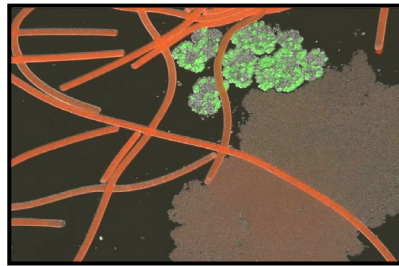


Freshwater HABs Newsletter



Lake Discovery, RTP, NC, September 13, 2018
Algae (green), Anabaena (red), Microcystis (gray-red). From Dr. Zucker, NHEERL, EPA

[City of Salem Water Advisory After-Action Assessment Final Report](#)

On September 14, the City of Salem published an After-Action Assessment report conducted by an independent company regarding the City of Salem's 2018 Drinking Water Advisory for cyanotoxins from May to July. The report lays out a timeline of what happened during the event as well as an assessment of what worked well, what did not, and lessons learned. The reports highlight the great work done by the City staff to protect public health and identified the areas that need improving such as deficiencies in communication, and the lack of action plans in responding to an emergency. The City is taking this report as an opportunity to learn from its response and to take steps to ensure that it is better prepared to handle future events.

UPCOMING EVENTS

[18th ICHA](#)

October 21-26, 2018
Nantes, France

[Cyanobacteria Twitter Conference - #cyanoTC2018](#)

October 24, 2018, 6:00pm EST

[NALMS 2018](#)

October 30 – Nov. 2, 2018
Cincinnati, Ohio

[NWQMC Webinar HABs Detection](#)

November 28, 2018
3:00 pm EST

Cyanobacteria Assessment Network (CyAN) Annual Science Meeting

From September 26-28, CyAN, a multi-agency project among NASA, NOAA, USGS, and EPA to develop an early warning indicator system using historical and current satellite data to detect algal blooms in U.S. freshwater systems, hosted an annual reporting and planning meeting in RTP, NC. The meeting focused on the transition from the NASA Ocean Biology Program to the NASA Applied Sciences Program, and to review and discuss FY18 work, and plans for work to be done during FY19. Representatives from EPA Regional Offices and Office of Water participated and provided summary reports on use of CyAN data and future plans of use. For more information on CyAN please visit the CyAN website [here](#).



In situ data (e.g. cyanobacteria counts) is used for the evaluation, validation, and refinement of the remote-sensing algorithm on multiple spatial and temporal scales. If you are interested in collaborating or want to learn more, please send an email to CyAN@epa.gov

Important Links

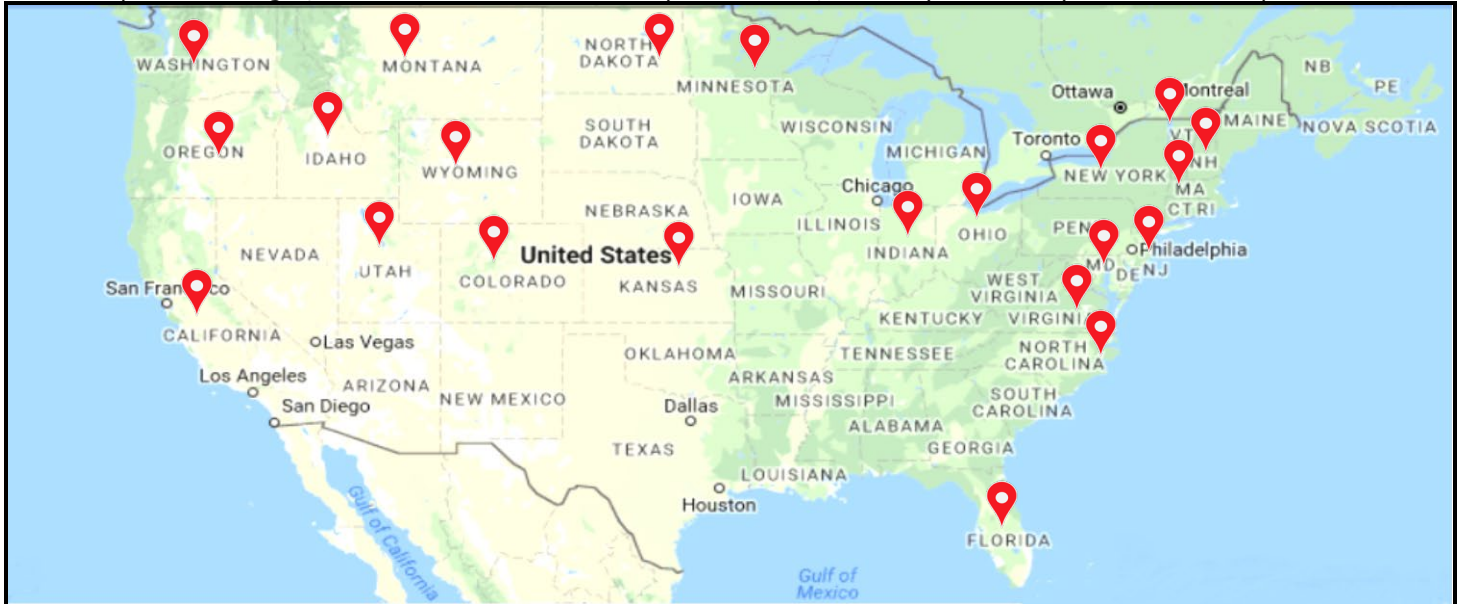
- ✓ [Congressional Research Service Report: Freshwater Harmful Algal Blooms: Causes, Challenges and Policy Considerations](#)
- ✓ [OCEANUS Article: The Recipe for a Harmful Algal Bloom](#)
- ✓ [ENVIRONMENTAL MONITOR Article: Water-Filter Pitchers Not Equally Effective at Removing Microcystins](#)
- ✓ [QAPP: Prevalence and Persistence of Cyanotoxins in Lakes of the Puget Sound Basin](#)
- ✓ [Scientists Uncover Genetic Basis for Toxic Algal Blooms](#)

