



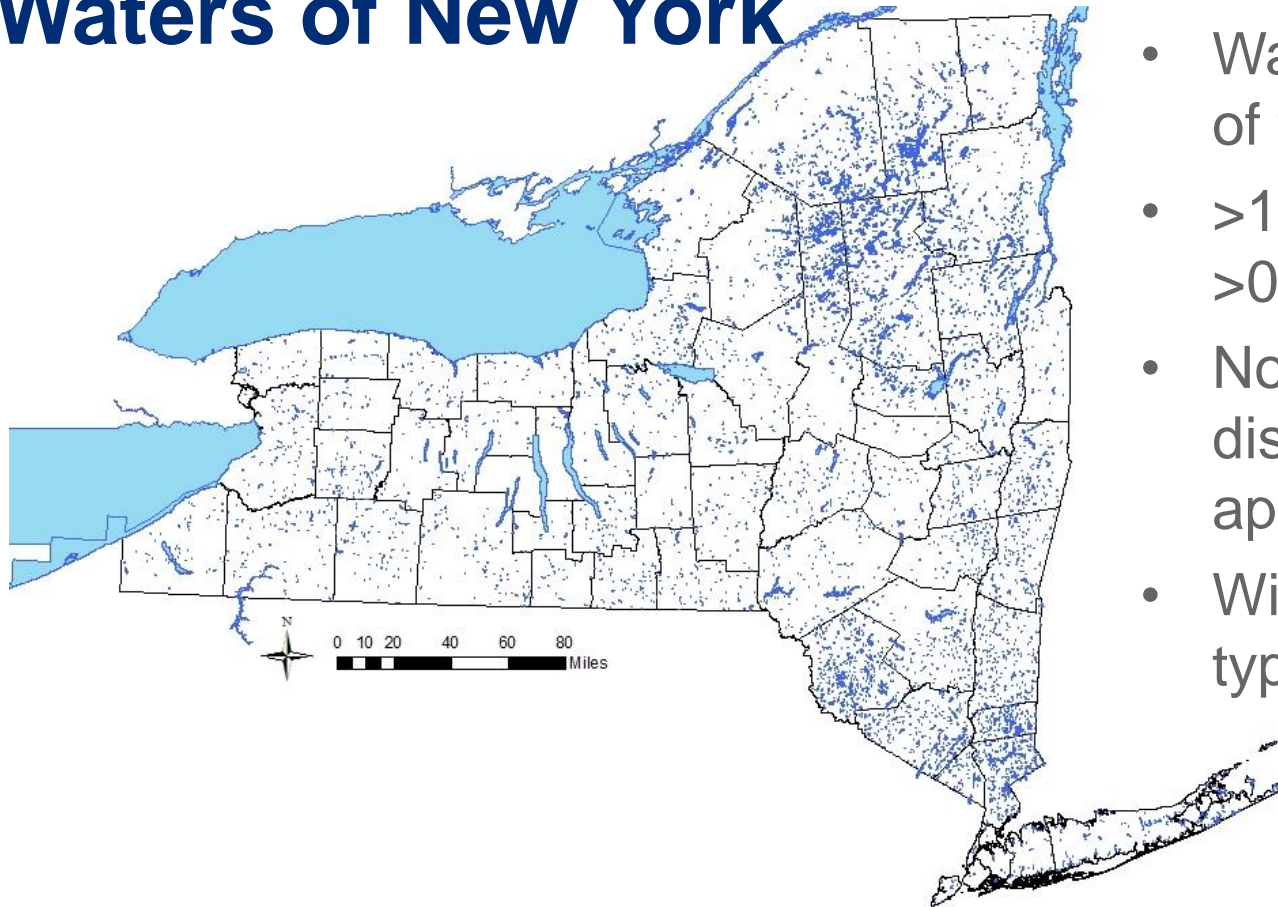
Department of
Environmental
Conservation

Efforts to Streamline HABs Programs in New York State

Rebecca M. Gorney, Ph.D.

