River Voices

A quarterly publication of River Network

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Volunteer Water Monitoring Makes A Splash Nationwide

by Karen Firehock,
Director of the Izaak Walton League of America's Save Our Stream Program

From San Francisco Bay to Chesapeake Bay to the Gulf of Mexico, volunteer monitoring has taken hold across the nation. Increasing numbers of volunteer monitors are keeping watchful eyes on the mighty rivers that flow to the bays, the tributary streams that feed the rivers, and the springs where these waters originate. Although the goals and methods of various monitoring groups may differ, all monitors share a commitment to a hands-on, volunteer approach to resource conservation.

National Survey of Monitors

The Izaak Walton League of America's Save Our Streams (SOS) Program, a leader in volunteer watershed assessment for 22 years, has noted a dramatic increase in the number of volunteer monitoring projects during the last several years.

In 1990, SOS, in cooperation with the U.S. Environmental Protection Agency (EPA) and America's Clean Water Foundation, conducted a survey of all states to determine which ones had coordinated volunteer monitoring programs and the extent of organized projects in each state. This year, SOS again surveyed the country to determine how many groups were involved in volunteer monitoring. While a few hundred projects were added to the League's database in 1990, making the total number of groups about 3,500, that number has jumped to 4,500 projects this year, and names continue to pour in!

What are we finding out from these groups? According to Amy McKinney, a full-time SOS intern from Texas who spent the entire summer contacting all the new groups, most of the groups seem to function as isolated projects and are not part of any formalized state network.

Respondents were asked to identify one or more types of monitoring

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Karen Firehock (second from left front), Director of Izaak Walton League's SOS Program, teaches a group of volunteers how to use a kick-seine net to collect stream invertebrates to check the stream's health. Photo by Laury Marshall-Forbes.

RIVER NETWORK

P.O. Box 8787
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River Network is a national non-profit organization committed to building local support for river protection. We believe that local people are the voice of America's rivers and that without local action, rivers cannot be protected effectively, nor permanently.

River Network has three programs:

the **River Clearinghouse** to provide information and referrals to local river activists,

the **River Leadership Project** to develop river conservation leaders at the state and local levels, and

the **Riverlands Conservancy** to acquire outstanding riverlands and convey them to the public for protection.

Staff

Phillip Wallin, Director

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methods they use. About half of the groups do visual surveys to note such things as abandoned chemical drums, evidence of eroding banks or other problems, such as strange odors. These groups tend to be made up of canoeists, kayakers, fishing organizations or other waterway users.

In addition, about half of the groups do chemical monitoring, while only a quarter are engaged in biological monitoring. (Refer to box on page 3, "Water Monitoring Methods") McKinney said the types of chemicals monitored vary greatly, depending on the purpose for monitoring and the resources and abilities of the groups. Only a few groups surveyed engage in habitat restoration.

Some groups (about 15 percent) monitor primarily for advocacy purposes and limit their monitoring to problems that can be identified quickly and easily and reported to the proper authorities. This type of watchdog monitoring can be greatly enhanced when backed up by actual data collected by volunteers. For example, while SOS projects monitor construction sites for compliance with state laws, they also monitor streams to document that excess sediment from violating sites is impacting the stream's water quality.

According to McKinney, who plans to return to Texas and begin a biological monitoring project on Barton Creek in Austin, "I know there are a lot of water pollution problems but I was surprised at how many groups there really are out there organized to do something about the problem. Everyone seemed very willing to work together and cooperate."

State Programs

While it is impossible to highlight the efforts of all volunteer monitoring groups in one article, some examples of new and existing programs illustrate how monitors are making an impact.

Coordinated state programs are also springing up or moving into high gear. New programs include Texas Waterwatch, coordinated by Dave Buzan at the Texas Water Commission. Texas is now helping citizens who have gathered data put it to use in presentations, assessing water quality trends and educating the public. The program has a newsletter, *Texas Watch*, and has found many groups organized to protect Texas waterways.

In addition, states such as Alaska, Georgia, and Louisiana, which have varying current projects, are considering hiring volunteer monitoring coordinators. Other states that have offices to coordinate river projects, such as the Missouri Stream Team program. According to state Stream Team coordinator, Joe Bachant, the two-year-old program currently has 8,000 people conducting inventories on state waterways. "The idea just kind of caught like a prairie fire," growing at an average of ten new groups per month in the first year," he said.

In 1990, the total number of citizen monitoring groups was about 3,500. Today that number has jumped to 4,500, and the names continue to pour in.

