Community update on response to fish deaths in Menindee and Lower Darling-Baaka

Dissolved oxygen levels in the Menindee weir pool

The dissolved oxygen levels in the Menindee weir pool remain at good levels for fish health. Our series of in-river buoys, installed between Lake Pamamaroo and Weir 32, provide 'real-time' enhanced water quality data and show that the dissolved oxygen is well within the healthy range.

NSW DPI Fisheries investigating cause of fish deaths on 10 and 11 February

Several reports have been received of Golden Perch *(Macquaria ambigua)* deaths in the Darling-Baaka River, Menindee. The fish appear to be affected by the small parasitic copepod, *Lernaea cyprinacea* (anchor worm) which is known to be widespread in NSW, including the Darling River, and have a wide range of fish hosts.

Samples have been collected for further investigation at the Elizabeth Macarthur Agricultural Institute (EMAI). Anchor worm is widespread in wild freshwater fish in NSW, especially after rainfall or in warmer months. DPI Fisheries scientists have noted an increase in *Lernaea* observations on fish throughout the MD Basin in recent months.

Anchor worm (*Lernaea cyprinacea*) impact on fish

Anchor worm has a wide host range and has previously been reported in several native species including golden perch, silver perch, Macquarie perch and Murray cod, as well as introduced carp.

While an infection by small numbers of parasites isn't necessarily fatal, it is extremely irritating to the fish. *Lernaea* can cause intense inflammation, leading to secondary bacterial and fungal infections. Heavy infestations can lead to mortalities.

Eating infected fish

Lernaea is not known to affect human health. Recreational fishers are advised to always cook recreational seafood thoroughly. Never eat it raw. Severely infected fish should not be eaten.

Reducing the spread of anchor worm

To help reduce the spread of anchor worms, fishers are asked to make cleaning part of their routine by washing and drying vessels (including niche areas such as live wells, water inlets/outlets and anchor wells), trailers and fishing gear between use and particularly before moving to new waterways.

Ongoing management of water quality

The eight water pulses released between 10 November 2023 and 23 January 2024 have successfully improved dissolved oxygen throughout the water column and supported fish health.

NSW Government and Commonwealth agencies are continuing to carefully monitor the situation and adjusting releases as required.

Staff from the NSW Department of Climate Change, Energy, the Environment and Water as well as the Department of Primary Industries Fisheries have been conducting checks on the river and gathering samples including testing the DO levels near the micro bubbler pilot site.

Red alert for Blue green algae in Lakes Wetherell and Tandure

WaterNSW has issued a red alert advisory for high levels of blue-green algae for the Menindee Lakes at Lakes Wetherell and Tandure.

This red alert warning applies only to untreated water at the identified locations and will remain in place until monitoring and test results confirm that the risk is sufficiently diminished.

People should avoid consuming untreated water from this waterbody, making direct physical contact with the water and prevent pets and livestock from drinking this water.

Potentially toxic blue-green algae may cause gastroenteritis if consumed, while contact can cause skin and eye irritations. Consumption of water containing algal toxins may cause liver damage and other health problems. Boiling the water does not remove algal toxins.

People who suspect they have been affected by blue-green algae should seek medical advice.

Any fish caught should be cleaned and washed thoroughly in uncontaminated water; the internal organs should not be eaten. Avoiding fishing during a bloom is the best way to minimise risk.

Blue-green algae is naturally occurring and can reproduce quickly in still or slow-flowing water when there is abundant sunlight and sufficient nutrients.

Updates and information about blue-green algae blooms and red level warning areas can be obtained by visiting – www.waternsw.com.au/algae or Water Insights

Monitoring for pesticides and other chemicals

The EPA has concluded an investigation into the cause of the Darling-Barka major fish deaths in February and March 2023. Water and fish samples were tested to determine if any offence, including any water pollution offence, under the *Protection of the Environment Operations Act 1997* (POEO Act) was the cause.

After careful consideration, the likely cause of both incidents was low dissolved oxygen (hypoxic water) in the Weir Pool where the fish deaths occurred. This finding aligns with the Chief Scientist and Engineer report.

Several environmental factors, including weather, algae, fish biomass and the long-term decline in river health contributed to the conditions.

Emergency Operations Centre notified and ready to act

The Emergency Operations Centre led by NSW Police have been notified and they are on standby should a mass fish death event occur. A contractor has been stood up to be available to remove dead fish from the river as soon as possible if a mass fish death event were to occur in the reach.

Additional information

- To notify the NSW Department of Climate Change, Energy, the Environment and Water of potential blackwater events email: waterqualitydata@dpie.nsw.gov.au
- To view community updates issued, visit Community updates and frequently asked questions | Water (nsw.gov.au)
- To report dead fish, fish struggling or gasping at the water surface, or crayfish leaving the water please call the NSW DPI Fisheries Phoneline 1800 043 536 or fill in a fish kill protocol and report form at: https://www.dpi.nsw.gov.au/fishing/habitat/threats/fish-kills-2019-2020/info-sheet
- Information on recent fish deaths is available at: Fish kills in NSW. When reporting, please include the name of the river/waterbody, location and date of your observation and provide photographs. If possible, please also record what species are affected and an estimate of number of each species observed.
- Further information on blackwater events can be found at the DCCEEW Water website at: Hypoxic blackwater | Water (nsw.gov.au)
- Additional information is also available on the Murray-Darling Basin Authority website at: https://www.mdba.gov.au/publications/mdba-reports/water-management-101-factsheets
- Operational updates are available at: WaterInsights - WaterNSW
- Water quality data collected after the fish deaths at Menindee is available on the Environment Protection Authority web page at: https://www.epa.nsw.gov.au/working-together/community-engagement/updates-on-issues/menindee-fish-kill