

Successes and Challenges of Volunteer Monitoring

USDA-CSREES
National Water Quality Conference
February 8, 2005

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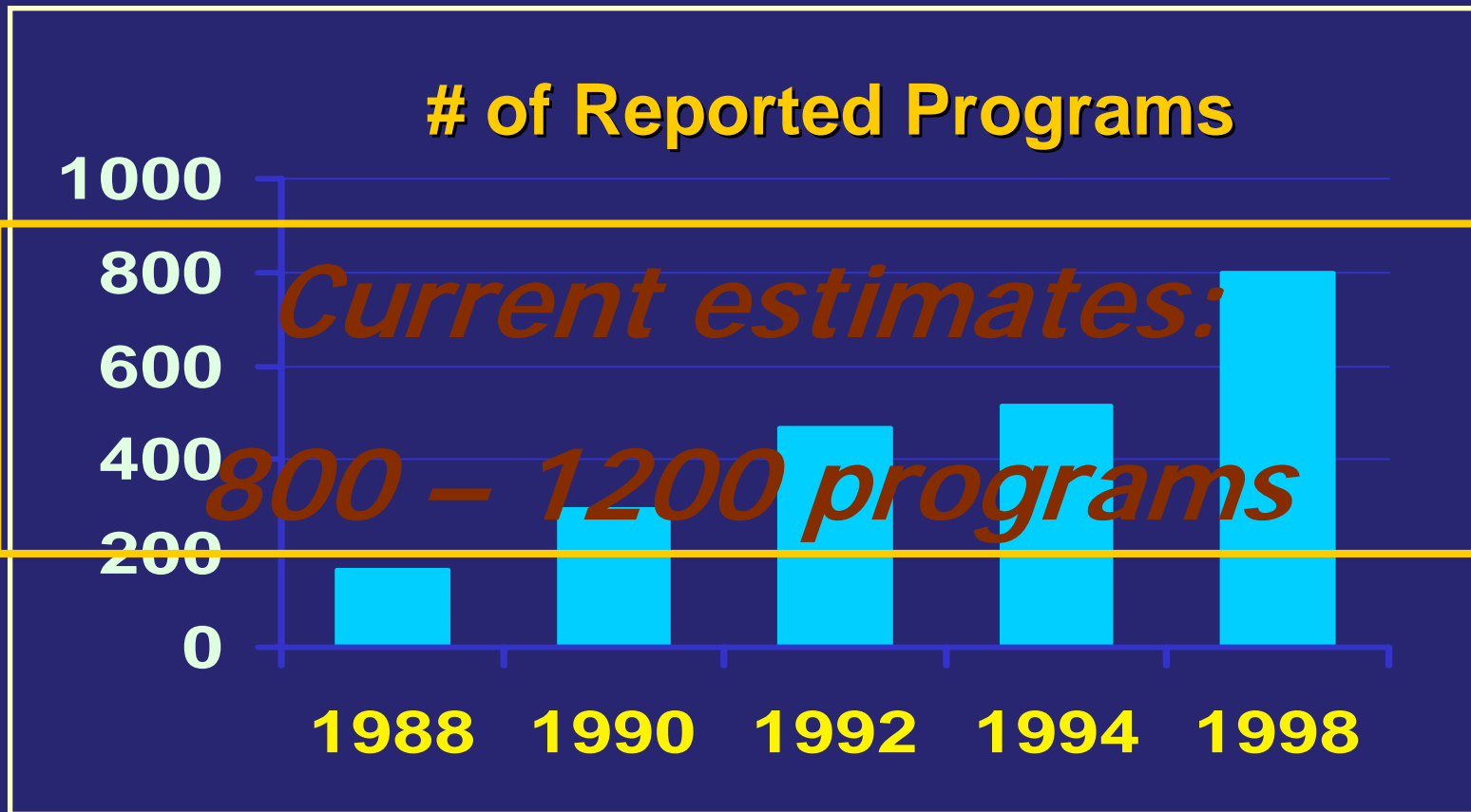