Some states, such as Virginia, have nonprofit organizations like the Izaak Walton League's SOS Program, which collect data using EPA-approved protocols. SOS collects biological data and the Alliance for the Chesapeake Bay collects chemical data in the state, and data from both groups is provided to government agencies. However, because interest in the state has grown among the private and

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Letter To The Network

The most exciting thing that's happening in river protection today is the proliferation of river-watch teams. This may be the key to creating a solid grassroots constituency for rivers in this country.

In 1989, I was with a team of American environmentalists looking at the problems of the Volga River in Russia. We were beseiged by ordinary citizens. They all demanded one thing: that we take water samples from the steel mill effluent, the sewage treatment plant, the Volga itself. They wanted us to take these samples back to the United States, analyze them, and tell the people of Volgograd why the fish were dying and their children were sick.

In Russia (and most of the world) it is impossible for ordinary citizens to test water quality. We really are blessed in this country that organizations like River Watch Network and Izaak Walton League will train us to monitor our backyard streams. As the people of Volgograd knew, data is power.

I want to acknowledge the excellent work of Rita Haberman, editor of *River Voices* and Coordinator of the River Clearinghouse. Every issue of River Voices is better than the last, thanks to Rita. You'll get to know her when you start to us DORIS, our referral service that puts you in touch with specialists on river issues.

Phillip Wallin
Director

Water Monitoring Methods

Citizen water monitors conduct a wide range of monitoring activities that can be placed into three general categories. Any of these actitivies may be appropriate for your group depending on its goals, abilities, budget, and expertise.

Visual Observation - Volunteers make visual observations of changes in water color following storm events; effects of erosion and sediment control measures; general impacts of earth disturbances during land development for agricultural or construction purposes; weather; land uses; impacts of recreational uses; and animal behavior and abundance.

Physical and Chemical Measurements - Volunteers collect and analyze water samples using standardized techniques and equipment. Volunteers may measure any of the following parameters: water and air temperature; water transparency; turbidity; suspended solids; salinity; river height and flow; rain and snow amounts; and chemical constituents such as pH, alkalinity, dissolved oxygen; nitrates, phosphates, chlorophyll, sulfates, pesticides, metals, and hardness.

Biological Assessments - Recognizing the direct correlation between water quality and the condition of plants and animals in and around them, some volunteers survey living resources. Volunteers often survey benthic macroinvertebrates, fish, birds, and plants. More in depth analysis may involve reporting on the condition of fish (noting tumors, growth abnormalities, and lesions); the incidence of fish kills and algae blooms; habitat condition and availability; and the presence and concentration of fecal coliform bacteria.

(refer to "Volunteer Water Monitoring: A Guide for State Managers", see References on page 10)

Ashuelot River Watch: Citizens Improving Water Quality Through Monitoring

by Jack Byrne,
Executive Director of River Watch Network

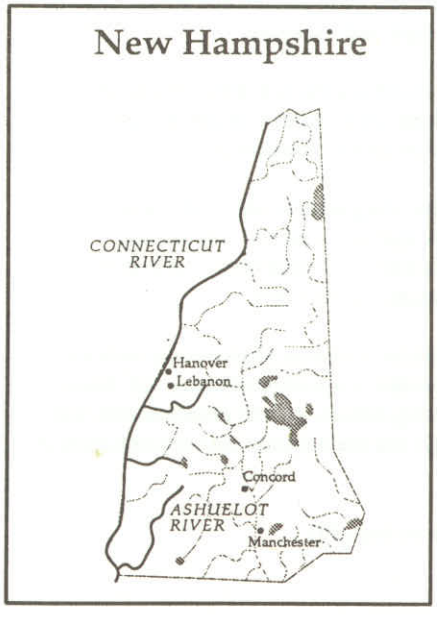
The Ashuelot River located in southwest New Hampshire, is about 60 miles long. It flows in a southwest direction eventually emptying into the Connecticut River. Its upper watershed is relatively undeveloped and forested. However, about halfway along its course, starting at the City of Keene, water quality begins to deteriorate. Although many water quality improvements have been made over the past twenty years, the river is still unswimmable at many places between Keene and its confluence with the Connecticut River in Hinsdale, New Hampshire.