Call for Presenters on HABs

The PA Lake Management Society (PALMS) is seeking abstracts for oral presentations at the 29th Annual PALMS Conference to be held March 6-7, 2019 at the Ramada Hotel and Conference Center, State College, PA. Abstract deadline is November 1, 2018.

BLOOMS, BEACH CLOSURES and HEALTH ADVISORIES, September 2018

The following map includes blooms, cautions, warnings, public health advisories, closings and detections over the State's threshold, due to the presence of algae, toxins or both. This is not a comprehensive list, and many blooms may have not been reported.



- **California (21):** Whiskeytown Lake, Wet Meadows Reservoir, Lake Elsinore, Red Lake, Salton Sea, Pyramid Lake, San Luis Reservoir, Lake Almaden, Lake Cunningham, Pilarcitos Creek, Quarry Lakes, Lake Chabot, Lake Temescal, Big Break River, Huichica Pond, Lake Berryessa, Swan Lake, Red Lake, Clear Lake, Klamath River, Iron Gate Reservoir
- **Colorado: (1)** Iola Basin section of Blue Mesa Reservoir
- **Idaho (7):** Lake Lowell, Lake Cascade, C.J. Strike Reservoir, Esther Simplot Park, Fernan Lake, Brownlee Reservoir, Salmon Falls Creek Reservoir
- **Indiana (13):** Low levels and Advisories (from August): Worster Lake, Lake James, Sand Lake, Mississinewa Lake, Salamonie Lake, Cecil M. Lardin Lake, Brookville Lake, Monroe Lake, Starve Hollow Lake, Deam Lake, Kunkel Lake, Whitewater Lake, Hardy Lake
- **Kansas (22):** Watches (Atchison County State Fishing Lake, Mary's Lake, Melvern Lake, Pomona Lake, Tomahawk Parkway North Pond, West Campus Pond on KU Campus); Warning (Atchison County Park Lake, Carbondale West Lake, Central Park Lake, Frazier Lake, Hodgeman County State Fishing Lake, Jerry Ivey Pond, Lake Afton, Lake Scott State Park Lake, Lake Wabaunsee, Lakewood Park Lake, Marais Des Cygnes Wildlife Area, Melvern Outlet Pond and Swim Pond, Overbrook City Lake, Rock Garden Pond Lake in Gage Park, South Lake Park; Webster Lake)
- **Florida (4):** Lake Mattie, Lake Okeechobee, New River, Caloosahatchee River (several areas), [Red Tide](#) (Pinellas County, Manatee, Sarasota, Lee, and Collier counties)
- **Maryland (3):** Sassafras River, Budds Landing, Fishing Bay (*Prorocentrum minimum*)
- **Massachusetts (6):** Cedar Lake, Sturbridge; Central Pond, Seekonk; East Monponsett Pond, Halifax; Hummock Pond, Nantucket; Hummock Pond, Nantucket; South Watuppa Pond, Fall River, Westport; Turner Reservoir, Seekonk
- **Montana (1):** Canyon Ferry Reservoir
- **New Hampshire (5):** Marsh Pond, Arlington Mill Reservoir, Salem; Showell Pond, Sandown; Country Pond, Kingston; Hunkins Pond, Sanbornton
- **New Jersey (14):** Deal Lake, Duck Pond, Weequahic Lake, Memorial Lake, Unnamed Lake Saddle River Park, Cupsaw Lake, Swartswood Lake, Little Swartswood Lake, Budd Lake, Spruce Run Reservoir, Southard Park Pond, Lake Hopatcong, Crystal Springs Pond, Boonton Reservoir
