

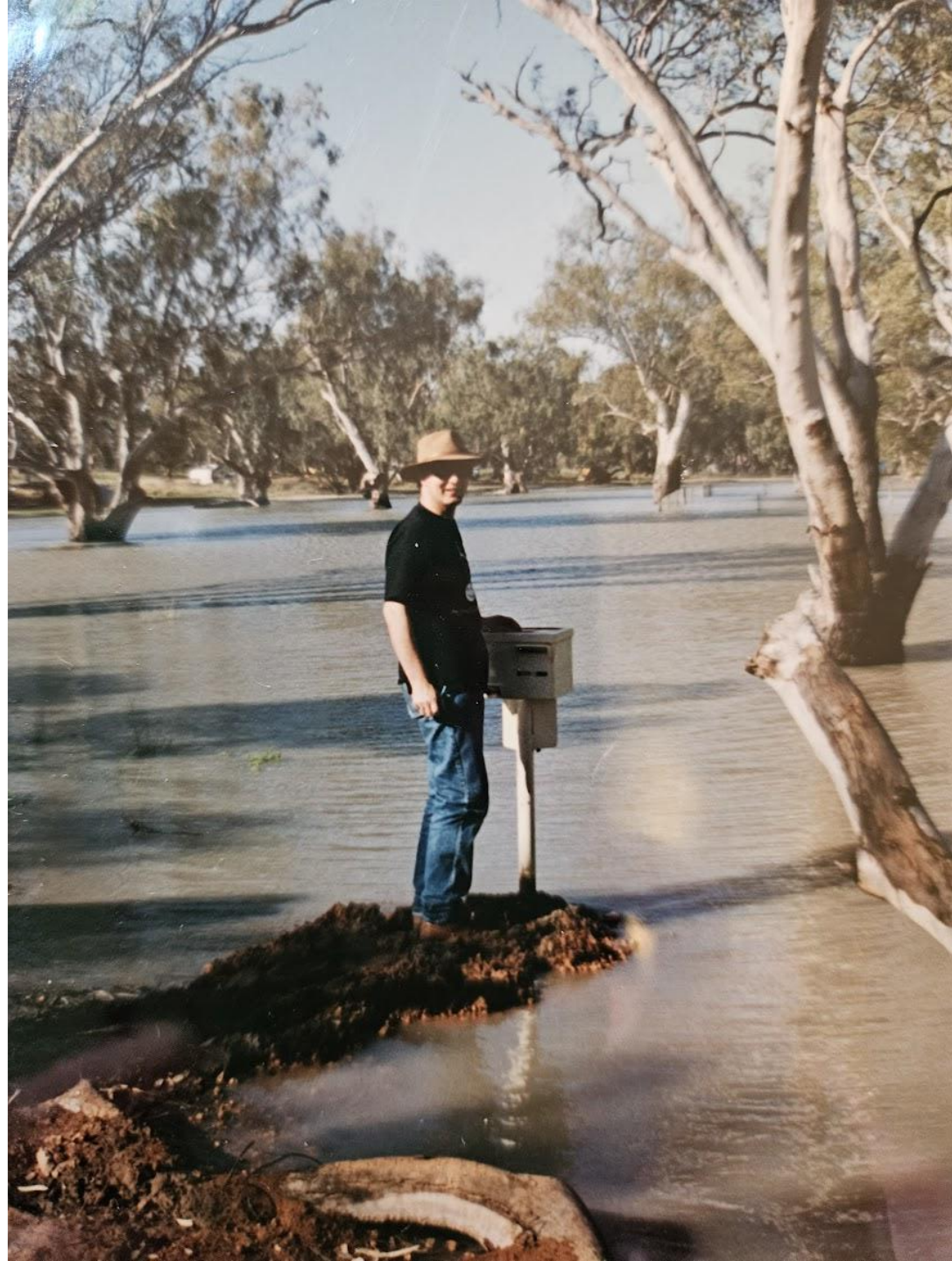
# Victoria's water woes

Juliet Le Feuvre



Lake Hattah, September 1993



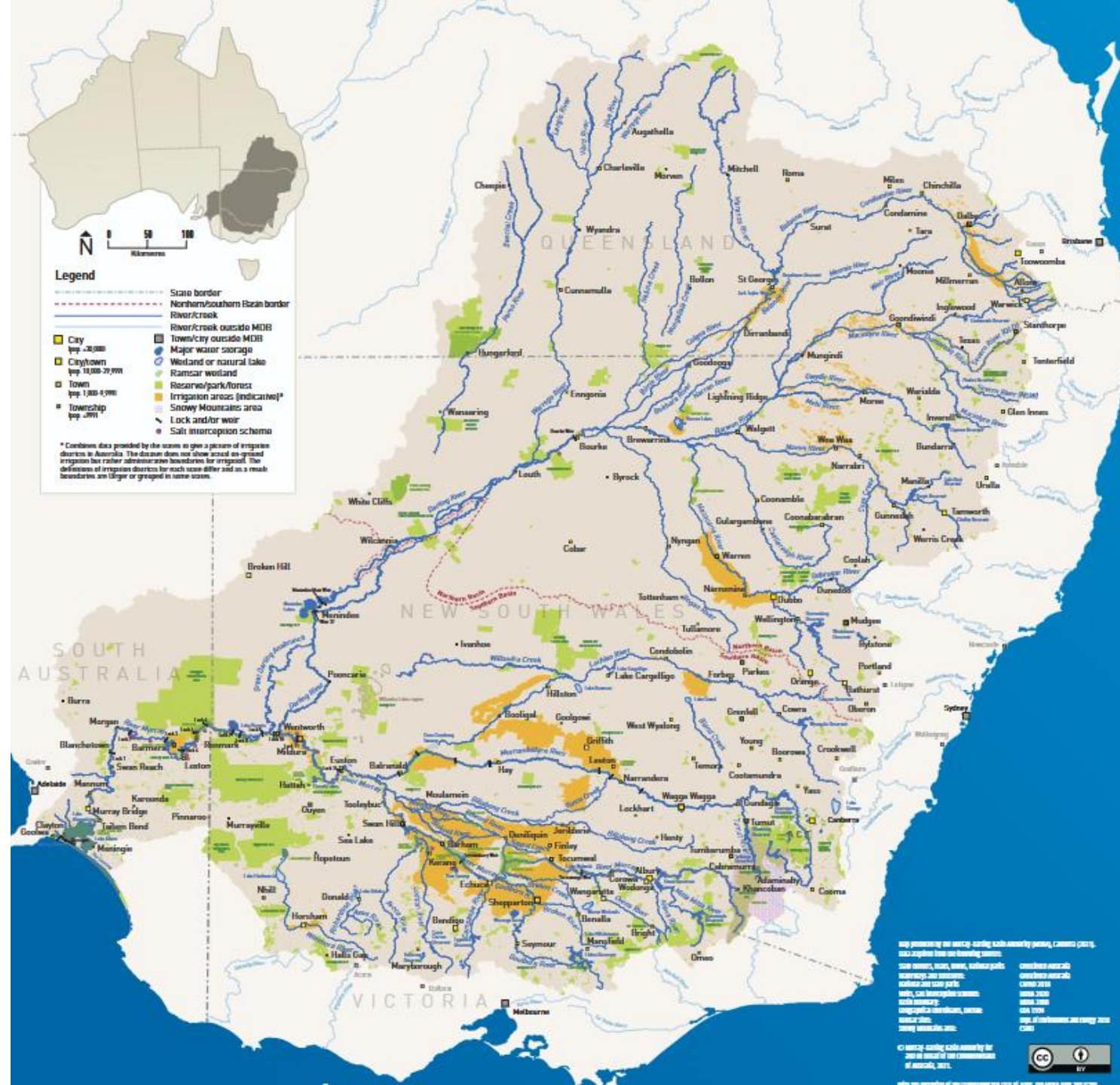














Lake Hattah 2019















Lake Hattah 2021





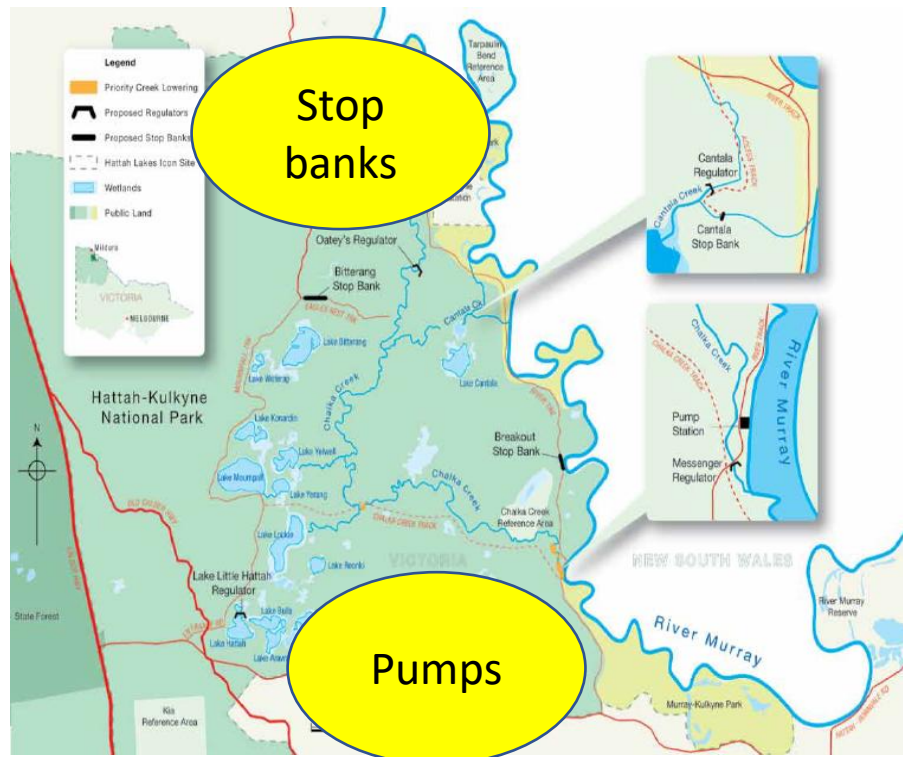
Lake Hattah 2023



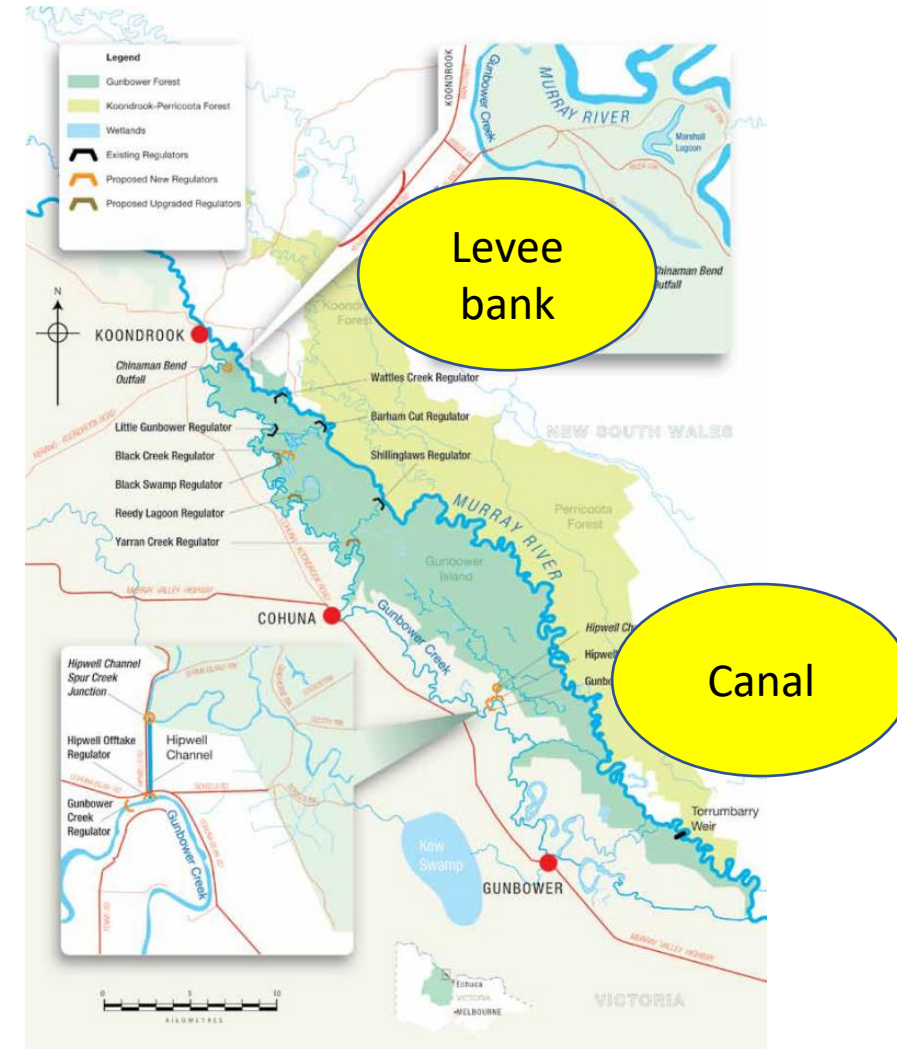




# Environmental works and measures

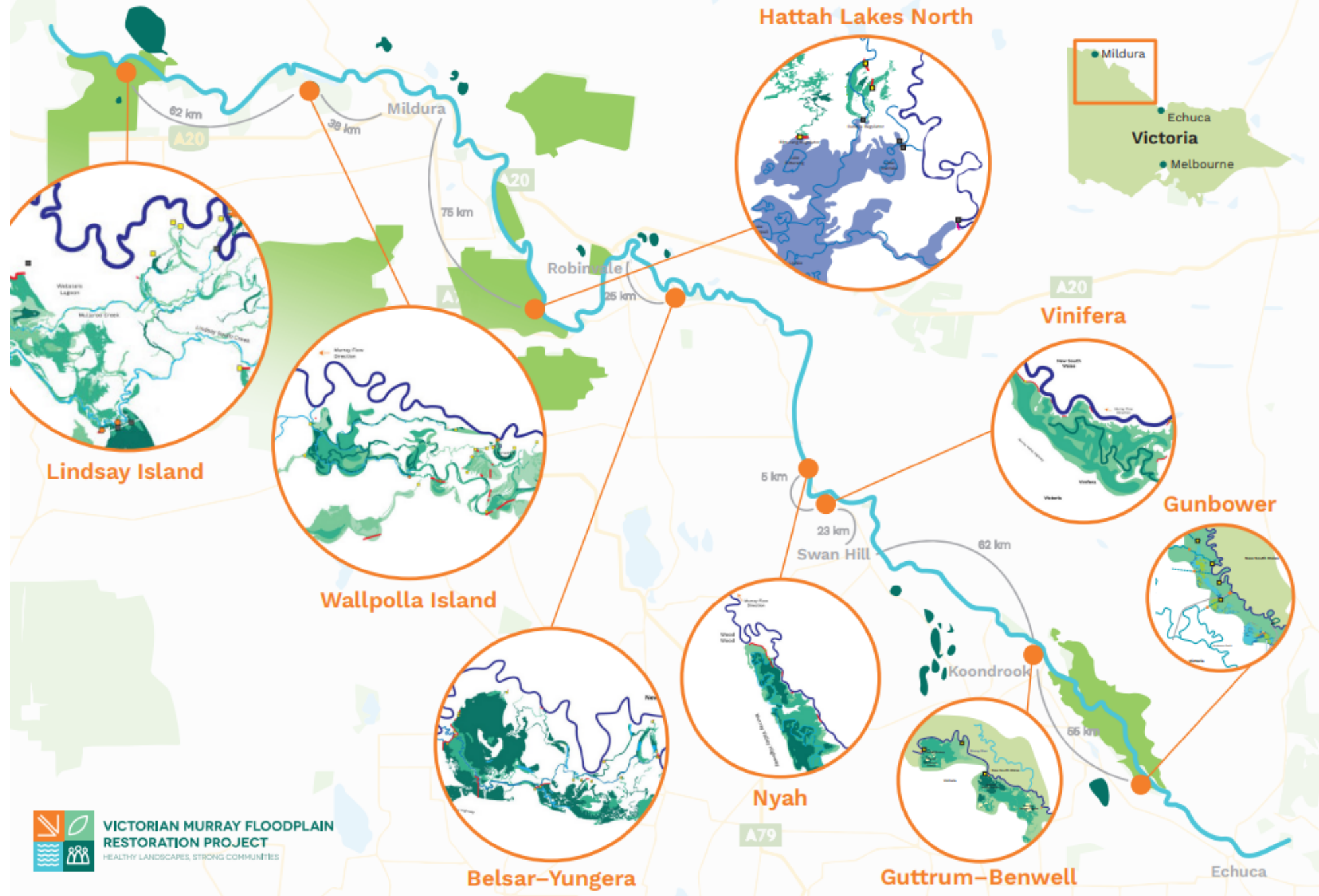


Source: Murray-Darling Basin Authority





VMFRP projects  
