

Resources Available for Monitoring Programs

PNW Water Quality and Volunteer
Monitoring Workshop
July 14-15, 2003
Ketchum, Idaho



Resource Needs

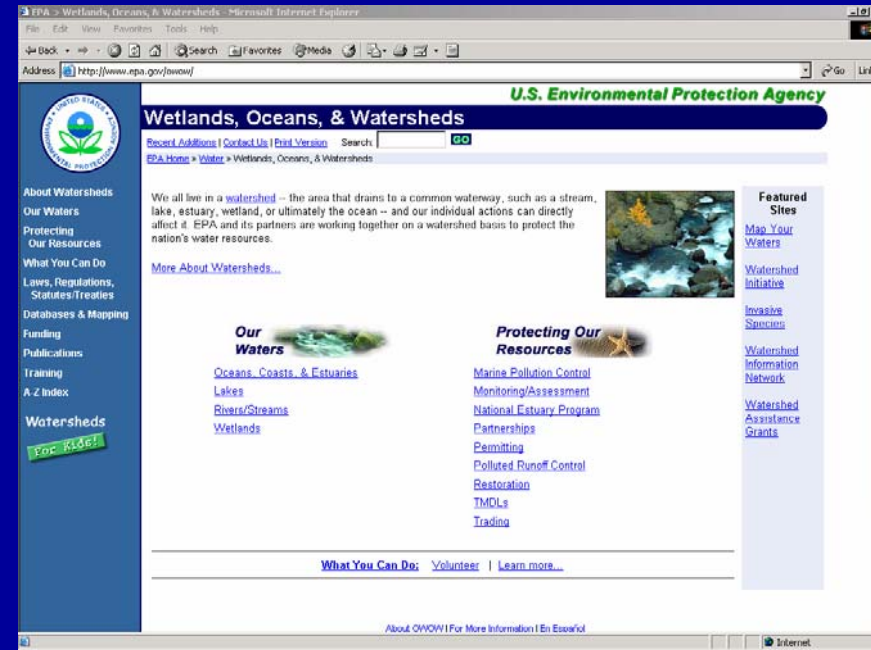
- Program Support
- Funding
- Networking
- Methods
- QA/QC
- Equipment
- Watershed Education



Program Support



- National
 - EPA
 - What Volunteer Monitoring Is
 - Variety of Volunteer Monitoring Methods
 - National Directory of Volunteer Monitoring Programs
 - *Volunteer Monitor* Newsletter
 - QAPP Guidance
 - And much more!

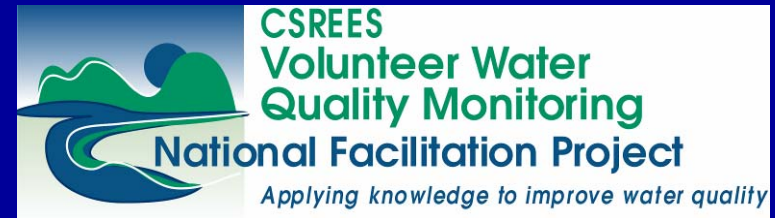


Access information at: <http://www.epa.gov/owow/>



Program Support

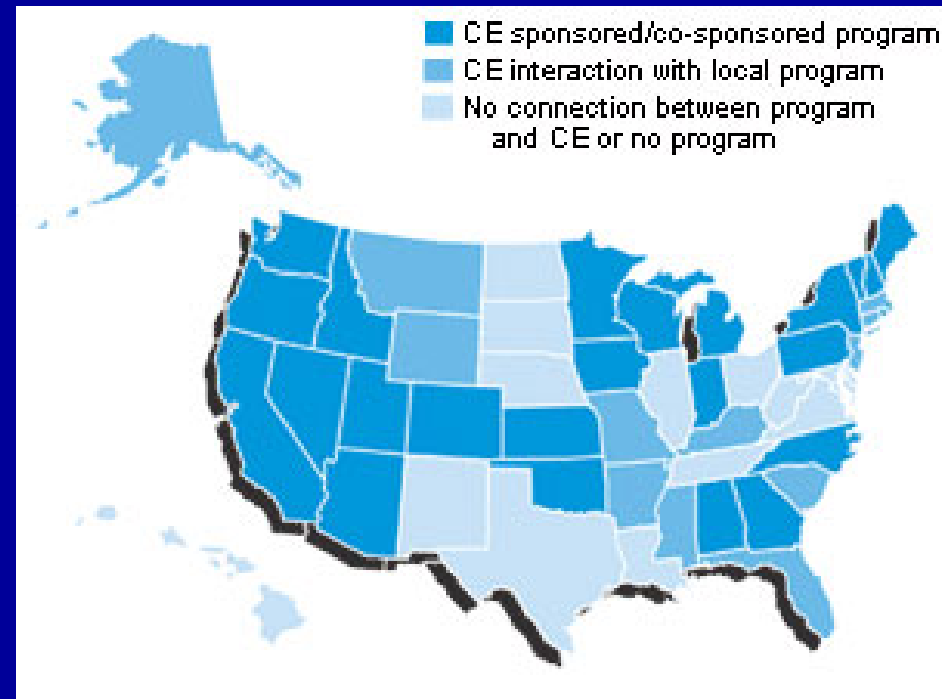
- National
 - CSREES National Facilitation Volunteer Water Quality Monitoring Project
 - Improve communication
 - Develop templates and materials
 - Expand opportunities
 - Strengthen partnerships



