Cape Cod Ponds Network Meeting

PRESENTERS

Kathleen Mason, Water Resources Analyst, Cape Cod Commission

Tim Pasakarnis, Water Resources Analyst, Cape Cod Commission

Elizabeth Herron, University of Rhode Island Watershed Watch

Judith Bruce, Board of Directors, Orleans Pond Coalition

Andrew Gottlieb, Association to Preserve Cape Cod

FACILITATOR

Tim Pasakarnis, Water Resources Analyst, Cape Cod Commission

Network Structure and Objectives

- Provide a single forum and meeting place for pond groups throughout the Cape Cod region to share and receive resources
- Provide a venue for ongoing updates on pond topics of regional interest
- Help inform stakeholder engagement process of Freshwater Initiative
- Help advance pond improvement strategies and solutions identified through the Freshwater Initiative at the local level

CAPE COD COMMISSION

APCC Association to Preserve Cape Cod

Identified Needs

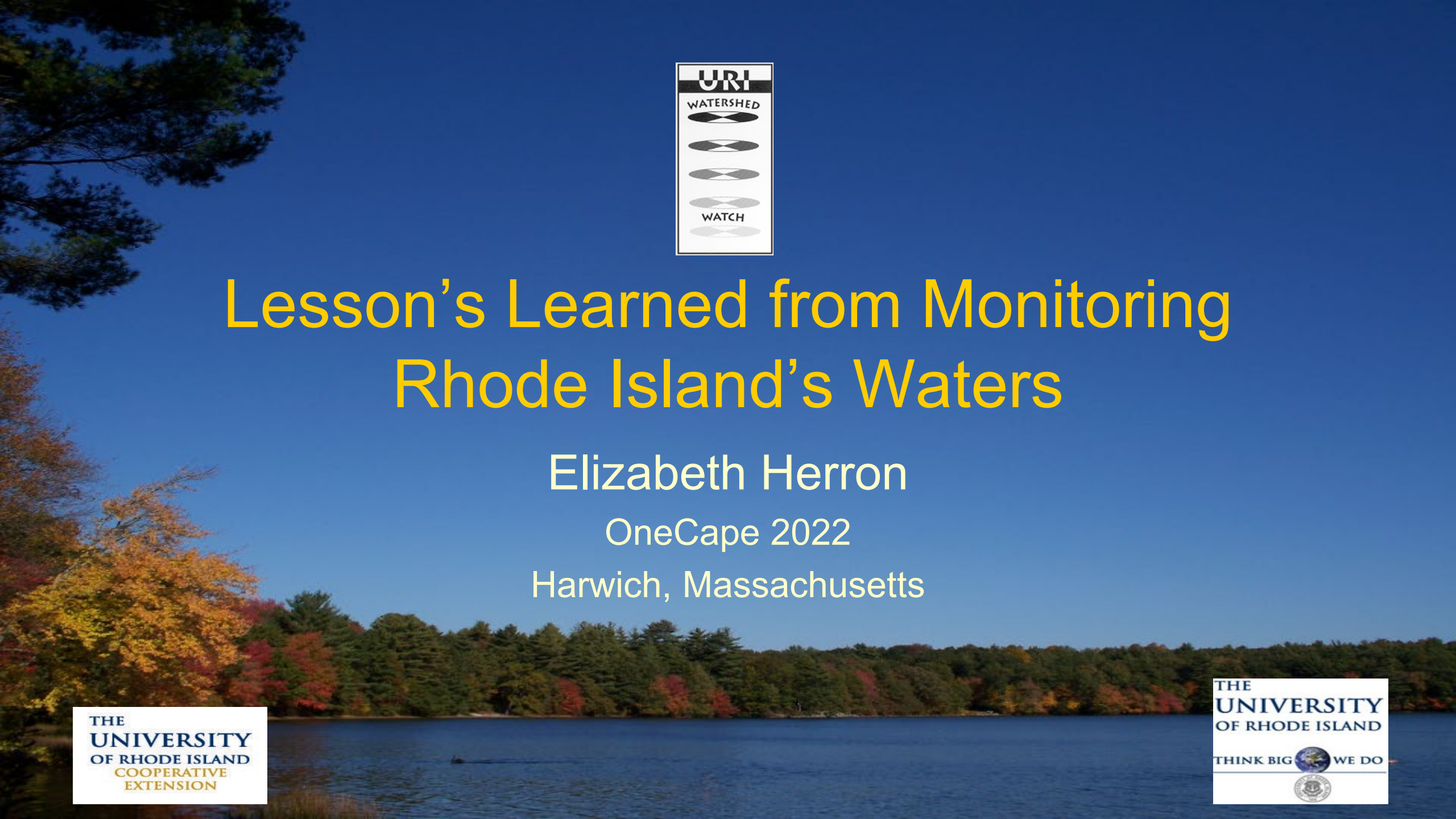
1. Engagement, marketing, communications, educational resources
2. Central location for ponds resources
3. Guidance on leadership and organization
4. Funding resources
5. Updated information on pond remediation approaches

