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Lower Lakes & Coorong Recovery

Options for managing the region already considered

Is stormwater being captured and reused to reduce South Australia's reliance on the River Murray?

Yes. The South Australian Government has established the multi-million dollar Water for Good strategy a plan to guarantee South Australia's future water security to 2050 and beyond.

The 40 year strategy outlines a range of ways to diversify our water supplies and reduce our reliance on the River Murray, such as capturing and reusing some of the stormwater that currently flows out to Gulf St Vincent.

Stormwater reuse could increase from two gigalitres in 2002 to 60 gigalitres per year by 2050 in greater Adelaide. This is equal to about 18 percent of the water used by the entire Adelaide metropolitan area every year. A further 15 gigalitres could also be saved in regional areas.

The strategy also predicts that wastewater reuse could increase from 14 gigalitres each year to 75 gigalitres each year by 2050. South Australia already recycles approximately a third of the wastewater treated in plants, and this is set to increase to up to 45% once upgrades to Adelaide's wastewater treatment plants are completed.

The Water for Good strategy will help reduce our reliance on the River Murray and help in resolving the difficulties facing the Lower Lakes, although other actions will also need to be taken to manage South Australia's water sustainably for the future.

Why aren't there tougher water restrictions to reduce stress on the River Murray and Lower Lakes?

SA Water continually provides advice to the South Australian Government on water restrictions and whether changes are needed. Water restriction levels depend on a range of factors including the amount of water flowing into local catchments and water consumption, which is monitored by SA Water each month.

Since January 2007, level 3 water restrictions have been in place to help ease the pressure on the River Murray. In the two years since then, South Australians have saved 64 gigalitres. This is equivalent to about 16% of the water used by the entire Adelaide metropolitan area in an average year.

Water restrictions help reduce our reliance on the River Murray and work in combination with other actions to help manage South Australia's water sustainably.



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Why can't the River Murray be left to flow naturally to solve the issues facing the Coorong, Lower Lakes and Murray Mouth?

The River Murray is regulated using locks, weirs, barrages and water storages. Regulation began to maintain a reasonable amount of water in the river so water would be available even in times of severe drought when it would not naturally flow.

Currently, upstream reservoirs and water storages are well below their long-term average capacities, even though the amount of water diverted from the Murray-Darling Basin in 2007-08 was the lowest since records began in 1983-84. If regulation was to end, water would not have reached the Murray Mouth for several years. This happened in the past, before the river was regulated, during the final years of the Federation drought in 1901-03 and the 1911-16 drought.

Regulation has allowed some water (although currently reduced amounts) to be available for water supplies, irrigation and recreational boating when this would not have been possible naturally.

As a result of current low river flows and low volumes of water in upstream storages, letting the river flow naturally would not result in large amounts of water reaching the Coorong, Lower Lakes and Murray Mouth. Therefore it would not address the immediate issues facing the region.

Why isn't using the River Murray for irrigation stopped to help solve the issues facing the Coorong, Lower Lakes and Murray Mouth?

The current drought across the Murray-Darling Basin has forced all River Murray water users, including the environment, to go with little or no water. Currently irrigators are receiving reduced water allocations. From the beginning the 2009-10 water year (1 July 2009), irrigators were able to use 2 percent of their licensed water entitlements and 60 percent of their approved 'carry-over water' that they did not use the previous year.

In South Australia, in an average year, around 75 percent of the water taken from the River Murray is used for primary production. This includes water for livestock and wineries, and for the irrigation of crops such as citrus, stone fruit, almonds and vegetables. The River Murray, where many of these industries are situated, is known as the 'food bowl' of our state and provides consumers in South Australia, interstate and internationally with essential horticulture, viticulture, dairy and vegetable produce. These commodities return huge economic benefits to the state.

If irrigation from the River Murray was stopped, these crucial primary industries and food supplies would no longer exist as there are no suitable alternative water sources. This would have devastating financial and physical impacts on regional communities.



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Also many of the industries consist of well established permanent plantations, including citrus, stone fruits and grapes. If they were left to die, it would take at least

10 years to re-establish before production could begin again. Consumers would suffer, as the demand for imported fruit, vegetables and dairy products would increase and raise the weekly shopping bill.

Why isn't an embankment in Lake Alexandrina constructed, creating a salt water lake within the fresh water lake?

The former Murray-Darling Basin Commission considered a range of options for saving water in the Lower Lakes. These included building an embankment, or 'bund', within Lake Alexandrina to form a salt water lake inside the fresh water lake.

This would be a very expensive technical engineering solution. Construction costs and environmental impacts were considered too high for it to be carried out. Other issues included increased salinity in the inner marine lake, which could lead to hyper-saline conditions, and impact on estuarine plants and animals.

There are also issues about whether the structure could physically be built on top of the soft sediments of Lake Alexandrina to withstand wind and tide movements.

Building a permanent inner salt water lake within the fresh water lake would have a permanent, negative effect on the Lower Lakes and Coorong's environment and permanently impact on recreational boating. Although the current low river flows are placing pressure on the river system, these conditions are considered temporary.

The Murray-Darling Basin Commission report on building a 'bund' within Lake Alexandrina to create an inner salt water lake is available on the Murray-Darling Basin Commission website.

Why can't a desalination plant be built to provide fresh water to the Lower Lakes?

While the Adelaide sea water desalination plant at Port Stanvac will help make sure drinking water is available for Adelaide, even in times of drought, it could take approximately eight of these plants just to replace evaporation from the Lower Lakes. Approximately four times as much water evaporates from the Lower Lakes than is used by the entire Adelaide metropolitan area every year.

