



Department of
Environmental
Conservation

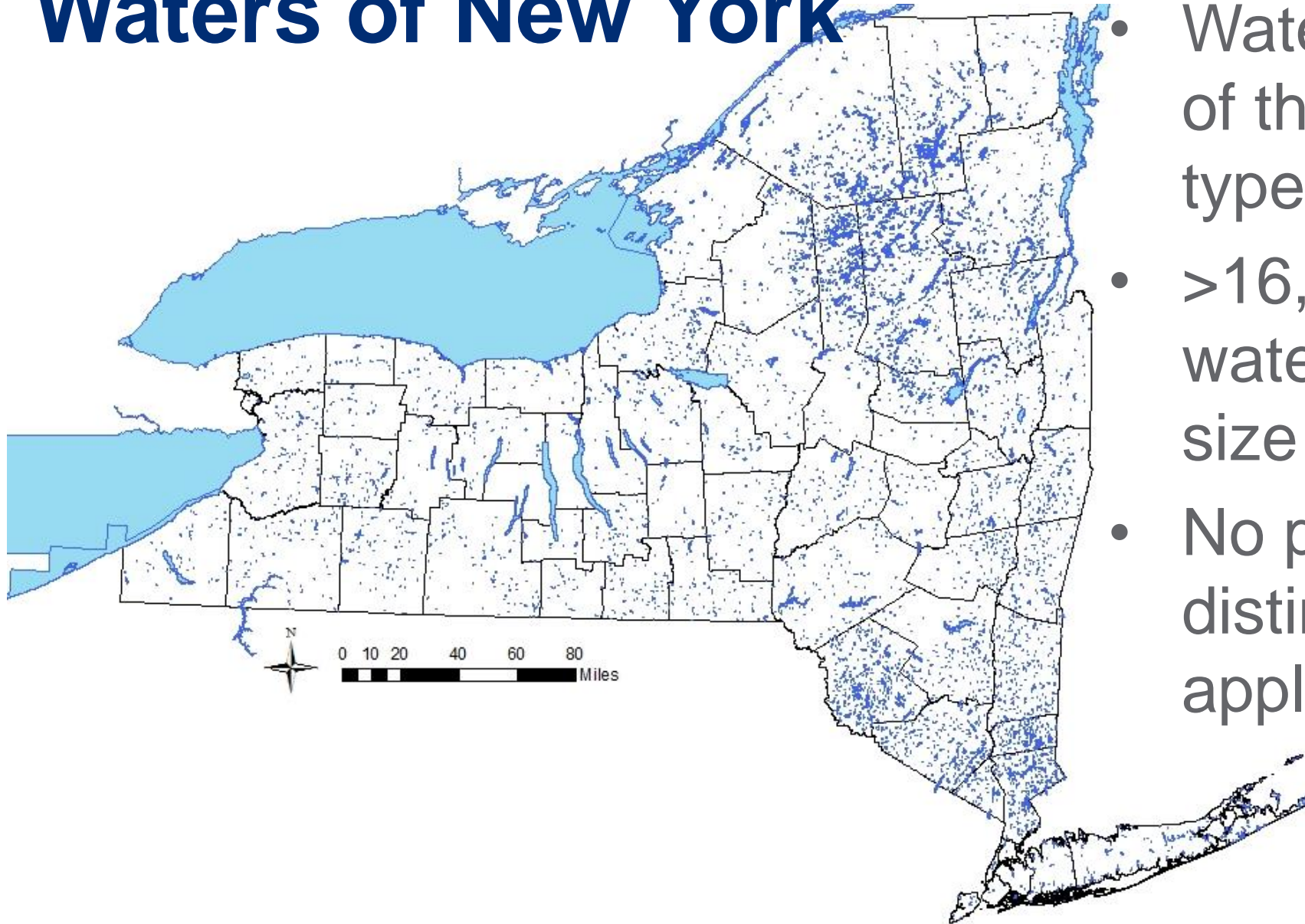
New York's Approach to HABs and HAB Summit Outcomes

Rebecca Gorney, HABs Program Coordinator,
NYSDEC Division of Water

NYSFOLA Conference

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Waters of New York



- Water covers over 10% of the state; all 5 water types
- >16,000 distinct ponded waters over ~1 acre in size
- No private/public distinction, but home rule applies

How does NYS define a bloom?

