NEW YORK STATE | Department of Health

County Health Officials of New York
Leading the way to healthier communities

Climate & Health Adaptation Workshops

Vector-Borne Diseases, Harmful Algal Blooms (HABs), & Food Security

November 3rd, 2022

IMPORTANT INFORMATION!

- For those who have joined via phone before logging in on your computer…
  - To sync your online and phone presence, click on the audio icon (should look like a headset)
  - Select “switch to phone audio” or “phone call” and follow the directions that come up on your screen
  - When your phone and online presence are synced, the audio icon should look like a phone

Thank You!

To the grants that supported these workshops…

CDC-RFA-EH16-1602 CDC-RFA-EH17-1702
CDC-RFA-EH21-2101 CDC-RFA-EH22-2202

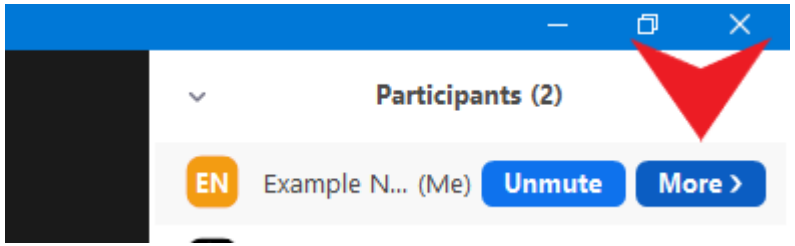
…and to the planning team that brought these workshops to life!

- Neil Muscatiello
- Faith Schottenfeld
- Kristen Vacca
- Laura Agnew
- Sarah Ravenhall
- Cristina Dyer-Drobnack

NEW YORK STATE Department of Health | NYSACHO County Health Officials of New York

Before We Begin…

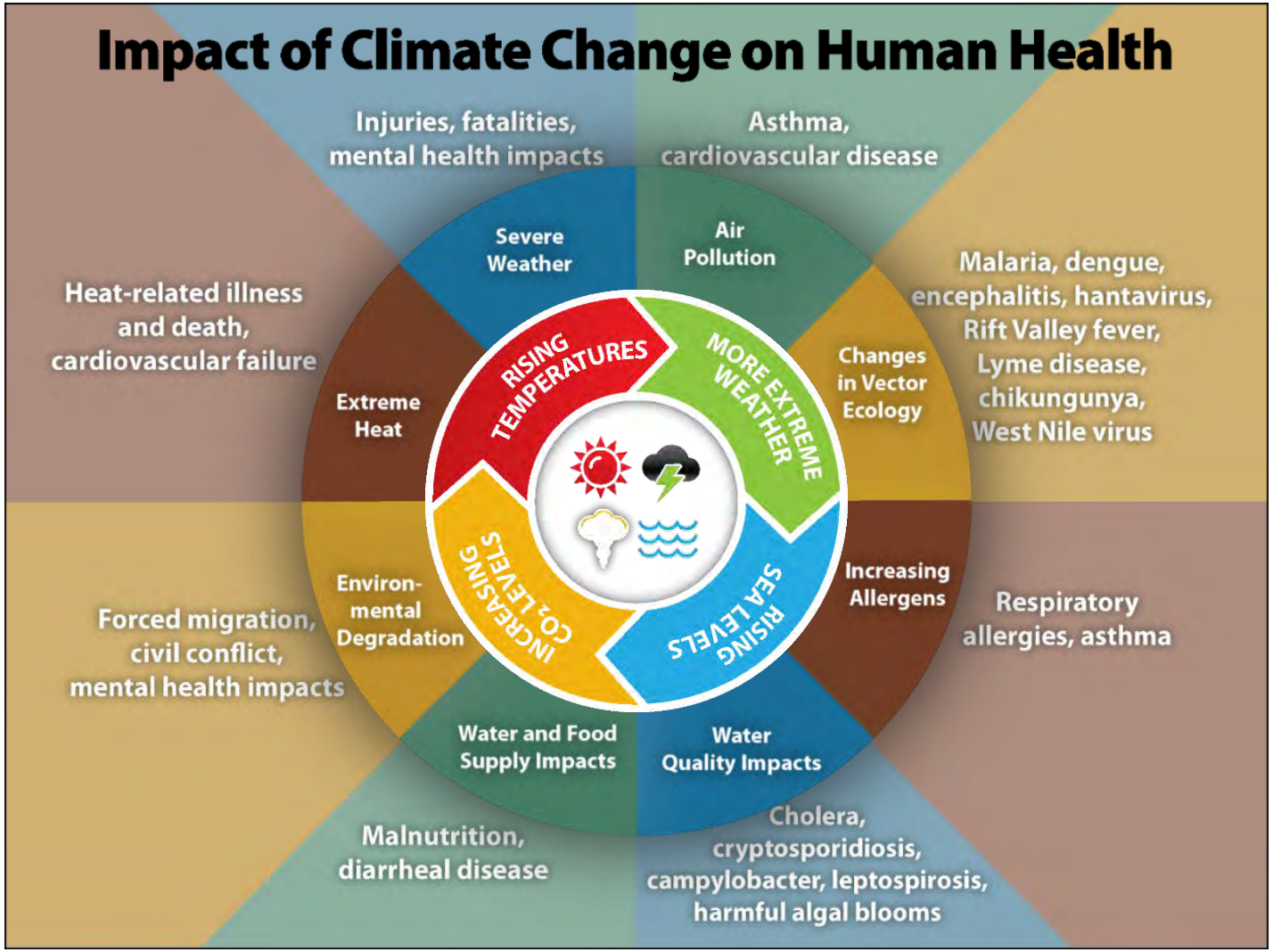
- **This session is being recorded** and will be emailed out to all registrants, and be uploaded onto NYSACHO's webpage
- Please remain **muted** to limit background noise
- At any time during the session, share your thoughts, feedback, and questions using the chat box, or Zoom's "reactions"!
- Please r**ename yourself** to include your name and county/affiliation



In the "Participants" list, hover over your name and click "Rename"

Today's Agenda

9:05 – 10:00 AM	Content Overview
10:00 – 10:15 AM	Break
10:15 – 11:25 AM	Breakout Sessions
11:25 AM – 12:00 PM	Report Out

