

# Murray and Sunraysia – Algae Alert Status

20 December 2024

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

**Table 1 shows the following red and amber, blue-green algal alerts:**

## **Murray River**

Hume Dam as well as Lake Mulwala canal offtake, the Murray River below Yarrawonga Weir, Cobram, Tocumwal, Picnic Point, Moama, Tooleybuck, Mount Dispersion, Merbein, Curlwaa and Fort Courage are on **Amber** alert for blue-green algae.

## **Billabong Creek, Edward River & Wakool River**

The Gulpa Creek at Mathoura, and Edward River at Old Morago are on **Amber** alert for blue-green algae.

## **Menindee Lakes and lower Darling River**

The Darling River at Wilcannia, Lake Menindee outlet regulator, Darling River at Tolarno, Pooncarie and Ellerslie as well as the Great Darling anabranch at the Silver City Highway Crossing are on **Red** alert for blue-green algae.

Lake Wetherell (sites 3 & 4) as well as lake Copi Hollow and Lake Cawndilla outlet regulator are on **Amber** alert for blue-green algae. The Darling River upstream of Weir 32, Burtundy and Tapio are on **Amber** alert for blue-green algae.

**Some satellite images are shown on page 4 of this report.**

## **Blue-green algal outlook**

In the upper reaches of the catchment near Albury, days are expected to be mostly sunny. Maximum day air temperatures will be between 25 °C and 41 °C with minimum temperatures ranging from 9 °C to 18 °C (Source -[BOM 7-day weather forecast](#)). These conditions are likely to create favourable circumstances for blue-green algal growth.

At Menindee, days are forecast to be sunny. Maximum day air temperatures are expected to be between 28 °C and 44 °C with minimum temperatures ranging from 13 °C to 21 °C. These environmental conditions are expected to create favourable circumstances for blue-green algal growth.