- If surface scums are visually apparent, there is the potential for toxins and other harmful compounds to be present; contact should be avoided
- Visual scums are satisfactory criteria for beach closure and bloom notification procedures to occur



DOH – State Parks – DEC: Separate but overlapping

- DOH oversees all aspects of drinking water testing, reporting, etc.; health concerns related to exposure to HABs
- DEC provides real time public and agency bloom notifications including information regarding shoreline blooms to local health departments
- DOH and Parks operate regulated swimming areas; communicate HABs-related closures to DEC
- Agency staff communicate regularly



DEC Lake Assessment Programs

Lake Classification and Inventory (LCI)

- DEC's in-house professional lake monitoring program
- Largely managed and run out of DEC's Central Office in Albany with assistance from DEC's 9 Regional offices

Citizens Statewide Lake Assessment Program (CSLAP)

- Statewide volunteer lake monitoring program
- DEC, NY Federation of Lake Associations, Upstate Freshwater Institute, SUNY ESF
- Mandated by state NY Environmental Conservation Law



The NY DEC HABs Program

Surveillance/sampling

- DEC works with SUNY ESF and Stony Brook researchers for lab analysis
- Sampling mostly by trained volunteers, DEC staff
- DW and beaches are the jurisdiction of DOH & Parks



The DEC HABs Program

Bloom Status

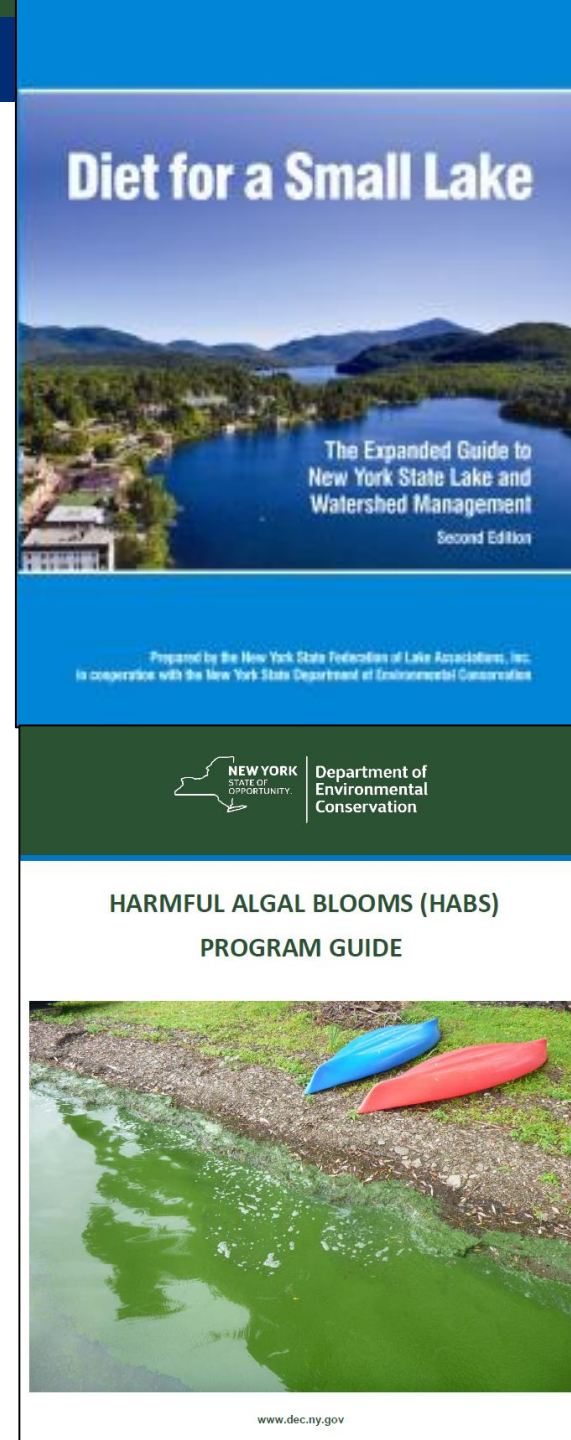
- Determine bloom status (**Suspicious, Confirmed, or Confirmed with High Toxins**) based on surveillance (visual evidence) and sampling data

