Getting Going in Community-based Water Monitoring

Linda Green

Kris Stepenuck & Elizabeth Herron

Building Bridges: Citizens, Science and Policy workshop
NALMS, Banff, Alberta November 2016

Applying knowledge to improve water quality
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100 Years of COOPERATIVE EXTENSION 1914 - 2014

URI WATERSHED WATCH

Successful Programs Make A Difference

- Raise **awareness**
- Involve people in **real science**
- Create an **informed constituency**
- Promote individual **actions &/or** community **responsibility**
- Provide info on places **where sometimes no one else is looking**
- Identify & address **local problems**

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www.volunteermonitoring.org

The AWW Approach

NOT MEANINGFUL

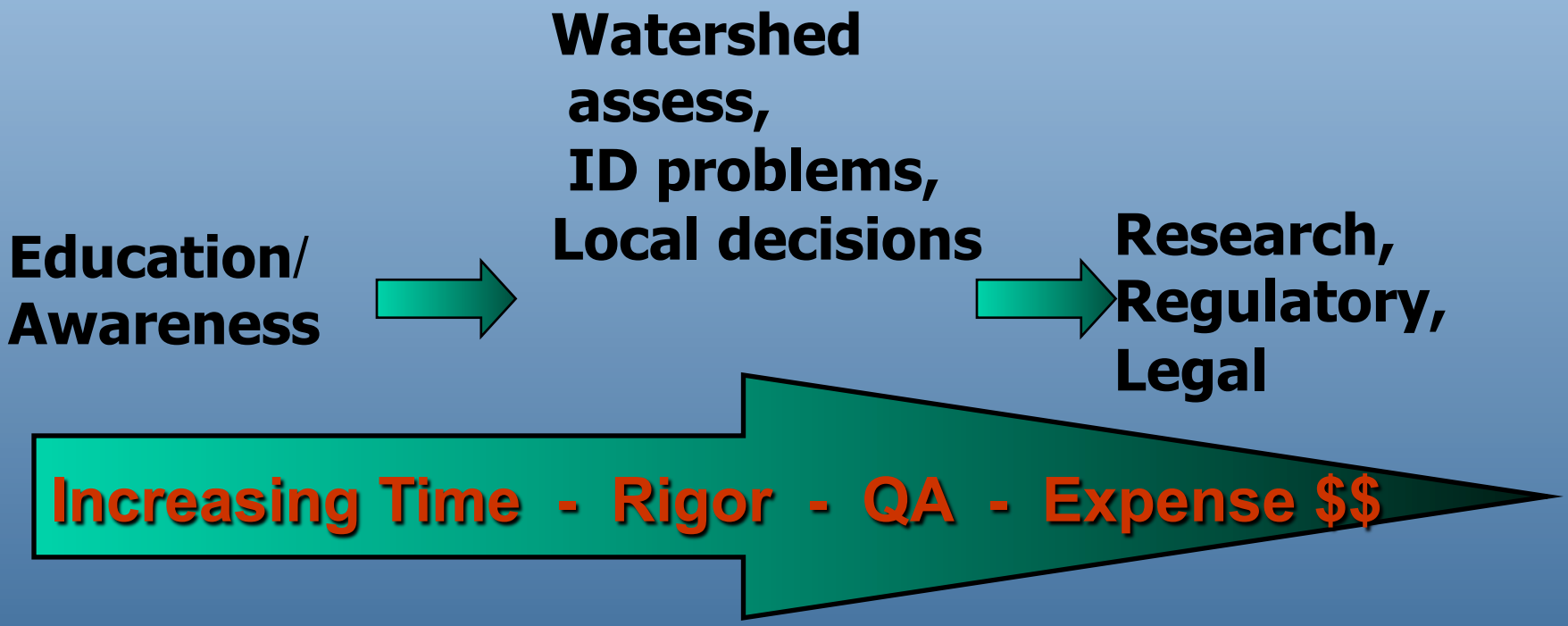
DO-ABLE & MEANINGFUL

NOT DO-ABLE

Alabama Water Watch

www.alabamawaterwatch.org

Continuum of Volunteer/CB Monitoring



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Originated by Geoff Dates, River Network
modified by L. Green