Water 14,000 hectares  
at cost of \$320 million  
= \$23,000/hectare





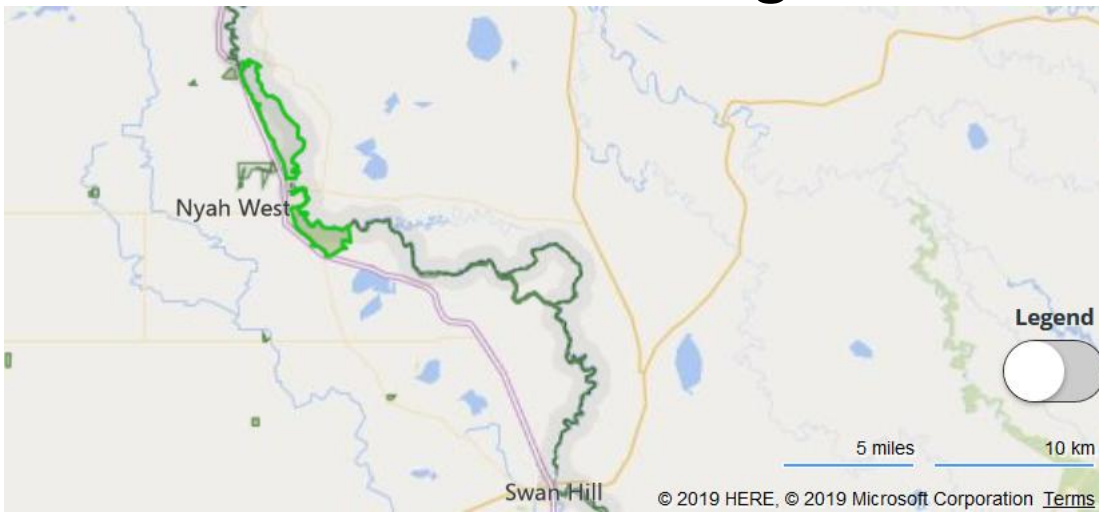
# Nyah - Vinifera Park SDL projects

## Nyah

- \$11 million capital works
- 55% of 913 ha inundated
- 6% of 64 ha of black box
- 76% of 168 ha of red gum

## Vinifera

- \$9.1 million capital works
- 55% of 638 ha inundated
- 2% of 87 ha of black box
- 56% of 439 ha of red gum



From floodplain  
ecosystems to  
red gum  
irrigation bays?