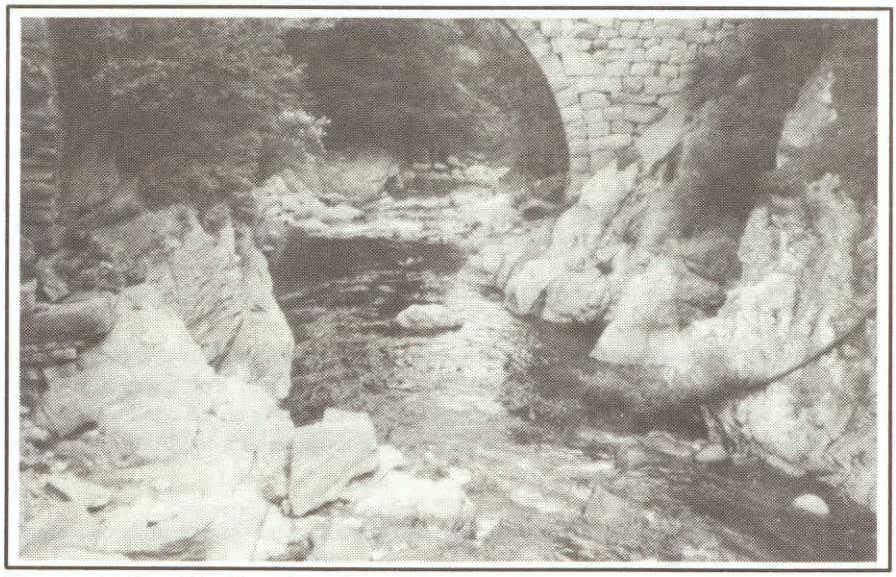
In 1987, the Cheshire County Conservation District contacted the River Watch Network (RWN) about starting a River Watch program for the Ashuelot River. The District had recently made the river a focus of their programs for the coming years and wanted to get more people aware of the river and encourage participation in identifying and addressing its issues. RWN worked with the District and Keene State College to organize the Ashuelot River Watch Program. The first step was to develop a working group to help design the program. This group included the New Hampshire Department of Environmental Services, Rural Housing Improvement, Inc., the Keene Department of Public Works, the Soil Conservation Service, and several citizens who were concerned about the river. This group developed a plan for monitoring the river and a fundraising strategy. Funding was obtained from the New Hampshire Charitable Fund, local businesses, and individuals who live in the river valley.

The Ashuelot River Watch Program is a cooperative partnership between local citizens and local government working together to protect the Ashuelot.

Because many of the river's water quality problems were related to sewage pollution, the participants decided to test for fecal coliforms at 30 sites along the entire length of the river. Fecal coliforms are bacteria which serve as indicators of the presence of sewage and manure. Site were chosen to accomplish two purposes: 1) to provide a baseline which would characterize the general level of sewage pollution throughout the watershed; and 2) determine whether and how potential and known sources of sewage pollution were affecting the ability of people to use the river for water contact recreation, such as swimming.

By September 1987, the monitoring program was designed. RWN enlisted and trained a crop of 22 citizens to collect samples and deliver them for fecal coliform testing to a microbiology lab a Keene State College. In this first year, they made two sample runs. This experience was used as a trial period to test the logistics of the sample runs and check the accuracy of





The Ashuelot River, New Hampshire. Photo by River Watch Network.

the sample results. The data gathered gave a preliminary view of the overall condition of the river's water quality with respect to fecal coliforms.

In 1988, full scale testing began in the spring with the assistance of teachers and students at three high schools (Keene, Thayer, and Monadnock Regional) and 40 citizens. Among the volunteers were two employees of the Keene Department of Public Works who had been invited to participate. Eight sample runs at forty-five sites were carried out between May and October that year. The results showed consistently high coliform levels at sixteen sites. Several of these were on Beaver Brook, a tributary to the Ashuelot in Keene which was previously thought to be clean. The Ashuelot River Watch Program notified the Keene Department of Environmental Services.

In 1989 and 1990, the Keene Department of Public Works responded by conducting their own fecal coliform tests to try to pinpoint the source of possible leaks from their sewer lines along Beaver Brook. They then began checking the suspected lines with dye. Their check revealed several places where the mains were leaking sewage into adjacent storm drains which allowed the sewage to flow into Beaver Brook. These were promptly repaired. Continued monitoring both by the Ashuelot River Watch Program and the Keene Department of Public Works have subsequently shown, however, that the coliform levels are still high in Beaver Brook. Volunteers from the Ashuelot River Watch Program are working with the Keene Department of Public Works to try to determine why they persist.

The Ashuelot River Watch Program is currently in the process of trying to identify the cause of the elevated coliform readings at the other sites with high counts. Many new sampling points have been added to help narrow