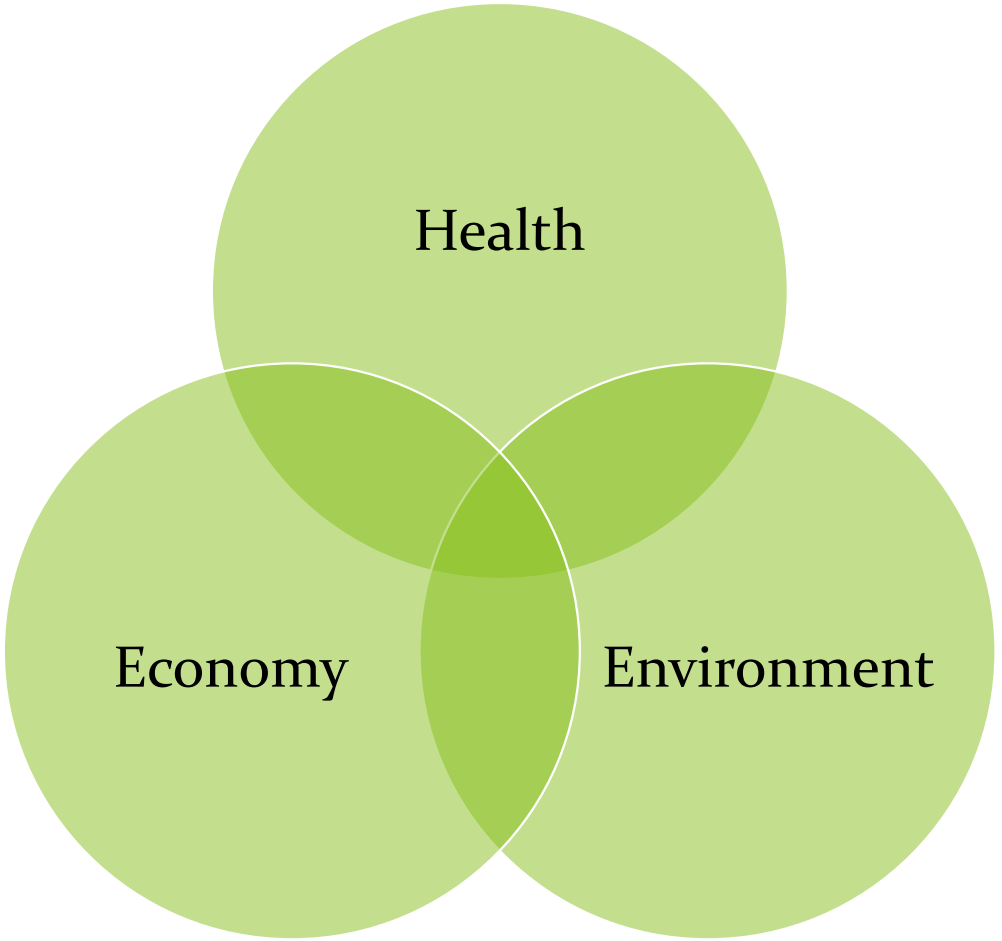


Source: Centers for Disease Control and Prevention, Climate and Health Program

Evolution of Farm to School in Jefferson County

Jefferson County Public Health Service

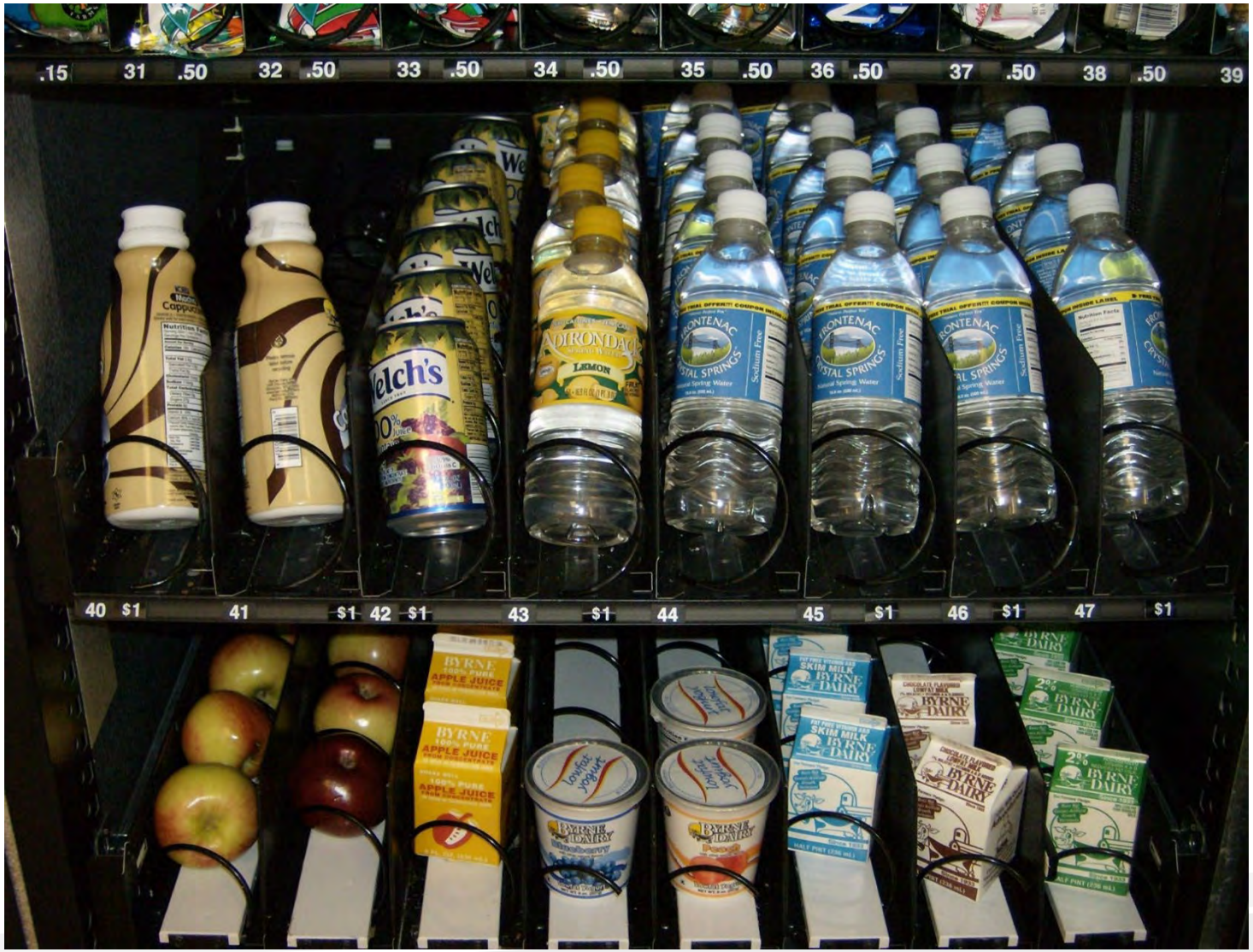
Benefits



Jefferson County Public Health Service

Example

VENDING


.15 31 .50 32 .50 33 .50 34 .50 35 .50 36 .50 37 .50 38 .50 39
Welch's
ADIRONDACK
LEMON
FRONTENAC
CRYSTAL SPRINGS
Sodium Free
40 $1 41 $1 42 $1 43 $1 44 45 $1 46 $1 47 $1
BYRNE DAIRY
APPLE JUICE
SKIM MILK
lowfat yogurt


Your Plate
Pick 5

Salad Bars

School Gardens

Get Involved with Supportive Initiatives

- School Gardens
- Healthy Vending
- Healthy Fundraising
- Nutrition Education
- School Salad Bars
- Smarter Lunch rooms

CCE

Photos from CCE of Jefferson County

Local Foods

Jefferson County Local Foods

Food Policy Council: USDA Grant to United Way: This project has a focus on the needs of low-income individuals and will increase food security by bringing the whole food system together to assess strengths, establish linkages, and create sustainable systems that improve the self-reliance of community members over their food needs

Action:

Learn More

Subscribe to *The Dirt*, the USDA's Farm to School program monthly e-Letter is chock full of updates, webinar info, relevant news, and field notes. https://www.fns.usda.gov/f2s/e-letter-archive

Develop partnerships

- Join groups where producers are in attendance.
- Join School Wellness Committees
- Partner with Cornell Cooperative Extension or if you are a CCE, partner with your LHD.
- Start a list serve of people interested both schools and producing-to connect them.

Look for funding:

USDA awards competitive Farm to School grants that support planning, developing, and implementing farm to school programs. Grants.gov USDA-FNS-2023-F2S

NYS Education Department: http://www.cn.nysed.gov/farmtoschool
NYS 30% Initiative: To incentivize school districts to use more New York State farm products, the initiative increases the reimbursement schools receive for lunches from 5.9 cents per meal to 25 cents per meal for any district that purchases at least 30 percent ingredients for their school lunch program from New York farms. School districts that have reached the 30 percent threshold can apply for reimbursement under the new initiative.

Helpful Links

- School Salad Bars: https://www.saladbars2schools.org/
- Cornell: https://cals.cornell.edu/cornell-cooperative-extension/join-us/new-york-state-farm-school
- USDA: (Census): https://farmtoschoolcensus.fns.usda.gov/
- NYS Education: http://www.cn.nysed.gov/farmtoschool
- USDA: (FNS-2023-F2S) FY23 Farm to School Grant: https://www.grants.gov/web/grants
- CCE of Jefferson County Local Foods: https://www.jcnylocalfoods.org/
- The Dirt: https://www.fns.usda.gov/f2s/e-letter-archive

