

Updates

EPA Health Advisories – June 2015



Advanced Search

A-Z Index

LEARN THE ISSUES

SCIENCE & TECHNOLOGY

LAWS & REGULATIONS

ABOUT EPA

SEARCH

Newsroom

Contact Us Share

You are here: [EPA Home](#) » [Newsroom](#) » [News Releases By Date](#) » EPA Issues Health Advisories to Protect Americans

News Releases By Date

EPA Issues Health Advisories to Protect Americans from Algal Toxins in Drinking Water

Release Date: 05/06/2015

Contact Information: Robert Daguillard, daguillard.robert@epa.gov, 202-564-6618, 202-564-4355

WASHINGTON – The U.S. Environmental Protection Agency (EPA) today issued health advisory values that states and utilities can use to protect Americans from elevated levels of algal toxins in drinking water. Algal blooms in rivers, lakes, and bays sometimes produce harmful toxins. Because utilities often use these water bodies as sources of drinking water, EPA has determined algal toxin levels in tap water that are protective of human health based on the best available science. EPA is also recommending how utilities can monitor and treat drinking water for algal toxins and notify the public if drinking water exceeds protective levels.

Search this collection of releases | or search all news releases

Get news releases by email

View selected historical press releases from 1970 to 1998 in the EPA History website.

Recent additions

09/23/2015 [Kansas City and St. Louis, Mo., and State of Missouri to Receive](#)

Safe Drinking Water Act Amendments -2015

Drinking Water Protection Act

(Sec. 2) This bill amends the Safe Drinking Water Act to direct the Environmental Protection Agency (EPA) to develop and submit to Congress a strategic plan for assessing and managing risks associated with algal toxins in drinking water provided by public water systems. Cyanobacteria, also known as blue-green algae, have the ability to produce cyanotoxins, or algal toxins. When certain conditions are favorable, algae can rapidly multiply causing blooms, or dense surface scums, that may be toxic.

The plan must include steps and time lines to:

- evaluate the risk to human health from drinking water contaminated with algal toxins;
- establish, publish, and update a comprehensive list of algal toxins that may have an adverse effect on human health, taking into account likely exposure levels;
- summarize the known adverse human health effects of algal toxins and the factors that cause toxin-producing cyanobacteria and algae to grow rapidly and make toxins;
- determine whether to publish health advisories for algal toxins and establish guidance regarding feasible analytical methods to quantify the presence of algal toxins and guidance regarding the frequency of monitoring necessary to determine if the algal toxins are present;
- recommend feasible treatment options, including procedures, equipment, and source water protection practices; and
- enter into cooperative agreements with, and provide technical assistance to, affected states and public water systems to manage risks associated with algal toxins.

Chowan River Bloom - 2015

Harmful Algal Bloom Health Risk Evaluation - Cyanobacteria

Date: 9/19/15
Location: Chowan River; Bertie County
Bloom Organism: Microcystis aeruginosa
Microcystin concentration: 54.39 µg/L Cyanobacterial abundance: Not Available cells/ml Chlorophyll-*a* Concentration: Not Available µg/L

Probability of acute health effects by cyanobacteria abundance, microcystin concentration, and chlorophyll-*a* concentration based on World Health Organization guideline values for recreational activities¹:

Probability	Microcystin Concentration	Cyanobacterial Abundance	Chlorophyll- <i>a</i>
Low	< 10 µg/L	< 20,000 cells/ml	< 10 µg/L
Moderate	10 - 20 µg/L	20,000 - 100,000 cells/ml	10 - 50 µg/L
High	<u>20 - 2,000 µg/L</u>	100,000 - 10,000,000 cells/ml	50 - 5,000 µg/L
Very High	> 2,000 µg/L	> 10,000,000 cells/ml	> 5,000 µg/L

N.C. DHHS recommends the following steps to safeguard pets and children from harmful cyanobacterial (blue-green algal) blooms²:

- Keep children and pets away from waters that appear discolored or scummy.
- Do not handle or touch large accumulations ("scums" or mats) of algae.
- Do not water ski or jet ski over algal mats.
- Do not use scummy water for cleaning or irrigation.
- If you accidentally come into contact with an algal bloom, wash thoroughly with soap and water.
- If your pet appears to stumble, stagger, or collapse after being in a pond, lake or river, seek veterinary care immediately.
- If your child appears ill after being in waters containing a bloom, seek medical care immediately.
- If you are unsure whether or not a bloom is present, it is best to stay out of the water.