Continuum of Volunteer/CB Monitoring

Education/ Awareness

Watershed assess, ID problems, Local decisions

Research, Regulatory, Legal

Increasing Time - Rigor - QA - Expense $$

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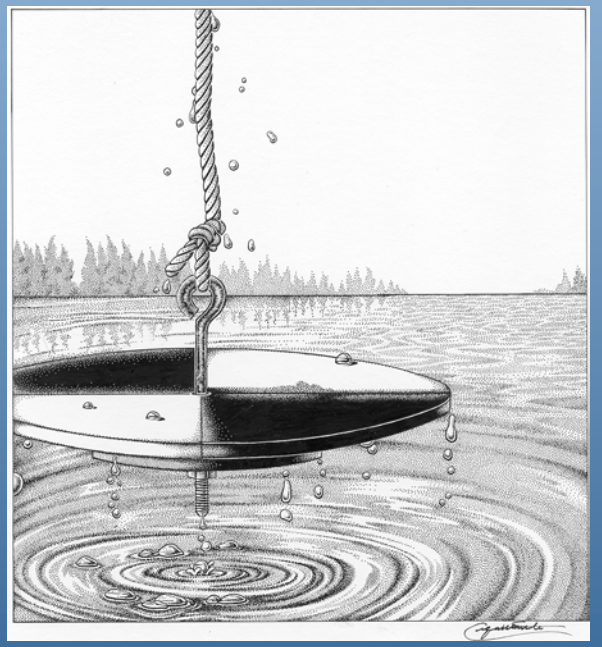
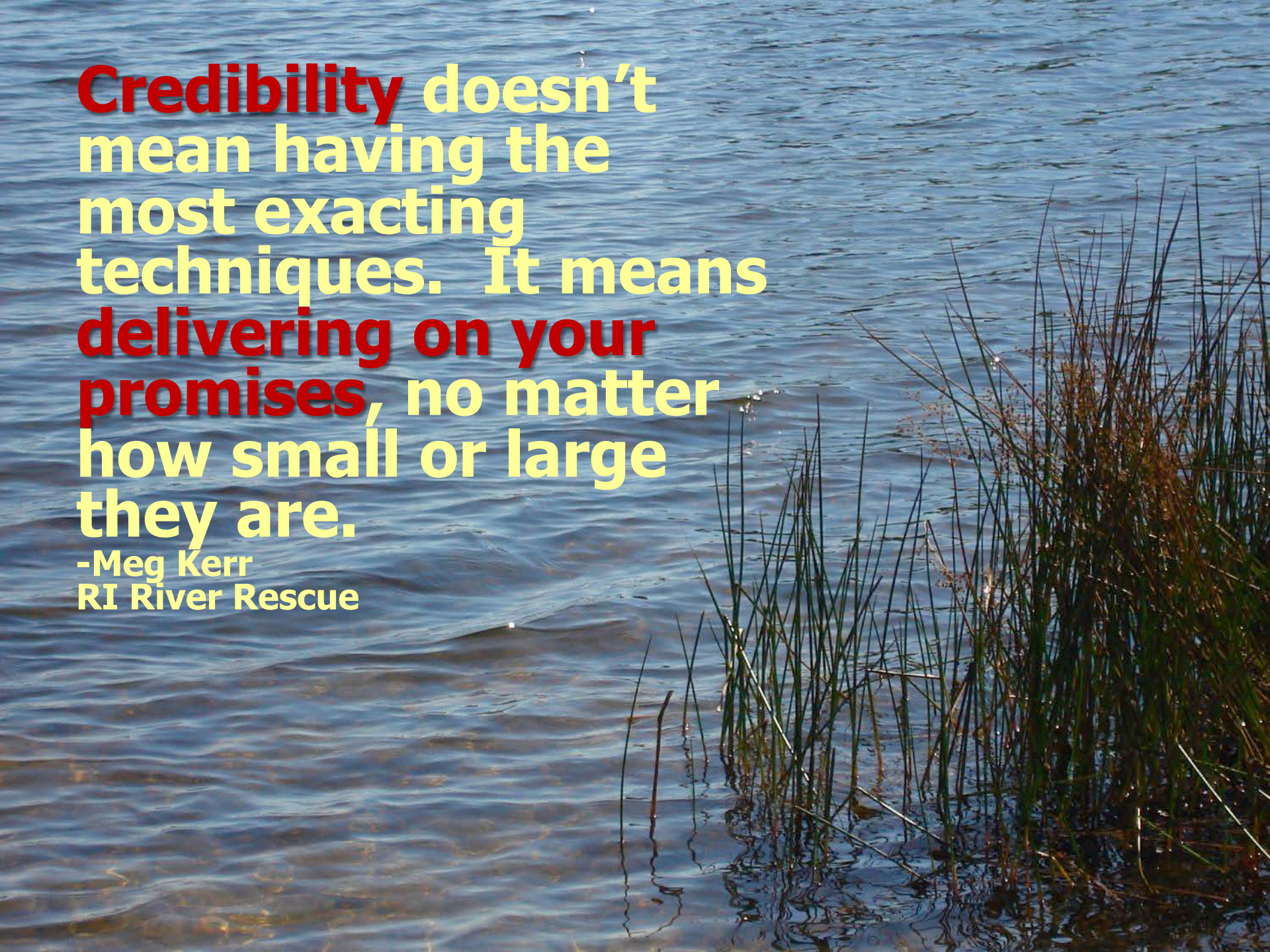
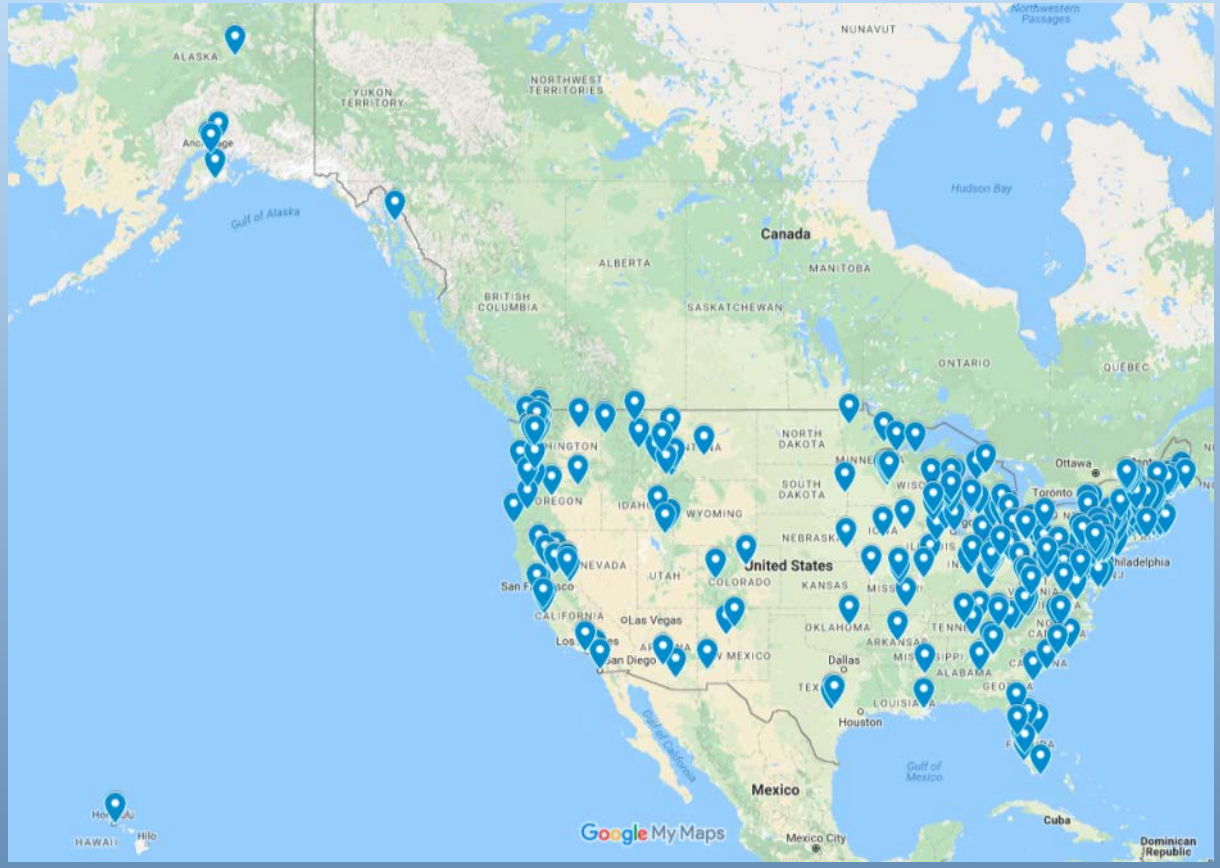
Most Widely Used Monitoring Tools?