Contact

Faith Lustik

faithl@co.jefferson.ny.us

315-786-3723

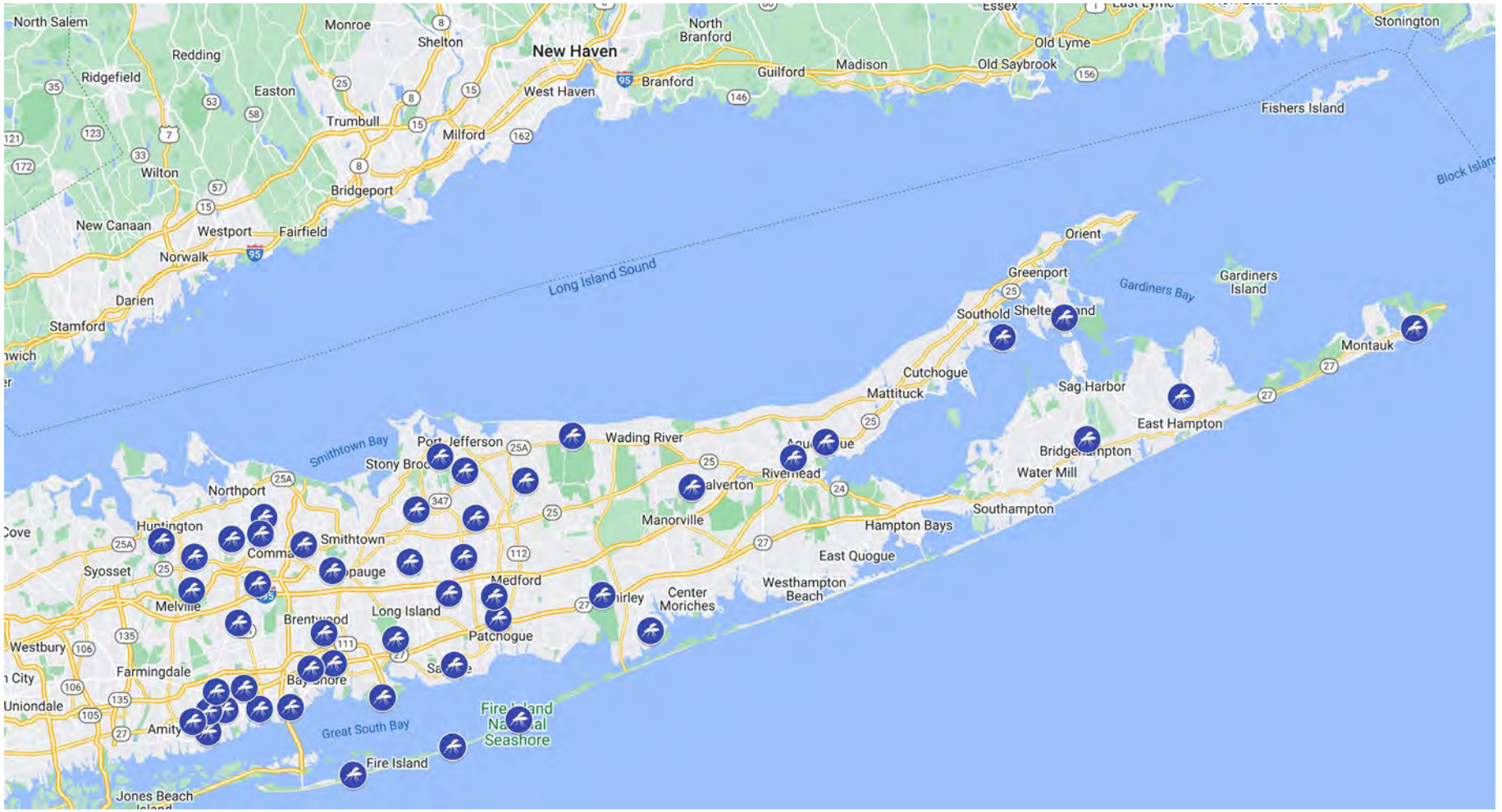
Suffolk County, Climate Change and Vector-Borne Disease

Scott R. Campbell, PhD
Suffolk County Department of Health Services
Laboratory Chief
Arthropod-Borne Disease Laboratory
Yaphank, New York

Suffolk County

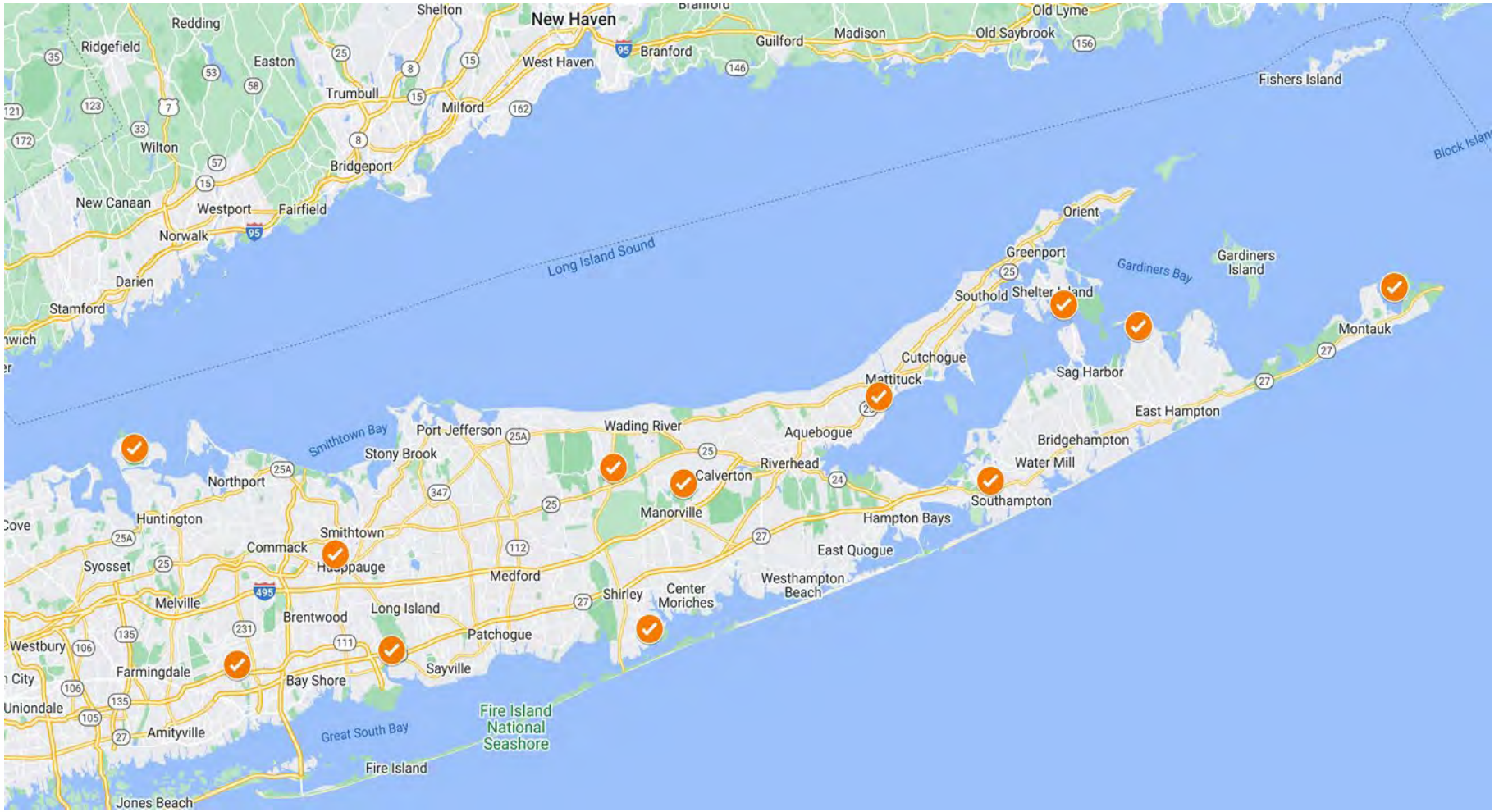
- L.I., 912 sq mi, 980 Miles of Shoreline
- Approximately 1.5 Million Residents
- Saltmarshes, Freshwater Wetlands
- Woodlands, Fields, Residential Areas
- Deer, White-Footed Mice, Crows, Blue Jays
- Maritime Climate (Jan 39º/25ºF, July 84º/66ºF)
- DHS Arthropod-Borne Disease Laboratory
  - MBDs - WNV, EEEV
  - TBDs – Lyme Disease (LSTs)
- DPW Vector Control

Suffolk County - Mosquitoes



WNV and EEEV

Suffolk County - Ticks



BLTs, ADTs, LSTs, ALTs and GCTs

Climate Change and VBD

- CO_2 Builds, Traps Heat, Temperature Rise
- Warmer Average Temperatures
  - Longer Warm Seasons
  - Earlier Spring Seasons
  - Hotter Summers
  - Shorter and Milder Winters
- Vectors - Cold-Blooded Organisms
  - Ticks and Mosquitoes
- Pathogens – Temperature Dependent
- May become more favorable for VBDs