Education

- Maintain website with HABs primer, FAQs, photo gallery and more (on.ny.gov/hab)
- Publish articles in DEC publications, respond to press inquiries, lake association newsletters, etc.
- Public presentations and training workshops

Outreach

- Daily notifications sent via email to agency and county staff
- Weekly updates to website (map), social media, etc.



2018 NY HABs Partnerships

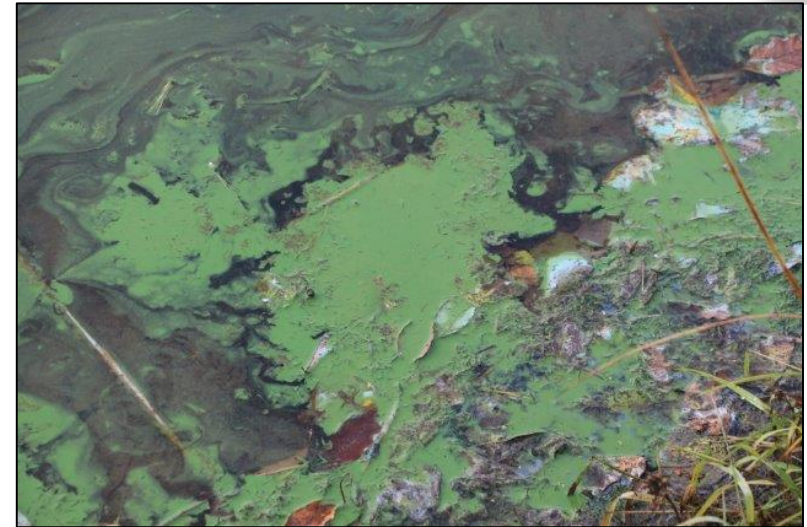
- CSLAP: **>150** lakes, including all finger lakes; 8x/summer
- DEC LCI: **~100** lakes; 1-4x/summer
- Volunteer HABs monitoring (surveillance and sampling): **~10** individual lakes; weekly
- ESF and Stony Brook researchers: **>20** lakes; weekly
- VT DEC, USACE, NYC Parks, NYC DEP and others: **>30** lakes; variable frequency
- Regulated swimming areas (DOH and Parks); **Hundreds of locations**



