## Interstate Harmful Algal Bloom Outreach Matrix

Prepared by NEIWPCC in cooperation with the States of Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Last Updated July 2014. For more information, contact Dan Peckham, NEIWPCC.

		EPA / CDC / USGS	СТ	MA	ME	NH	NY	RI	VT
Regulations / State Department Roles			Local Health Directors can open and close swimming facilities:  Statutory Authority: Connecticut General Statutes outlines enforcement authority under Chapter 98, Municipal Powers. Section 7-148:	Statutory Authority: Massachusetts General Law 111, section 122: Regulations relative to nuisances; examinations -power of local boards of health to take action against nuisances (including HABs) Massachusetts General Law 11, section 5S: Public bathing waters-describes roles and responsibilities of bathing beach operation  Bathing beach regulations: 105 CMR 445: - Binding - The regulations allow for posting advisories at beaches for any potential health reason, including	DEP Rules (06-096 Chapter 581: 6B) define algal blooms as "planktonic growth of algae which causes Secchi disk transparency to be less than 2.0 m."  When DEP staff are asked about HABs, our standard answer pertains to general conditions (blooms, risk of contracting Girardia) rather than HABs (e.g., don't swallow water, some species irritates skin - shower after swimming, relate personal perspective that if it were my child and I couldn't see more than 6-7 feet into the water, I wouldn't want them swimming in the water because I might not be able to find them if they had an accident).	researching the state statutes to determine if	DEC: No specific regulations for HABs. A narrative standard for phosphorus and nitrogen references algae (Part 703.2) mone in amounts that will result in growths of algae, weeds and slimes that will result in growths of algae, weeds and slimes that will simpair the waters for their best uses. and taste, color, and odor producing, toxic and other deleterious substances allows "None in amounts that will adversely affect the taste, color or odor thereof, or impair the waters for their best usages." The latter may be disaggregated to separate "toxins" and be interpreted through a numeric translator for citing HAB-related standards violations. DEC has interprated HADs ampling into their monitoring programs; encourages the public to submit reports; provides weekly updates on the public website based upon the information recieved; developed comprehensive web pages about blue-green algae & HABS and continues to improve the content, uses social media, DEC listserves and email to build awareness and direct the public to DEC & DOH information.  DOH/OPR: developed response protocols for beach closures based on guidance, not regulations.	Both salt and freshwater beach facilities are required to conduct sampling to ensure sale swimming conditions as part of their recreational licenses.  The DEM's Office of Water Resources screens lakes with reported blooms and lakes that have historically had high nutrient and/or chlorophyll a levels (factors that lead to cyanobacteria blooms) and responds to citizen complaints, as funding and manpower allow.  The agencies jointly issue Health Advisories when any of the three guidelines (noted below), which indicate that a bloom exists, are met.	The Health Department offers Guidance Document Only: http://healthvermont.gov/enviro/bg_algae/documents/BGA_guide.pdf
Action Levels	Advisories		Visual Rank Category 2 (or blue-green algae cells >20kml and < 100k): Notify CT DPH, CT DEEP, Increase regular visual surveillance until conditions change.		No official guidance for closures/advisories, but DEP Rules (06-096 Chapter 581: 68) define algal blooms as "planktonic growth of algae which causes Secchi disk transparency to be less than 2.0 m."	Beach Advisories issued when a bloom exists, with a cyanobacteria cell course exceeding 70,000 cells/mL OR >50% of the bloom is a cyanobacteria.  A Lake WARNING is issued when a lake has no beach or the bloom covers area away fron the beach. Action values the same as a beach advisory.	DEC: No official guidance for advisories for freshwater HABs. Guidance thresholds, based on literature review and analysis of other state's criteria, are used to categorize the alage bloom data received through DEC monitoring programs, volunteers, and the public. Specifically for the following DEC notification categories:  "Suspicious" blooms = visual evidence consistent with BGA (spilled paint, pea soup, green streaks)  "Confirmed" blooms = sample showing BG chlorophyll a > 30 ugh or total chlorophyll a > 50 with dominance by BGA species; beach closure from DOH or OPR: chlorophyll > 20 with ancillary information  "Confirmed" with high toxins" = microcystis-LR > 20 ugh or anatoxin-a leveles > 4 ugh; open water MC-LR > 10 and ancillary information (bloom increasing, unsampled denser shoreline blooms, etc.)  DOH and OPR: advisory may be issued if DEC reports BGA near regulated beach but no evidence of bloom at beach, or if beach has reopened and some indication that bloom may return	Health Advisories issued when any of the following three guidelines, which indicate that a bloom exists, are met: - Evidence of a visible cyanobacteria scum or mat Cyanobacteria cell count exceeding 70,000 cells/mL Toxin (Microcystin-LR) level of lysed cells meeting or exceeding 14 ppb (ug/l).	VISUAL assessment: Post Beach at Category 2. Health alert- keep children and pets away from algae.