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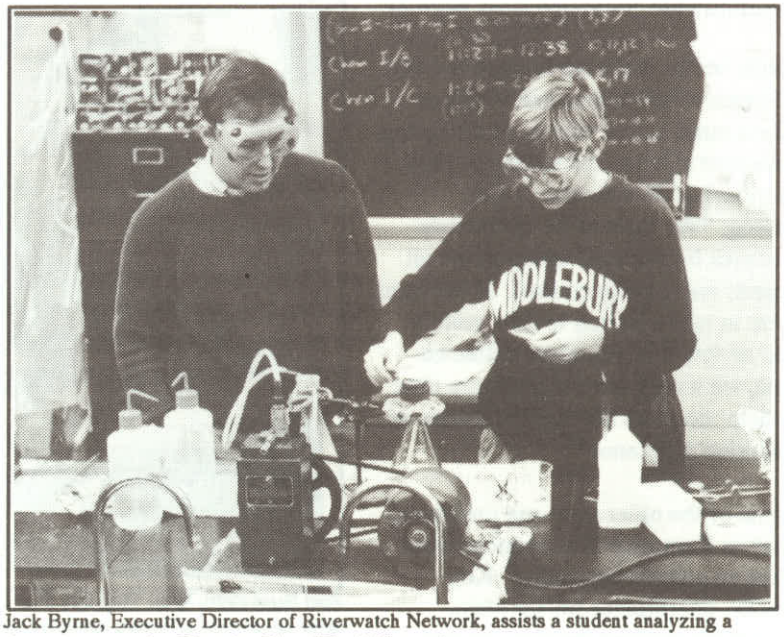

Jack Byrne, Executive Director of Riverwatch Network, assists a student analyzing a river water sample. Photo by River Watch Network.

ABOUT RIVER WATCH NETWORK

River Watch Network (RWN) is a national, non-profit organization that helps local groups organize and operate water quality monitoring and protection programs. There is a growing number of people throughout the country willing to work on reversing the trend of river degradation. Many of these citizens need organizational and technical advice in order to produce scientifically credible data which can be used to upgrade the status of their rivers. RWN was established in 1987 to address this need by putting together a formula which could be exported to citizen groups across the country. This formula evolved from over 24 years of volunteer experience cleaning up the Ottauquechee and other rivers in Vermont.

RWN is currently working on 37 rivers in 13 states. It works with local conservation groups, schools and universities, businesses, or with people who have no formal affiliation by are ready to organize to protect their rivers. RWN and a working group of volunteers design a monitoring program tailored to address specific problems. RWN then trains citizens to test the physical, biological, and chemical condition of their river. It also helps volunteers check their tests against state standards, document their findings, recommend actions, and follow-up on recommendations to be sure they are acted upon by the appropriate agencies and organizations.

For more information contact: River Watch Network, 153 State Street, Montpelier, Vermont, 05602, (802) 223-3840.

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public sector, both the League and the Alliance would like to see Virginia take a more active role in coordinating volunteer efforts. According to SOS Monitoring Coordinator, Loren Kellog, "We have to do all the data analyses for the state and provide all reports and quality control. If the state were to hire a person to help collect and review this volunteer-collected data, we would have much more time to help monitors address the causes of pollution problems."

Some of the older state-run programs, such as Kentucky Waterwatch, arose from an activist beginning. Ken Cooke, coordinator for the state, landed his position because he was conservation chair for a river group called Southern Kentucky Paddlers Society. According to Cooke, "When they first offered me the job (of volunteer coordinator), I thought they were just trying to shut me up. I figured if that was the case I could always quit."

However, that turned out not to be true. Kentucky has enjoyed enormous success with its program an has not experienced the backlash some bureaucrats might have feared. In addition to biological and chemical monitoring methods used by Kentucky volunteers, Cooke has utilized some fun approaches to the concept of "adopting" things that affect river quality. These approaches include "Adopt a Discharger," where volunteers use permits, monitoring and visual surveys to watch over a company's discharges and to keep on top of the industry; "Adopt a Dumper" and "Adopt a Bureaucrat." Asked if he had been adopted yet, Cooke responded, "Not yet, but I'm eligible!"

Regional EPA offices also can serve as liaisons and supporters of citizen monitoring groups. Wayne Davis, a taxonomist for EPA Region 5, has offered to assist volunteer monitoring groups wishing to develop a quality control/quality assurance (QC/QA) program for states in the region. In addition, EPA's Region 4 has just provided funding to the Tennessee SOS program through Tennessee's Nonpoint Source 319 funds, and EPA Region 3 funds volunteer monitoring programs in both Virginia and West Virginia through those states' 319 monies.

Paul Brant (left), West Virginia's SOS Coordinator, and two SOS volunteers sift through a kick-seine net sample of stream macroinvertebrates. Photo by Chris Dorst, The Charleston Gazette.

EPA Region 10 in Washington provides funds to the Adopt-A-Stream Foundation to monitor rivers in the state and holds twelve hands-on workshops. According to Susan Handley of the Region 10 office, more than 12,000 people in Washington, Oregon, and Idaho participate in the region's Stream Walk. Region 10 also uses 319 monies to fund citizen monitoring in Juneau, Alaska, and is expanding coastal lake monitoring in Oregon. Region 10 also sponsors Project Wet in Idaho which teaches 230 schools about stream walking. Commenting on the success of her program, Handley said, "I think that Stream Walk has really touched a nerve, evidenced by the fact that there are so many people participating. It is a positive thing they can do for the environment. It empowers people to take an active role in protecting the environment."