- **New York (77):** Agawam Lake, Barnum Pond, Beaver Dam Lake, Beaver Lake, Bedford Lake, Bradley Brook Reservoir, Brooks Lake, Butterfield Lake, Canandaigua Lake, Cayuga Lake, Cayuga Lake, Cazenovia Lake, Conesus Lake, Cossayuna Lake, Dead Lake, Dryden Lake, Duane Lake, Eagle Pond, Evens Lake, Fort Pond, Franklin Falls Pond, Georgica Pond, Gilbert Lake, Glenwood Lake, Goose Pond, Hatch Lake, Honeoye Lake, Hyde Lake, Kinderhook Lake, Kings Point Pond, Kirk Lake, Kissena Lake, Lake Casse, Lake Champlain, Lake Lincolndale, Lake Lucille, Lake Neatahwanta, Lake Ontario, Lake Oscaleta, Lake Rippowam, Lamoka Lake Channel, Lebanon Reservoir, Mariabille Lake, Marion Lake, Martlings Lake, Mill Pond (Watermill), Moon Lake, Moreau Lake, Morningside Lake, Morningside Pond, Muscoot Reservoir, North Sandy Pond, Oneida Lake, Orange Lake, Pleasure Lake, Prospect Park Lake, Putnam Lake, Roaring Brook Lake, Roth Pond, Saratoga Lake, Seneca Lake, Skaneateles Lake, Sleepy Hollow Lake, Smith Pond, Spring Lake, Summit Lake, The Lake in Central Park, Troy Reservoir, Turtle Pond, Turtle Pond Delta, Waneta Lake, Washington Park Pond, Wilcox Park North and South Ponds, Willowbrook Lake, Winding Hills Park Lake
- **North Carolina (7):** Pamlico River, Neuse River, Rocky River Reservoir, Albemarle Sound, Chowan River, Falls Lake, Falls of the Neuse Reservoir
- **North Dakota (10):** Advisories (Long Lake, Sweet Briar Dam, Lake Tschida, Antelope Lake, Harvey Reservoir, Bowman-Haley Reservoir, Lake LaMoure.); Warning (Belcourt Lake, Homme Dam)
- **Ohio (3):** Buckeye Lake, Grand Lake St. Marys, Chippewa Lake. From [satellite imagery on 9/19](#), microcystis cyanobacteria bloom continues in the western basin of Lake Erie from Maumee Bay east along the coast of Ohio to the Metzger Marsh Wildlife Area
- **Oregon (3):** South Umpqua River, Keno Dam and Upper Klamath Lake
- **Utah (8):** Deer Creek Reservoir, Manning Meadow Reservoir, Matt Warner Reservoir, Mill Meadow Reservoir, Otter Creek, Panguitch Lake, Utah Lake, Scofield Reservoir
- **Vermont (22):** Poutry Beach, Derby Bay, Ransoms Bay, Farrant Street Bluff Area, RPt DEC Old Beach, Newport City Docks, Highgate Springs, Strong House Lane, Phillipsburg Pelagic, Lake Carmi, Leddy Park, Texaco Beach, Alburgh, Pelots Points West, Shelburne Pond, Lake Salem, Savage Point, Hospital Creek, Blockhouse Point Rd, Dunham Bay, St. Albans Bay Park, Lake Morey,
- **Virginia (3):** Woodstock Pond, Ajacan Lake at the Vineyards, Pamunkey And North Anna Branches, Lake Anna
- **Washington (12):** Spanaway Lake, Potholes Lake, Scootney Reservoir, Pass Lake, Loses Lake, Wagner Lake, Cottage Lake, Lone Lake, Rufus Woods Lake, Anderson Lake, Lake Jeane, Waughop Lake
- **Wyoming (2):** Alcova Reservoir, Pathfinder Reservoir

