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
			Local Health Directors can open and close swimming	Statutory Authority: Massachusetts General	DEP Rules (06-096 Chapter 581: 6B) define	DES: No entities are required to test for	DEC: No specific regulations for HABs. A narrative	Both salt and freshwater beach facilities are required	The Health Department offers Guidance Document Only:
			facilities:	Law 111, section 122: Regulations relative to	algal blooms as "planktonic growth of algae	cyanobacteria. However, if cyanobacteria is	standard for phosphorus and nitrogen references algae	to conduct sampling to ensure safe swimming	http://healthvermont.gov/enviro/bg_algae/documents/BGA_g
				nuisances; examinations	which causes Secchi disk transparency to be	found, an advisory sign must be posted. Still	(Part 703.2) "none in amounts that will result in	conditions as part of their recreational licenses.	de.pdf
			Statutory Authority:	 power of local boards of health to take action 	less than 2.0 m."		growths of algae, weeds and slimes that will impair the		
			Connecticut General Statutes outlines enforcement	against nuisances (including HABs)				The DEM's Office of Water Resources screens lakes	
			authority under Chapter 98, Municipal Powers.	Massachusetts General Law 11, section 5S:	When DEP staff are asked about HABs, our	close a beach or lake. DES does NOT have	producing, toxic and other deleterious substances	with reported blooms and lakes that have historically	
			Section 7-148:	Public bathing waters- describes roles and	standard answer pertains to general conditions	that authority.	allows "None in amounts that will adversely affect the	had high nutrient and/or chlorophyll a levels (factors that	
			- power to "control and operate" recreation places, public	responsibilities of bathing beach operation	(blooms, risk of contracting Girardia) rather		taste, color or odor thereof, or impair the waters for	lead to cyanobacteria blooms) and responds to citizen	
			beaches and beach facilities		than HABs (e.g., don't swallow water, some		their best usages". The latter may be disaggregated to	complaints, as funding and manpower allow.	
			- power to "regulate and prohibit swimming or bathing in	Bathing beach regulations: 105 CMR 445:	species irritate skin - shower after swimming,		separate "toxins" and be interpreted through a numeric		
			the public or exposed places within the municipality"	- Binding	relate personal perspective that if it were my		translator for citing HAB-related standards violations.	The agencies jointly issue Health Advisories when any	
				- The regulations allow for posting advisories at	child and I couldn't see more than 6-7 feet into		DEC has integrated HABs sampling into their	of the three guidelines (noted below), which indicate that	
Regulations / State			CT Public Health Code does not include a pertinent	beaches for any potential health reason, including	the water, I wouldn't want them swimming in		monitoring programs; encourages the public to submit	a bloom exists, are met.	
Department Roles			regulation specific for lakes and ponds, however; section	HABs.	the water because I might not be able to find		reports; provides weekly updates on the public website		
20pullion noise			19-13-B34 may apply to impoundments.	- Regulations moved through public process	them if they had an accident).		based upon the information recieved; developed		
				3			comprehensive web pages about blue-green algae &		
				Specific to Harmful Algae Blooms: MDPH			HABs and continues to improve the content; uses		
				Guidelines for Cyanobacteria in Freshwater			social media, DEC listserves and email to build		
				Recreational Water Bodies in Massachusetts			awareness and direct the public to DEC & DOH		
				Document			information.		
				boomon			DOH/OPR: developed response protocols for beach		
							closures based on guidance, not regulations.		
			Visual Rank Category 2 (or blue-green algae cells	Further sampling (toxin testing of lysed cells to	No official guidance for closures/advisories, but	Beach Advisories issued when a bloom	DEC: No official guidance for advisories for freshwater	Health Advisories issued when any of the following three	VISUAL assessment: Post Beach at Category 2
			>20k/ml and < 100k): Notify CT DPH, CT DEEP.		DEP Rules (06-096 Chapter 581: 6B) define	exists, with a cyanobacteria cell count	HABs. Guidance thresholds, based on literature review		Health alert- keep children and pets away from algae.