	Closures		Visual Rank Category 3, or blue-green algae cells > 100kmi: POSTED BACH CLOSURE: if public has beach access, alert water users that a blue-green algae bloom is present.	N/A - See Advisory.		N/A	DEC: Does not close freshwater waterbodies. Marine waters (immediately surrounding the sample location) are closed for shellifishing if mussels at a DC monitoring sites test positive for Alexandrium.  DOH/OPR: visual evidence of BGA bloom triggers beach closure; bloom cleared and MC-LR < 10 required to reopen beach. DEC regulated beaches would likely follow same protocol (blooms not reported at any DEC beaches since DOH protocol established)	N/A	Visual: Close Beach at Category 3 Cell Count: Close Beach <4000 potential producer cells/mL. Toxins: Close at >6 ug/L microcystin, >10ug/L anatoxin

Monitoring	- What public messaging exists on how states are gathering data? - What monitoring can citizens take part in and What information are they asked for?	No volunteering monitoring program actively managed by the state, but consultants and individual lake groups can conduct their own as desired.  State swimming beaches are monitored by DEEP staff (weekly).  Further efforts ongoing with EPA R1 (Monitoring and Analysis Focus Team).	Advisory Posting" in:	State program and volunteers in the Maine Volunteer Lake Monitioring Program monitor algal blooms using Secchi disk. Maine does not have any monitoring specific to HABs.  We request that volunteers notify Maine DEP when algal blooms decrease Secchi transparencies below 2.0 meters.	clean container (plastic or glass jar) and bring it to DES (link to directions to DES) to identify.	DEC posts information about the programs and how the program that collect blue-green algae data: Clitzens in lake communities that have a lake association may be able to participate in the Citizen Statewide Lake Assessment Program (CSLAP, http://www.dec.ny.gov/chemical/81576.html); information about what data is collected is available on DEC's website http://www.dec.ny.gov/chemical/81849.html- appx 120 lakes sampled 8x per summer for open water blooms and as needed when shoreline blooms observed.  DEC monitoring conducted on other lakes; bloom samples collected when blooms observed.  Citizens not associated with a lake association may submit information about potential blooms using DEC's online form and limited sampling may be authorized under authority of DEC.		Lake Champlain Committee (LCC), Health and DEC monitor for blooms. Citizens may work with LCC to get trained as a volunteer monitor.
	Protocol/Contacts	By Phone: DPH: 860-509-7758 DEEP: 860-424-3020 By Email: algalbloomsCT@ct.gov, deep.algalblooms@ct.gov	watershed associations). MDPH asks local health dept or individual reporting the bloom to email photos of the bloom before samplers are deployed.	DEP staff or VLMP staff will investigate extent and collect water samples for TP & Chl analysis.	By email: sonya.carlson@des.nh.gov or beaches@des.nh.gov  By Phone: Cyano hotline: 603-419-0918	DEC: Online: http://www.dec.ny.gov/docs/water_pdf/algaereportform.pdf. By Phone: Contact regional DEC office or DEC HAB coordinators.  DOH/OPR: blooms observed by beach managers reported by DOH/OPR HAB coordinators in Albany All data reported to any agency shared amongst all agency HAB coordinators	( <b>By Email</b> : brian.zalewsky@dem.ri.gov or jane.sawyers@dem.ri.gov)	By Phone: 1-800-439-8550 By Email: AHS.VDHBlueGreenAlgae@state.vt.us
Reporting	Outreach/ Instructions	"If you believe that you have observed an algae bloom, follow the guidance listed above and contact your Local Public Health Agency; (linked to Public Health Agencies webpage). You may also contact CT Department of Public Health (860-509-7758), or CT Department of Energy and Environmental Protection (860) 424-3020, or send an email to deep algalbicoms @ct.gov"	reporting the bloom to email photos of the bloom before samplers are deployed.		in the water, described in the Ecology section below. However, cyanobacteria may only be positively identified to the Genus level by microscopic identification. If you suspect a	mapping application such as Google, Bing or Yahoo Maps, with a marker at the bloom location." (instructions included with on-line reporting form)	"To report a suspicious algae bloom, contact RIDEM at (401) 222-6800"	"To report a bloom to VDH, call 1-800-439-8550 or click the link on our website to send us an email."