Comments:

Microcystin is the most frequently observed and tested cyanotoxin. Other cyanotoxins may or may not be present such as cylindrospermopsin, anatoxin-*a*, and saxitoxin.

High Probability of adverse health outcomes due to microcystin toxin

References:

¹ <http://www2.epa.gov/nutrient-policy-data/guidelines-and-recommendations>

² <http://epi.publichealth.nc.gov/oee/algae/protect.html>

MMS 9/18/15



Upcoming Webinar

Watershed Academy Webcast on Implementing Low-Cost Modifications to Improve Nutrient Reduction at Wastewater Treatment Plants

Please join us for a webcast on October 15 at 1:00pm to 3:00pm Eastern on a recently released draft report on "[Case Studies on Implementing Low-Cost Modifications to Improve Nutrient Reduction at Wastewater Treatment Plants](#)."

As many studies have shown, nutrient pollution is one of America's costliest and most challenging water quality problems. However, many of the nation's wastewater treatment plants (WWTPs) were not designed for nutrient removal and major retrofits may be a significant hurdle. The recent EPA draft report showcases a number of communities that were able to achieve better nutrient treatment at WWTPs through relatively low-cost modifications without requiring costly infrastructure upgrades. Nitrogen discharge levels in 12 case study plants were reduced by about 20 to 70%. Two case studies also documented low-cost phosphorus reduction of 40 to 58%. In many cases, these facilities also reduced energy consumption and lowered operational costs. The webcast will give listeners a broad overview of the report, and will highlight two of the case studies in Crewe, VA and Victor Valley, CA.

EPA is also interested in learning of additional communities' successes and intends to update this document to help more of the nation's WWTPs make progress towards additional nutrient reductions. Comments and additional case studies can be submitted by December 15, 2015 to POTWOptiNP@epa.gov. The draft report is available at: <http://www2.epa.gov/nutrient-policy-data/reports-and-research#reports>.

Register today.



Data Summaries

1. Overview of NC reservoir/lakes data – *completed*
2. Overview of Albemarle Sound data – *ongoing*

Estuarine Literature Review

- Itemized lists, DOIs, groupings of scientific literature/reports regarding nutrients in estuaries – *not quite finished*