			Increase regular visual surveillance until conditions	not exceeded) if cell count exceeds 50.000	algal blooms as "planktonic growth of algae	exceeding 70,000 cells/mL OR >50% of the	and analysis of other state's criteria, are used to	 Evidence of a visible cyanobacteria scum or mat. 	ribalit alore hoop children and polo away from algae.
			change.		which causes Secchi disk transparency to be	bloom is a cyanobacteria.	categorize the alage bloom data received through DEC	 Cyanobacteria cell count exceeding 70,000 cells/mL. 	
			ondingo.	oolorne.	less than 2.0 m."		monitoring programs, volunteers, and the public.	- Toxin (Microcystin-LR) level of lysed cells meeting or	
				Advisory: Avoid contact with water if visible scum	1000 11011 210 111	A Lake WARNING is issued when a lake has	Specifically for the following DEC notification	exceeding 14 ppb (ug/l).	
				or mat, ≥14 µg/L microcystin-LR, or ≥70,000		no beach or the bloom covers area away from	categories:	exceeding in ppe (agr).	
				cells/mL for cyanobacteria cell counts		the beach. Action values the same as a	"Suspicious" blooms = visual evidence consistent		
				celiarme for cyanobacteria celi counta		beach advisory.	with BGA (spilled paint, pea soup, green streaks)		
						boach advisory.	"Confirmed" blooms = sample showing BG		
							chlorophyll a > 30 ug/l or total chlorophyll a > 50 with		
							dominance by BGA species; beach closure from DOH		
	Advisories						or OPR; chlorophyll > 20 with ancillary information		
							"Confirmed with high toxins" = microcystis-LR > 20		
							ug/l or anatoxin-a levels > 4 ug/l: open water MC-LR >		
							10 and ancillary information (bloom increasing,		
							unsampled denser shoreline blooms, etc.)		
							unsampled denser shoreline blooms, etc.)		
Action Levels									
							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		
			Visual Rank Category 3, or blue-green algae cells >	N/A - See Advisory.	1	N/A	DEC: Does not close freshwater waterbodies. Marine	N/A	Visual: Close Beach at Category 3
			100k/ml: POSTED BEACH CLOSURE: If public has				waters (immediately surrounding the sample location)		Cell Count: Close Beach <4000 potential producer cells/mL
			beach access, alert water users that a blue-green algae				are closed for shellfishing if mussels at a DEC		Toxins: Close at >6 ug/L microcystin, >10ug/L anatoxin
			bloom is present.				monitoring sites test positive for Alexandrium.		
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							DOH/OPR: visual evidence of BGA bloom triggers		
	Closures						DOH/OPR: visual evidence of BGA bloom triggers beach closure: bloom cleared and MC-LR < 10		
	Closures						beach closure; bloom cleared and MC-LR < 10		
	Closures						beach closure; bloom cleared and MC-LR < 10 required to reopen beach. DEC regulated beaches		
	Closures						beach closure; bloom cleared and MC-LR < 10 required to reopen beach. DEC regulated beaches would likely follow same protocol (blooms not reported		
	Closures						beach closure; bloom cleared and MC-LR < 10 required to reopen beach. DEC regulated beaches		

Monitoring	- What public messaging exists on how states are gathering data? - What monitoring can citizens take pair 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).		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. Caution: If collecting a potentially toxic algal sample: Avoid contact with skin. Wear water- proof gloves when sampling and/or	DEC posts information about the programs and how the program that collect blue-green algae data: Citizens in lake communities that have a lake association may be able to participate in the Citizen Statewide Lake Assessment Program (CSLAP, http://www.dec.nv.gov/chemical/81576.htm); information about what data is collected is available on DEC's website 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.	ΝΆ	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	dept or individual reporting the bloom to email photos of the bloom before samplers are deployed.	By Phone: - DEP Lakes Staff: 207-287-3901 - Environmental and Occupational Health Program: 866-292-3474 in state. When a bloom is called in from a lake that has not supported chronic algal blooms in the past, 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: Mitp://www.dec.nv.gov/docs/water_pdl/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	By Phone: Contact RIDEM at (401) 222-6800 (By Email: 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.algalblooms@ct.gov*	Reports requested via phone to MDPH. MDPH asks local health dept or individual reporting the bloom to email photos of the bloom before samplers are deployed.	"If you want to report a bloom, contact the DEP Lakes Staff at 207-287-3001. For information on health effects, contact the Environmental and Occupational Health Program (866-232- 3474 in state). Out of State contact The World Health Organization (WHO)."	