

EDUCATING
YOUNG PEOPLE
about

Water



A guide to unique program strategies



Compiled by
Kelly J. Warren

Elaine Andrews,
project director

Sponsored by the
United States Department
of Agriculture,
Cooperative Extension
Water Quality
Initiative Team

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Sponsored by the United States Department of Agriculture, Cooperative State Research Education and Extension Service (CSREES) under the direction of Greg Crosby, National Program Leader for Youth Science Education, and the Cooperative Extension Water Quality Initiative Team, Andrew J. Weber, Chair.

The USDA-CSREES project to review youth water education needs was developed in support of youth and community water quality education goals of the National 4-H Environmental Stewardship Program and the USDA-CSREES National Water Quality Initiative Team.

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*Educating Young People About Water:
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shop guide are also available:



*Educating Young People About
Water: Planning for Fun and Success*

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Youth water education —an overview

Inspiring young people of all ages to take an interest in water resources, become active environmental stewards, and ultimately, carry these behaviors into adulthood is the goal of all water education programs.

Around the country, such programs encourage young people to become socially conscious about water resources, and in doing so, to work toward the common good. Sheldon Berman, president of Educators for Social Responsibility states that “social responsibility—that is, a personal investment in the well-being of others and the planet—doesn’t just happen.”¹ Berman asks “What motivates one individual over another to develop social responsibility?” According to his research,² the answer lies in a child’s having positive role models. Those role models, Berman claims, take the form of parents, teachers and community leaders.

What attracts youth to water education programs? How can a program’s design enhance young people’s social and intellectual skills? Several water program coordinators throughout the country recognize water education as a way to address social and economic issues that involve youth directly, as well as an opportunity to develop environmental stewardship skills.

Many programs listed in this guide confront issues facing youth such as drug and alcohol abuse, crime, decreasing high school graduation rates, unemployment/underemployment, lack of critical thinking and life skills, and dwindling career options. In Austin, Texas, for example, river monitoring helps keep high school kids in school. Elementary school students in East Troy, Wisconsin find fishing a deterrent to drug and alcohol use. Researching restoration techniques along the Bronx River in New York offers employment and educational opportunities for urban youth. And week-long 4-H water camps in Monahans, Texas, highlight industrial and agricultural water use in arid regions of the

state, sparking interest in future natural resource managers.

The coordinators of these programs identified the social issues *and* water education needs of the young people in their communities. Incorporating both into a water education program required defining target audiences critically— not just by age, but also by the events happening in their lives. After coordinators defined their target audiences, they customized the programs so that the youth participants, the community and the environment benefited as a result.

Nonformal education settings

Water education programs for youth exist in little pockets all over the world. The myriad sources and uses of water provide a variety of educational settings that appeal to youth. This guide examines programs that are based in the United States and set in a nonformal—outside-the-classroom—environment. To organize our research findings, we grouped the programs into the following ten categories:

- Campaigns
- Clubs
- Community service learning
- Day camps
- Festivals/fairs
- Museums
- Nature centers/environmental education centers
- Organizations
- Residential camps
- School enrichment programs

We then defined³ each category based on program design and delivery strategies. The definitions are found in the Directory of Programs beginning on page 6.

Programs included under each category vary in location and method of delivery. For example, in the community service learning setting, youth may become actively involved in river restoration projects, urban and rural water conservation, or marine conservation. In the club setting, 4-H youth may learn about aquatic habitats by fishing, or experience watershed study using scientific investigation skills. Our examples of school enrichment settings encourage students to learn by hands-on activities how to integrate a wetland ecosystem into their studies. Our nature center example designs an outdoor groundwater adventure trail to teach youth about the source of their drinking water. And an annual groundwater festival actively involves 4th- to 6th-graders in understanding the largest aquifer in the U.S. (the Ogallala aquifer), which literally exists beneath their feet.

Program size and scope

Program design and delivery methods differ among the 10 categories depending on how much time youth spend in the program (a day, a week, a season) or whether the program is national or local in scope.

National campaigns such as *Adopt-A-Stream* set broad goals and place heavy emphasis on partnerships, local training and educational material distribution. After that, it is up to individual youth facilitators to adapt national criteria to the water education needs of specific youth groups and the community.

At the local level, programs like *Leap Into Lakes*, an interactive exhibit at the Madison Children's Museum, involve months of fundraising, display design and maintenance. The reward is in seeing thousands of children and adults who participate in the exhibit leave with a heightened awareness of local water issues. By contrast, *Ridges to Rivers*, a 4-H watershed exploration program (developed as part of national 4-H science education materials, SERIES) represents a common type of water program in the way it is administered—a small, independent group operating with a tiny budget, a few youth facilitators and community volunteers. Smaller programs dot the country and appear as clubs, day camps, nature centers, school enrich-

ment and community service learning programs. Different settings offer youth *choices* about how to get involved, and research⁴ shows that they are more likely to take part in an environmental program if they can choose how to participate.

Common goals

Regardless of size and scope, common threads run through the programs highlighted in this guide. The desired outcomes for youth range from giving them an understanding of land and water interrelationships to enhancing their critical thinking skills to helping them discover new facets of themselves and their world. Collectively, these programs aim to prepare young adults to: 1) become environmentally aware of their surroundings; and 2) pay close attention to how their daily activities affect water resources. All these efforts should culminate in community action and willingness to maintain healthy aquatic ecosystems.

WHY DID YOU DECIDE TO TEACH YOUNG PEOPLE ABOUT WATER?

How did you make the decision to become a water educator? What events in your life led you to this point? The answers to these questions often take adults back to their own childhood experiences with the outdoors.

Program coordinators featured in this guide (and in the companion video) expressed a deep passion for working with young people and water. One cited growing up along the coast and developing a love for and commitment to protecting marine animals. Another remembers attending a Trout Unlimited fishing camp and learning to tie flies as a key experience.

Tobin Smith, a volunteer leader for the program *Fishing for 4-H*, sums up the attitude of many water educators when he says, "I want to give back more than I received."

