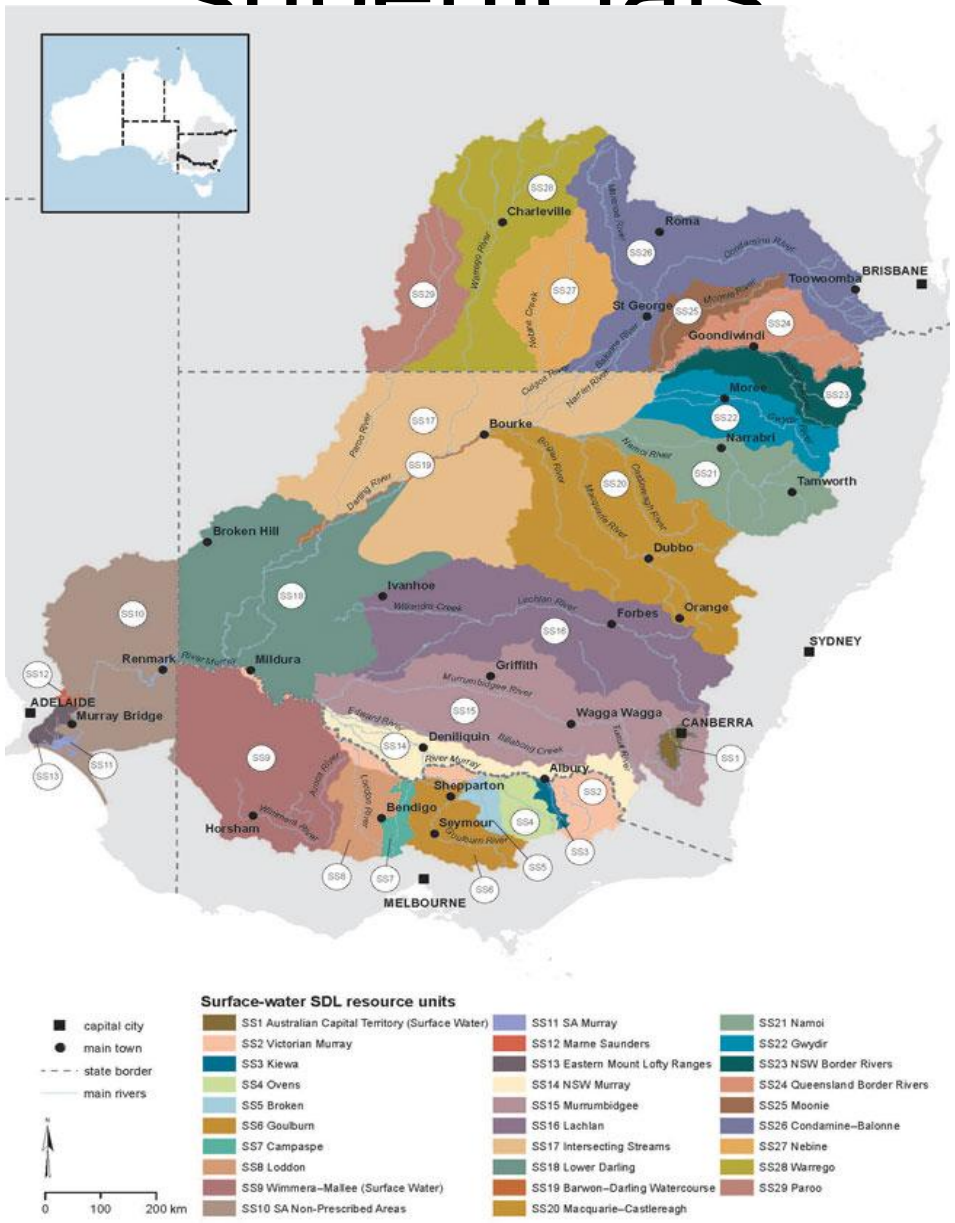


Modelos matematicos

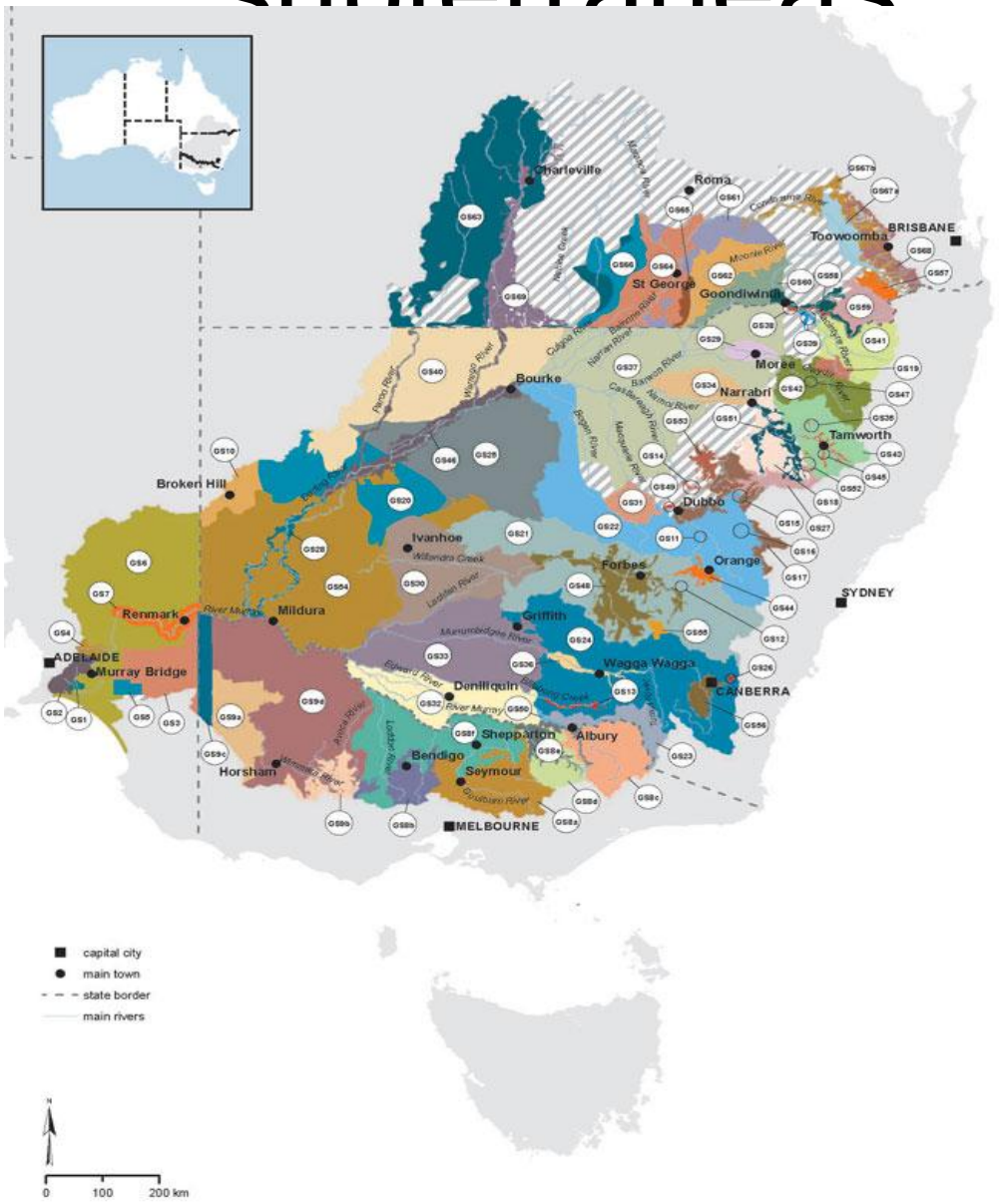


The Basin Plan – Legislacao Federal

