

COMMUNIQUÉ

Murray–Darling Basin Ministerial Council Meeting 46, 14 November 2008, Canberra

Today's main decisions and announcements:

(see main text below for details):

- Council was advised that on current projections, and under a continuing worst-case scenario, the Lower Lakes are now unlikely to reach the acidification threshold prior to February 2010
- release of a summary real-time management strategy to prevent acidification in the Lower Lakes, including:
 - monitoring alkalinity as well as lake levels;
 - funding of up to \$1.9 million to boost monitoring of water quality, acid sulfate soils, alkalinity and other ecological conditions of the Lower Lakes;
 - funding of \$8.1 million to continue pumping water from Lake Alexandrina into Lake Albert until June 2009;
 - South Australia's Constructing Authority will initiate, as soon as possible, an EPBC referral on the potential need to introduce sea water into the Lower Lakes in order to avoid the risk of acidification if water levels continue to decline; and
 - The Community Advisory Committee will convene a forum in South Australia to communicate the details of the strategy as soon as possible.
- 547.5 GL of water recovery measures now listed on The Living Murray (TLM) Central Register:
 - approval for MDBC to proceed with two new water recovery measures for 0.55 GL and 9.3 GL; and
 - two new water entitlements now available to The Living Murray, subject to water availability (9 GL and 12.3 GL), bringing the total to 167.6 GL.
- a list of priority infrastructure projects to be completed by 2014 under the TLM Environmental Works and Measures program at a total cost of \$238 million.
- release of the TLM Icon Site Condition Monitoring Report for 2008.
- release of the 2007–08 Living Murray Environmental Watering Report.

The Murray–Darling Basin Ministerial Council meeting in Canberra today expressed strong concern at the continuing record drought and the devastating effect it has had on families, communities, farmers and industries throughout the Basin.

Ministers said it was particularly disappointing that below-average rainfall was persisting in the southern half of the Basin after seven years of dry conditions.

Ministers said, however, that with the development of The Living Murray, salinity management and accelerated asset maintenance programs in particular, when it does rain the Basin is much better equipped to respond positively.

They emphasised their concern at the **plight of communities and the environment of the Lower Lakes and the Coorong** and **released a summary real-time management strategy (see attachment)** to prevent acidification.

The strategy follows an expert review of the approach being taken to prevent acidification.

The review recommended that, in addition to monitoring lake levels, **it was important to also monitor alkalinity** as a measure of the capacity of water to neutralise acids.

Ministers agreed that this twin approach would result in more reliable information on the acidity of the water and provide more reliable acidification thresholds to inform decision-making. Monitoring alkalinity levels would enable managers to track trends towards acidification and to implement management responses as needed. If these thresholds are reached, and in the absence of freshwater inflow, South Australia will operate the barrages in accordance with operating procedures prepared by the Commission. Any actions by the South Australian Constructing Authority are dependent on having secured the necessary approvals under the Environment Protection and Biodiversity Conservation Act.

The Council today announced funding of up to \$1.9 million to boost monitoring of water quality, acid sulfate soils, alkalinity and other ecological conditions of the lower lakes.

Ministers agreed that water should continue to be pumped from Lake Alexandrina into Lake Albert and **approved funding of \$8.1 million** for this project to continue until June 2009. The initial \$6 million which the ministers made available in March covered the cost of pumping until today (14 November).

Council noted that, due to revised trigger levels, the lakes will not now need an additional 30 GL of inflow in 2008–09 to avoid acidification. This is a positive development.

The effectiveness of this short-term strategy will be continually monitored, and fine-tuned as necessary in an ‘adaptive management’ approach.

Ministers also noted that the original South Australian Parliamentary Standing Committee on Public Works investigating the need for barrages near the Murray Mouth contemplated the possibility of letting sea water into the Lower Lakes.¹

Council welcomed input from the Community Advisory Committee from the two forums held earlier this year on the Lower Lakes management. This input was important for Council in considering the management approach. Council requested the Community Advisory Committee to host a further community forum in South Australia to report back to the community and to communicate the real-time management strategy to avoid acidification in the Lower Lakes.

Assessing acidification at more than 19,000 wetlands

¹ *Report of the Parliamentary Standing Committee on Public Works on Barrages near Murray Mouth 1933*, Government Printer, Adelaide.

The Ministers today announced that a project to assess acidification at more than 19,000 wetlands across the Basin was making good progress.

The \$5 million, MDBC-managed project is being carried out by state agencies, the Murray–Darling Freshwater Research Centre, CSIRO, Southern Cross University and several catchment management authorities.

Ministers were pleased that the project had established a methodology and that a desktop assessment of more than 19,000 wetlands had helped to identify those most at risk.

Rapid on-ground assessment at more than 500 wetlands had already been carried out.

Ministers agreed that the project should continue until all identified wetlands have been properly assessed. This could take the project into late 2009.