Identifying water programs

In 1988, the U.S. Department of Agriculture, in cooperation with other federal agencies, identified water as a priority issue.⁵ As a result, the USDA Cooperative State Research Education and Extension Service (CSREES) made youth water education a priority in 1990. At the same time, nearly 80 public, private and nonprofit organizations joined together to support and design a new policy for national water quality, titled *Water Quality 2000*. In their final report (1993), the group recommended developing a national policy to improve and protect surface and groundwater quality.⁶

Following a 1990 USDA Youth Water Education Needs Assessment and a national water education curricula review,⁷ a USDA-CSREES Design Team (members listed on the inside front cover) began researching successful teaching strategies in youth water education program design and delivery in 1993. To identify exemplary programs, we referred to the following sources:

Environmental Success Index 1991 and 1992, by Renew America; *Directory of Water Education Programs in Southeast Michigan*, Southeast Regional Center for Groundwater Education in Michigan; *Water Quality Education in Puget Sound: Programs and Materials*, Aquatic Habitat Institute; *Public Involvement and Education Model Projects Fund: 47 Success Stories from Puget Sound, 1991*, and *Educating for Action: More Success Stories from Puget*

Sound, 1993, both by the Puget Sound Water Quality Authority; newsletters such as *The Communicator* by the North American Association for Environmental Education and *NPS News Notes* by the U.S. Environmental Protection Agency; conferences; water resources conference proceedings; and personal referrals.



After we collected nearly 80 programs, we began to narrow down the selection to organize a working symposium to discuss program strategies. The symposium entitled, "Youth Water Education: Thinking About Program Strategies That Work!"⁸ took place in Columbus, Ohio, in December 1993, with 40 youth water education programmers participating. This guide features program profiles written by many of those coordinators, along with others identified since the symposium.

Selecting unique programs

Programs in this guide were selected to represent the many successful and unique programs found around the country. Defining *unique* or *successful* is an arbitrary and ambiguous process. We realized this, and based decisions in part on referrals, interviews and professional experience. We followed up on a program if it stood out as employing an unusual delivery method, meeting community water education needs, or using water to address both social and youth development needs.

Applying an even simpler approach, we interviewed program coordinators if their program had consistently high enrollment. Then, by phone, mail or personal visit, programmers were questioned about their program's design and delivery methods such as goals, instructional approaches, content, partnerships and keys to success. (See the Program Profile Sheet on page 60).

Their responses during the 1993 Symposium and from later interviews formed a basis for our criteria about what constitutes a successful youth water education program. Responses were based on the coordinators' experience with community water issues, knowledge and recruitment of the target audience, ability to wring the very most from available resources, and a willingness to listen and respond to participant and partner feedback.

How to use this guide

The programs and coordinators featured here have discovered unique ways to attract youth and to keep them interested in water education programs. As you compare program design and delivery methods, you may choose to adopt ideas or contact the program coordinators for more details.

One way you can begin using this guide is by searching for programs with a setting similar to yours—day camps, museums or school enrichment programs (see Appendix A). While perusing the profiles, closely observe the program's goals. Many coordinators set similar goals, yet approach them in unique ways.

You may also choose to use the *Water Program Topics* cross-referenced listing (Appendix B) to find programs that address common water education themes such as watershed study, groundwater, lakes, fishing, etc. Using this method, for example, you learn that the *Austin Youth River Watch* program represents a river monitoring, school enrichment program that targets youth at risk for dropping out of school.

A few program profiles remain incomplete although every effort was made to allow for coordinators to provide information. Though some information was missing, these programs were still included because of their unique approaches. If a particular program appeals to you and you would like to know more, call the contact person listed on the profile.

Using other resources

This book and others in the *Educating Young People About Water* series are full of ideas, checklists, references, program partners lists, and community action education materials. We invite you to take advantage of them.

For ideas on program development, see *Educating Young People About Water: A Guide to Program Planning and Evaluation*. This user-friendly workbook explains program design and delivery methods for the nonformal educational setting based on feedback from many of the program managers who contributed to *A Guide to Unique Program Strategies*. It can be used alone or in a training session accompanied by a video and training guide.

To find and select water education curricula, see *Educating Young People About Water: A Guide to Goals and Resources*. This guide introduces more than 100 reviewed youth water curricula. It also lists educational topics and goals, unique resources, and multimedia materials that help create a water education opportunity or event.



The Design Team realizes that there are youth water education programs throughout the country that produce tremendous results for communities, but that did not reach our attention in time to be considered for this publication. If you know of, or are a part of such a program, please complete the Program Profile Form on page 60, and send to:

Educating Young People About Water
University of Wisconsin–Extension
Environmental Resources Center
216 Agriculture Hall
1450 Linden Drive
Madison, WI 53706.

Notes

¹Berman, Sheldon. 1990. "Educating for Social Responsibility" in *Educational Leadership*, November 1990, 75-80.

²Berman, Sheldon. 1990. "The Real Ropes Course: The Development of Social Consciousness" in *Educators for Social Responsibility Journal*, 1-18.

³*Nonformal Program Setting Definitions* was developed by Kelly Warren and Elaine Andrews at the University of Wisconsin-Extension Environmental Resources Center, Madison. 1994.

⁴Children and the Environment, a survey of 10,375 children in grades 4–12. 1993. Conducted for Pew Charitable Trust by Louis Harris and Associates, 630 Fifth Avenue, New York, NY 10111.

⁵*Extension Review*, Vol. 59, No. 3, Fall 1988.

⁶Water Quality 2000. 1993. Water Quality 2000 Final Report, A National Water Agenda for the 21st Century. 601 Wythe Street, Alexandria, Virginia 22314.

⁷Andrews, Elaine. 1992. *Educating Young People About Water—A Guide to Goals and Resources*. Updated in 1995. ERIC Clearinghouse, Columbus, OH.

⁸*Educating Young People About Water: Thinking About Program Strategies That Work! Conference Proceedings*. 1995. ERIC Clearinghouse, Columbus, OH.

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Directory of programs

Based on their program settings, the unique programs featured in this guide have been organized into 10 categories. Arranging programs by category helps you identify programs similar to yours, and learn how other coordinators make their programs work. To identify programs by topic, see the Water Education Topics list (Appendix B) on page 59.

Campaigns

Campaigns are promotional efforts undertaken to advertise designated events or programs. They are intended to produce a specific outcome such as community action, education or increased awareness of a particular issue.