Pioneering Programs

- ◆ National Weather Service (1890)
- ◆ 1900 National Audubon Society
- ◆ 1954 National Marine Fisheries Service
- ◆ Stream Monitoring - 1969 (Maryland)
- ◆ Lakes - 1971-1978
(Maine, Minnesota, Michigan, NH)
- ◆ Estuaries -1985 (RI, Chesapeake Bay)



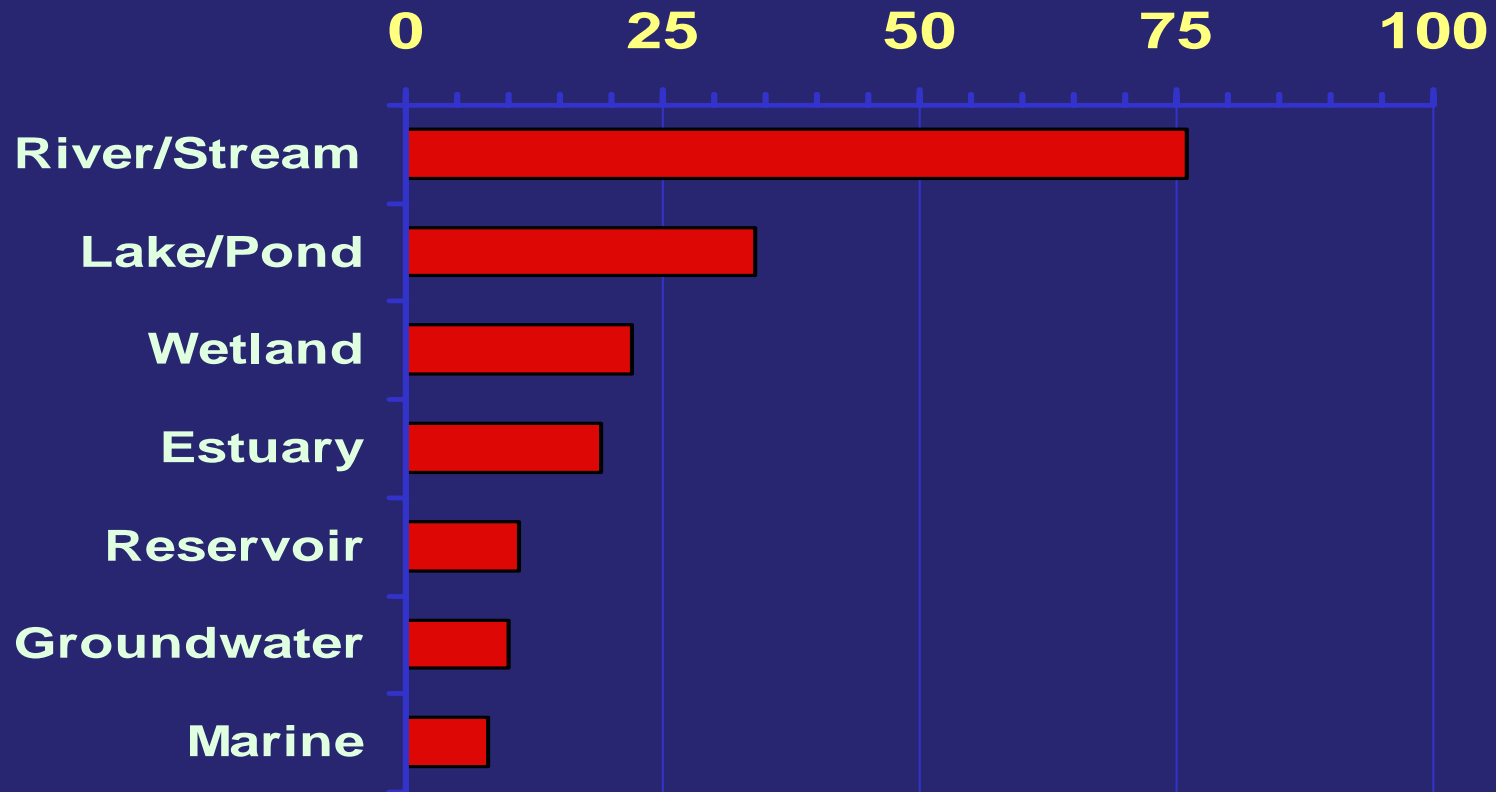
Volunteer WQ Monitoring Came of Age in the 1990s*



* Nat'l Dir. of Envir. Mon. Progs. - 5th Ed.