Terminating an Advisory/Closure		Health officials may justify lifting a blue-green algae bloom posting if observations meet either or both of the following two criteria:  - Visual assessment remains at the Category 1 condition for at least two successive and representative observational rounds one week apart  - Cell count results of the water column indicate that blue green algal cell abundance has markedly decreased over at least two successive and representative sampling rounds one week apart and is below 70,000 cells per ml.  As the situation requires, health officials may consider additional confirmation through microcystin testing of the water column. As is stated for the above, the water column should be below the threshold for at least two successive and representative sampling rounds one week apart. CT DPH suggests a toxin threshold of 15 ug microcystin.	representative sampling rounds one week apart demonstrate cell counts or toxin levels below those at which an advisory would be posted.  (Approach is similar to that of OR and Australia)		"When monitoring indicates that cyanobacteria are no longer present at levels that could harm humans or animals, the advisory or warning will be removed."  The Beach Program will immediately resample all beaches upon issuing an advisory. The sign will be removed from the area when further samples indicate the concentration of the cyanobacteria species is below 50 percent of a sample.	DEC follows up with all reports received for updates to the status of bloom:  Resampled lakes- once visual evidence and/or lab results indicate BGA bloom conditions have dissipated, waterbody removed from DEC nofilication page Unsampled lakes- original or follow up-waterbodies that have not had an update for >= 4 weeks will be removed from the list on the DEC web page due to lack of information  All cases- DEC still advises the public to be aware of blooms because blooms can come and go.  DOH/OPR- beach reopened if bloom cleared and MC-LR <= 10 (sampling not initiated until bloom has cleared)	the swimming season (first of November), unless follow- up sampling by a city, town, or third party indicate that	Advisory is lifted when water is visually clear and toxins are < 6 ug/L microcystin and 10 ug/L anatoxin

Advisories & Closures Outreach / Disclosure to Public			Posting closure signs at swimming areas and advisory signs at other access points used for public recreation is the primary intervention. Some posting is up to local health director.  Further interventions include: - Notifying lake associations - Posting information for public access via the internet or local newspapers via a press release. Include information as to how the public can contact the CT DEEP for the most up-to-date information on the status of the blue-green algae bloom In some communities it may also be important to notify local Veterinarians and Physicians and keep them updated on the status of the blue-green algae bloom.	(all) water body entry points and should include the following: date of the posting, contact information for the posting authority, language (to be provided or reviewed by MDPH) advising against contact with the water, and a recommendation that pets accidentally entering the water be rinsed.  Current advisories are listed on MDPH website:  http://www.mass.gov/eohhs/gov/departments/dph/	N/A	*DES will continue to monitor the water and will notify the appropriate parties regarding the results of initial and subsequent testing. Public notification occurs through press releases and the DES website.*	DEC posts waterbodies with bloom notifications on its website. The number of new waterbodies with blooms are announced in the Division of Water's weekly listserv email (Making Waves).  DOH/OPR regulated beaches posted with signs (and some county DOH press releases) when beaches closed; signs removed or changed to advisory when beach reopened	Updated every year with new information on the year's blooms: <a href="http://www.health.ri.gov/publications/datareports/20">http://www.health.ri.gov/publications/datareports/20</a> 13CyanobacteriaBloomsInRhodelsIand.pdf. Beach closures are also posted on the state Beach Water Quality Information site: <a href="https://beaches.health.ri.gov/swim/">https://beaches.health.ri.gov/swim/</a> For materials posted on the state website, see "Advisory Notices Materials" row	Monitoring data are reported on the tracker: https://webmail.vdh.state.vt.us/vttracking/bluegreenalgae/d/. Conditions are reported on our website also http://healthvermont.gov/enviro/bg_algae/weekly_status.aspx
Advisory Notices Materials			See Section C of http://www.ct.gov/dph/lib/dph/environmental_health/pdf/g- uidance to Ihd for blue- green_algaeblooms_in_rec_fresh_waters_june_2014.pdf	Signage posted at (all) water body entry points: http://willage14.com/files/2012/08/Pages-from- CAUTION-sign_cyanobacteria-2012.pdf	N/A	http://des.nh.gov/organization/divisions/wat er/wmb/beaches/graphics/rec-exposure- caption.gif	http://www.health.nv.gov/publications/2849/images/sign2.ipg Similar signs available from DEC for posting at non-regulated sites (boat launches, common access points, etc.)	A letter is sent by HEALTH to town officials with signage to be posted at the point of access. DEM Fish and Wildlife will post if there is a state-owned boat ramp at the lake.  http://www.southkingstownri.com/files/Health%20Adviso.py%20Barber%20Pond%20Cyanobacteria_ENG.pdf	See appendix E: http://healthvermont.gov/enviro/bg_algae/documents/BGA_guide.pdf
Drinking Water Advisories and Outreach				Conducting drinking water outreach for cyanobacteria via presentations to public water suppliers.  - New written outreach materials under review Another program working on drinking water actions levels for cyanobacteria (although all Mass. PWS have an Emergency Response Plan which details actions for any water supply emergency).	N/A	http://des.nh.gov/organization/commissione r/pip/factsheets/dwgb/documents/dwgb-4- 15.pdf	No state protocol established. DEC does not provide information to the public about drinking water when waterbodies classified for drinking report blooms. DEC shares data with DOH, which may include information about drinking water in press releases.		Process for managing anatoxin and mircocystin detections in finished water samples for public water systems- this document exposires in January 2015.  A DO NOT DRINK is ordered at anatoxin > 5 ug/L and microcystin at 10 ug/L. The document can be found at <a href="https://drinkingwater.vt.gov/wgmonitoring/pdf/practicealgaltoxind-etections.pdf">https://drinkingwater.vt.gov/wgmonitoring/pdf/practicealgaltoxind-etections.pdf</a>
Further Comments					Preliminary screening data indicate that toxic blooms are not a prevalent issue in Maine, but the state wants to be prepared for future bloom situations because changes in frequency and duration of precipitation events coupled with an extended growing season due to early ice-off and later ice-on, might change the types of blooms that occur in the state.				