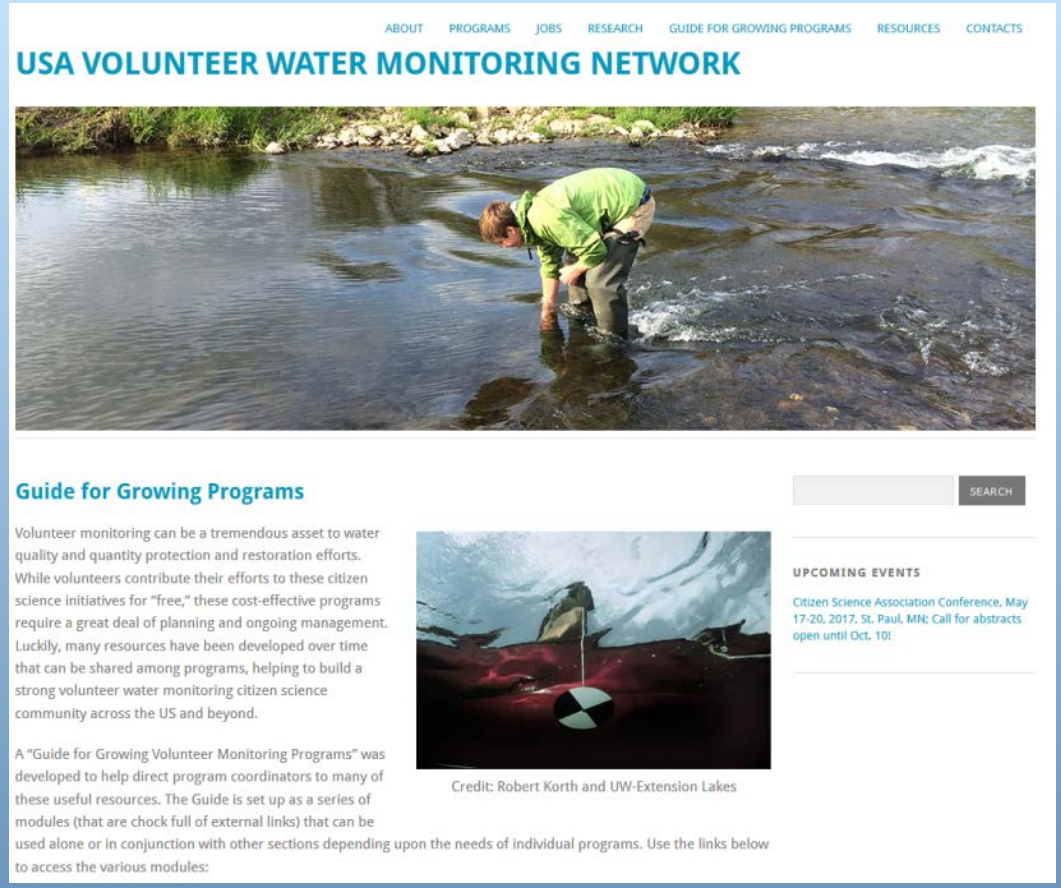

Credibility doesn't mean having the most exacting techniques. It means **delivering on your promises**, no matter how small or large they are.
-Meg Kerr
RI River Rescue

Volunteer Water Monitoring Across the US



351 stand-alone or parent programs
1675 affiliated programs

http://www.volunteermonitoring.org/programs , 2015



www.volunteermonitoring.org

14 years on 12 years of funding (2000 – 2012)

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Guide for Growing Extension Volunteer Monitoring Programs

Volunteermonitoring.org/guide-for-growing-programs/

Factsheet Modules

I. Volunteer Water Quality Monitoring
II. Why Volunteer Water Quality Monitoring Makes Sense
III. Getting Started: Finding Resources in the *Guide for Growing CSREES Volunteer Monitoring Programs*
   a. Additional Resources; b. Matrix of Monitoring Activities
IV. Designing Your Monitoring Strategy: Basic Questions and Resources to Help Guide You
V. Training Volunteer Water Quality Monitors Effectively
VI. Building Credibility: Quality Assurance and Quality Control for Volunteer Monitoring Programs
VII. Sharing Information Through Internet Exchanges
VIII. Volunteer Management and Support
IX. Considerations for Planning Your Program's Data Management System
X. From the Trenches – Tips and Tools for Better Presentations
XI. Fundraising for Volunteer Monitoring
XII. Tools for Effective Outreach
XIII. Volunteer Monitoring of Bacteria in Surface Waters
XIV. Bacteria Monitoring in Surface Waters – Methods
XV. Presenting Bacteria Data Effectively
XVI. Evaluating Your Volunteer Water Quality Monitoring Program