Unidades Hidrológicas – águas superficiais



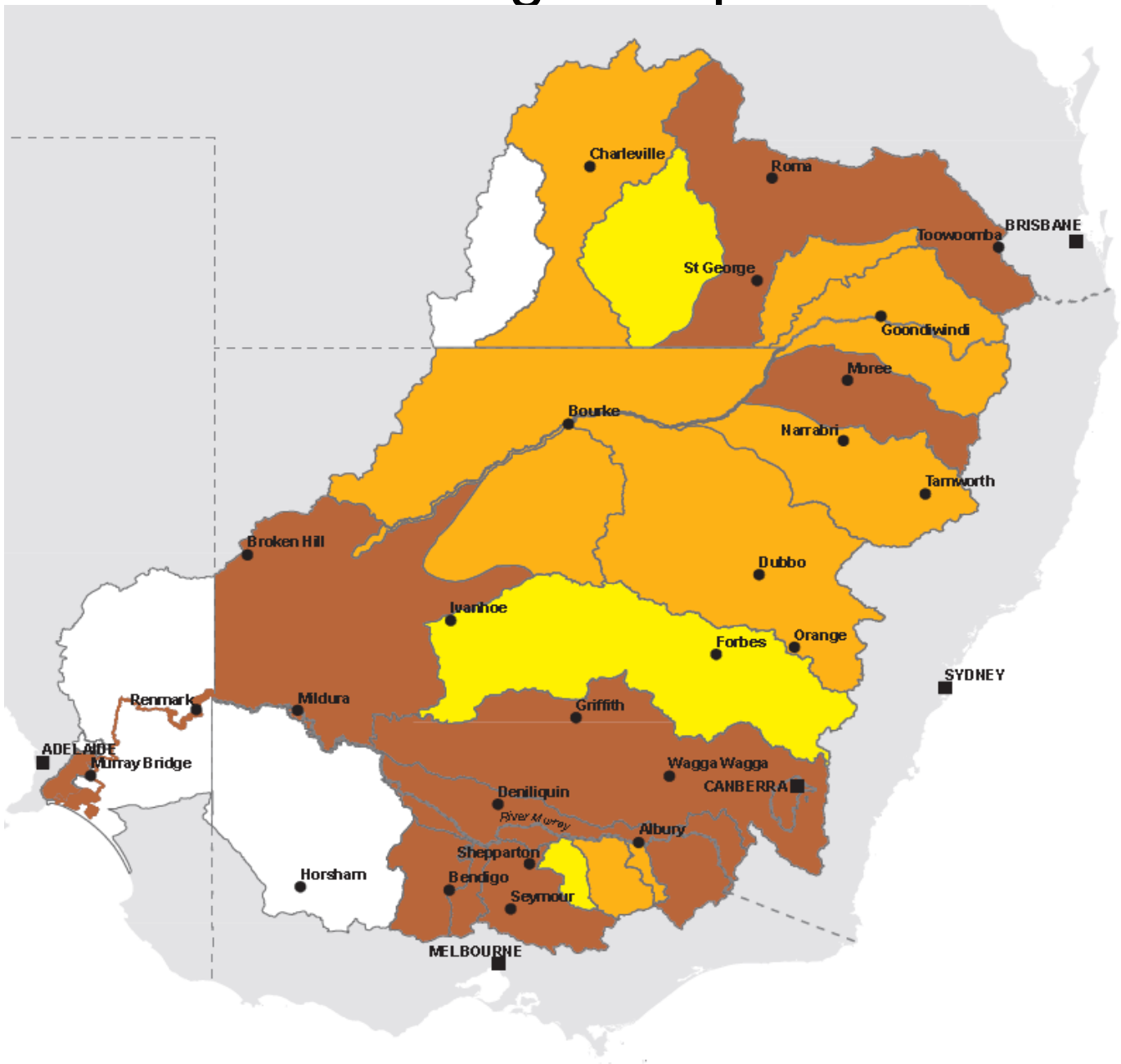
Unidades Hidrológicas – aguas subterraneas