Getting Started

If your group is considering getting involved in volunteer monitoring, here are some suggestions on how to get started:

* Call or write the Izaak Walton League of America's SOS Program (see address an phone number at the end of this story) to find out about other monitoring groups in your state and to learn if your state has a government-run program.

* Contact other groups in your state to find out what kinds of monitoring they are doing and who uses their data. Also get a copy of the "National Directory of Citizen Volunteer Environmental Monitoring Programs" (see References on p. 10). Contact other groups listed in the directory for copies of publications and ideas.

* Find out what kind of monitoring is done by your state's water regulatory agencies. (If you don't know your state water regulatory agency, the Izaak Walton League SOS Program can provide assistance.) How many different monitoring sites do they have

for rivers, lakes or estuaries? Are they interested in or currently using volunteer-collected data? Get a copy of "Volunteer Water Monitoring, A Guide for State Managers" (see References on p. 10)

* Review different types of monitoring methods available to citizens groups. What methods will work best for your group based on your goals, abilities, budget and staff or local expertise? A very useful publication on this subject which will be available in October 1991 is "Volunteer Lake Monitoring: A Methods Manual." To order a copy contact: US EPA, Office of Water, Assessments & Watershed Protection Division, 401 M St. SW, Washington, DC, 20460.

* Contact your regional EPA office for guidance on developing a QA/QC plan. This is a scientific plan that shows how you can ensure your data is gathered correctly and is accurate. Remember, a state agency will be much more agreeable to working with you if you can say you have developed at least a draft copy of a QA/QC plan for their review. This gives the state some way of ensuring that the data your group provides will be credible.

* Find out more about other successful state volunteer monitoring programs. You may want to refer skeptical state agencies to managers of these volunteer monitoring programs to tell them about successes.

Good luck!

Karen Firehock is the Director of the Izaak Walton League of America's Save Our Streams Program. To learn more about SOS, write to IWLA SOS Program, 1401 Wilson Blvd., Level B, Arlington, VA, 22209-2318; or call (703) 528-1818.

Third National Volunteer Monitoring Conference: Building Partnerships in the Year of Clean Water

Purpose: The conference will focus on how volunteer monitoring groups can participate in state and federal progams to monitor the water quality of rivers, lakes, wetlands and estuaries. This conference will help these groups set goals, develop scientific methods and protocols and make the best possible use of their data. The conference will also help local, state and federal government agencies initiate successful, scientific, cost-effective volunteer monitoring programs. Sessions will be presented in workshop format.

When: March 30 - April 2, 1992

Where: Annapolis, Maryland

For More Information: Izaak Walton League of America, Save Our Streams Program, 1401 Wilson Blvd., Level B, Arlington, VA, 22209, (703) 528-1818.

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the possibilities - ninety sites are being monitored this summer.

The Ashuelot River Watch Program has been a success for a number of reasons. First, an effort was made early on to involve public officials in the process of designing the program. This helped the program to determine what methods and techniques would be required in order for these officials to rely on the data being gathered. Second, the monitoring program had a purpose other than to collect baseline data, i.e., the focus has been to identify and correct problems related to sewage entering the river. Another important element is the effort to regularly inform the public and officials of the program's findings. This has been done through extensive media coverage of the program's progress, a widely distributed annual report summarizing the data and the condition of the river, and regular training sessions where people are oriented to the program and learn more about the water quality and river ecology. Finally, and most importantly, the program has succeeded because of very dedicated volunteers like Dr. Steve Stepenuck of Keene State College, who are willing to put in the long hours necessary to insure that all the work of collecting, analyzing, reporting and following up on problems is done as planned. Without such people, no citizen monitoring program can succeed over the long haul.

Jack Byrne is the Executive Director of River Watch Network. To learn more about the Ashuelot River Watch Program or River Watch Network, contact River Watch Network, 153 State Steet, Montpelier, VT, 05602, (802) 223-3840.

Friends of the North Fork of the Shenandoah River: A Model Organization for Grassroots Water Monitors

by Rita Haberman

Today citizen water monitoring is growing by leaps and bounds. There's a vast amount of resources available to citizens interested in monitoring the quality of waters in their community. It wasn't too long ago, though, when information was scarce. That is when Friends of the North Fork of the Shenandoah River based in rural Woodstock, Virginia began. Today, with a membership of nearly 600, they are among the most recognized and respected citizen river monitoring organizations in the country. They were recently awarded an "Environmental Achievement Award" from the national Searching for Success Program of Renew America.

