

31 August 2023

This Blue-green algal (BGA) alert report is based on routine monitoring at sites in the Murrumbidgee Algae Reporting Area. The sites are monitored by WaterNSW and local councils. Satellite imagery may be used to supplement the monitoring data.

Summary

Red Alerts

Amber Alerts

- Lake Wyangan (North) - More information can be obtained from [Griffith City Council](#)

Green Alerts

- Burrinjuck Goodhope
- Lake Albert - More information can be obtained from [Lake Albert - Wagga City Council](#)
- Murrumbidgee River at Redbank Weir Buoy

Satellite Imagery. The most recent imagery of Burrinjuck has cloud cover. Satellite imagery shows conditions are stable in Burrinjuck. At Yanga Lake imagery show algae levels are low across the lakes. At Blowering Dam imagery shows low algal activity closer to the dam wall. However, sample results for 15/08 did not pick up any algal activity. Images are shown on pages 3-4 of this report for Burrinjuck Dam and Yanga Lake.

Weather Outlook For the next month, below median rainfall is likely for most of NSW. Maximum and minimum temperatures are likely to be warmer than median
<http://www.bom.gov.au/climate/outlooks/#/overview/summary>

Algal Outlook: Cooler temperatures are less favourable for high algal activity. When temperatures increase the potential for algae blooms also increases due to high nutrient levels in many waterways.

Results Table

Site	Description	Latest Sample Date	BGA Biovolume (mm ³ /L)	Toxic BGA Biovolume (mm ³ /L)	Current Alert Status (based on latest sample)	Previous Alert Status	BGA dominant potentially toxic taxa	Comments
N1017	Murrumbidgee River at Mittagang Crossing (Cooma)	4/07/2023	0.00	0.00	No Alert	No Alert		
Burrinjuck Dam								
DBRJ12	Burrinjuck Goodhope	15/08/2023	0.11	0.10	GREEN	No Alert	<i>Dolichospermum circinale</i>	Potentially toxic, taste & odour
DBRJ11	Burrinjuck Woolgarlo	15/08/2023	0.02	0.01	No Alert	No Alert	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
DBRJ10	Burrinjuck Waters State Park	15/08/2023	0.00	0.00	No Alert	No Alert		
DBRJ09	Burrinjuck Station 1 (Dam Wall)	15/08/2023	0.01	0.00	No Alert	No Alert		
DBRJ01	Burrinjuck Downstream	15/08/2023	0.00	0.00	No Alert	No Alert		
Blowering Dam								
DBLO01	Blowering Station 1 (Dam Wall)	15/08/2023	0.00	0.00	No Alert	No Alert		
DBLO02	Blowering Downstream	15/08/2023	0.00	0.00	No Alert	No Alert		
N1014	Murrumbidgee River at Gundagai	2/08/2023	0.00	0.00	No Alert	No Alert		
N1059	Murrumbidgee River D/S Wagga Wagga (Roaches Road)	1/08/2023	0.00	0.00	No Alert	No Alert		
N1019	Murrumbidgee River at Gogeldrie Weir	22/08/2023	0.00	0.00	No Alert	GREEN		
N1018	Murrumbidgee River at Carrathool	10/07/2023	0.00	0.00	No Alert	No Alert		
N1056	Murrumbidgee River at Hay weir	22/08/2023	0.01	0.00	No Alert	No Alert		
N1058	Murrumbidgee River at Maude Weir Buoy	22/08/2023	0.00	0.00	No Alert	No Alert		
N1057	Murrumbidgee River at Redbank Weir Buoy	11/07/2023	0.12	0.07	GREEN	No Alert	<i>Dolichospermum circinale</i>	Potentially toxic, taste & odour
N1061	Murrumbidgee River at Balranald	11/07/2023	0.00	0.00	No Alert	No Alert		
N1344	Yanga Lake at Regatta Beach	11/07/2023	0.00	0.00	No Alert	AMBER		

These alert levels apply to **non-consumptive or recreational contact**. Drinking water safety thresholds are much more stringent.

