

River Voices



YOUTH AS A FORCE FOR CLEAN WATER

by Julie Schultz



ast the fences, past the refineries, past the strip clubs and littered parking lots, and through the weeds growing along the bank, today's Schuylkill River in South Philadelphia is not a pretty site. Refineries, huge gas tanks and pipelines block the public's access to this industrial section of the river. The Schuylkill River Development Council (SRDC) is trying to change that by tapping into a powerful force—young people.

When seeking public involvement for a community initiative to restore the Schuylkill River and its surroundings, SRDC could see that the students from Vare Middle School would be a great way to access the greater community. Vare students jumped right in. Guided by a community action and problem solving process developed by Earth Force, the students began by studying the river corridor and assessing the impact the industry and other forces have had on it. They created surveys to measure local interest in the river. The students then developed their own proposals for the future of the river corridor based on their research.

The students presented the best of these proposals at a community meeting sponsored by SRDC. Vare students drummed up interest in the meetings by creating and distributing promotional leaflets. Initiatives proposed by the SRDC-Vare collaboration included a new dog park, a performing arts center and an environmental education center.

“The Vare Middle School team played an integral role in the Tidal Schuylkill River Master Plan Process. Their energy, innovative ideas and civic commitment helped create the Schuylkill River plan that will bring Philadelphians back to the river,” said Tiffany Hodge, the director of community relations at Schuylkill River Development Council.



photo credit: Earth Force

Students from Silver Springs Elementary assessing the health of the Rouge River in April 2002, part of the Rouge Education Project organized by Friends of the Rouge and supported by Earth Force's GREEN program.

Julie E. Schultz has been the watershed education manager at Earth Force for three years, helping expand the GREEN program. Prior to joining Earth Force, Julie received her MA degree in environmental studies and water resources at the University of Illinois at Springfield and worked at the Illinois EPA Office of Community Relations, Illinois Governor's Office and environmental nature centers.



National Office
 520 SW Sixth Avenue, Suite 1130
 Portland, Oregon 97204-1511
 503/241-3506
 fax: 503/241-9256
 info@rivernetwork.org
 www.rivernetwork.org

D.C. Office
 4000 Albemarle Street NW, Suite 303
 Washington, D.C. 20016
 202/364-2550
 fax: 202/364-2520
 dc@rivernetwork.org

Vermont Office
 153 State Street
 Montpelier, VT 05602
 802/223-3840
 fax: 802/223-6227
 vt@rivernetwork.org

CONTENTS

- 1 Youth as a Force for Clean Water
by Julie Schultz
- 3 From the President
- 8 Support Your Organization’s Young People
by Karen Young & Jesse Graham
- 10 Can Schools Fill the River Information Gap?
by Geoff Dates
- 11 Elder to Youth Transfer of Knowledge
by Rosetta Alcantra
- 12 Voices from the Field
by Katherine Luscher
- 18 Bring on the “Senior” Citizens!
by Rob Buirgy
- 20 Young Warriors
by Jolene Catron
- 21 Resources & References
- 23 River Network Partnership

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FROM THE PRESIDENT



about a year ago I was talking with a friend—actually the son of an old friend—about the work of River Network. I had known and admired this young man since he was a pre-teen and had watched with pride as he excelled through high school and then went to Harvard on a full ride scholarship. He was now just getting ready to begin his graduate work.

“Do you have any young people on your board?” he asked me.

I thought a minute. *“Yes,”* I answered, *“we do have one.”*

“How old?”

“Twenty-seven,” I replied.

My young friend shook his head. *“You’re really out of it,”* he informed me.

He was right. At River Network, we never run out of things to do. Keeping up with our work with Partners is a constant challenge, but that is no excuse to forgo exciting opportunities to help build the watershed movement—and what could be more exciting or more promising than working with the young people who will soon be dealing with the problems our generation has created.