If fresh water was produced in the region using a large desalination plant, large amounts of hyper-saline waste water would be created. This could severely damage the environment near the shore, depending on where it is released in the region. The effluent could also wash back into the Murray Mouth, resulting in increased salinity.



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Noise and vibration associated with construction and operation are also likely to negatively impact on fish and birds in the region.

Establishing the Adelaide sea water desalination plant at Port Stanvac will help reduce our reliance on the River Murray.

Why isn't more water piped from Australia's far north to supply Adelaide and relieve stress on the River Murray and the Lower Lakes?

A number of large scale schemes, such as building a pipeline from the Ord River in far north Western Australia to supply more water to Perth and Adelaide, were considered to reduce our reliance on the River Murray.

The Ord River proposal would cost over \$10 billion to supply about 150 gigalitres to South Australia each year. In comparison, the Adelaide sea water desalination plant will supply 100 gigalitres each year and cost \$1.83 billion. The Ord River proposal would also have very high ongoing costs and the water would cost \$186 million each year to supply the Adelaide metropolitan area.

Building the pipeline and keeping it working would also produce a large amount of greenhouse gas, and the implications of this need to be considered.

Why not just buy water to save the Coorong and Lower Lakes?

The Australian Government is committed to buying back water entitlements over the next 10 years as part of their Water for the Future program. \$3.1 billion is set aside to buy back water to give Murray-Darling Basin rivers and wetlands a greater share of water when it becomes available. The South Australian Government has also committed \$80 million for purchasing water entitlements, as part of the Murray Futures program, funded by the Water for the Future program.

Water purchased for the Coorong, Lower Lakes and Murray Mouth region will be held by the Commonwealth Environmental Water Holder and will improve the health of the region, which is under extreme stress due to years of over-allocation and drought across the Murray-Darling Basin.

However, to give some perspective to the volumes of water involved, the flow to the lakes in 2008-09 was 350 gigalitres. An additional 450 gigalitres would be needed to maintain lake levels, that is, to balance evaporation losses. To flush the salts that have been transported to the Lakes from the entire Murray-Darling Basin would require even more water.

Although the purchase of water entitlements will help reduce the amount of water taken from the River Murray, remedial works will still be needed to ensure a healthy future for the region, even if large amounts of water are returned to the river system.



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Why isn't water released from upstream to help solve the issues facing the Coorong, Lower Lakes and Murray Mouth?

The Murray-Darling Basin is experiencing the worst drought since records began in 1891. Record low inflows have been caused by drought and over-allocation across the Murray-Darling Basin.

The Coorong, Lower Lakes and Murray Mouth region relies on flows from upstream. Currently upstream storages (Hume and Dartmouth Reservoirs, Lake Victoria and Menindee Lakes) are well below long-term average capacities.

River regulation has allowed some water (although currently reduced amounts) to be available in the region for water supplies, irrigation and recreational boating when this would not have been possible naturally.

As a result of current low river flows and low volumes of water in upstream storages, releasing water from upstream would not result in large amounts of water reaching the Coorong, Lower Lakes and Murray Mouth. Therefore it would not address the immediate issues facing the region.

How much water will be saved through South Australia's water-saving strategies and water entitlement buybacks?

The South Australian Government is working on a number of projects to reduce our reliance on the River Murray through saving water and buying back water entitlements.

These projects include:

- Level 3 water restrictions, which save approximately 32 gigalitres per year
- Adelaide desalination plant, which will save approximately 100 gigalitres per year
- Water for Good stormwater reuse is expected to save 75 gigalitres each year by 2050
- Water for Good's recycled wastewater is expected to save 75 gigalitres each year by 2050.

The Australian Government's Water for the Future water entitlement buy-back program, which has already resulted in over a gigalitre of water released to the environment in South Australia in March 2009, and a further five gigalitres released in May 2009.

The Australian Government has also committed \$300 million for an On-Farm Irrigation Efficiency Program in the southern Murray-Darling Basin. The program will invest in



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more efficient irrigation systems to provide long-term economic and environmental benefits over the next 20 years.

Independently these strategies can not effectively reduce our reliance on the River Murray, but combined they will contribute towards a sustainable future for the Coorong, Lower Lakes and Murray Mouth region.

Why aren't cloud seeding technologies being deployed?

Cloud seeding is a way to artificially increase rainfall from clouds. It may involve attempting to produce rain when it would not normally fall or increasing rainfall over a particular region.

Clouds can be seeded with a variety of materials including silver iodide particles, dry ice pellets or salt. Seeding is either done from a plane or from the ground depending on the material.

Many years of research in Australia indicate that cloud seeding can increase rainfall. However, the conditions required for it to work occur relatively infrequently and CSIRO research suggests the only regions in Australia where cloud seeding would effectively increase rainfall is where air rises over mountains.

CSIRO research indicates cloud seeding is effective in Tasmania but experiments on the Australian mainland have been controversial or inconclusive. Research also shows the inland plains of South Australia, Victoria and New South Wales are not suitable for cloud seeding.

The length of time needed for a cloud seeding experiment to demonstrate increased rainfall over an area is often extremely long and costly and the results are often inconclusive. Also many types of clouds cannot be successfully seeded. Therefore cloud seeding would not address the immediate issues facing the Coorong, Lower Lakes and Murray Mouth region.

What irrigation programs are planned to improve water efficiency and reduce stress on the River Murray and Lower Lakes?

South Australia has already achieved a great deal in recent years to improve water conservation and management, and leads the country in irrigation practices.

To improve the efficiency of irrigation practices even further, the South Australian Government has committed \$110 million for the River Industry Renewal program to reinvigorate irrigation communities through the uptake of innovative and smarter irrigation technology. This is part of the Murray Futures program, funded by the Water for the Future program.



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