

17 April 2024

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

## Summary

**Table 1 shows the following blue-green algal alerts:**

**Amber** alerts are current for the following sites: Wyangala Dam at the Dam Wall, Carcoar Dam at the Dam Wall, Lake Cargelligo town water supply, boatshed, outlet at lake creek, Lake Brewster regulator channel and outlet channel as well as the Lachlan River at Willandra Weir and Corrong.

Wyangala Dam at the junction of the Lachlan & Abercrombie River, at the junction between the Lachlan River and Sandy Creek, Inland Waters Park, Lake Cargelligo Weir as well as the Lachlan River at Hillston and Booligal are on **green** alert for blue-green algae.

**Some satellite images are shown on page 3 of this report.**

**A seven-day weather forecast together with the weekly blue-green algal outlook is available on page 5.**

Please note that updates on flow and other matters in the Lachlan River can be obtained from our WaterInsights website. The link is provided on the last page of this report.

## Results Table

Table 1: Current blue-green algal alerts in the catchment of the Lachlan River.

	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 toxic taxa	Comments
<b>Wyangala Dam</b>										
DWYA01	Wyangala Junction Lachlan & Abercrombie	3/04/2024	30,419	0.101	833	0.089	GREEN	GREEN	<i>Dolichospermum circinale</i>	Potentially toxic, taste & odour
DWYA02	Wyangala Junction Lachlan & Sandy Ck	3/04/2024	13,369	0.151	1,815	0.145	GREEN	AMBER	<i>Dolichospermum circinale</i>	Potentially toxic, taste & odour
DWYA05	Wyangala Abercrombie R	3/04/2024	14,555	0.019	0	0.000	No Alert	GREEN		
DWYA06	Wyangala Inland Waters Park	3/04/2024	4,749	0.077	612	0.076	GREEN	GREEN	<i>Dolichospermum sp.</i>	Potentially toxic, taste & odour
DWYA08	Wyangala Dam Wall Station 1	3/04/2024	38,434	0.196	7,186	0.183	AMBER	AMBER	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
DWYA04	Wyangala Dam Downstream	3/04/2024	2,864	0.019	755	0.017	No Alert	No Alert	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
N1168	Lachlan River at Cowra									
<b>Carcoar Dam</b>										
DCAR01	Carcoar Dam Station 1 (Dam Wall)	2/04/2024	20,811	1.465	19,859	1.228	AMBER	AMBER	<i>Microcystis species 2</i>	Potentially toxic, taste & odour
DCAR02	Carcoar Downstream (Belubula River)	2/04/2024	0	0.000	0	0.000	No Alert	No Alert		
N1022	Lachlan River at Cottons Weir (Forbes)	7/03/2024	0	0.000	0	0.000	No Alert	No Alert		
N1024	Lachlan River @ Condobolin Bridge	14/03/2024	1,633	0.000	0	0.000	No Alert	No Alert		
<b>Lake Cargelligo</b>										
DCRG04	Lake Cargelligo Weir	2/04/2024	66,848	0.242	1,905	0.071	GREEN	AMBER	<i>Raphidiopsis raciborskii</i>	Potentially toxic, taste & odour
DCRG06	Lachlan River downstream of Lake Cargelligo Weir	2/04/2024	0	0.000	0	0.000	No Alert	No Alert		
DCRG05	Lake Cargelligo intake downstream of Curlew Waters	2/04/2024	2,994	0.002	0	0.000	No Alert	GREEN		
DCRG02	Lake Cargelligo Town Water Supply 41210042	2/04/2024	2,105,669	3.417	4,000	0.197	AMBER	AMBER	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
DCRG03	Lake Cargelligo Boatshed	2/04/2024	2,635,824	4.696	1,291	0.163	AMBER	AMBER	<i>Anabaenopsis sp.</i>	Potentially toxic
DCRG01	Lake Cargelligo Outlet @ Lake Creek	2/04/2024	984,887	2.373	2,175	0.317	AMBER	AMBER	<i>Anabaenopsis sp.</i>	Potentially toxic
<b>Lake Brewster</b>										
DBRW01	Lake Brewster Inflow 412102	10/04/2024	15,514	0.027	272	0.006	No Alert	GREEN	<i>Microcystis sp.</i>	Potentially toxic, taste & odour
DBRW02	Lake Brewster Inf wetland u/s eastern spillway									
DBRW03	Lake Brewster Regulator C	10/04/2024	2,698,353	6.837	6,777	0.512	AMBER	AMBER	<i>Anabaenopsis sp.</i>	Potentially toxic
DBRW04	Lake Brewster Outlet Channel 412108	10/04/2024	5,511,932	7.616	27,191	0.959	AMBER	RED	<i>Phormidium sp.</i>	Potentially toxic, taste & odour
DLOS06	Lachlan River @ Willandra Weir	2/04/2024	193,190	0.356	4,893	0.114	AMBER	AMBER	<i>Phormidium sp.</i>	Potentially toxic, taste & odour
N1025	Lachlan River at Hillston	2/04/2024	77,790	0.138	0	0.000	GREEN	AMBER		
N1023	Lachlan River at Booligal	2/04/2024	80,838	0.204	15,514	0.130	GREEN	GREEN	<i>Geitlerinema splendium</i>	Potentially toxigenic
N1026	Lachlan River at Corrong	2/04/2024	247,409	2.109	3,262	0.073	AMBER	AMBER	<i>Microcystis 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 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 2: 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 latest satellite images (Figures 1 to 4)

