

Harmful algal bloom resources for Queensland

Queensland Water Annual Forum

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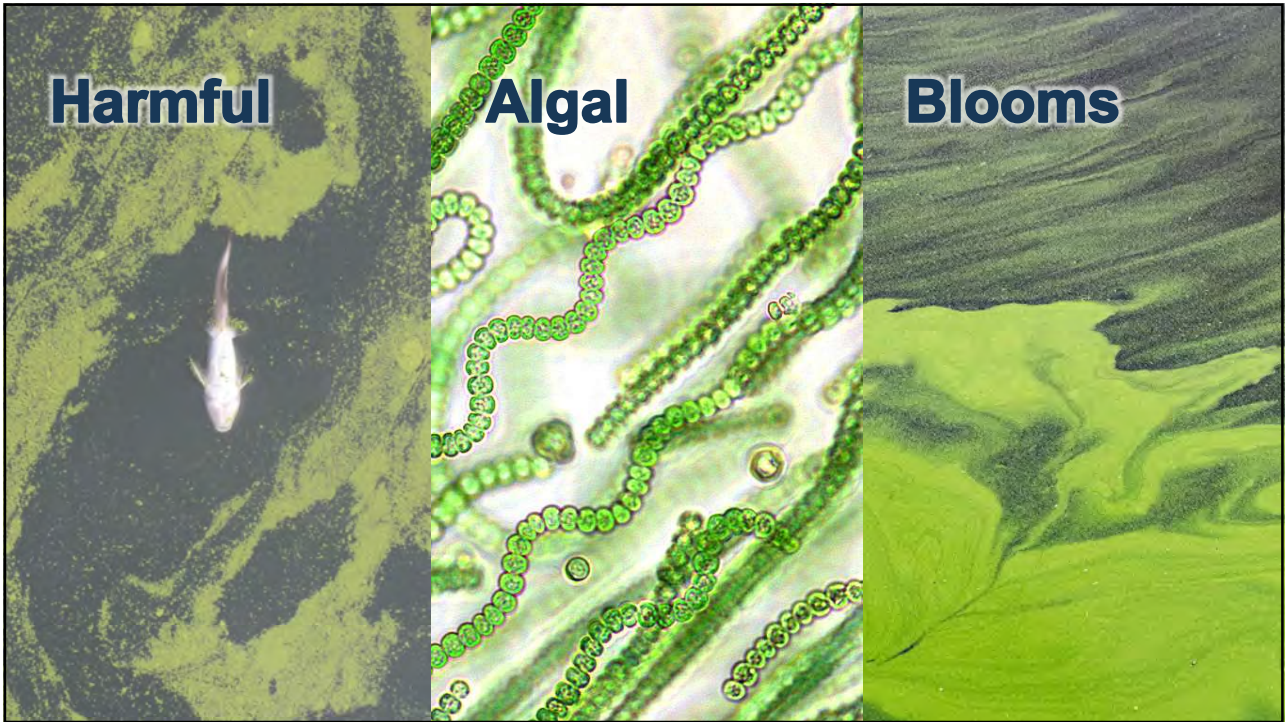
What would you do if this was your reservoir?