Satellite imagery

The key to the approximate total algae (blue green and non-blue green) concentrations using the Custom Algae Script can be found Table 1. The actual values can potentially vary by a significant margin due to the geology of the waterbody, species of algae, turbidity, aquatic plants, time of day of the image capture, aerosols in the atmosphere, etc. This variability is a result of the nature of satellite imagery being a large-scale remote sensing format and is not function of the technology or the script itself. For this reason, these colours and descriptors are not the official “Algae Alert Level” but rather provides information on the **potential risk on algae formation**.

Table 1: Observed risk levels based on the estimated photosynthetic activity for Custom Algae Script

Map Colour	Risk Level -	Starting concentration guide range	RACC recreational alert values approx. equivalence
Blue	Very low	<0.05 mm ³ /L	No Alert
Green	Low	0.05 to 0.5 mm ³ /L	Green
Yellow	Medium	0.5 to 5.0 mm ³ /L	Amber
Red	High	5.0 to 20.0 mm ³ /L	Red
Dark red	Extreme	> 20 mm ³ /L	Red

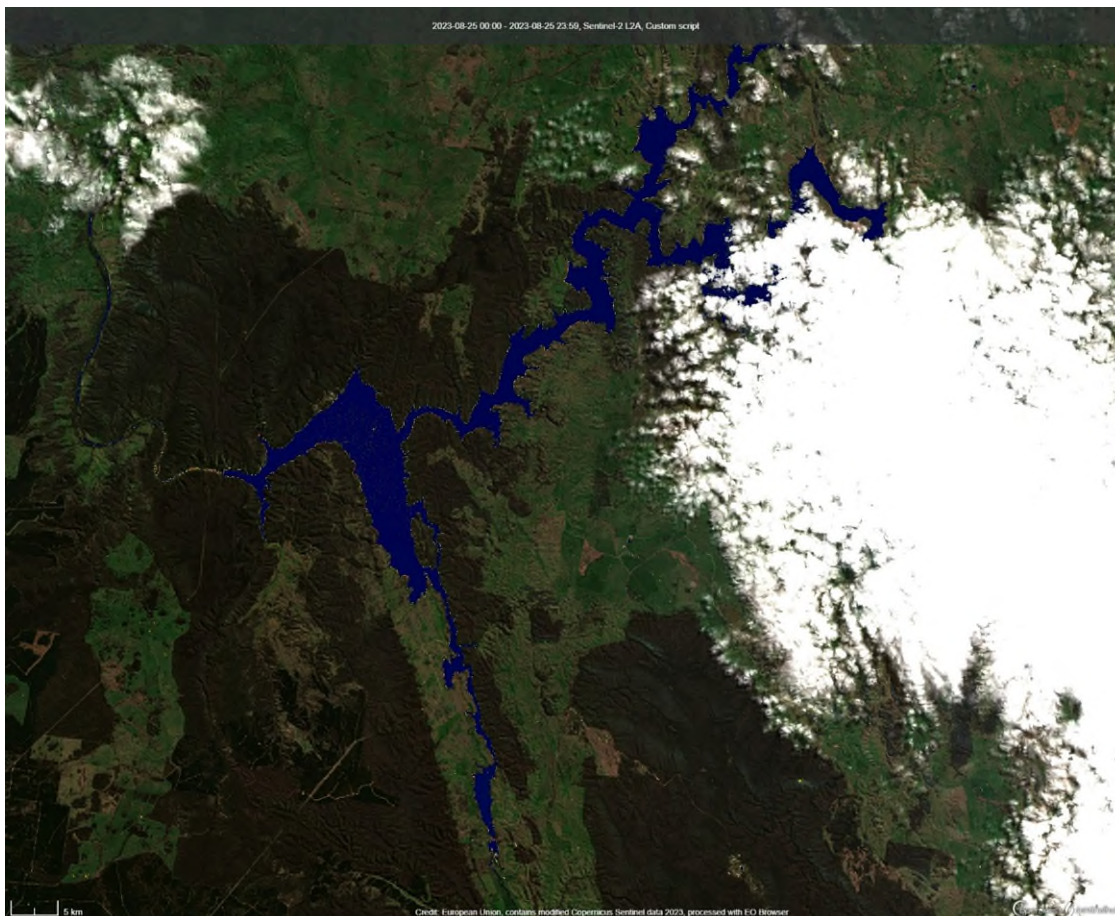


Figure 1: Burrinjuck Dam 25/8/2023 (most recent with partial cloud cover) SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW