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

Table 1: Combined Murray and Sunraysia Alerts

Site	Description	Latest Sample Date	Cyanobacteria Total Count (cells/mL)	Cyanobacteria Biovolume (mm <sup>3</sup> /L)	Potentially Toxic Cyanobacterial Count (cells/mL)	Potentially Toxic Cyanobacterial Biovolume (mm <sup>3</sup> /L)	Current Status (based on Latest Sample)	Previous Status	Cyanobacteria dominant potentially toxic taxa	Cyanobacteria Comments
<b>MURRAY RIVER SYSTEM</b>										
	Manus Lake (SVC) Lake pontoon	2/12/2024	0	0.000	0	0.000	No Alert	GREEN		
DLH003	Lake Hume, Ebdon	2/12/2024	50,772	2.617	2,572	0.065	AMBER	No Alert	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
DLH001	Lake Hume, Heywoods Bay nr Bethanga	2/12/2024	52,222	2.327	7,022	0.196	AMBER	GREEN	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
DLH002	Lake Hume, Hume Dam Resort	2/12/2024	42,465	3.056	5,430	0.138	AMBER	GREEN	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
DLH004	Lake Hume, Dam Wall	2/12/2024	44,986	1.520	3,511	0.098	AMBER	No Alert	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
N1000	Murray R. Union Bridge Albury	2/12/2024	3,212	0.070	2,600	0.070	GREEN	No Alert	<i>Phormidium sp.</i>	Potentially toxic, taste & odour
N1001	Murray R. Corowa	2/12/2024	27,832	0.045	817	0.019	GREEN	No Alert	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
	Yarrowonga Weir (outlet) GMW	2/12/2024	38,439	2.726	0	0.000	AMBER	GREEN		
N1008	Mulwala Canal Offtake	2/12/2024	30,178	1.269	898	0.021	AMBER	GREEN	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
N1007	Murray R. @ below Yarrowonga	2/12/2024	27,456	0.539	0	0.000	AMBER	No Alert		
N1051	Murray R. Cobram (Barooga)	2/12/2024	74,108	3.262	204	0.004	AMBER	GREEN	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
	Cobram WTP, raw water (GVW)	3/12/2024	16,611	1.060	0	0.000	AMBER	GREEN		
N1013	Murray R. Tocumwal	2/12/2024	38,793	2.299	2,041	0.049	AMBER	No Alert	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
N1052	Murray R. Picnic Point	2/12/2024	43,076	0.563	0	0.000	AMBER	GREEN		
	Barmah WTP raw water (GVW)	2/12/2024	5,005	0.889	19	0.005	AMBER	GREEN		
N1050	Murray R. Moama (Echuca)	2/12/2024	23,543	2.854	0	0.000	AMBER	GREEN		
	Torrumbarry Weir GMW	2/12/2024	11,480	0.242	0.000	0.000	GREEN	GREEN		
N1003	Murray R. Barham (Koondrook)	3/12/2024	27,103	0.101	782	0.073	GREEN	No Alert	<i>Dolichospermum sp.</i>	Potentially toxic, taste & odour
N1054	Murray R. Murray Downs (Swan Hill)	3/12/2024	5,444	0.017	0	0.000	No Alert	No Alert		
	Murray River U/S Woorinen pumps GMW	16/12/2024	6,000	0.031	0	0.000	No Alert	AMBER		
N1055	Murray R. Tooleybuc (Piangil)	3/12/2024	25,391	0.529	68	0.001	AMBER	No Alert	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
N1064	Lake Benanee Rec Area	4/12/2024	0	0.000	0	0.000	No Alert	No Alert		
N1028	Murray R. Euston (Robinvale)	3/12/2024	2,840	0.106	0	0.000	GREEN	AMBER		
N1065	Murray R. Mount Dispersion	4/12/2024	1,903	0.472	0	0.000	AMBER	No Alert		
N1062	Murray R. Buronga	2/12/2024	25,953	0.247	0	0.000	GREEN	GREEN		
	Merbein (LMW)	9/12/2024	17,610	2.789	0	0.000	AMBER	GREEN		
N1027	414206 - Murray River at Merbein	3/12/2024	23,392	0.666	1,286	0.037	AMBER	GREEN	<i>Radiocystis sp.</i>	Potentially toxic
N1063	Murray R. Curlwaa	2/12/2024	30,397	0.710	0	0.000	AMBER	AMBER		
N1066	Murray R. Fort Courage	2/12/2024	53,322	1.966	204	0.029	AMBER	GREEN	<i>Anabaenopsis sp.</i>	Potentially toxic
	Lock 9 (LMW)	9/12/2024	2,876	0.014	0	0.000	No Alert	GREEN		
N1077	Murray R. Lock 8	2/12/2024	68,400	0.150	0	0.000	GREEN	GREEN		
N1078	Lake Victoria Outlet Regulator	2/12/2024	34,489	0.068	255	0.030	GREEN	No Alert	<i>Dolichospermum sp.</i>	Potentially toxic, taste & odour