So, in cooperation with Earth Force, and working with experienced watershed practitioners, River Network is designing an ambitious program to develop stream monitoring as an in-service activity for which secondary students can receive class credit. The program includes structured opportunities for students to share their results with decision-makers, media representatives and community leaders, and to have their contribution recognized.

Similar projects are going on in many places, including Colorado, New York and California. Our goal is to develop the program as a replicable model, and make the approach available to thousands of watershed groups throughout the country. We are currently seeking funding to initiate a pilot project in the Pacific Northwest.

And, yes, we are looking for a board member or two considerably younger than twenty-seven; please call me with your recommendations.

A handwritten signature in blue ink that reads "Kenneth Rajzol". The signature is fluid and cursive, with a long horizontal stroke at the end.

YOUTH AS A FORCE FOR CLEAN WATER

cont. from page 1

“My class really enjoyed this. They feel connected to the community and are really invested in improving the river. I think they will carry that interest with them long after they have left my class,” said Larry Stier, the students’ teacher.

WHY WORK WITH YOUTH?

The most obvious reason watershed organizations need to reach out to young people is that they are cultivating future adult leaders who are invested in the cause of clean water. As if that were not reason enough, young people—as seen in the example above—are a valuable resource now for getting quality work done in assessing the health of the watershed and making actual improvements.



Currently, there are more than 12,000 educators leading student water monitoring groups in the U.S. Despite that number, about 70 percent of rivers go untested in a given year. The involvement of more young people in water monitoring and improvement could put a serious dent into the number of rivers with unknown water quality.

Schools have a good incentive to get young people involved in the cause. Watershed studies are a compelling way for educators to give students hands-on lessons in biology, chemistry, ecology and environmental science, as well as providing practical applications for math and language arts. By going outside of the classroom, students are given a context for their learning, and those kinds of experiences teach lessons far better than a

textbook ever could. Watershed organizations have a lot to offer schools in terms of bringing their science and environmental expertise into the classroom. These same organizations in turn have a lot to gain when students leave the class and get their feet wet at the banks of local rivers, streams and lakes. It’s a win-win situation all around.

MAKING THE MOST OF A VALUABLE RESOURCE

Youth bring a lot to the table in terms of energy, enthusiasm and creativity. At the same time, it is not as easy as just opening your door, inviting them in and expecting work to magically get done. Actively involving youth in watershed programs does take time and effort. These points should be kept in mind to ensure a successful collaboration.

Don’t Underestimate “Those Kids”

Many people think the easiest way to work with young people is to just tell them what to do. Often, what they are then told to do are simple tasks such as picking up trash on the riverbank. While these simple activities are worthwhile, they do not connect youth to their watersheds in a meaningful way. When young people are given the responsibility to make their own assessments and create their own plan of action, they understand the context of their actions and truly connect to the issue. Having a tangible, lasting impact on a watershed has an enormous impact on the youth themselves.

Moreover, relationships with young people can be troublesome when it is perceived they are just being told what to do and what to think while their opinions go unheard. Young people do need guidance. However, the Vare example above shows the level of

work young people are capable of when they are treated like (and in turn see themselves as) collaborators and partners in an effort. People are pleasantly surprised by the results of letting young people lead.

In Charleston a group of young people ages 10 through 14 wanted to weigh in on the issue of a global port being built over wetlands in the area. When they went to present their case at a city meeting with more than 1,000 citizens present, snickers could be heard. It was evident to the crowd thought these “cute kids” were there for entertainment. Their minds were soon changed when it was clear their effective presentation was based on solid research. The group had talked to the Sierra Club, the Chamber of Commerce and a variety of other sources with different viewpoints. They made a compelling case that the obvious economic benefits to the plan did not outweigh the environmental costs. The crowd was so swayed, the students received a round of applause when they were finished. Afterward a community leader approached the adult facilitator of the group and told her he was so impressed he would never work on another community project without actively involving youth.