Where Are We Monitoring?

% of Programs Monitoring Each Environment



What Are We Monitoring?

River/Streams

- ❖ Water Temp. (88%)
- 💧 pH (78%)
- 💧 Macroinverts (76%)
- 💧 Diss. Oxygen (73%)
- 💧 Nitrogen (53%)
- 💧 Flow/water level (51%)

Lakes

- ❖ Secchi trans. (88%)
- 💧 Water Temp. (74%)
- 💧 Phosphorus (66%)
- 💧 Diss. Oxygen (58%)
- 💧 Chlorophyll (51%)
- 💧 pH (45%)

Not surprisingly, this is similar to professional monitoring

Volunteer Monitors are Community Educators



Volunteer Monitors Are Citizen Scientists



Strong Nationwide Support



U.S. Environmental Protection Agency



NATIONAL WATER QUALITY MONITORING COUNCIL

Working Together for Clean Water



CSREES
Volunteer Water
Quality Monitoring
National Facilitation Project

Applying knowledge to improve water quality

State, County, Academic, Non-profit Support

Organizational and technical services to program coordinators at all levels

- ❖ Organizational development and support
- ❖ Study design
- ❖ Technical training and support
- ❖ Analytical services
- ❖ Data management and interpretation
- ❖ Networking with other programs



Main Uses of Volunteer Data

- ❖ Water Quality or Watershed Education
- ❖ Document Existing Conditions
- ❖ Problem Identification
- ❖ Local Decisions

The Providence Journal SATURDAY
March 25, 2000
50 cents
\$2.20 per week by carrier

QUALITY CONTROL:
URI Watershed Watch monitors are being sought for several lakes and ponds in Rhode Island, including Valley Falls Pond, in Central Falls, where tall grasses wave in the breeze in the mud flats along its shore.



Rainfall – or lack of it – affects quality of state’s lakes, ponds

By **PETER B. LORD**
Journal Environment Writer

Remember last summer’s drought? And the torrential rains two summers ago? Both extremes had major and unexpected effects on Rhode Island’s lakes and ponds, according to data collected at the University of Rhode Island.

Reports submitted by hundreds of volunteers for URI’s Watershed Watch program showed that last summer’s drought lowered

water levels in some lakes and ponds by 3 feet. Stillwater Pond in Smithfield and Spalding Pond in North Stonington, Conn., were so shallow that volunteers couldn’t launch their boats.

The water that remained in some ponds was more polluted than usual because there was less water but the same amount of contaminants. In other ponds, however, the water was clearer because the lack of rainfall meant that contaminants weren’t washed into the body.