Table 1: Continued

BILLBONG CREEK, EDWARD & WAKOOL RIVERS										
N1020	Billabong Ck. Waubundrie	2/12/2024	22,704	0.024	0	0.000	No Alert	No Alert		
N1015	Billabong Ck. Jerilderie	2/12/2024	1,089	0.001	0	0.000	No Alert	GREEN		
N1006	Gulpa Ck. Mathoura	2/12/2024	20,811	0.660	0	0.000	AMBER	GREEN		
N1002	Edward R Deniliquin	2/12/2024	25,005	0.307	0	0.000	GREEN	GREEN		
N1053	Edward R. Old Morago	3/12/2024	37,814	0.592	0	0.000	AMBER	No Alert		
N1005	Edward R. Moulamein	3/12/2024	12,800	0.020	0	0.000	No Alert	No Alert		
N1010	Wakool R. Wakool-Barham Road	3/12/2024	28,104	0.227	0	0.000	GREEN	No Alert		
N1004	Wakool R. @ Stoney Crossing	3/12/2024	8,540	0.091	0	0.000	GREEN	No Alert		
N1009	Wakool R. Kyalite	3/12/2024	7,346	0.062	2,447	0.059	GREEN	No Alert	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
MENINDEE LAKE SYSTEM & LOWER DARLING RIVER										
N1042	Darling River at Wilcannia	4/12/2024	72,454	6.022	65,860	6.015	RED	AMBER	<i>Dolichospermum sp.</i>	Potentially toxic, taste & odour
N1087	Lake Wetherell Site 1	25/11/2024	1,973	0.000	0	0.000	No Alert	No Alert		
N1088	Lake Wetherell Site 2	25/11/2024	57,758	0.051	0	0.000	GREEN	No Alert		
N1089	Lake Wetherell Site 3	25/11/2024	96,387	1.133	442	0.054	AMBER	GREEN	<i>Aphanizomenonaceae sp.</i>	Potentially toxic, taste & odour
N1090	Lake Wetherell Site 4	25/11/2024	112,428	0.977	0	0.000	AMBER	AMBER		
N1091	Lake Tandure Site 8	25/11/2024	41,344	0.042	0	0.000	GREEN	GREEN		
N1092	Lake Pamamaroo Inlet (Site 9)	25/11/2024	38,296	0.036	0	0.000	No Alert	GREEN		
N1129	42510013 Centre Pamamaroo (Site 13)	26/11/2024	26,130	0.038	0	0.000	No Alert	GREEN		
N1093	Lake Pamamaroo Outlet (Site 10)	25/11/2024	33,206	0.032	0	0.000	No Alert	GREEN		
N1094	Menindee Lakes, Copi Hollow	26/11/2024	835,081	1.084	0	0.000	AMBER	AMBER		
N1339	Lake Menindee outlet regulator	26/11/2024	4,145,556	53.924	97,329	12.198	RED	GREEN	<i>Aphanizomenonaceae sp.</i>	Potentially toxic, taste & odour
N1128	Lake Cawndilla Site 34 Outlet	26/11/2024	942,916	1.451	170	0.004	AMBER	GREEN	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
N1095	Darling R. Menindee bhwb pump	26/11/2024	59,887	0.094	0	0.000	GREEN	GREEN		
N1086	Darling R u/s Weir 32	26/11/2024	762,209	5.825	4,426	0.474	AMBER	AMBER	<i>Dolichospermum sp.</i>	Potentially toxic, taste & odour
N1043	Darling R. Tolarno	4/12/2024	541,494	14.350	3,541	0.487	RED	AMBER	<i>Anabaenopsis sp.</i>	Potentially toxic
N1040	Darling R. Pooncarie	4/12/2024	252,778	4.053	53,164	3.569	RED	GREEN	<i>Umezakia ovalisporum</i>	Potentially toxic, taste & odour
N1041	Darling R. Burtundy	16/12/2024	940,679	1.270	1,087	0.101	AMBER	AMBER	<i>Dolichospermum sp.</i>	Potentially toxic, taste & odour
N1074	Darling R. Ellerslie	16/12/2024	736,254	2.442	8,302	0.976	RED	RED	<i>Aphanizomenonaceae sp.</i>	Potentially toxic, taste & odour
N1075	Darling R. Tapio	16/12/2024	945,930	1.293	816	0.076	AMBER	AMBER	<i>Dolichospermum sp.</i>	Potentially toxic, taste & odour
Non routine monitoring Wentworth Weir Pool										
N1366	Pomona (@ Boat Ramp)	21/10/2024	149,701	0.179	0	0.000	GREEN	GREEN		
GREAT DARLING ANABRANCH										
N1350	Silver City Hwy	11/12/2024	1,237,771	12.618	6,260	0.748	RED	No Alert	<i>Dolichospermum sp.</i>	Potentially toxic, taste & odour

## Satellite imagery

The key to the approximate total algae (blue green and non-blue green) concentrations using the Custom Algae Script can be found in Table 3. 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 3: 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 <sup>3</sup> /L	No Alert
Green	Low	0.05 to 0.5 mm <sup>3</sup> /L	Green
Yellow	Medium	0.5 to 5.0 mm <sup>3</sup> /L	Amber
Red	High	5.0 to 20.0 mm <sup>3</sup> /L	Red
Dark red	Extreme	> 20 mm <sup>3</sup> /L	Red

## Observations about the satellite images

Figure 1 indicates that Hume Dam had mostly very low-level phytoplankton activity on 12/12/2024. The image of 17/12/2024 is hidden from view by cloud cover.