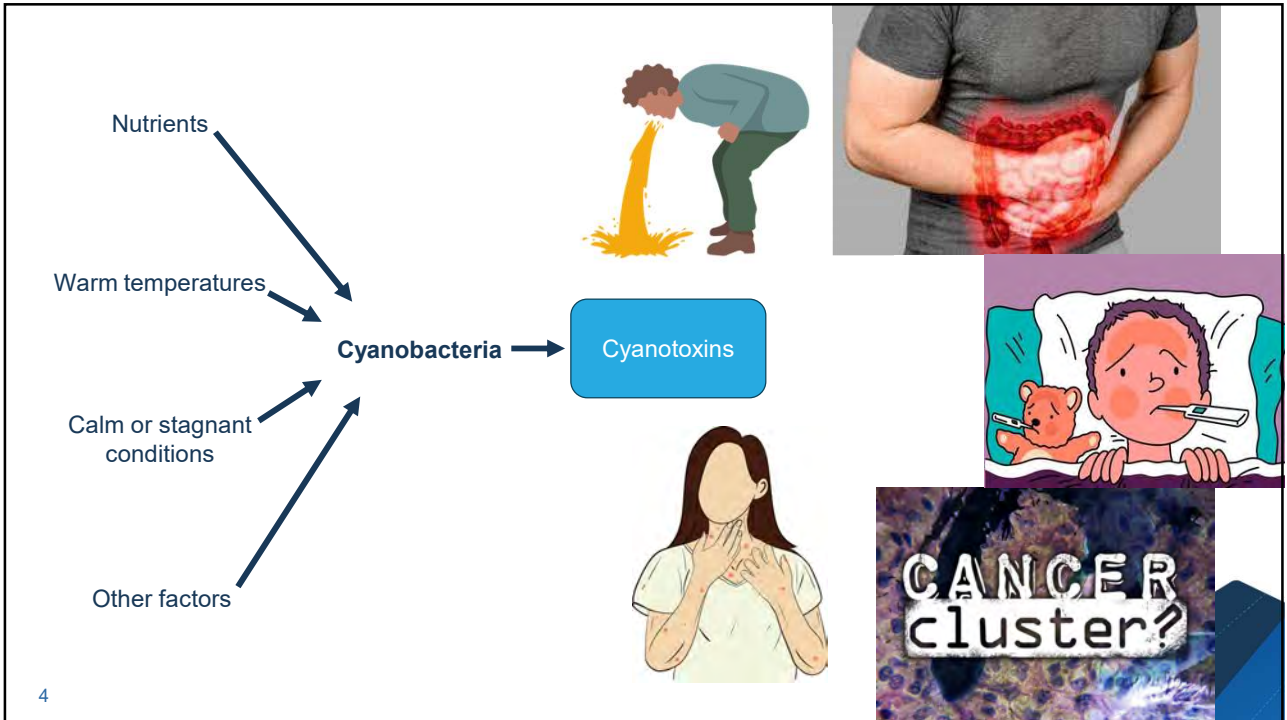
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Source: ABC News

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How can operators get help with HABs?

- Experience
- Freely available resources
- Australian Drinking Water Guidelines (ADWG)

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How can operators get help with HABs?

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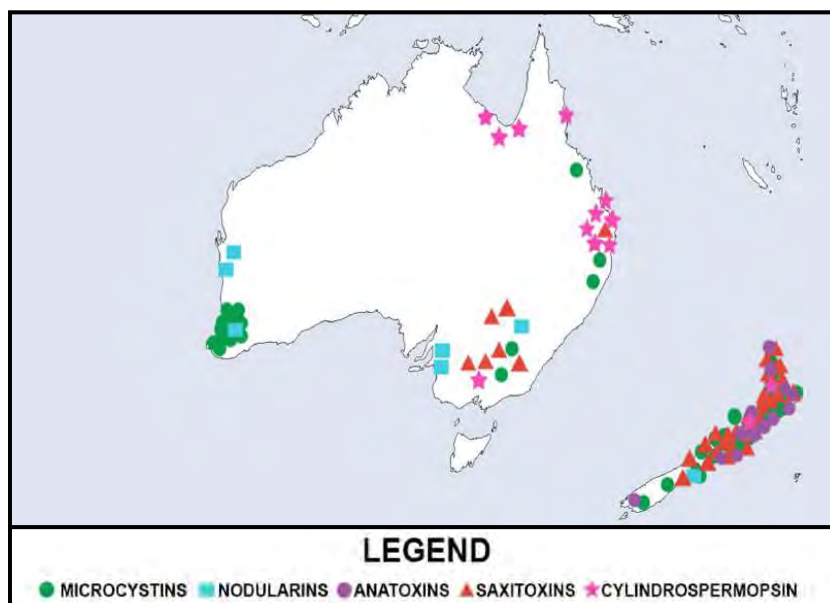
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THIS WATER DOES NOT ...
If you collect cyanobacteria (mustard) ...
Department of the Environment and Heritage
www.dock.wa.gov.au/algal-bloom

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Distribution of cyanotoxins in Australia and New Zealand



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How can operators get help with HABs?