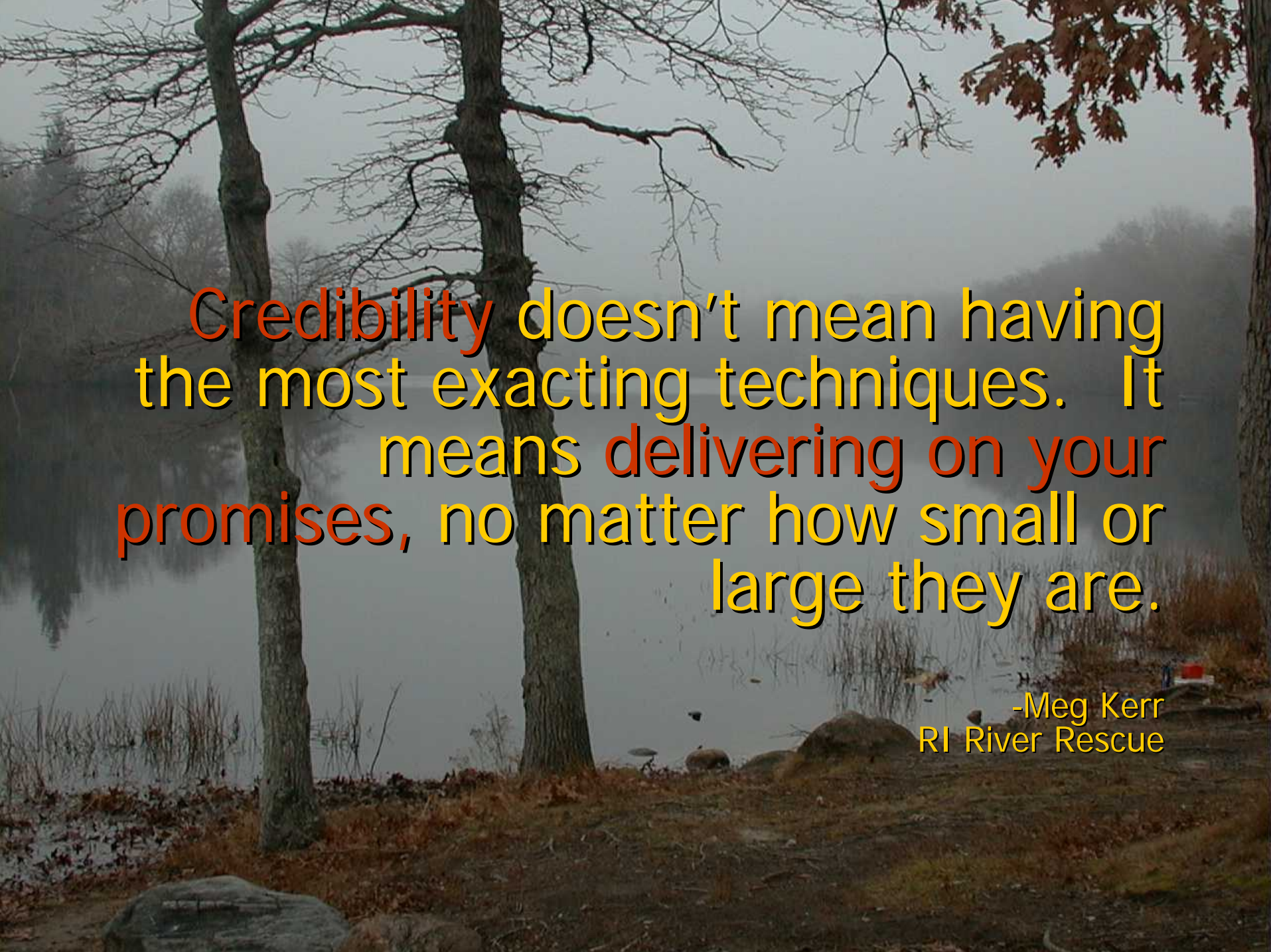
Turn to **POND**, Page A-4



The Continuum of Monitoring Data Use



Increasing Time - Rigor - QA - Expense \$\$

A misty landscape with trees and a body of water. The scene is overcast and foggy, with several trees in the foreground and middle ground. The water is calm and reflects the surrounding environment. The overall mood is quiet and serene.

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

Quality Assurance Support

- 💧 USEPA Guidance Documents
- 💧 National, regional and local workshops
- 💧 *Volunteer Monitor* Newsletter
- 💧 Volunteer Monitoring list serv





December 2004
Factsheet VI



**Building Credibility:
Quality Assurance and Quality Control for Volunteer Monitoring Programs**

University of Rhode Island University of Wisconsin

Elizabeth Herron, Linda Green, Kris Stepenuck and Kelly Addy

The ultimate goal of most volunteer monitoring programs is to ensure that well-trained volunteers collect high quality data and that the data are used. Despite decades of demonstrating that volunteers can and do collect representative data, government agencies, scientists and often the general public are sometimes reluctant to use data not collected by "experts". Therefore volunteer water quality monitoring programs must work especially hard to build and maintain credibility – some have even said, "twice as hard for half the recognition." This factsheet provides an overview of quality assurance and quality control issues and provides examples of methods used by Cooperative Extension and other volunteer monitoring programs to substantial the credibility of their data.