Program name: *Adopt-A-Stream* *page 13*

Institutional affiliation: Adopt-A-Stream Foundation

Address: P.O. Box 5558, Everett, WA 98206

Phone: 206/338-3487

Contact: program coordinator

Program name: *Blue Thumb Campaign* *page 14*

Institutional affiliation: American Water Works Association and USDA-Cooperative State Research Education and Extension Service (CSREES)

Address: USDA/CSREES, Aerospace Building, Suite 329 N., Washington, DC 20250-2210

Phone: 202/410-5620

Contact: Joe Wysocki, national program leader



Give drinking water a hand.

Program name: *Georgia Waterway Cleanup* *page 15*

Institutional affiliation: Cordele/Crisp Clean Community, Crisp County Cooperative Extension, Department of Natural Resources, Waste Management Co., Crisp County Power Commission, and Keep America Beautiful

Address: P.O. Box 5494, Cordele, GA 31015

Phone: 912/273-3102

Contact: Kathy Odom, coordinator



Program name: *Give Water a Hand* *page 16*

Institutional affiliation: National Fish and Wildlife Foundation, USDA-Cooperative State Research Education and Extension Service, National 4-H Council and the University of Wisconsin-Extension

Address: University of Wisconsin-Extension, 1450 Linden Drive, 216 Agriculture Hall, Madison, Wisconsin 53706

Phone: 800/WATER-20

Contact: Kadi Row, project coordinator



Clubs

Clubs are water education programs that adopt a club's goals and structure, and may complement school education goals. A club may organize fishing trips, develop displays for a county fair, monitor water quality, visit a wetland, or conduct similar activities.



Program name: *4-H Watershed Project: From Ridges to Rivers—Watershed Explorations* page 17

Institutional affiliation: 4-H Youth Development Program, San Luis Obispo County, CA

Address: 2156 Sierra Way, Suite C, San Luis Obispo, CA 93401

Phone: 805/781-5940

Contact: 4-H watershed project coordinator

Program name: *Fishing for 4-H*

page 19

Institutional affiliation: Arlington County Extension and the Northern Virginia Chapter of Trout Unlimited

Address: 800 Follin Lane, SE, Suite 250, Vienna, VA 22180-4949

Phone: 703/553-7732

Contact: Tobin Smith, Trout Unlimited volunteer youth coordinator



Community service learning

Community service learning refers to education-based programs and projects that emphasize learning by taking action in the community. Water service learning projects focus on stewardship activities, and provide an active educational component in areas such as ecology, watershed land use, risk and decision-making skills. These activities may benefit the community ecologically, aesthetically, or economically. Projects may include water monitoring, clean-up, restoration (streambank stabilization, seed collecting and planting), storm drain stenciling and career planning.



Program name: *Austin Youth River Watch Program*

page 20

Institutional affiliation: Colorado River Watch Foundation

Address: 1501 W. 5th Street, Suite #110, Austin, TX 78703

Phone: 512/320-8172

Contact: Daniel Apodaca, project coordinator

Program name: *Bronx River Restoration Project*

page 21

Institutional affiliation: The Gaia Institute

Address: Cathedral of St. John the Divine, 1047 Amsterdam Ave., New York, New York 10025

Phone: 718/885-1906

Contact: Paul Mankiewicz, program co-director

Program name: *Duwamish River Youth Initiative*

page 22

Institutional affiliation: Student Conservation Association (SCA)

Address: 1800 N. Kent Street, Suite 1260, Arlington, VA 22209

Phone: 703/524-2441

Contact: Chukundi Salisbury



Day camps and summer education programs

Activities organized as part of community-based recreation programs that may or may not be held at established camp settings.



Program name: *4-H Water-Wise Day Camps* *page 24*

Institutional affiliation: Hillsborough County Cooperative Extension Service

Address: 5339 South County Road 579, Seffner, FL 33584-3339

Phone: 813/744-5519

Contact: Shirley Bond, 4-H Extension Agent III



Program name: *Eyes On Conservation: Water Works* *page 25*

Institutional affiliation: University of Nebraska Cooperative Extension

Address: Sarpy County Office, 1210 Golden Gate Drive, Papillion, NE 68046

Phone: 402/593-2172

Contact: 4-H Extension educator



Program name: *Minnaqua—Minnesota Aquatic Education Program* *page 26*

Institutional affiliation: Minnesota Department of Natural Resources, Section of Fisheries

Address: 500 Lafayette Rd., Box 12, St. Paul MN 55155-4012

Phone: 612/297-4919

Contact: Statewide coordinator



Program name: *SOAR—Summer Orientation About Rivers* *page 27*

Institutional affiliation: Prairie Plains Resource Institute

Address: 1307 L Street, Aurora, NE 68818

Phone: 402/694-5535

Contact: Bill and Jan Whitney

Festivals and fairs

Festivals and fairs are usually one-day events where children can visit several stations or booths set up for hands-on activities that focus on water and water use issues. Such activities might include observing demonstrations, answering questions, playing games, role playing, practicing science investigation, or examining career planning options. Festivals or fairs may be conducted during school or during the summer. Those held in cooperation with schools usually include some background activities at the school.



Program name: *Children's Groundwater Festival* *page 29*

Institutional affiliation: The Groundwater Foundation Institution

Address: P.O. Box 22558, Lincoln, NE 68542

Phone: 800/858-4844

Contact: festival director



Program name: *Wonders of Wetlands—1993 Wisconsin State Fair 4-H Action Center* *page 30*

Institutional Affiliation: University of Wisconsin Cooperative-Extension

Address: 4-H, UWEX, 339 Lowell Hall, 610 Langdon St., Madison, WI 53703-1195

Phone: 414/761-1151

Contact: 4-H Environmental Education Subcommittee members

Museums

Museums offer water-related exhibits designed for youth and located in museums. Water education topics may include water conservation, natural history, geology, regional flora and fauna and habitats.