	Health Agency	CDC: http://www.cdc.gov/health communication/toolstempl ates/entertainmented/tips/ algalblooms.html	http://www.ct.gov/dph/lib/dph/environmental_health/ pdf/guidance_to_lhd_for_blue- green_algaeblooms_in_rec_fresh_waters_june_2014.pd f_	http://www.mass.gov/eohhs/gov/departments/d ph/programs/environmental-health/exposure- topics/beaches-algae/	N/A	N/A	http://www.health.nv.gov/environmental/water/drinking/b luegreenalgae.htm	http://www.health.ri.gov/healthrisks/poisoning/cyanobact eria/	http://healthvermont.gov/enviro/bg_algae/bgalgae.aspx
Websites: HAB Landing Pages	Environmental Agency	EPA: http://www2.epa.gov/nutrient- policy-data/cyanobacterial- harmful-algal-blooms- cyanohabs *** http://www2.epa.gov/nutrient pollution/harmful-algal- blooms	http://www.ct.gov/deep/cwp/view.asp?A=2719&Q=51002	DW Only: http://www.mass.gov/eea/agencies/massdep/to xics/sources/cyanobacteria-in-drinking- water.html	http://www.maine.gov/dep/water/lakes/cynobacteria.htm	http://des.nh.gov/organization/divisions/wat er/wmb/beaches/cyano_bacteria.htm	http://www.dec.my.gov/chemical/77145.html	http://www.dem.ri.gov/bart/habs.htm	http://www.anr.state.vt.us/dec/waterg/lakes/htm/lp_cyanob_acteria.htm
Public Informational Documents		CDC - Cyanos/Blooms: http://www.cdc.gov/hab/cy anobacteria/pdfs/facts.pdf  CDC - Pets: http://www.dem.ri.gov/pro grams/bnatres/agricult/pdf/ algaepostr.pdf  CDC - Cyanobacteria: http://www.cdc.gov/hab/cy anobacteria/pdfs/activities. pdf  USGS - Blooms: http://pubs.usgs.gov/fs/200 6/3147/pdf/FS2006_3147.pdf	N/A	Flyer: http://neiwpcc.org/neiwpcc_docs/AlgaeBlooms.pdf Pets: http://neiwpcc.org/neiwpcc_docs/protectpets.pdf.		Cyanos/Blooms: http://des.nh.gov/organization/commissioner/p ip/factsheets/wmb/documents/wmb-10.pdf	BGA: http://www.health.ny.gov/environmental/water/drinking/b luegreenalgae.pdf Dogs: http://www.seagrant.sunysb.edu/btide/pdfs/HABsBrochure 0814.pdf	aepostr.pdf  Waterbody Management: http://www.dem.ri.gov/programs/benviron/water/quality/p df/algafact.pdf  Cyanos/Blooms: http://www.url.edu/ce/wg/ww/Publications/DEM_Cyanob acteria_%20fact%20sheet.pdf	BGA/Blooms: http://healthvermont.gov/enviro/bg_algae/documents/BGA_guide_pdf.  Cyanos: http://www.anr.state.vt.us/dec/waterg/lakes/docs/lp_cyanobact_eria_basic_information.pdf  Reporting: Reporting: Lake Champlain: http://www.anr.state.vt.us/dec/waterg/lakes/docs/lp_cyanobact_eria_lf_you_suspect_a_bloom.pdf  Lake Champlain: http://www.lakechamplaincommittee.org/fileadmin/files/Publica_tions/2014_LCCFiler_on_Distinguishing_Blue_Green_Algae_from_other_Lake_Phenomena.pdf
Tracker/Map Site			N/A	N/A	N/A	http://www2.des.state.nh.us/WaterShed_BeachMaps/WaterShed_BeachMaps.aspx	http://www.dec.ny.gov/chemical/83310.html	https://beaches.health.ri.gov/swim/	https://webmail.vdh.state.vt.us/vttracking/bluegreenalgae/d/

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