Has the Basin Plan delivered its predicted environmental outcomes?

Anne E Jensen
Environmental Consultant

Dr Anne Jensen
Healthy Rivers Ambassador
Environmental Consultant

Healthy Rivers Ambassadors
Promoting a healthy, working Murray Darling Basin for the future

Ecosystem health under the Murray-Darling Basin Plan in 2026

The intent of the Basin Plan (2012) was:

1. To reverse over-allocation of water, and
2. To reduce diversions to a sustainable level of take

After 14 years of implementation and nearly $13 B:

- It has <u>not</u> fully reversed over-allocation of water
- It has <u>not</u> achieved an effective ecologically sustainable level of take
- Yes, there have been improvements but not enough water returned to the full range of habitats at the right time for long enough, and not fast enough to halt and reverse ecological decline

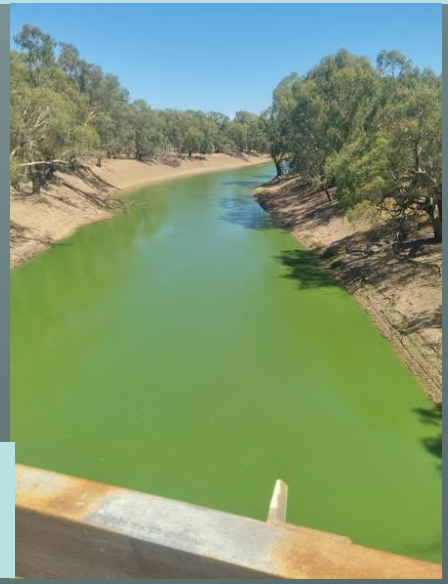
We have lost the rhythm of the rivers

What has the Basin Plan achieved to 2025?

- Ecosystem condition is still significantly stressed, regeneration and breeding rates reduced
- Lower Murray Valley listed as Threatened Ecological Community (10 y risk), Macquarie Marshes as Endangered Community (20 y risk)
- Murray Mouth is being dredged >90% of time
- Basin-wide continued serious decline in waterbirds
- Constraints have not been resolved, so delivery of environmental water recovered is limited to in-channel locations so benefits not fully realised
- Connectivity has not yet been established in the Northern Basin, limited in Southern Basin
- All Basin lower valleys are in poor condition, with algal blooms and fish kills more frequent
- Climate change means there will more variability in flows, less water and more frequent, more severe droughts

'Without the return of enough water, our rivers will be afflicted with more blue-green algae blooms, salinity levels will rise, more extensive areas of floodplain forests will die and internationally significant wetlands along the River Murray will be lost. Further, Indigenous communities, and pastoral and tourism industries will be badly affected.'

Wentworth Group (2017)