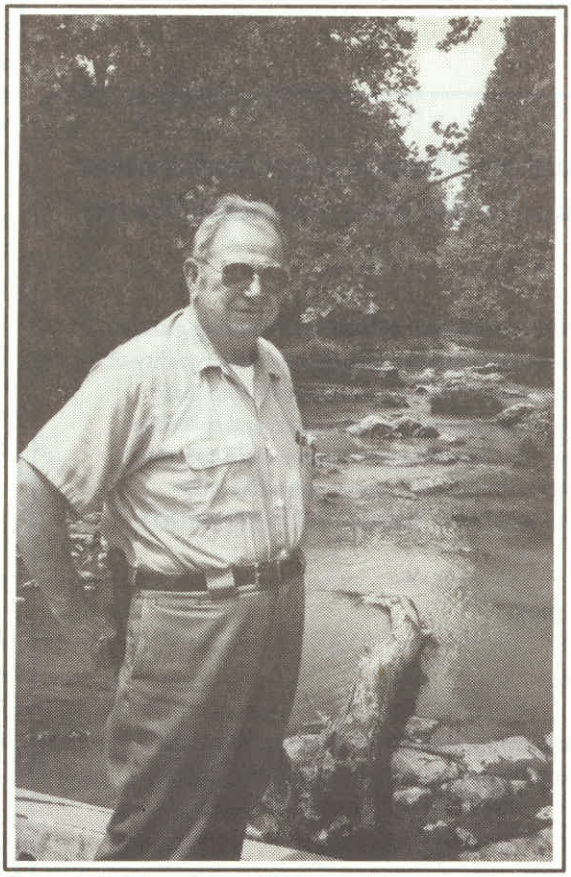
Friends of the North Fork organized in 1987 because they were concerned about the extremely low water levels in the river due to drought conditions. "We knew that when the water levels are low, oxygen is also low, aquatic plants grow wildly, and aquatic macrointertebrates and fish die," explains Garland Hudgins, co-founder and Chair of the organization and its monitoring committee.

To get a better understanding of the health of the river, they decided to test the waters. With virtually no prior knowledge of water monitoring, Hudgins called around for assistance. "I must have made over 100 phone calls to state agencies looking for a model program. I found none. So I made one up myself, and we've been using it ever since."

The core of the monitoring program consists of two types of testing along 86 miles of the river. Each week, at designated sites, some 50 volunteers test and record the river water level, temperature, and pH.

The volunteer monitors of Friends of the North Fork don't claim to be water quality professionals, just dedicated citizens helping to identify the trends and problems of their river.

Each month, these same volunteers bring water samples into the "lab" for chemical analyses. Hudgins and another volunteer, Dr. Johnson, test the samples for dissolved oxygen, pH, alkalinity, phosphates, nitrates, carbon dioxide, ammonias, and other parameters. "When we started, I didn't know anything about testing water quality, but we figured it out," explains Hudgins.



Garland Hudgins, Chair of Friends of the North Fork

With help from the Izaak Walton League's SOS Program, Friends of the North Fork also tests three times a year for benthic organisms. "We count the bugs and other critters," says Hudgins. They've also recently initiated programs to monitor the water in wells and caves in the area.

Hudgins just can't say enough good things about his team of volunteer monitors. Of the 22 volunteers that came to the first organizational meeting for monitors in 1987, 18 are still on board. Hudgins says, "The monitors are like a big family, everyone helps." In addition to the monthly meetings, the team of monitors also gathers at picnics once or twice a year.

Hudgins and his dedicated corps of volunteers don't claim to be professionals. "Occasionally we'll get a call from someone criticizing us for not using EPA approved techniques. We don't care. That's not our purpose. Our data is useful for identifying problems and trends," explains Hudgins. The Virginia Water Control Board, in particular, Ray Tesh, uses their data. Hudgins describes the typical process as such, "When we think we've found a problem, we'll act as a gopher and check it out. If it's something we can't handle, then I call Ray and he sends out his crew to investigate."

"Public awareness about the river is our primary objective," says Hudgins. They keep the public informed about the status of the river by writing a column featuring their data and other information about the river. It's called the "Shenandoah Environmental Report," and it appears in *The Free Press*, the Woodstock weekly paper.

The Friends of the North Fork is now well known and respected throughout Virginia. Their knowledge of the water quality of the river has allowed them to put together an impressive list of accomplishments including, influence the establishment of county ordinances regarding agricultural and septic waste disposal, meet with the Council on the Environment (an advisory committee to the Virginia Legislature), and participate in the Secretary of State's Natural Resources Advisory Committee.