## Constraints relaxation projects

Water 350,000 hectares at  
cost of \$854 million  
= \$2,300/hectare

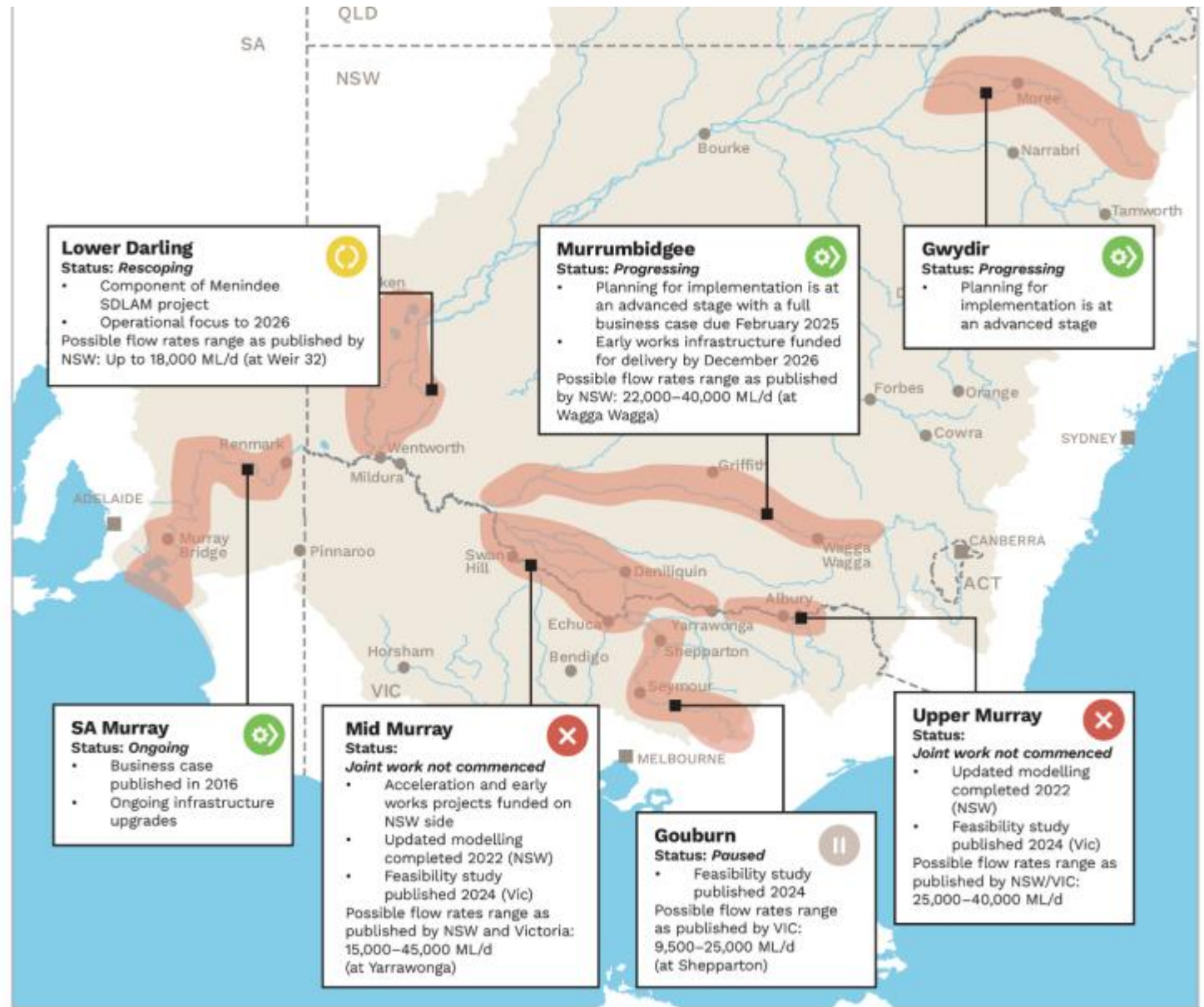
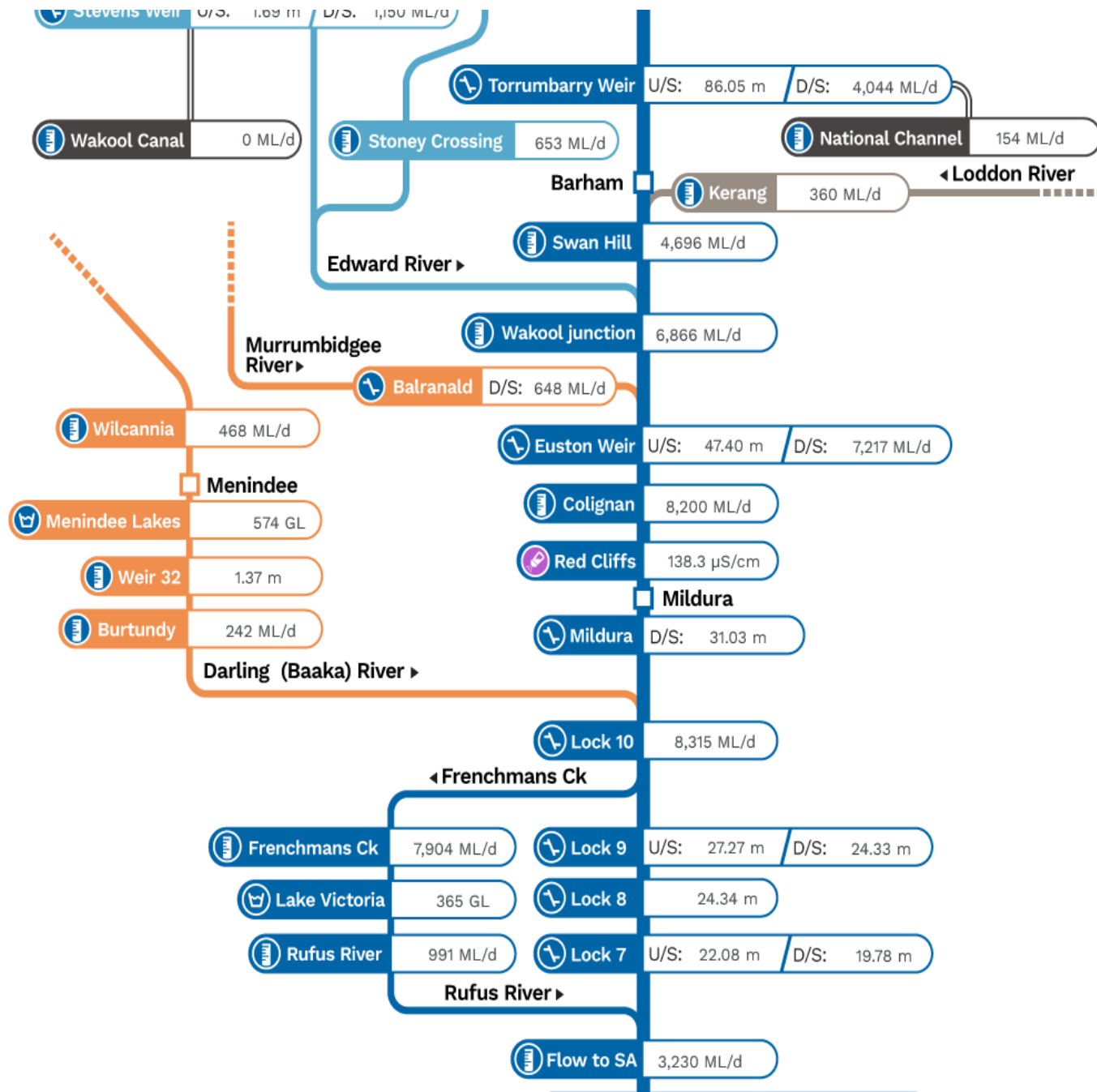
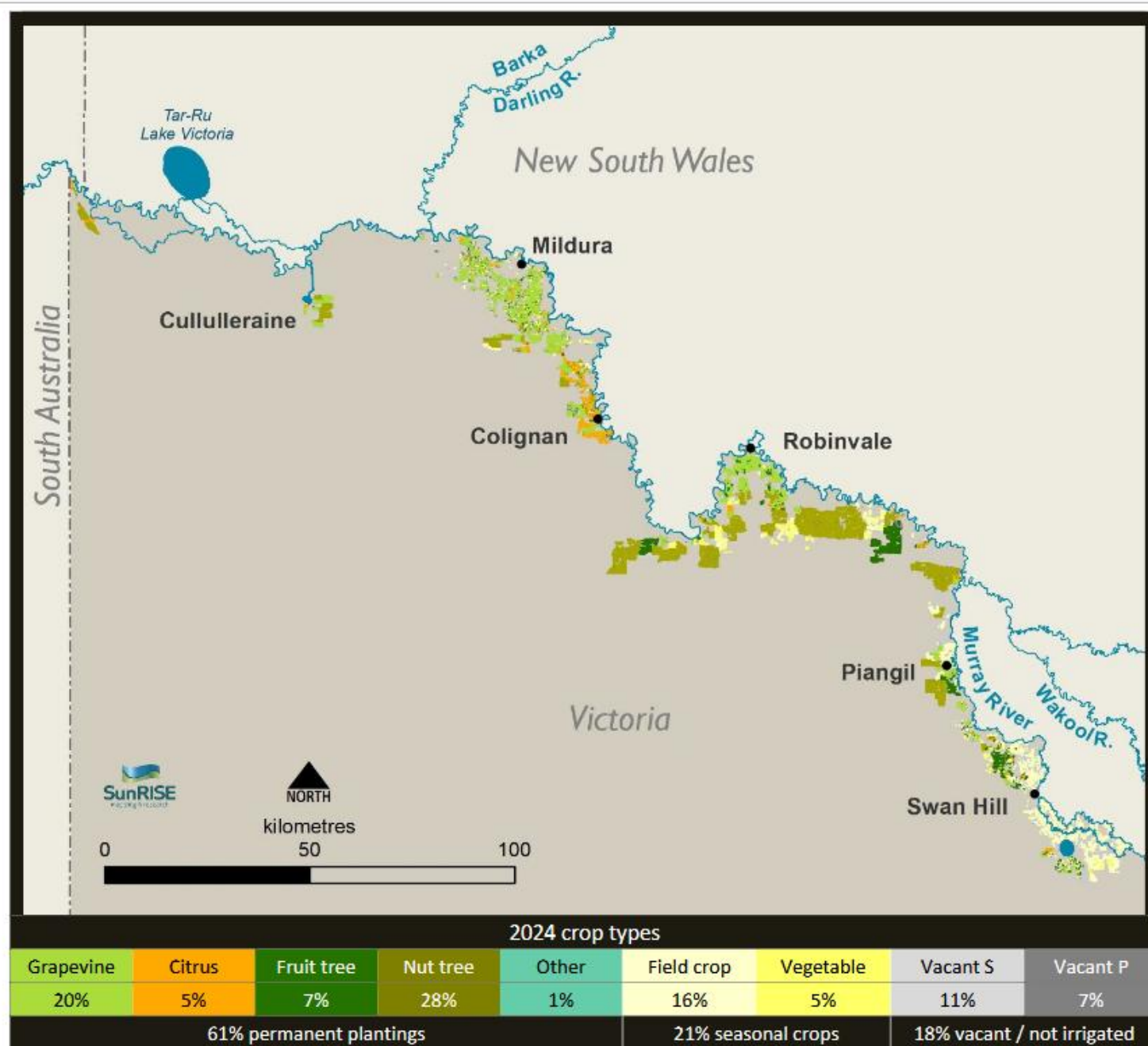


Figure 2: Status of constraints relaxation projects in the Basin.