Darling River at Louth Jan 2026

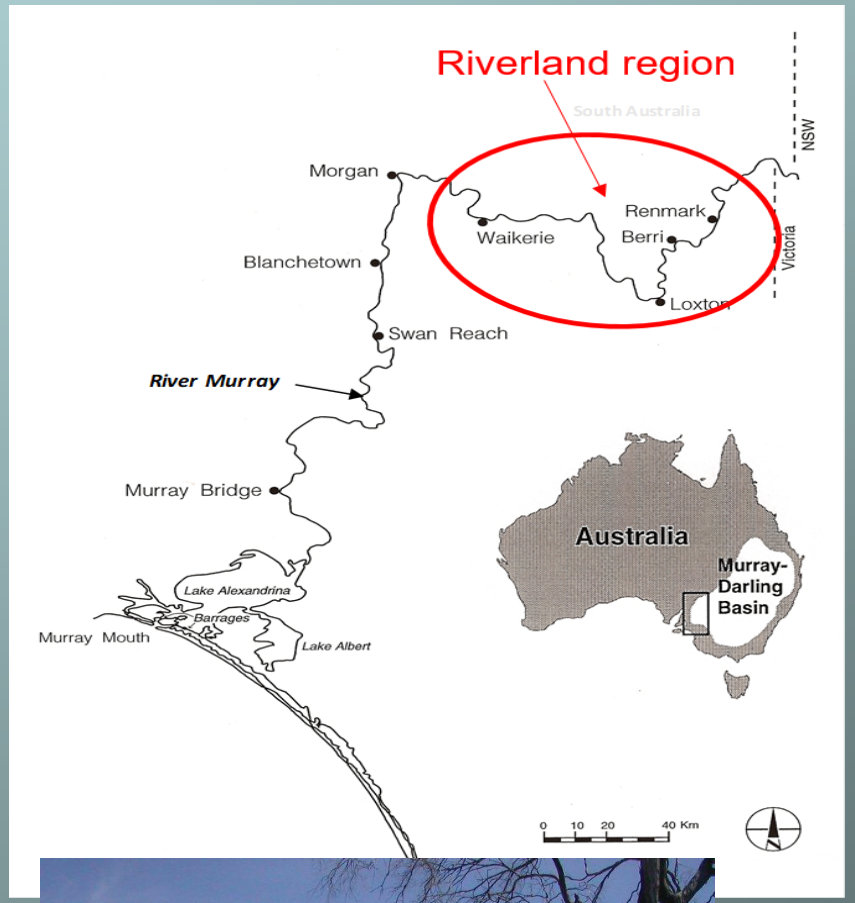
Lower Murray Valley before the Plan

Effects of river regulation, upstream dams & extraction since 1920s:

- no longer any small floods
- fewer, shorter, later medium-large floods, more rapid rise and much sharper decline, less likely to coincide with peak local rains
- drier, more saline floodplains, limited regeneration

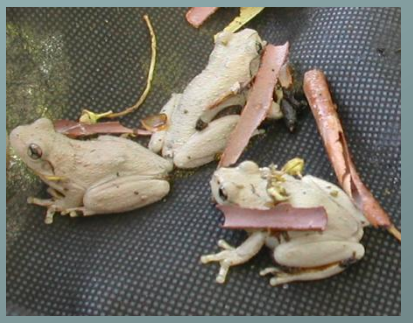
Millenium Drought 2000-2010

- no over-bank flows for 14 years
- extensive death & decline in red gum & black box woodlands in 2004, 76% of red gums dead, dying or stressed along 700 km of Murray Valley
- Lower Lakes below sea level, drying, salinizing, acid sulfate soils exposed, no water supplies



Intended outcomes of Basin Plan after 2019 for River Flows & Connectivity

- maintain base flows at least 60% of natural levels
- improve overall flow by 10% more into Barwon–Darling, 30% more into River Murray and 30–40% more to Murray mouth, keep open to sea 90% of time
- maintain connectivity between rivers and floodplains in the Paroo, Moonie, Nebine, Warrego and Ovens
- improve connectivity with bank-full and/or low floodplain flows by 30–60% in Murray, Murrumbidgee, Goulburn and Condamine–Balonne
- maintain Lower Lakes above sea level
- adequate flushing to export average 2 m tonnes of salt from River Murray system into Southern Ocean each year



Intended outcomes of Basin Plan after 2019 for Native Vegetation, Waterbirds & Fish

- maintain current extent & condition of floodplain forests, woodlands and shrublands; improve condition of southern river red gum
- maintain current species diversity of all waterbirds and migratory shorebirds, increased abundance of waterbirds by 20–25% by 2024
- improved distribution of key short and long-lived fish species, improved breeding success, improved populations of short-lived species, long-lived species, Murray cod and golden perch, improved movement