As the Charleston students demonstrate, young people can understand and articulate the nuances of these complex environmental issues. With guidance, they can identify problems in the community and create lasting solutions to those problems. When the projects are led by youth, problems and even solutions emerge that perhaps could go unseen by an adult. For example, one group of youth in Denver set out to assess and improve the health of the stream by their school. Their project focus changed when the students felt it was unfair that several of their classmates in wheelchairs could not

access the riverbank. The students successfully led an effort to make the riverbank accessible to their friends with physical disabilities. Now everyone can access the local recreational area and natural resource. It is now easier for the students to continue to keep tabs on the health of the stream as well.

Young people are passionate and committed about what is important to them. Their drive makes for a powerful volunteer force for watershed organizations. Their confidence and skills will grow as a group works together over time, and their facilitator becomes more inclined to



encourage more student direction of the projects.

But Don't Overestimate Them Either

While one cannot underestimate the capacity young people have to take on projects, there

are still limits to what they can do simply because they are young. First and foremost, young people need guidance. In all of the stories told here, the students followed the guidance of a trained adult facilitator and a defined process. It is absolutely essential that the scope of work is clearly defined and both the watershed organization and the young people understand the expectations, objectives and goals of a project before starting it.

While outlining clear expectations is a good idea with youth and adult volunteers, it is still essential to recognize the various constraints in the lives of young people that limit the role they can play in a watershed

continued on page 6

YOUTH AS A FORCE FOR CLEAN WATER

cont. from page 5

organization. The biggest constraint youth face is time. Young people's lives are dictated by the school day. Working with, and not against, the school schedule will make it easier for young people to be involved. For example, do not hold a conference call in the middle of a school day and expect them to participate. Sports and other after-school activities will limit their time as well. On the other hand schools provide outside organizations with opportunities for time with a captive audience in the form of student field trips to sites, in-class visits or school-wide presentations.

Logistics is another obvious constraint. Travel arrangements may have to be made in order to get young people below driving age to come to meetings or to a monitoring site. Arranging for buses is one of the biggest hurdles to jump when arranging a school field trip, particularly because of the cost.

An organization needs to recognize the legal constraints as well. Obtain signed parental permission forms if employees are going to be working with young people outside of school. Permission forms are also needed to publish photos or air video footage of the young people participating in its activities. The laws vary from state to state.

Finally, expectations of young people need to be based on a variety of factors such as:

- Student skill levels
- Student grade levels
- Student experience in leadership roles

Of course you will be able to expect more from a 17-year-old than you will a 14-year-old. You may also find expectations will vary among a group of 14-year-olds whose skill levels and leadership experiences could be very different despite their age being the same.

HOW TO BEGIN

Working with youth does take time and patience. But making the investment to create a youth program or actively involve youth in existing programs is well worth the effort. Here are some suggestions on getting started.

Work With Educators and Youth Groups

Reach out to schools and youth groups. Offer your expertise as a means of enhancing education and exciting youth about a topic that affects everyone—the water that sustains us. By connecting with just one educator, you could have up to 100 students ready to be active water protectors.

The Rouge Education Project, coordinated by Friends of the Rouge in southeastern Michigan, has recruited more than 80 schools (6,000 students) to monitor various parts of the Rouge River each year. Students enter and help analyze the data they collect and identify trouble spots along the river.

“Since 1987 our organization has developed tens of thousands of stewards of the Rouge River by working with youth. With the help of these future decision-makers, one of the most polluted and urbanized rivers in the country may one day be fully restored,” said Courtney Shosh, Rouge Education Project Coordinator.

Create a Youth Advisory Board

If you already work with schools, you may be ready to directly engage young people in your organization by forming a Youth Advisory Board. After all, the best way to understand how to work with young people is to ask them directly.

Such a group can advise an organization on how to make its resources more youth-friendly and how to recruit more schools. They have even been known to take on projects of their own on behalf of the organization such as the efforts to stop the

port in Charleston mentioned above. The youth in a community can make great spokespeople of an organization as well, garnering more media attention to a watershed problem than perhaps an adult spewing facts and figures would.