Ministers announced that 547.5 GL of water recovery measures were now listed on The Living Murray Central Register, increasing the probability of meeting the water recovery target by June 2009.

Ministers today gave the MDBC approval to proceed with two new water recovery measures:

- 0.55 GL from the NSW Wetlands Water Recovery Stage 1, which will recover water through infrastructure improvement at a cost of \$1.4 million
- 9.3 GL of supplementary water from NSW at a cost of up to \$14 million.

The MDBC Pilot Environmental Water Purchase last year recovered another 13.2 GL. NSW and Victoria will receive credit against their water recovery targets for the amounts recovered by the pilot purchase in those states.

In addition, Ministers today announced another two new water entitlements available to The Living Murray when water is available. They are:

- 9 GL recovered from the Poon Boon lakes in NSW
- 12.3 GL bought on the market in NSW.

These measures increase the volume of water entitlements available to the environment to 167.6 GL, subject to allocations.

Endorsed: \$238 million for environmental works and innovative fishways

Ministers endorsed a list of priority projects to be completed by 2014 under the TLM Environmental Works and Measures program at a total cost of \$238 million.

The works, which range from 60-km-long levees to extensive landscape excavations and construction of river ‘regulators’, will enable water recovered for the TLM icon sites (when water is available) to be efficiently managed over large areas of the Murray floodplain.

These works are partly funded from the \$500 million cash injection from the Australian Government in 2006, and partly funded by state and Australian Government commitments to TLM.

The five major projects at the TLM icon sites are:

- Chowilla — construction of an environmental regulator at Chowilla Creek; and upgrade to Pipeclay and Slaney Creek weirs and other structures
- Koondrook — construction of an inlet regulator and upper forest channel from Torrumbarry weir pool, upper forest regulators, a return channel to the Murray, lower forest regulators and associated levee banks
- Hattah Lakes — construction of a pumping station, main lake regulators and excavation at Chalka Creek
- Gunbower — construction of an upper forest channel with associated levees, regulators and landscape works
- Lindsay–Wallpolla — construction of a Mulcra Island – Potterwalkagee Creek regulator and associated structures.

These funds will also cover the cost of completing the remaining fishways in the MDBC's 'Sea to Hume' program, which will give native fish unimpeded passage along the entire length of the Murray from the sea up to Hume Dam — a distance of over 2,200 kilometres.

With ten fishways so far completed, a review of the program earlier this year by a team of freshwater fish scientists concluded that it was setting a new worldwide standard for ecosystem restoration.

The fishways are being built along with other upgrades and improvement works at each lock and weir (funded separately).

So far, works have been completed at Locks and Weirs 1, 7, 8, 9 and 10. Three fishways have been completed at the barrages and a fourth is to be constructed. Construction is in progress at Lock and Weir 3.

Ministers today approved the construction of new fishways at Locks 2, 4, 5 and 6, together with the upgrade of their navigable passes, at a total cost of over \$30 million. These works are scheduled to be completed in three years.

The design for fish passage through Lock and Weir 11 at Mildura is in progress and its construction will be undertaken in the next two years.

Ministers today released the TLM Icon Site Condition Monitoring Report for 2008.

The report shows that, while meeting TLM environmental objectives is currently difficult, environmental watering has resulted in some localised positive outcomes.

Severe drought conditions continue to impact on waterbird communities and limit the availability of other wetland, floodplain and riverine habitats throughout the southern Murray–Darling Basin.

Most floodplain or shallow icon sites were dry or almost dry and supported few waterbirds. While the main river channel held water, it had relatively few birds and species richness was low.

River red gums and black box continued to decline across all icon sites and understorey vegetation is suffering, with a loss of biodiversity.

The reports shows a poor fish population, although new fishways are restoring passage for the migratory fish community and a major resnagging program has increased the available habitat for large-bodied species between Hume Dam and Yarrawonga.

At sites where limited environmental water has been applied there have been positive responses including to river red gum condition, ephemeral plant assemblages and fish recruitment, however these are limited in extent.

A copy of the report is available at <www.mdbc.gov.au/news/MC_communique>.

Ministers today released the 2007–08 Living Murray Environmental Watering Report.

The report showed that despite the small quantity of water available for environmental watering in 2007–08, there was a positive ecological response in small areas of icon sites where water was applied, especially at sites that had been previously watered.

In the Chowilla and Lindsay–Wallpolla icon site, many river red gums — including some that are hundreds of years old — would have otherwise died without this small volume of environmental water.

These trees are now responding with new growth. Experience from previous environmental watering at icon sites has shown that follow-up watering is required to protect this investment.

Coordinating flows, such as that undertaken in the Wakool system, can provide benefits to both landholders and the environment.