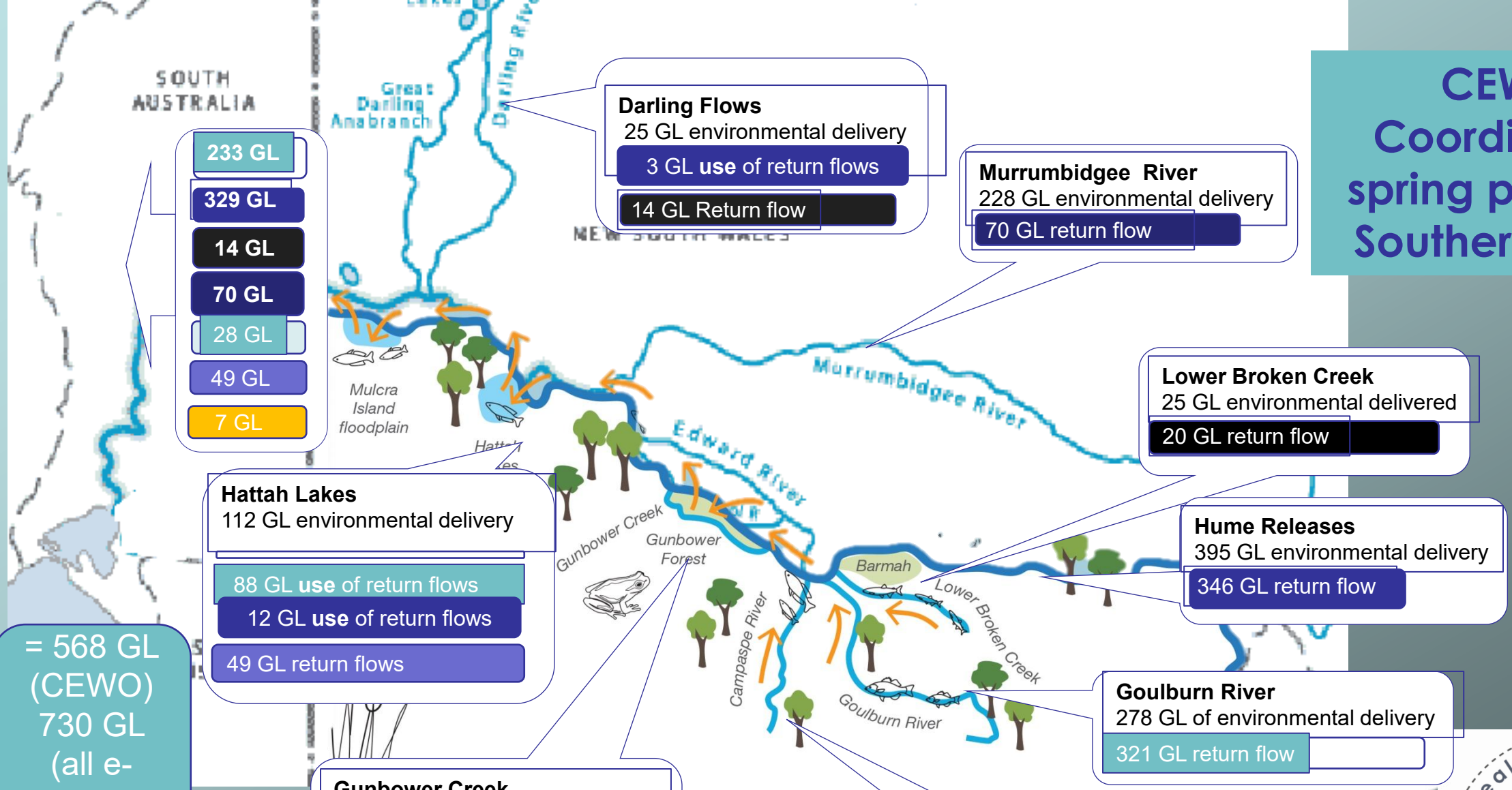
Recovered Water: Entitlement vs Allocation vs Delivery