Reducao na extracao de agua superficial

Reduction

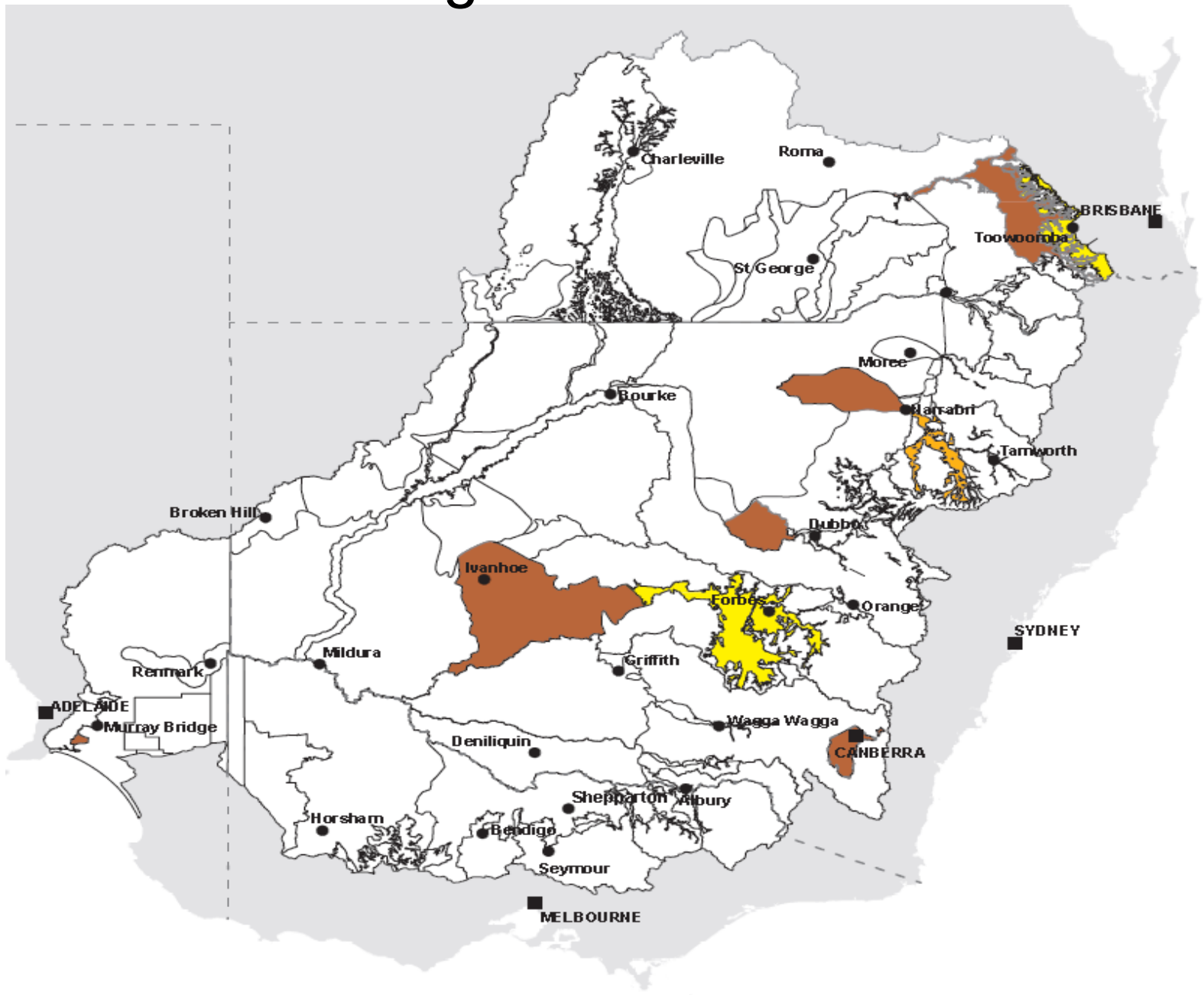
- 0%
- 1–10%
- 11–20%
- 21–30%



Reducao na extracao de agua subterranea

Reduction

- 0%
- 11–20%
- 21–30%
- 31–40%



Plano de gerenciamento de sub-bacias

- Qualidade de agua
- Mercado de agua
- Contabilidade de uso
- Valores indigenas
- Riscos
- Eventos extremos
- Agua ambiental
- Monitoramento e avaliacao

Mercado aberto de agua

- 1 Megalitre = one million litres
  - 1/3 Olympic swimming pool