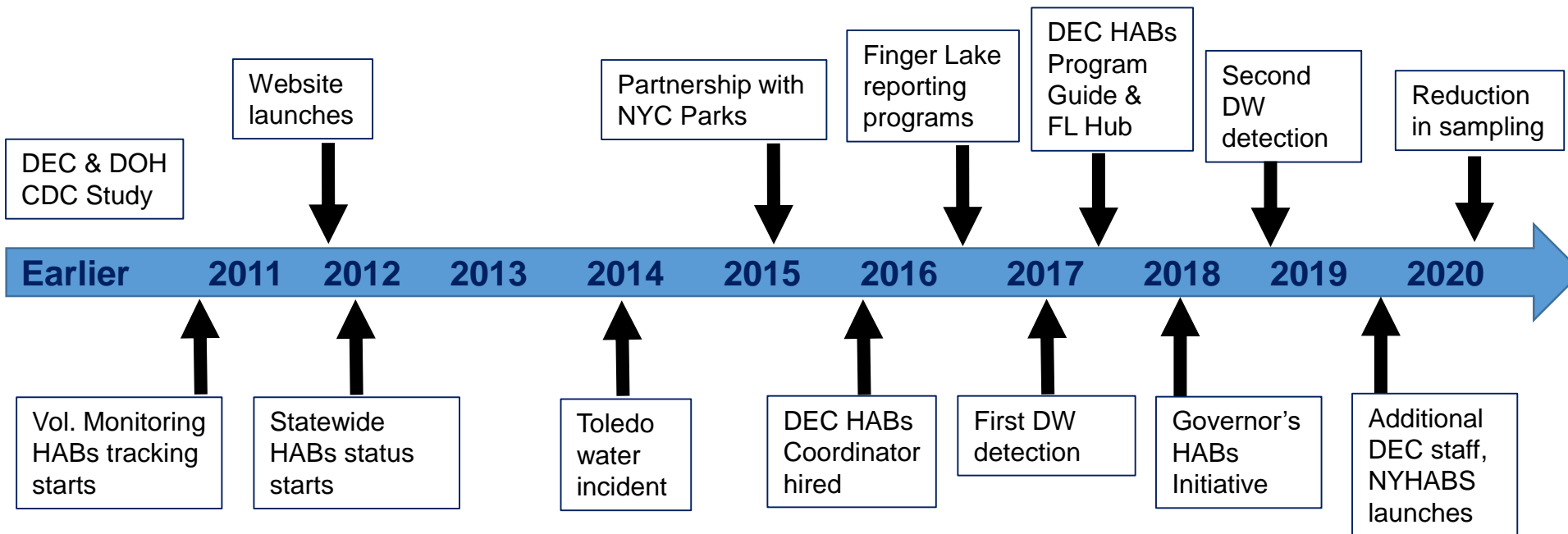
Bureau of Water Assessment and Management

Waters of New York



- Water covers over 10% of the state
- >16,000 ponded waters >0.1 acre in size
- No private/public distinction; “home rule” applies
- Wide range in waterbody types

Timeline of NYS HABs Program



DOH – State Parks – DEC: Separate but overlapping

- DOH oversees drinking water testing & reporting, health concerns related to exposure to HABs
- DEC provides near real time interagency and public bloom notifications
- DEC, DOH and Parks operate regulated swimming areas; communicate HABs-related closures to DEC
- Agency staff communicate regularly

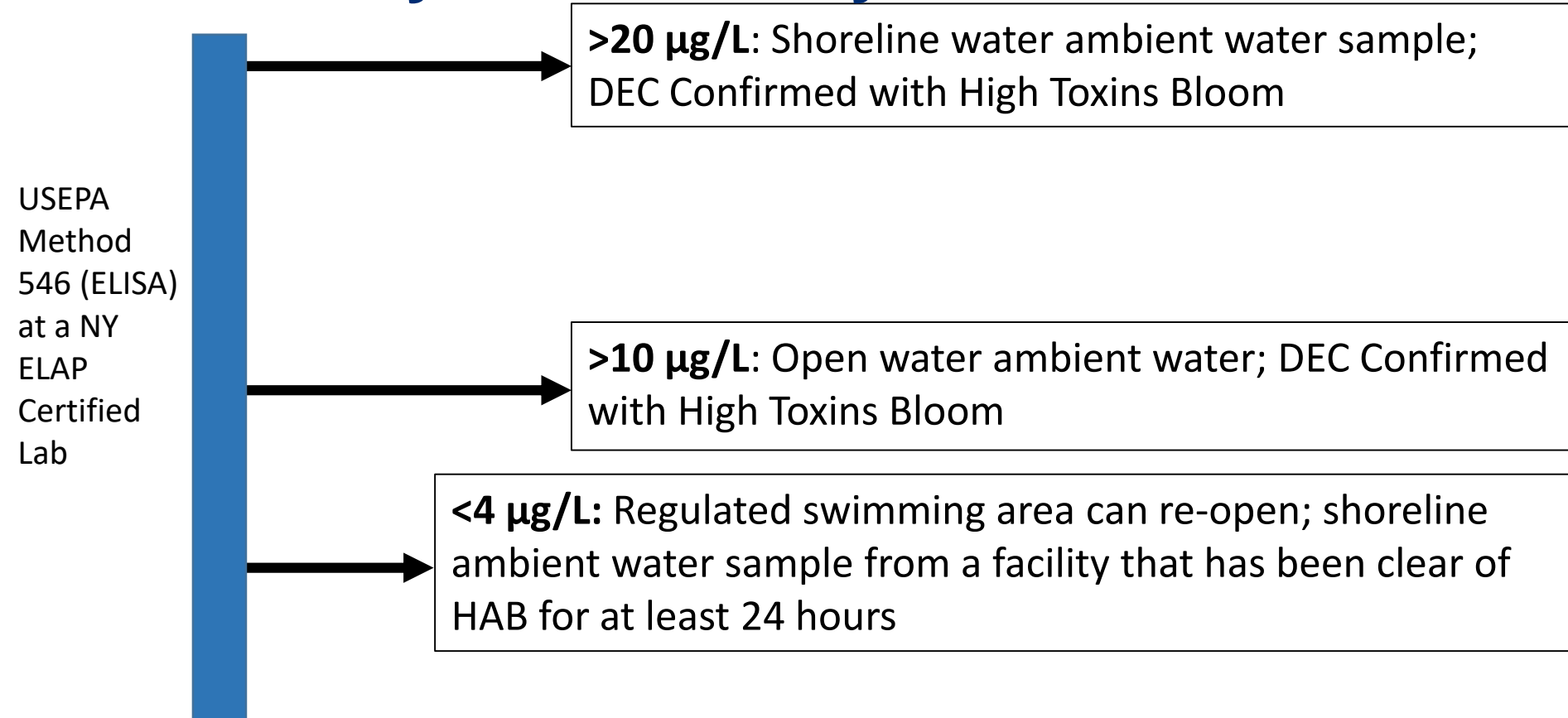
How does NYS define a bloom?