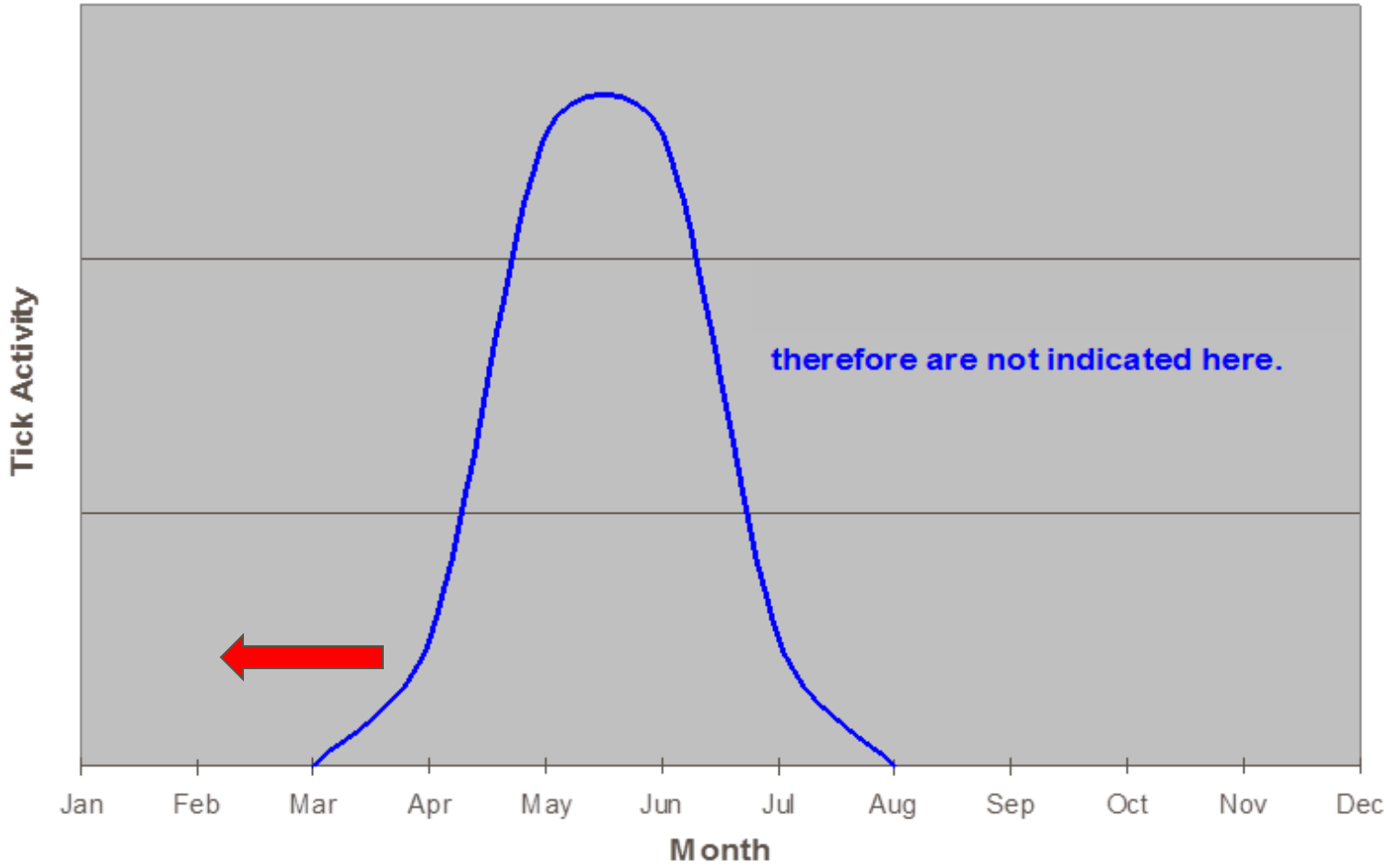
Vector-Borne Disease and Warmer Temperatures

- Complex Interactions and Ecological Systems
- Vectors and Pathogens – Temp Dependent
- Increased Rate of Vector Development
- Increased Breeding Season (e.g. Mosquitoes)
- Increased Mosquito Activity, i.e. Biting Rates
- Increased Vector Reproduction & Survival
- Increased Pathogen Reproduction & Survival

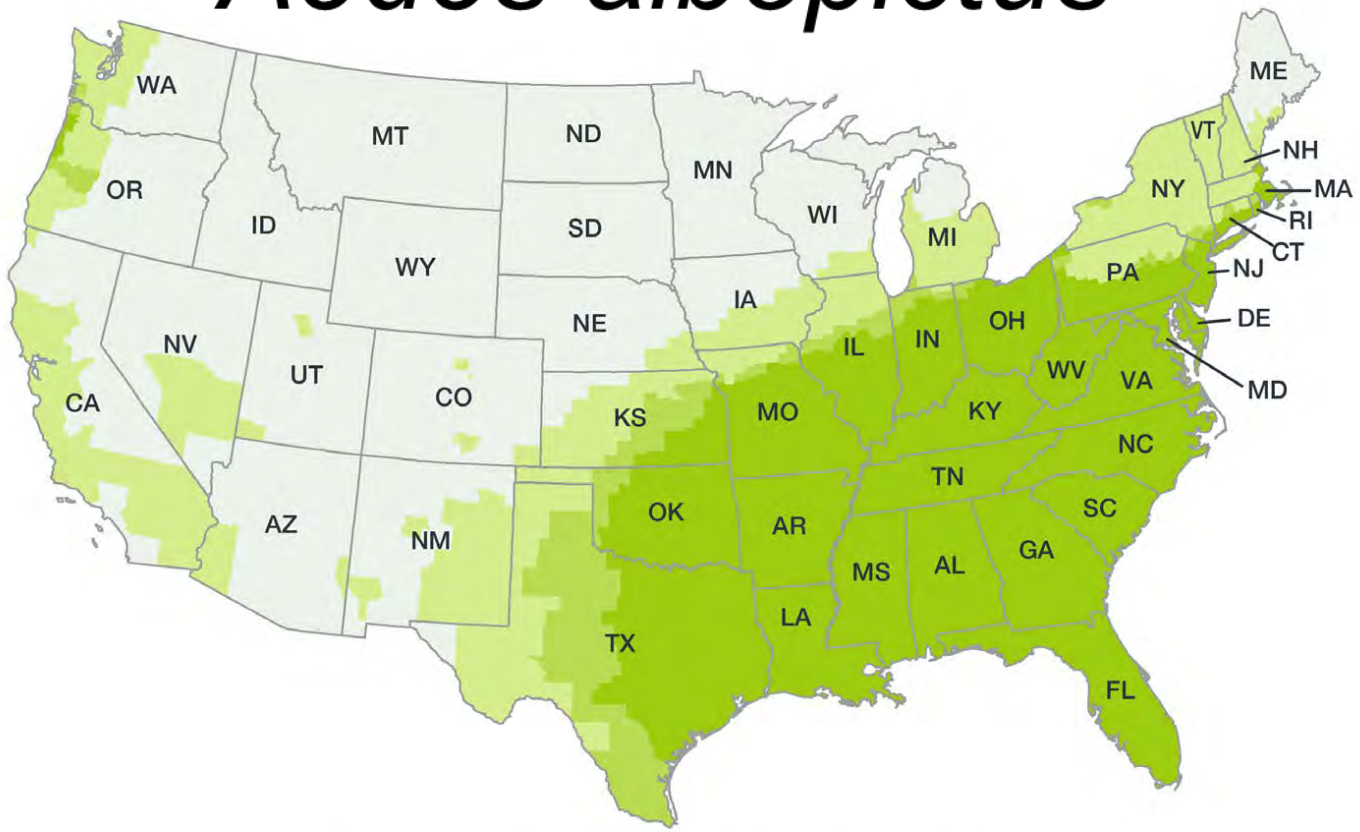
Vector-Borne Disease and Warmer Temperatures

- Vectors and Pathogens – Temp Dependent
- Increased Population Numbers
- Increased Range of Native Species
  - Cold-Tolerance (LSTs & GCTs)
- Establishment of Invasive Species (ATMs)
- Establishment or Risk of New Pathogens
- Phenology of Vectors – Cyclic and Seasonal

Activity of American Dog Tick *(Dermacentor variabilis)*



Asian Tiger Mosquito
Aedes albopictus



Mosquitoes' ability to live and reproduce

very unlikely | unlikely | likely | very likely

2017

CDC

Suffolk and MBDs

- Lower winter mortality
- *Aedes albopictus* (2004), *Aedes aegypti*
  - Dengue (2013)
  - Chikungunya
  - Zika
  - Yellow Fever
- *Anopheles quadrimaculatus*
  - Malaria (1999)
- Travel Cases of Human MBDs
- Potential Pandemic Rise of Human MBDs

Impacts on VBD Programs

- Longer Field Seasons for Surveillance
  - Earlier Spring Start
  - Later Fall Finish
- Increased Public Health risk
  - Increased Entomological Risk
  - Increased Human Behavioral Risk
  - More Time Outside - Hiking, Gardening, etc.
- Increased Educational Outreach
  - Public and Medical Care Providers
- Increased Staff and Resource Needs

Impacts on VBD Programs

- Evaluate a Changing Environment
- Be Prepared for New Species
- Be Prepared for New Pathogens
- Increased Health Risk to Pets
- Altitude and Climate Change
- Vulnerable to Sea Level rise (0-401ft elevation)
- Increased Vector Management
  - Pesticide Applications on Private/Residential Land
  - Pesticide Applications on Public Land

Negative Impacts on VBD?