- 1 Gigalitre = one billion litres
  - 400 Olympic size pools

- In 2012-13
  - 1,044 GL entitlement trade
  - 6,058 GL allocation trade

- MDB market value $13 billion

Water Markets Product Information

Listen

Water Access Rights in the Murray–Darling Basin

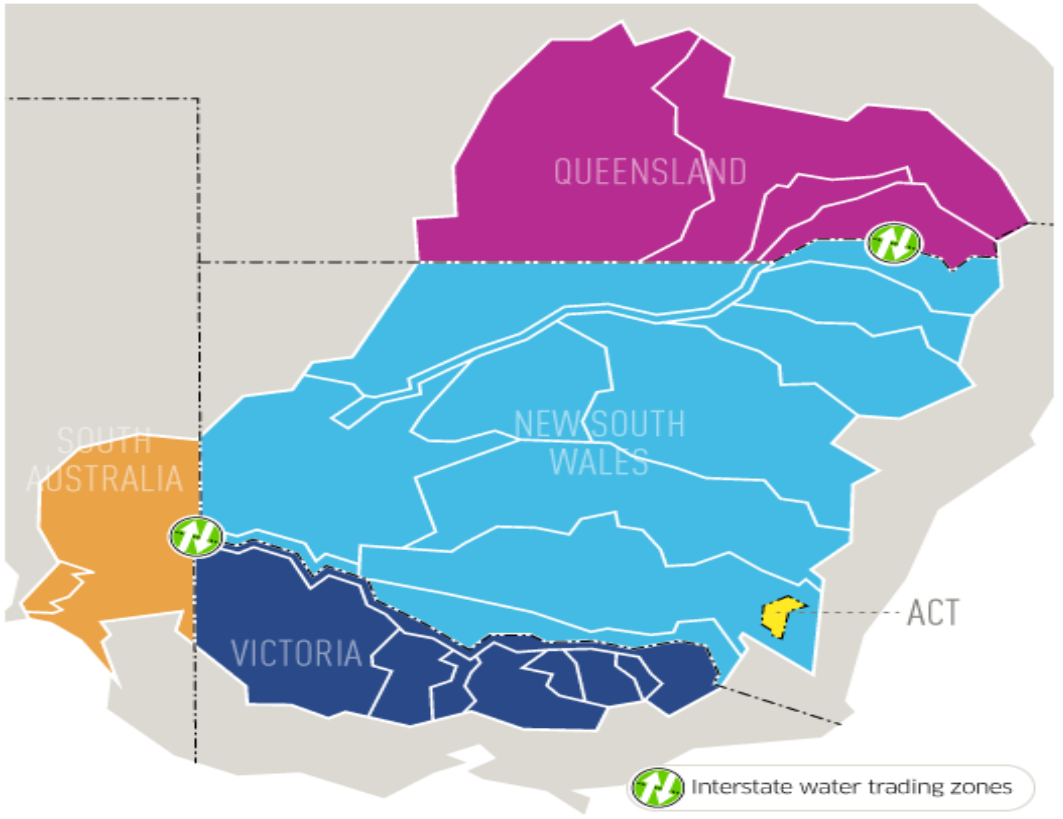
There are a large number of actively traded water access rights throughout the Murray–Darling Basin. These rights can be characterised by differences in priority and reliability, and form of take.