Figure 2: Yanga Lake 28/8/23 SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW

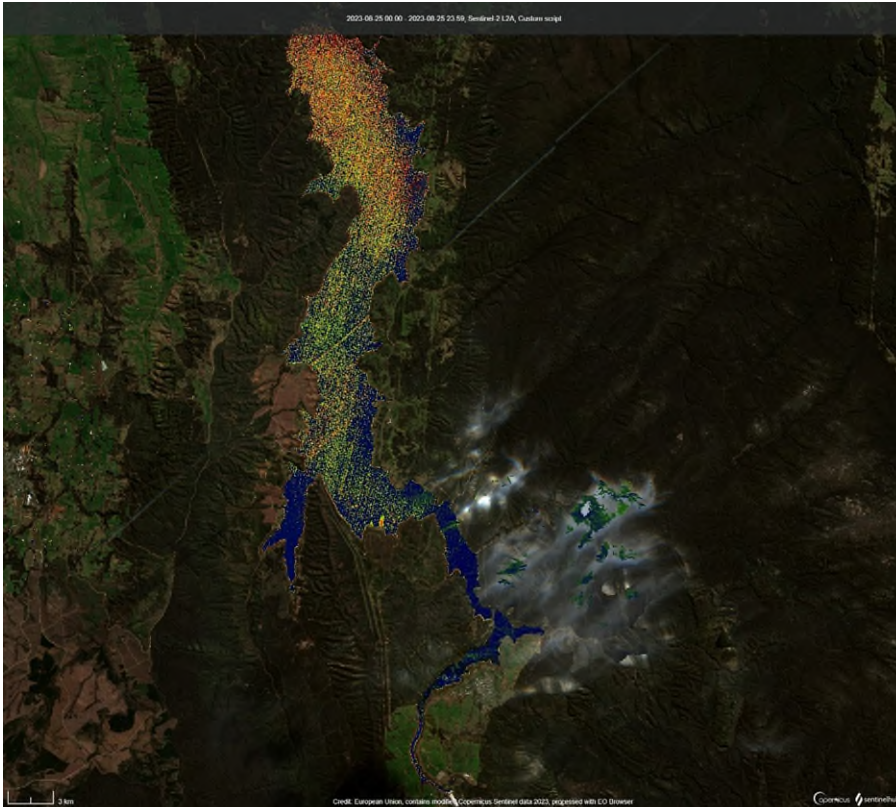


Figure 3: Blowering Dam 25/8/23 (most recent with partial cloud cover) SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW

Alert Definitions for Recreational Waters

Alert Definitions as specified in The National Health and Medical Research Council (NHMRC) *Guidelines for Managing Risks in Recreational Water* 2008.

The interim use of these guidelines is endorsed by the Scientific Subcommittee of the NSW Algal Advisory Group.

RED ALERT

These alert levels represent 'bloom' conditions. Water will appear green or discoloured and clumps or scums could be visible. It can also give off a strong musty or organic odour.

Algae may be toxic to humans and animals. Contact with or use of water from red alert areas should be avoided due to the risk of eye and skin irritation. Drinking untreated or boiled water from these supplies can cause stomach upsets. Alternative water supplies should be sought or activated carbon treatment employed to remove toxins. People should not fish when an algal scum is present. Owners should keep dogs away from high alert areas and provide alternative watering points for stock.

