Water banking: insurance against drought

The next drought is coming.

The challenge for Australia is that climate is expected to become more extreme. But we have solutions to prepare us.

Australia generally has a hot and dry climate and is prone to droughts. These droughts are projected to be more severe and frequent in the future.

What is water banking?

Storing water underground in natural reservoirs.

Excess water is stored when available for future use during drought. Sourced from rain water or via recycled wastewater.

Also known as **managed aquifer recharge**

Why bank water?

- Communities and industries, like agriculture, need greater water security.
- Water can be stored long-term for drought supply.
- Avoid expensive and timely water cartage when regular water sources dry up.
- Manage water storage safely to reduce impacts to the environment.

How much does it cost?

Our recent study shows it can be cost-effective, with variation depending on the system applied.

$0.05/kl ▷ $0.48/kL

Cheapest — Most expensive

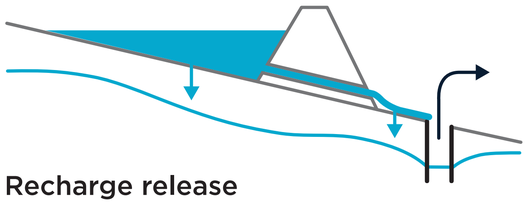
We have modelled a range of scenarios to bank surface water and the costs involved. Average costs are based on 2-3 different scenarios.[1]

Opportunities in Australia

Water banking is suitable in a range of geographical settings.

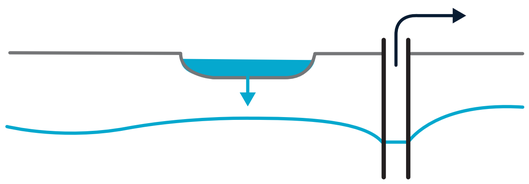
For example, we identified 4km^3 of potential storage opportunities in the Murray-Darling Basin.[2]

Indicative costs for different systems



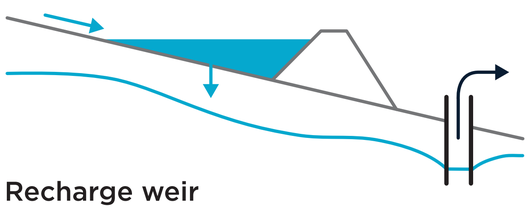
Recharge release

$0.06/kL	Low	Low	14%
Levelised cost	Capex	Opex	Opex/Capex



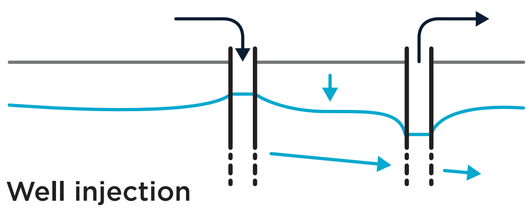
Infiltration basin

$0.10/kL	Med	Low	4%
Levelised cost	Capex	Opex	Opex/Capex



Recharge weir

$0.20/kL	Med	Low	4%
Levelised cost	Capex	Opex	Opex/Capex



Well injection

$0.30/kL	High	High	4%
Levelised cost	Capex	Opex	Opex/Capex

Our R&D focus

- We look at how best to store water underground.
- Understanding and mitigating risks so water is safe for people and the environment.
- Tailored solution to the need and location.
- Securing demonstration sites.

Engage with us to explore water banking

research.csiro.au/mar

Our Drought Resilience Mission is strengthening regional resilience by demonstrating new ways to improve water security.

1. Vanderzalm et al 2022
2. Gonzalez et al 2020

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