- If scums are visually apparent, there is the potential for toxins and other harmful compounds to be present; avoid contact
- Visual appearance is criteria for beach closure and bloom reporting

Know it, Avoid it, Report it!



NYS Microcystin Advisory Thresholds



What is measured by the labs?

- **Fluoroprobe Chlorophyll** – Measures chlorophyll by algal type (total, **blue green**, diatoms, green algae)
- **Microscopy** – Quick qualitative scan, list most common taxa
- **Total microcystins**– ELISA
- **Other toxins** - Anatoxin-a, Cylindrospermopsin, BMAA, microcystin congeners LC-MSMS



Bbe moldaenke
Fluoroprobe

The DEC HABs Program

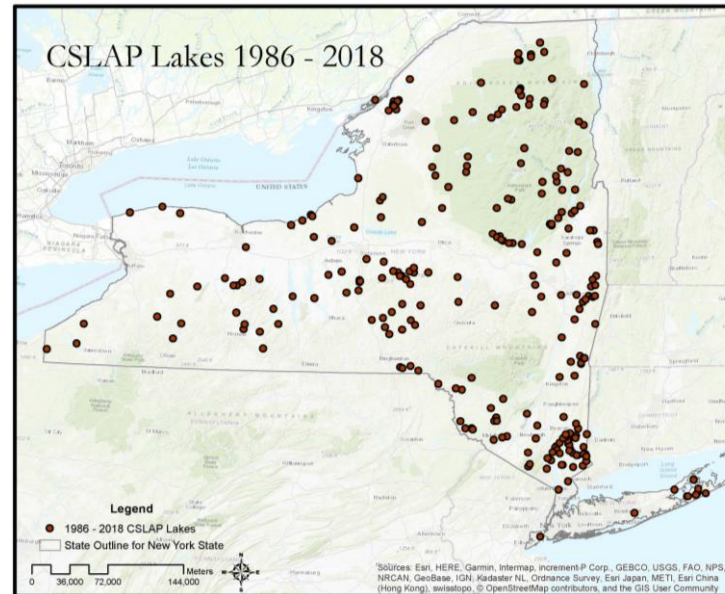
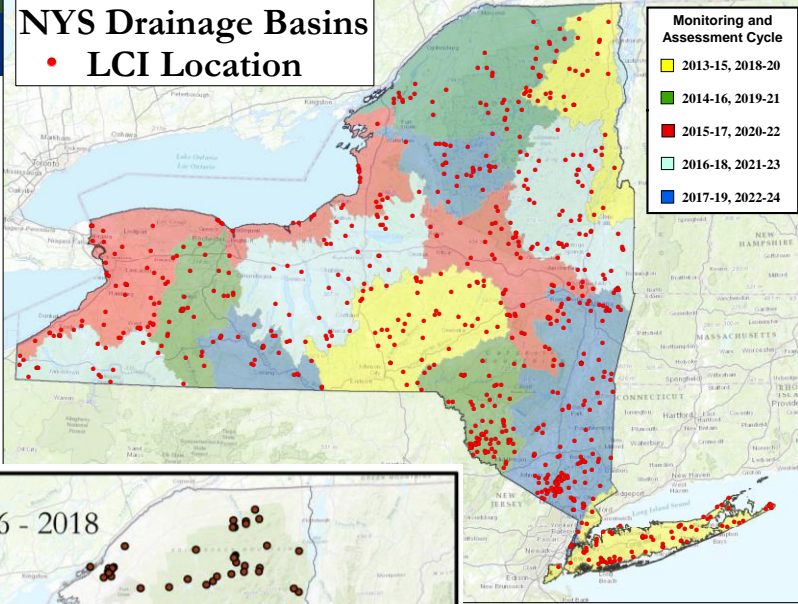


Reporting & Sampling

- Paired water quality monitoring in many waterbodies (DEC and citizen scientists)
- Visual reporting and sampling support notification website
- HABs sampling conducted by DEC staff, trained volunteers, additional partners programs
- Drinking water is the jurisdiction of DOH & local providers