- Total CEWH holdings in entitlements at June 2025 are 3124 GL, with long term Diversion Limit Equivalent (LTDLE) of 2150 GL
- Target is 2525 GL + 675 GL equivalents = 3200 GL
- Delivery 2015-16: 1721 GL
- Delivery 2016-17: 1148 GL
- Delivery 2021-22: 2016 GL
- Delivery 2023-24: 1800 GL
- Multiple positive results in promoting breeding, regeneration and ecosystem health where e-water can be delivered

CEWO doing a great job within limitations

Source (accessed 12/04/2026): http://www.environment.gov.au/water/cewo/about-commonwealth-environmental-water

CEWO Coordinated spring pulses in Southern Basin



Darling Flows
25 GL environmental delivery
3 GL **use** of return flows
14 GL Return flow

233 GL
329 GL
14 GL
70 GL
28 GL
49 GL
7 GL

Murrumbidgee River
228 GL environmental delivery
70 GL return flow

Lower Broken Creek
25 GL environmental delivered
20 GL return flow

Hattah Lakes
112 GL environmental delivery
88 GL **use** of return flows
12 GL **use** of return flows
49 GL return flows

Hume Releases
395 GL environmental delivery
346 GL return flow

= 568 GL (CEWO)
730 GL (all e-water)

Goulburn River
278 GL of environmental delivery
321 GL return flow

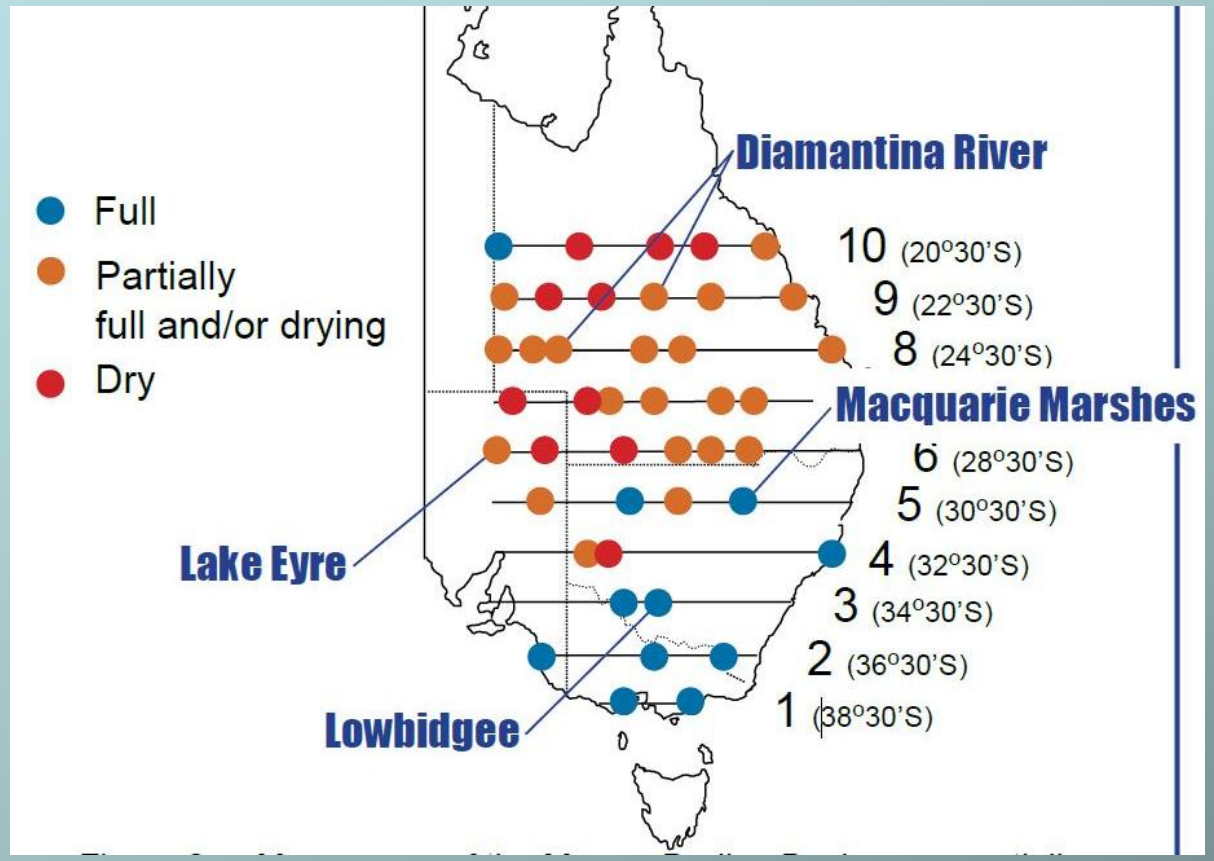
Gunbower Creek
15.8 GL environmental delivery
13 GL **use** of return flows
2 GL **use** of return flows
2.3 GL return flow