CSREES National Facilitation Volunteer Water Quality Monitoring Project

Project Objectives:

- Identify current Extension programs
- Develop multi-media training materials
- Offer training programs
- Develop and establish internet and web-based tools
- Increase collaboration and cooperation



Develop and Implement Training Materials and Programs

- *Guide for Growing CSREES Volunteer Monitoring Programs*
 - Based on case studies of model programs
 - Modular format to ensure timeliness
 - Available in hardcopy and electronic formats
- Training sessions offered through regional CRSEES conferences and other venues



Guidebook Modules

- Types of monitoring activities available
- Effective training techniques
- Quality assurance issues
- Successful approaches to overcoming barriers to local data sharing and networking
- Volunteer management and support ideas
- Outreach tools
- Fund raising

Scroll over web addresses for active links

 **June 2003 Factsheet IV** 

**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 to 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 U.S.D.A. 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.uswaterquality.org/volunteer/> for more information.



Program Support

- National
 - Give Water A Hand
Action Guide for youth to inventory strengths and identify local water management gaps
 - Educating Young People About Water
Resources to help design water education programs and choose materials that help youth relate their knowledge about water to local issues



Program Support

- State and Local
 - Cooperative Extension
 - University Departments
 - State Natural Resources Depts.
 - County Offices
 - Soil and Water Conservation Districts
 - Tribal Offices
 - City Depts.
 - Non-profit Organizations
 - Interest Groups



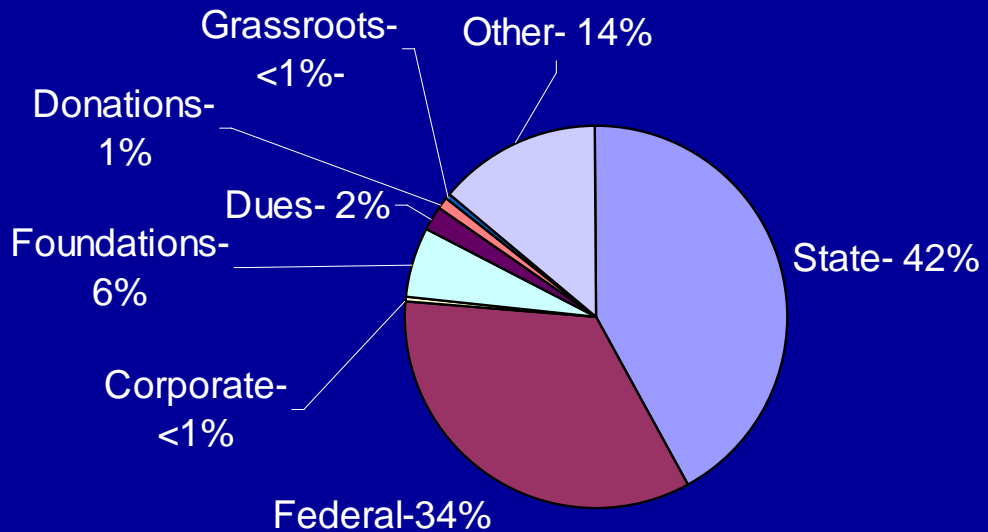
Program Support

- State and Local
 - Other volunteer monitoring programs-- networking



Funding

- Programs with larger budgets generally supported with state and federal funds
- Consider partnerships when seeking funding



