

Algal Alerts in the Lachlan Catchment

8th March 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 |
|------------------------|--|---|----------------|--|
| 22/02/07 AMBER ⇔ | Lake Wyangala Dam Wall / State Rec Area | 7,775 2.3 mm ³ /L BVEq | Amber | <i>Anabaena circinalis</i> |
| 22/02/07 AMBER ⇔ | Lake Wyangala at Grabine (Stn 2) | 9,842 1.4 mm ³ /L BVEq | Amber | <i>Microcystis aeruginosa</i> |
| 27/02/07 No Alert ⇔ | Carcoar Dam. | 4,135 C/mL | Nil | <i>Aphanocapsa sp.</i> |
| 26/02/07 RED ⇔ | Lake Cargelligo | 663,288 >10.0 mm ³ /L BVEq | RED | <i>Cylindrospermopsis raciborskii.</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 |
|------------------------|---------------------------------------|--|----------------|-------------------------------|
| 27/02/07 No Alert ⇔ | Belubula River downstream Carcoar | None detected | Nil | |
| 22/02/07 No Alert ↓ | Lachlan River d/s Wyangala Dam | 165 C/mL | None | <i>Raphidiopsis sp.</i> |
| 05/02/07 | Lachlan River @ Cowra | None detected | None detected | |
| 13/02/07 No Alert | Lachlan River @ Forbes | 662 C/mL 0.02 mm ³ /L BVEq | None detected | <i>Microcystis flos-aquae</i> |
| 28/11/06 | Lachlan River @ Condobolin | None detected | Green | |
| 26/02/07 No Alert ↓ | Lachlan River at Lake Cargelligo Weir | 2,233 C/mL | nil | <i>Aphanocapsa sp.</i> |
| 26/02/07 GREEN ↓ | Lachlan River at Lake Brewster Weir | 1,919 C/mL | Amber | <i>Aphanocapsa sp.</i> |
| 26/02/07 GREEN ↑ | Lachlan River at Willandra Weir | 5,260 C/mL | nil | <i>Oscillatoria sp.</i> |
| 13/02/07 GREEN ⇔ | Lachlan River at Hillston Weir | 2,051 C/mL 0.32 mm ³ /L BVEq | Green | <i>Anabaena sp.</i> |
| 7/02/07 AMBER ↓ | Lachlan River at Booligal Weir | 3,282 C/mL 0.5 mm ³ /L BVEq | Red | <i>A. circinalis</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 |
|---|--|
| <p style="text-align: center;">GREEN</p> <p>>500 – <5,000 cells/mL potentially toxic cyanobacteria or biovolume equivalent of >0.04 to <0.4 mm³/L for the combined total of all cyanobacteria</p> | <p>Green Alert</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> <ul style="list-style-type: none"> • Continue/increase routine sampling to measure cyanobacterial levels |
| <p style="text-align: center;">AMBER</p> <p>≥5,000 – <50,000 cells/mL potentially toxic cyanobacteria or biovolume equivalent of >0.4 to < 4.0 mm³/L for the combined total of all cyanobacteria</p> | <p>Amber Alert</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 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 |
| <p style="text-align: center;">RED</p> <p>>50,000 cells/mL potentially toxic cyanobacteria or biovolume equivalent of ≥ 4 mm³/L for the combined total of all cyanobacteria where a known toxic producer is dominant</p> <p>Or</p> <p>The total biovolume of all cyanobacterial material exceeds 10 mm³/L</p> <p>Or</p> <p>Cyanobacterial blooms are consistently present</p> | <p>Red Alert</p> <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 <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 • Local authority and health authorities to warn the public that the water body is considered to be unsuitable for primary contact recreation |