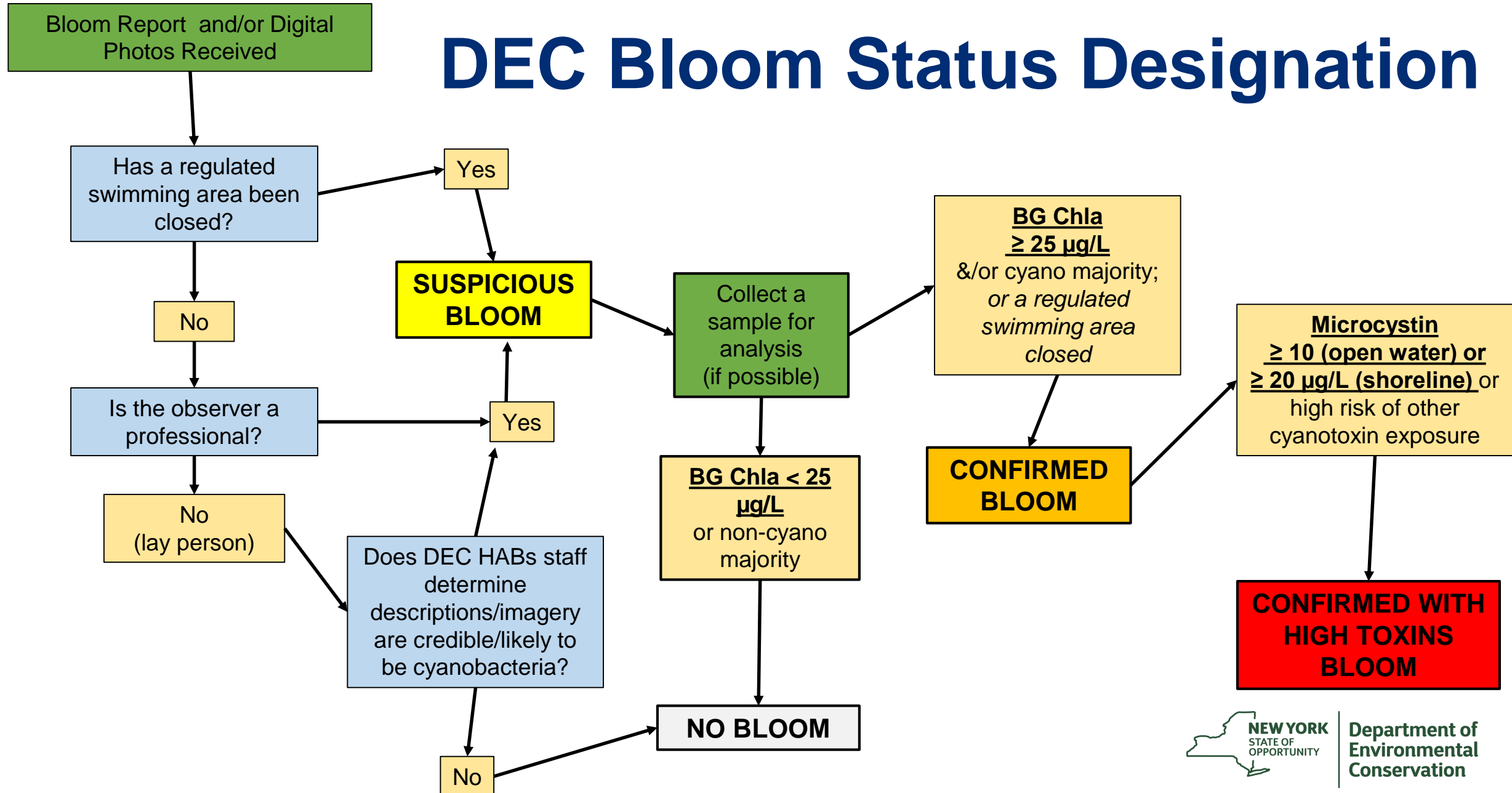
What is measured by the labs?

- **FluoroProbe Chlorophyll** – Measures chlorophyll (total, blue green, diatoms, green algae)
- **Microscopy** – Quick scan, check for most common taxa
- **Toxins** – (lab dependent) LC-MSMS or ELISA; Microcystins, Anatoxin-a, Cylindrospermopsin, BMAA