The satellite image of the Menindee Lakes on 18/12/2024 (Figure 2) shows a mix of very low-level and Low phytoplankton activity in lakes Tandure, Pamamaroo and Copi Hollow as well as at Lake Wetherell site 4. Lake Wetherell site 3 had very low-level activity. Phytoplankton activity in Lake Menindee ranged from low to high while the activity in Lake Cawndilla ranged from low to medium. Weir 32 weir pool had very low to low phytoplankton activity.

Figure 3 indicates that the Murray River near Wentworth had very low phytoplankton activity on 18/12/2024, while the anabranch appears to have had low to medium phytoplankton activity. The lower Darling River had mostly low phytoplankton activity.

Lake Victoria had mostly very low phytoplankton activity on 18/12/2024 (Figure 4).



Figure 1: Hume Dam 12/12/2024 SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW.

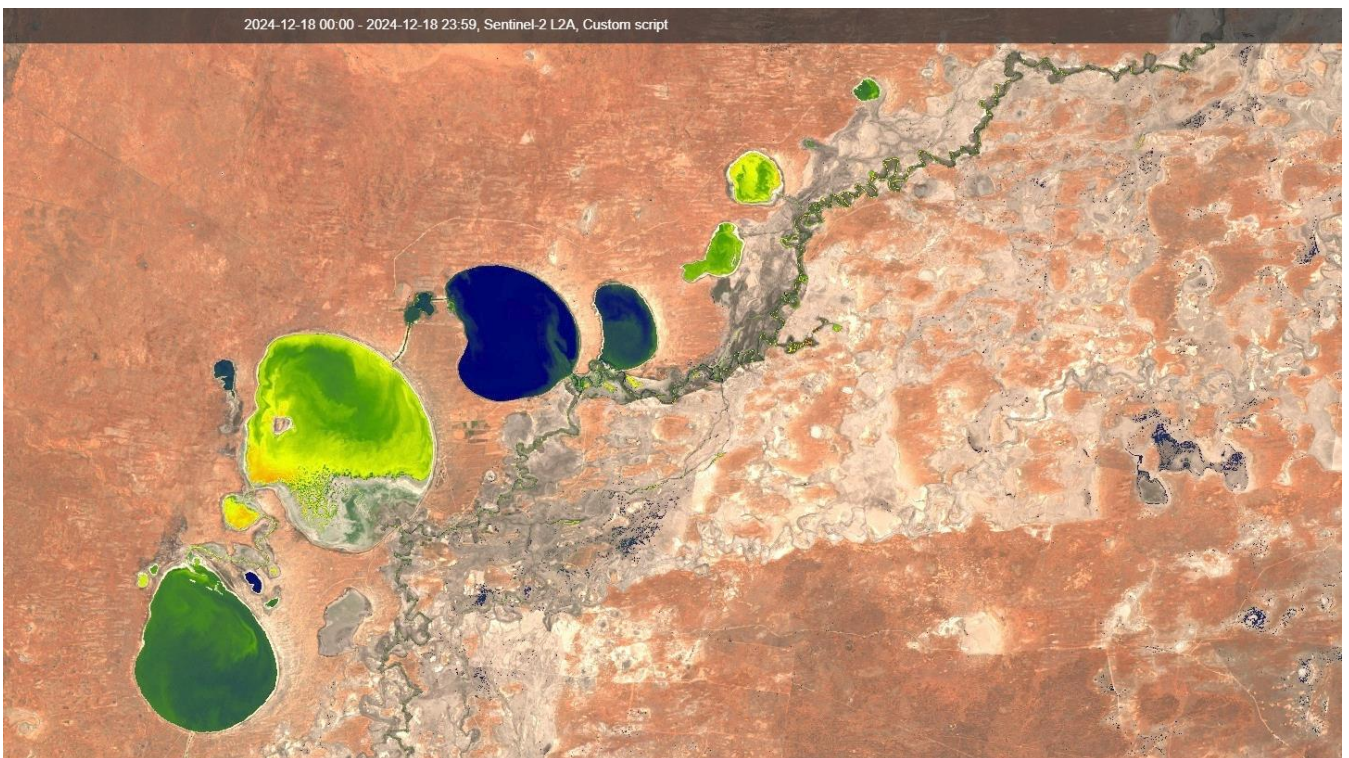


Figure 2: Menindee Lakes 18/12/2024 SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW.



