Algal Alerts in the Lachlan Catchment

18th December 2008

Central West Regional Algal Coordinating Committee

This blue-green algal alert report is based on routine monitoring undertaken by the Cowra, Forbes and Lachlan Shire Councils; State Water Corporation and the Department of Water and Energy

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

Table 1 – Lachlan Storages Total blue-green algal biovolume equivalents (BVEq) and cell counts in Lachlan Catchment storages

Date/Alert	Storage Sites	Current count (total cells/mL / BVEq)	Previous Alert	Dominant species (BVEq)
21/10/08 GREEN	Lake Wyangala Dam Wall / State Rec Area	12,572 C/ml 0.24 mm3/L BVEq	Greeen	Microcystis flos-aquae.
21/10/08 GREEN	Lake Wyangala at Grabine (Stn 2)	2,581 C/ml 0.04 mm3/L BVEq	nil	Microcystis flos-aquae.
21/10/08 GREEN	Lake Wyangala State Rec area Site 7	2,647 0.06 mm3/L BVEq	Green	Microcystis flos-aquae.
30/09/08 No Alert	Carcoar Dam.	None detected	nil	.
08/12/08 No Alert	**Lake Cargelligo**	**None detected**	**Green**	
08/12/08 GREEN	**Lake Cargelligo TWS Site 2 41210042**	**2,051 C/mL 0.09 mm^3/L BVEq**	**nil**	**Spirulina sp**
08/12/08 GREEN	**LC intake d/s Lake Curlew**	**67,331 C/mL 0.12 mm^3/L BVEq**	**nil**	**Aphanocapsa sp.**

Table 2 – **River Sites.** Total blue-green algal biovolume equivalents (BVEq) and cell counts in the Lachlan River

Date/Alert	River Sites	Current count (total cells/mL / BVEq)	Previous Alert	Dominant species
30/09/08 No Alert	Belubula River downstream Carcoar	81 C/ml 0.05 mm^3/L BVEq	nil	Geitlerinema sp.
21/10/08 No Alert	Lachlan River d/s Wyangala Dam	794 0.02 mm3/L BVEq	Green	Microcystis flos-aquae.
24/11/08 GREEN	**Lachlan River @ Cowra**	**4,896 0.11 mm3/L BVEq**	**nil**	**Microcystis flos-aquae.**
03/12/08 GREEN	**Lachlan River @ Forbes**	**2,316 0.05 mm3/L BVEq**	**nil**	**Microcystis flos-aquae.**
29/01/08 No Alert	Lachlan River @Condobolin	817 C/mL 0.01 mm^3/L BVEq	nil	
08/12/08 No Alert	**Lachlan River at Lake Cargelligo Weir**	**199 C/mL <<0.04 mm^3/L BVEq**	**Nil**	**Aphanocapsa sp.**
08/12/08 No Alert	**Lachlan River at Lake Brewster Weir**	**1,363 C/mL <<0.04 mm^3/L BVEq**	**nil**	**Aphanocapsa sp.**
08/12/08 No Alert	**Lachlan River at Willandra Weir**	**3,137 C/mL <<0.04 mm^3/L BVEq**	**nil**	**Aphanocapsa sp.**
24/11/08 GREEN	**Lachlan River at Hillston Weir**	**73,236 C/ml 0.13 mm3/L BVEq**	**nil**	**Aphanocapsa sp.**

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24/11/08 GREEN	**Lachlan River at Booligal Weir**	**569 C/ml 0.11 mm3/L BVEq**	**Green**	**Aphanocapsa sp.**
24/11/08 GREEN	**Lachlan River at Coorong**	**596 C/ml 0.18 mm3/L BVEq**	**Green**	**Aphanocapsa sp.**

Notes:

The bio-volume equivalent (BVEq) calculated for all contributing cyanobacteria species is used to determine alert thresholds. The total observed cyanobacteria genera that contribute to the current alert level are also presented. It is recommend that water treatment and stock management responses should not be altered according to the observed cyanobacteria genera but that the BVEq Alert framework be applied. 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

Alert Definitions are as specified in The National Health and Medical Research Council (NHMRC) *Guidelines for Managing Risks in Recreational Water* 2005
The use of these guidelines is endorsed by the Scientific Sub committee 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 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 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**

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