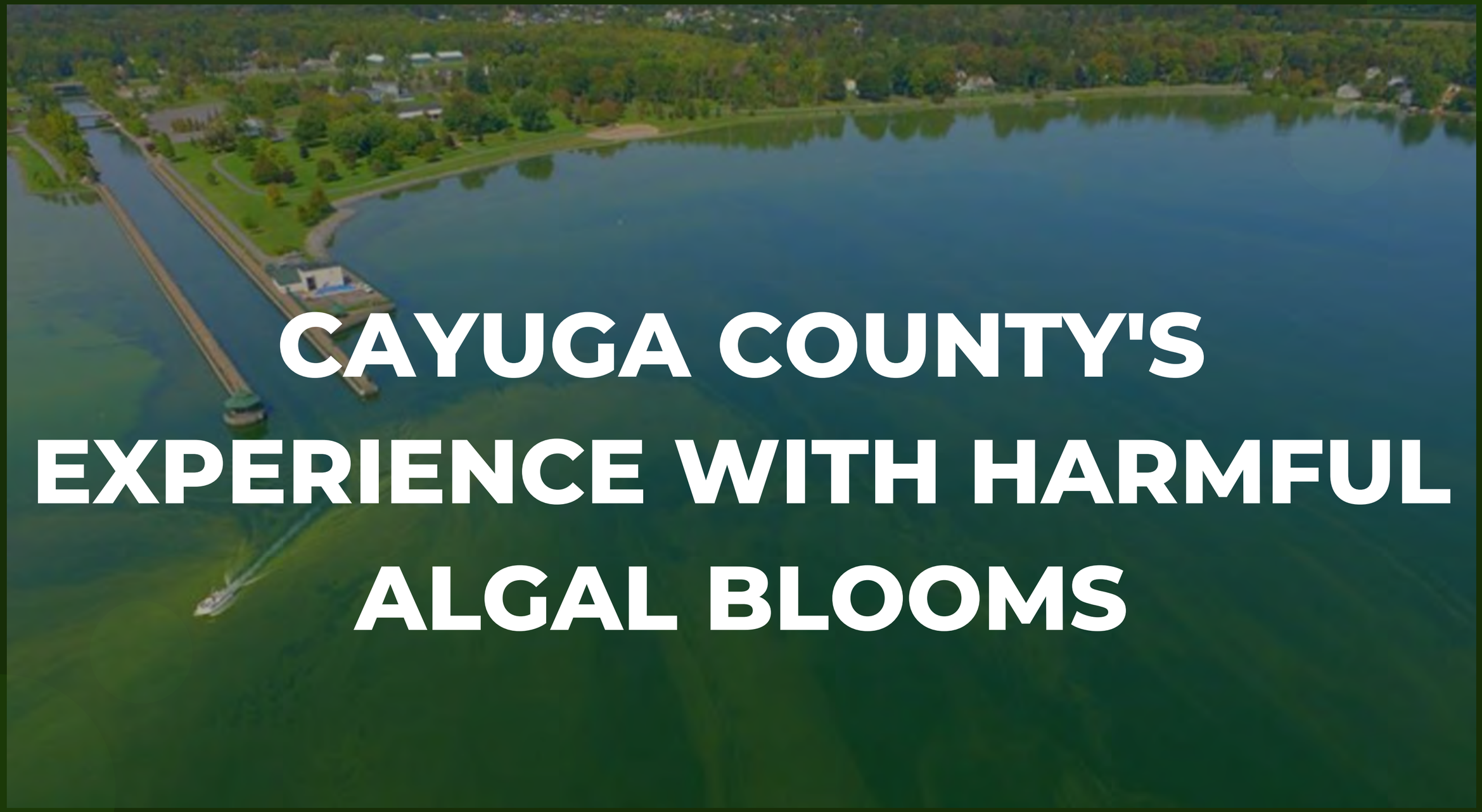
- Conditions may become more unfavorable?
- Habitat Changes – too warm, too wet, too dry
  - Vectors and Hosts
- Impact on Warm-Blooded Hosts (Food, Water)
- Impact on Cold-Blooded Hosts (Lizards)
- Severe weather events can disrupt VBD cycles
  - Hurricanes - Washout Catch Basins
  - Hot dry summers decrease nymphal BLTs
- Can it be get too warm???

Example of “Climate Change”

- Florida versus New York (June-August)
  - Suffolk County
    - 82º/64º
  - Orange County
    - 92º/73º
  - 12 month vs 6 month field mosquito seasons
- Indication of things to come?

Thank you!

Lexi White, Chris Romano and Mike Santoriello
Seasonal Interns and Additional County Staff



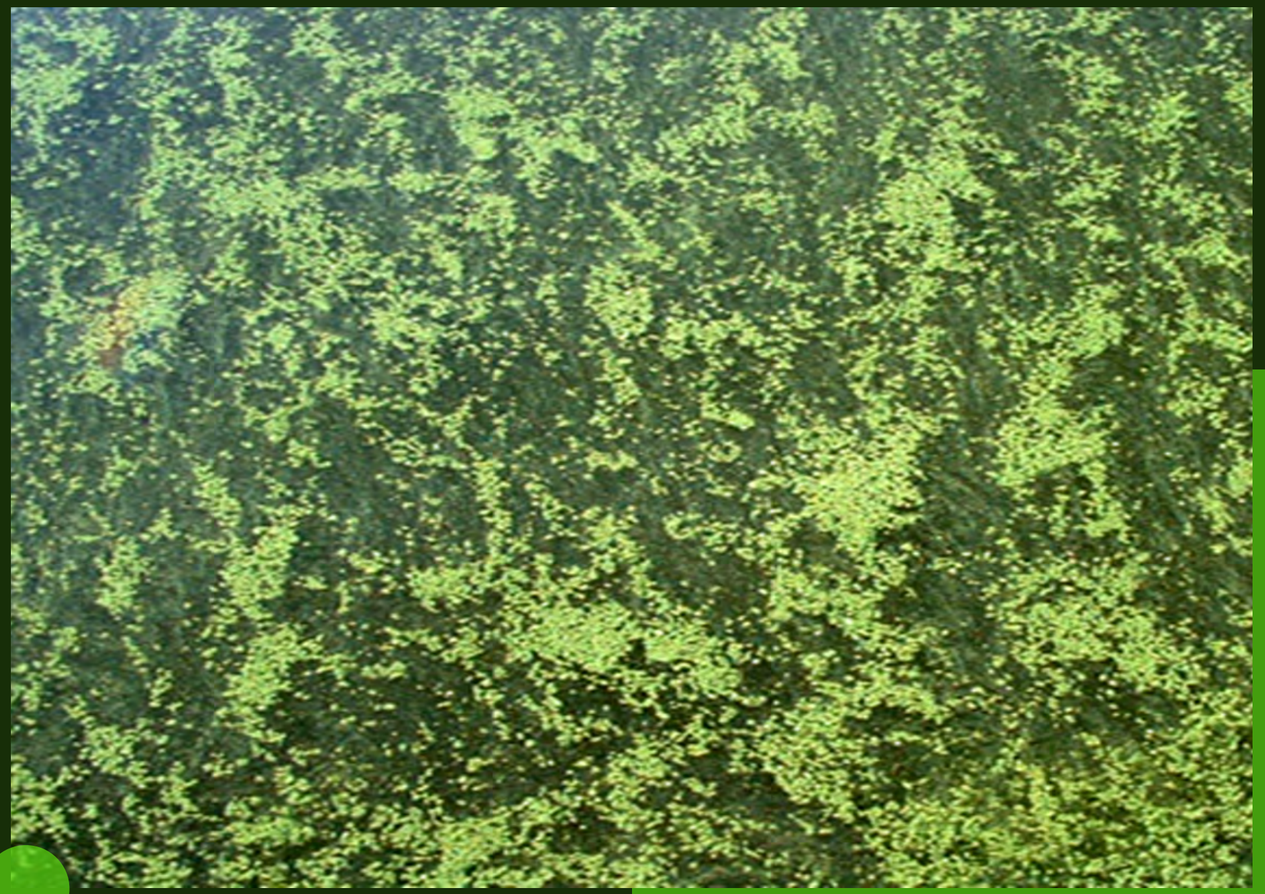
CAYUGA COUNTY'S EXPERIENCE WITH HARMFUL ALGAL BLOOMS

PHOTO PROVIDED BY OWASCO LAKE WATERSHED INSPECTORS

CAYUGA COUNTY HEALTH DEPARTMENT

WHAT ARE HARMFUL ALGAL BLOOMS (HABS)?

Harmful algal blooms (HABs) are **the rapid growth of cyanobacteria that can cause harm to people, animals, and the local ecology**. HABs can look like foam, scum, paint, or mats on the surface of water and can be different colors.



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WHAT ARE HABS CONT.

CAYUGA COUNTY HEALTH DEPARTMENT

WHAT HAPPENS WHEN HABS ARE PRESENT?