Bbe moldaenke
FluroroProbe



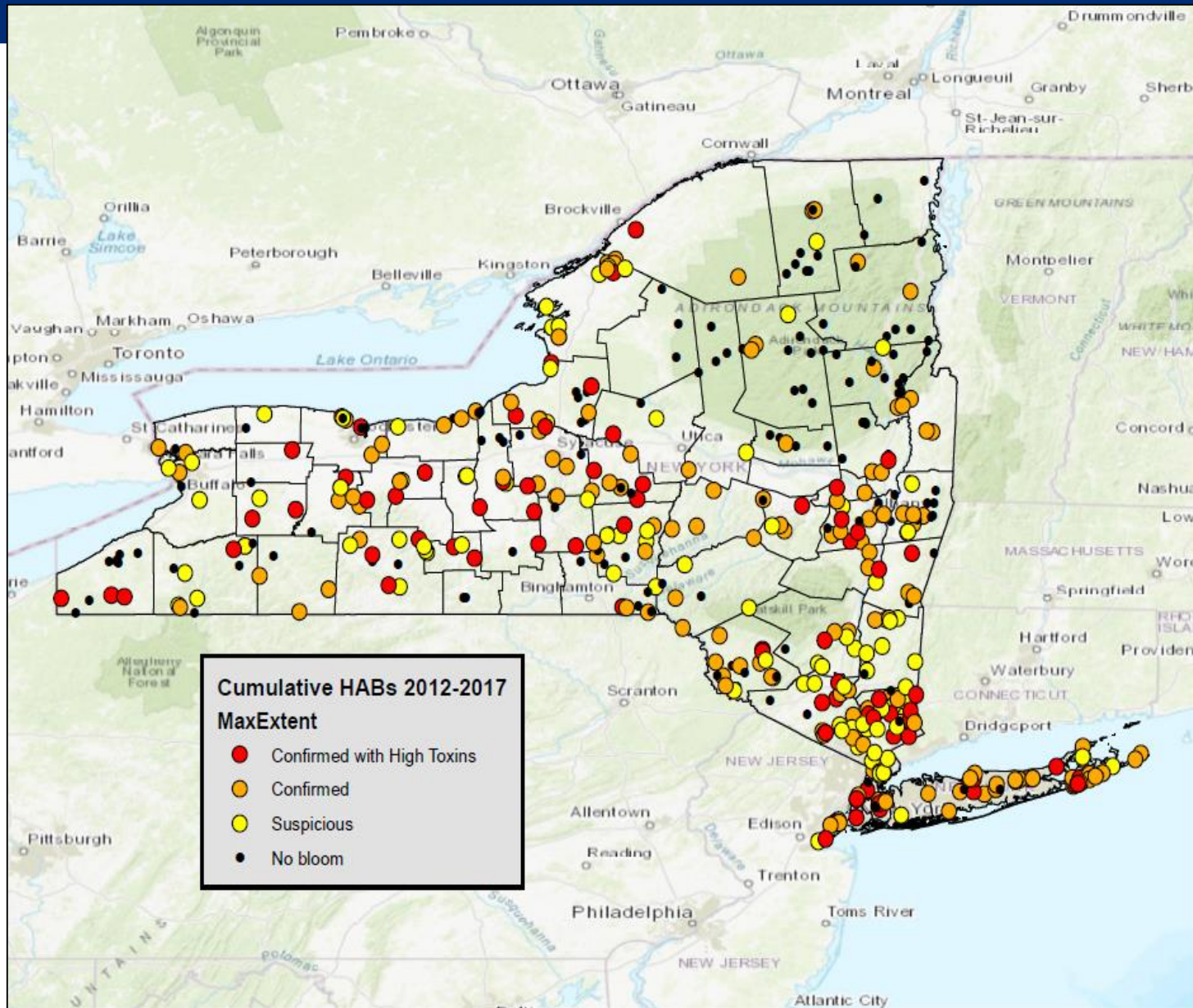
DEC Bloom Status Designation



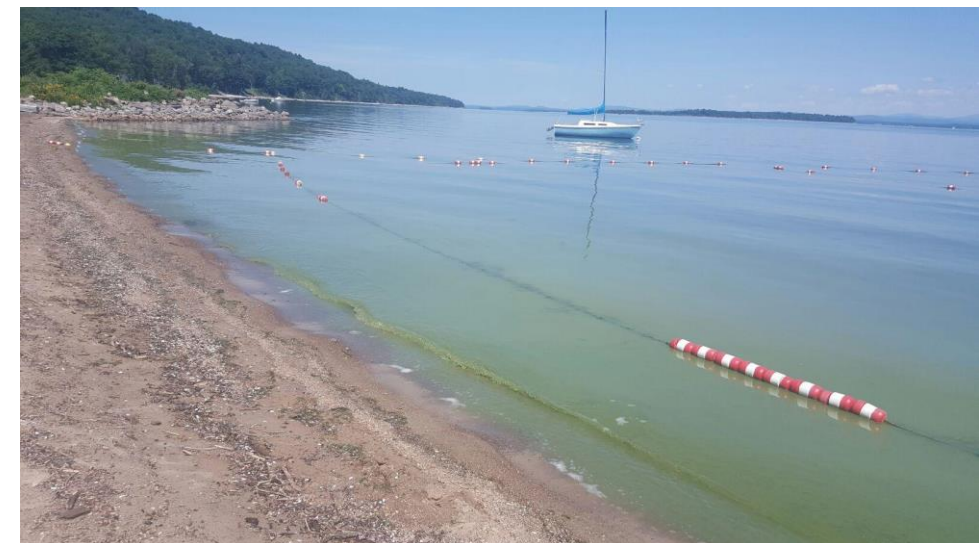
For all blooms....

- **Avoid exposure.** Keep children and pets away from scums or discolored water
- Seek immediate medical assistance for symptoms consistent with exposure
- Report any symptoms to local/state Health Department
- Report additional and on-going blooms to DEC through digital photos, suspicious bloom form, or email drop box (HABsInfo@dec.ny.gov)





Year	Suspicious	Confirmed	High Toxins	Total
2012	20	29	9	58
2013	17	37	22	76
2014	19	51	23	93
2015	40	62	35	137
2016	41	95	38	174
2017	48	85	35	168
12-17	75	133	77	340



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New initiatives regarding HABs in New York

- ELAP certification
- Stream sampling
- Other research
- CSLAP continues to grow
- Governor's Initiative



Governor Cuomo's State of the State 2018

- \$65 million dedicated to this issue; HABs Summits, 12 waterbodies identified for Action Plans; Advanced Monitoring pilots; Mitigation pilots
- Follow up to previous initiatives
 - \$2.5B in Clean Water Infrastructure funding
 - > \$2M for state-of-the-art water treatment systems
 - Finger Lakes Hub staff hired to oversee WQ activities
 - \$700k in Owasco Flats restoration funds



HABs Regional Summits

- Sponsored by Governors Office, DEC, DOH, Ag & Markets
 - Southern, February 27, New Paltz (Lake Carmel, Putnam Lake, Palmer Lake, Monhagen Watershed)
 - Central, March 5 & 6, Syracuse (Skaneateles, Owasco, Cayuga Lakes)
 - North County, March 20, Ticonderoga (Lake George, Lake Champlain)
 - Western, March 26, Rochester (Conesus, Honeoye, Chautauqua Lakes)



Summit Format

Daytime –invite

- Overview of NYS Circumstances
 - History
 - Program action
- Expert presentations and discussions