**Map 8: LMD VIC study area - crop types in 2024**

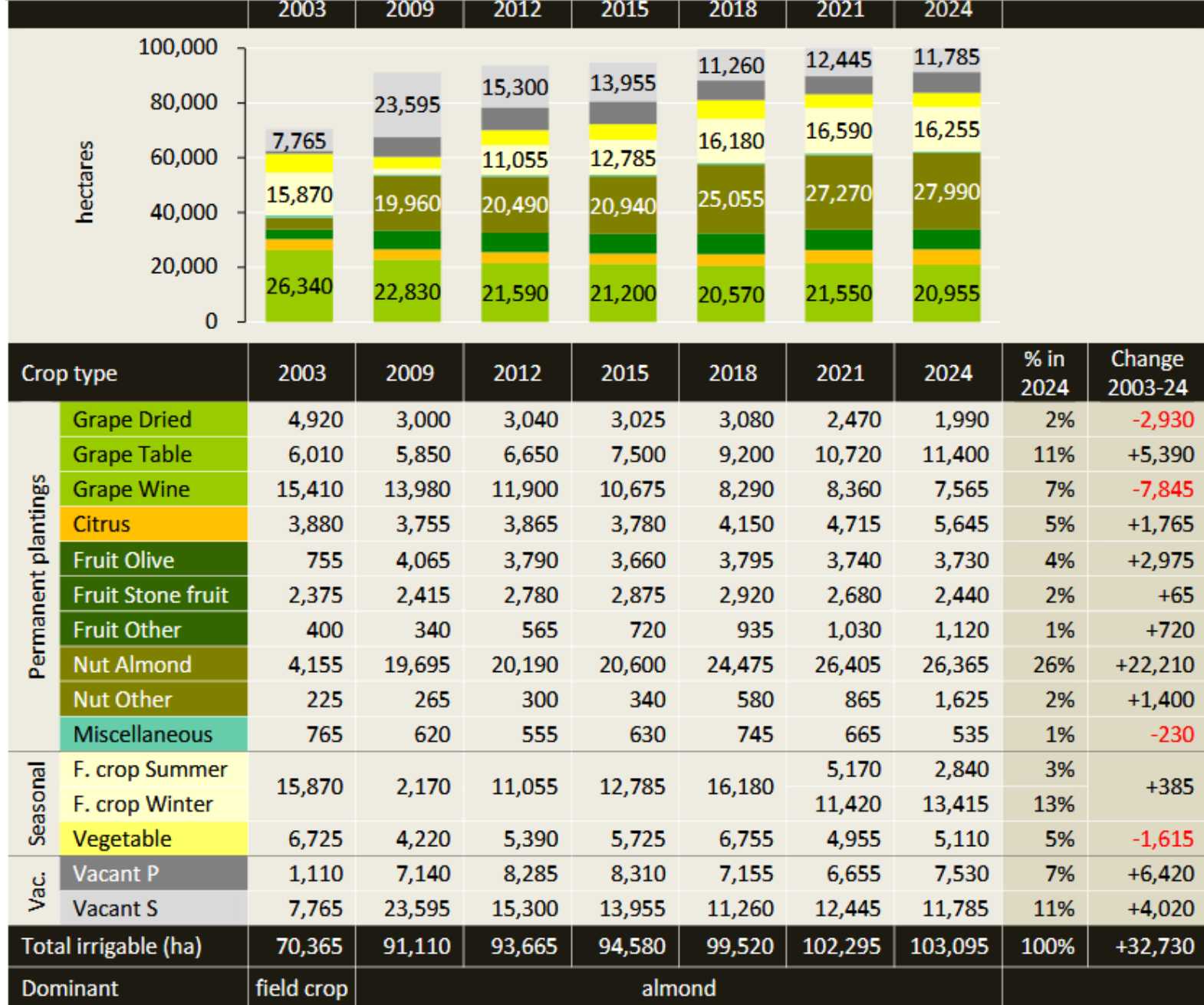


Figure 12: LMD Victoria - crop types from 2003 to 2024

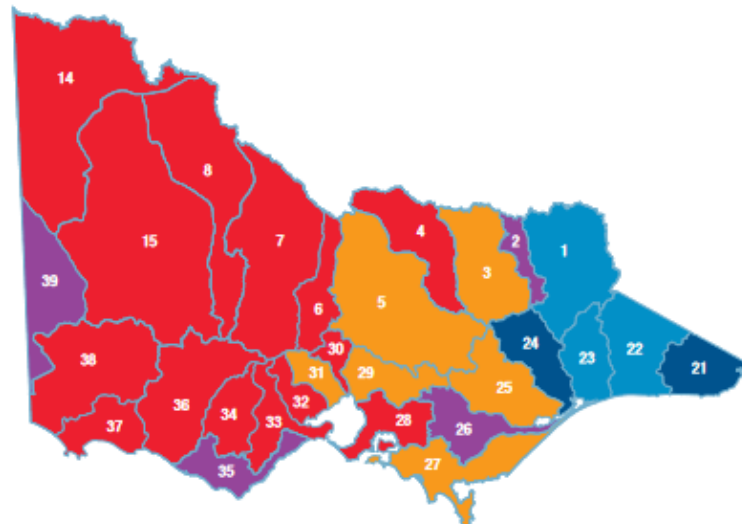


# River Condition in Victoria

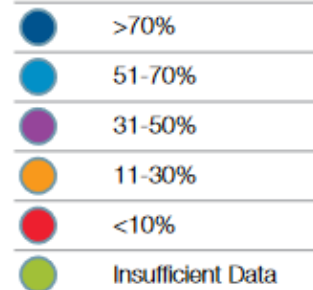
Figure 4: 2010 ISC – Percentage river length in good or excellent condition



Figure 5: 2004 ISC – Percentage river length in good or excellent condition



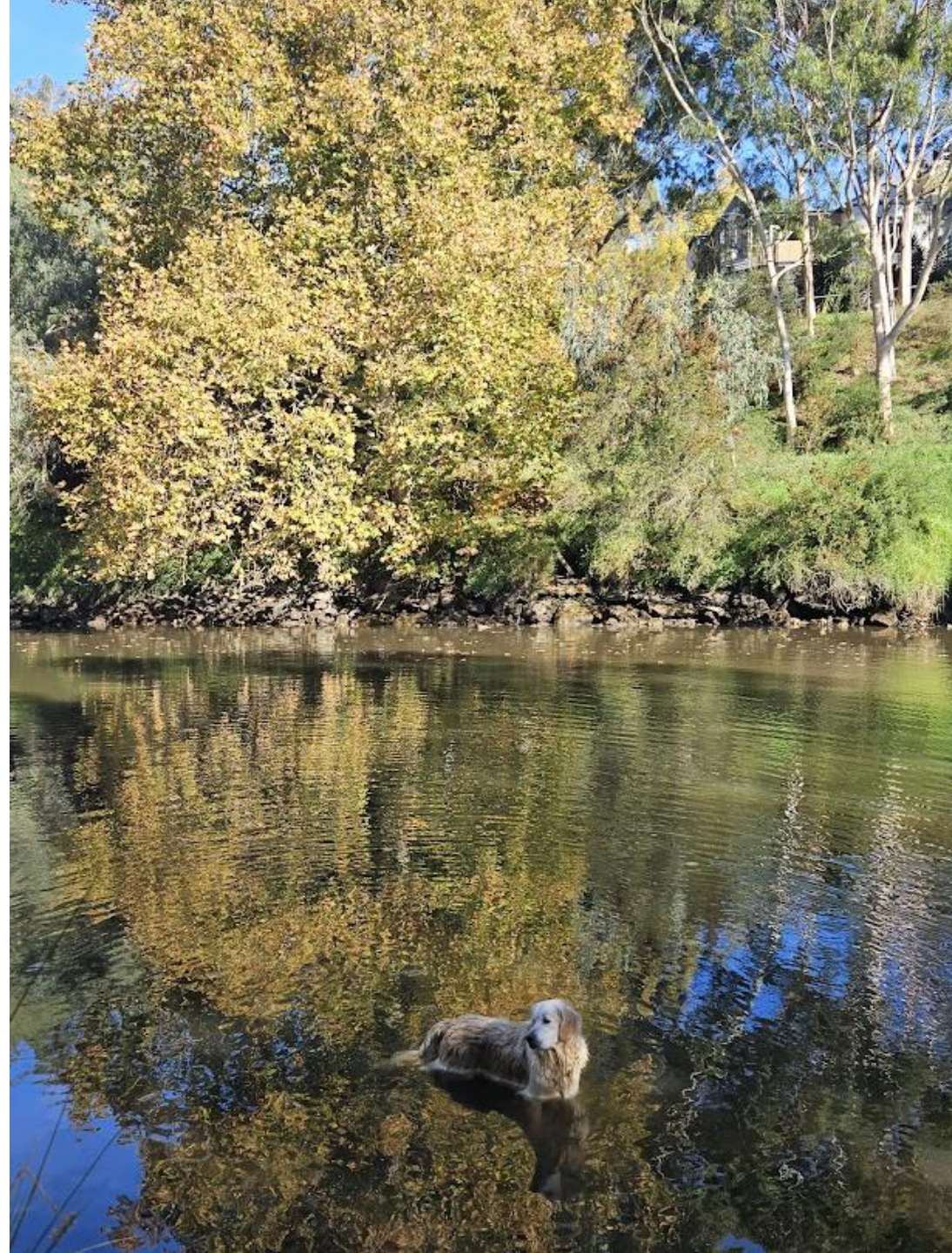
## Environmental Condition



## Basin Names

|                |                   |                    |                    |
|----------------|-------------------|--------------------|--------------------|
| 1 Upper Murray | 14 Mallee         | 27 South Gippsland | 35 Otway           |
| 2 Kiewa        | 15 Wimmera        | 28 Bunyip          | 36 Hopkins         |
| 3 Ovens        | 21 East Gippsland | 29 Yarra           | 37 Portland        |
| 4 Broken       | 22 Snowy          | 30 Maribymong      | 38 Glenelg         |
| 5 Goulburn     | 23 Tambo          | 31 Werribee        | 39 Millicent Coast |
| 6 Campaspe     | 24 Mitchell       | 32 Moorabool       |                    |
| 7 Loddon       | 25 Thomson        | 33 Barwon          |                    |
| 8 Avoca        | 26 LaTrobe        | 34 Corangamite     |                    |