Use Existing Resources

Numerous resources exist to aid you and your organization with the involvement of youth. Earth Force has a variety of watershed education and assessment resources through its Global River Environmental Education Network (GREEN) program. GREEN works with a variety of watershed education organizations around the country to recruit and train educators in the Earth Force process and help form Youth Advisory Boards. The Resources and References section (*see page 21*) provides listings for various organizations, web pages and resources dedicated to encouraging the active participation of youth in community work.



YOUTH ADVISORY BOARDS

CONSIDER CREATING ONE FOR YOUR ORGANIZATION!

As part of their commitment to remain a youth-driven organization, Earth Force has established an active Youth Advisory Board (YAB). Youth from ages 12 to 17 provide leadership for the organization in a number of important ways. First, they help design and implement national campaigns that spur youth to take action around the environment. Second, YAB members represent Earth Force at important events on environmental issues, civic action and other topics. Third, two current YAB members as well as two recent graduates of the YAB sit on Earth Force's Board of Directors. Finally, they provide overall advice to Earth Force on the direction and content of their programs. The fifteen-member YAB is representative of Earth Force's program.

Responsibilities include:

- Attend two meetings per year and actively participate in monthly conference calls and email discussions
- Plan and lead Earth Force campaigns and programs
- Represent Earth Force through the media
- Assist Earth Force by taking part in at least one task force that works on specific YAB issues
- Respond to all requests in a timely manner and follow through on commitments
- Keep in touch with Earth Force even after the term is over.

In return for their service, YAB members have the opportunity to work with other exceptional young people and help shape a great organization. Earth Force covers all costs for conference calls, as well as for each YAB member and one chaperone to attend the meeting.

For more information, contact Earth Force (earthforce@earthforce.org; 703/299-9400) or visit <http://www.earthforce.org/info2.htm>.

SUPPORT YOUR ORGANIZATION'S YOUNG PEOPLE

By Karen Young
& Jesse Graham



When you make the commitment to involve young people in your organization, it's important to realize the wide array of issues involved in supporting them. With your help, youth can make a contribution to not only to your work, but also to the community and society in general.

Younger people, as yet relatively unscathed by the sometimes disappointing realities of even the best work-places and lured by the mission orientation of our organizations, are likely to come in with high expectations of our workplaces and practices.

This can be frustrating on both sides, but if the expectations are surfaced, talking about them can promote a deeper understanding of the meaning of our missions and

the periodic disconnects between our stated values and our practices. For the young person, such a discussion can promote an appreciation for complexity and the balancing of interests and tasks that are a part of running any organization.

ORIENTATION

Helping young people feel welcome and comfortable in their new position is critical to their success. They will need information, supportive relationships and a clear sense of their role in the organization. A good orientation process can provide a map to help them successfully negotiate the complexity of your organization.

It is important for an orientation to not only familiarize the young person with her specific roles and responsibilities, but to put those roles into the context of the

organization as a whole. Part of familiarizing youth with the “big picture” should involve teaching them the acronyms and jargon of your work.

An orientation can be as simple as a meeting to go over basic organizational information, the span and limits of their particular role and logistics about the work. Finally, make sure that young people are welcomed personally and that they are encouraged to get to know what everyone else does.

TRAINING

After the initial orientation, it's in the best interests of the young person and the organization to provide continuing opportunities for training. The technical knowledge and communication skills young people develop will become important building blocks toward their future goals. Ongoing skills training can also help young people develop their capacity to take responsible leadership and become more effective organizational members. Consider creating a training program to cover issues such as fundraising, public speaking, how to write a report and how to read a budget. Training doesn't always have to be formal; the “buddy system” is a great way to create and foster youth-adult partnerships that build the capacity of both relationships.

ONGOING SUPPORT

Supporting a young person in an organization requires that you be able to imagine yourself in their shoes and envision yourself as a bridge between where the person is and where they want to be. If in doubt, err on the side of giving them too much information as opposed to keeping them in the dark. Keep in mind, however, that peppering people with too much information at one time or talking at them without checking in on whether the



information is useful or needed can also create barriers, in that it can give the impression that you think they know less than they do. Make sure the interactions are two-sided.