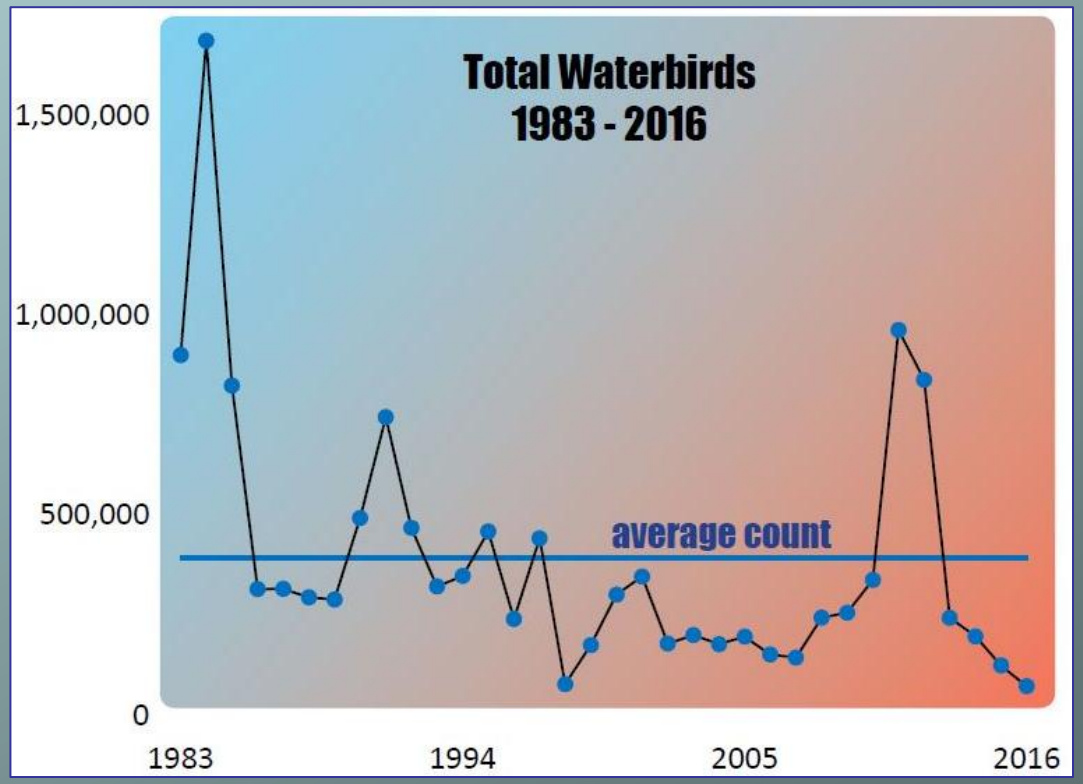
Campaspe River
28.5 GL environmental delivery
28 GL return flow

Commonwealth Environmental Water Office

Waterbirds in Worrying Decline –
Eastern Australian Wetlands Survey Annual Reports 1983-2025

