

# Monitoring and Prediction of Cyanobacteria to Protect Public Health in Oregon

Richard Whitman, Director  
Oregon Department of  
Environmental Quality



OREGONLIVE  
The Oregonian

## Future of blue-green algae in Willamette River still uncertain; users frustrated



Volunteers for the Oregon Health Authority have put up warning signs in Willamette, Sellwood, Westwood, and East Side Parkwater paths. These signs caution their users against drinking or cooking with the water due to blue-green algae bloom, which can produce harmful toxins. (Photo: Kungu)

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## Algae Bloom In Willamette River Swimming In Portland Triathlon

OPB | Sept. 19, 2014 12:51 p.m. | Updated: Sept. 19, 2014 3:43 p.m. | Photo

The Portland Triathlon has been a toxic swim floating around in the Willamette River.

Event organizers decided Friday to Portland health officials announced blue and green algae bloom between is harmful.

"The city and state Willamette River definitive safe to swim information. "Because the information is incomplete side of safety for all our athletes."

As OPB's Kristian Foden-Venell reports, types of algae can create a numb, lead to difficulty breathing or heart.

Instead of swimming to running to a mile run followed by the bicyclist designated swimmer will now run.

CONTRIBUTED BY  
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PART OF SERIES  
OPB News Blog

May 29, 2018

## City of Salem issues drinking water advisory



Late this afternoon, the city of Salem issued the following press release regarding a "Do Not Drink" notice for tap water in the cities of Salem, Turner, Suburban East Salem Water District, and Orchard Heights Water Association. The city is recommending that vulnerable people including infants, children under six, people with compromised immune systems, people receiving dialysis treatment, people with pre-existing liver conditions, pets, pregnant women or nursing mothers, or other sensitive populations should follow this advisory. Everyone may use tap water for showering, bathing, washing hands, washing dishes, flushing toilets, cleaning and doing laundry. Please see the full press release below for more information or visit cityofsalem.net.



### DRINKING WATER ADVISORY

City of Salem: MAY 29, 2018,  
**CYANOTOXINS PRESENT IN DRINKING WATER DO NOT DRINK THE TAP WATER – INFANTS, YOUNG CHILDREN AND OTHER VULNERABLE INDIVIDUALS**  
Applies to City of Salem, City of Turner, Suburban East Salem Water District, and Orchard Heights Water Association.

**WHY IS THERE AN ADVISORY?** Low levels of cylindrospermopsin and microcystin (cyanotoxins) have been found in treated drinking water. These toxins are created by algal blooms in the source of City of Salem drinking water, Detroit Reservoir. To ensure the greatest quality of drinking water, City of Salem voluntarily samples for such toxins during algal events. Samples were collected on May 23, 2018, and May 25, 2018.

## Toxic algae forces cancellation of Portland regatta

By Reuters  
September 23, 2014 8:00 PM

By Courtney Sherwood

PORTLAND Ore. (Reuters) - A regatta fundraiser that was expected to draw hundreds of crew-rowing competitors to downtown Portland this weekend has been canceled because of the presence of toxic blue-green algae on the Willamette River, organizers said on Thursday.

"It was too risky, there are too many people out there with compromised immune systems," said Row for the Cure event co-chair Juanita Cham-



Business makes their way along the Willamette River during a heavy morning fog in Portland, Oregon (AP Photo)

## Blue-green algae bloom kills 32 cattle in S. Oregon

Ranchers should be diligent and check all water sources for anything atypical if they see anything suspicious, they should keep livestock away from the water and call the local OSU Extension office. Not all blue-green algae is toxic.

By Abby Hall - Capital Press  
Published on July 12, 2017 10:25AM  
Last changed on July 12, 2017 10:55AM



A blue-green algae bloom in a Lake County, Ore., pond killed 32 cattle. Though not all blooms are toxic, ranchers and others should report any outbreaks so they can be tested.

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## Two more dogs die from blue-green algae in South Umpqua River

Updated Aug 17, 2011; Posted Aug 17, 2011

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By Lynne Terry, lterry@oregonian.com  
The Oregonian/OregonLive



Oregon Department of Environmental Quality Pools of water in the Myrtle Creek area of the South Umpqua River tested positive for blue-green algae. Two dogs died in July after playing with their owners around the South Umpqua River, marking what officials believe is yet another summer of dog deaths due to blue-green algae. Two other dogs died -- one in 2009 and another in 2010 -- after playing near the river in southern Oregon. Veterinarians confirmed that they were killed by toxins produced by blue-green algae in the river.

## Dogs sickened by algae toxins in Willamette River

Rachel Chisholm, KGW Staff  
A dog in 2014 September 2014

PORTLAND, Ore. - State health officials issued a warning last week about toxic blue-green algae in the Willamette River that can make animals and humans sick. While the agency cannot guarantee whether any people have gotten sick from it, KGW has learned that several dogs have become ill.

Portland veterinarians hospital after being exposed

Algae were also found along the river last Friday warning people to keep their children and their pets away from the river.

Toxic bloom levels of toxins in the water were 10 to 70 times higher than safe levels. The toxin can make people sick but they can be healthy for dogs.

Woman suspected of T-bulldozers arrested in Vancouver  
Police: Man exposed himself to woman on MAX train  
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HAB in downtown Portland, Oregon. *Credit: Photo courtesy of the Oregon Public Health Division*



# Salem Cyanotoxin Incident

- 33 days of Do Not Drink Advisory for vulnerable population.
- Local emergency response with State support.
- City, County and National Guard operated bulk water distribution sites, some operated 24/7.
- City engineering consultants installed powdered activated carbon pre-treatment within weeks.
- New OHA cyanotoxin emergency rules adopted within 3 weeks.





# Advisory Levels

*Oregon Health Authority*

## Recreational Use Guidance Values:

**Table 2.** Health advisory RUVs for cyanotoxins in Oregon recreational waters ( $\mu\text{g/L}$ )

<i>RUVs*</i>	<i>Microcystin</i>	<i>Anatoxin-a</i>	<i>Saxitoxin</i>	<i>Cylindrospermopsin</i>
	8	15	8	15

\*See Appendix B for the detailed rationale behind these RUVs.

## Drinking water:

EPA and Oregon have established Health  
Advisory Levels for:

Cyanotoxin	For Vulnerable People (ppb)	For Age 6 and Above (ppb)
Total Microcystins	0.3	1.6
Cylindrospermopsin	0.7	3



# Monitoring for OHA's Drinking Water Rule

## OAR 333-061-0510 to 333-061-0580

- 60 facilities with cyanotoxins risk
- Bi weekly raw water sampling and analysis at DEQ Lab
  - Total microcystins and cylindrospermopsin by ELISA
  - Cylindrospermopsin confirmation by LC/MS/MS
- Raw water detections:
  - 24 hour confirmation sample
  - Weekly sampling of raw and finished water at entry point
- Finished water detections: Daily sampling finished in distribution system
- All costs covered by the State for analysis by DEQ Lab