In addition, a strong mentoring program can provide crucial ongoing support for young people, in that it encourages critical thinking. Have youth meet their mentors before and after meetings to debrief, and before projects are started and after they are completed. Having a mentor gives young people an opportunity to “check-in” about their experiences and ask questions in a safe environment.

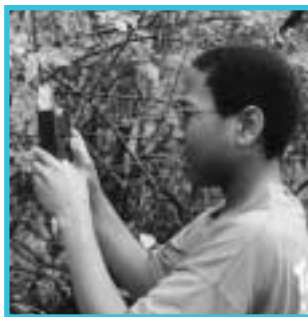
STEREOTYPES AND ATTITUDES

As important as the individual personal support of adult mentors is for youth, it is equally important that the organization as a whole develop a scaffolding of supportive attitudes. To develop such scaffolding, it is crucial to confront and dismantle the stereotypes that all of us have about young people.

Just as young people may not be familiar with adult settings, many adults are not used to working in environments where young people participate as equals. Just as young people in our culture lack the respect and value accorded to adults, they also lack many of the resources (access to money, health care, flexibility with their time) adults may take for granted and expect from new employees. Additionally, young people are inundated with negative stereotypes from the media; these images can give young people negative views about themselves that hinder their progress and success just as surely as oppression from adults.

Stereotypes and myths about teens can get in the way of productive relationships,

which is why communication and relationship-building skills are critical in making youth-adult partnerships work. Consider conducting an intergenerational training, in which youth and adult members can share their views of each other. Get adults to remember what it was like to be a young person. Have the young people talk about their lives. Activities like these help build understanding and result in a stronger, more effective team.



PREPARING YOUNG PEOPLE FOR FURTHER OPPORTUNITIES

Preparing young people for future opportunities (both within and beyond your organization) requires a real investment in that person’s life. To really know their situation, you need to

be aware of the full context of their lives; only then will you get a clear picture of the possible next steps of their professional development, as well as the probability of success in any particular path.

When helping young people network with different organizations, don’t just give them a phone number: help them build links with other nonprofits and relevant individuals. Once the young person has found a new position, it’s a good idea to call her new supervisor. As the young person prepares to transition to a new organization make sure you help them to focus on the fact that they must attend both to their own development path and the need to get the work of the new organization done.

Karen Young is co-founder and principal of Youth on Board.

Jesse Graham graduated from Harvard Divinity School in Spring 2002 and is currently living in Japan working for the Jet Program.

For more information, visit:
www.youthonboard.org.



CAN SCHOOLS FILL THE RIVER INFORMATION GAP?

By Geoff Dates
River Network's River
Watch Program Director



According to the EPA's 1998 Report to Congress, only 23% of the nation's rivers and streams, 42% of its lakes and ponds and only 32% of its estuaries were assessed. Can schools help produce useful and reliable data to help fill this gap? The answer is: "Of course, but..." So why the "but?" Schools can produce quality data *if* they design their program to do so.

"Using" data involves first turning it into information and then applying that information to accomplish a stated data collection purpose. Common data uses include everything from community involvement to providing evidence for a legal or regulatory process.

Here are a few thoughts and suggestions about schools producing "useful" data:

- ***Specify the intended users and uses of data.*** This will drive the rigor of your program. Regulatory uses of school data are unlikely, but not unknown. Don't expect that data gathered for the purpose of teaching aquatic ecology is automatically going to be used by a state agency to make decisions about water pollution control. Make sure you understand the data quality requirements of any outside users. These describe the quality of the data that must be achieved in order for the data to be used. They are expressed as numbers (e.g. minimum # of samples) or narrative (e.g. data must be validated) requirements which must be met.
- ***Quality assurance is more important and much more challenging when many people do the sampling and analysis.*** Some users require that you document the quality of your data and compare it to your data quality

requirements. Differences in sampling and analytical techniques, different opinions about the color of the sample (some methods relate color to the concentration of the indicator being tested) or the name of an aquatic insect, and the repeated handling of a sample can make it difficult to pinpoint errors.

