

Blooming algae – Murray River 2016

EHPA Water Workshop

12 August 2016

Houa Tia

Water Program

Department of Health & Human Services

Blue-green algae 101

- Bacterial organism
- Present in all aquatic ecosystems
- Growth dependent on
 - environmental conditions
 - nutrient levels
 - flow of water
- All BGA have allergens on their cell surface
- Some BGA species can produce toxins



Murray River, Barmah 18/03/16
(source: Leanne Wells)

Health effects

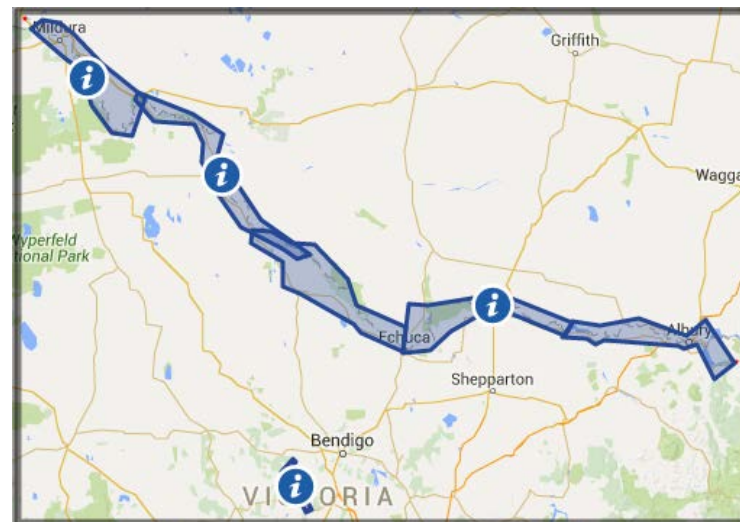
- Exposure routes
 - Direct oral route: gastro symptoms, affect liver or nervous system (severe cases)
 - Skin contact, inhalation: skin & eye irritation, mild respiratory effects, hayfever like symptoms
- Unsuitable for
 - drinking (humans & animals)
 - recreational activities: swimming, boating, fishing

Overview Murray River bloom

- 2016 - warmest Victorian February and March on record
- Dominant BGA species - *Chrysosporum ovalisporum* (previously *Aphanizomenon ovalisporum*)
- Red alert warning - Albury Wodonga to Mildura
- Lake Boga, Loddon River (Cairn Curran & Laaencoorie) & others

Overview Murray River bloom

- 115 days (18 Feb – 15 Jul 2016)
- 41 townships = 120K population + tourist population
- 1330km Murray + lakes, estuaries
- 6 water agencies involved
- Whole of government response



Overview Murray River bloom

- Declared 'Class 2 emergency' by Emergency Management Victoria
- *Emergency Management Act 2013* definition:
 - “a major emergency”
 - “potential for significant adverse consequences for a part of the Victorian community, requires involvement of 2 or more agencies”*
- Control of incident subsequently handed to EMV Commissioner (Craig Lapsley)



Overview Murray River bloom



Murray River March 2016 (source: Leanne Wells)

Governance

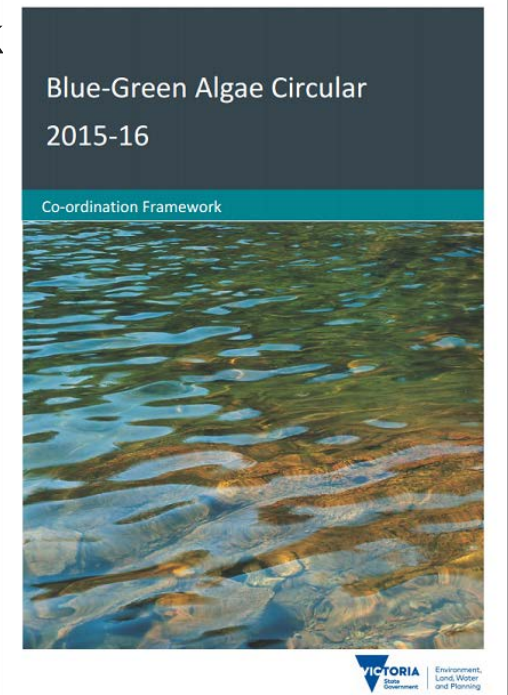
- DHHS Water Program

Provision of safe drinking
water: *Safe Drinking Water Act*
2003

Advice relating to health risk from
recreational water use: *Public*
Health & Wellbeing Act 2008

Governance

- NSW DPI waterway manager
- Department of Environment, Land, Water and Planning (DELWP): Victorian State Co-ordinator for BGA management
- Established roles and responsibilities - protocol in place via BGA Circular Co-ordination Framework
- Regional Co-ordination plans
- 'Water Industry BGA Portal'

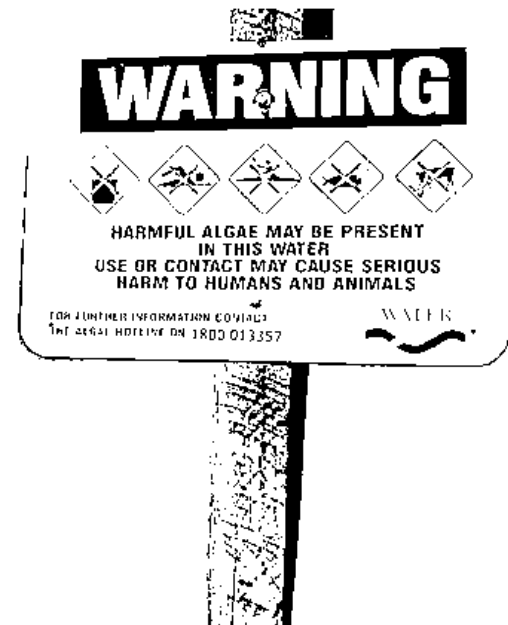


Trigger levels (BGA Circular)

	Drinking water	Recreational water
Total combined biovolume of known toxic cyanobacteria species	$\geq 0.6 \text{ mm}^3/\text{L}$	$\geq 4 \text{ mm}^3/\text{L}$
Total combined biovolume of all cyanobacteria species	$\geq 10 \text{ mm}^3/\text{L}$	$\geq 10 \text{ mm}^3/\text{L}$

Impacts on community

- Drinking water affected
- Where treatment plants weren't capable of removing BGA, water supplies were turned off, water carted into these towns
- Stage 4 restrictions introduced in some towns



Impacts on business

- Water suppliers
- Farmers facing potentially reduced access to water for livestock and crops
- BGA affected water and use on crops
- Tourism industry
 - recreational water users
 - fishing
 - houseboats

DHHS response

- Key role in providing public health advice to the community
 - Avoid drinking algae affected water
 - Avoid direct skin contact
 - Do not eat molluscs, gut and gill fish before consumption
- Technical advice to local government through REHOs
- CHO advisory issued 11 March 2016 & 17 June 2016
- Health surveillance system established
- BGA workshop for water agencies

Challenges

- NSW waterway manager, VIC tourism / business
- Complex nature of BGA
- Emergency?!
- Surge capacity / business continuity
- Skills & knowledge



Cobram 18/03/16 (source: Leanne Wells)

?? Can we expect increased likelihood, magnitude and duration of future blooms??

Thank you!

Water Program

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