cyanobacteria to initially identify its presence in the water, described in the Ecology section below. However, cyanobacteria may only be	"You are encouraged to include digital photographs as email attachments with the form (close-up, and landscape showing extent and location of bloom). If possible, please include an image from an online 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/l microcystin.	demonstrate cell couris or toxin levels below those at which an advisory would be posted. (Approach is similar to that of OR and Australia)	NA	"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.	the status of bloom: Resampled lakes- once visual evidence and/or lab results indicate BGA bloom conditions have dissipated, waterbody removed from DEC nofification page Unsampled lakes- original or follow up- waterbodies that have not had an update for s= 4 weeks will be	Health advisories remain in effect for the remainder of the swimming season (first of November), unless follow- up sampling by a city, town, or third party indicate that the advisory can be lifted. Health Advisories may be lifted after two successive and representative sampling rounds, two weeks apart, demonstrate no evidence of an algal scum or mat and demonstrate cyanobacteria cell counts and toxin levels below threshold concentrations.	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	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 listerer email (Making Waves). DOH/OPR regulated beaches posted with signs (and some county DOH press releases) when beaches dosed; signs removed or changed to advisory when beach reopened	Updated every year with new information on the year's blooms: http://www.health.ri.gov/publications/datareports/20 13CyanobacteriaBloomsInRhodelsland.pdf Beach closures are also posted on the state Beach Water Quality Information site: https://beaches.health.ri.gov/swim/ 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://wilage14.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.jpg 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 posit if there is a state-owned boat ramp at the lake. http://www.southkingstownf.com/files/Health%20Adviso ty%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- <u>15.pdf</u>	No state protocol estabilished 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 miricoystin detections in finished water samples for public water systems- this document exposites 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 <u>http://drinkingwater.vt.gov/wqmonitoring/pdf/practicealgaltoxing</u> etections.pdf
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.				
Websites: HAB Landing Pages	Health Agency	CDC: http://www.cdc.gov/health communication/toolstempl ates/entertainmented/tips/ algablooms.html EPA: http://www2.epa.gov/nutrient- policy-data/cyanobacterial-	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	ph/programs/environmental-health/exposure- topics/beaches-algae/	N/A http://www.maine.gov/dep/water/lakes/cynobac eria.htm	N/A <u> http://des.nh.gov/organization/divisions/wat</u> er/wmb/beaches/cyano_bacteria.htm	http://www.health.ny.gov/environmental/water/drinking/b Luegreenalgae.htm http://www.dec.ny.gov/chemical/77145.html	http://www.health.ri.gov/healthrisks/poisoning/cyanobact eria/ http://www.dem.ri.gov/bart/habs.htm	http://healthvermont.gov/enviro/bg_algae/bgalgae.aspx http://www.anr.state.vt.us/dec/waterg/lakes/htm/lp_cyanob acteria.htm
	Environmental Agency	harmful-algal-blooms- cyanohabs **** http://www2.epa.gov/nutrient pollution/harmful-algal- blooms		<u>xics/sources/cyanobacteria-in-drinking- water.html</u>					
Public Informational Documents		COC - Cyanos/Blooms: http://www.cdc.gov/hab/cy anobacteria/pdfs/facts.pdf COC - 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.ugs.gov/fs/200 §/3147/pdf/F52006_3147.p df		Flyer: http://neiwpcc.org/neiwpcc_docs/AlgaeBlooms_ pdf Pets: http://neiwpcc.org/neiwpcc_docs/protectpets.pd f		Cyanos/Blooms: http://des.nh.gov/organization/commissioner/p ip/Tactsheets/wmb/documents/wmb-10.pdf	luegreenalgae.pdf Dogs: http://www.seagrant.sunysb.edu/btide/pdfs/HABsBrochure 0814.pdf	Pets: http://www.dem.ri.gov/programs/bnatres/agricult/pdf/alg aeposir.pdf Waterbody Management: http://www.dem.ri.gov/programs/benviron/water/quality/p df/algafact.pdf Cyanos/Blooms: http://www.ie.du/ce/wg/ww/Publications/DEM_Cyanob acteria_%20fact%20sheet.pdf	eria If you suspect a bloom.pdf Lake Champlain: http://www.lakechamplaincommittee.org/fileadmin/files/Publica tions/2014 LCC - Filer 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_Be achMaps/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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