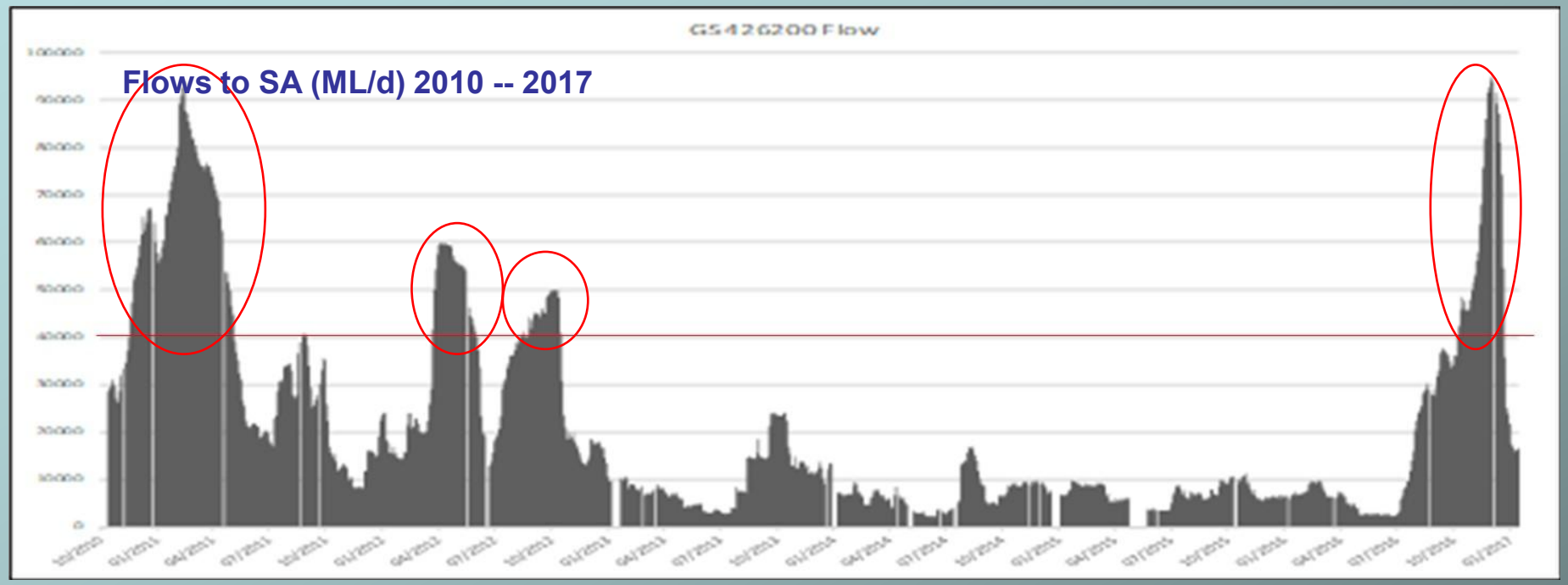
(Porter, Kingsford & Brandis, 2016)