Under the Basin Plan, information on water access rights is now collected from Basin States by the MDBA and published in a single location. Displaying this information allows for easier comparisons between different types of water access rights.

As there are hundreds of different products across the Basin, the MDBA has initially collected only those which are most actively traded in regulated systems. Approximately 70 products are now for comparison, with up to three being able to be selected at a time for side-by-side comparison.

Over time, the MDBA may expand this product range, based on feedback from water market participants.

Information is available by selecting a valley on the map below or from the adjacent list.



New South Wales

- Belubula
- Gwydir
- Lachlan
- Lower Darling
- Macquarie-Cudgegong
- Murrumbidgee
- Namoi
- NSW Border Rivers
- NSW Murray
- Peel

Queensland

- QLD Border Rivers
- Condamine-Balonne
- Warrego-Paroo-Nebine

South Australia

- SA Murray

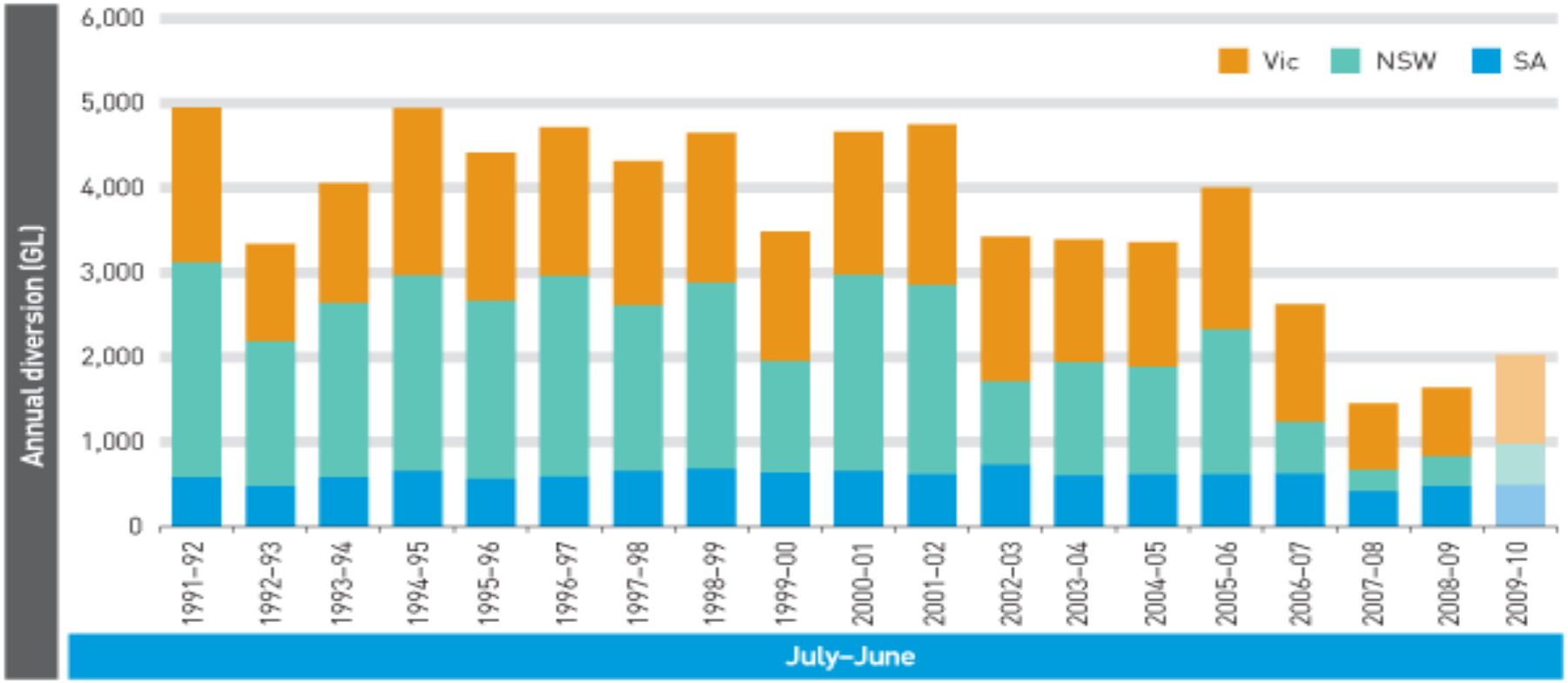
Victoria

- Broken
- Bullarook
- Campaspe
- Goulburn
- Loddon
- Ovens
- Vic Murray

More information about interstate trading zones is available for the southern-connected system and the NSW-QLD Border Rivers.