Cape Cod Ponds Network Meeting

Lessons Learned from Monitoring Rhode Island's Waters

ELIZABETH HERRON

PROGRAM DIRECTOR,
UNIVERSITY OF RHODE ISLAND WATERSHED WATCH



Lesson's Learned from Monitoring Rhode Island's Waters

Elizabeth Herron

OneCape 2022

Harwich, Massachusetts

THE UNIVERSITY OF RHODE ISLAND COOPERATIVE EXTENSION

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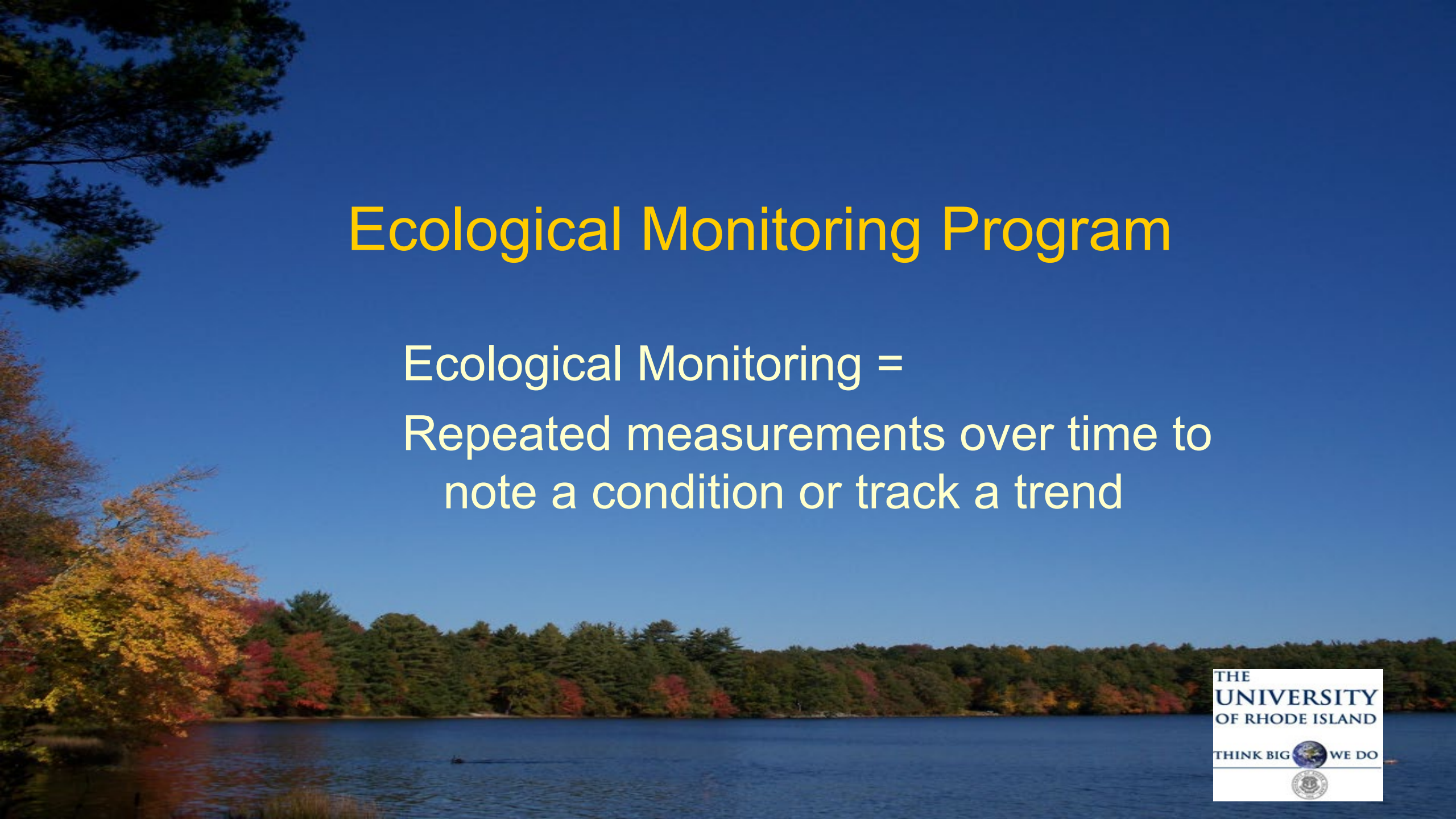
URI Watershed Watch

Long-term volunteer water quality monitoring

- Began in 1988 with 14 lakes
- Now has ~400 volunteer monitors on 250+ sites on 180+ waterbodies
  - Lakes, ponds & reservoirs
  - Rivers, streams & tributaries
  - Salt ponds, surfing sites, etc.
- Provides ~90% of RI's lake baseline data

Long-term ecological monitoring

https://web.uri.edu/watershedwatch/



Ecological Monitoring Program

Ecological Monitoring =

Repeated measurements over time to note a condition or track a trend

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Scientist-led Statewide (+) Volunteer Monitoring Program

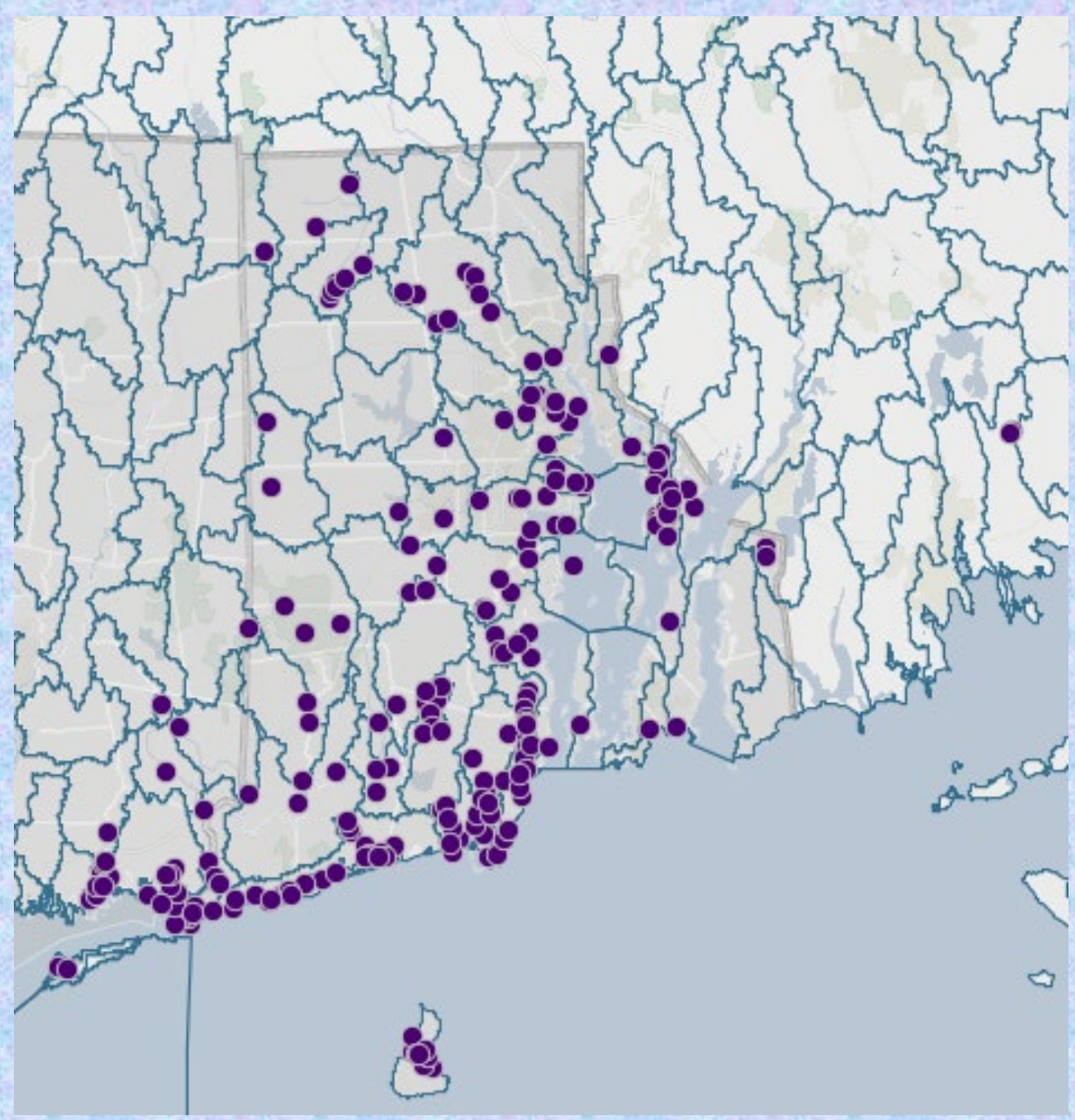
Sites throughout RI

Southeastern, CT

Fisher Island, NY (2)