Program name: *Leap Into Lakes* *page 31*

Institutional affiliation: Madison Children's Museum

Address: 100 State Street, Madison, WI 53701

Phone: 608/241-8400

Contact: education coordinator



Program name: *Sarasota Bay and Midnight Pass Exhibits* *page 32*

Institutional affiliation: Gulf Coast World of Science: A Hands-On Museum

Address: 717 N. Tamiami Trail, Sarasota, FL 34236

Phone: 813/957-4969

Contact: Elva Farrell, executive director



Program name: *Water Works* laboratory and exhibit *page 33*

Institutional affiliation: The Chicago Academy of Sciences

Address: 2060 North Clark Street, Chicago, IL 60614

Phone: 312/ 549-0606

Contact: Ken Rose, education department

Nature centers and environmental education centers

This category encompasses water-related education programs held at established centers in parks, nature reserves or other public access property. Youth groups are brought to the center to experience natural water environments.



Program name: *Groundwater in Nature Program* *page 35*

Institutional Affiliation: Kalamazoo Nature Center/Western Michigan University

Address: Kalamazoo Nature Center/Western Michigan University, 7000 N. Westnedge, Kalamazoo, MI 49004

Phone: 616/381-1574

Contact: program coordinator



Program name: *Project ECO-Environmental Curriculum Outdoors* *page 36*

Institutional affiliation: Outdoor Skills Center

Address: 299 Fairview Drive, P.O. Box 84, Plymouth, WI 53073

Phone: 414/893-5210

Contact: Sterling Strathe, Executive Director or Scott Johnson, School Program Director

Organizations

The organizations listed here have selected youth water education as their operational goal or mission. They sponsor water-related events and provide funding, educational materials, or training workshops.



Program name: *America's Clean Water Foundation* page 38

Institutional affiliation: Association of State and Interstate Water Pollution Control Administration (ASIWPCA)

Address: 750 First Street, NE, Suite 911, Washington, DC 20002

Phone: 202/898-0902, fax 202/898-0929

Contact: Roberta Savage



Program name: *American Water Works Association-Youth Education* page 39

Institutional affiliation: American Water Works Association (AWWA)

Address: 6666 West Quincy Avenue, Denver, CO 80235

Phone: 303/347-6206

Contact: student programs manager



Program name: *Save Our Streams* page 39

Institutional affiliation: Izaak Walton League of America

Address: 707 Conservation Lane, Gaithersburg, MD 20878

Phone: 800/BUG-IWLA, Technical Assistance Hotline

Contact: Save Our Streams (SOS) Office



Program name: : *Whitney Water Center* page 40

Institutional affiliation: Regional Water Authority

Address: 90 Sargent Drive, New Haven, CT 06511

Phone: 203/624-6671, Ext. 263

Contact: Water Science Educator II

Residential camps

At residential camps, young people spend at least one night in an established outdoor setting where water education is the primary focus or an integral component of the program.

Program name: *Manatees and Mermaids—Manatee Dive Trips to Crystal River* page 42

Institutional affiliation: Florida Sea Grant and Escambia County Extension

Address: Escambia County Extension, P.O. Box 7154, Pensacola, FL 32534-0154

Phone: 904/477-0953

Contact: Sonya Wood, Sea Grant/Marine Extension agent



Program name: *NatureLink—Family Fishing Weekend* page 43

Institutional affiliation: National Wildlife Federation

Address: 8925 Leesburg Pike, Vienna, VA 22184-0001

Phone: 703/790-4056

Contact: Nature Link program coordinator



Ohio 4-H Sea Camp Program

Program name: *Ohio 4-H Sea Camp—An Experiential Outdoor Learning Laboratory* *page 44*

Institutional affiliation: Ohio State University Extension

Address: 4-H Youth Development, Northeast District, 1680 Madison Avenue, Wooster, OH 44691

Phone: 216/263-3831

Contact: Extension District specialist



Program name: *Texas State 4-H Water Camp* *page 46*

Institutional affiliation: Texas Agricultural Extension Services

Address: 1900 South Stockton, Suite J, Monahans, TX 79756

Phone: 915/943-2682

Contact: Ward County 4-H Extension agent

School enrichment

School enrichment programs are water education programs that enhance an existing school curriculum or classroom experience. Participants are school groups or groups recruited through the schools.

Program name: *Active Watershed Education, It's AWESome!* (formerly The Pawcatuck Watershed Education Program) *page 47*

Institutional affiliation: The Southern Rhode Island Conservation District (SRICD)

Address: 5 Mechanic Street, Hope Valley, RI 02832

Phone: 401/539-7767

Contact: Vicki O'Neal, district conservationist



Program name: *Adopt-A-Lake Program* *page 48*

Institutional affiliation: Wisconsin Lakes Partnership, University of Wisconsin–Extension, Department of Natural Resources, and Wisconsin Association of Lakes

Address: College of Natural Resources, University of Wisconsin–Stevens Point, Stevens Point, WI 54481

Phone: 715/346-3366

Contact: Libby McCann, program coordinator



Program name: *Adopt-A-Watershed* *page 50*

Institutional affiliation: Daedalus Education Foundation

Address: 12702 Via Cortina, Suite 201 B, Del Mar, CA 92014

Phone: 619/793-0523

Contact: education program director



Program name: *Hooked on Fishing, Not on Drugs* *page 51*

Institutional affiliation: Future Fisherman Foundation and East Troy Elementary School

Address: East Troy Elementary School, P.O. Box 257, East Troy, WI 53120

Phone: 414/642-6720

Contact: Twila Voss, physical education teacher





Program name: *Kids in Creeks: A Creek Exploration and Restoration Program* for Grades 3-12

page 52

Institutional Affiliation: San Francisco Estuary Institute (SFEI)