Yarra, Birrarung  
Hawthorn





Yarra, Birrarung  
Warrandyte



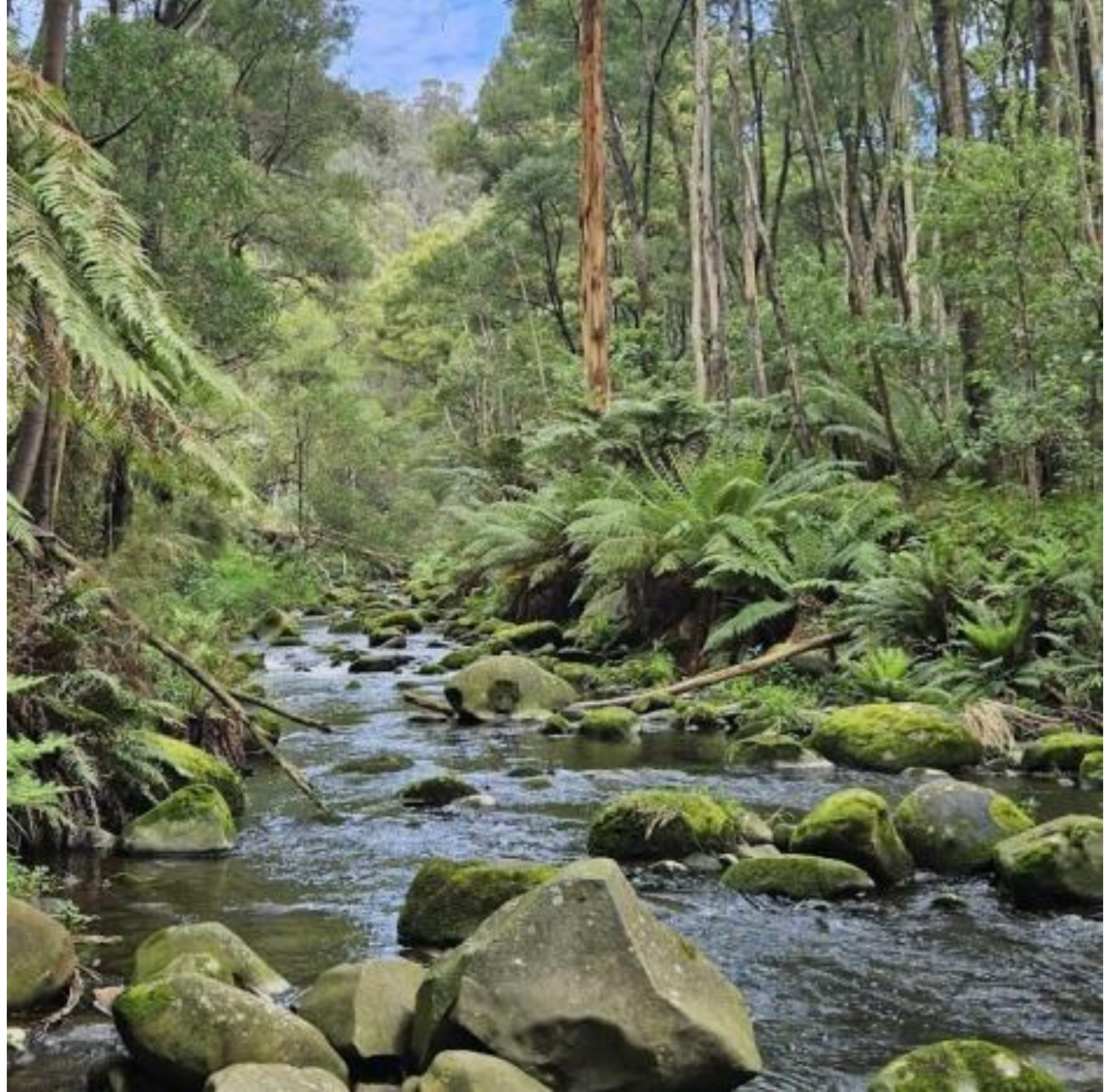


# Darebin Creek, Yarra





Wye River  
Otways





Hopkins River  
Western Vic





Mitchell River  
Gippsland



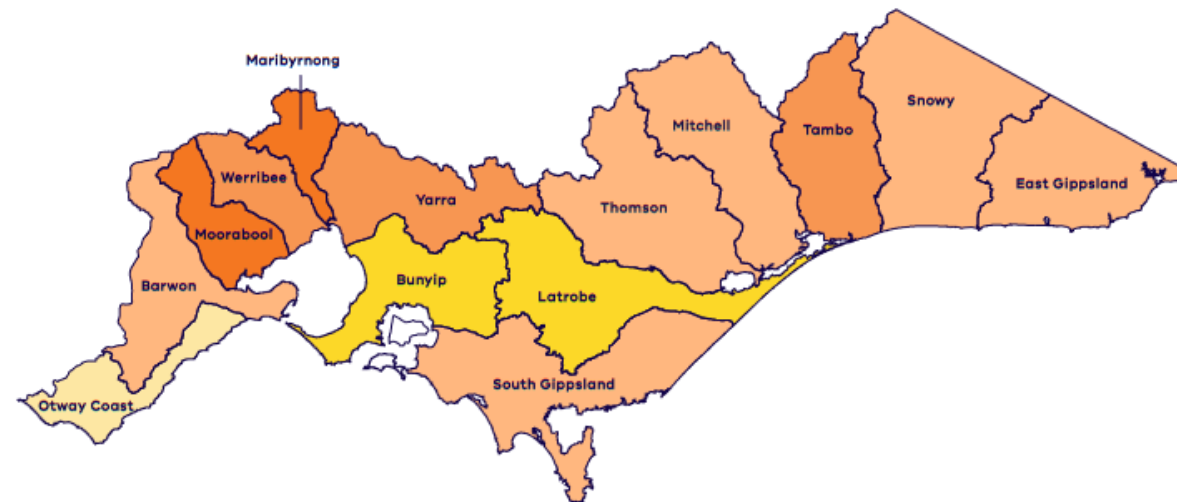


# Decline in surface water availability 1975-2020 in southern Victoria

**Note\*** percentage decline was not assessed for Phillip Island as part of the Long-Term Water Resource Assessment

## CGRSWS DECLINE %

- < 5% decline
- 5 – 10% decline
- 11 – 15% decline
- 16 – 20% decline
- 21 – 25% decline



**Figure 2.5:** Percentage decline in surface water availability in each river basin across the Central and Gippsland Region for 1975–2020, relative to the long-term record



# Environment's share more affected than consumptive share – disproportionate impact

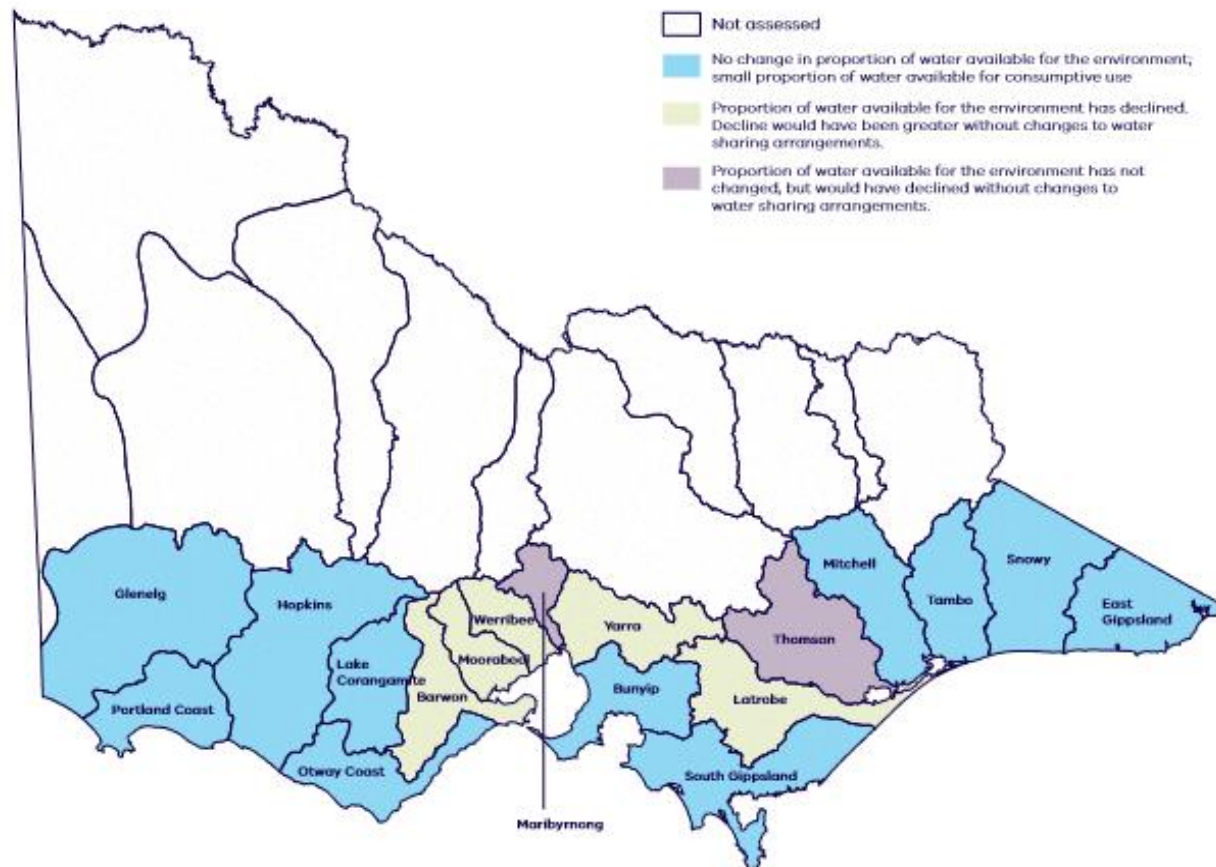
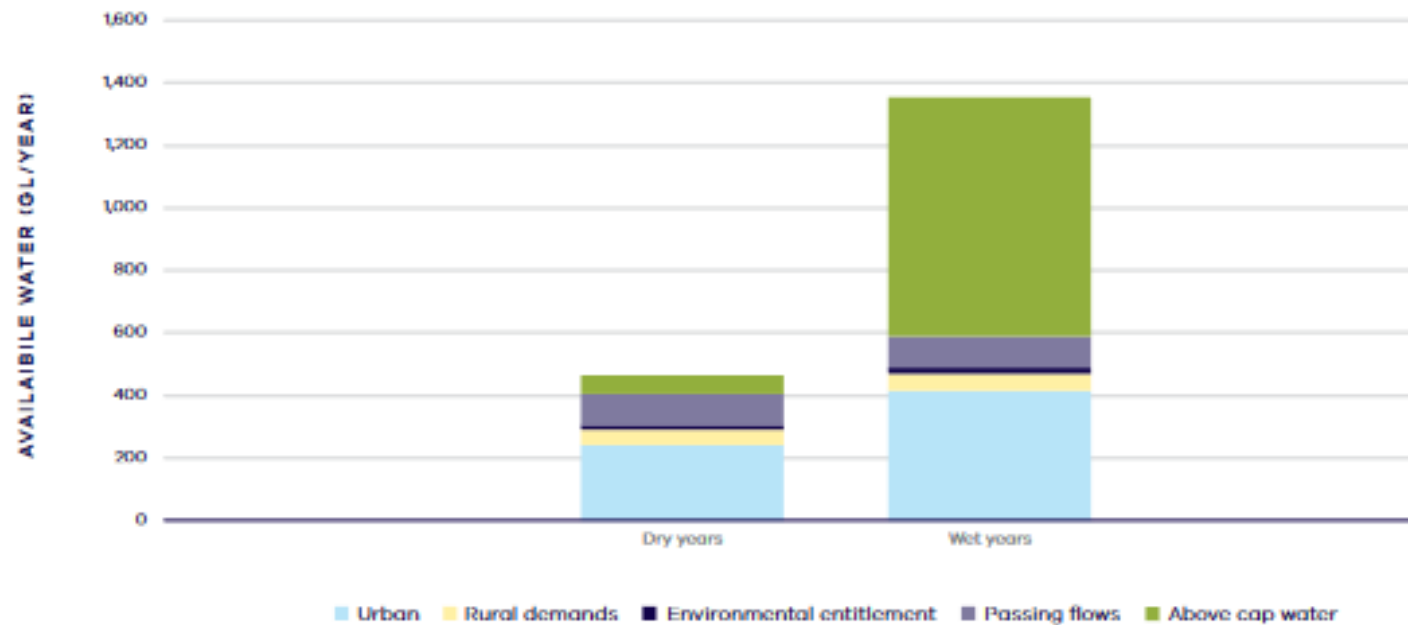


Figure 52: Changes in proportions of water available for the environment and for consumptive uses, by basin