Contabilidade do uso

- Hidrologia + contabilidade



A experiencia a nivel Estadual

Educando a populacao


Melbourne Water
"EVERY 45 SECONDS OVER
4 MINUTES IN THE SHOWER IS ANOTHER
BUCKET OUT OF THE DAM."
Dale Archer, Works Coordinator - Thomson Dam
"Even after the winter rains, it looks like the dam will start next summer at a record low. So it's more important than ever to keep our showers to under 4 minutes, because every 45 seconds over is another bucket taken out of the dam." Visit target155.vic.gov.au for more ways to save water.
Our Water Our Future
A Victorian Government initiative
Victoria
The Place To Be
SAVE
WATER
TARGET
155

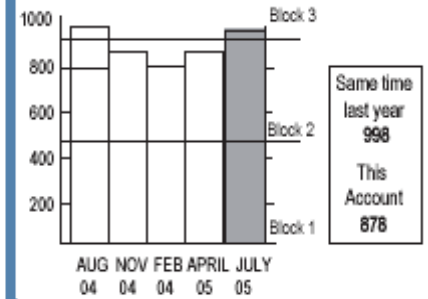

4 minute timer

Sewage Disposal	16 April 05 to 30 June 05	$45.64
	1 July 05 to 17 July 05	$45.64
Service Charges	01 July 05 to 31 Sept 05	$47.85
Drainage Charge	On behalf of Melbourne Water	$14.34
Annual Parks Charge	On behalf of Parks Victoria	$50.00
TOTAL (GST does not apply)		**$235.12**

See reverse for details

Compare your usage

Your average usage in litres per day



	None	581	436
	Small	616	461
	Medium	666	500
	Large	723	542
	None	690	518
	Small	726	544
	Medium	775	581
	Large	833	624
	None	822	617
	Small	858	644
	Medium	907	680
	Large	964	723

It's easy to make your home more water efficient.
Visit www.yvw.com.au for more information.

Yarra Valley Water

12 12345 12 3

21 SAMPLE STREET, SAMPLETOWN

Payment Slip

Customer Number **a000 000**

Invoice Number **824 0000 0000**

Total Due	**$235.10**
Due Date	**8 August 2005**

If eligible for a concession the amount due is: $197.60

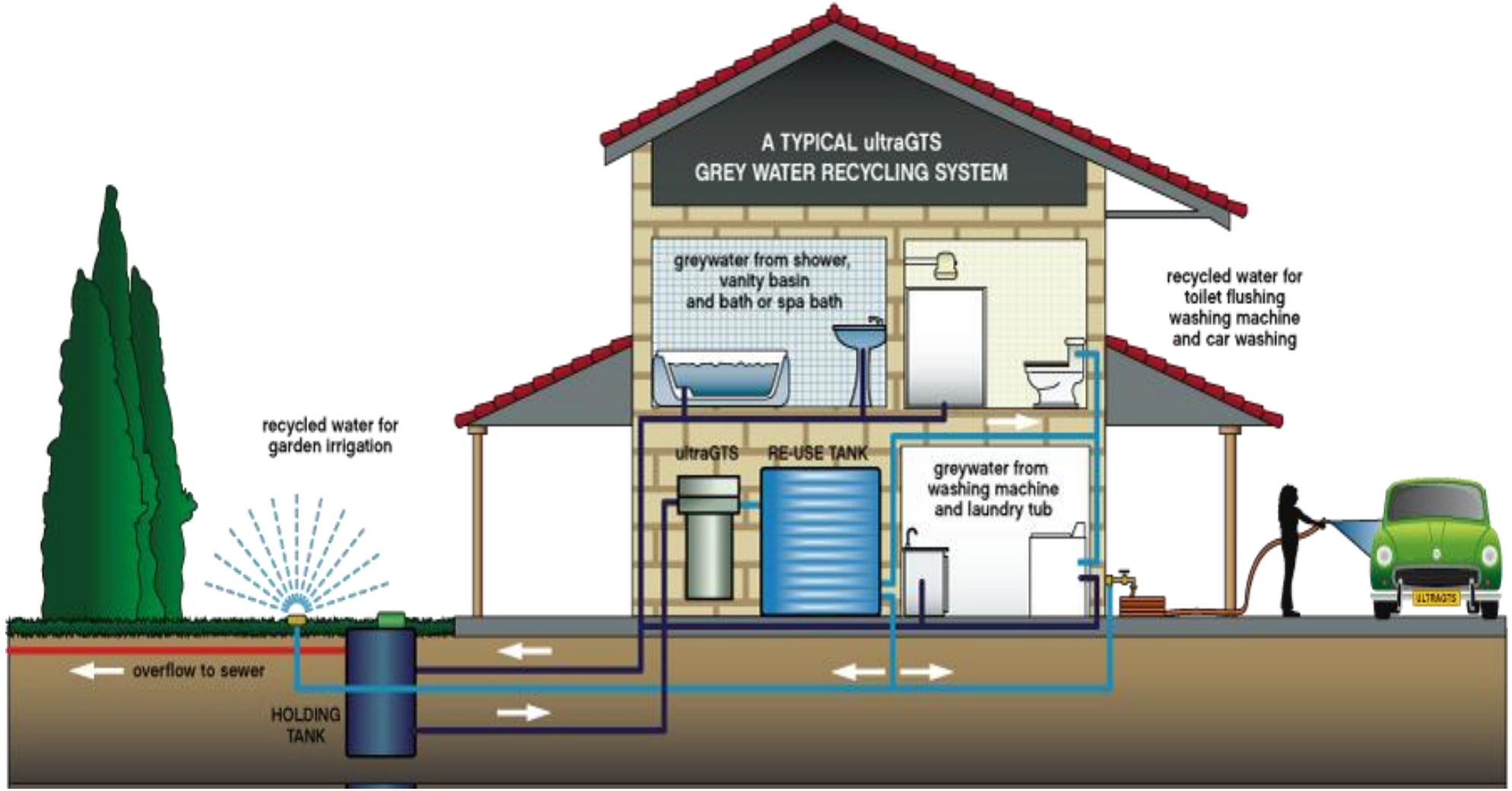
To claim an automatic concession on your account, please call 13 1721.
Please see reverse for details