Address: Richmond Field Station, #180, 1301 S. 46th Street, Richmond, CA 94804

Phone: 510/231-9539

Contact: Kathy Kramer, Education Director

Program name: *Project FUR (Fighting Urban Runoff)*

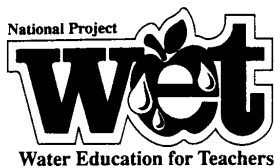
page 53

Institutional affiliation: Holy Cross High School

Address: 2770 Jonquil, New Orleans, LA 70122

Phone: 504/942-3100

Contact: Sue Ellen Lyons



Program name: *Project WET (Water Education for Teachers)* Idaho

page 54

Institutional affiliation: Idaho Water Resources Research Institute

Address: University of Idaho, 106 Morrill Hall, Moscow, ID 83843

Phone: 208/885-6429

Contact: Project WET program coordinator

Program name: *Testing the Waters: Linking Students and Water through Technology*

page 55

Institutional affiliation: Riveredge Nature Center

Address: Box 26, Newburg, WI 53060

Phone: 414/675-6888

Contact: Terri Cooper, nature center director



Program name: *Yahara Watershed Education Network (and Summer Heron Institute)*

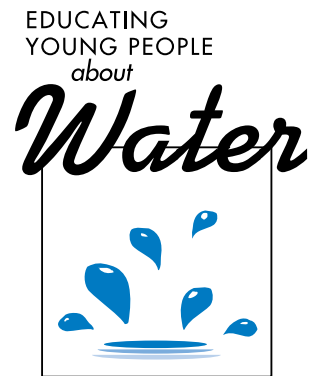
page 56

Institutional affiliation: Edgewood College and University of Wisconsin-Madison

Address: Edgewood College, 855 Woodrow St., Madison, WI 53711

Phone: 608/257-4861

Contact: Jim Lorman (Edgewood College); Robert Bohanan (UW-Madison)



Program profiles

Campaigns

Adopt-A-Stream Foundation

Program goals: To have schools, community groups, sports clubs, civic organizations or individuals adopt every stream. The Adopt-A-Stream Foundation was established to ensure that Pacific Northwest streams continue to provide spawning and rearing habitat for wild salmon, steelhead and trout, as well as serve a recreational function for the growing population.

Program setting: Local streams nation-wide

Target audience: Youth and adults throughout the U.S.

Community needs met: Population growth in the Northwest, where many people reside and visit because of the water resources, is having a noticeable impact on salmon runs in the streams and rivers, and on commercial fisheries.

Instructional approach: "Adopting" a stream means that volunteers provide long-term care of the stream and establish monitoring, restoration, and community-wide environmental education activities. By supporting these efforts, the Adopt-A-Stream Foundation provides the building blocks for an improved environment and sustained healthy wild fish production.

Educational content: In *Adopt-A-Stream* workshops, teachers and community leaders learn how people and nature shape watershed systems, and how to carry out the five steps involved in adopting a stream:

1. Investigating the watershed
2. Establishing a Streamkeeper group
3. Establishing short and long term goals
4. Creating an action plan
5. Carrying out the plan

Other workshops the Foundation conducts include Streamkeeper Training and Watershed Education Workshops for Teachers.

In-stream projects include water monitoring, raising salmon or trout eggs, revegetating streambanks, and adding or cleaning spawning gravels. As part of adopting a stream, youth partake in community education by designing brochures, building an interpretive trail, stenciling storm drains, and mapping and documenting pollution sources. The Foundation provides aquariums for raising salmon from egg to fry; then releasing the young in the "adopted" stream.

Institutional and community support: The Adopt-A-Stream Foundation began in 1985 with the long-term goal of seeing every stream adopted. The Foundation's overall function is to teach watershed residents how to become stewards of their streams. It sponsors conferences on stream restoration and environmental education for educators, scientists and volunteers.

Evaluation/modification strategies: Not reported.

Unexpected outcomes: AASF has received several local and national awards for its activities, such as the Achievement Award for the best environmental education effort nationally from the National Association of Counties, 1985.

Program promotion and outreach efforts: When the Foundation secures grant funding to sponsor workshops, they are offered free of charge; otherwise, fees are negotiated.

Contact information for each program is provided on pages 6-12.

Materials produced: *Adopting-A-Stream: A Northwest Handbook*, by Steve Yates. 1993; *Adopting-A-Wetland: A Northwest Handbook*, 1993; *A Streamkeeper's Field Guide: Watershed Inventory and Stream Monitoring Methods*, 1993; The *Streamkeeper* video, 1993; posters and t-shirts.

Keys to success: A comprehensive approach to stream and watershed monitoring, inventory and restoration.

Future endeavors: A Northwest Stream Center (an environmental education and interpretive facility) will become a regional Streamkeepers headquarters. Located in Seattle and Everett, WA, the Center will feature a wetland restoration project, salmon stream restoration, interpretive trails, exhibits, and education programs.



Give drinking water a hand.

The Blue Thumb Campaign

Program goals: To encourage the media and community groups to "spread the word for water," thereby increasing awareness of water issues and commitment to responsible actions.

Program setting: Communities throughout the world

Target audience: All ages

Community needs met: Americans drink 110 millions gallons of water everyday. Our health depends on the quality of this water, so individuals need to know basic water conservation and what to do to maintain their drinking water quality.

Instructional approach: The *Blue Thumb* campaign was developed along with National Drinking Water Week to go beyond promoting drinking water awareness to encouraging citizens to take local action on water resources. *Blue Thumb* education packets are distributed to water utilities that belong to the American Water Works Association. From there, materials go to schools and community groups. *Blue Thumb* also receives support from 17 national nonprofit organizations, known as the National Drinking Water Alliance. The Alliance works with the media and local groups to "spread the word for water" by encouraging awareness of water issues and commitment to improving and protecting water resources locally.

Educational content: The Alliance, which sponsors National Drinking Water Week during the second week of May, recommends three basic principles for action: conserve water, protect it, and become involved in local decisions that affect water sources and water quality. Throughout the week, local groups hold events in libraries, near lakes, in schools, drinking water treatment plants, malls, and city halls. Community groups conduct river cleanups, hazardous waste collections, and water festivals. The Alliance makes information available to citizens on a variety of positive water behaviors called "Blue Thumb" actions that center around three principles: the need to use water wisely; the need to protect water from pollution; and the need for public participation in decisions about water quality and quantity.

Institutional and community support: Working closely with youth leaders, community groups and the media, water utility companies and Alliance members get out the *Blue Thumb* message. Alliance members include: American Water Works Association; U.S. Environmental Protection Agency; Cooperative State Research, Education and Extension Service (formerly Cooperative Extension Service); National Drinking Water Clearinghouse; Natural Resources Conservation Service (formerly Soil and Water Conservation); Water Education Foundation; Groundwater Foundation; American Ground Water Trust; and League of Women Voters Education Fund.

Evaluation/modification strategies: Education packets include questionnaires for users to evaluate the usefulness of the materials. We consider all comments when revising new materials.