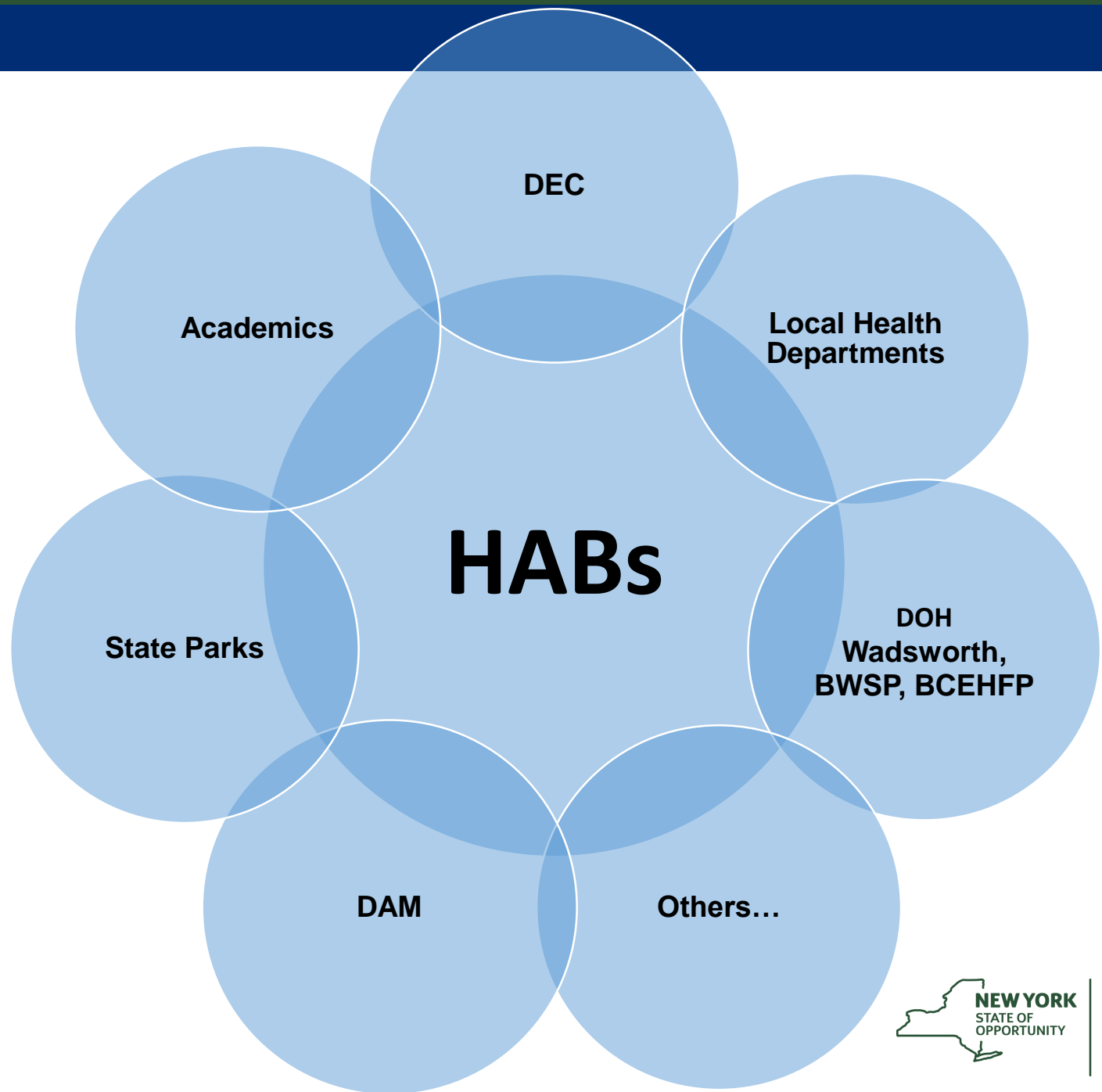
Evening-open to public

- Panel with brief program presentations and keynote from an expert;
livestream.com/hvccstreaming/habssummits
- Moderated Q&A



Team Work

- Action Plans
- Coordination and collaboration with other agencies
- Based on Science
- Time to do Something



The experts

- Art Degaetano-Cornell University
- Greg Boyer-SUNY ESF
- Tim Mihuc-SUNY Plattsburgh
- Angela Shambaugh-Vermont DEC
- Sandra Nierzwicki-Bauer-RPI
- Tim Davis-Bowling Green State Univ.
- Hal Walker-SUNY Stony Brook
- Jennifer Graham-USGS-Kansas
- Dave Mathews-UF
- Hans Paerl-University of North Carolina
- Steve Wilhelm-University of Tennessee
- Chris Gobler – SUNY Stony Brook