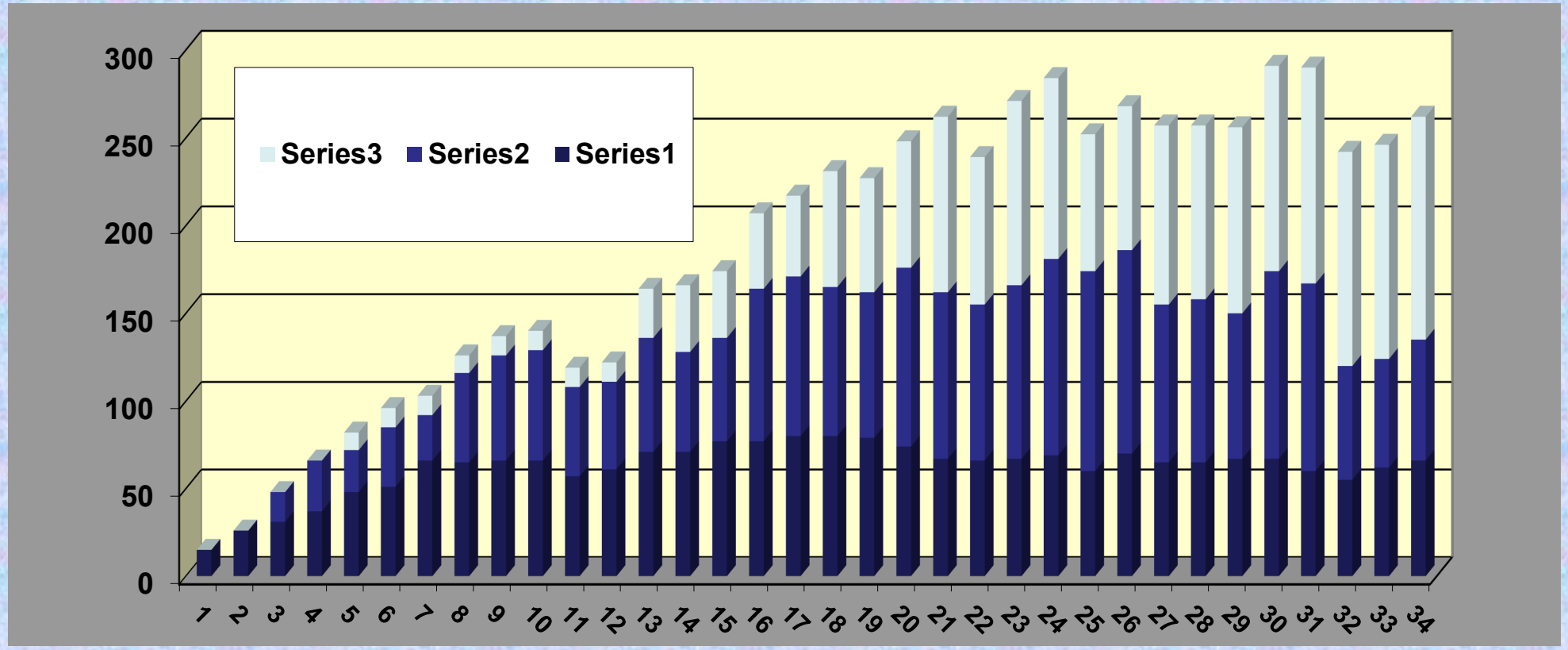
Rochester, MA (1)

- Lakes, ponds, reservoirs
- Rivers, streams
- Salt ponds
- Bays
- Swimming & surfing beaches



More than 700 sites have been monitored since 1988

191 lakes, 315 streams, 209 salt



2022: 63 lakes, 66 streams, 112 salt

URI Watershed Watch: Essential Ingredients

- Science-based
- Bottom-up approach
- Involve the public
- Educational, not regulatory
- Provide good, useful information
- Stable, diverse funding

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A research project can begin anytime, but a year lost monitoring is a year lost forever
-Sam Droege, Patuxent Wildlife Research Center

Many Program Sponsors (45+)

Base Funding:

URI Cooperative Extension

Program Specific Annual Grant:

RI Dept. of Environmental Management

Local Sponsorship (per site per year)

Watershed and Environmental Organizations
Municipal Conservation Commissions
Lake associations
Businesses/Industry
Endowments

Fee for service

Beach bacteria samples
Nutrient analyses
Chlorophyll

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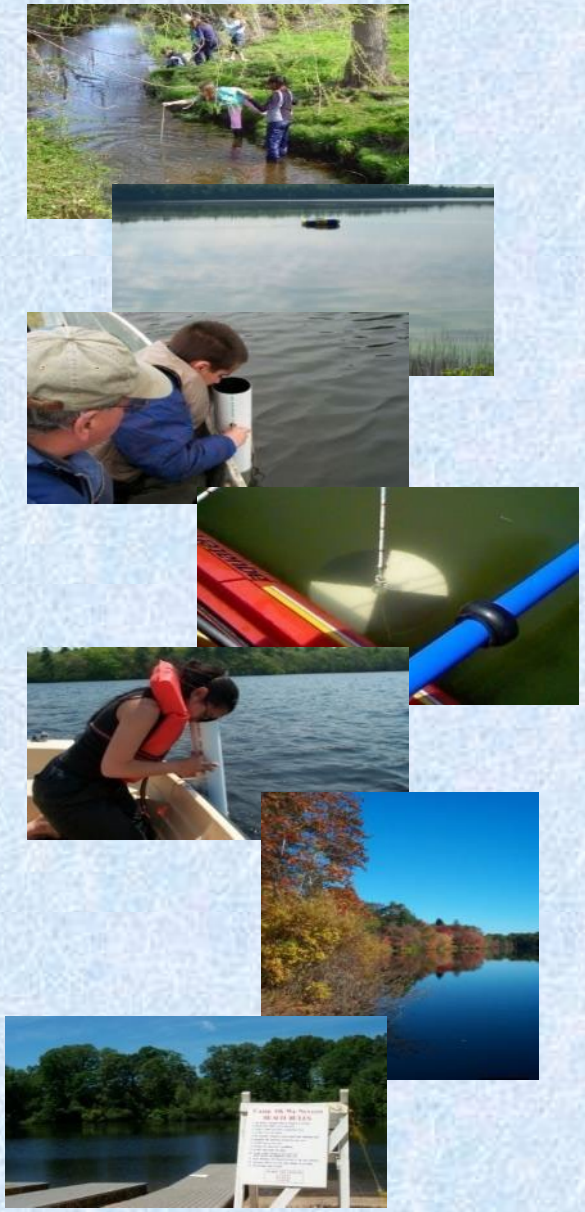

URIWW volunteer water quality monitoring helps to determine:

- Current conditions
- Changing conditions (trends)
- Clues to the causes of changes
- Document impacts from management efforts


