Algal Alerts in the Lachlan Catchment

7th February 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 potentially toxic species
23/01/07 AMBER ⇔	**Lake Wyangala Dam Wall / State Rec Area**	**72,250 1.83 mm^3/L BVEq**	**AMBER**	**Microcystis flos-aquae**
23/01/07 AMBER ⇔	**Lake Wyangala at Grabine (Stn 2)**	**28,285 0.62 mm^3/L BVEq**	**AMBER**	**Microcystis flos-aquae**
31/01/07 GREEN ⇩	**Carcoar Dam.**	**5039 0.12 mm^3/L. BVEq**	**GREEN**	**None found**
30/01/07 RED ⇧	**Lake Cargelligo**	**987,394 180.7 mm^3/L BVEq**	**RED**	**Cylindrospermopsis raciborskii.**

*DNS = Did not sample

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 potentially toxic species
31/01/07 GREEN ⇔	**Belubula River downstream Carcoar**	**None found**	**GREEN**	
23/01/07 GREEN ⇔	**Lachlan River d/s Wyangala Dam**	**3,143 0.07 mm^3/L BVEq**	**GREEN**	**Microcystis flos-aquae**
08/01/07	Lachlan River @ Cowra	None detected	None detected	
09/01/07	Lachlan River @ Forbes	None detected	None detected	
28/11/06	Lachlan River @Condobolin	None detected	GREEN	
30/01/07 GREEN ⇩	**Lachlan River at Lake Cargelligo Weir**	**2,481 0.01 mm^3/L BVEq**	**GREEN**	**No potentially toxic BGA detected**
30/01/07 GREEN ⇔	**Lachlan River at Lake Brewster Weir**	**3,206 0.39 mm^3/L BVEq**	**GREEN**	**Anabaena circinalis.**
30/01/07 GREEN ⇩	**Lachlan River at Willandra Weir**	**None detected**	**GREEN**	
31/01/07 AMBER ⇧	**Lachlan River at Hillston Weir**	**2,646 0.41 mm^3/L BVEq**	**GREEN**	**Anabaena sp.**
31/01/07 RED ⇧	**Lachlan River at Booligal Weir**	**20,735 4.15 mm^3/L BVEq**	**AMBER**	**A. circinalis**

The total observed cyanobacteria genera that contribute to the current alert level are presented in conjunction with a bio-volume equivalent (BVEq) to Microcystis aeriginosa 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* (DRAFT) 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 >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	Green Alert • 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
AMBER ≥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	Amber Alert • **Indicates blue-green algae are multiplying** • **Water may have a green tinge and musty taste and odour** Action • 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 >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	Red Alert • 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 • 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