Lake Monitoring Programs

- **Lake Classification and Inventory Program (LCI)**- 1982-1991, 1996-present; 800+ lakes, 50-75 annually,
- **Citizen Statewide Lake Assessment Program (CSLAP)**- 1986-present; 250+ lakes, >150 annually



2020 NYS HABs Reporting Partnerships

- CSLAP Program : **>150** lakes; 8x/summer
- DEC LCI Program: **~80** lakes; 1-4x/summer
- Enhanced shoreline surveys, individual lakes: **~10**; weekly
- Academic researchers: **>20** lakes; weekly
- VT DEC, USACE, NYC Parks, NYC DEP and others: **>30** lakes; variable frequency
- Regulated swimming areas: **>1,400** locations; nearly daily
- Research studies: additional lakes and rivers; variable

The DEC HABs Program

Bloom Status

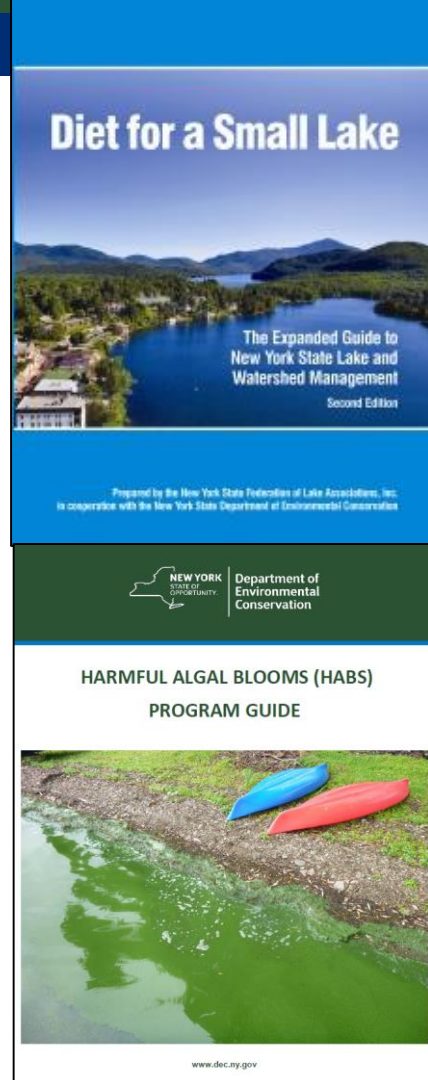
- Determine bloom status (**Confirmed**, or **Confirmed with High Toxins**) based on surveillance (visual evidence) and sampling data

Education

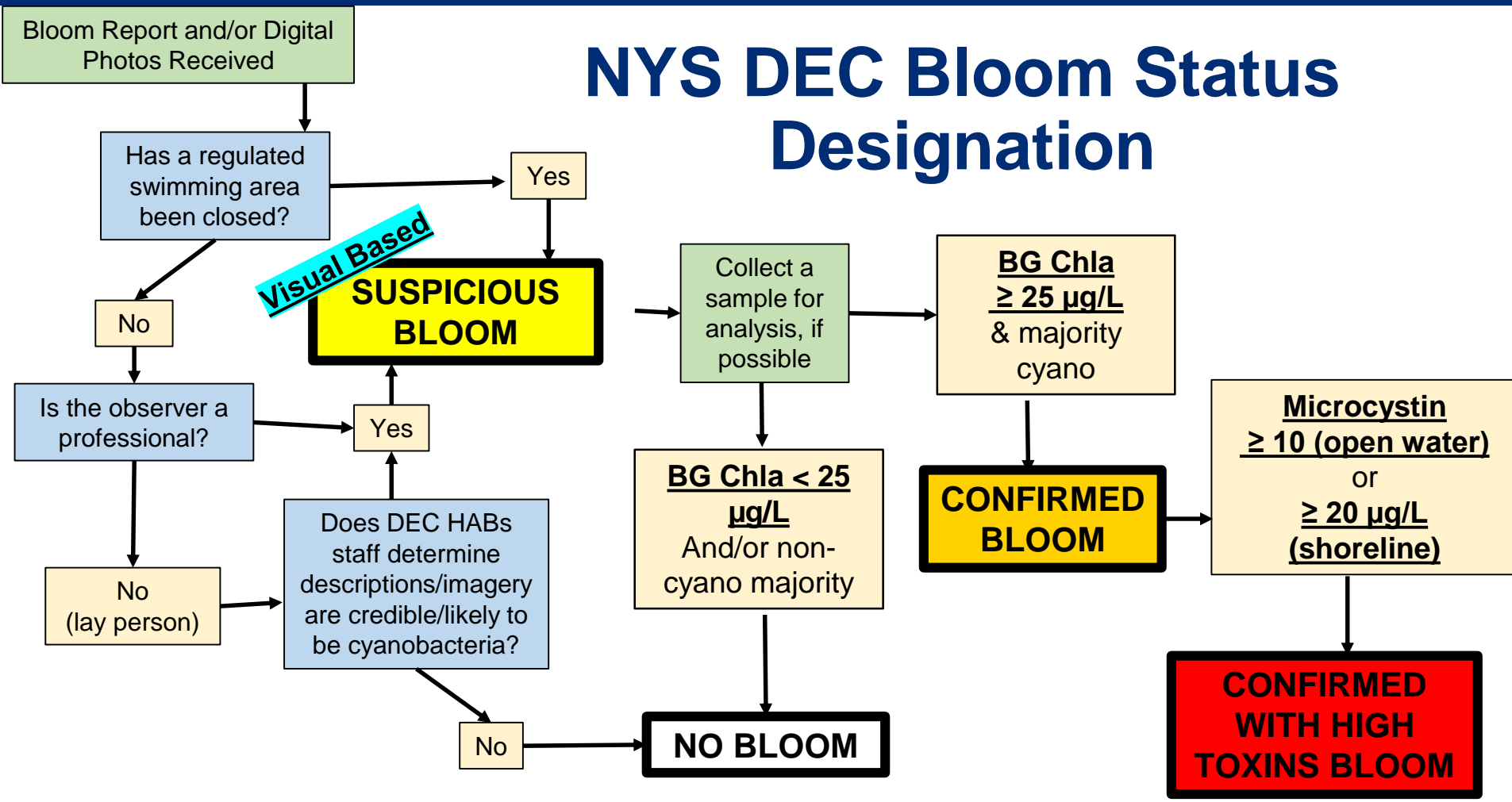
- Maintain website with HABs brochure, photo gallery and more (on.ny.gov/hab)
- Publish articles, respond to press inquiries, public presentations and training workshops