Credibility doesn't mean having the most exacting techniques. It means delivering on your promises, no matter how small or large they are.
-
Meg Kerr
RI River Rescue

Continuum of Volunteer Monitoring Programs

Education/ Awareness → **Watershed assess, ID problems, Local decisions** → **Research, Regulatory, Legal**

Increasing Time - Rigor - QA - Expense $$

URI Watershed Watch

- Institutional support (URI housed/supported)
- Relies on established, approved methods
- Often adapted to be easier for use by volunteers
  - Kits
  - Field processing only
- Extensive tools to train/support volunteers
- Responsive to local needs

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Routine Monitoring Parameters

Field

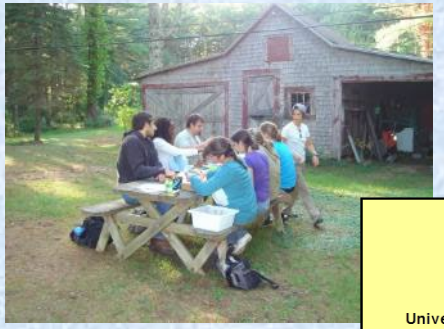
- Secchi Depth
- Water Temperature
- Dissolved Oxygen
- Chl - a Processing

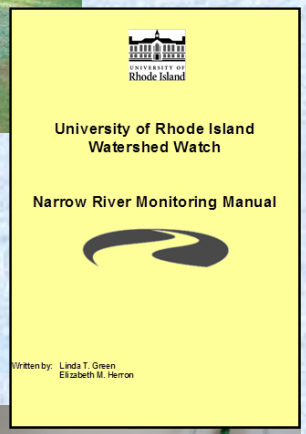
Laboratory

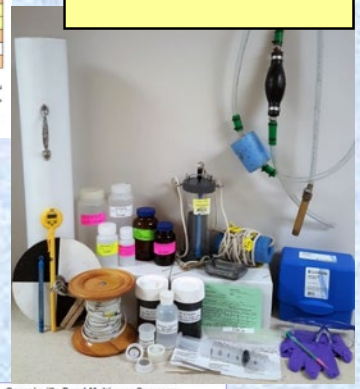
- pH
- Alkalinity
- Total & Dissolved Phosphorus
- Total, nitrate and ammonium nitrogen
- Chlorophyll - a
- Chlorides
- Bacteria

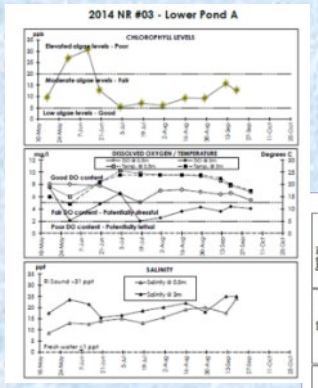
State Certified Laboratory, operating with USEPA & RIDEM approved QAPPs for both field and lab parameters !

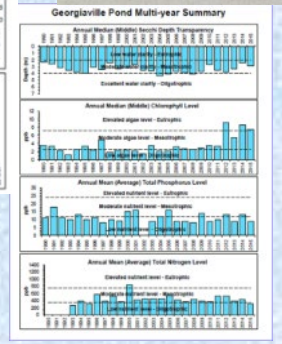
URIWW Provides Volunteers:







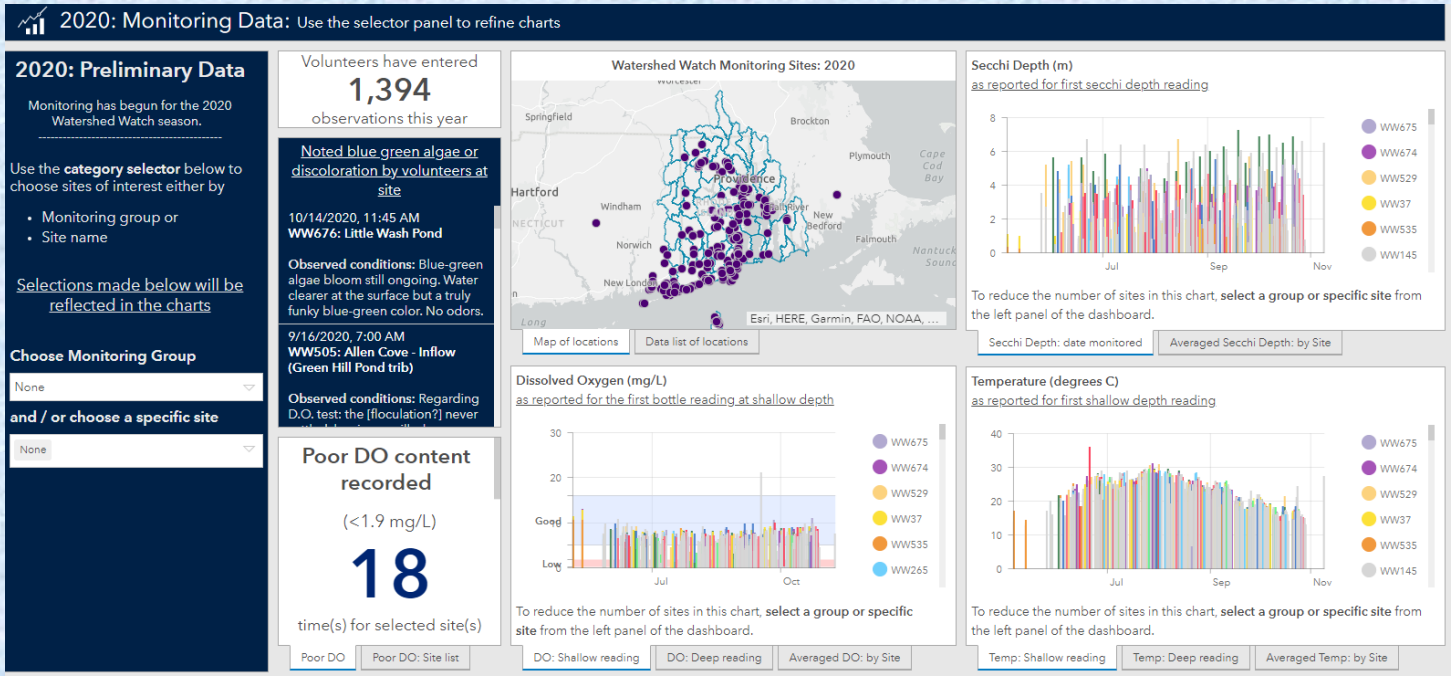


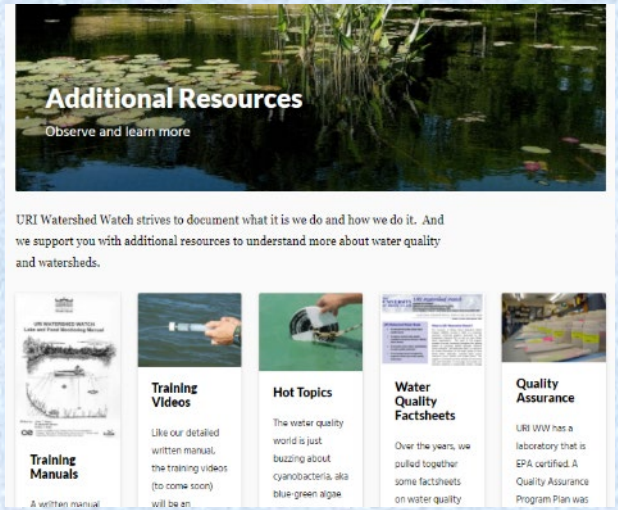


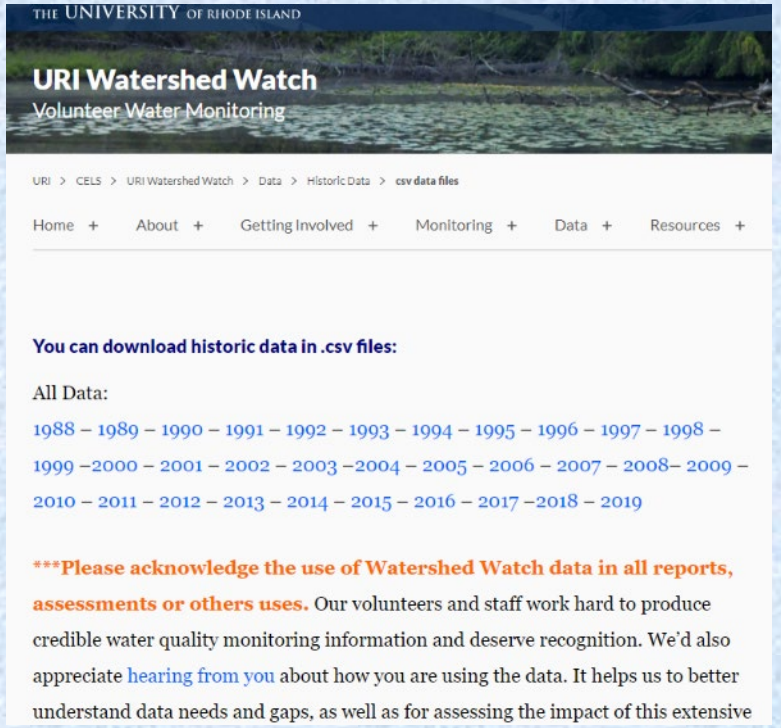
- Classroom & field training
  - Online since 2020 due to Covid-19
- Monitoring manuals
- Monitoring equipment & supplies
- Detailed schedules
- Analytical services (sample testing)
- Sharing and interpreting monitoring results
- Opportunities to work with other researchers

Monitoring Equipment

https://web.uri.edu/watershedwatch/



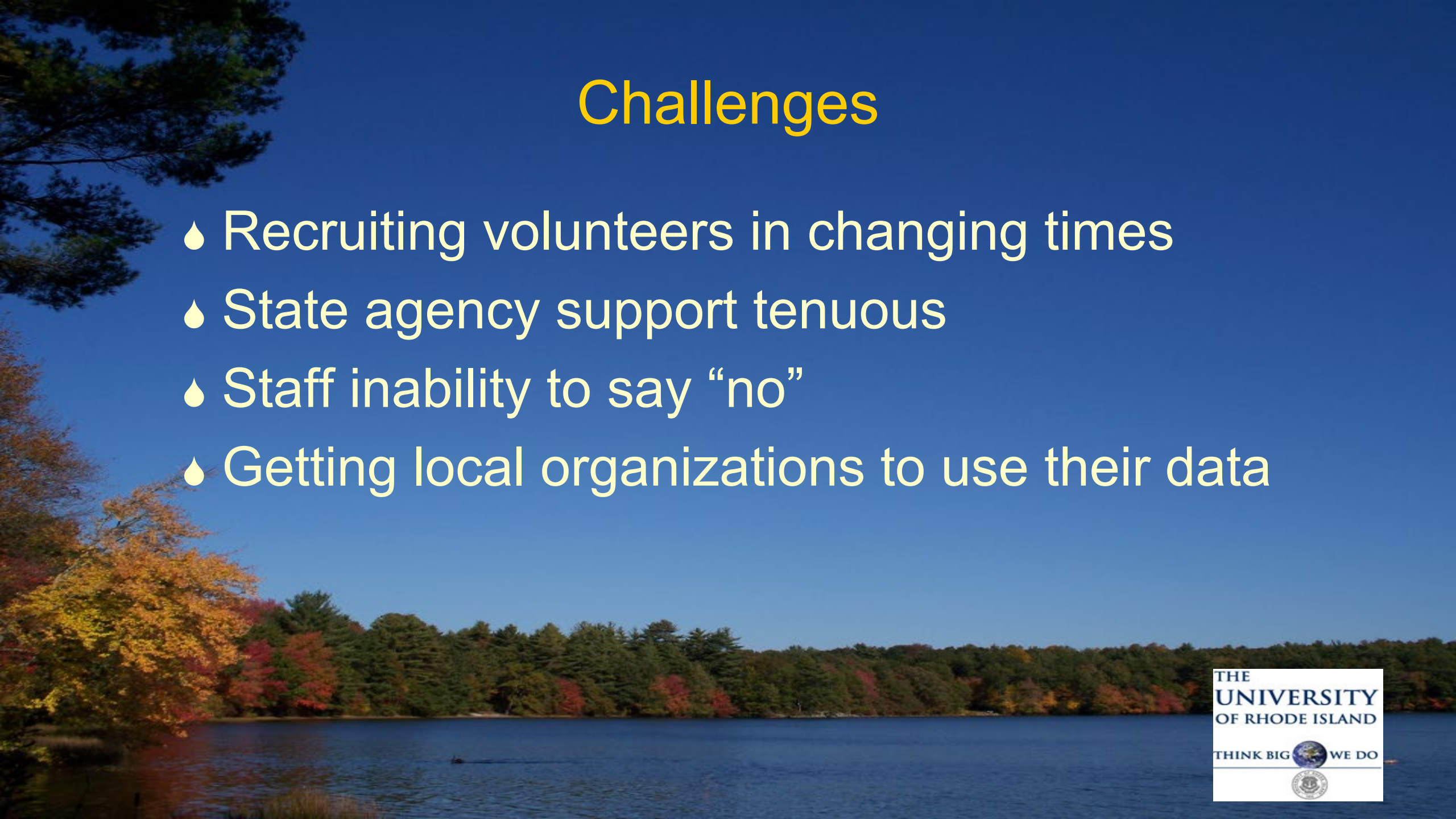




CSV files allow data to be downloaded and used by a variety of data users

Challenges

- Recruiting volunteers in changing times
- State agency support tenuous
- Staff inability to say “no”
- Getting local organizations to use their data



Success: URIWW Lab is State-Certified

- Started with EPA QAPP
  - Meeting with RI DOH
  - 1 of 2 state certified labs at URI
  - Increased credibility
  - Added expense
  - Well worth the cost
  - Enabled WW to meet regulations for state agency use of data
  - Encourages additional data use by various users

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Don’t reinvert the wheel!