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ADWG

- Advice on preventing HABs
- Guideline value for a cyanotoxin
- Evidence-based notification and alert levels
 - Alert level: health effects may occur
 - Notification level: ~1 week until health effects may occur



Have you tried reading pages 33-34, 96-99 and 355-376 of the ADWG (version 3.8)?

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Workshopping the issue



DESI



Queensland Water Directorate



Regulators



Bulk water suppliers



Laboratory



Academics



Consultant



Griffith Uni Australian Rivers Institute

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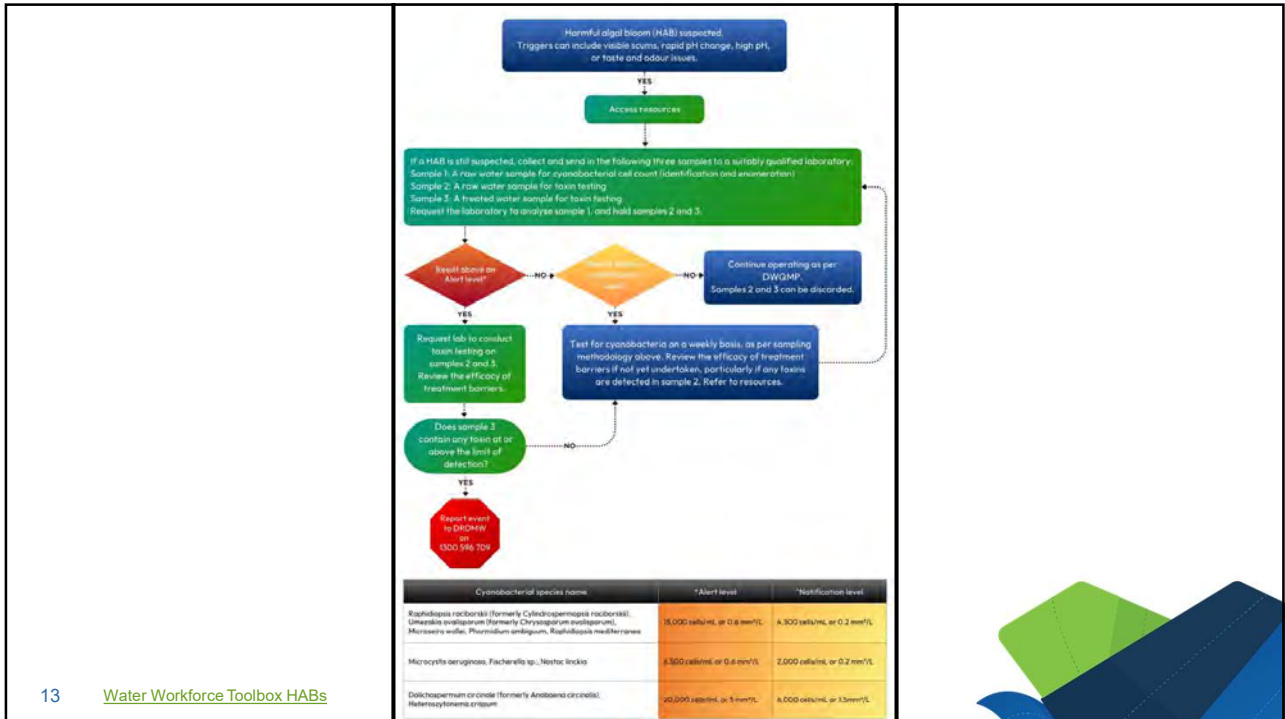
Workshop findings

- Parts of the water industry face:
 - Knowledge access gaps
 - Resourcing issues for repeated sampling
 - Competing priorities
 - etc...
- Issues with timely analysis at laboratories



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Principles of the HAB Action plan

For schemes where HABs are not addressed in their plan

- If you think you have a HAB, refer to some resources
- Submit raw and treated water samples to the lab
- **Notify the regulator if *any* toxin is found**

[Hosted on qldwater website](#)

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QH HAB FAQ

HAB 101 for public health and water professionals in Queensland

- Aimed at QH Environmental Health professionals and the water industry
- Summarises key information from ADWG and other authoritative sources
- 9 pages!