Figure 3: Murray River near Wentworth, Lower Darling River and Great Darling Anabranch 18/12/2024 SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW.



Figure 4: Lake Victoria 18/12/2024 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><b>RED Alert</b>  <math>\geq 50\,000</math> cells/mL toxic <i>M. aeruginosa</i>  OR  biovolume equivalent of <math>\geq 4</math> mm<sup>3</sup>/L for the combined total of all cyanobacteria where a known toxin producer is dominant in the total biovolume  OR  The total biovolume of all cyanobacteria <math>\geq 10</math> mm<sup>3</sup>/L  OR  Cyanobacterial scums are consistently present</p>	<ul style="list-style-type: none"> <li>• High levels of Blue Green Algae detected</li> <li>• Indicates “bloom” conditions</li> <li>• Toxicity should be presumed</li> <li>• Water will appear green or brownish and may have a strong musty taste and odour</li> <li>• Surface scums could occur</li> <li>• <b>Extreme care should be exercised, and contact with the water should be avoided</b></li> </ul> <p><b>Action</b></p> <ul style="list-style-type: none"> <li>• Issue Media Release</li> <li>• Water supply authorities to increase filtering with activated carbon as appropriate</li> <li>• Local authority and health authorities to warn the public that the water body is unsuitable for primary contact recreation</li> </ul>
<p><b>AMBER Alert</b>  <math>\geq 5\,000</math> to <math>&lt; 50\,000</math> cells/mL <i>M. aeruginosa</i>  OR  biovolume equivalent of <math>\geq 0.4</math> to <math>&lt; 4</math> mm<sup>3</sup>/L for the combined total of all cyanobacteria where known toxin producers are dominant in the total biovolume  OR  <math>\geq 0.4</math> to <math>&lt; 10</math>mm<sup>3</sup>/L combined total for all blue-green algae where known toxin producers are not dominant</p>	<ul style="list-style-type: none"> <li>• Indicates blue-green algae are multiplying</li> <li>• Water may have a green tinge and musty taste and odour</li> </ul> <p><b>Action</b></p> <ul style="list-style-type: none"> <li>• Water supply authorities to consider filtering with activated carbon</li> <li>• Investigations into the causes of the elevated levels and increased sampling to enable the risks to recreational users to be more accurately assessed.</li> </ul>
<p><b>GREEN Alert</b>  <math>&gt; 500</math> to <math>&lt; 5\,000</math> cells/mL <i>M. aeruginosa</i>  OR  biovolume equivalent of <math>&gt; 0.04</math> to <math>&lt; 0.4</math> mm<sup>3</sup>/L for the combined total of all cyanobacteria</p>	<ul style="list-style-type: none"> <li>• Low levels of potentially toxic species detected – suggesting base crop of blue green algae may be on the increase</li> </ul> <p><b>Action</b></p> <ul style="list-style-type: none"> <li>• Continue/increase routine sampling to measure cyanobacterial levels</li> </ul>

### 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 mm<sup>3</sup>/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

### Links to websites of VIC and other agencies

[Link to Snowy Valleys Council](#)

[Link to North East Water](#)

[Link to Goulburn-Murray Water blue-green algal alerts](#)

[Link to Goulburn Valley Water blue-green algal information](#)

[Link to Lower Murray Water blue-green algal alerts](#)

### Go to the WaterNSW Algal Website

[www.waternsw.com.au/algae](http://www.waternsw.com.au/algae) or at WaterInsights:

Murray regulated river - <https://waterinsights.waternsw.com.au/11904-new-south-wales-murray-regulated-river/updates>

Lower-Darling regulated river - <https://waterinsights.waternsw.com.au/12104-lower-darling-regulated-river/updates>

### Contacts

Gerhard Schulz (Coordinator)

[Gerhard.Schulz@waternsw.com.au](mailto:Gerhard.Schulz@waternsw.com.au)

Telephone: 0457 505 850