USDA United States Department of Agriculture National Institute of Food and Agriculture

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June 2003
Factsheet IV
(Updated Nov. 2010)

USDA
United States Department of Agriculture
National Institute of Food and Agriculture

Designing Your Monitoring Strategy:
Basic Questions and Resources to Help Guide You

University of Rhode Island **University of Wisconsin**

Elizabeth Herron, Kris Stepenuck, Linda Green and Kelly Addy

Getting Started in Volunteer Water Quality Monitoring?

This factsheet focuses on helping new program coordinators get their programs up and running. Our goal is to provide you with questions to consider, steps to follow, examples of what's worked and direct you to some of the many resources available to assist you in your monitoring efforts.

There are numerous potential monitoring program goals and monitoring activities available to meet those goals. It is essential to accurately identify what you want your volunteer monitoring to accomplish and how you want your data to be used before you consider specifically what and how you want to monitor. In fact, **the first step in determining *WHAT* to monitor is deciding *WHY* you want to monitor.**

Why Extension Volunteer Water Quality Monitoring Programs Got Started

Volunteer water quality monitoring encompasses a wide range of activities, meeting a diversity of needs. Replies to a recent inquiry of Extension-based volunteer monitoring programs provided a variety of reasons for starting a program. They included:

- To create a long term, credible, data set (address need for data), often due to a lack of watershed monitoring by state or other agencies;
- To educate the public about water quality issues;
- To develop and educate youth (school-based and other youth programs);
- To create consistency in methods, data management, and coordinated use of data between basins, volunteer groups, and agencies;
- To address public interest about why and how monitoring is done and what the results mean;
- To foster community involvement with water resources;
- To respond to a crisis in the shellfish industry caused by poor water quality conditions;
- To address concerns about drinking water quality in private wells.

The program design process discussed in this module includes several basic components:

1. defining the question(s) to answer (e.g. is the water safe for swimming?),
2. characterizing how the data will be used (e.g., education or regulatory compliance), and
3. identifying the resources available for accomplishing your goals.

This is the fourth in a series of factsheet modules which comprise the **Guide for Growing CSREES Volunteer Monitoring Programs**, part of the *National Facilitation of Cooperative State Research Education Extension Service (CSREES) Volunteer Monitoring Efforts* project. Funded through the USDA CSREES, the purpose of this four-year project is to build a comprehensive support system for Extension volunteer water quality monitoring efforts nationally. The goal is to expand and strengthen the capacity of existing Extension volunteer monitoring programs and support development of new groups. Please see http://www.usawaterquality.org/volunteer/ for more information.

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Soup to Nuts

- **Introductory factsheets (I-III)**
  - Background, cheerleading, basics
- **Start with the End in Mind (IV, VI, XVI)**
  - Why before what, QA/QC, evaluation
- **The People in your program (V, VIII, XI)**
  - Training, Vol mgt/support, fundraising
- **Broadcasting your message (X, XII)**
  - Presentation, outreach tips
- **Monitoring Bacteria (XIII, XIV, XV)**


Start With the End in Mind
Why are you starting a monitoring program?

Successful Citizen Science/Volunteer Monitoring Programs are. . .

- Well-organized
- Sound scientific basis
- Respectful of their volunteers
- Strong organizational support
- Report & use results
- Make a difference

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A Sound Scientific Basis means …

- Clear monitoring goals and questions
- Written study design
- Clear documentation of instructions for all monitoring activities
  - ✓Based on established methods!
- Monitoring scope and complexity appropriate to group's capabilities
- QA appropriate to data use