- When the cyanobacteria die, the cell wall ruptures and toxins are released into the water
- These toxins can cause health impacts for people and animals
- Raise treatment costs for drinking water
- Hurt industries and local economy that depend on clean water

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HUMAN HEALTH IMPACTS

Recreational Contact/Exposure

- Skin, eye or throat irritation
- Allergic reactions
- Breathing difficulties

Drinking Water

- Stomach upset including vomiting and diarrhea
- Liver and kidney damage

CAYUGA COUNTY HEALTH DEPARTMENT

OWASCO LAKE, CAYUGA COUNTY, NEW YORK

- HABS first started to be a common occurrence on Owasco Lake in the mid 2010s
- Owasco Lake is the drinking water source for City of Auburn, Town of Owasco, & surrounding municipalities who purchase water from these two providers
- Approx 45,000 Cayuga County residents consume water produced from Owasco Lake

CAYUGA COUNTY HEALTH DEPARTMENT

TOXINS IDENTIFIED IN DRINKING WATER FROM BOTH WATER TREATMENT PLANTS IN 2016

- This was the first time cyanotoxins were detected in the treated water at a public water system in New York State
- Results ranged from 0.16 to 0.22 ppb
- The USEPA (Environmental Protection Agency) health advisory for microcystin is 0.3 ppb for pre-school children
- The public was understandably very concerned

CAYUGA COUNTY HEALTH DEPARTMENT

IMMEDIATE LOCAL RESPONSE TO HABS

- Coordinated with Wadsworth Laboratory to have numerous samples analyzed over the next month
- Cyanotoxins were found 11 times in the public drinking water systems during that time period
- Results released immediately to the public

Cayuga County Health Department
8 Dill St.
Auburn, NY 13021

For Immediate Release: Monday September 26, 2016

Contact: **Eileen O'Connor, P.E.**
Director of Environmental Health
Phone: (315) 253-1405
Fax: (315) 253-1478

Low Levels of Blue-Green Algae Toxins Detected in the Town of Owasco and City of Auburn's Treated Water

The Cayuga County Health Department collected untreated and treated water samples Monday, September 26 from the City of Auburn and Town of Owasco's water treatment plants to monitor for toxins associated with blue-green algae. **Detectable levels of toxins** (0.16 micrograms per liter) were found in the City of Auburn's treated drinking water and (0.18 micrograms per liter) in the Town of Owasco's treated drinking water. We were notified this afternoon, that detectable levels of toxins (0.17 micrograms per liter respectively) were found in a sample collected on Sunday September 25 from the Town of Owasco's treated drinking water.

The City of Auburn provides public water to residents in the City of Auburn, the Towns of Aurelius, Fleming Water District 6, Throop, Mentz, Brutus, Montezuma, Sennett, Springport Water District 2, and the Villages of Port Byron, Weedsport, and Cayuga. The Town of Owasco provides public water to residents in the Town of Owasco and Town of Fleming Water District.

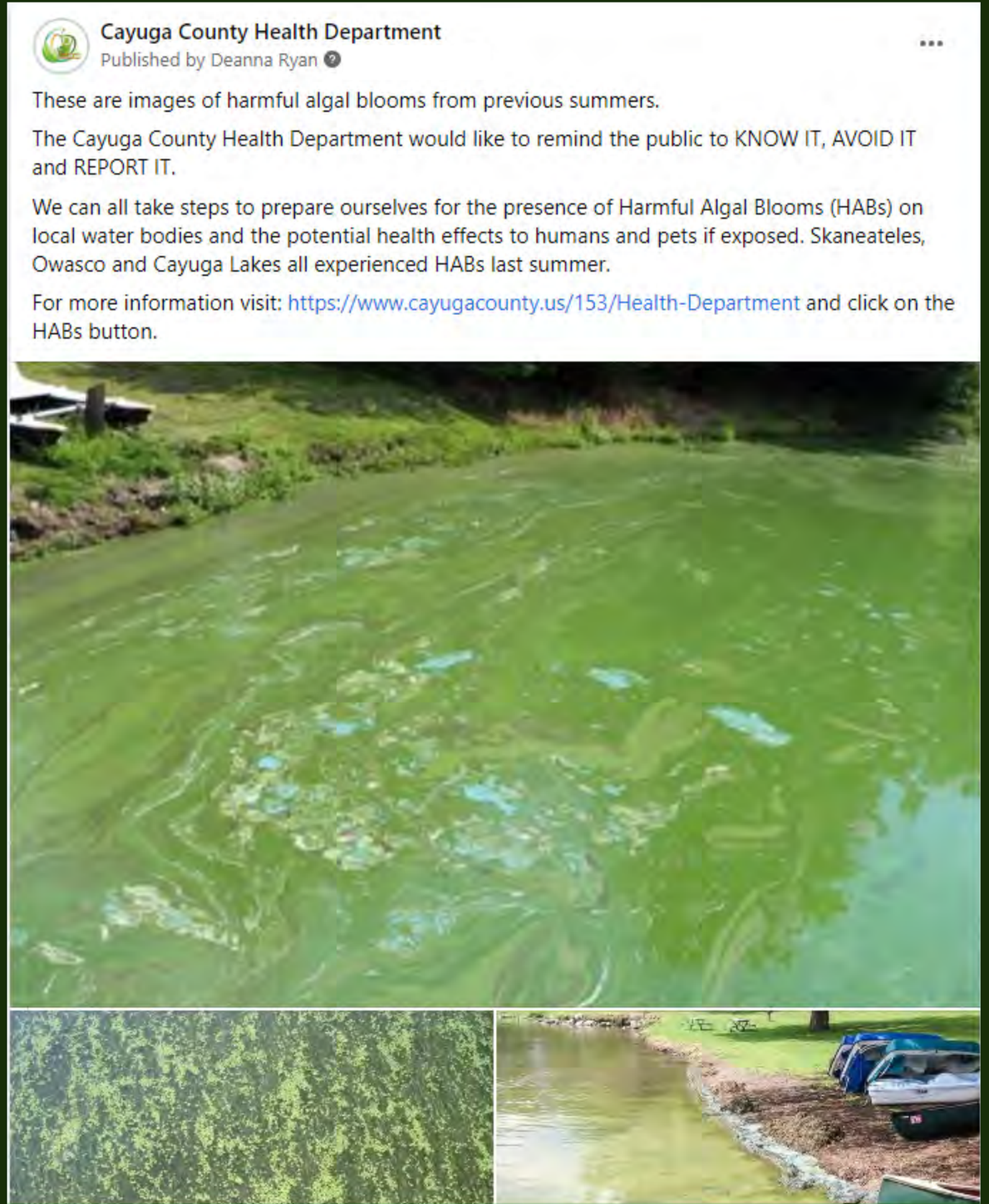
The Health Department will continue monitoring these levels. Samples from both the Town of Owasco and Auburn will be collected and analyzed tomorrow.

Even though there was a detection of microcystin toxin at levels ranging from 0.16 microgram per liter to 0.18 microgram per liter from the samples collected on Sunday and Monday in the treated water serving the City of Auburn and the Town of Owasco, these values **are below** the U.S. Environmental Protection Agency Health Advisory Level for short term exposure of 0.3 microgram per liter for the most sensitive population (pre-school age children). The short term exposure Health Advisory value for school-age children through adults is 1.6 micrograms per liter for microcystins.

CAYUGA COUNTY HEALTH DEPARTMENT

IMMEDIATE LOCAL RESPONSE TO HABS

- Provided technical information to water treatment plants to minimize breakthrough
- Press releases were issued
- Interviews on TV, on radio, and at community meetings
- Information was posted on our website and social media