Unexpected outcomes: The Regional Center for Environmental Education in Cracow, Poland has adopted the *Blue Thumb* campaign strategy. Funded by the U.S. Environmental Protection Agency and spearheaded by the nonprofit group, Water for People, located in Denver, Colorado, Polish residents are launching a multifaceted project to help people conserve water and protect it from pollution. The group will develop seven "Blue Workshops" for students and three training sessions for teachers. Additionally, a Blue Festival for all ages opened Cracow's "Week for Water" in June 1995.

Program promotion and outreach efforts: Publicity announcements included in “Spread the Word for Water” packets; *Blue Thumb* novelty items for sale such as t-shirts, buttons, stickers, pencils, cups, water bottles and banner kits.

Materials produced: “Spread the Word” Information Packet; free brochures on the “Blue Thumb Basics,” available at National Drinking Water Week Headquarters, American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235.

Keys to Success: A true grassroots strategy; lists of easy-to-follow water action tips; prewritten public service announcements; and international support.

Future endeavors: Continue to disseminate *Blue Thumb* materials through water utility companies and the Alliance, and further international *Blue Thumb* campaigns.



Georgia Waterway Cleanup

Program goals: To teach people not to litter at Lake Blackshear. Littering not only detracts from the lake’s beauty, but also hurts the environment—from birds and fish to turtles and humans.

Program setting: Flint River which feeds into Lake Blackshear. The lake was formed to generate electric power. The Flint River is located approximately 10 miles from Cordele, Georgia in Crisp County. The cleanup is held each year, usually in May.

Target audience: 4-H youth are always strongly involved in this program. In April 1995, we pulled in Sumter County residents that live on the lake. We also sent out a newsletter from the Crisp County Power Commission, asking residents to clean up the lakebed in front of their homes, so litter and excess debris would not float downstream when the lake was flooded in June. Free bags were offered to the residents, compliments of Glad (First Brands). Our community is part of the nationally known “Glad-Bag-A-Thon.”

Approximately 750 residents took part in this offer and the results were overwhelming.

Community needs met: This highly visible, tourist attraction needs to remain clean and beautiful. Lake uses include boating, fishing, power generation, swimming, canoeing and other water-related activities. Boaters are not targeted as litterbugs; however, they are educated about the fact that when a boat starts at speeds above idle, the likelihood of littering increases. Even when trash sinks to the bottom, it is still considered littering since fish and other water inhabitants will be affected by the litter. There are many non-local users of Lake Blackshear, and since a state park has its home on the banks, the lake is available to everyone.

Educational content: The goals of the activities are to teach students that boaters can place litter in trash cans and how fish and animals are affected by litter. The chosen activities are designed to get youth to understand how animals encounter debris, such as a six-pack ring becoming entangled on a duck’s neck or bill. Other activities include mixing oil and water to demonstrate how oil leaks from boats and other motorcraft on the lake. We also use activities found in “Waste in Place” curriculum by Keep America Beautiful.

Instructional approach: The more people know, the better they can understand why things are the way they are. With this approach in mind, TV interviews and newspaper articles help to educate adults and youth about our environment. We teach how water is affected not only by litter, but also by non-point source pollutants.

Evaluation/modification strategies: Campers and people coming into the state park are more than willing to help in our cleanups. Many were actually excited that an organized cleanup was being held while they were visiting. Most campers and boaters have boats and subsequently, access to areas where some students cannot go. The Trappers’ Association has expressed an interest in becoming involved, as have others from the water industry.

Unexpected outcomes: This event has become a large project for the Clean Community Commission—yet we never seem to have enough boats to assist with the large turnout.

Program promotion and outreach efforts: Word of the cleanup reaches the community through advertising and coordination with the Georgia's annual statewide waterway cleanup. The DNR sends press releases about our cleanup and publicizes the event at a major TV station and newspaper located in Albany, Georgia.

Materials produced: Posters are given to committee members and newspaper articles are written by the director Clean Community. In Fall 1995, we will distribute a brochure highlighting projects (by both youth and adults) in the Gum Creek Watershed Demonstration Project.

Keys to success: The more people and organizations aware of the program, the better. Through our involvement in the community, our board members spread activities by word of mouth so that most residents know that it is time for a cleanup.

Future endeavors: We will continue the cleanups in April as part of Keep America Beautiful Month. This year, BFI and Waste Management will donate bags for collecting litter. The Power Commission will continue to assist the DNR with the lake, and will notify the Commission of sites where cleaning is most needed.



Give Water a Hand

Program goals: To stimulate youth to *investigate* local water issues and to facilitate their taking *action* on problems; to encourage a *service-learning* approach to young people's understanding of environmental problems; to encourage partnerships between local natural resource experts and youth groups planning and carrying out projects; and to mobilize the networks of national partner organizations and facilitate cooperation among the agencies supporting *Give Water a Hand*.

Program setting: *Give Water a Hand* is a national program, supported by over 20 national agencies and organizations, designed to encourage local residents to take action on water issues in schools, communities, farms and homes.

Target audience: 4th- to 8th-graders, primarily in a nonformal settings such as 4-H clubs, scouts, or school-related environmental clubs.

Community needs met: A USDA national assessment of water education materials reported several needs in youth water education, including that of helping young people take action on local environmental issues. During a review of materials, it was determined that the very best water education materials are those in which young people are linked with local natural resources experts for ideas, information and resources. *Give Water a Hand* was developed in response to these findings. The *Give Water a Hand* materials, through a service-learning method, provide the steps young people need to take to identify local water issues and to plan and carry out service projects that address a problem they've identified. In addition, *Give Water a Hand* helps young people link up with local water experts and helps local resource people conduct effective outreach to youth.

Instructional approach: To ensure a successful national campaign, all major national water education agencies and organizations were contacted to participate as partners. The *Give Water a Hand* program helps these partners meet their goals of youth education and community outreach. The partners, in turn, assist *Give Water a Hand* by helping to develop materials, promoting the program, and disseminating the materials through their established networks. This partnership was developed through existing and new relationships with individuals in each organization. Through frequent contact with each partner (coordinated from a national office), we were able to most effectively and efficiently use our collective resources. For example, one member of the partnership may have the financial resources to print and mail materials, but no channels to distribute it. We can couple those resources with a partner who has limited funds, yet has education personnel in every county in the nation. This synergistic approach has proved to be successful.

