

Office of the Chief Executive

Ref: EX23-000415

Office of the NSW Chief Scientist & Engineer
Level 6, 52 Martin Place
Sydney NSW 2000

Dear Professor Durrant-Whyte

The Murray–Darling Basin Authority (MDBA) welcomes the NSW Office of the Chief Scientist and Engineer’s (OCSE) review into the March 2023 fish death event in the Lower Darling-Baaka River at Menindee.

The MDBA acknowledges the impact of fish deaths on the local community, including First Nations peoples’ cultural connection to native fish species. Following the event, I took the opportunity to visit Menindee and hear first hand from the community and to understand the impact it has had on the Basin ecosystem – water quality, flora and fauna, as well as the community.

It is important to acknowledge the importance of reviews such as this, to improve understanding and identify opportunities for improved management arrangements to build resilience and preparedness for the future.

The MDBA’s submission includes information that the OCSE may find relevant or helpful to the review, including details about the role of the MDBA during this event.

The MDBA thanks the NSW OCSE for providing the opportunity to make a public submission into this matter and looks forward to your final report anticipated to be released on 31 August 2023.

Please do not hesitate to contact me if you require further information from us.

Yours sincerely



Andrew McConville

10 July 2023

MDBA submission to the Office of the Chief Scientist and Engineer's review of the March 2023 fish death at Menindee

The Murray–Darling Basin Authority (MDBA) welcomes the inquiry by the NSW Office of the Chief Scientist and Engineer (OCSE) into the March 2023 fish deaths in the Lower Darling-Baaka near Menindee.

This brief submission provides information on the MDBA's role and responsibilities during fish death events and a summary of the actions taken by the MDBA in support of the NSW Government's role in leading the response.

The MDBA oversees the management of water by Basin governments to achieve long-term environmental objectives, including objectives to protect and restore native fish populations. These objectives are set out in the Basin Plan, in particular the [Basin-wide Environmental Watering Strategy](#). Furthermore, Basin governments jointly agreed to implement the [Native Fish Recovery Strategy](#).

A range of mechanisms are used to meet these objectives, including the delivery of water for the environment, improvements in native fish habitats and community engagement. Progress is monitored through various Commonwealth and state programs including the Murray–Darling Basin Fish Survey. In support of these objectives, each year since the 2018/19 fish death events in the Lower Darling-Baaka at Menindee, the MDBA and state governments have strengthened their collaboration to identify high-risk sites and respond to events when they occur.

The MDBA's role and responsibilities in the Menindee region relate to the operation of the River Murray System on behalf of Basin governments, the coordination of The Living Murray environmental water portfolio on behalf of Basin governments, the gathering of state government water quality information, and public interface through media and communication.

River Operations

- The MDBA respects that the management of the Menindee Lakes and Lower Darling-Baaka is the responsibility of the New South Wales Government.
- In accordance with the [Murray–Darling Basin Agreement](#), when there is downstream demand for water in the River Murray System, as the operator of the River Murray System on behalf of Basin governments the MDBA can call on water from the Menindee Lakes storage if the storage is above 640 GL and until it falls below 480 GL. Due to the lack of demand for water in the River Murray System, the MDBA has not had cause to call on operational water from the Menindee Lakes since June 2021.
- WaterNSW is responsible for undertaking flood operations at Menindee Lakes.
- Following the conclusion of flood operations at Menindee Lakes, the MDBA began instructing the release of water on 30 March 2023 to meet orders placed by environmental water holders. Release volumes under these orders were informed by the NSW inter-agency Hypoxic Blackwater Incident Response Group.

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- Under the Murray–Darling Basin Agreement the MDBA instructs a flow target at Weir 32, with WaterNSW having discretion as to which lake(s) within the Menindee system this water is released from. In issuing instructions, the MDBA supported the recommendations from the Hypoxic Blackwater Working Group regarding flow rates from different lakes.

Environmental Water Management

- The MDBA has a role in the management of water for the environment as the program manager of The Living Murray (TLM) program on behalf of Basin governments. Some of the water held in this portfolio was released from the Menindee Lakes to mitigate the poor water quality during and after the March 2023 fish deaths event.
- TLM is a portfolio of environmental water jointly funded by the New South Wales, Victorian, South Australian and Commonwealth governments, coordinated by the MDBA.
- Decisions to use TLM water are made by representatives from the joint governments and coordinated with other environmental water portfolios including those held by the Commonwealth Environmental Water Holder and the portfolios of the States.
- Approximately 83 gigalitres of TLM water were released from the Menindee Lakes from mid-March to June 2023 in response to the Lower Darling-Baaka fish deaths and associated water quality issues.
- To enable a coordinated response, decisions on releasing water for the environment from the Menindee Lakes were informed by the NSW inter-agency Hypoxic Blackwater Incident Response Group (on which the MDBA participates as an observer). This ensured the volume and timing of the water released to improve levels of dissolved oxygen and native fish outcomes was based on the best available information.

Water quality

- Water quality in the Murray–Darling Basin is monitored by individual Basin state governments. Site-specific water quality alerts are issued by respective state agencies.
- The MDBA's role in relation to water quality is to support state government-led recovery activities, consistent with the [Murray–Darling Basin Agreement](#) and the *Water Act 2007*.
- Of relevance to this function, in October 2022 the MDBA led a seasonal water quality risk scan undertaken through the Tier 2 interjurisdictional Water Quality Advisory Panel (WQAP) to understand the risk of hypoxic blackwater across the River Murray System and the Menindee Lakes due to precursor conditions and forecasts of continued La Niña events. This scan informed the [Threats to Water Quality](#) information on the MDBA website.

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- Commensurate with our role to provide a Basin-wide perspective, the MDBA produces a [map of water quality threats](#) using data gathered from state governments to develop a Basin-wide snapshot of where water quality issues are present or likely to occur. The map is updated monthly and began to signal the possibility of poor water quality (blue-green algae and low dissolved oxygen) at the Menindee Lakes and the Lower Darling-Baaka in December 2022. The rating levels increased through early 2023 as conditions worsened.
- The MDBA recognises that the role of ongoing water quality monitoring is that of the NSW Government and therefore the MDBA undertook no formal water quality monitoring preceding the fish death event.
- To support the NSW Government response, water quality expert Professor Darren Baldwin, under an existing contract to the MDBA to provide Basin-wide water quality advice, prepared prompt expert advice to the NSW Hypoxic Blackwater Incident Response Group. This advice included ongoing data analysis to determine longitudinal dissolved oxygen levels through the Menindee weir pool (Weir 32) and preparation of a File Note for the MDBA and NSW Government – *A preliminary assessment of the sequence of events that led to the massive fish kill in Weir 32 weir pool (Menindee) on 16-17 March 2023*.
- The MDBA continues to participate in the NSW inter-agency Hypoxic Blackwater Incident Response Group and its Menindee-specific sub-groups. Any future support, such as monitoring, will be considered in consultation with the inter-jurisdictional Water Quality Advisory Panel (WQAP).

Communications, Media and Engagement

- The MDBA collaborates with State governments and the Commonwealth Environmental Water Holder during response activities to assist in a coordinated approach to media and communication activities where required. This ensures the community is provided accurate and useful information. The MDBA participated in coordination activities to support consistent and accurate information provision by NSW agencies during the response to the fish death event in March 2023.
- The MDBA Regional Engagement Officer program provides locally based staff who, among other objectives, seek to improve community understanding about water management roles and responsibilities, and to support community members to navigate the complex institutional arrangements. Consistent with this role, during the March 2023 fish death event, the MDBA REO based in the Menindee region provided a point of contact and communication linkage between the response team and the broader community.