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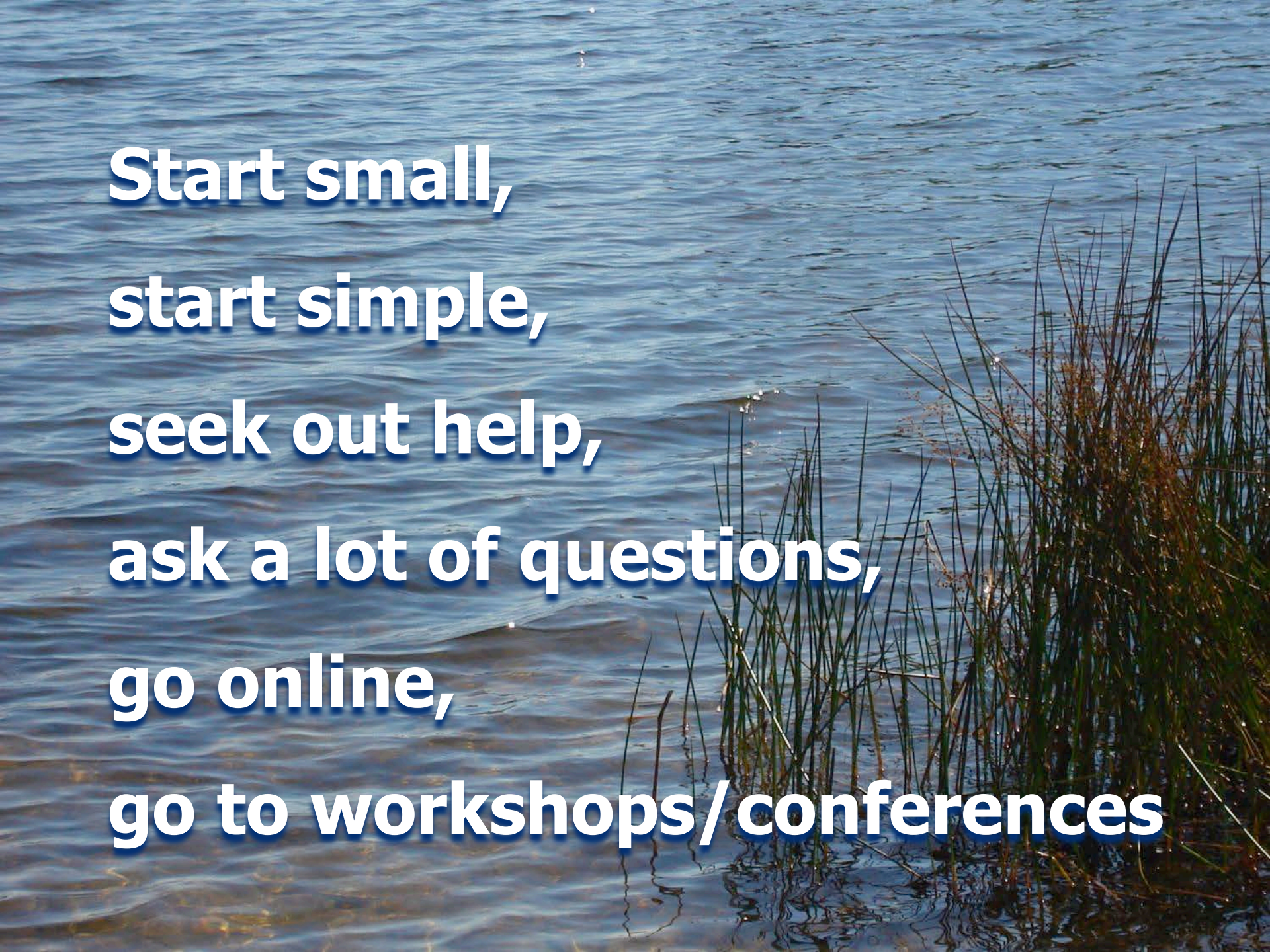
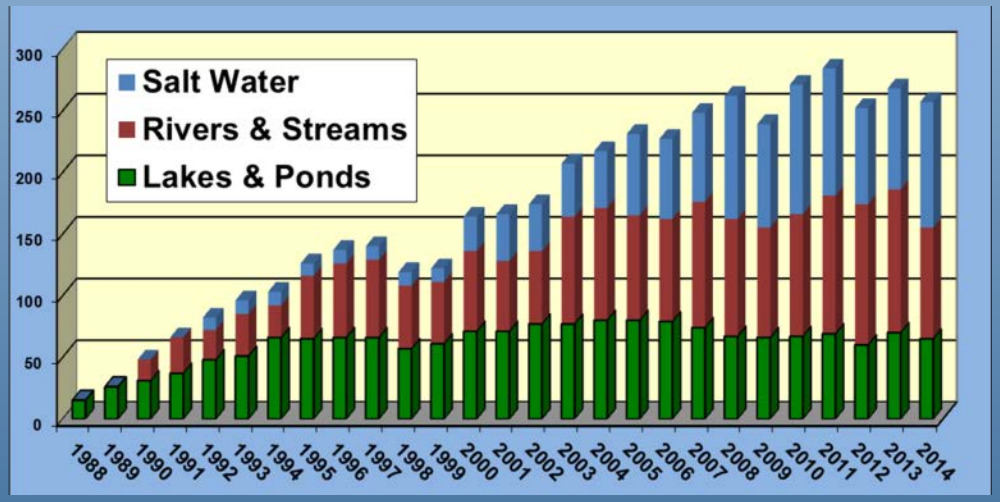