Outreach

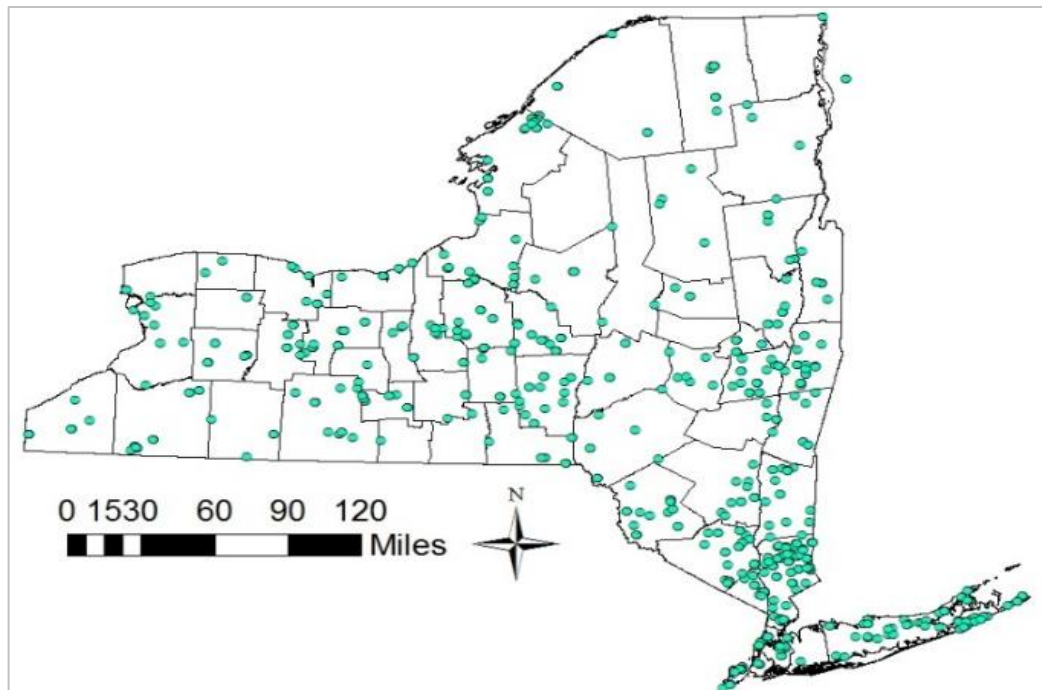
- Regular updates to NYHABS (statewide map) and weekly email newsletter (MakingWaves)