RECENTLY PUBLISHED ARTICLES

[Removal of Microcystin-LR by a Novel Native Effective Bacterial Community Designated as YFMCD4 Isolated from Lake Taihu](#)

Fei Yang, Jian Guo, Feiyu Huang, Isaac Yaw Massey, Ruixue Huang, Yunhui Li, Cong Wen, Ping Ding, Weiming Zeng and Geyu Liang. *Toxins* 2018, 10, 363.

[Mixotrophic Microalgae Biofilm: A Novel Algae Cultivation Strategy for Improved Productivity and Cost-efficiency of Biofuel Feedstock Production](#)

Javad Roostaei, Yongli Zhang, Kishore Gopalakrishnan & Alexander J. Ochocki. *Scientific Report*, August 2018

[Screening of cyanobacterial cultures originating from different environments for cyanotoxicity and cyanotoxins](#)

Nada Tokodi, Damjana Drobac, Gospava Lazić, Tamaš Petrović, Zoran Marinović, Jelena Lujić, Tamara Palanački Malešević, Jussi Meriluoto, Zorica Svirčev. *Toxicon*, Volume 154, 2018, Pages 1-6.

[Genetic toxicity of water contaminated by microcystins collected during a cyanobacteria bloom](#)

Maria Tereza Pamplona-Silva, Letícia Cristina Gonçalves, Maria Aparecida Marin-Morales, *Ecotoxicology and Environmental Safety*, Volume 166, 2018, Pages 223-230.

[Fluorescence probes for real-time remote cyanobacteria monitoring: A review of challenges and opportunities](#)

Edoardo Bertone, Michele A. Burford, David P. Hamilton. *Water Research*, Volume 141, 2018, Pages 152-162

[Identifying aerosolized cyanobacteria in the human respiratory tract: A proposed mechanism for cyanotoxin-associated diseases](#)

Dominic N. Facciponte, Matthew W. Bough, Darius Seidler, James L. Carroll, Alix Ashare, Angeline S. Andrew, Gregory J. Tsongalis, Louis J. Vaickus, Patricia L. Henegan, Tanya H. Butt, Elijah W. Stommel. *Science of The Total Environment*, Volume 645, 2018, Pages 1003-1013.

[Enhancing photocatalytic degradation of the cyanotoxin microcystin-LR with the addition of sulfate-radical generating oxidants](#)

M.G. Antoniou, I. Boraie, M. Solakidou, Y. Deligiannakis, M. Abhishek, L.A. Lawton, C. Edwards. *Journal of Hazardous Materials*, Volume 360, 2018, Pages 461-470.

[Genotoxicity and cytotoxicity of three microcystin-LR containing cyanobacterial samples from Antioquia, Colombia](#)

Herrera Natalia, Herrera Carolina, Ortíz Isabel, Orozco Luz, Robledo Sara, Agudelo Diana, Echeverri Fernando, *Toxicon*, 2018

[Insights into cyanophage-mediated dynamics of nodularin and other non-ribosomal peptides in *Nodularia spumigena*](#)

Sigitas Šulčius, Hanna Mazur-Marzec, Irma Vitonytė, Kotryna Kvederavičiūtė, Jolita Kuznecova, Eugenijus Šimoliūnas, Karin Holmfeldt. *Harmful Algae*, Volume 78, 2018, Pages 69-74.

[Effective electrochemical inactivation of *Microcystis aeruginosa* and degradation of microcystins via a novel solid polymer electrolyte sandwich](#)

Belal Bakheet, Md Ashraful Islam, John Beardall, Xiwang Zhang, David McCarthy, *Chemical Engineering Journal*, Volume 350, 2018, Pages 616-626.

This newsletter was created by [Dr. Lesley V. D'Anglada](#), Office of Science and Technology, Office of Water, EPA. Mention of trade names, products, or services does not convey and should not be interpreted as conveying official EPA endorsement, approval or recommendation for use.

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