When asked if he has some advice for citizen groups interested in water monitoring, Hudgins replied, "Set your goals, know what you want to accomplish. Design project plans to achieve those goals. And, most importantly, get young people involved."

Why does Hudgins, a 78-year-old retiree, put so much effort into protecting the Shenandoah? "I moved to this part of Virginia 58 years ago, and I've been in love with the Shenandoah River ever since. I would just hate to see anything happen to it." With the vigilant eyes of Hudgins and the rest of the Friends of the North Fork carefully watching, hopefully nothing will.

If you would like more information about Friends of the North Fork of the Shenadoah River, call (703) 459-8550.

Maintaining A Team of Volunteers

Once good volunteers are recruited and trained, it's important to keep them interested and enthusiatic about their sampling efforts. What follows are a few ideas to keep your team of monitors motivated:

1. *Send volunteers regular data reports.* Volunteers like to see their data and how it compares with data collected by other volunteers in the area.
2. *Keep volunteers informed about all uses of their data.* Let them know ahead of time how their data will be used and send them pertinent reports.
3. *Prepare a regular newsletter.* Keep it simple, and send it out often and regularly.
4. *Recruit a water quality specialist to help your group, someone who is willing and capable of answering volunteers' questions.*
5. *Provide volunteers with educational opportunities.* Invite guest speakers to talk with the group about technical or political issues pertinent to the sampling effort.
6. *Keep the local media informed of the goals and findings of the monitoring effort.* (See below, "Making the Most of the Media")
7. *Recognize the efforts of volunteers.*
8. *Provide volunteers opportunities to "grow" with the program through additional training, learning opportunties, and changing responsibilities.*

This list was taken and adapted, with permission, from the EPA's publication, "Volunteer Water Monitoring A Guide for State Managers (See References page 10 .)

Making the Most of the Media

Citizen monitoring programs are newsworthy, and getting some publicity for your group can be very useful in furthering project goals. It may help in recruiting volunteers needed to start or expand a monitoring program. It draws public attention to water quality issues, and helps get the message across that environmental protection is everybody's job.

Here are a few hints on getting coverage:

Don't feel like you have to be public relations specialist to be successful in working with the media, but you do need to be assertive and prepared. Before you call or visit have the following information available: concrete details about what citizen monitors do and where they are doing it, as well as the volunteers' names, addresses, and phone numbers.

Metropolitan newspapers. Your best bet here is a feature story. If you have a newsroom staff contact, use them, otherwise ask for the "news desk." Present your story as a do-it-yourself environmental project.

Television news. The "news desk" is also an appropriate contact at telvistion stations. Stress the visual side of the story as the basis for a news feature: scenic locations, actual monitoring operations, and articulate volunteers to explain what they are doing. Be willing to make arrangements that fit the schedule of a camera crew.

Smaller daily or weekly newspapers. Smaller papers, with fewer reporters, are more receptive to articles submitted by community groups. Remember that local papers want local news. Include as many names as reasonable. Stress the "grassroots" elements of a monitoring project. Provide photographs if available.

Newsletters. Organizational or corporate newsletters can be helpful when you want to reach a specific audience for a specific purpose. Tell the editor why his or her help is needed, provide the item you'd like printed.

This list is also from the EPA's publication, "Volunteer Water Monitoring: A Guide for State Managers (See References page 10)

REFERENCES ON CITIZEN MONITORING

Volunteer Water Monitoring: A Guide for State Managers. Available from U.S. EPA, Office of Water, 401 M Street SW, Washington, DC, 20460. Publication (WH-553).

National Directory of Citizen Volunteer Environmental Monitoring Programs, Third Edition. Available for $1 from Rhode Island Sea Grant, Information Office, University of Rhode Island Bay Campus, Narragansett, RI 02882-1197, (401)792-6842.

Field Manual for Water Quality Monitoring: An Environmental Education Program for Schools (fourth edition). Available for $9.95 from William B. Stapp, 2959 Delaware Street, Ann Arbor, MI 48103, (313) 761-4854.

The Volunteer Monitor, The National Newsletter of Volunteer Water Quality Monitoring
The purpose of this relatively new newsletter is to serve the volunteer environmental monitoring community by providing a forum for dialogue and for the lively exchange of ideas, information, and opinions. To get on the mailing list, write: The Volunteer Monitor, Eleanor Ely, Editor, 1318 Masonic Avenue, San Francisco, CA 94117.