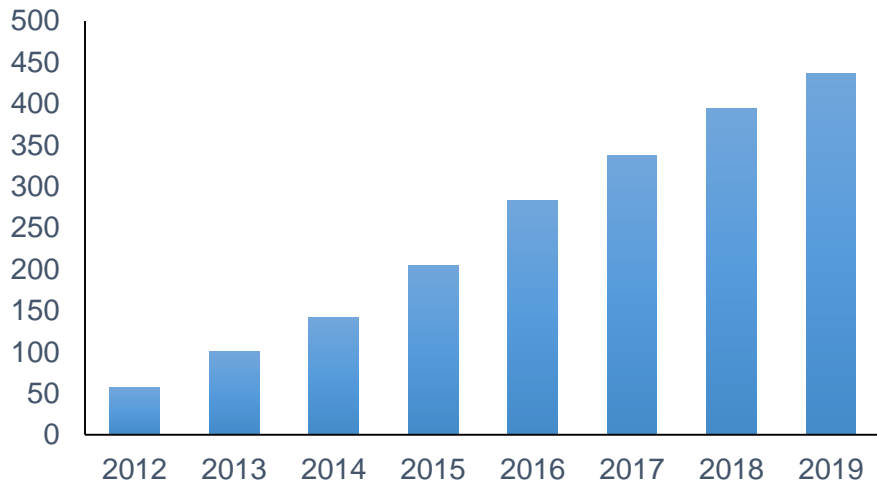
NYS DEC Bloom Status Designation



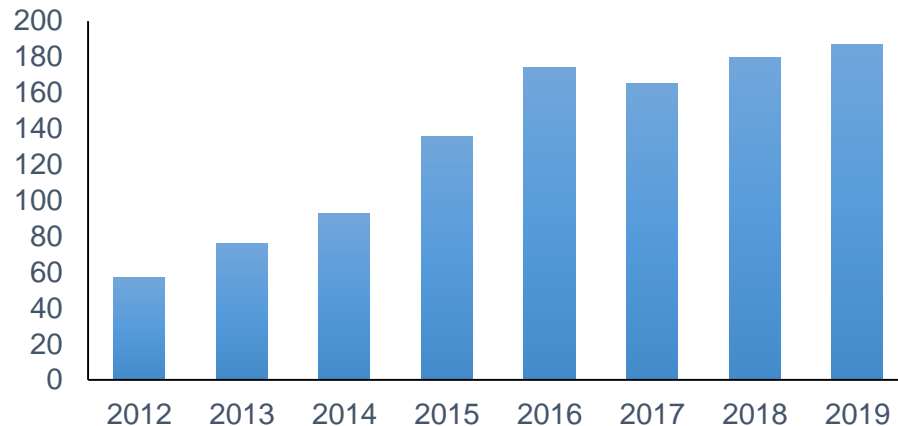
Statewide distribution of reports since 2012