The 6 GL of The Living Murray environmental water, combined with the 28 GL of NSW stock and domestic replenishment flow, was able to provide landholders with access to water for stock and domestic use while also replenishing waterhole refuges for native fish.

A copy of the report and a fact sheet are available at www.mdbc.gov.au/news/MC_communique

Ministers said that the 2008–09 Annual TLM Environmental Watering Plan would have to be framed against the backdrop of the continuing drought and the small amount of water available.

Any watering would again need to be targeted at sustaining localised critical drought refuges.

Ministers agreed that two urgent watering actions, totalling 1.395 GL, would be implemented immediately at:

- Chowilla Floodplain — 0.895 GL to prevent permanent environmental damage, including significant loss of long-lived flood-dependent vegetation, and to provide critical drought refuge habitat for a diverse range of species
- Barmah Forest — 0.500 GL to maintain the last remaining freshwater pools in Barmah and provide critical refuges for native fish, including the southern pygmy perch, and turtles.

Growing concern at impacts of mining and energy

The Council's Community Advisory Committee (CAC) told ministers there was growing community concern at the impacts of mining and energy developments on natural resource management assets.

They recommended a detailed assessment of this sector's potential impacts on the Murray–Darling Basin Salinity Management Strategy, Native Fish Strategy and Risks to Shared Water Resources Program. The committee also alerted the ministers to community concern about climate change issues.

Transition to the Murray–Darling Basin Authority

Ministers acknowledged that this would be the last meeting of the Murray–Darling Basin Ministerial Council as it is currently constituted.

Three state parliaments (New South Wales, South Australia and Queensland) have passed legislation referring powers to the Commonwealth which will enable, among other things, the transfer of the current functions and powers of the Murray–Darling Basin Commission to the new Murray–Darling Basin Authority. All other jurisdictions are expected to pass similar legislation this month.

Ministers acknowledged the solid achievements of the Murray–Darling Basin Commission and its staff and executive. They said the Commission's 20 years of conscientious endeavour had built on the foundation of the previous River Murray Commission and together constituted more than 90 years of coordinated water management in the lower Basin.

They commended the Commission and the Authority on their professional and efficient handling of complicated human resource, procedural and other transition arrangements

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Attachment: Summary of Real time management strategy to avoid acidification in the Lower Lakes - November 2008

Real time management strategy to avoid acidification in the Lower Lakes - November 2008

Summary

The objectives of the strategy are to:

- Avoid irreversible damage through acidification of the Lower Lakes system;
- Avoid adverse impacts on the water quality of major water supply off takes; and
- Use treatments that as far as possible do not compromise mid to long term options.

The strategy involves real time monitoring of key water quality parameters, reviewing lake level predictions and acidification thresholds, assessing fresh water availability and responding by securing additional fresh or sea water inflows to avoid acidification. The strategy enables managers to predict when management triggers will be reached and assess how much additional water is required.