ABOUT COVID-19 GUIDE FOR GROWING PROGRAMS JOBS BOARD PROGRAMS RESOURCES CONTACTS

USA VOLUNTEER WATER MONITORING NETWORK

http://www.volunteermonitoring.org/

Volunteer Water Monitoring Network

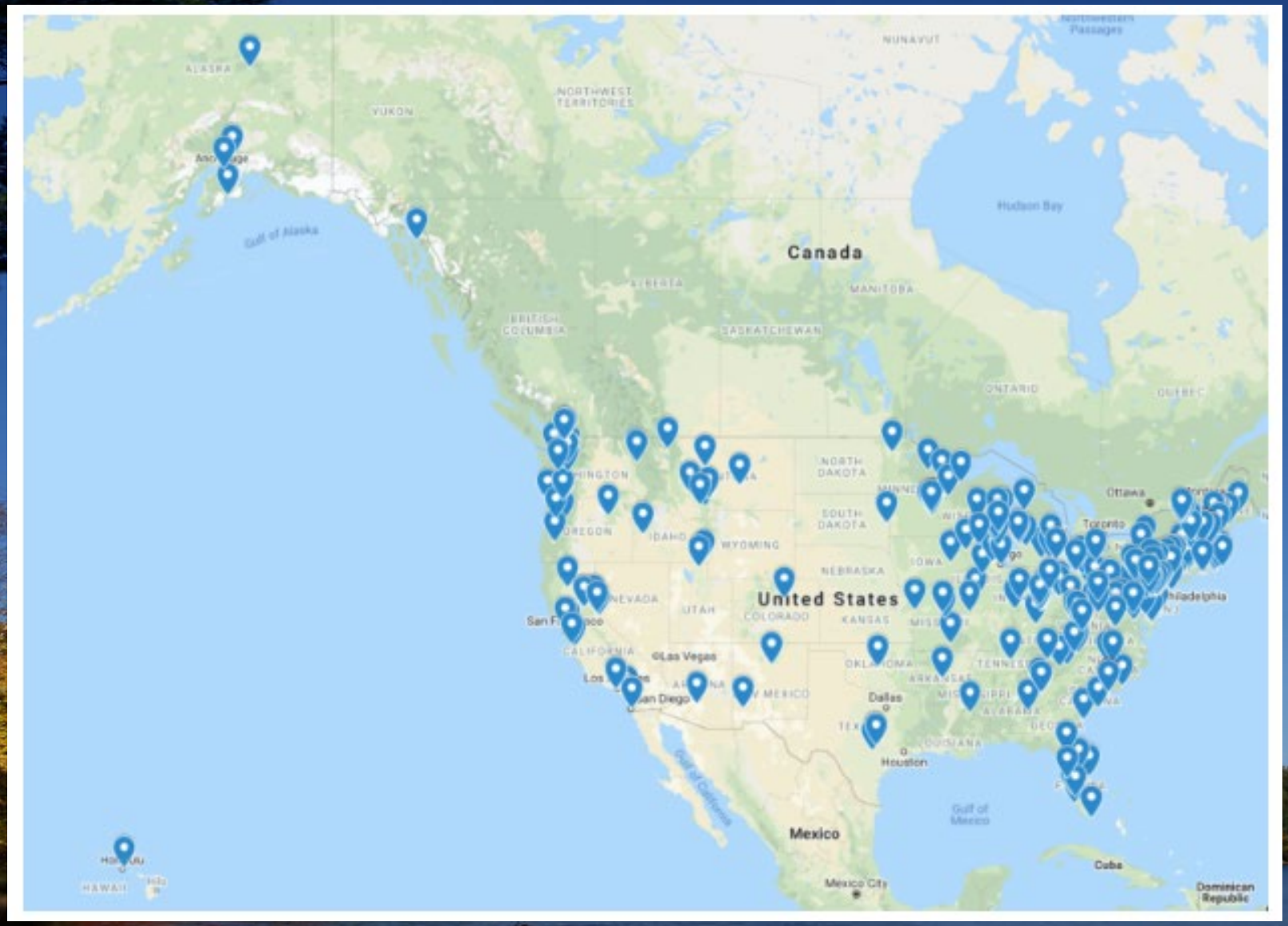
Our mission is to expand and strengthen the capacity of volunteer monitoring programs and support development of new groups.

Currently, there are about 1700 volunteer water monitoring programs operating in the

SEARCH

Upcoming Events

Volunteer monitoring across the US



285 stand-alone or parent programs supporting over 1400 affiliated programs

https://blog.uvm.edu/kstepenu/programs/

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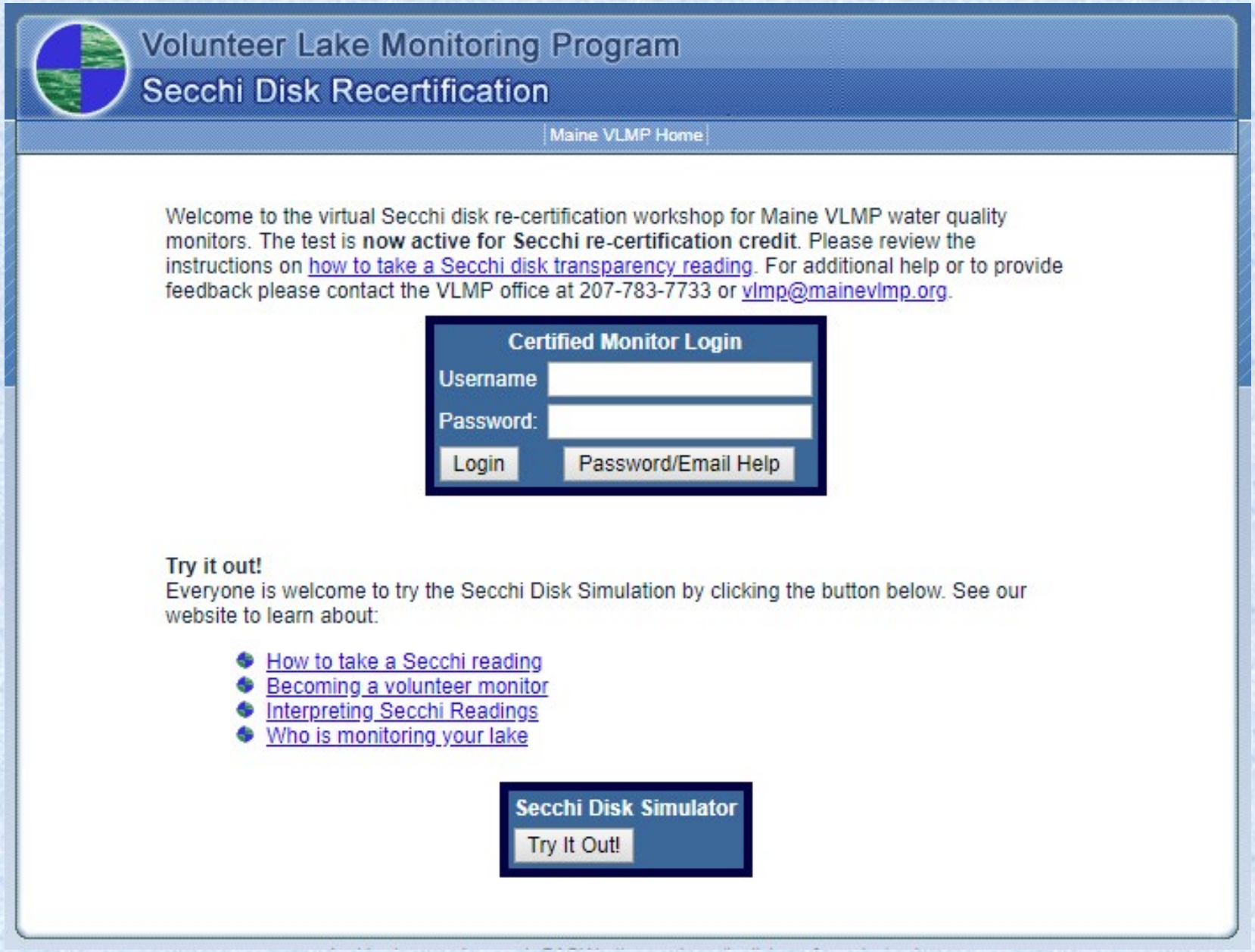
Guide for Growing Programs