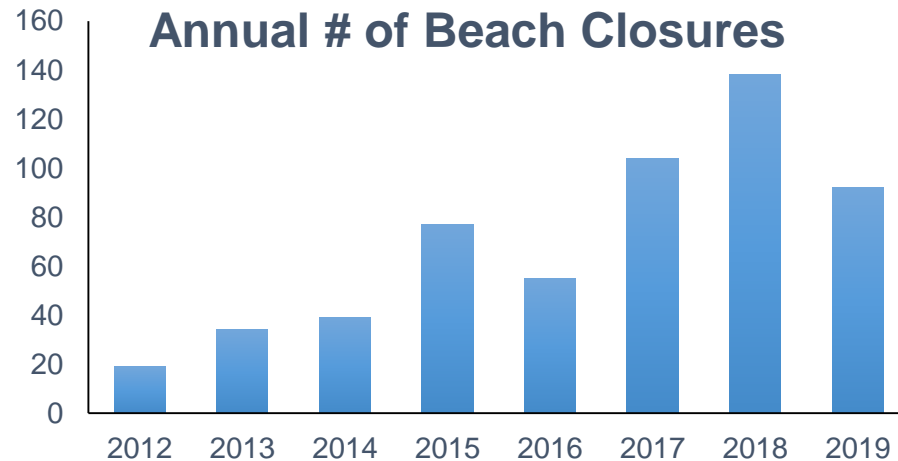
Cumulative # of Waterbodies with HABs



Annual # of Waterbodies with HABs

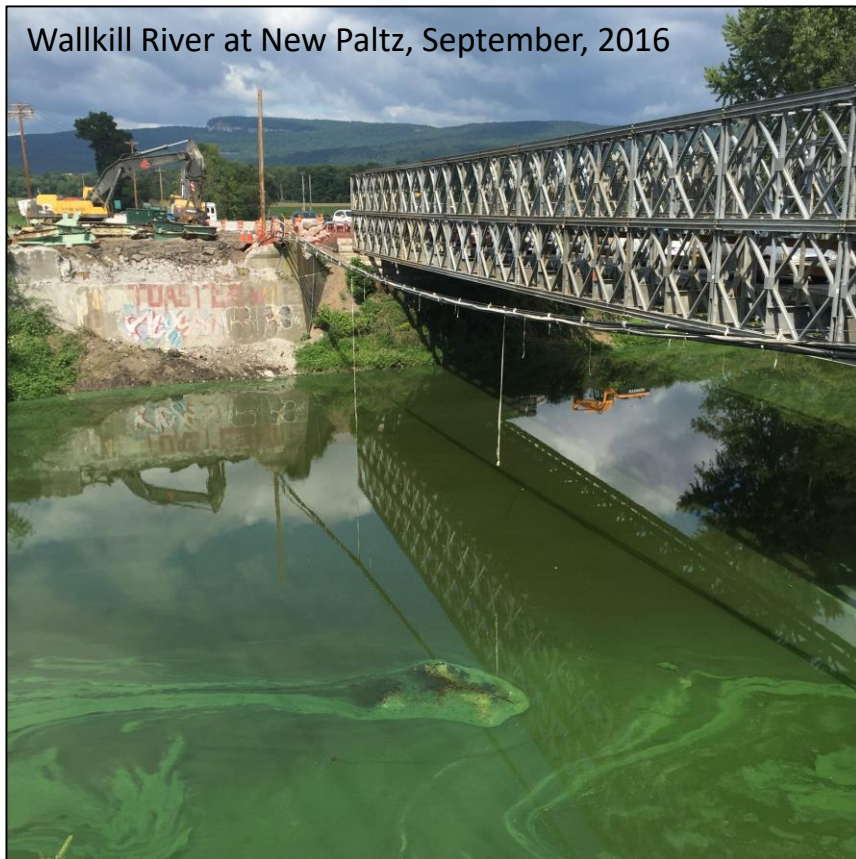


Annual # of Beach Closures

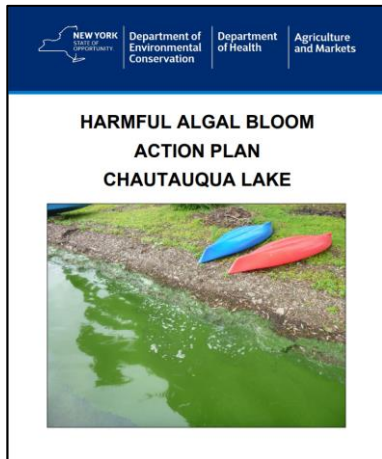


High Profile Events

- Finished drinking water detections & threats
- HABs in all 11 Finger Lakes
- Over 30 miles of the Wallkill River, 2016
- Illness reporting tracked by DOH



Governor Cuomo's HABs Initiative 2018



>\$65 million dedicated to HABs:

- 12 Priority Waterbodies
- 4 Regional Summits
- Priority Waterbody Action Plans (<http://www.dec.ny.gov/chemical/113733.html>)
- Advanced Monitoring
- Mitigation Pilot Projects

Follow up to several recent water quality initiatives

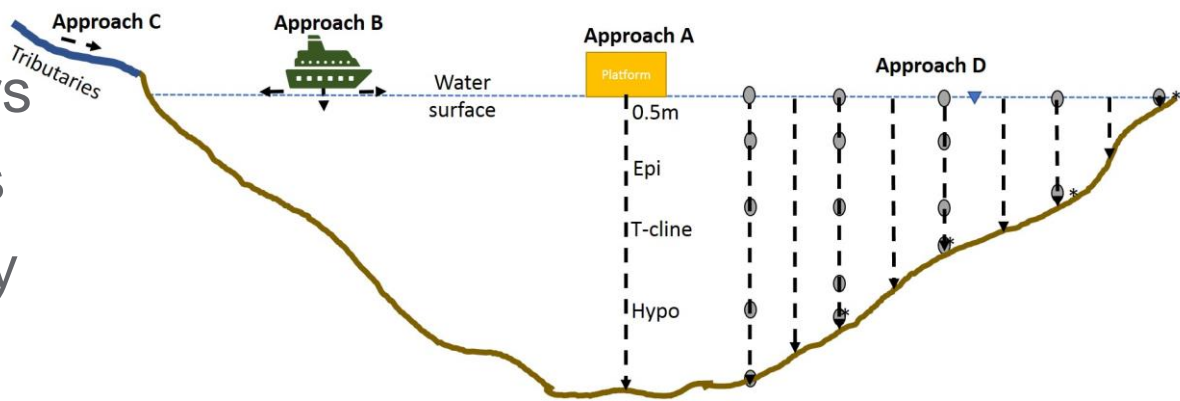


Department of
Environmental
Conservation

HABs Advanced Monitoring Pilot

DEC and USGS piloting
use of advanced
monitoring approaches

- Innovative HAB sensors
- Meteorological stations
- Multi-dimensional study
- Real time reporting
- Public facing webpage:
(<https://ny.water.usgs.gov/maps/habs>)



NYHABS - The NY HABs System

- ArcGIS Online interactive map of HAB reports, updated daily*
- Reports include status, extent, reported by, exact location, photos
- Current Reports: last 2 weeks
- Archived Reports: all previous reports of the year
- User can filter by lake or county and export reports as pdf

on.ny.gov/nyhabs

The screenshot displays the NYHABS ArcGIS Online interface. At the top right, a green header contains the text "About NYHABS" and a page number "18". Below the header, a green box provides instructions: "Press the ... above to minimize the info tab." and "In this map:" followed by two bullet points: "Yellow points are HABs reported within the last two weeks." and "Grey points are archived HABs reported this year." Below this, it says "Click on any point to view HAB report data." and "HABs may be present in other places, or conditions may have changed since the HAB was reported. HABs may be present in all or parts of a waterbody." At the bottom of this box, it says "To report a HAB, please use the [Suspectious Algal Bloom Report Form](#)." The main map shows New York State with various cities and counties labeled. A yellow point is visible in Central Park. A detailed report for "The Lake in Central Park" is shown in a white box with a green header. The report includes the date "5/20/2019, 9:15 AM", the status "Suspicious", the extent "Small Localized", and the reported by "NYC Parks". It also lists the county as "New York County (Manhattan)" and includes a note: "Due to the variable nature of HAB formation, conditions reported here may not reflect current conditions." At the bottom of the report, it lists attachments: "image1.jpeg", "image2.jpeg", and a "Zoom to" link.