Did you know...

The Victorian Government's **Water Smart Gardens and Homes Rebate Scheme** is currently offering a $10 rebate on the purchase of a new AAA showerhead. See overleaf for more information on eligible products.

Yarra Valley Water

Programas governamentais


A TYPICAL ultraGTS
GREY WATER RECYCLING SYSTEM
greywater from shower,
vanity basin
and bath or spa bath
recycled water for
toilet flushing
washing machine
and car washing
recycled water for
garden irrigation
ultraGTS
RE-USE TANK
greywater from
washing machine
and laundry tub
overflow to sewer
HOLDING
TANK

Restricoes do uso de agua: Tamworth - NSW

Drought Response Level	Primary Trigger *	Usage Target (ML/d)	Additional Actions
1 Low	Chaffey Dam level falls to 50%	24.7 *(95%)* *Average***	• Maintain Dungowan Dam storage volume at around 40% (to provide ongoing supply to Dungowan pipeline users and emergency backup storage) with remainder of supply from Chaffey Dam
2 Moderate	Chaffey Dam level falls to 40%	23.4 *(90%)* *Average***	• Undertake a review of large users water savings plans in association with community awareness campaign (target 10% non-residential usage reduction) • Implement Council's Parks and Gardens Water Management Plan and target 30% consumption reduction • Prepare Scott Road wells
3 High	Chaffey Dam level falls to 35%	22.1 *(85%)* *Average***	• Target 15% non-residential usage reduction • Target 50% Parks and Gardens consumption reduction • Activate Scott Rd wells to supplement supply from Chaffey and Dungowan Dams
4 Very High	Chaffey Dam level falls to 30%	19.5 *(75%)* *Daily*	• Target 20% non-residential usage reduction • Scott Rd wells continue to supplement supply from Chaffey and Dungowan Dams • Investigation and implementation of emergency supply options including, potentially making treated effluent available for industry & public parks watering, and investigation of options for a temporary weir at Paradise Weir
5 Emergency	Chaffey Dam level falls to25%	16.9 *(65%)* *Daily*	• Full use of emergency supply options – Scott Rd wells, use of any remaining storage in Chaffey and Dungowan Dam, construct temporary weir at Paradise Weir, continue to make treated effluent available. • Target 25% non-residential usage reduction When storages fall and there is estimated to be less than 6 months water storage remaining Council will adopt the following trigger levels for Tamworth water supply to further curtail demand under Level 5 Restrictions: • Business/industrial/institutional users be required to reduce consumption to less than 50% of the metered 2005/2006 water consumption; • Effected businesses/institutions to be given at least one month written notice prior to the estimated remaining storage level dropping to six months; • The Director of Water Enterprises will provide a report to Council that provides an assessment of economic and social impacts on businesses that would be affected by the 50% reduction in consumption on the 2005/2006 level of consumption if storages fall to the point where only six months supply remains; and • The Director Water Enterprises provide a further report to Council on required actions when remaining storage level drops to 3 months.