[Can seafood from HAB affected waters be eaten?](#)

[What should a drinking water service provider \(DWSP\) do if a HAB is detected in drinking water sources or storages?](#)

[How are HABs measured?](#)

[What if algae or toxins are detected in treated water storages or the reticulation network?](#)

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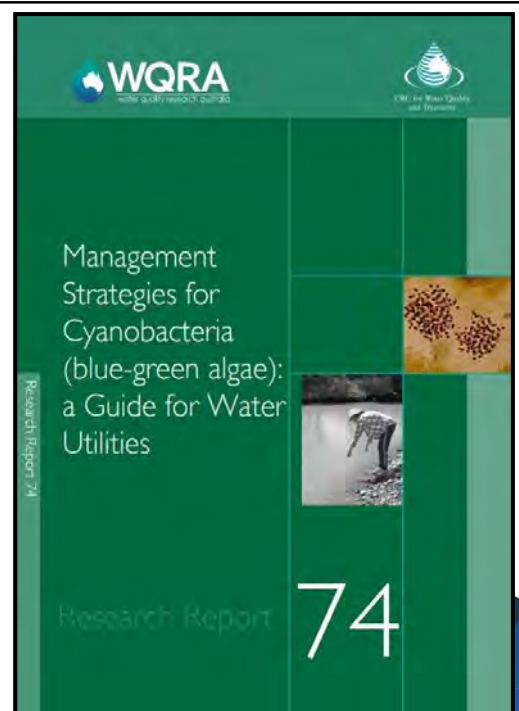
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Management strategies

For discerning manager or operator

- Formed the basis of ADWG advice
- Detailed
- Lots of experience from South Australia
- Uses old names

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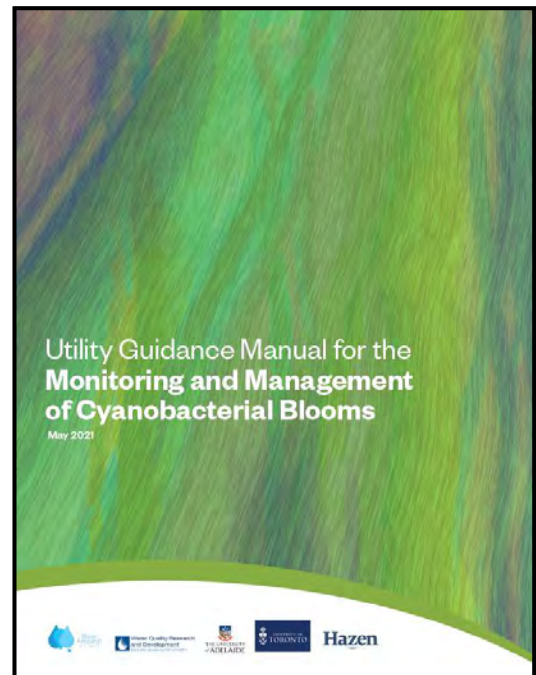


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Utility Guidance Manual

For operators and managers who want to make decisions about HAB management

- Designed by utilities, for utilities
- Provides general advice on cost, TAT, expertise needed
- Less words, more pictures and diagrams
- Has a focus on benthic cyanobacteria and ATP monitoring



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Cyanotoxins HATE this spreadsheet!