All of the following references are available from the Izaak Walton League, SOS Program, 1401 Wilson Blvd., Level B, Arlington, VA 22209, (703) 528-1818:

Save Our Streams Kit - Contains all information need to begin an active and effective stream protection program. Included in the kit are planner's guides on how to adopt a stream and organize restoration projects, information on how to monitor water quality using a biological approach complete with i.d. cards and stream survey forms, pollution indicator guide and information on how to get the media interested in a SOS program. Subscription to SOS quarterly newsletter, SPLASH. 8-page water resources bibliography is also included. $6.00

"Citizen Monitoring Bibliography" an annotated bibliography listing 46 publications relevant to water quality monitoring). $1.00.

SOS Training Video - 1990. A 28-minute training video that teaches citizens how to monitor a river. Demonstrates biological stream monitoring and shows how to adopt and protect a stream. $15.00

A Citizen's Guide to Clean Water - 1990. A 50-page guide to the 1987 Clean Water Act Amendments. Includes a history of the act, programs that exist under the Act and using the Act to protect water quality.

Chemical Water Testing Kits

The **Hach Chemical Company** produces a large selection of kits to test for many different types of pollution indicators such as alkalinity, phosphates, annonia, etc. Write for a free catalogue to Hach Chemical Company, PO Box 907, Ames, IA 50010, or call toll free: 1-800-247-3990.

The **LaMotte Chemical Products Company** produces a number of easy to follow testing kits for reliable water, soil, and plant analysis. For more information write LaMotte Chemical Products Company, PO Box 329, Chesterstown, MD 21620, or call toll free: 1-800-247-3990.

Library Addition

THE SNAKE RIVER, Window to the West by Tim Palmer

This new book written by Tim Palmer outlines the future of the Snake River. From brilliant headwaters in the Yellowstone and Grand Teton National Parks to shadowy depths in Hells Canyon, the Snake River shows the best of the American West. It also shows the worst abuse of untempered development: back-to-back hydroelecetric dams that destroyed legendary runs of salmon, and irrigation diversions leaving only a parched riverbed of sun-baked mud where a biological bonanza once thrived. In *THE SNAKE RIVER, Window to the West*, Tim Palmer paints a vivid portrait of this 1,056-mile river and its people.

Until now, no comprehensive, readable assessment existed for this river - the second largest draining into the Pacific, south of Canada. Palmer, author of five other books about rivers and the environment, looks at the modern-day Snake River as a living entity and discusses the issues that will shape its future. He blends colorful observation from his travels along the length of the river with interviews with local residents, scientists, land managers and political decisionmakers.

To order copies, call 1-800-828-1302 (8:00-5:00 Pacific Time)/ $17.95 paper, $34.95 cloth/
ISBN #0-933280-59-9/60-2/ Island Press, Washington, D.C.

River Network's

Directory of River Information Specialists (DORIS)

will be available to assist river guardians starting October 1, 1991

What is DORIS?

DORIS is a compilation of over 350 river specialists from within environmental organizations, government agencies, colleges and universities, and private practice who are willing to assist grassroot river guardians.

In what ways are DORIS specialists willing to provide assistance?

DORIS specialists are willing to assist river guardians in at least one of the following ways:

* discuss issues over the telephone
* attend group meetings
* recommend and provide written references
* testify at hearings
* provide referrals to other speicalists
* and others.

DORIS specialists have expertise in what topics related to rivers?

River Values	*Stream Alteration*	*Pollution*	*Land Development*	*Water Flows and Water Law*	*General Tools*
riparian ecosystems	dams	monitoring	economics	private rights	Wild & Scenic Rivers Act
fisheries	channelization-dredging	municipal	land-use planning	public rights	State river programs
cultural resources	project analysis	industrial	land-use regulations	water projects	river restoration
recreation		hazardous wastes	greenways	water conservation	
economics		mining	wetlands		
		forestry	land acquisition		
		agriculture			

How can river guardians use DORIS?

Call River Network at (503) 241-3506; or write River Network, DORIS, PO Box 8787, Portland, OR 97207.

Publications Available from River Network

Choosing Your IRS Tax Status, by Christine Cook. At some time or another, every group faces the decision of whether to apply for tax-exempt status with the Internal Revenue Service. The big question is whether to apply as a 501(c)(3) or (c)(4) tax-exempt organization. *Choosing Your IRS Tax Status* will lead you through that decision-making process by highlighting the advantages, disadvantage, do's and don'ts of each.

River Wealth, edited by Kenny Johnson and Lindy Walsh. *River Wealth* is a collection of fundraising ideas successfully used by other river organizations. $5

Free Lotus Software

In cooperation with the Lotus Development Corportation, River Network is offering a free copy of Lotus 123 software to any organization working to protect rivers. Lotus 123 is both a spreadsheet and a database software program compatible with personal computers. The only requirement is that the group must be incorporated. Contact River Network for more information.

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