



Algae Alerts for the Far West Region

9th March 2022

The Far West Blue-Green Algal Reports are based on samples collected by various councils; Moree Plains, Walgett, Brewarrina, Bourke and Central Darling Shire Councils and WaterNSW.

Summary

Algae concentrations in the mid to lower-Darling have risen rapidly with the reducing flows (figure 1 and 2). Algae production appears to be accelerating, given the present river flows are still significant it is surprising to see the algae concentration elevate so soon after good flows still in the system after flooding. These high concentrations of algae are likely to be flushed down the system with the river flows and continue to rise as a slug of algae developing down the system. The algae composition is of a large mix of species with the potentially toxic component making up most of the composition.

As can be seen in the included satellite imagery using a newly developed custom Algae Script on page 3, which shows the algae moving into the Menindee lakes system.

Darling River at Wilcannia and Caulpaulin (~30km below Wilcannia) are on Red Alert. Water users downstream of the Wilcannia to Menindee should seek alternate water supplies for Stock and domestic use.

Darling River at Louth, Tilpa and Trevallyn are on Amber Alert.

Namoi River at Walgett is on Amber Alert.

Barwon River at Dangar bridge is on Amber Alert.

The Namoi River at Walgett is on **Amber Alert.**

Bogan River at Gongolgon is on **Green Alert.**

Note: The latest sentinel-2 satellite image for the Darling River at Menindee and Menindee Lakes with NSW-Custom Algae Script is located on page 2 and 3 of this document.

Outlook:

- March to May (autumn) rainfall is likely to be above median for large parts of Australia,
- March to May maximum temperatures are likely to be above median for much of the east and south-east.

<http://www.bom.gov.au/climate/outlooks/#/overview/summary/>

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

Satellite imagery

Sentinel-2 Observed Photosynthetic Activity and Biovolume Probable Guide Range:

NSW-Custom Algae Script Key

Blue = very low: <0.05 mm³/L

Green = low: 0.05 to 0.5 mm³/L

Yellow = medium: 0.5 to 5 mm³/L

Red = High: 5 to 20 mm³/L

Dark red = very high: >20 mm³/L

Note: Probable guide range can vary depending on the water body, algae composition, and other environmental conditions.