Start small,
start simple,
seek out help,
ask a lot of questions,
go online,
go to workshops/conferences

URI Watershed Watch

Long term volunteer water quality monitoring

- Began in 1988 with 14 lakes in 1 watershed, May - Oct
- ~350 volunteer monitors, 250+ sites
- 180+ waterbodies
- 2 staff, 4 students



www.uri.edu/watershedwatch/

URI Watershed Watch: Essential Ingredients

- science-based
- bottom-up approach
- involve concerned citizens & orgs.
- educational, not regulatory
  - long term data source
- provide good, useful information
- supportive home org/stable funding
  - 45 sponsors (distributed funding)

Combination of Field & Lab

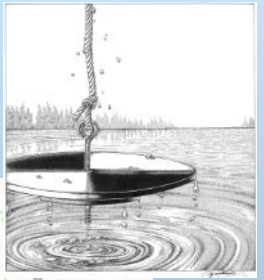
Field monitoring

- Water clarity
- Temperature
- Chlorophyll
- Diss. Oxygen
- Salinity
- Recent weather

Laboratory

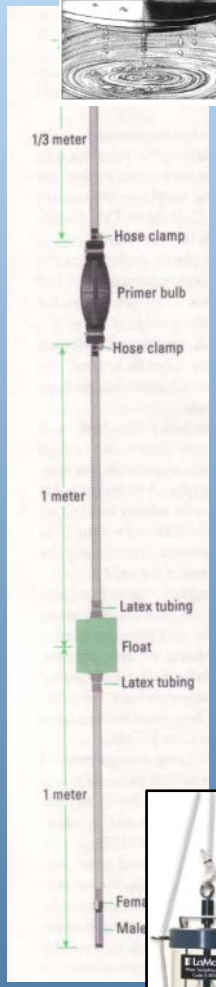
- pH & alkalinity
- Bacteria
  - Enterococci
  - Fecal coliform
- Nutrients
- Chlorophyll

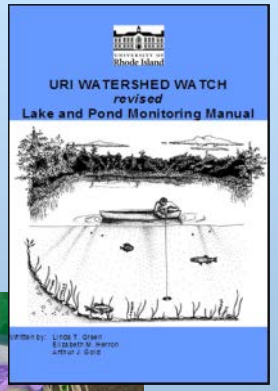
State-certified lab since 2005

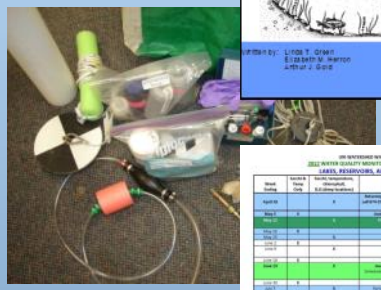


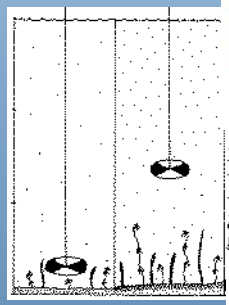
What we provide

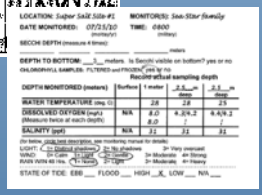
- Volunteer recruitment
- Volunteer coordination
- Volunteer training
- Monitoring manuals
- Monitoring supplies
- Monitoring schedule
- Analytical services
- Charts and graphs