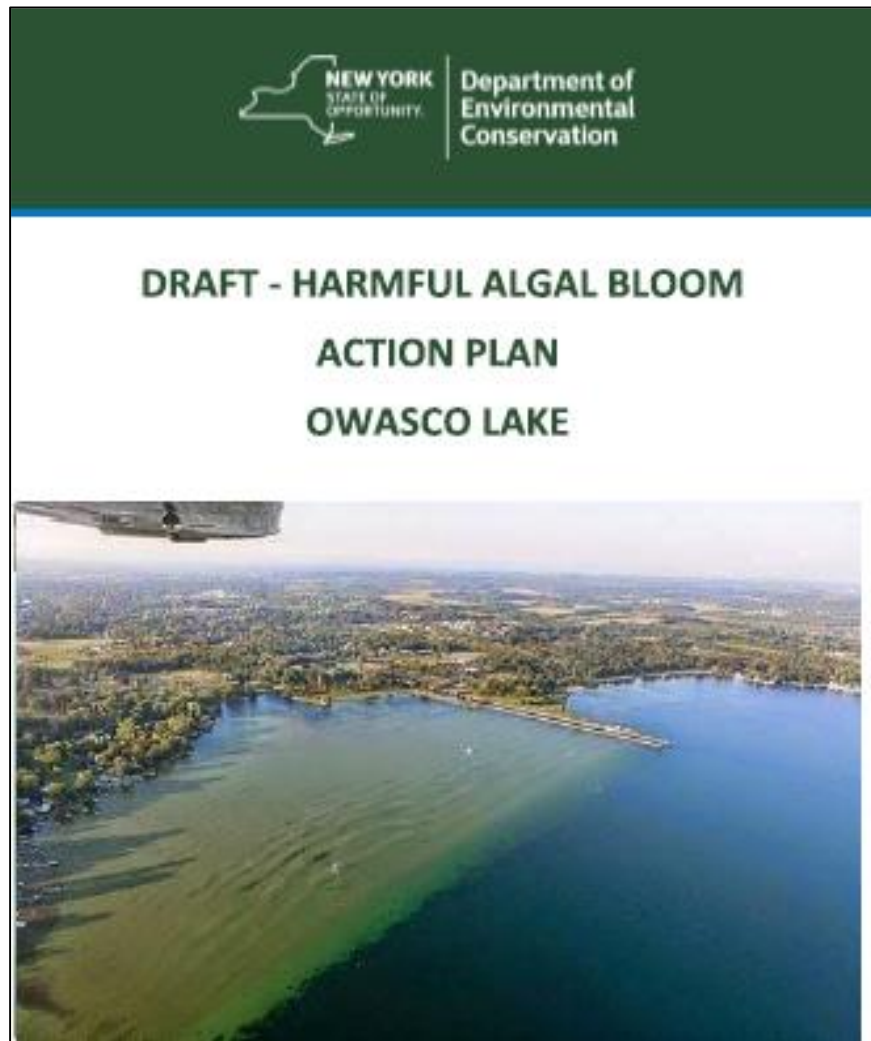


Take Home Messages



- “Its complicated”
- Long Haul
- Improvement is possible
- Control both nitrogen *and* phosphorus
- Expand collaborative partnerships and research

HABs Action Plans



- 12 plans, one for each priority waterbody
- Summary of lake, water quality and HABs history
- Waterbody and statewide analysis of HAB triggers
- Lake and watershed implementation projects to address HABs
- Due in May 2018

HABs Advanced Monitoring Pilot

DEC and contractors developing pilot to investigate use of advanced monitoring platforms

- Innovative HAB sensors
- Meteorological stations
- Real time reporting
- Public facing webpage

DEC finalizing details



HABs Mitigation Pilot



Evaluation of innovative HABs mitigation actions

- Nutrient inactivants
- Hydrogen peroxide
- Ultrasonic devices

DEC and contractor choosing candidate sites and technologies; initiating environmental review



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Questions?

Conesus Lake