This factsheet module-based guide includes reviewed resources to help program coordinators identify reliable sources of information to help them develop their own programs.

A "Guide for Growing Volunteer Monitoring Programs" was developed to help direct program coordinators to many of these useful resources. The Guide is set up as a series of modules (that are chock full of external links) that can be used alone or in conjunction with other sections depending upon the needs of individual programs. Use the links below to access the various modules:

- Getting Started (235 KB pdf file) – updated 2020
- Why Volunteer Monitoring Makes Sense (582 KB pdf file)
- Designing Your Monitoring Strategy (1.6 MB pdf file)
- Monitoring Matrix (80 KB pdf file)
- Effective Training (856 KB pdf file)
- Monitoring Equipment Suppliers (63 KB pdf file)
- Building Credibility: Quality Assurance and Quality Control for Volunteer Monitoring Programs (942 KB pdf file)
- Volunteer Management (1 MB pdf file) – updated 2020
- Planning Your Program's Data Management System (560 KB pdf file)
- Tips and Tools for Effective Presentations (541 KB pdf file)
- Outreach Tools (464 KB pdf file)
- Locating Support and Funding (1.6 MB pdf file) – updated 2019
- Introduction to Bacteria Monitoring (518 KB pdf file)
- Methods for Monitoring Bacteria in Surface Waters (1 MB pdf file)
- Presenting Bacteria Monitoring Data Effectively (522 KB pdf file)

https://blog.uvm.edu/kstepenu/guide-for-growing-programs/



http://www.mainevlmp.org/secchi-simulator/

Volunteer Monitoring Makes A Difference

- Gets us outside & on the water
- Involves us in real science
- Creates informed citizens
- Provides info on places where no one else is looking
- Identifies & solves problems locally
- Leads to protection & restoration

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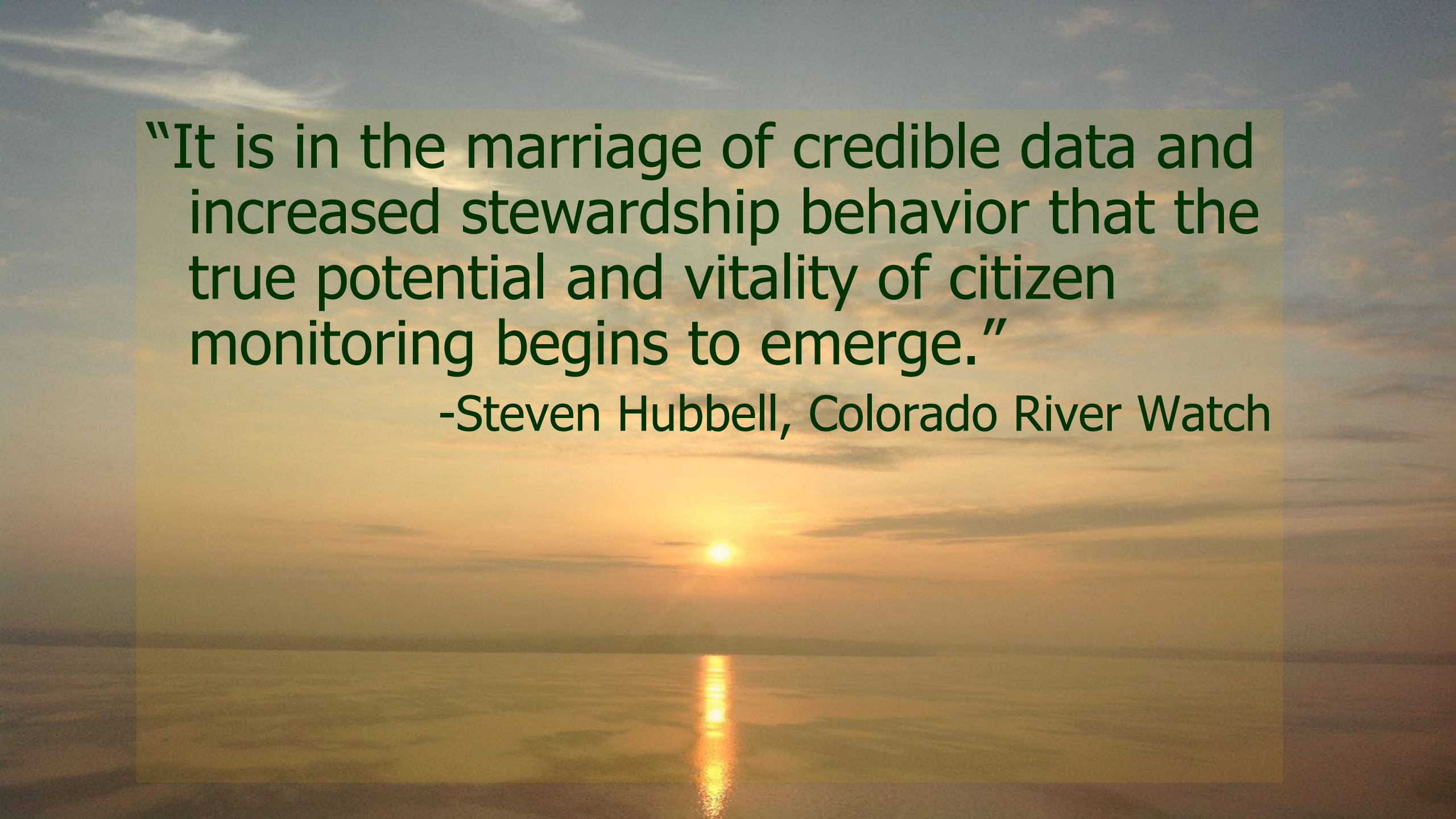
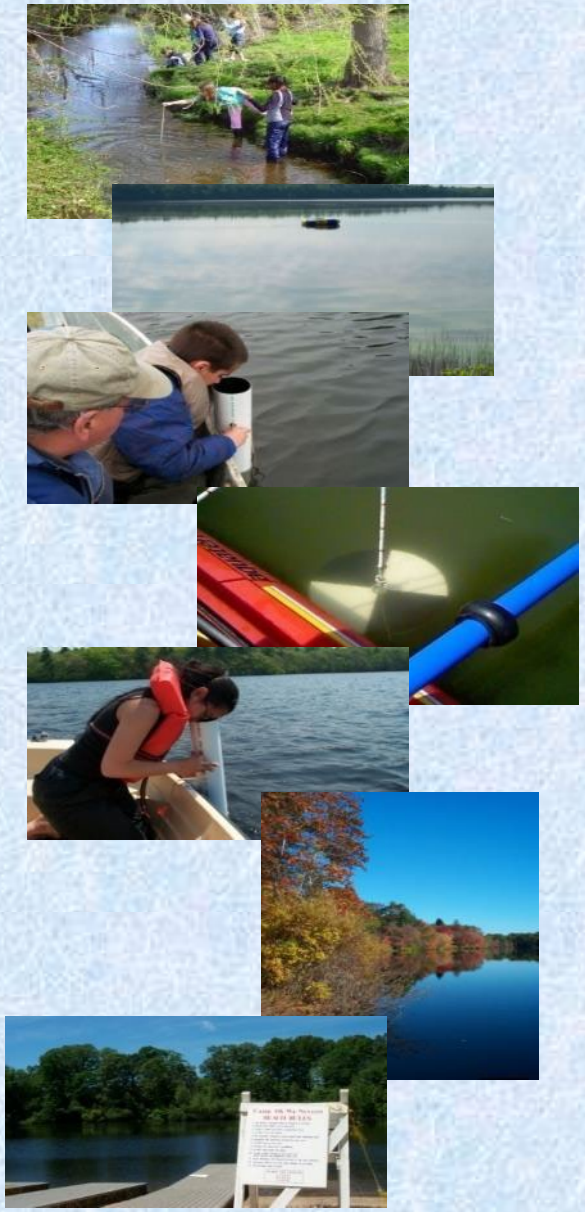