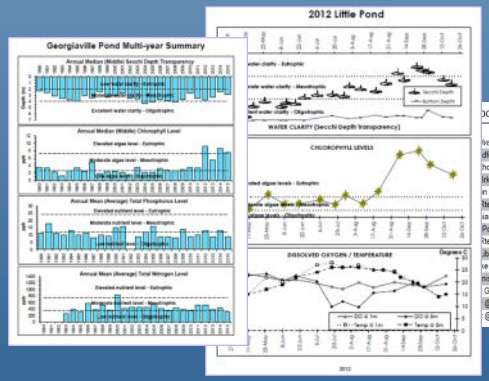


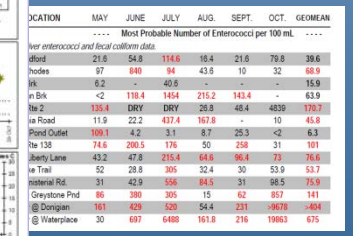




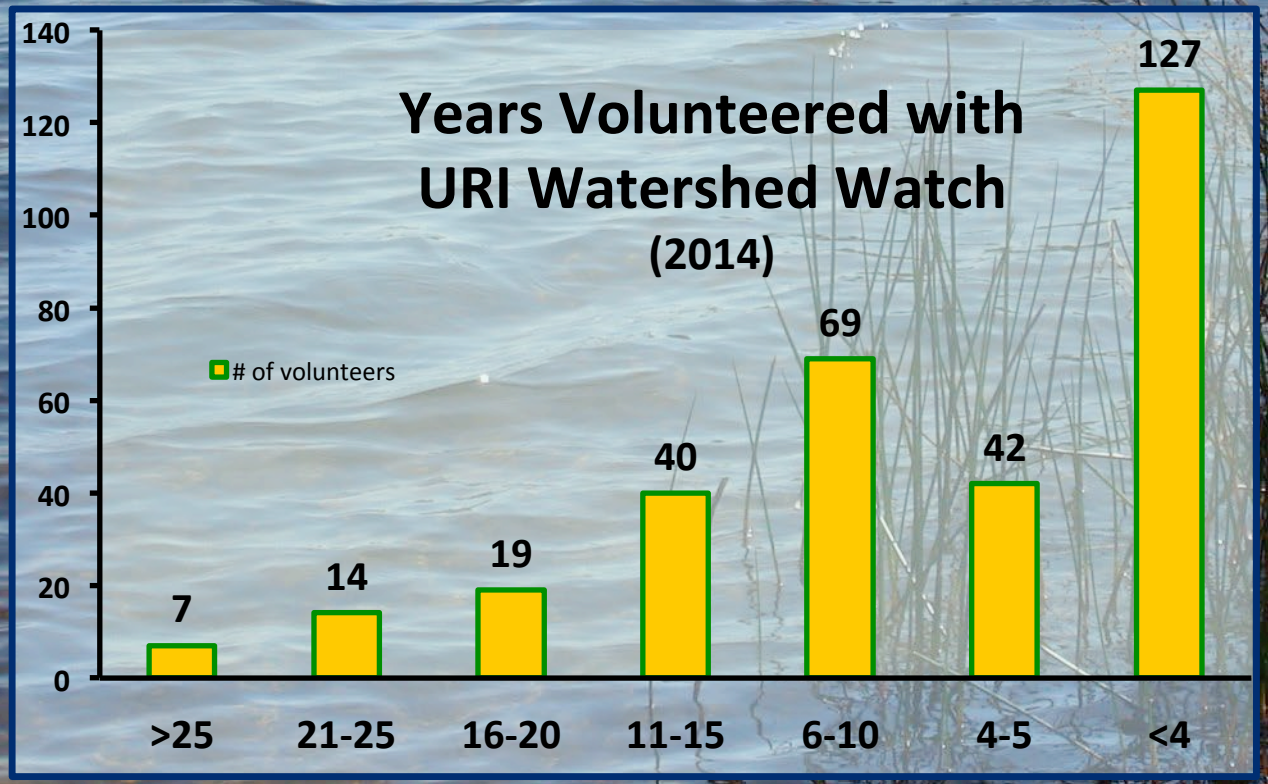








People monitor what they care about. They monitor what has meaning to them, otherwise it is an assignment or a task.




Volunteer monitoring,
citizen science, &
community-based programs
are
cost effective – *not* cost free.


"We do not use/involve/engage volunteers because they are worthless …
We do so because they are PRICELESS"
Attribution unknown- *not* L Green


Thanks!
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401-874-2905
www.uri.edu/watershedwatch/
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