# Why is there a disproportionate impact?



**Figure 53:** Yarra basin water balance, modelled wet and dry periods

**NOTE:** the figure is the result of water resource modelling using 1992–96 (wet period) and 2005–09 (dry period) data.

# Environmental water deficits in southern Vic

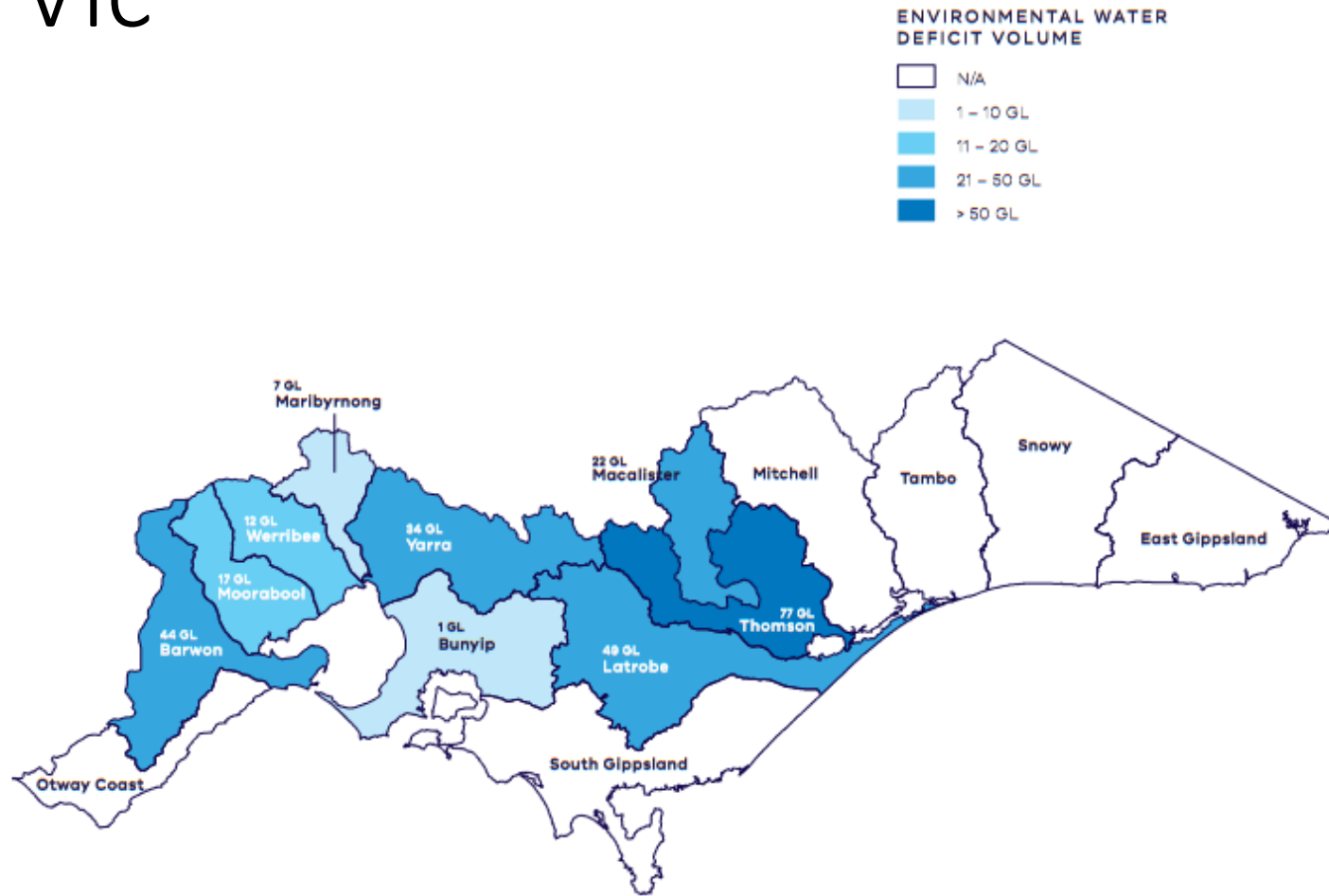
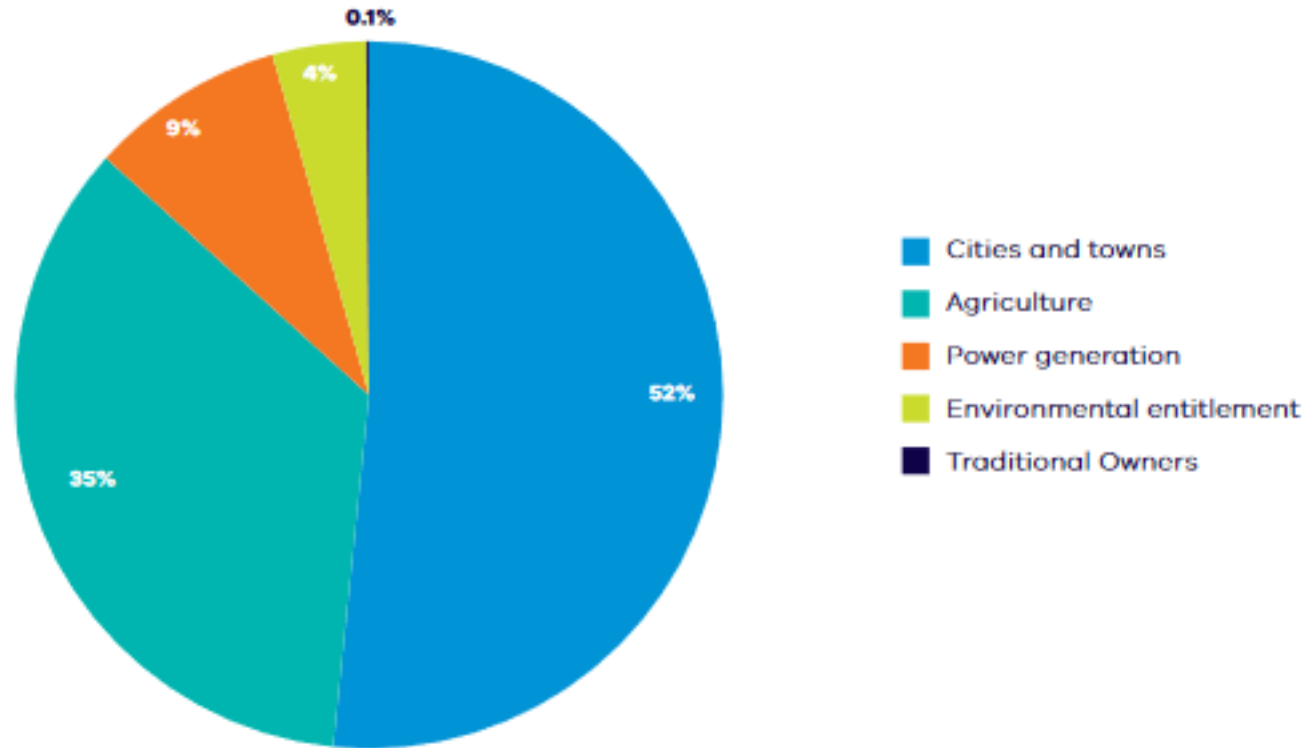


Figure 3.8: Total environmental water deficits for the Central and Gippsland Region (based on post-1975 baseline)

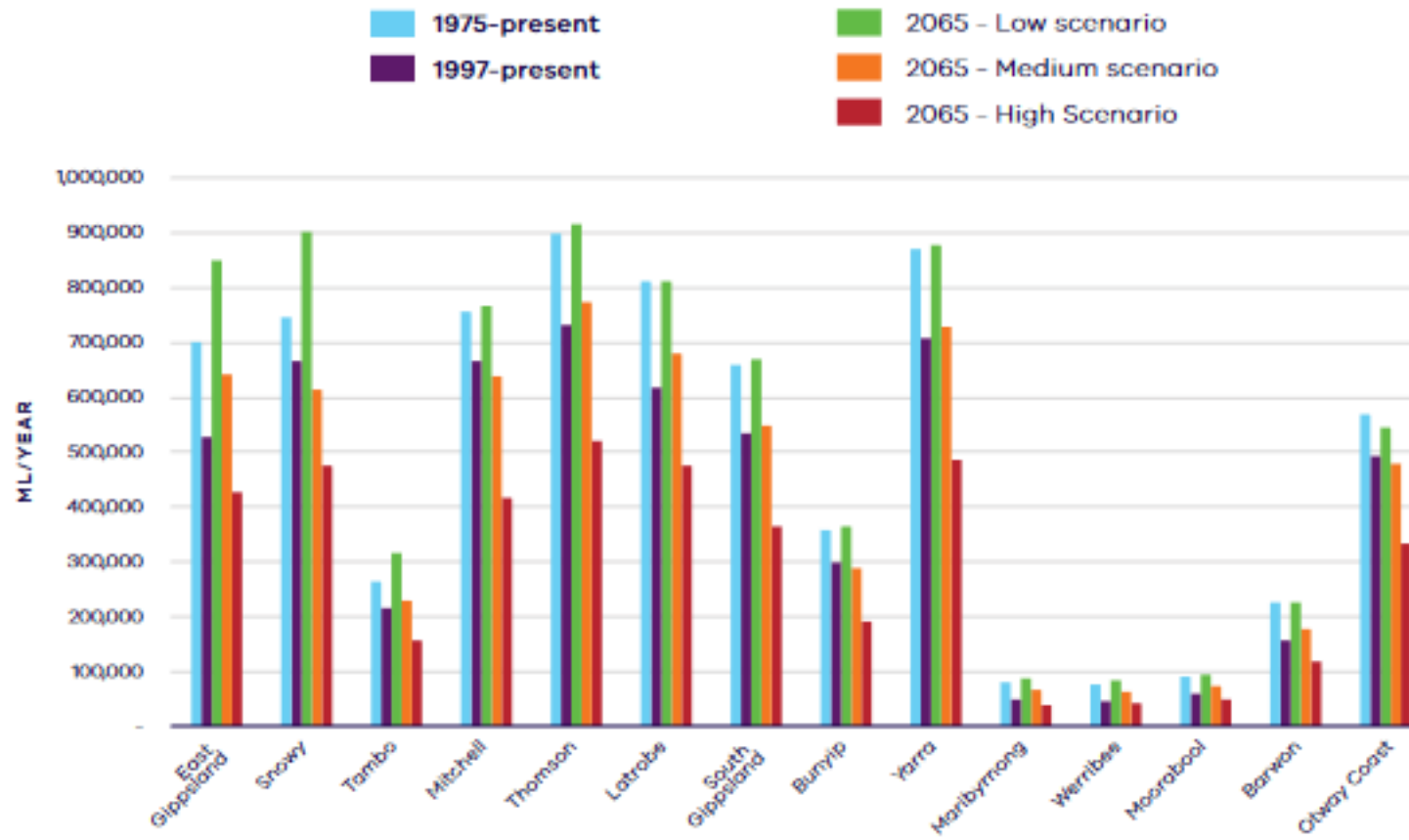


# Who is using water in southern Victoria?



**Figure 3.2:** Approximate distribution of surface water and groundwater entitlements across different uses in the Central and Gippsland Region. Surface water makes up 85 per cent of entitlements, while groundwater is 15 per cent

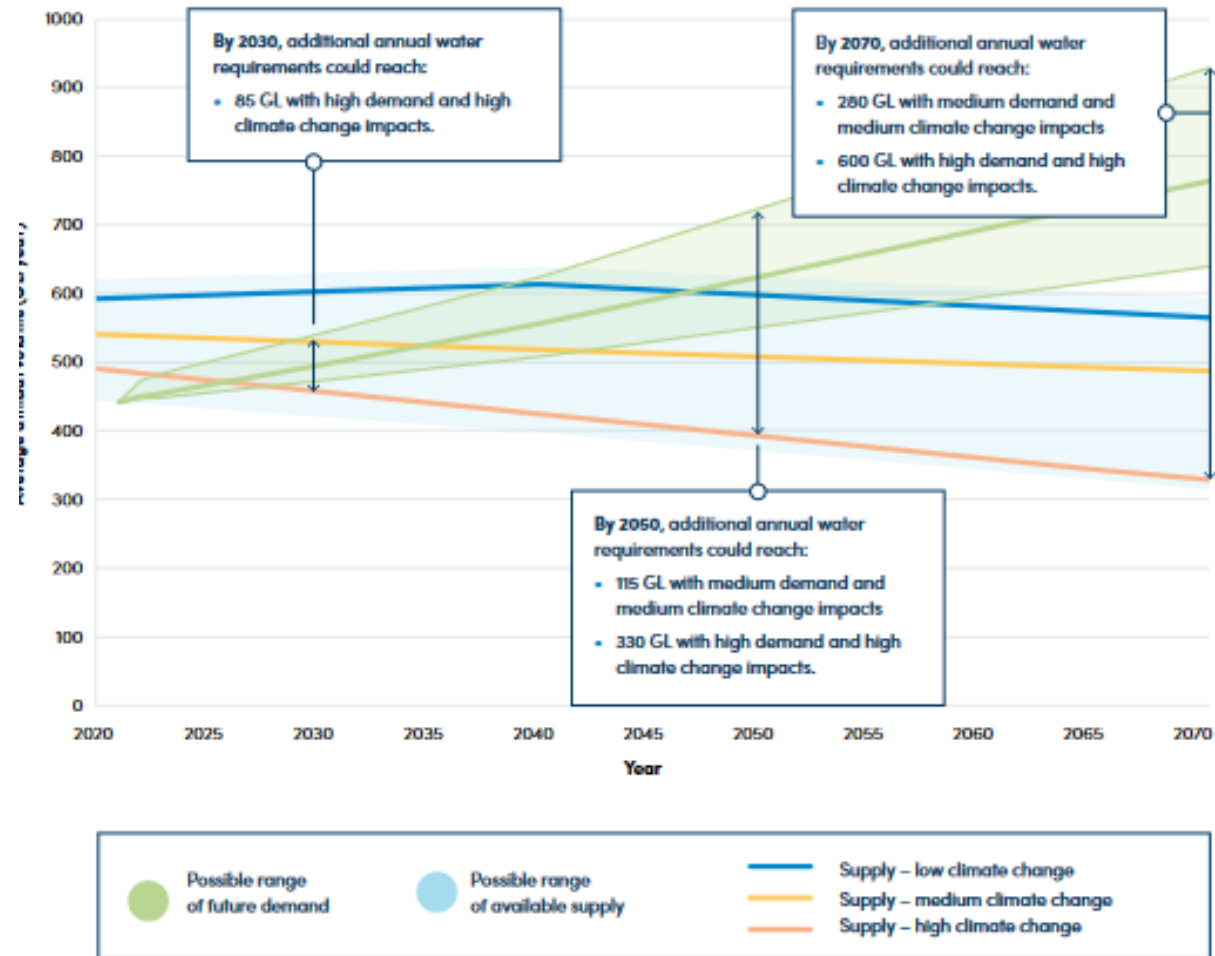
# Where we are headed – climate change already biting



