

Algal Alerts in the Lachlan Catchment

13th April 2007



NSW Government

DEPARTMENT OF NATURAL RESOURCES

Lachlan Storages

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

Table 1 – Total blue-green algal counts and/or biovolume equivalents in Lachlan Catchment storages

Date Alert	Storage Sites	Current count (total cells/mL / BVEq)	Previous Alert	Dominant species
27/03/07 AMBER ⇄	Lake Wyangala Dam Wall / State Rec Area	55,776 1.2 mm ³ /L BVEq	Amber	<i>Microcystis flos-aquae</i>
22/02/07 AMBER ⇄	Lake Wyangala at Grabine (Stn 2)	9,842 1.4 mm ³ /L BVEq	Amber	<i>Microcystis aeruginosa</i>
1/04/07 No Alert	Carcoar Dam.	132 C/mL	Nil	<i>Oscillatoria sp.</i>
27/3/07 RED ⇄	Lake Cargelligo	3,042,104 >10.0 mm ³ /L BVEq	Red	<i>Cylindrospermopsis raciborskii.</i>
27/3/07 RED ↑	Lake Cargelligo # 2 TWS Curlew Waters	60,190 >4.0 mm ³ /L BVEq	Amber	<i>Anabaena circinalis</i>

River Sites

Table 2 – Total blue-green algal counts and/or biovolume equivalents in the Lachlan River

Date Alert	River Sites	Current count (total cells/mL / BVEq)	Previous Alert	Dominant species
1/04/07 No Alert	Belubula River downstream Carcoar	None detected	Nil	
27/03/07 AMBER ↑	Lachlan River d/s Wyangala Dam	60,540 C/mL 1.5 mm ³ /L BVEq	None	<i>Microcystis flos-aquae.</i>
03/04/07 No Alert	Lachlan River @ Cowra	198 C/mL	None detected	<i>Raphidiopsis sp</i>
13/03/07 No Alert	Lachlan River @ Forbes	None detected	None detected	
28/11/06	Lachlan River @ Condobolin	None detected	Green	
27/03/07 No Alert ⇄	Lachlan River at Lake Cargelligo Weir	1,283 C/mL 0.01 mm ³ /L BVEq	nil	<i>Limnothrix sp.</i>
27/03/07 GREEN ↑	Lachlan River at Lake Brewster Weir	28,478 C/mL 0.15 mm ³ /L BVEq	nil	<i>Anabaenopsis sp</i>
27/03/07 GREEN ↑	Lachlan River at Willandra Weir	4,364 C/mL 0.38 mm ³ /L BVEq	nil	<i>Phormidium sp.</i>
27/03/07 AMBER ⇄	Lachlan River at Hillston Weir	34,855 C/mL 1.0 mm ³ /L BVEq	Amber	<i>Aphanocapsa sp.</i>
26/03/07 GREEN ↓	Lachlan River at Booligal Weir	21,816 C/mL 0.08 mm ³ /L BVEq	Amber	<i>Aphanocapsa sp</i>

The total observed cyanobacteria genera that contribute to the current alert level are presented in conjunction with a bio-volume equivalent (BVEq) to *Microcystis aeruginosa* calculated for all contributing cyanobacteria species. These data are presented for information only. We recommend that water treatment and stock management responses should not be altered according to the observed cyanobacteria genera. All Cyanobacteria should be considered as potentially harmful to human and animal health when present in blooms.

River users and landholders are advised to avoid waters in areas subject to RED (High) alert levels or with visible algae scums. They should also consider either alternative sources of water for stock. NSW Health advises that any domestic use of surface water without treatment is dangerous and should be avoided. Note, boiling water contaminated with blue green algae **does not** remove toxins

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Alert Definitions as specified in The National Health and Medical Research Council (NHMRC) *Guidelines for Managing Risks in Recreational Water* 2005

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

Key to alerts for recreational waters

Blue-Green Algal Level	Alert Definition
GREEN	Green Alert
>500 – <5,000 cells/mL potentially toxic cyanobacteria or biovolume equivalent of >0.04 to <0.4 mm ³ /L for the combined total of all cyanobacteria	<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 Action <ul style="list-style-type: none"> • Continue/increase routine sampling to measure cyanobacterial levels
AMBER	Amber Alert
≥5,000 – <50,000 cells/mL potentially toxic cyanobacteria or biovolume equivalent of >0.4 to <4.0 mm ³ /L for the combined total of all cyanobacteria	<ul style="list-style-type: none"> • Indicates blue-green algae are multiplying • Water may have a green tinge and musty taste and odour Action <ul style="list-style-type: none"> • Water supply authorities to commence 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
RED	Red Alert
>50,000 cells/mL potentially toxic cyanobacteria or biovolume equivalent of ≥ 4 mm ³ /L for the combined total of all cyanobacteria where a known toxic producer is dominant Or The total biovolume of all cyanobacterial material exceeds 10 mm ³ /L Or Cyanobacterial blooms are consistently present	<ul style="list-style-type: none"> • High levels of potentially toxic species 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 <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 considered to be unsuitable for primary contact recreation