Figure 1 indicates that the Wyangala Dam had mostly very low-level phytoplankton activity on 16/04/2024.

The latest satellite image of Carcoar Dam on 16/04/2024 (Figure 2) shows very low phytoplankton activity with some low to medium activity, increasing towards the inflow.

Figure 3 shows very low phytoplankton activity with low to medium activity in some areas within Lake Cargelligo on 16/04/2024.

The satellite image for Lake Brewster (Figure 4) indicates that there was low to high phytoplankton activity in the lake on 14/04/2024.



**Figure 1: Wyangala Dam 16/04/2024 SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW**



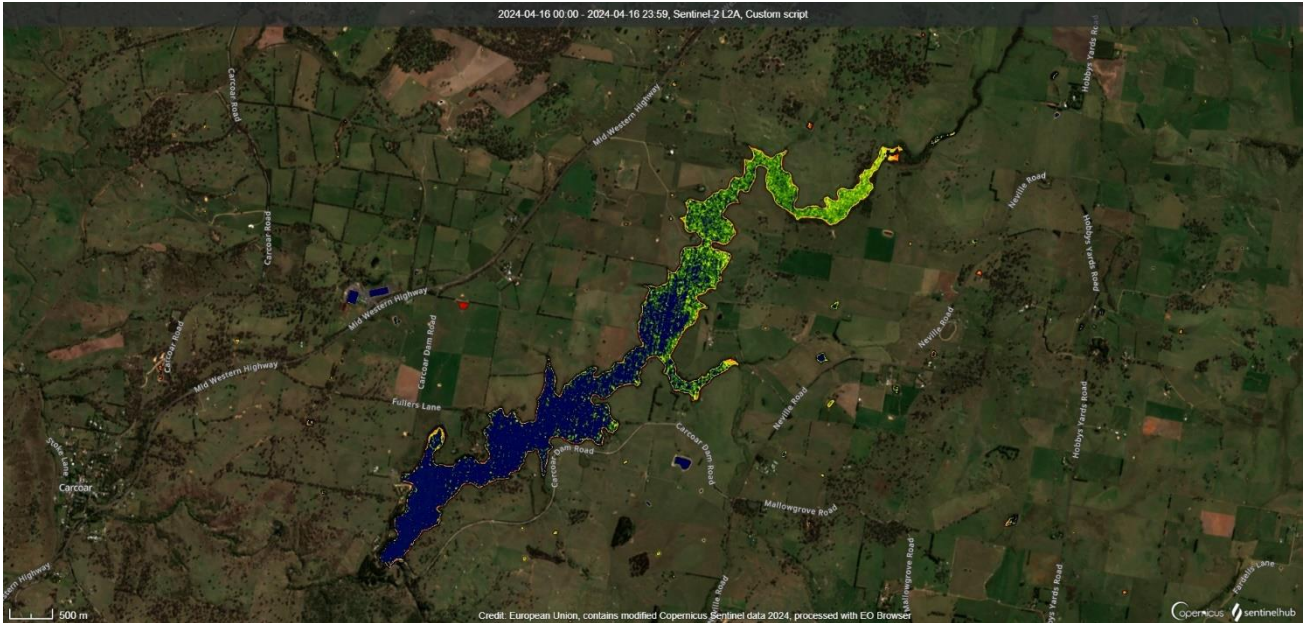


Figure 2: Carcoar Dam 16/04/2024 SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW

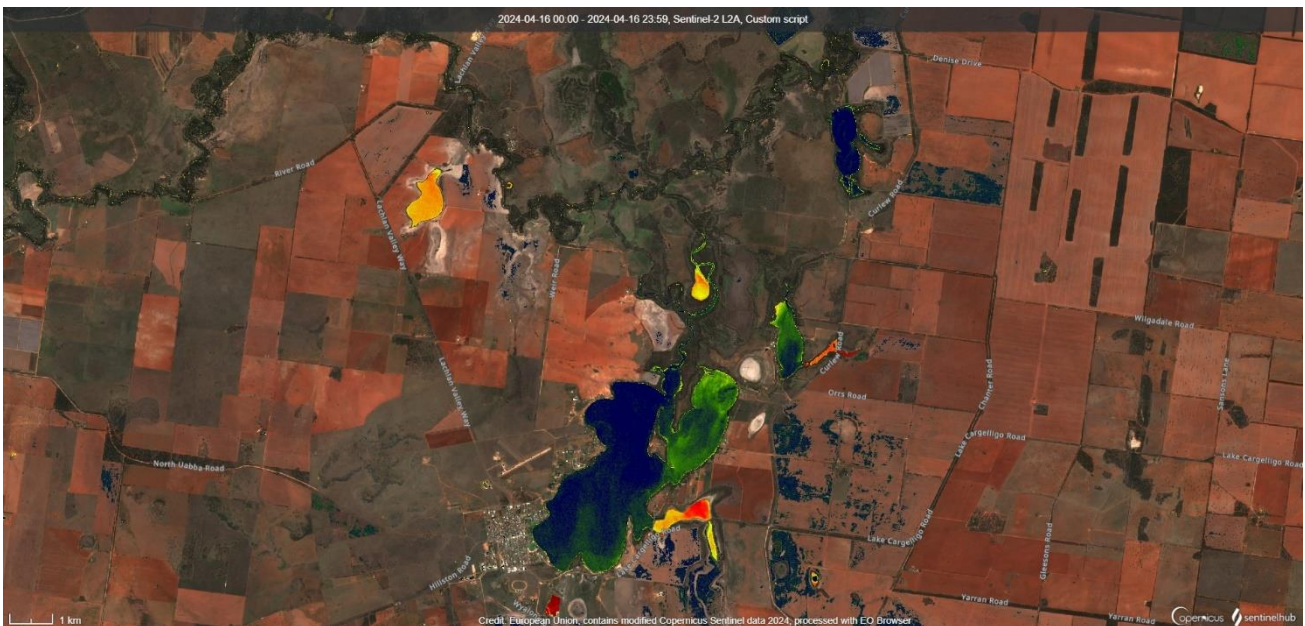


Figure 3: Lake Cargelligo 16/04/2024 SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW

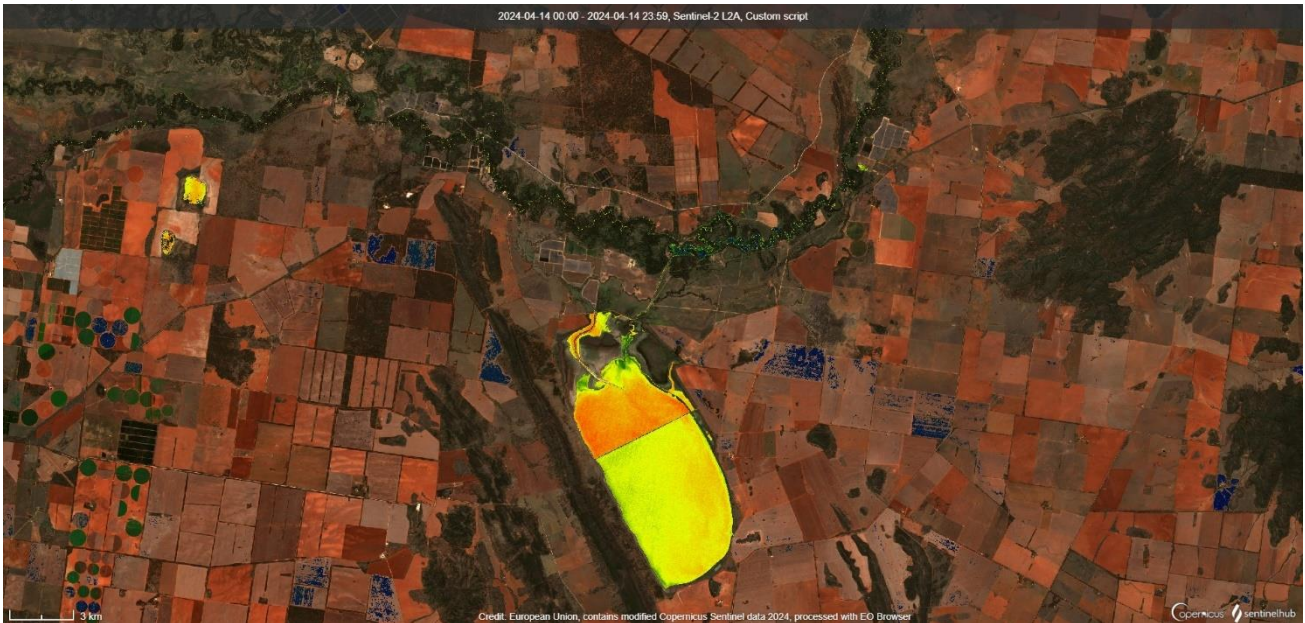
















Figure 4: Lake Brewster 14/04/2024 SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW.

## Weather forecast and blue-green algal outlook.

### Cowra and Lake Cargelligo, [BOM 7-day weather forecast](#)

Cowra							
Forecast issued at 4:25 am EST on Wednesday 17 April 2024. <a href="#">Detailed Cowra Forecast</a>							
	Wed. 17 Apr	Thu. 18 Apr	Fri. 19 Apr	Sat. 20 Apr	Sun. 21 Apr	Mon. 22 Apr	Tue. 23 Apr
	 Sunny.	 Sunny.	 Partly cloudy.	 Mostly sunny.	 Sunny.	 Sunny.	 Sunny.
Max. Temperature	24 °C	22 °C	20 °C	22 °C	23 °C	25 °C	24 °C
Min. Temperature		7 °C	6 °C	8 °C	6 °C	6 °C	6 °C

Lake Cargelligo							
Forecast issued at 4:25 am EST on Wednesday 17 April 2024. <a href="#">Detailed Lake Cargelligo Forecast</a>							
	Wed. 17 Apr	Thu. 18 Apr	Fri. 19 Apr	Sat. 20 Apr	Sun. 21 Apr	Mon. 22 Apr	Tue. 23 Apr
	 Mostly sunny.	 Sunny.	 Partly cloudy.	 Sunny.	 Sunny.	 Sunny.	 Sunny.
Max. Temperature	26 °C	23 °C	22 °C	25 °C	25 °C	26 °C	26 °C
Min. Temperature		10 °C	9 °C	9 °C	8 °C	7 °C	9 °C

### Blue-green algal outlook

In the upper reaches of the catchment near Cowra, mostly sunny days in combination with mild air temperatures is likely to create fair conditions for blue-green algal growth. Minimum daily air temperatures of 7 to 6 °C are likely to impair algal activity to some extent.

The mild, mostly sunny days at Lake Cargelligo, is expected to give rise to fairly favourable conditions for blue-green algae activity. The minimum expected daily air temperatures of between 10 and 7 °C may in turn lead to reduced algal activity.



## 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></p> <p>≥ 50 000 cells/mL toxic <i>M. aeruginosa</i> OR biovolume equivalent of ≥4 mm<sup>3</sup>/L for the combined total of all cyanobacteria where a known toxin producer is dominant OR The total biovolume of all cyanobacteria exceeds 10 mm<sup>3</sup>/L OR Cyanobacterial blooms 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></p> <p>≥5000 to &lt;50 000 cells/mL <i>M. aeruginosa</i> OR biovolume equivalent of ≥ 0.4 to &lt; 4 mm<sup>3</sup>/L for the combined total of all cyanobacteria OR ≥ 0.4 to &lt; 10mm<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> &gt; 500 to &lt; 5000 cells/mL <i>M. aeruginosa</i> OR biovolume equivalent of &gt; 0.04 to &lt; 0.4 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>
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**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

Select the links below to the WaterNSW and Department of Primary Industries Algal Websites

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

[DPI blue-green-algae](#)

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

<https://waterinsights.waternsw.com.au/11983-lachlan-regulated-river/>

### Contacts

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