Average composition of 2001 annual budget among 21 responding volunteer water quality monitoring programs

National Facilitation Project Inquiry 2002



Funding



- Washington State Grantmakers and Funders
<http://www.fundsnetsservices.com/washignt.htm>
- Oregon Grantmakers
<http://www.fundsnetsservices.com/oregon.htm>
- Alaska Community Foundations
http://fdncenter.org/funders/grantmaker/gws_comm/comm_ak.html
- Idaho Grants
<http://www.fundsnetsservices.com/idaho.htm>



Funding

- EPA's Catalog of Federal Funding Sources (<http://cfpub.epa.gov/fedfund/>)
- USDA 406 funding
- Connect with funded project



Networking

- EPA Volunteer Monitoring List Server
 - Send a blank message to: volmonitor-subscribe@lists.epa.gov
- National Facilitation Project List Server
 - Contact any of the project staff
- PNW Training
- Websites



Methods: Research and ID

- Research uses
 - Matrices
 - Waterwatch Tasmania Equipment Guide
- Identify various methods
 - EPA Guidance Manuals
 - LaMotte/Hach kits and catalog
 - Standard Methods for the Examination of Water and Wastewater

Matrix of Monitoring Activities

The following table describes in broad terms some of the monitoring activities typically performed by volunteers. This matrix is intended to help direct the selection of monitoring activities according to data objectives and available resources. The table is arranged with the monitoring activities that generally require less effort and resources at the top, increasing in complexity toward the bottom. Within each monitoring activity, there is also often a range of data objectives and resources needed, with more intense data objectives requiring more resources.

Monitoring Activities	Data Objectives	Examples of Activities	Resources Needed			
			Equipment & Supplies	Education & Training	Frequency of monitoring	QA/QC Level & Standards
Shoreline Survey	Educational; General awareness; Gross problem identification or screening; Baseline data; Targeting sites for additional study	Field observations; shoreline land use assessment; I.D. potential sources of pollutants	Map of waterbody, field data sheets Optional: Camera, GPS unit	Understanding of maps and features of concern. Can be self taught or training on how to complete maps and data sheets	Annually	No formal QA/QC plan required. Field Observations on standard forms.
Watershed Assessment	Educational; General awareness; Gross problem identification or screening; Baseline data; Targeting sites for additional study	Field observations, watershed wide land use assessment, I.D. potential sources of pollutants	Map of watershed, field data sheets Optional: camera; permission to access private property, GPS unit	Understanding of maps and features of concern. Can be self taught or training on how to complete maps and data sheets	Annually or less often	No formal QA/QC plan required. Field Observations on standard forms.
Habitat Assessment	Educational; General awareness; Gross problem identification or screening; Baseline data; Targeting sites for additional study/restoration	Visual assessment of critical habitat features; may include measurements of some features. Intensive surveys measure channel depths, sinuosity, etc.	Map of waterbody, field data sheets, measuring tape, measuring stick Optional: camera; permission to access private property, GPS unit	Understanding of maps and features of concern. Training in evaluating habitat features and in how to complete maps and data sheets recommended	Several times a year during different seasons or less is typical, many programs assess habitat annually	Basic written plan - assessment purpose, methods, sites, and schedule.

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U.S.D.A. National Facilitation of C.S.R.E.E.S. Volunteer Monitoring Efforts Website <http://www.usawaterquality.org/volunteers/>



Methods: National Connections

- The *Volunteer Monitor* newsletter
- Secchi Dip-In website (<http://dipin.kent.edu/>)
- NEMI (<http://www.nemi.gov/>)

The Volunteer Monitor
THE NATIONAL NEWSLETTER OF VOLUNTEER WATERSHED MONITORING Volume 15, Number 1 • Winter 2003

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the **ALLARM** Program
growth, change, and lessons learned
by Cande Wilderman, Alissa Barron, and Lauren Ingrand

After 10 years of operation, we renamed our college-community partnership. The program formerly known as ALLARM would henceforth be called ... ALLARM. Although the name change—from "Alliance for Acid Rain Monitoring" to "Alliance for Aquatic Resource Monitoring"—may have been subtle, it signaled a far-reaching change in the relationship between Dickinson College and volunteers from the surrounding community.