**Figure 2.7: Water availability projections for low, medium and high climate change scenarios for 2065, assuming little curbing of greenhouse gas emissions, compared to average annual inflows for two historical reference periods (1975–present and 1997–present)**



# Melbourne's future water demand



# Growing water resources for Melbourne

## Water supply sources in Greater Melbourne: 2010 to 2065

(Source: Melbourne Water, 2021)

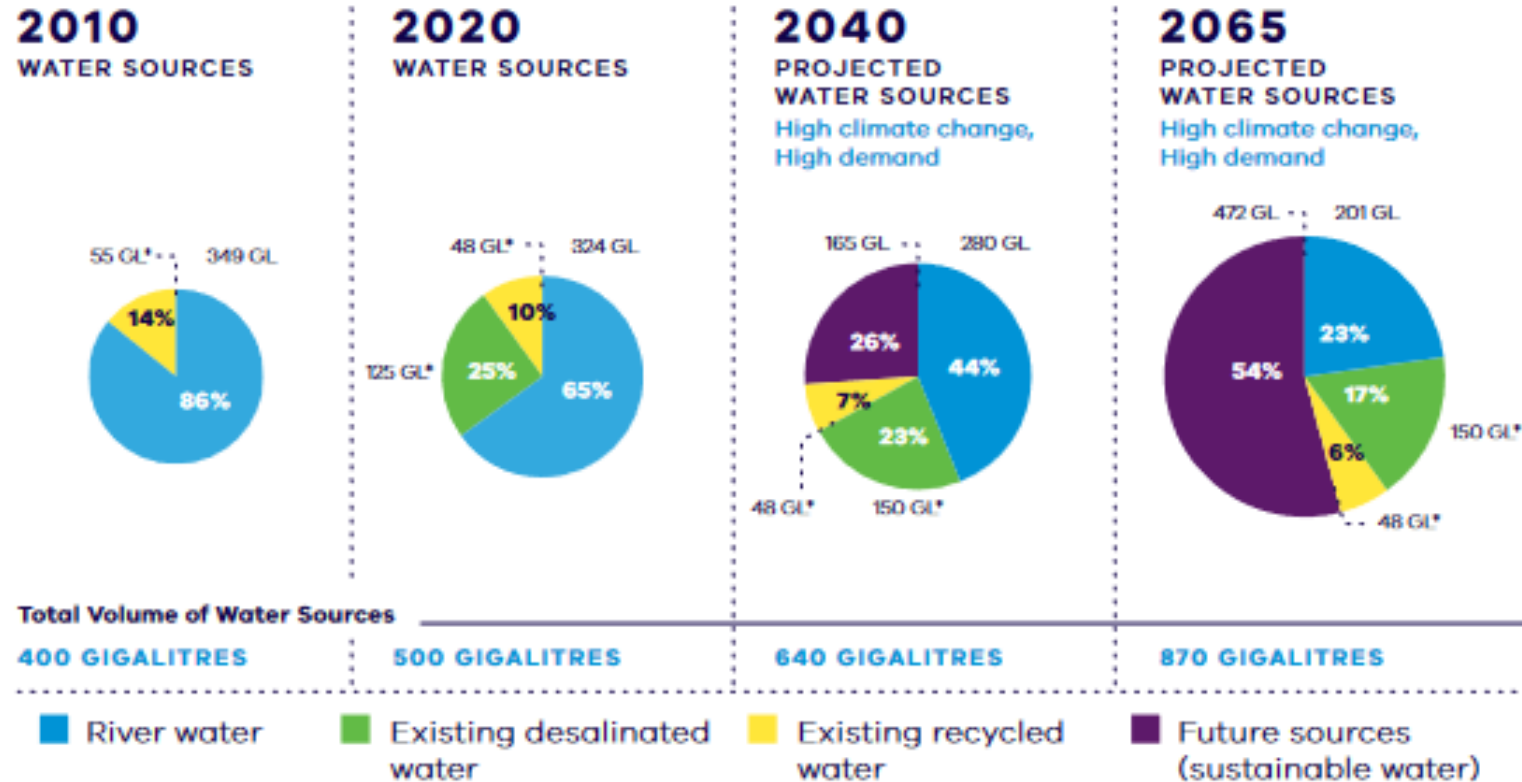


Figure 6.1: Expected transition from reliance on river water to more manufactured water for Greater Melbourne, 2010 to 2065 (prepared by Melbourne Water, 2021)



# Proposed actions to meet Melbourne's shortfall

- More recycled water – but is it fit for purpose?
  - More stormwater capture and use – but difficult to store and scale up
  - A potential alternative supply network
  - More desalination – expanding Wonthaggi, a new plant for Geelong?
  - Reducing per capita use – more efficient appliances, stronger targets
  - Integrated water management – better planning for new suburbs
- 
- But little detail on how these are to be achieved – a plan for a plan!

# CWA election asks



- **Deliver for our rivers**
  - - Reduce bulk entitlements, delivering promises for rivers
  - - Provide connectivity – sorting out passing flows
  - - Meaningful Sustainable diversion limits, based on ecological criteria
- **Rivers as single living entities**
  - - Connected from source to sea and to floodplains and wetlands
  - - Statewide planning protection and riparian buffers





# CWA election asks

- **Rivers need water, not clouds**
  - Regulate data centres, stop the fast track
  - Mandate closed loop cooling
  - Ban release of toxicants
- 
- **Know the facts – measure, monitor and comply**
  - What comes out
  - What goes in
  - Who lives there
  - Zero tolerance for rule breaking

# CWA elections asks



- **Cough up the cash**
  - Increase the environmental contribution levy
  - Increase tariffs for industrial users
  - Increase budget for climate independent sources of water and water treatment plant upgrades

[Concernedwaterwaysalliance.org.au](http://Concernedwaterwaysalliance.org.au)



# Psyche Bend, Mildura 2009

Thank you!

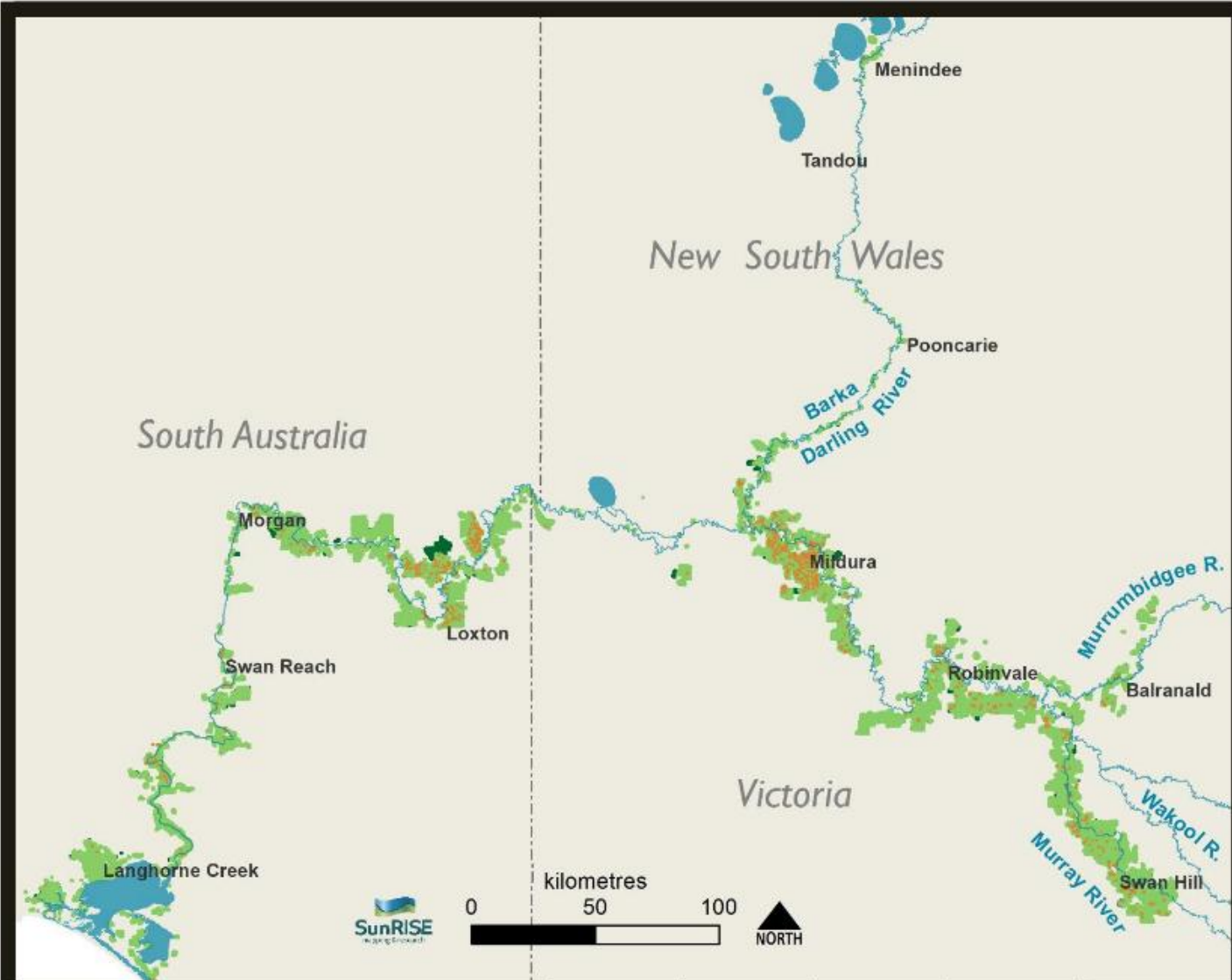


56% (4,080 ha) of new areas were permanent plantings, mainly almonds, wine grapes and citrus. Seasonal crops were mainly field crops in the Edward/Kolety-Wakool system, established with centre pivot or lateral move irrigation.

