Tuesday, June 7, 2022

This report is based on routine monitoring at sites within the Lachlan River region.

In the Lachlan a **Red** alert remains in place at Lake Brewster (outlet channel site).

Amber alerts are current for Lake Cargelligo and downstream on the Lachlan at Willandra Weir, Hillston and Booligal.

Outlook Central West Slopes and Plains area: - Partly cloudy with slight chance of showers to possible small hail on the southern slopes and morning light frost on the northern slopes. Overnight temperatures falling to around 3 with daytime temperatures reaching between 10 and 14. (Source: BOM forecast Condobolin)

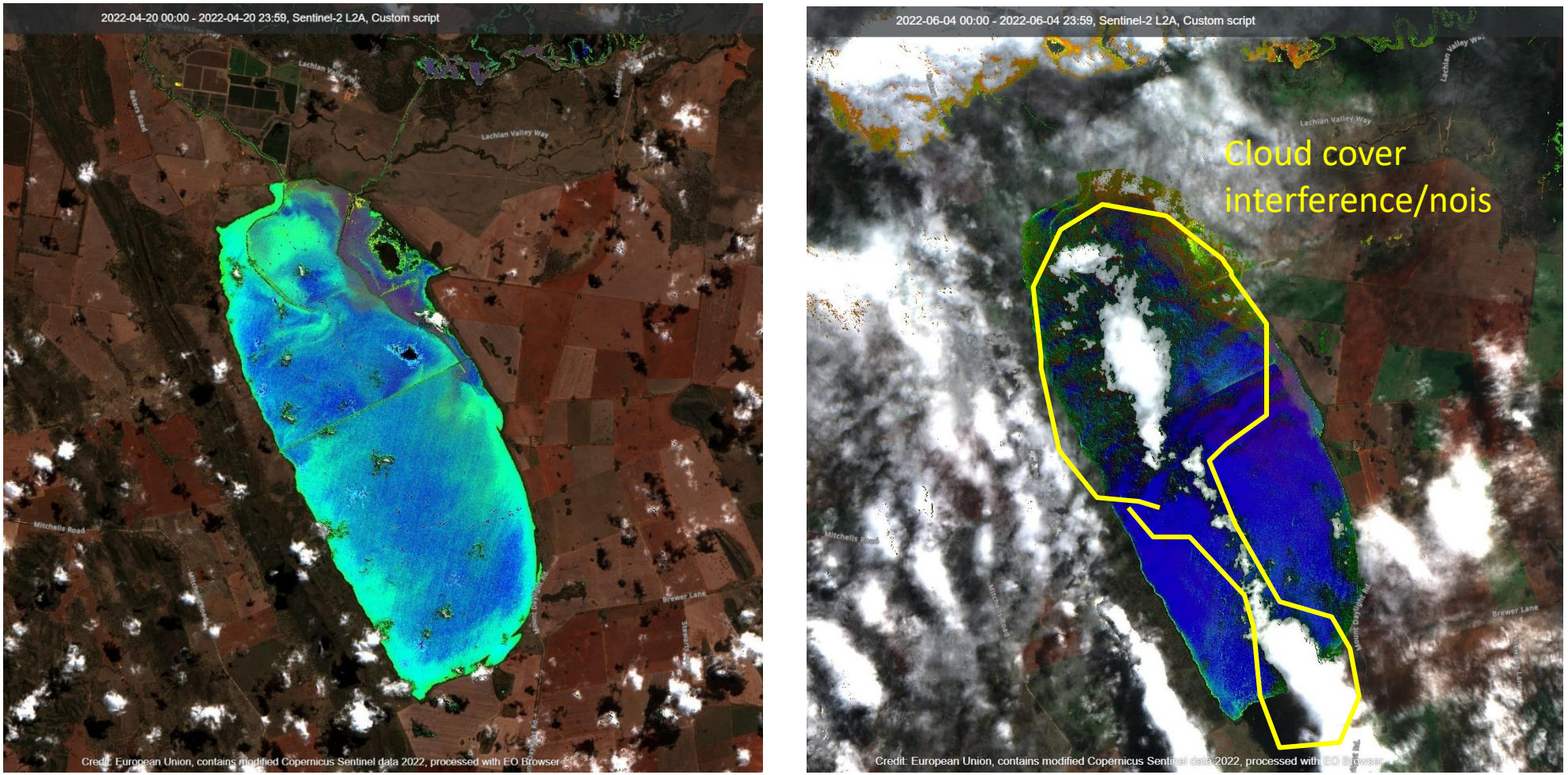

Figure 1 Lachlan at Lake Brewster (left) captured 20 April 2022 with output script showing the presence of algae in bright green and turquoise and, right captured on 4 June 2022 and script applied shows mostly blue colour signifying open water. Despite cloud cover interference surface algal growth at Lake Brewster appears to have decreased significantly with change to cooler conditions. (APA custom script, source: Péliova,et al no date)