Notes: ** Secondary triggers include failure to achieve consumption targets & major water quality incidents*

*** Usage targets are average annual consumptions and should be adjusted for seasonal patterns*

Restricoes do uso de agua: Melbourne

PURPOSE	STAGE 1	STAGE 2	STAGE 3	STAGE 4
13. **Vehicles** *(See Definitions)*	Water must not be used to clean a vehicle except by means of: (a) a hand-held hose fitted with a trigger nozzle, to pre-rinse and rinse only; or (b) a high pressure water cleaning device; or (c) a commercial car wash referred to in item 14; or (d) a watering can or bucket filled either by a hand-held hose fitted with a trigger nozzle, or directly from a tap.	Water must not be used to clean a vehicle except by means of: (a) a high pressure water cleaning device; or (b) a commercial car wash referred to in item 14; or (c) a watering can or bucket filled directly from a tap (and not by means of a hose).	Water must not be used to clean a vehicle except by means of: (a) a commercial car wash referred to in item 14 ; or (b) a bucket filled directly from a tap (and not by means of a hose): (i) to clean vehicle windows, mirrors and lights; and (ii) for spot-removing corrosive substances.	Water must not be used to clean any part of a vehicle other than its windows, mirrors and lights, and for spot-removing corrosive substances, and then only with a bucket filled directly from a tap (and not by means of a hose).
14. **Commercial Car Wash**	(1) A commercial car wash (other than a permanent bay carwash) must not use water to clean vehicles, except by means of: (a) a hand-held hose fitted with a trigger nozzle to pre-rinse and rinse only; or (b) a watering can or bucket filled either by a hand-held hose fitted with a trigger nozzle, or directly from a tap.	(1) A commercial car wash (other than a permanent bay car wash) must not use water to clean vehicles except by means of: (a) a high pressure water cleaning device; or (b) a watering can or bucket filled directly from a tap (and not by means of a hose).	(1) A commercial car wash (other than a permanent bay carwash) must not use water to clean vehicles except by means of a high pressure water cleaning device.	(1) A commercial car wash (other than a permanent bay car wash) must not use water to clean any part of a vehicle other than its windows, mirrors and lights, and then only with a bucket filled directly from a tap (and not by means of a hose).

Melbourne Outlook

Water storage levels stable

Melbourne's water storages have remained relatively stable over the past year and are 78.7% of their capacity as of 27 November 2014 compared with 81.0% on 30 November 2013.

Chart 1 shows that at this level, water storage levels are assessed as being in the High Zone. This means the existing water supply system can deliver at least five years of water without entering the Low Zone under a range of modelled climate and demand scenarios.

Melbourne's largest reservoir – Thomson – is currently holding 81.0% of its capacity. Thomson Reservoir acts as Melbourne's drought reserve, so it is important to maximise its recovery during wetter years to prepare for potential future droughts.

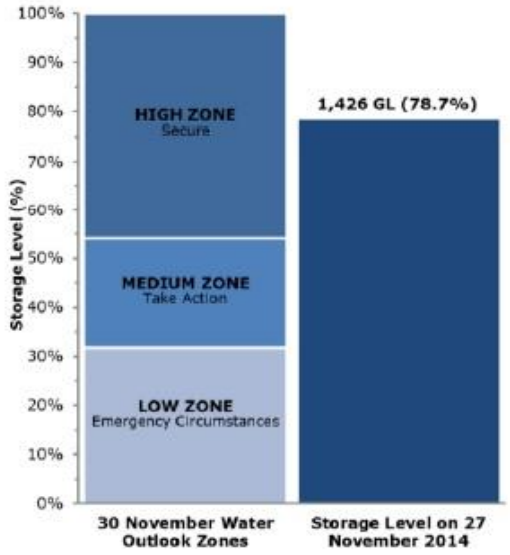
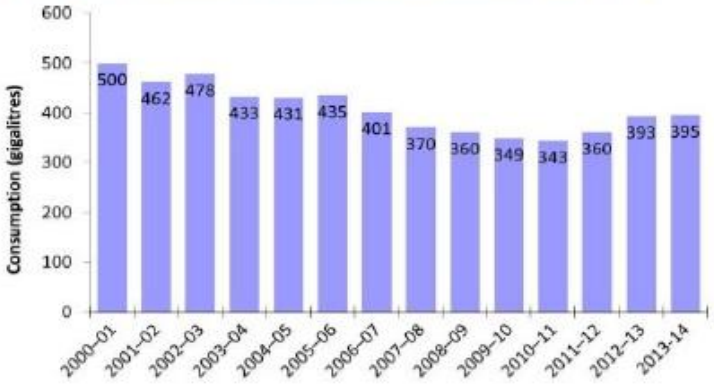


Chart 1 – Storage level on 27 November 2014



Water use stable at low levels

Melburnians continue to use water efficiently, with per

Conclusoes

- Agua eh um bem economico e deve ser tratada como tal;
- Planejamento eh extremamente importante: implementa-lo eh essencial!
- Transparencia da informacao eh vital!
- Educar a populacao eh primordial;
- Programas governamentais são cruciais
- Crises ajudam a impulsionar politicas publicas: seja oportunista.

Obrigado! Perguntas?