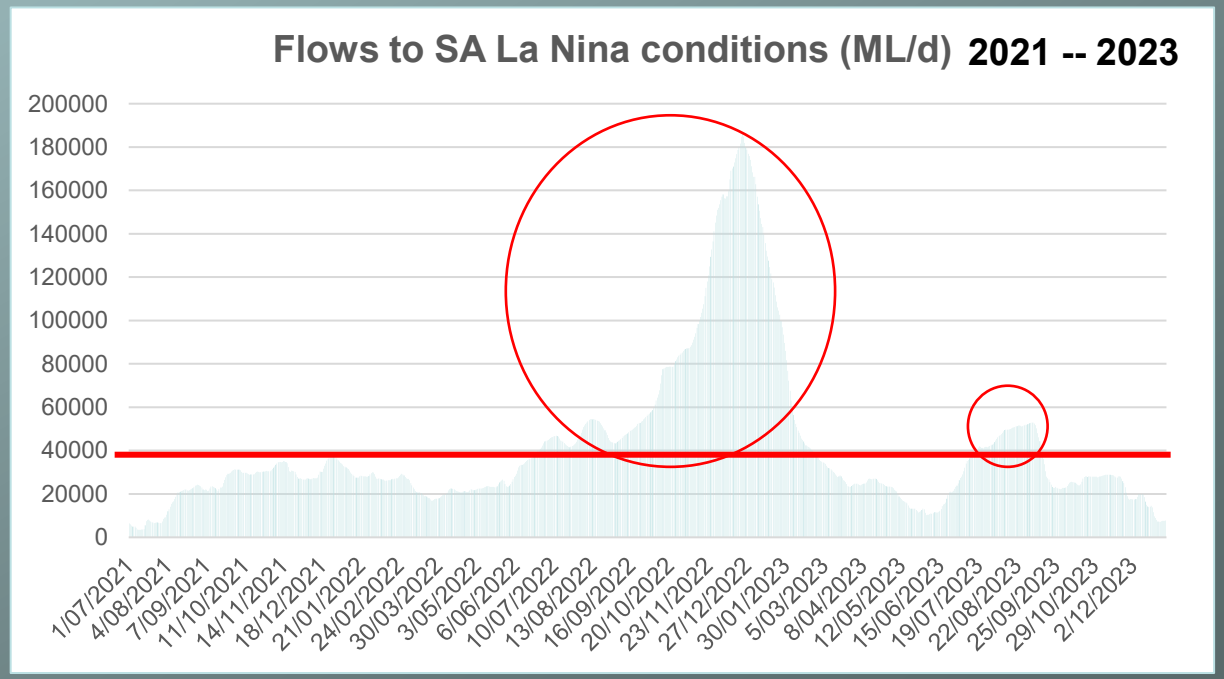


Update from 2025 survey:
increased wetland area but waterbirds concentrated into fewer sites;
increased total numbers to just above average, overall trend is still decline in abundance and diversity

Rare overbank flows to Lower Murray Valley



Flows to the SA border need to exceed 40,000 ML/d to spill out of the deeply incised channel onto floodplains, to reach wetlands and support floodplain ecosystems – before river regulation small floods happened every 4-5 years



Declining Lower Murray Floodplain Condition

2026

Higher floodplains have gone without water for decades, leaving a legacy of dead skeletons

2020

2024

Even when e-watered or flooded, seedlings can't survive into the future without more water
mature trees struggle to recover

Is the Basin Plan on track to sustain ecosystem health?

The targets required no loss or degradation to 30 June 2019, then major improvements, but:

- serious concerns about health of Coorong, algal blooms in Southern Lagoon, fewer migratory waders visiting, impact of marine algal bloom, only flows past barrages are environmental water
- individual site and reach improvement but continued decline and stress in ecosystems at wider scale, all lower valleys in poor health
- need to support floodplain regeneration post floods, 2022-23 flood less beneficial than expected
- significant decline of waterbirds at Basin scale, in spite of floods 2010-12, 2016 and 2022-23
- Basin status of native fish still poor in 2026, turtles in trouble, mussels missing

Environmental watering program:

- maturing well, cross-basin coordination of flows to create spring pulses
- re-use of e-flows at multiple sites
- coordination of end-system-flows
- building connectivity with floodplains
- lots of positive local stories
- but not enough, limited by increased physical & political constraints, volumes available & outdated operating rules

Options for the Future

- Minimum base flows in all rivers must be secured to keep ecosystems healthy and able to support communities
- End-of-system flows secured in Water Sharing Plans
- Act to generate longitudinal and lateral connectivity in all rivers, allow small floods onto floodplains
- Prepare an adaptation plan for managing the effects of climate change on water availability and how to share less water

Minister Watt said:
'failing to act would condemn the Basin to environmental decline, that would gradually strangle the industries and communities that rely on that environment for their livelihoods'.

Let's give him the evidence and support to act to keep the Basin Plan on track!


Healthy ecosystems to support healthy communities