The original ALLARM was started by the college's Environmental Studies Department in 1989 to collect more information about the impact of acid deposition on Pennsylvania's streams. The new ALLARM has a dramatically broader focus. While we have continued the acid rain monitoring, now the majority of our effort is devoted to helping community groups perform their own monitoring and research on issues of their own concern.

A continuum of models
"Citizen science" projects, including volunteer monitoring, rely on partnerships between citizens and professional scientists. These partnerships can take many forms, which may be arranged along a continuum of increasing community involvement and control. ALLARM's experience of evolving from a single-issue, "top-down" program to a multi-issue, "bottom-up" program has given us some special insights into the strengths and challenges of the different models.

The following five questions help situate a given partnership along the continuum:

1. Who defines the problem?
2. Who designs the study?
3. Who collects the samples?

continued on page 3



Methods: Other Programs

- Citizens' Environmental Monitoring Program
- Field Manual for Water Quality Monitoring (GREEN)
- OSU Watershed Steward Education Program
- Vancouver Water Resources Education Center
- Discovery Southeast Creek Stewards
- San Juan Conservation District Monitoring
- Idaho Streamwalk
- Nevada/CA Tahoe Truckee Snapshot
- URI Watershed Watch
- WI Water Action Volunteers



Get Involved and Monitor Water Quality!

Monitoring the health of your local stream or river is an excellent way to work proactively for the natural world. Not only are you doing something positive for the environment, you also get to spend time enjoying the outdoors.

There are a number of expectations required of you as a Volunteer Monitor. For quality assurance purposes, you will be expected to attend a training program to learn the quality assurance procedures. When you join the monitoring group, try to commit to one year of collecting. This will help maintain consistent monitoring practices.

The number of times you are in the field will vary with the goals of your local monitoring program, but plan to collect data about once a month. The time spent in the field will vary depending on what data you collect.

The strength of a good stream or river monitoring program is based on its volunteers. As a volunteer, you may be asked to help recruit others for the program. You can form teams with others to share the responsibility of data collection from one site. If you are not interested in data collection, there are other ways to help the program. Ask your Monitoring Coordinator to suggest some related projects that need volunteers.

DEFINITION OF TERMS

Accuracy: A measure of confidence that the data closely match their true values.

Parameter: The stream characteristic to be measured.

Quality Assurance: Assurance that data are reliable because they are collected systematically by all volunteers.

Quality Control: Assurance that data are accurate by using a series of check points to review procedures before the information is entered into a database.

Your Safety: Our concern for your well being and enjoyment while collecting data in the field.



PNW, pp.
136, 174-5

Equipment: Determining What You Need

- Chosen equipment should allow for collected data to meet defined quality standards
 - Use other programs' written methods to determine your equipment needs
 - Waterwatch Tasmania Equipment Guide
 - Other resources as mentioned



Equipment: Borrowing

- Local municipal water districts
- Solid waste units
- Sewage treatment plants
- Schools
- Tribal, Federal, State agencies
- Soil and Water Conservation Districts
- Irrigation Districts
- Watershed councils
- Non-profits

Watershed Education Resource Centers (WERCs)

These centers are located in a variety of locations across Wisconsin. They provide equipment, resources and often training for local citizens, teachers, civic group leaders and youth group leaders interested in learning about water quality and natural resource issues.

The WERCs have water quality monitoring equipment and library resources available for use by individuals or groups at little or no cost.

What you might find at the WERCs:

Chemical and Physical Water Monitoring Testing Equipment:

- Dissolved oxygen kits
- Turbidity tubes
- Thermometers
- Secchi discs
- pH test kits and more!

Biotic Monitoring Equipment

- D-Frame Nets
- Macroinvertebrate Identification Keys

Storm Drain Stenciling Supplies

Curriculum Guides

Monitoring/Water Quality Videos

Monitoring/Water Quality Books

Groundwater and Enviroscope Models

Soil Testing Equipment

Contacts for Watershed Education Resource Centers (listed by basin)