CAYUGA COUNTY HEALTH DEPARTMENT

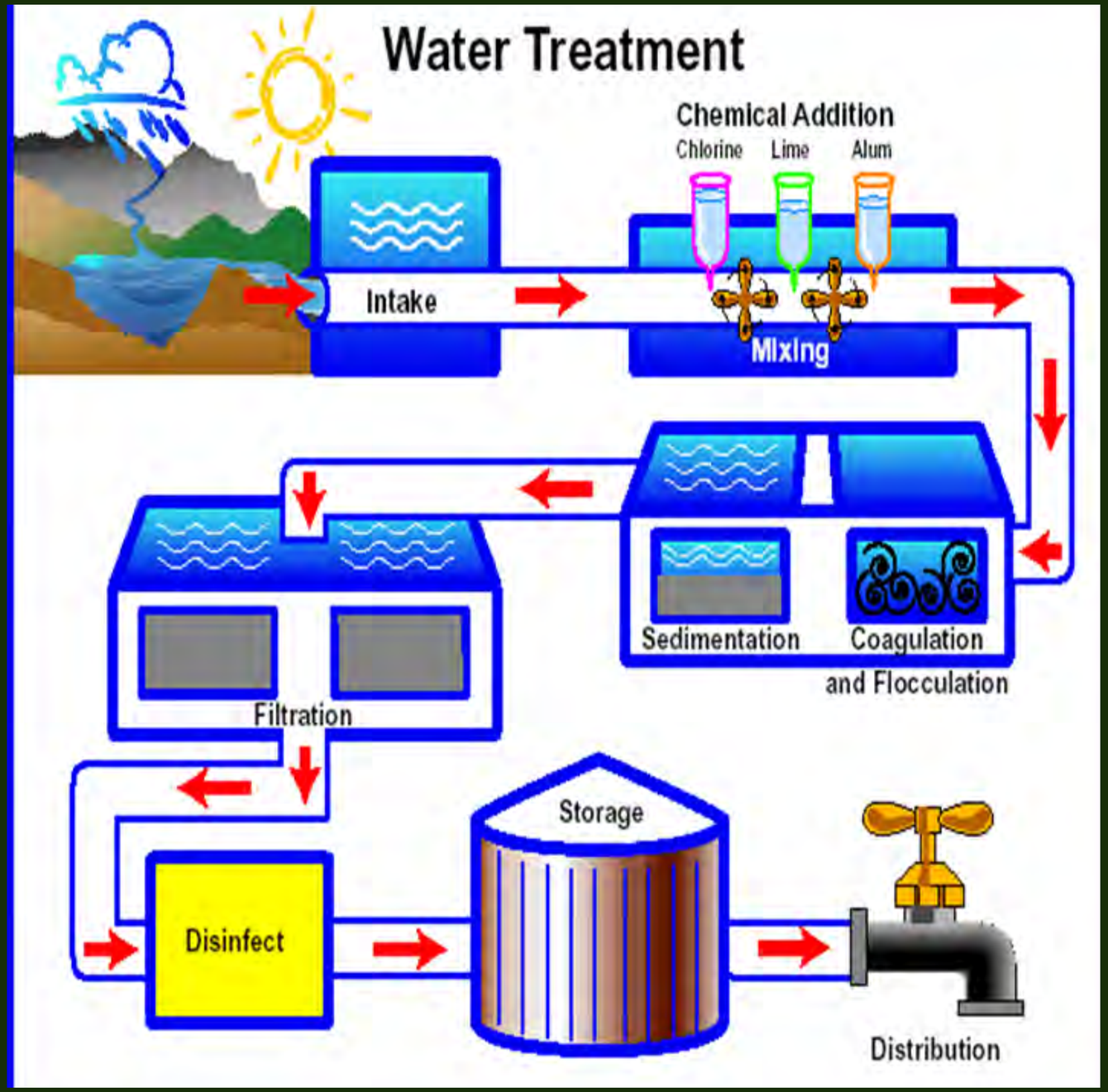
INTERMEDIATE-TERM LOCAL RESPONSE

- The City and Town installed carbon treatment systems designed to remove the toxins by the next summer
- Measures to enhance emergency preparedness should a Do Not Drink Order be issued
  - Remind the public that cyanobacteria blooms are expected and to be prepared
  - Encourage maintaining a 3 to 7 day supply of bottled water on hand
    (1 – 2 gallons per person)
  - Register cell phone with reverse 911

CAYUGA COUNTY HEALTH DEPARTMENT

INTERMEDIATE-TERM LOCAL RESPONSE CONT.

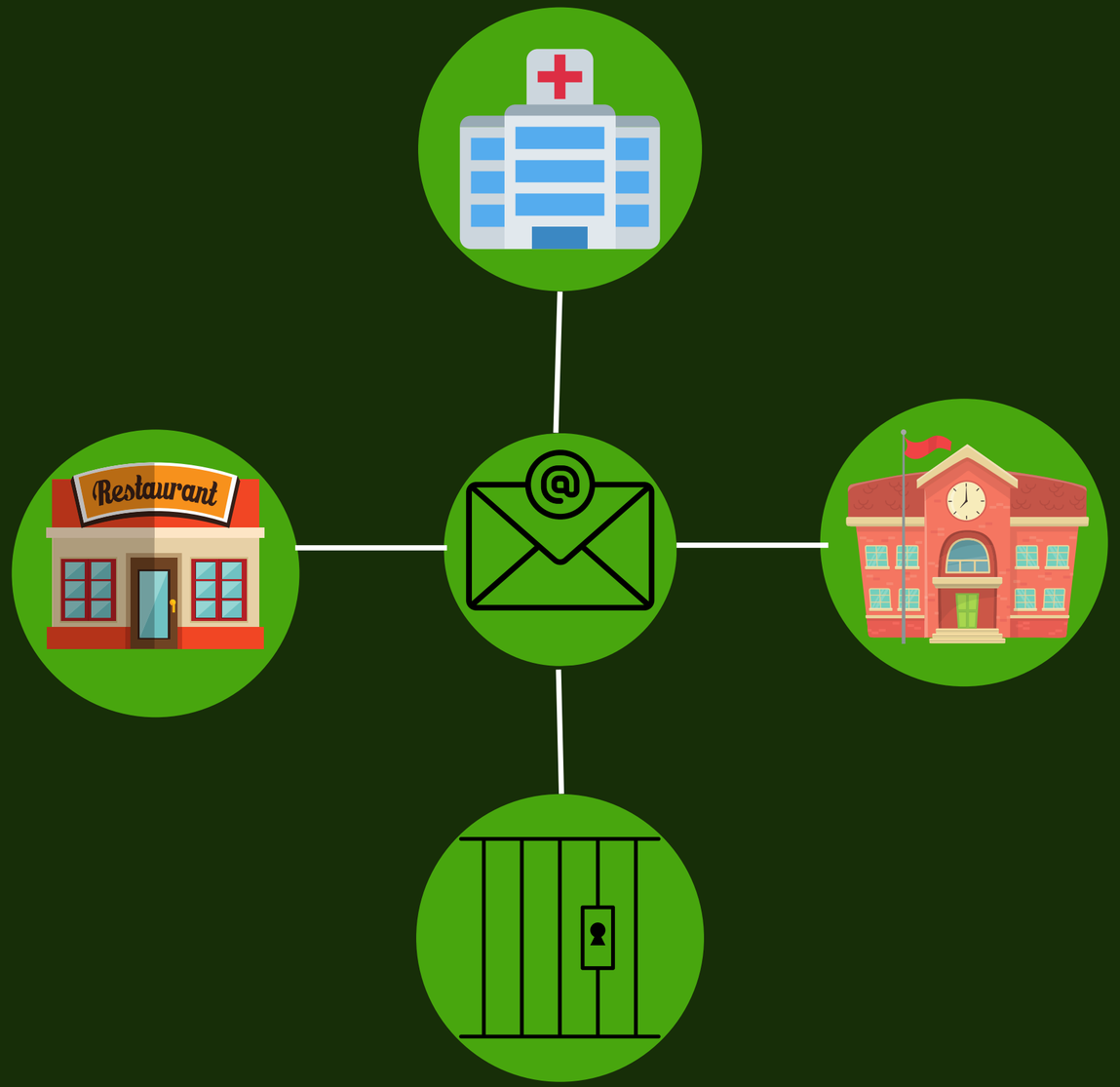
- On-going sampling plan and protocol was developed
- Workshop with many stakeholders on risk communication
- FAQs and message maps were created for staff, stakeholders, public



CAYUGA COUNTY HEALTH DEPARTMENT

INTERMEDIATE-TERM LOCAL RESPONSE CONT.

- Meetings with local businesses that would be impacted
- Sent info to food service establishments
- Conversations with local hospital, nursing homes, assisted living facilities
- Discussion with local jail and prison
- Spoke to school superintendents
- Outreach to medical providers, including dentists



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INTERMEDIATE-TERM LOCAL RESPONSE CONT.

Targeted Education and Outreach for Public

- Know It, Avoid It, Report It – signs were purchased and posted at boat launches and bathing beaches
- Direct mailers to lake front owners discouraging drawing lake water for residential use
- Information shared with homeowners' associations, realtors, property management and rental companies
- Posted information at churches and convenience shops within 2 miles of Owasco Lake

CAYUGA COUNTY HEALTH DEPARTMENT

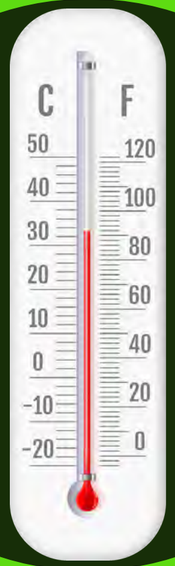
INTERMEDIATE-TERM LOCAL RESPONSE CONT.

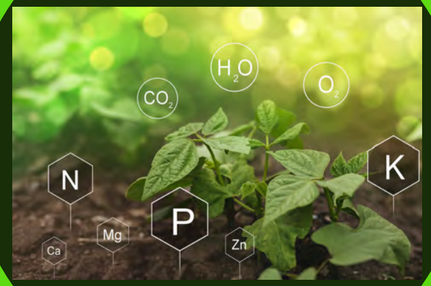
Phone Bank Set Up and Drill

- We tested our local capacity to set up, train staff and manage a phone bank if a Do Not Drink Order was issued
- Staff were provided training on HABs and given the scenario as part of just in time training
- Callers calling in asked questions of staff and staff responded to the questions accordingly

CAYUGA COUNTY HEALTH DEPARTMENT

WHERE DOES CLIMATE CHANGE FIT IN?