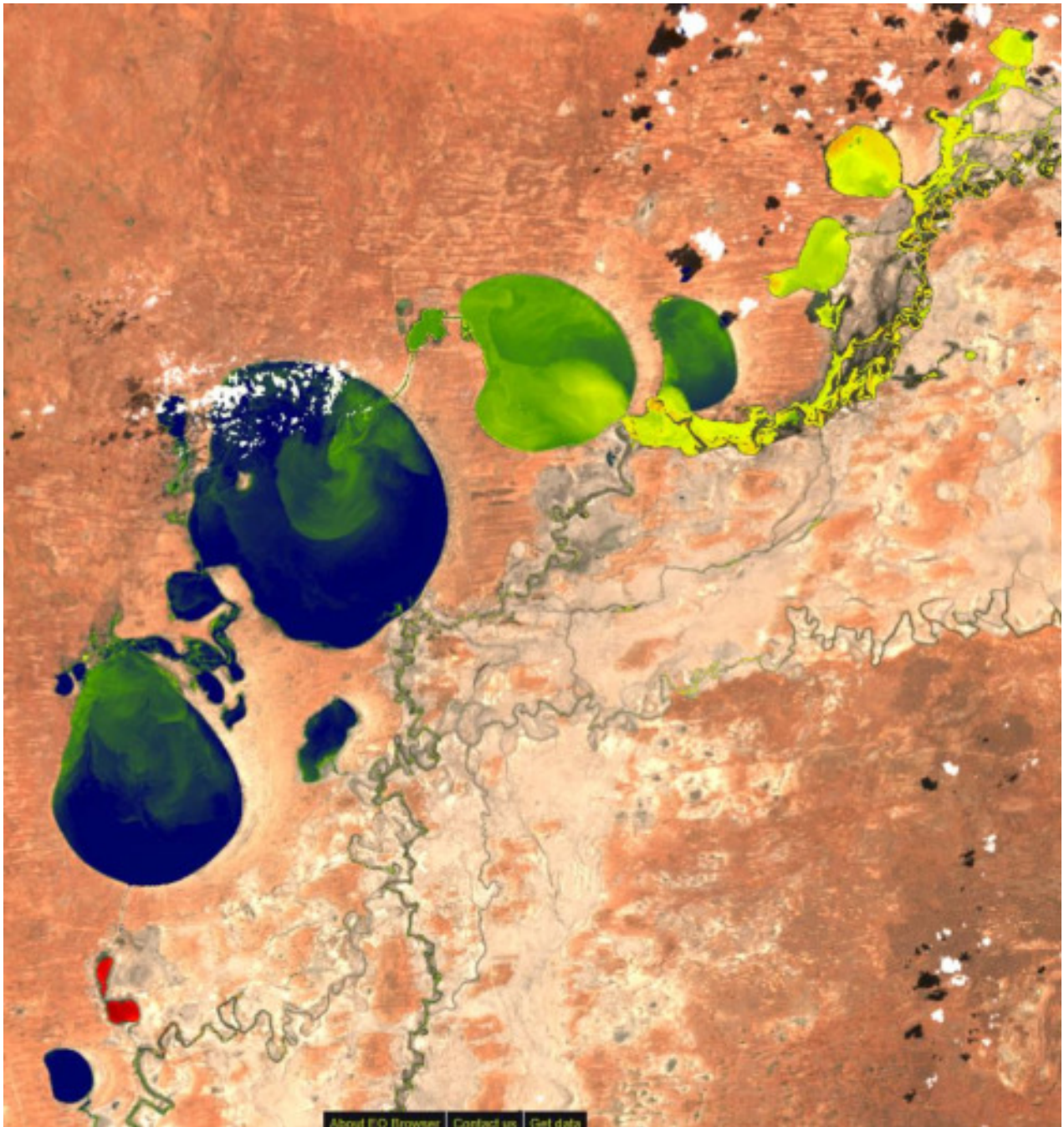


Figure 1. Darling River at Menindee 27-2-22

SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW

Results Table

Note:

- New results are shown in **bold**.
- * indicates that sampling results show that algal numbers have reduced, however another low sampling result is required to reduce the alert status to a lower level.

Site Description	Latest Sample Date	Toxic BGA Biovolume (mm ³ /L)	BGA Biovolume (mm ³ /L)	Current Status (based on Latest Sample)	Previous Status	BGA Dominant Toxic Taxa	Comments and River Flows (ML/day) As per date of this report.
Namoi River at Walgett	16-Feb-22	0.39	1.04	Amber	No Alert		Flow: --
Barwon River at Mungindi	07-Feb-22	0.00	0.00	No Alert	No Alert		Flow: 5,724
Barwon River at Collarenebri	--	--	--	--	--		Flow: 4,703 No recent results
Barwon River at Walgett Dangar Bridge	16-Feb-22	0.04	0.49	Amber	Amber		Flow: 2,642
Barwon River Brewarrina Weir	15-Feb-22	0.00	0.01	No Alert	Amber		Flow: 2,120
Bogan River at Gongolgon	15-Feb-22	0.00	0.09	Green	No Alert		Flow: 71
Darling River at Bourke/ Boat Ramp	24-Feb-22	0.00	0.00	No Alert	No Alert		Flow: 2,827
Darling River at Bourke Weir	---	---	---				
Darling River at 'Rose Isle'	---	---	---				
Darling River at Louth	09-Feb-22	0.83	1.30	Amber	No Alert	<i>Sphaerospermopsis - aphanizomenoides</i>	Flow: 3,682 Potentially toxic, taste & odour
Darling River at Tilpa (Tilpa Weir)	23-Feb-22	0.44	0.47	Amber	---		Flow: 3,843
Darling River at 'Trevallyn'	22-Feb-22	3.27	4.49	Amber	---	<i>Planktothrix - sp.</i>	
Darling River at Wilcannia	23-Feb-22	11.59	16.44	Red	Amber	<i>Planktothrix - sp.</i>	Flow: 7,396 Potentially toxic
Darling River at 'Caulpaulin'	23-Feb-22	21.28	25.06	Red	---	<i>Planktothrix - sp.</i>	Potentially toxic

Note: * indicates that sampling results show that algal numbers have reduced, however another low sampling result is required to reduce the alert status to a lower level.

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 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.

Table 2: 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 <p>Extreme care should be exercised, and contact with the water should be avoided</p> <p>Action</p> <ul style="list-style-type: none"> • Issue Media Release • Water supply authorities to increase filtering with activated carbon as appropriate <p>Local authority and health authorities to warn the public that the water body is considered to be unsuitable for primary contact recreation</p>
<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 <p>Investigations into the causes of the elevated levels and increased sampling to enable the risks to recreational users to be more accurately assessed.</p>
<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> <p>Continue/increase routine sampling to measure cyanobacterial levels</p>

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

<http://www.waternsw.com.au/water-quality/algae>

Contacts

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