This local WTP went from
10 µg/L toxins in raw water to
0 µg/L in treated water using
this **ONE WEIRD
SPREADSHEET**



>LEARN HOW<

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Photo is for illustrative purposes only

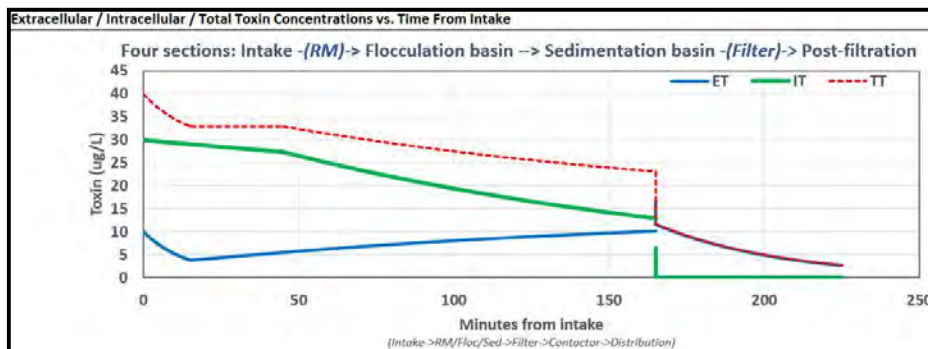
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Hazen Adams CyanoTOX Version 3.0



Answers the question: How much oxidant do I need to remove cyanotoxins?

- Outputs: Cyanotoxin removal % and concentration, estimated CT or CT needed to achieve target
- Can adjust for baffle factor, oxidant half life etc



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List of Queensland algae labs

Algae Labs

Where to get your testing done

Lab name	Phone	Email	Website	Address
Townsville Laboratory Services	4727 8666	labenquiries@townsville.qld.gov.au	Townsville Laboratory Services	421 Angus Smith Dr, Douglas QLD 4814
Ecoscope	4926 0630	ecoscope@bigpond.net.au	Ecoscope	79 Elphinstone Street, Berserker QLD 4701
ALS Environmental	3243 7222	ALSEnviro.Brisbane@alsglobal.com	ALS Global	2 Byth Street, Stafford QLD 4053
ALS Environmental	4773 0000	ALSEnviro.Townsville@alsglobal.com	ALS Global	13 Carlton Street, Kirwan QLD 4817
Symbio Laboratories	1300 703 186	Admin@symbiolabs.com.au	Symbio Labs	52 Brandl Street, Eight Mile Plains QLD 4113
Queensland Health	3096 2850	Rebecca.Morgan3@health.qld.gov.au or Karen.Reardon@health.qld.gov.au	Queensland Health Water Testing	39 Kessels Road, Coopers Plains QLD 4108, Australia
Biosecurity Sciences Laboratory		bsiclo@daf.qld.gov.au	Biosecurity Services	Health and Food Sciences Precinct, 39 Kessels Road, Coopers Plains, QLD 4108
SAS	3856 7550	SASLAB@urbanutilities.com.au	SAS Laboratory Services	180 Ashridge Road, Darra QLD 4076
City of Gold Coast Scientific Services Laboratory	5581 1960	scientificservices@goldcoast.qld.gov.au	Gold Coast Scientific Services	Smart Water Research Centre, Southport QLD 4215

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Article | Published: 30 September 2021

Challenges of managing harmful algal blooms in US drinking water systems

Galen Treuer , Christine Kirchoff, Maria Carmen Lemos & Francesca McGrath

Nature Sustainability 4, 958–964 (2021) | [Cite this article](#)

- “Water managers who experienced HABs rate them as more difficult to manage than do those with no previous HAB experience”
- “Managers in systems that experience HABs become increasingly reliant on internal resources... ..rather than reaching out for external sources of information and technology”

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<https://www.nature.com/articles/s41893-021-00770-y>

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What would you do if this was your reservoir?



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Source: ABC News

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Website layout

- HAB action plan
- QH FAQ
- Management strategies document
- Utilities Guidance Manual
- Hazen Adams calculator
- ADWG
- Algae lab contact list
- Recordings of webinars

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Thank you for listening

This work was supported by:

DRDMW

DESI

qldwater

Sunwater

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