High Rock Lake: Criteria Development - *under consideration*

Reservoir and Lakes Data Summary

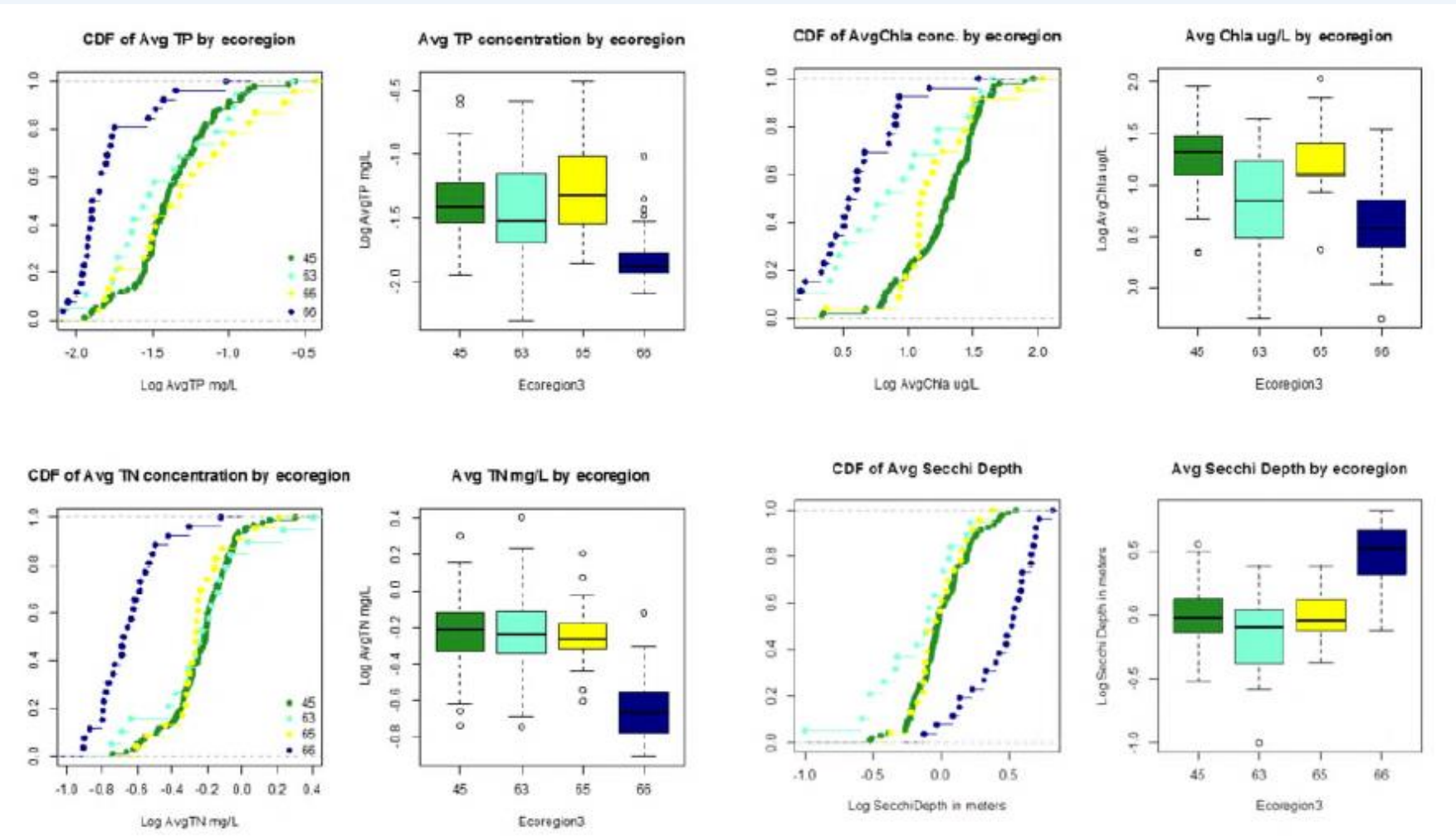


Figure 7. Classification of NC lakes by ecoregions in relation to nutrient, chlorophyll concentrations and Secchi depth (m). All variables are log₁₀-transformed, explaining the negative values. Ecoregions are: 45 – Piedmont, 63 – Middle Atlantic Coastal Plain, 65 – Southeastern Plains, and 66 – Blue Ridge (See Figure 1)

Literature Review - Estuaries

EndNote X7 - [NSTEPS_Lit_Review_09-02-15_No_attachments]

File Edit References Groups Tools Window Help

Annotated Quick Search Hide Search Panel

My Library

- All References (3962)
- Unfiled (2698)
- Trash (0)
- Smart Groups (1198)
- Causal Pathways (377)
- Endpoints
 - Benthics/Inverts (91)
 - Blooms/HABs (194)
 - Clarity/Light Attenuation (115)
 - Diatoms (49)
 - DO/Hypoxia (165)
 - Epiphytes (74)
 - Fish (54)
 - Macroalgae (172)
 - Nitrogen forms (330)
 - Phosphorus forms (188)
 - Phytoplankton/Chla (265)
 - SAV/Seagrass/Eelgrass (242)
- Approaches (313)
- Geographical Areas
 - Albemarle (4)
 - Chesapeake Bay (109)
 - Florida (179)
 - Massachusetts (100)
 - New Hampshire/Great Bay (13)
 - North Carolina (48)
 - Northeast Estuaries (44)
 - Other Estuaries (83)
- Documents (109)
- Other (100)