Quality Is Assured Through:

- ❖ Training and more training
- ❖ Written monitoring procedures
- ❖ Adhering to established procedures
- ❖ Routine sampling
- ❖ Repetition (replicate and duplicate sampling)
- ❖ Monitoring multiple indicators
- ❖ QA/QC field and laboratory testing

Many programs are entering their second decade of monitoring

- ❖ Clarified their purpose(s)
- ❖ Secure in their techniques
- ❖ Have jumped thru QA hoops
- ❖ Are realizing the value of their community connections



Challenges

❖ Perceptions

- ❖ Can't sample
- ❖ Will deliberately alter samples to get _____ in trouble
- ❖ Will take my job
- ❖ Just not good enough for _____



Challenges

- ❖ Methodology & the Ever-rising QC bar
 - ❖ Will the data stand up in court? Should it?
 - ❖ Prescriptive techniques vs performance based
 - ❖ Data validation
 - ❖ Listing vs de-listing
- ❖ Who's data is it anyway?
 - ❖ What route does it take thru an agency
 - ❖ Agency needs vs organizations needs
 - ❖ STORET –easier to STOR than RET



... and issues

- ❖ Fulfilling work is needed to keep interest
- ❖ Knowing what you want to achieve is critical
- ❖ Successful programs require good training and coordination
- ❖ Start-up funding easier to get than continuation funding
- ❖ Good ecological monitoring requires healthy organizations



Successes

- ❖ Volunteer monitoring originates in the community & builds strong community partnerships
- ❖ Volunteer monitoring educates the community to make informed decisions
- ❖ Volunteer monitoring provides youth with civic lessons and hands-on science
- ❖ Volunteer monitoring provides a pathway to increased civic activities/responsibility



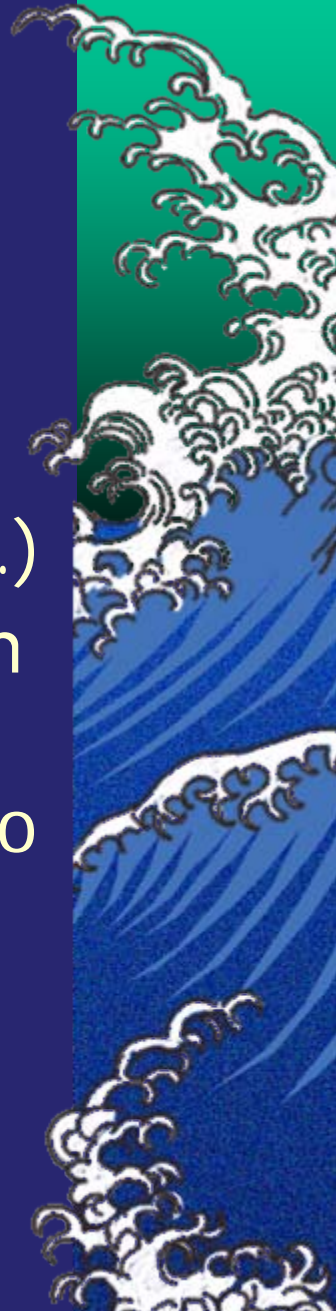
Successes

- ❖ Volunteer monitoring can reach underserved audiences
- ❖ Volunteer monitoring can build family relationships
- ❖ Volunteer monitoring tangibly connects people to their environment
 - ❖ counteracts the plastic world of TV, videos, computer games
- ❖ Ordinary people can collect good data



Successes

- ❖ Huge increase in number of locations monitored (~10 vol mon to 1 agency site)
- ❖ Source of long-term data (15, 20, 25 years...)
- ❖ Monitoring where people care - IDs the high quality waters as well as problem areas
- ❖ Provides agency personnel the opportunity to get out in the field and tap into local knowledge
- ❖ Can gain support for agency initiatives



Volunteer Monitoring Makes A Difference

- ❖ Identifies & solves problems locally
- ❖ Involves people in real science
- ❖ Raises awareness, and educates
- ❖ Provides info on places where no one else is looking
- ❖ Creates an informed constituency
- ❖ Creates stewards



Volunteers- The Wave of the Future for Watershed Planning and Implementation - C. Snyder, PA DEP





Thank you!

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