<p>St. Croix Basin</p> <p>SUE OYALLOGAN 1 Northern WI WERC McCall 143A 1800 Grand Avenue Superior, WI 54880 Phone: 715/396-8525 soyallo@facstaff.wiscnet.edu</p>	<p>Lake Superior Basin</p> <p>CATHY RECHTMANN 6 Northern Great Lakes Visitor Ctr. 29270 County Hwy G Ashland, WI 54805 Phone: 715/68-2637 cathyrn.rechtmann@rcs.uwex.edu</p>	<p>Upper Chippewa Basin</p> <p>MATT DAVIS 7 ENR Service Center N4103 State Hwy 73 Ladysmith, WI 54448-9309 Phone: 715/532-6322 mrdavis_ean@rcs.uwex.edu</p>	<p>Upper Green Bay Basin</p> <p>AMANDA KOSTNER 8 Teaching Outdoor Awareness and Discovery (T.O.A.D.) Harrison County WERC 1702 Hall Avenue Harrison, WI 54143 Phone: 715/37327780 akostner@harrisoncounty.com</p>	<p>Milwaukee Basin</p> <p>SUE MILLIN 10 Washington County LCO 333 East Washington Street Suite 200 West Bend, WI 53090 Phone: 262/335-4507 ksue@rcs.washington.wi.us</p>
<p>Lower Chippewa Basin</p> <p>RUTH FORSGREN 2 Beaver Creek Reserve 511 County Road K Fall Creek, WI 54642 Phone: 715/6372212 rfor@beaverreserve.org</p>	<p>Central Wisconsin Basin</p> <p>LAURA FELDA 3 Adage-Laure 1200 Franklin Street Stevens Point, WI 54481 Phone: 715/346-3364 lfe@knap.wisc.edu</p>	<p>Grant-Platte-Super-Petersonia Basin</p> <p>PEGGY COMPTON 4 Southwest WI Water Education Library Lancaster Ag. Research Station 7206 State Hwy 26 & J Lancaster, WI 53813-9725 Phone: 608/726-6181 peggy.compton@rcs.uwex.edu</p>	<p>Fox-Wolf Basin</p> <p>HEATHER WIEGELT 9 Jackson Wildlife Reserve PO Box 55 1205 Parilla Road Menasha, WI 54952 Phone: 920/733-9184 heatherw@landandsovereignty.com</p>	<p>Milwaukee Basin</p> <p>MARY HOLLABECK 11 Riveridge Nature Center 4938 West Heathstone Drive PO Box 24 Neenah, WI 53060 Phone: 262/252-2115 edu@riverandsovereignty.com</p>
<p>Rock Basin</p> <p>DICK NEWSOME 15 Friends of the Wolf Environmental Center PO Box 131 Bainbridge, WI 53912 Phone: 608/763-2387, 608/345-2609 news@efoc.org</p>	<p>Rock Basin</p> <p>MARY HOLLABECK 12 Wisconsin LCO 1326 Penacook Road, Room 210 Manitowish, WI 53188 Phone: 262/396-8935 jmh@beaverreserve.org</p>	<p>Rock Basin</p> <p>SHARON MUTTKE 13 Aurora University Lake Geneva Campus 350 Centerville Blvd. PO Box 210 Wilmette, WI 53191 Phone: 262/245-8534 smuttke@aurora.edu</p>	<p>Rock Basin</p> <p>MINDY HABECKER 14 Dane County UW Extension 1 Fox Oak Court Madison, WI 53718-8112 Phone: 608/264-9718 mindy.habecker@rcs.uwex.edu</p>	

Map of Wisconsin showing 15 Watershed Education Resource Centers (WERCs) locations, numbered 1 through 15, corresponding to the contact information provided.

Produced by the USGS National Environmental Resource Center April 2002



Equipment: Borrowing

- Project WET
- Adopt-a-Watershed
- Blue Thumb
- Kids in the Creek
Stream Study
- Master Watershed
Steward Program
- WSU Howard Hughes
Equipment Loan
Program
- GLOBE (U of Idaho)



PNW p., 231



Equipment: Purchasing

- Acorn Naturalists
- Ben Meadows
- CHEMetrics
- Cole-Palmer Instruments
- GREEN
- BioQuip
- Forestry Suppliers



Simplicity In Water Analysis

Product Search Visual Systems Instrument Systems Catalog Contact Order

PNW p., 227



Equipment: Purchasing

- Hach
- LaMotte
- NASCO
- Fisher Scientific
- liquidators



Watershed Education

- EPA
 - Surf Your Watershed
 - Clean Water Action Plan
 - Groundwater, Source Water Protection and the Watershed Approach
- Water Basics
- Science in Your Watershed
- Chehalis River Council
- NatureMapping Program

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Watershed Education

- The Watershed and River System Management Program
- USGS Surface Water Information Pages

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