Search Options

Author Contains

Author	Year	Title	Journal	Last Updated	Abstract
	1998	New Source of Fish Fears	Environmen...	9/2/2015	
	2011	Charlotte Harbor		9/2/2015	
Aalto, S. L.; Kaski, O.; Salonen, K...	2013	Responses of algae, bacteria, Daphnia and natura...	Hydrobiologia	9/2/2015	Understanding responses of parasites to changes in nutrient regime...
Abal, E.G., and W.C. Dennison	1996	Seagrass depth range and water quality in south...	Marine and ...	9/2/2015	
Abdelaziz, A. E. M.; Leite, G. B.; ...	2013	Addressing the challenges for sustainable produ...	Environmen...	9/2/2015	Microalgae hold promise for the production of sustainable replacem...
Abdelaziz, A. E. M.; Leite, G. B.; ...	2013	Addressing the challenges for sustainable produ...	Environmen...	9/2/2015	In order to ensure the sustainability of algal biofuel production, a nu...
Abdelrhman, M. A.; Cicchetti, G.	2012	Relationships between Nutrient Enrichment and Be...	Estuaries and...	9/2/2015	Eutrophication-induced changes to benthic faunal activities are proble...
Abdenadher, M.; Hamza, A.; Feki...	2012	Factors determining the dynamics of toxic blooms ...	Estuarine Co...	9/2/2015	Many blooms of the toxic dinoflagellate Alexandrium minutum have be...
Abell, J. M.; Ozkundakci, D.; Ha...	2010	Nitrogen and Phosphorus Limitation of Phytopla...	Ecosystems	9/2/2015	We examine macronutrient limitation in New Zealand (NZ) lakes wh...
Abell, J. M.; Ozkundakci, D.; Ha...	2012	Latitudinal variation in nutrient stoichiometry an...	Fundamenta...	9/2/2015	We present analysis of variations in relationships between nitrogen (...)
Abramic, A.; del Rio, J. G.; Marti...	2012	Evaluation of the possibility for phytoplankton m...	Marine Pollu...	9/2/2015	The Water Framework Directive, under the European Legislation, re...
Abukawa, K.; Yamamuro, M.; Ki...	2013	Assessing the biomass and distribution of subme...	Limnology	9/2/2015	Here we report on an advanced survey system that combines multib...
Acosta, A.; Bartels, C.; Colvocores...	2007	Fish assemblages in seagrass habitats of the Florida...	Bulletin of M...	9/2/2015	Seagrass beds of the Florida Keys National Marine Sanctuary (FKNMS) h...
Adamack, Aaron Thomas	2003	Quantifying habitat quality of larval Bay Anchovy...	The Depart...	9/2/2015	Larval bay anchovy (Anchoa mitchilli) habitat quality in Chesapeake B...
Adams, S. M.; Greeley, M. S.	2000	Ecotoxicological indicators of water quality: Usin...	Water Air an...	9/2/2015	As sensitive and ecologically relevant measures of environmental co...
ADEM	2010	Final Total Maximum Daily Load (TMDL) Perdido ...		9/2/2015	
Adey, W. H.; Laughinghouse, H. ...	2013	Algal turf scrubber (ATS) flowways on the Great Wic...	Journal of Ph...	9/2/2015	Two Algal Turf Scrubber (ATS) units were deployed on the Great Wicom...
Adolf, Jason E.; Bachvaroff, Tsvet...	2008	Can cryptophyte abundance trigger toxic Karlodini...	Harmful Algae	9/2/2015	Karlodinium veneticum is a common member of the phytoplankton in ...
Adolf, J. E.; Yeager, C. L.; Miller, ...	2006	Environmental forcing of phytoplankton floral co...	Estuarine Co...	9/2/2015	We examined environmental forcing of floral composition, biomass as c...