"It is in the marriage of credible data and increased stewardship behavior that the true potential and vitality of citizen monitoring begins to emerge."
-Steven Hubbell, Colorado River Watch



To learn more:

- Elizabeth Herron
- eherron@uri.edu
- 401-874-4552
- Room 001A, Coastal Institute in Kingston, 1 Greenhouse Rd

https://web.uri.edu/watershedwatch/

Cape Cod Ponds Network Meeting

The History of the Orleans Blue Pages

JUDITH BRUCE

BOARD OF DIRECTORS, ORLEANS POND COALITION

The Freshwater Initiative

Tim Pasakarnis
Water Resources Analyst
Cape Cod Commission

THE FRESHWATER INITIATIVE

A science-based, information-driven planning process that will engage stakeholders and enable action to protect and restore Cape Cod's freshwater ponds.

Freshwater Initiative

REMOTE SENSING
Investigating the use of satellite-derived imagery and existing pond water quality data to quantify changes in pond characteristics

DATA MANAGEMENT AND ANALYSIS
Developing freshwater monitoring database, processing scripts for trend analyses, and accessible user interface

PHYSICAL CHARACTERISTICS
Assessing, through the use of GIS and other data sources, characteristics that may contribute to changes in water quality, and determining potential internal and external drivers of water quality degradation

PONDS AND LAKES ATLAS UPDATE
An update to the Cape Cod Ponds and Lakes Atlas has been completed to serve as a resource for updated pond information and provide the basis for the Freshwater Initiative

STRATEGIES DATABASE
Developing a pond-specific strategies database that includes a range of technologies, regulatory and voluntary options, and management approaches for protecting and restoring pond water quality

ENGAGEMENT AND OUTREACH
Engaging stakeholders to develop a framework for identifying and implementing pond management strategies

ECONOMIC ANALYSIS
Quantifying the costs and benefits of pond management strategies, including the cost of no action and the impacts of degraded freshwater quality on the regional economy

LEGAL AND JURISDICTIONAL ANALYSIS
Reviewing federal and state laws relative to public and private interests in and around freshwater ponds, and identifying opportunities for local and regional action

MONITORING PROGRAM
Expanding pond monitoring to collect data necessary to support management decisions and track performance

ONGOING DATA MANAGEMENT AND ANALYSIS
Managing and maintaining accessible pond monitoring datasets and providing on-demand trend analyses through a web-based interface

Freshwater Initiative (for pond groups)

REMOTE SENSING
Coordination of secchi disk measurements with dates when relevant satellites pass over Cape Cod (ongoing).

DATA MANAGEMENT AND ANALYSIS
Continued need for data sharing. Input and feedback will be needed on the user interface, data analysis, and outputs.

PHYSICAL CHARACTERISTICS
Local knowledge will be valuable for determining characteristics to examine, such as stormwater problems, pond use, and land activities.

PONDS AND LAKES ATLAS UPDATE
Updated Cape Cod Ponds and Lakes Atlas and Ponds Viewer are available for outreach and planning.

STRATEGIES DATABASE
Information on local implementation, costs, obstacles, and level of effectiveness will enhance utility of database.

ENGAGEMENT AND OUTREACH
Some representatives from the pond network will participate in the engagement and outreach processes. Network meetings will provide opportunity to share updates.

ECONOMIC ANALYSIS
Stakeholder groups will be engaged in several elements of the economic analysis.

LEGAL AND JURISDICTIONAL ANALYSIS
Pond network representatives can help identify areas where there may be confusion regarding legal or jurisdictional questions.

MONITORING PROGRAM
All pond groups are encouraged to participate in the expanded regional monitoring program.

ONGOING DATA MANAGEMENT AND ANALYSIS
Take advantage of accessible pond monitoring datasets and on-demand trend analyses.

Cape Cod Ponds Network Meeting

ANDREW GOTTLIEB

EXECUTIVE DIRECTOR
ASSOCIATION TO PRESERVE CAPE COD

oneCAPE

AUGUST 1-2, 2022