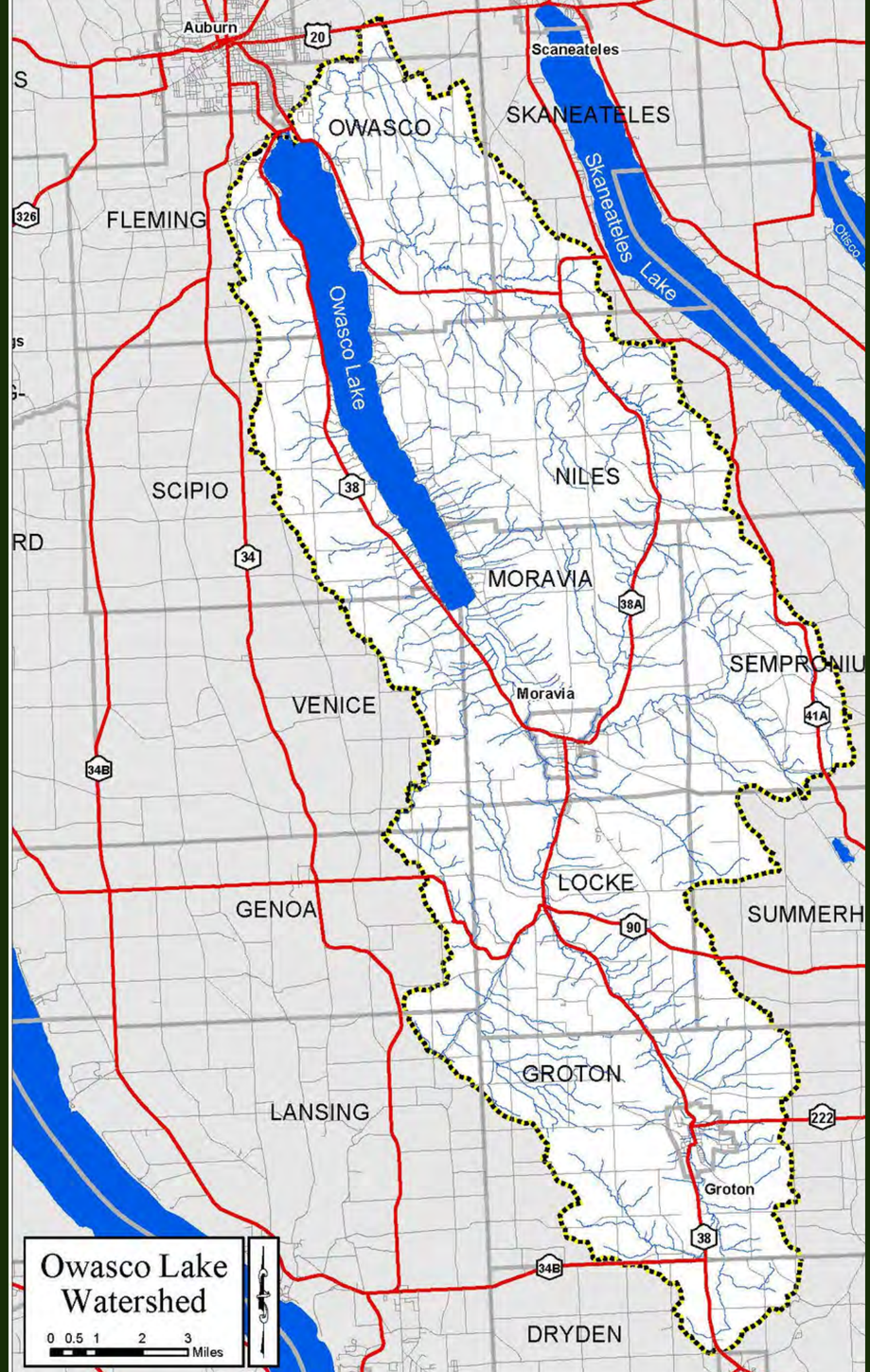
- Scientists don’t fully understand what causes a bloom, but they do know that HABs like
  - Warm temperatures
  - Nutrients
- Warmer weather increases the temperature of the lake water
- Violent storms cause increased runoff and flooding which bring nutrients to the lake

CAYUGA COUNTY HEALTH DEPARTMENT

LONG TERM LOCAL RESPONSE

Make the watershed more resilient to better withstand storm events.

- Updated watershed rules and regulations. (Still undergoing review by the NYSDOH)
- Completed a 9 Element plan that outlines Best Management Practices (BMPs) that should be put in place.
- Strengthen the Owasco Lake Watershed Management Council (OLWMC) and inspection program



LONG TERM LOCAL RESPONSE CONT.

- Working with an applied behavioral science systems firm to increase voluntary adoption of BMPs
- Providing education regarding the importance of soil health
- Obtaining funding for BMP implementation
- Develop nutrient managements plans through New York State Agricultural Environmental Management (NYS AEM) program
- Aquatic weed harvesting

CAYUGA COUNTY HEALTH DEPARTMENT

LOCAL PARTNERS INCLUDE

- City of Auburn
- Town of Owasco
- Owasco Lake Watershed Management Council
- Cayuga County Planning Department
- Cayuga County Soil & Water Conservation District
- Cornell Cooperative Extension
- Owasco Watershed Lake Association

THANK YOU

THE CAYUGA COUNTY HEALTH DEPARTMENT

NEW YORK STATE | Department of Health

County Health Officials of New York
Leading the way to healthier communities

Questions?

Use the chat box or use the “raise your hand” feature to ask your question(s)!

Breakout Rooms

Option 1: Pick a topic-specific breakout room to join:

- Vector-Borne Diseases
- Harmful Algal Blooms (HABs)
- Food Security

Option 2: If you would prefer to have a separate breakout room – let us know, and we can set that up for you!

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Break ☺

Return at 10:25 AM

Climate & Health Adaptation Workshop: Vector-Borne Diseases, Harmful Algal Blooms, Food Security

Breakout Session Report Out

VECTOR-BORNE DISEASES

What climate adaptation activity(s) did your group focus on?

- Developing public outreach
  - with new and fresh messaging
  - maintaining property (for example pools)
  - personal protective measures
  - For vulnerable populations
- Enhancing Fight the Bite campaign
- Handling legal complaints
- Being creative when you have limited resources
- Opportunities for resources
- Addressing the larger impact VBD will have in the future

Who are your partners for this activity?

- County Vector Control Program
- CDC
- NYSDOH
- Cornell Cooperative Extension
- Gardening centers, libraries, health fairs
- summer camps, schools
- Parks and recreation
- Campgrounds
- Alpin Haus RV
- Butchers, hunters, DEC
- Academic Institutions
- Medical providers

What are your next steps?

- Evaluate the risk of VBD in each county
- Surveillance/Monitoring
- Develop new messaging that will inspire residents to be proactive
- Finding new partners for outreach and education

What kind of assistance/support do you need?

- Information on additional resources counties can utilize
- Sharing of resources from other counties

HARMFUL ALGAL BLOOMS

What climate adaptation activity(s) did your group focus on?

- Messaging/community outreach
  - Prevention/mitigation
- Drinking water and recreational water concerns/treatment strategies
- Emergency response
- Agriculture impacts/local and state regulations
  - Phosphorus fertilizers/nutrient loading/source point
  - Septic System regulations
  - 9 element plan
  - Drinking Water source protection plan

Who are your partners for this activity?

- **Lake associations** , HABS surveillance groups, local businesses, DEC, churches, local media, planning and agriculture groups, children's camps,

  →Knowing your community and what they need (education level in general and that it decreases in emergency situations, language)

What are your next steps?

- Having emergency management messaging (during/after a bloom) and proactive education/ prevention materials in off season (non-bloom)
  - Know it. Avoid it. Report it campaign, increasing awareness year round
  - state/regional messaging
- HABS drinking water response plan template
- 9 Element plan
- harmfulalgae@health.ny.gov
- Emergency Preparedness funds for drinking water

What kind of assistance/support do you need?

- Educational materials, **political support/ Watershed Regulations, more state materials counties can use (campaign, print, templates)**

FOOD SECURITY

What climate adaptation activity(s) did your group focus on?

- Healthy Neighborhoods, Farm to School, Adapting policies to reflect challenges of climate change (Meals on Wheels), starting a food policy council

Who are your partners for this activity?

- Local farmers, Schools - teachers & lunch program staff, Food bank, Meals on Wheels volunteers, CCE Farm, Food Pantries, Garden Share, Local Health Initiative, Food Alliance, Community Centers, JCEO (backpack program), Gleaning services, Home health agencies, local libraries, churches

What are your next steps? Recommendations.

- Food desert mapping (online interactive tool): https://www.usda.gov/media/blog/2011/05/03/interactive-web-tool-maps-food-deserts-provides-key-data
- getting in touch with policymakers, partnering with community organizations

What kind of assistance/support do you need?

- Need storage space for food/distribution, Funding, Transportation for produce, strategies to help people learn how to cook fresh veggies, nutrition education to help people change eating habits