Afeworki, Y.; Videler, J. J.; Brug...	2013	Seasonally changing habitat use patterns among ...	Coral Reefs	9/2/2015	Coral reefs are characterized by intense herbivory. Spatial patterns i...
Affonso, A. G.; Barbosa, C.; Nov...	2011	Water quality changes in floodplain lakes due to ...	Brazilian Jou...	9/2/2015	Assurance of water quality for human consumption is essential for p...
Ahern, J.; Lyons, J.; McClelland, J...	1995	INVERTEBRATE RESPONSE TO NUTRIENT-INDU...	Biological B...	9/2/2015	
Ahern, Kathleen S.; Ahern, Colin ...	2007	Nutrient additions generate prolific growth of Lyng...	Harmful Algae	9/2/2015	Nutrients such as bioavailable iron, phosphorus and nitrogen have been...
Ahern, Kathleen S.; Ahern, Colin ...	2008	In situ field experiment shows Lyngbya majuscula (...)	Harmful Algae	9/2/2015	Coastal waters worldwide have experienced an increase in the occurrenc...
Ahmadi, M.; Records, R.; Arabi, M.	2014	Impact of climate change on diffuse pollutant fl...	Hydrological...	9/2/2015	This study aims to assess watershed-scale impacts of changing climat...
Ahn, Y. H.; Shanmugam, P.	2006	Detecting the red tide algal blooms from satellit...	Remote Sen...	9/2/2015	Over the last few decades, the coastal regions throughout the world...
Ahn, Y. H.; Shanmugam, P.; Ryu,...	2006	Satellite detection of harmful algal bloom occur...	Harmful Alg...	9/2/2015	Cochlodinium polykrikoides (p) is a planktonic dinotlagellate known t...
Ajani, P.; Brett, S.; Krogh, M.; Sca...	2013	The risk of harmful algal blooms (HABs) in the oyst...	Environment...	9/2/2015	The spatial and temporal variability of potentially harmful phytoplanko...
Ake-Castillo, J.A.; Vazquez, G.	2008	Phytoplankton variation and its relations to nutri...	Estuarine, C...	9/2/2015	
Aksu, M.; Basaran, A. K.; Egeme...	2011	INVESTIGATION OF WATER QUALITY TRENDS O...	Fresenius En...	9/2/2015	The Tahtali reservoir is the biggest surface freshwater to supply pot...
Al-Azri, A. R.; Piontkovski, S. A.; A...	2014	Mesoscale and Nutrient Conditions Associated wit...	Estuaries and...	9/2/2015	Cochlodinium polykrikoides formed large blooms in the coastal waters ...
Alber, M., J. Flory, and K. Payne	2005	Assessment of Coastal Water Resources and Wat...		9/2/2015	
Albert, K. R.; Bruhn, A.; Ambus, P.	2013	Nitrous oxide emission from Ulva lactuca incuba...	Journal of E...	9/2/2015	Biomass yields from some species of macroalgae exceed the yields i...
Albert, S.; Udy, J.; Tibbetts, I. R.	2008	Responses of algal communities to gradients in h...	Coral Reefs	9/2/2015	Settlement tiles were used to characterise and quantify coral reef a...
James Albright	2008	Fecal Coliform TMDL for the Klosterman Bayou ...		9/2/2015	

High Rock Lake Water Quality Goal

To provide for the protection of designated uses in the HRL reservoir by defining and proposing the appropriate level of algal related indicators for each of the following uses:

- Aquatic Life
- Fishing
- Fish Consumption
- Wildlife
- Secondary Recreation (e.g. wading, boating)
- Agricultural uses (e.g. irrigation)
- Water Supply
- Lower lake: Primary Recreation – full human body contact (e.g. swimming, water skiing)