18

About NYHABS

Press the ... above to minimize the info tab.

In this map:

- Yellow points are HABs reported within the last two weeks.
- Grey points are archived HABs reported this year.

Click on any point to view HAB report data.

HABs may be present in other places, or conditions may have changed since the HAB was reported. HABs may be present in all or parts of a waterbody.

To report a HAB, please use the [Suspectious Algal Bloom Report Form](#).

The Lake in Central Park

Date of Report: 5/20/2019, 9:15 AM

HAB Status: Suspicious

Extent: Small Localized

Reported by: NYC Parks

County: New York County (Manhattan)

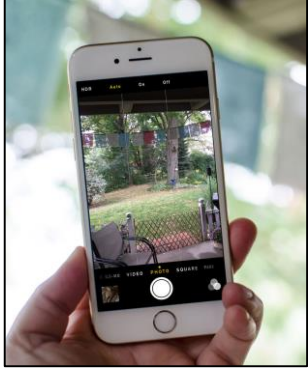
Due to the variable nature of HAB formation, conditions reported here may not reflect current conditions.

Attachments:
[image1.jpeg](#)
[image2.jpeg](#)
[Zoom to](#)

Streamlined Reporting Tools



- Survey123: ESRI ArcGIS Online fillable forms
- Works on any platform (desktop, mobile, tablets)
- Fill out anywhere, but ideally in the field for exact location
- Attach photos to bloom report (required)
- Agency Staff HABs Form: **on.ny.gov/habproform**
- Public HABs Form: **on.ny.gov/habform**



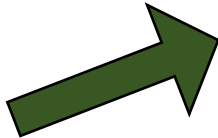
DEC Evaluation



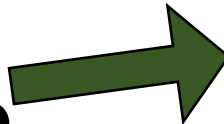
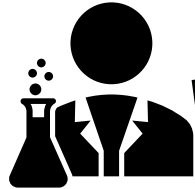
NYHABS



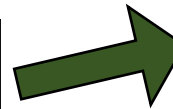
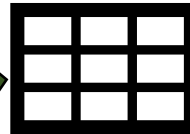
Sample



Lab
Analysis



Results



DEC Evaluation

NYHABS Customized Views

View	Users	Timing	Edit	Raw Data	ArcGIS Login	Photos, Status
NYHABS Workspace	CO DEC, DOH, OPR	All real time	X	X	X	X
NYHABS Portal	Executive staff, regional DEC	All real time		X	X	X
NYHABS (public)	Public	Daily after QA				X

Streamlined Communication w/ Exec

- Annual interagency memo stating planning and prioritization of response
- Daily summary of new HAB reports summarized for Governor's office
- Refine form validation to improve quality of incoming data
- Use of R scripts to supplement AGOL tools



Thank You! Questions?

Rebecca Gorney

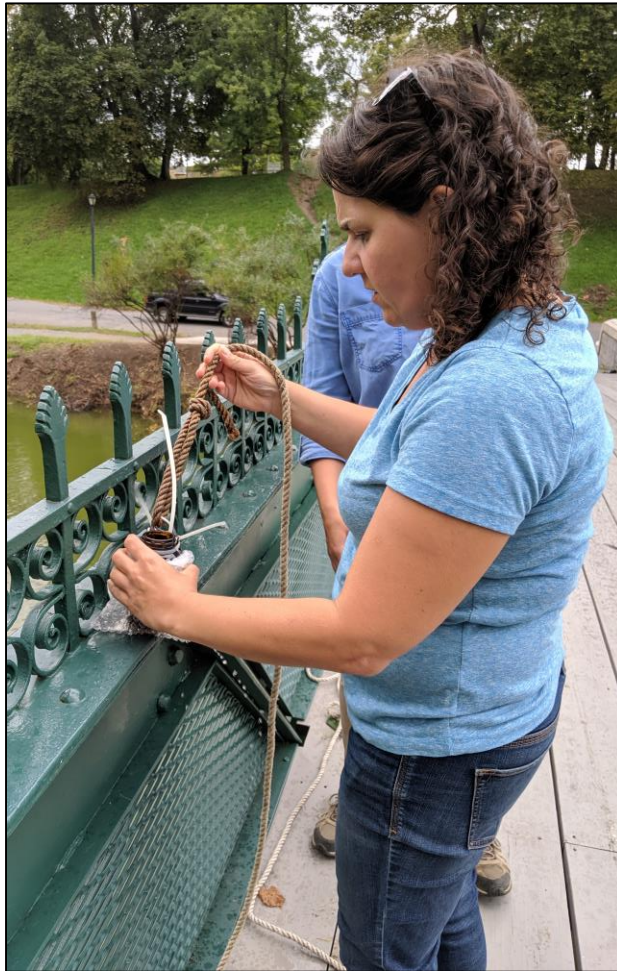
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