Table 1 Lachlan Algal Alerts 7/06/2022

Site	Description	Latest Sample Date	Cyanobacteria Total Count (cells/mL)	Cyanobacteria Biovolume (mm3/L)	Potentially Toxic Count (cells/mL)	Potentially Toxic Biovolume (mm3/L)	Current Status (based on Latest Sample)	Previous Status	Cyanobacteria Dominant toxic taxa	Comments
Wyangala Dam										
DWYA01	Wyangala Junction Lachlan & Abercrombie	23/05/2022	7,841	0.181	3,007	0.170	GREEN	GREEN	*Microcystis Unknown*	Potentially toxic, taste & odour
DWYA02	Wyangala Junction Lachlan & Sandy Ck	23/05/2022	9,403	0.264	2,752	0.261	GREEN	GREEN	*Dolichospermum circinale*	Potentially toxic, taste & odour
DWYA04	Wyangala Dam Downstream	23/05/2022	6,627	0.052	774	0.018	GREEN	No Alert	*Microcystis Unknown*	Potentially toxic, taste & odour
DWYA05	Wyangala Abercrombie R	23/05/2022	830				No Alert	GREEN		
DWYA06	Wyangala Inland Waters Park	23/05/2022	6,022	0.017	539	0.014	No Alert	No Alert	*Microcystis sp.*	Potentially toxic, taste & odour
DWYA08	Wyangala Dam Wall Station 1	23/05/2022	12,935	0.010	138	0.004	No Alert	GREEN	*Microcystis Unknown*	Potentially toxic, taste & odour

N1168	Lachlan River at Cowra	3/05/2022	2,765	0.004			No Alert	No Alert		
Carcoar Dam										
DCAR01	Carcoar Dam Station 1 (Dam Wall)	23/05/2022	1,591	0.013	484	0.012	No Alert	No Alert	*Microcystis Unknown*	Potentially toxic, taste & odour
DCAR02	Carcoar Downstream (Belubula River)	23/05/2022	3,969	0.029	1,065	0.024	No Alert	No Alert	*Microcystis Unknown*	Potentially toxic, taste & odour
N1024	Lachlan River @ Condobolin Bridge	12/05/2022	23,229	0.015			No Alert	No Alert		
Lake Cargelligo										
DCRG01	Lake Cargelligo Outlet @ Lake Creek	24/05/2022	794,204	0.954	486	0.040	AMBER	AMBER	*Raphidiopsis raciborskii*	Potentially toxic, taste & odour
DCRG02	Lake Cargelligo Town Water Supply 41210042	24/05/2022	926,949	1.356	1,006	0.125	AMBER	AMBER	*Dolichospermum circinale*	Potentially toxic, taste & odour
DCRG03	Lake Cargelligo Boatshed	24/05/2022	1,139,361	1.691			AMBER	AMBER		
DCRG04	Lake Cargelligo Weir	24/05/2022	53,199	0.052			GREEN	GREEN		
DCRG05	Lake Cargelligo intake downstream of Curlew Waters	24/05/2022	501,302	0.537			AMBER	GREEN		
DCRG06	Lake Cargelligo Lachlan River ds Lake Carlweir	24/05/2022	113,868	0.130			GREEN	No Alert		
Lake Brewster										

DBRW01	Lake Brewster Inflow 412102	23/05/2022	28,269	0.086	1,797	0.055	GREEN	No Alert	*Radiocystis sp.*	Potentially toxic
DBRW02	Lake Brewster Inf wetland u/s eastern spillway	23/05/2022	14,380	0.013			No Alert	GREEN		
DBRW04	Lake Brewster Outlet Channel 412108	23/05/2022	272,710	4.371	49,159	4.129	RED	RED	*Dolichospermum circinale*	Potentially toxic, taste & odour
DLOS06	Lachlan River @ Willandra Weir	23/05/2022	140,584	1.216	13,005	1.078	AMBER	RED	*Dolichospermum circinale*	Potentially toxic, taste & odour
N1025	Lachlan River at Hillston	12/05/2022	145,204	3.269	33,745	3.143	AMBER	AMBER	*Dolichospermum circinale*	Potentially toxic, taste & odour
N1023	Lachlan River at Booligal	10/05/2022	32,216	0.629	1,283	0.191	AMBER	GREEN	*Sphaerospermopsis aphanizomenoides*	Potentially toxic, taste & odour
N1026	Lachlan River at Corrong	10/05/2022	20,907	0.194	7,744	0.178	GREEN	GREEN	*Microcystis sp.*	Potentially toxic, taste & odour

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

RED Alert ≥ 50 000 cells/mL toxic *M. aeruginosa* OR biovolume equivalent of ≥4 mm^3/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^3/L OR Cyanobacterial blooms are consistently present	• 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** **Action** • 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
AMBER Alert ≥5000 to <50 000 cells/mL *M. aeruginosa* OR biovolume equivalent of ≥ 0.4 to < 4 mm^3/L for the combined total of all cyanobacteria	• Indicates blue-green algae are multiplying • Water may have a green tinge and musty taste and odour **Action** • 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.

GREEN Alert > 500 to < 5000 cells/mL *M. aeruginosa* OR biovolume equivalent of > 0.04 to < 0.4 mm^3/L for the combined total of all cyanobacteria	• Low levels of potentially toxic species detected – suggesting base crop of blue green algae may be on the increase **Action** • 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 mm^3/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

Call

NSW algae hotline 1800 999 457

Contacts

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