AMBER ALERT

Blue-green algae may be multiplying, and the water may have a green tinge and musty or organic taste and odour. The water should be considered as unsuitable for potable use and alternative supplies or prior treatment of raw water for domestic purposes should be considered. The water may also be unsuitable for stock watering. Generally suitable for water sports, however people are advised to exercise caution in these areas, as blue-green algal concentrations can rise to red alert levels quickly under warm, calm weather conditions.

GREEN ALERT

Blue-green algae occur naturally at low numbers. At these concentrations, algae would not normally be visible, however some species may affect taste and odour of water even at low numbers and does not pose any problems for recreational, stock or household use.

Key to Alerts for Recreational Waters

<p>RED Alert $\geq 50\,000$ cells/mL toxic <i>M. aeruginosa</i> OR biovolume equivalent of ≥ 4 mm³/L for the combined total of all cyanobacteria where a known toxin producer is dominant OR The total biovolume of all cyanobacteria exceeds 10 mm³/L OR Cyanobacterial blooms are consistently present</p>	<ul style="list-style-type: none"> • High levels of Blue Green Algae detected • Indicates “bloom” conditions • Toxicity should be presumed • Water will appear green or brownish and may have a strong musty taste and odour • Surface scums could occur • Extreme care should be exercised, and contact with the water should be avoided <p>Action</p> <ul style="list-style-type: none"> • Issue Media Release • Water supply authorities to increase filtering with activated carbon as appropriate • Local authority and health authorities to warn the public that the water body is unsuitable for primary contact recreation
<p>AMBER Alert ≥ 5000 to $< 50\,000$ cells/mL <i>M. aeruginosa</i> OR biovolume equivalent of ≥ 0.4 to < 4 mm³/L for the combined total of all cyanobacteria</p>	<ul style="list-style-type: none"> • Indicates blue-green algae are multiplying • Water may have a green tinge and musty taste and odour <p>Action</p> <ul style="list-style-type: none"> • Water supply authorities to consider filtering with activated carbon • Investigations into the causes of the elevated levels and increased sampling to enable the risks to recreational users to be more accurately assessed.
<p>GREEN Alert > 500 to < 5000 cells/mL <i>M. aeruginosa</i> OR biovolume equivalent of > 0.04 to < 0.4 mm³/L for the combined total of all cyanobacteria</p>	<ul style="list-style-type: none"> • Low levels of potentially toxic species detected – suggesting base crop of blue green algae may be on the increase <p>Action</p> <ul style="list-style-type: none"> • Continue/increase routine sampling to measure cyanobacterial levels

Livestock Drinking Water Guidelines Based on ARMCANZ (2000), Orr and Schneider (2006) and WQRA (2010)

This guideline should be used when water is used for livestock drinking water purposes.

- If visual scums are present, then a High alert should be declared. This would be applicable for both farm dams and publicly managed water bodies (streams, rivers, etc). Such advice should also be given to farmers who phone the department seeking information on managing blooms in their dams.
- Where blooms dominated by *Microcystis aeruginosa* are present, then the ANZECC/ARMCANZ (2000) guideline of 11,500 cells/mL should be used. Excess of this cell count will constitute a **High alert**.
- Where blooms dominated by *Dolichospermum circinale* are present, then the Orr and Schneider (2006) guideline of 25,000 cells/mL should be used. Excess of this cell count will constitute a **High alert**.

Blooms of blue-green algae other than *M. aeruginosa* and *D. circinale* are also common in NSW. These can be of either known potentially toxic species, or of species not considered to be toxin producers. When these blooms are present, a total blue-green algal biovolume in excess of 6 mm³/L will constitute a **High alert**. (These are based on Very High alert recommendations for raw water sourced for potable human supply published by WQRA (2010), in lieu of there being nothing else available).

Further Information and Contacts

Go to the WaterNSW Algal Website

www.waternsw.com.au/algae

For more information on water quality and flows in the Murrumbidgee Catchment

<https://waterinsights.waternsw.com.au/11982-murrumbidgee-regulated-river/updates>



Call

NSW algae hotline 1800 999 457

Contacts

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