



# Darling-Baaka River Health Project

## Quarterly results January to March 2024

In response to the flooding events and fish deaths in March 2023, the NSW Environment Protection Authority (EPA), in partnership with the Department of Climate Change, Energy, the Environment and Water (DCCEEW) are monitoring the health of the Darling-Baaka River. The aim is to increase our knowledge of the river system and to deliver a river health monitoring program to assess the aquatic ecosystems and their recovery.

This report provides an initial assessment of the river's health between January and March 2024, based on key water quality indicators. Some data are still undergoing analysis.

Water samples were taken monthly from 20 sites along the river. Measurements included temperature, dissolved oxygen (DO), nutrients, pH, chlorophyll-a, algae and pesticides. Four smart buoys with automatic monitoring stations recorded water quality every 30 minutes.

- [View the real-time data](#)

### Nutrients - Total Nitrogen (TN) and Total Phosphorus (TP)

Samples showed consistently high levels of TN and TP. Many samples exceeded guidelines for lowland river ecosystems in NSW (ANZG 2018). On average TN and TP exceeded these guidelines by up to 1.8 and 2 times respectively. High nutrients levels can lead to algal blooms and may be harmful to animals and humans.

### Pesticides and Metals

Pesticides were tested from water and sediments (see Water quality summary table). Seven sites were sampled monthly with 2 additional sites (Lake Wetherell and Wilcannia) sampled in February, and 32 sediment sites sampled in the Menindee weir pool in March. No chemicals were found to exceed the guideline values for toxicity (ANZECC & ARMCANZ 2000). The only pesticide detected was atrazine, at levels well below the guideline values of 13µg/L. Eighteen water samples, and five sediment samples were tested for 11 metals during March 2024. All samples contained metals below the default guideline values.

### Algae

Algal biomass (indicated from chlorophyll-a) was very high, ranging between 20-130 µg/L. The algal biomass saw increases in potentially toxic cyanobacteria. Further analysis of algal dynamics is underway and will be reported in subsequent reports.

### Dissolved Oxygen (DO)

All DO records fell within the guidelines, except site B3 which had values below 2mg/L in January and 4mg/L in February. Low DO concentrations can cause harm to aquatic life.

### Overall assessment

The areas of concern for the current samples were elevated nutrient and algal levels. Further analysis of algal species is underway. Analysis of the most appropriate water quality guidelines to use for the Darling-Baaka system is occurring and will be addressed in future reports.

### Future sampling

DCCEEW has expanded sampling of river health to include 34 sites between Wilcannia and Wentworth. Sampling for these sites will start in June, and will include biological indicators of river health such as fish and macroinvertebrates.

Contact [enquiries.waterscience@environment.nsw.gov.au](mailto:enquiries.waterscience@environment.nsw.gov.au) for more information

# Water quality summary: January – March 2024

Date 1: 31 Jan–2 Feb Date 2: 19–22 Feb Date 3: 25–28 Mar

Sampling site	Dissolved oxygen			Nutrients						Pesticides			Metals		
	Date 1	Date 2	Date 3	Date 1		Date 2		Date 3		Date 1	Date 2	Date 3	Date 1	Date 2	Date 3
				TN	TP	TN	TP	TN	TP						
E1	✓	✓	✓	X	X	X	X	X	X	✓	✓	✓*			✓
E2	✓	✓	✓	X	X	X	X	X	X	✓	✓	✓*			✓#
E3	✓	✓	✓	X	X	X	X	X	X	✓	✓	✓*			✓#
E4	✓	✓	✓	X	X	X	X	X	✓	✓	✓	✓*			✓#
E5	✓	✓	✓	X	X	X	X	X	X	✓	✓	✓*			✓#
E6	✓			X	✓	X	✓								
E6.5	✓	✓	✓	X	✓	X	✓	X	✓						✓
E7	✓	✓	✓	X	X	X	✓	X	✓						✓
E8	✓	✓	✓	X	X	X	X	X	X						✓
E9	✓	✓	✓	X	X	X	X	X	X						✓
E10						X	X								
E11	✓	✓	✓	X	X	X	X	X	✓						✓
E12	✓		✓	X	X	X	X	X	✓						✓
E13	✓	✓	✓	X	X	X	X	X	✓						✓
E14	✓	✓	✓	X	X	X	X	X	✓						✓
E15	✓	✓	✓	X	X	X	X	X	✓						✓
B1	✓	✓	✓	X	✓	X	✓	X	X						✓
B2	✓	✓	✓	X	X	X	X	X	X	✓	✓				✓
B3	X	?	✓	X	X	X	X	X	X	✓	✓	✓*			✓#
B4	✓	✓	✓	X	X	X	✓	X	✓						✓

✓ Meets guidelines X Outside of guidelines  
 ? Potentially stressful for aquatic life

\* Sediments # Water and Sediment

Guidelines used are for lowland river ecosystems in NSW (ANZG 2018)



Smart buoy used for sampling

## Raw data available

Scan this QR code to access the report's raw data online