Institutional and community support: Funders include National Fish and Wildlife Foundation; Church & Dwight Co., Inc. with additional support from over 20 national agencies and organizations.

Educational content: Through a series of exercises, *Give Water a Hand* engages young people in service projects to help them learn about water issues. First, participants map their watershed and complete a needs checklist to identify local water issues for themselves. Next, they prioritize the issues; solicit ideas, information and resources from local natural resources experts; and plan and carry out service projects that meet their abilities and interests. This approach emphasizes youth investigation, planning and action.

Evaluation/modification strategies: After the first year of the program, *Give Water a Hand* was evaluated for effectiveness based on feedback from young people, youth leaders and program partners. The materials were then revised for a second edition published in late 1995. The materials themselves contain strategies for youth groups to evaluate their own projects.

Unexpected outcomes: Getting youth to participate in *Give Water a Hand* in the first years was much more of a challenge than expected. Because each organization in the partnership had some role in dissemination and outreach, follow-up on who actually used the materials was difficult. This posed a problem, because the ability to identify youth participants and obtain their feedback is an important part of evaluation.

A positive unexpected outcome was the magnitude of success in gaining national recognition our first year. United Earth chose to focus its inaugural Youth Earth Service Award program on *Give Water a Hand* participants. The awards event added a prestigious element to the national recognition of youth participants and served to raise awareness of our program among youth and potential new partners.

Program promotion and outreach efforts: The partnership structure of *Give Water a Hand* has led to a great amount of publicity and promotion over a very short time. Each program partner is able to promote the materials through its own network. In addition, a highly-visible, national recognition program for program participants helps plant the seeds of future involvement.

Materials produced: *Give Water a Hand* materials consist of two guides: A Leader Guidebook, and a Site Action Guide for youth, focusing on four different sites: home, school, community or farm.

Keys to success: *Give Water a Hand's* success can be viewed on two levels. First is the ability to mobilize the national partnership to create and share a unique program for youth. Second, success depends on the motivation and dedication of young people and their leaders. With the service-learning approach, young people can investigate water issues and take action using the tools provided in the materials. This allows young people and communities to participate in their own environmental future.

Future endeavors: *Give Water a Hand* continues to involve new organizations in the partnership. With data collected during our pilot year, a revised version of the materials will be available.

Clubs

4-H Watershed Project: From Ridges to Rivers—Watershed Explorations

Program goals: These materials form a unit in the national 4-H science education program for nonformal settings, SERIES. This unit is designed to:

1. Help youth understand their watershed; learn their “ecological address”; explore how water and land interact; learn how they, as residents of their watershed, affect land-water interactions and the quality of the water around them
2. Help youth understand scientific inquiry and critical thinking skills
3. Impart a sense of community service—give youth confidence in their skills and knowledge that enables them to take thoughtfully-considered action as they continue to question and explore

Program setting: 4-H clubs; Scouts; after school groups; other youth clubs

Target audience: Stage I: grades 4–6; Stage II: grades 7–8; and Stage III: grades 9–12.

Instructional approach: Materials for Stages I and II have been designed for nonformal settings, although they can be adapted for classroom use. All of the activities are hands-on and inquiry-based, encouraging youth to develop their own questions and methods of testing. Stage I and II activities are designed



Contact information for each program is provided on pages 6-12.

to be led by teens trained in the activities. Stage III is a compilation of questions and issues concerning watersheds and water quality that can be explored by the teens within the framework of a club, science class, or science fair project.

Educational content: Stage I: Seven hands-on sessions

1. Watershed Overview
2. Creek Carvings
3. Rocks: Here Today, Soil Tomorrow?
4. Of Mudshakes and Mystery Soils
5. Life Underground
6. Creek Creatures
7. We've Got the Watershed in Our Hands

Stage II (currently under development): hands-on activities to include sessions on topography and topo maps, water quality in the watershed, community resource use. Stage III (currently under development): A guide for high school youth to help them develop science projects focused on watersheds and water quality issues that are relevant to their areas.

Community needs met: Community service projects are an integral part of the Watershed Project. Youth working with the project are encouraged to take part in education- or restoration-oriented projects.

Institutional and community support: USDA grant is part of the Morro Bay Hydrologic Unit Area Grant. *Ridges to Rivers* was adopted by the National 4-H SERIES (Science Experiences and Resources for Informal Educational Settings) Project.

Evaluation/modification strategies: Feedback from teens and groups to the Watershed Project Coordinator. Revisions made based on feedback.

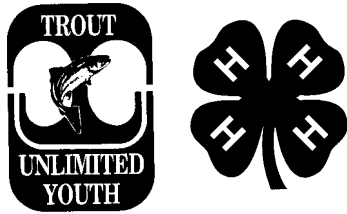
Unexpected outcomes: Teens who present the activities have come to learn as much, if not more, than the youth with whom they work. Since the activities require no extensive prior knowledge of the results of the activities, the teens can truly become fellow investigators with the younger children. Their excitement and curiosity can be infectious!

Program promotion and outreach: Workshops are used to train teen and adult coaches in methods of scientific inquiry and use of the activities. These are advertised locally through the media, volunteer conservation groups, and special introductory sessions at the high schools. Stage I activities have been adopted by the National SERIES Project which has Regional Leadership Centers (RLCs) throughout the country that help organize training workshops. For more information on the SERIES RLCs, contact SERIES Project, 4-H Center, University of California, Davis, Davis, CA 95616-8599, or call 916/752-8824.

Materials produced: *From Ridges to Rivers: Watershed Explorations*, Stage I, 1994. The curriculum is free by attending a training workshop available from four regional SERIES offices located in New York, Georgia, Missouri and California, or your state 4-H program office.

Keys to success: A strong teen/adult coach team is essential. The adult must support the teen, but still allow the teen to take responsibility for leading the activities. This opportunity for teenagers to exercise real leadership is a crucial part of the program. Supplementary field trips to areas of interest in the watershed help make the knowledge gained through the activities come alive. The combination of activities and field trips enables the group to identify community service projects that will give them a sense of power about being able to make positive changes.