**Table 1: Irrigation expansion across the Lower Murray-Darling from 2021 to 2023**

| Crop type             | VIC          | NSW          | SA           | Total (ha)   | % crop type |                                      |
|-----------------------|--------------|--------------|--------------|--------------|-------------|--------------------------------------|
| Grape - Dried         | 85           | 45           | 5            | 135          | 2%          | Permanent plantings:<br>4,080 ha/56% |
| Grape - Table         | 180          | 10           | 145          | 335          | 5%          |                                      |
| Grape - Wine          | 90           | 670          | 100          | 860          | 12%         |                                      |
| Citrus                | 300          | 320          | 60           | 680          | 9%          |                                      |
| Fruit tree            | 10           | 0            | 10           | 20           | <1%         |                                      |
| Nut - Almond          | 300          | 540          | 1,050        | 1,890        | 26%         |                                      |
| Nut - Pistachio       | 30           | 80           | 0            | 110          | 1%          |                                      |
| Miscellaneous         | 5            | 0            | 45           | 50           | 1%          | Seasonal:<br>3,255 ha/44%            |
| Field crop            | 160          | 2,225        | 60           | 2,445        | 33%         |                                      |
| Vegetable             | 165          | 175          | 470          | 810          | 11%         |                                      |
| <b>Total (ha)</b>     | <b>1,325</b> | <b>4,065</b> | <b>1,945</b> | <b>7,335</b> | <b>100%</b> |                                      |
| <b>% of expansion</b> | <b>18%</b>   | <b>55%</b>   | <b>27%</b>   |              |             |                                      |





|                                         |  | LMD VIC | LMD NSW | LMD SA | Total (ha) | % change 2021-2024 |
|-----------------------------------------|--|---------|---------|--------|------------|--------------------|
| Irrigable area in 2021 (2020-21 season) |  | 102,295 | 49,570  | 91,735 | 243,600    |                    |
| Retired between 2021 and 2024           |  | -1,175  | -415    | -460   | -2,050     | -1%                |
| Expansion between 2021 and 2024         |  | +1,975  | +2,410  | +4,215 | +8,600     | +4%                |
| Net change                              |  | +800    | +1,995  | +3,755 | +6,550     | +3%                |
| Irrigable area in 2024 (2023-24 season) |  | 103,095 | 51,565  | 95,490 | 250,150    |                    |
| % of irrigable area in 2024             |  | 41%     | 21%     | 38%    | 100%       |                    |

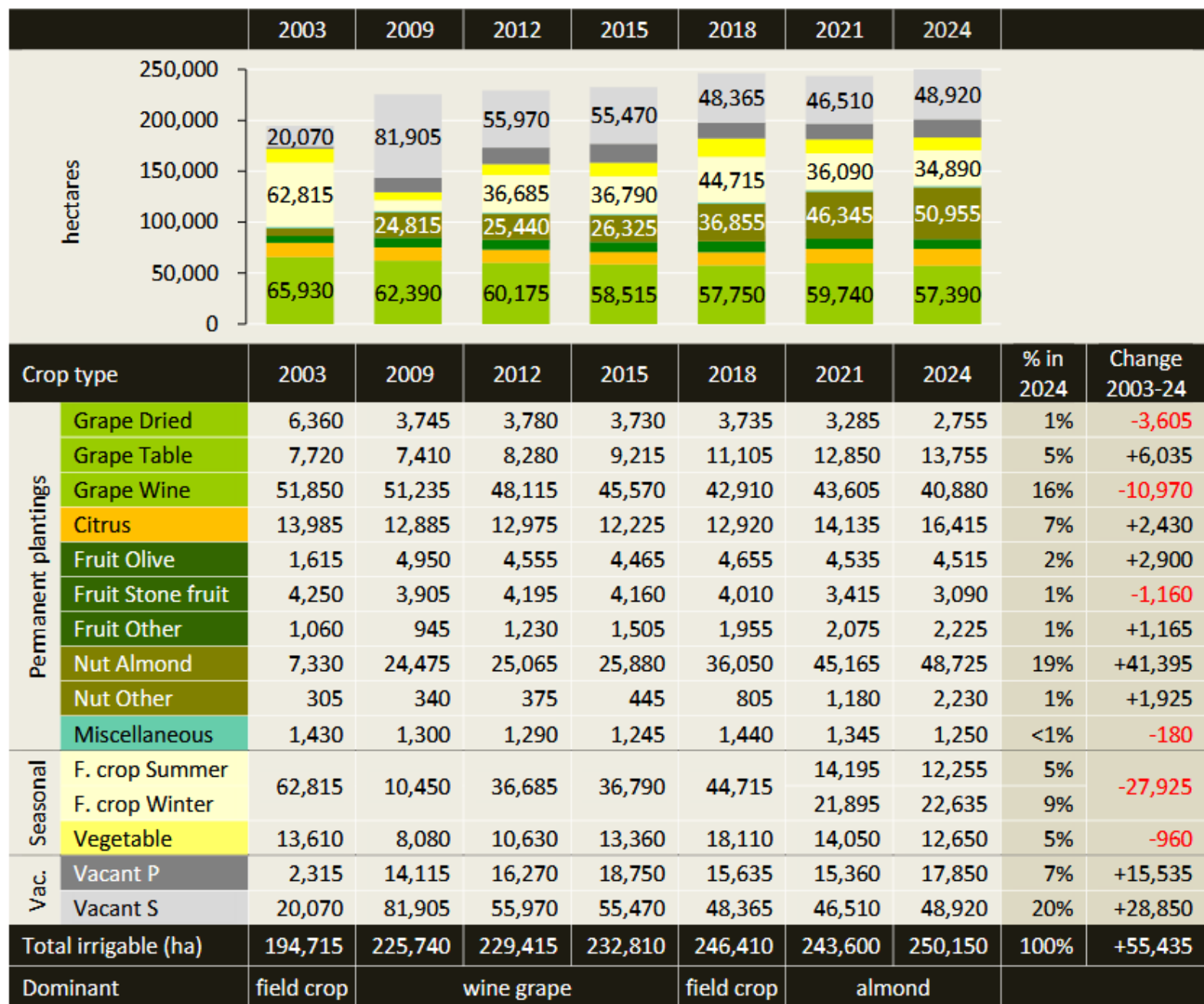
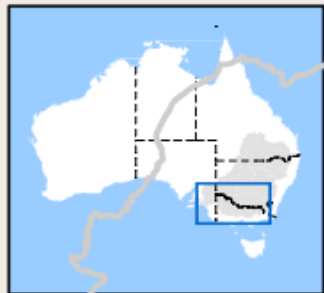


Figure 6: LMD summary - crop types from 2003 to 2024





Chowilla Floodplain

Lindsay-Wallpolla-Mulcra Islands

Hattah Lakes

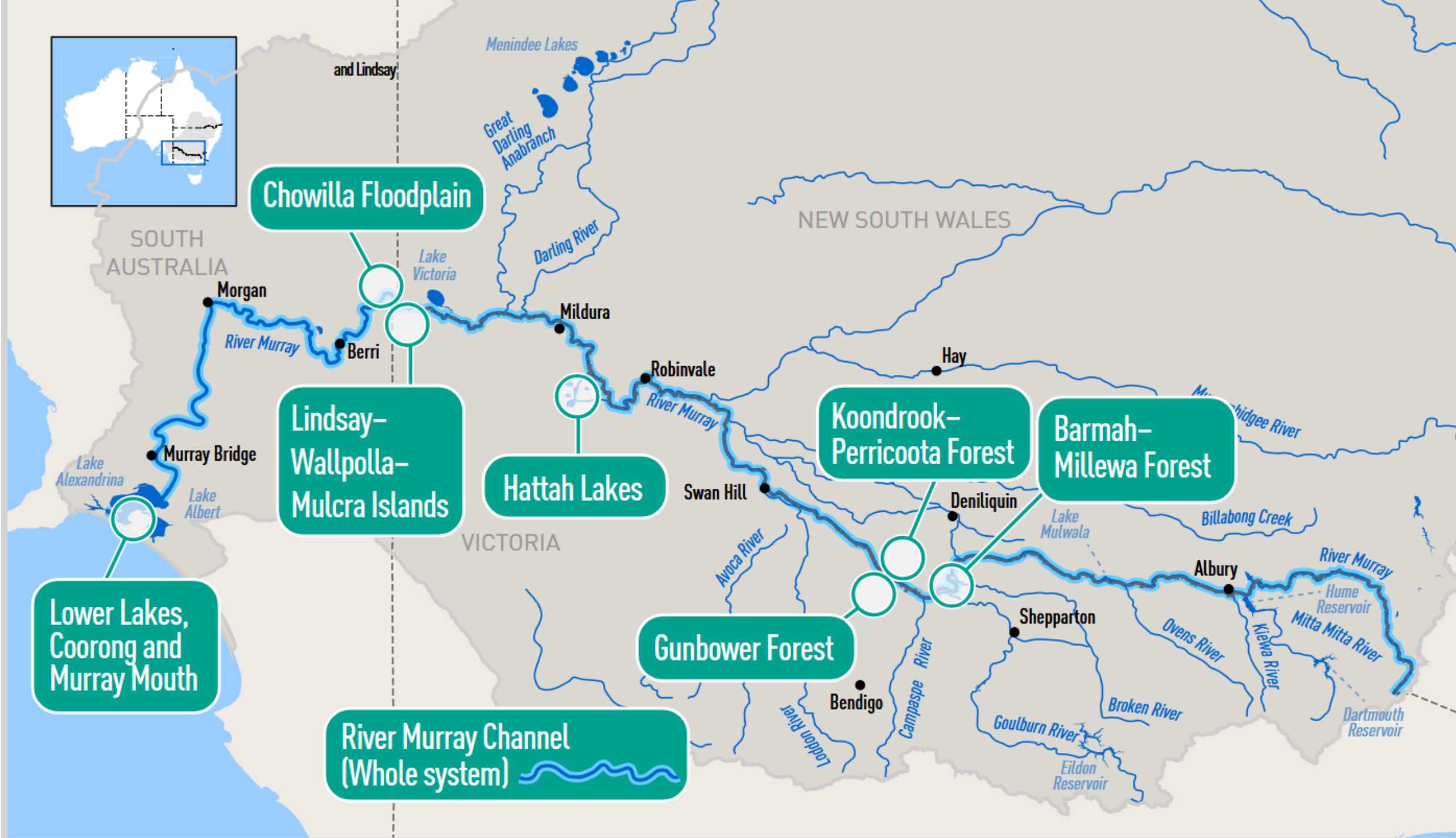
Gunbower Forest

Koondrook-Perricoota Forest

Barmah-Millewa Forest

Lower Lakes, Coorong and Murray Mouth

River Murray Channel (Whole system)



# How much water will this make for our rivers?

- 44 GL by 2040
- 123 GL by 2065

How much water do our rivers need?

**237 GL !**