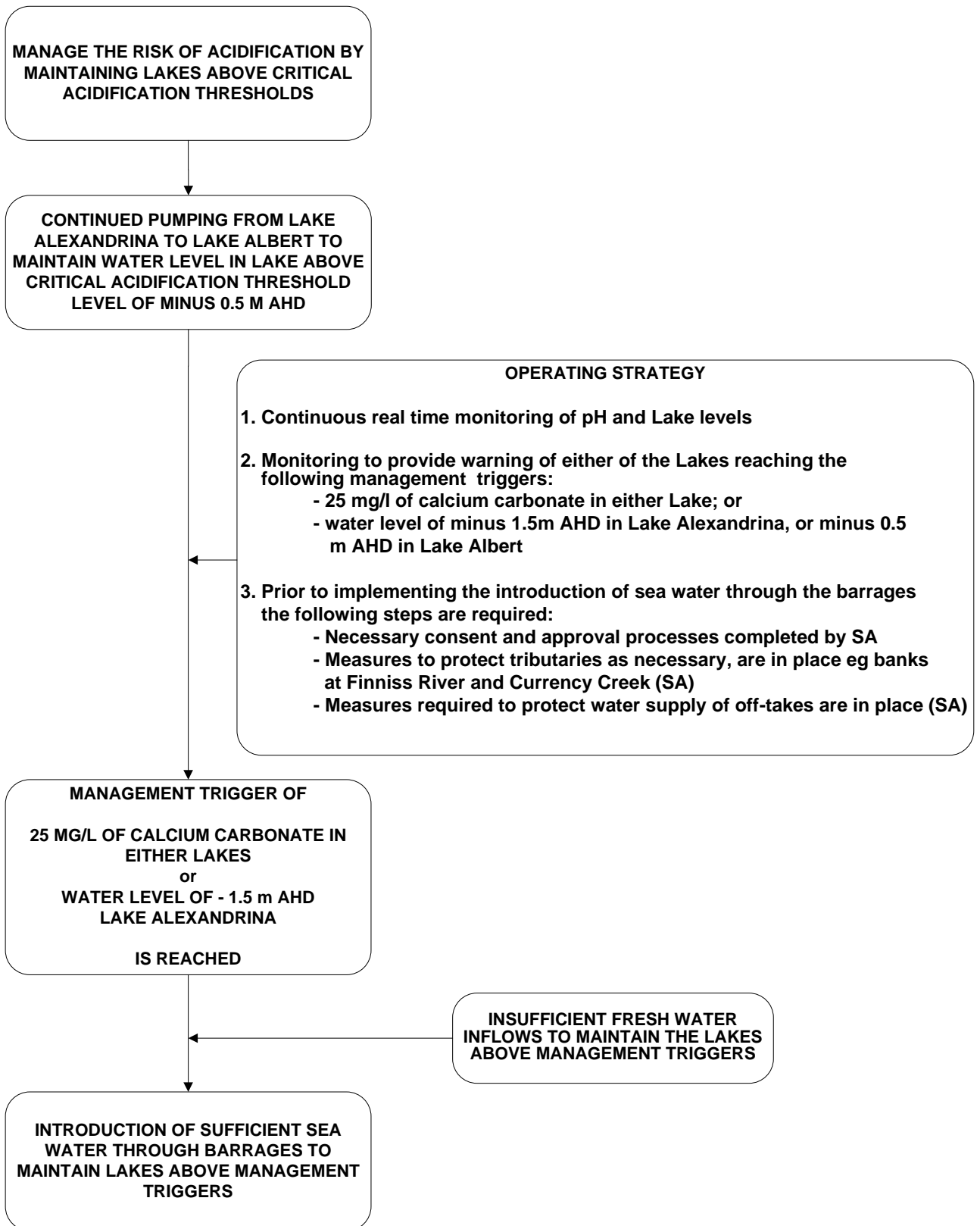
The strategy aims to avoid acidification of both lakes by maintaining the lakes above alkalinity and water level management triggers (see Box 1). The strategy is not aimed at refilling the Lower Lakes or addressing other social, economic, cultural and ecological needs.

The key components of the strategy are:

- a) Continuous monitoring of pH and water levels in the Lower Lakes;
- b) Continued pumping from Lake Alexandrina to Lake Albert to ensure the main water body of Lake Albert does not acidify;
- c) Monitoring to provide advance warning of reaching either of the following management triggers:
 - 25 mg/l of calcium carbonate in either Lake (the alkalinity threshold); or
 - minus 1.5 m AHD in Lake Alexandrina or minus 0.5 m AHD in Lake Albert (the water level threshold);
- d) When either of the management triggers is reached and there is not sufficient fresh water inflows available to maintain the Lakes, the minimum quantities of sea water necessary to maintain the Lakes above these thresholds will need to be introduced through the barrages.

The strategy will not be implemented until any requirements under the *Environment Protection & Biodiversity Conservation Act 1999* have been met and the results of any other relevant studies of the likely effects of seawater on the Lower Lakes are known. Monitoring of alkalinity and water levels will ensure managers have sufficient time to complete operational preparatory work required prior to any decision to release sea water through the barrages.

LOWER LAKES ACIDIFICATION MANAGEMENT STRATEGY



Box 1: Management Triggers

Alkalinity Trigger

Alkalinity is a measure of the acid buffering capacity of water or the capacity of water to neutralise acids and resist changes in pH. Due to the predictable response of alkalinity to acid additions, a decline in alkalinity can be used as an early warning indicator of water body acidification.

Alkalinity can be expressed as mg/L of calcium carbonate (CaCO₃). Maintaining a total alkalinity level of above 50 mg/L of CaCO₃ will stabilise the pH level in the Lakes. If levels fall below 25 mg/L CaCO₃ this would indicate that the system is poorly buffered (i.e. at this point the system would have limited ability neutralise the acidity), and is very susceptible to a rapid decline in pH. Best-available science indicates that upon reaching 25 mg/L CaCO₃ in the Lakes, it would take about four to six weeks before a large-scale acidification event would occur. This is the current alkalinity management trigger level.

Water Level Trigger

The water level management trigger is based on a modelled critical acidification trigger water level. This is the level at which acidity being formed in the lake sediments can no longer be buffered by the alkalinity of the sediments and lake waters and the pH of the lake body may decline relatively quickly. The critical acidification threshold water levels are the minimum levels to which the Lakes should be allowed to fall. Any water levels below these will expose large areas of acid sulphate soils and any refilling event (including additional freshwater inflows or the introduction of sea water through the barrages) may result in the acidification of the water body.

The current modelled critical acidification threshold water levels are minus 1.5 m AHD for Lake Alexandrina and minus 0.5 m AHD for Lake Albert. These water levels may change as more data is collected and the acidification modelling is improved.