Future endeavors: Stage II and III materials will be available in spring/summer 1995.



Fishing for 4-H

Program goals: The goals of *Fishing for 4-H* are threefold. First, the program teaches young people how to fish for and identify several different species of fish. Second, modeled after Trout Unlimited, the club works to teach Arlington boys and girls important lessons in leadership, community service, conservation and environmental protection. Finally, *Fishing for 4-H* offers the youth of Arlington an opportunity to learn and have fun at the same time. Another primary objective of the program is to teach Arlington youth how to teach others about what they have learned in 4-H, thereby permitting the club's work to reach many sectors of the Arlington community.

Program setting: Youth interested in the *Fishing for 4-H* project are encouraged to join the 4-H Fishing Club which has been formed through the Arlington County Extension Office in coordination with the Northern Virginia Chapter of Trout Unlimited. The "Fishing for 4-H" club meets twice a month and is run entirely by Arlington teens with the assistance of an adult volunteer leader.

The club has regular guest speakers and also provides its members with plenty of opportunities to gain hands-on fishing and fly-tying experience.

Target audience: *Fishing for 4-H* programs and activities are offered to Arlington County Virginia youth, ages 8 to 18, who want to learn more about fish and fishing.

Community needs met: 4-H Fishing Club members have regularly provided assistance in Arlington County's own Four Mile Run stream cleanup and trout fishing effort. Last year, 4-H club members assisted county employees in the actual trout stocking. They have also helped at a number of fly-tying and fishing clinics in the community.

Aware that some disadvantaged youth may never have the ability to attend regular club meetings, *Fishing for 4-H* has sponsored special fishing clinics targeted specifically to providing these youth with an opportunity to go fishing.

Instructional approach: The instructional approach *Fishing for 4-H* takes is to draw upon the experience and expertise of Trout Unlimited's cadre of very knowledgeable adult members, as opposed to using any one curriculum. The assumption of the program is that the activities in which Trout Unlimited's members are involved are naturally interesting to kids. Young people often find fishing a very rewarding experience. They are fascinated with hands-on science and activities such as stream study, insect identification, fly tying and rod building. Therefore, this program encourages volunteers to teach what they know in a straightforward manner.

Educational content: Modeled after Trout Unlimited, the philosophy taught by the *Fishing for 4-H* program is that fishing is for sport rather than for food, and that the true enjoyment of the sport lies in the challenge and the love of the outdoors—not necessarily in having a full creel. It's about appreciating fish and their environments, respecting fellow anglers, and giving serious thought to tomorrow. At the same time, *Fishing for 4-H* teaches valuable lessons about fish conservation and preservation. It also works to develop positive self-esteem, leadership and citizenship. It does this by allowing youth participants to develop their own projects and run their own club meetings under the supervision of an adult 4-H volunteer leader.

Institutional and community support: One of the best things about the *Fishing for 4-H* program is that it can be easily replicated in all communities. While not all communities have a local Trout Unlimited chapter, most have access to a county Extension office through which they can begin their own program. There is no initial cost to start a *Fishing for 4-H* club. If the club wants money for certain activities, it may charge dues or conduct fund-raising activities.

Evaluation/modification strategies: No formal evaluation process exists for the program. However, participation has remained relatively steady with many of the original members of the club still active.

Materials produced: Some Virginia 4-H activity guides such as *Ponds and Lakes*, *Streams*, *Fish Identification & Display*, *Fish Culture*, *Fishing*, *Hunting and Fishing Sportsmanship*, *Wildlife Ecology*, and *Making Artificial Lures*, dovetail very well with this program. The 4-H Leader's Guide also has an excellent curriculum matrix containing suggestions for working with different age groups on any particular project.

Unexpected outcomes: As a direct result of this program, on February 23, 1991, a Memorandum of Agreement was signed by the Virginia 4-H Youth Program and the Virginia Council of Trout Unlimited. In the agreement, the organizations pledged to work together in an effort to educate youth about "the need for conservation and sustainability of resources in order to promote individual ethical environmental behavior and develop a sense of stewardship."

Program promotion and outreach: In Virginia, other Trout Unlimited chapters as well as the Northern Virginia Chapter, are currently targeting counties where similar *Fishing for 4-H* clubs can be started. Moreover, since 1990, the members of the Northern Virginia Chapter of Trout Unlimited have assisted in organizing and teaching a statewide 4-H Aquatic Resources Camp at the 4-H Educational Center in Front Royal, Virginia.

Keys to success: The success of *Fishing for 4-H* lies in the affiliation between the Arlington County 4-H program and the Northern Virginia chapter of Trout Unlimited. The 4-H club structure provides an excellent means through which Trout Unlimited can reach a larger number of youth on a more continual basis than it has in the past.

Future endeavors: This year, the Arlington Fishing for 4-H Club will begin a fishing mentor program in which teen club members will be assigned to younger children who are interested in learning how to fish and becoming members of the club. As mentors, the teens will be responsible for working with the younger children and their parents to teach them how and where to fish.

Contact information for each program is provided on pages 6-12.

Community service learning



Austin Youth River Watch

Program goals:

1. Improve the water quality of the Colorado River and its tributaries through ecological understanding and systems analysis
2. Reduce the dropout rate of students in the public and private high schools of Austin through positive role model interaction
3. Increase the participation of minority students in critical environmental issues and in technical careers that require understanding of science and mathematics.

Program setting: Lower Colorado River in Austin and the Youth River Watch office

Target audience: 9th- to 12th-grade minority students at risk of dropping out of school.

Community need met: In 1993, the dropout rate of minority high school students represented more than 53% of the total Austin school population. The expected rate is 25% between the 9th grade and senior graduation. Students in the Youth River Watch Program remained in school and achieved greater academic success. The city also benefits when students monitor the tributaries of the Lower Colorado River, because students report their findings on the source of Austin's drinking water.

Instructional approach: The *Austin Youth River Watch* program uses a peer mentoring unit consisting of two 9th-graders who are having difficulty with their course work and an older, successful 11th or 12th grade student. The older students tutor the younger ones on their academic subjects and they all monitor water quality each week of the school year. The students work about three hours a week and are paid a minimum wage

 program featured in training video