- ***Write up a quality assurance plan.*** Record what happens to each sample and who does it (called "chain of custody") on field and lab sheets. Additionally, use quality control samples to pinpoint places where problems may have happened: for example, collect and analyze duplicate samples to identify whether errors may have occurred during sampling or analysis.

Quality assurance (to assure that the data are of known quality) is a part of good science. Colorado River Watch schools undergo rigorous quality assurance to give the Colorado Division of Wildlife a level of confidence in using their data to make management decisions.

- ***To be useful, data must be turned into information.*** That involves figuring out trends and patterns in the data and what it tells you about a) your river or b) your monitoring methods.
- ***Students can be compelling storytellers.*** New Mexico Water Watch schools frequently give presentations of their findings, conclusions and recommendations to local community leaders. I've seen students get community leaders' attention when no adult would even be given the chance to speak.

¹ U.S. EPA, 2000. *National Water Quality Inventory: 1998 Report to Congress*. EPA841-R-00-001, Office of Water, Washington D.C.



THE STORY OF THE RIVER CONNECTING ELDERS & YOUTH

Recently, the Yukon River Inter-Tribal Watershed Council (YRITWC) brought together Elders and youth from each watershed community to participate in developing a narrative story of the Yukon River. The intent of the exercise was to foster relationships between the most important resources of the communities and to bridge traditional knowledge with the future. The “story of the river” helped to capture the mission of YRITWC—to protect our Native way of life.

By Rosetta Alcantra
Executive Director
Yukon River Inter-Tribal
Watershed Council

The “Story of the Yukon River,” the illustrations, the personal accounts and the poetry are examples of the changes witnessed by the Elders in their lifetime. The changes include the environmental and social changes brought on by modern times and equipment. This documentation is the beginning of a long process of recording the oral history and planning for the future of the YRITWC. The future includes building leadership among youth and fostering responsibility and respect for generations to follow. The wisdom and input from the Elders and Youth is invaluable to the foundation of the organization.

“An elder once told us about their childhood and how everything was once so beautiful and the animals were not in danger like they are today from all the pollution that is being dumped in the lakes and river and our land. If we all work together we can make it better before it gets any worse. The only way to make things better is to speak and be heard by our people. There are many people who care about our water and land. As youth, it is hard to be heard and that’s why we come to these meetings, to say what we have to say and to fight for our land and water before it gets any worse. In the future, as adults we will want a beautiful and safe environment for our children, so if we work together we can make our land as beautiful as it was in the past.”



— Estelle McGinty, Nulato, Alaska Youth Delegate

“This is a good example of how elders and youth can work together. There’s been a lot of Elders and Youth meeting at different places, but this was a new concept where the Elders tell their stories and the Youth tell them back to them. That’s the way stories were passed on in the past, and I hope we all take this message home to continue it.”

— Koyukuk Elder, Eliza Jones



VOICES FROM THE FIELD..

Compiled by
Katherine Luscher,
River Network

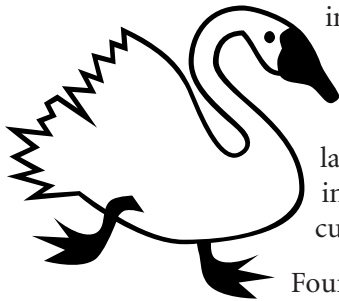
Pearl S. Buck once said, "The young do not know enough to be prudent, and therefore they attempt the impossible, and achieve it, generation after generation." The truth is, while our work often appears impossible, our long-term visions will not become a reality unless we make an effort to encourage and foster youth participation. More than providing us with extra hands to plant trees and fold letters, youth present us with the opportunity to encourage and develop the next generation of river conservationists. In the following pages, River Network Partners share ideas, strategies and words of advice regarding the involvement of young people.

PACK RIVER WATERSHED COMMUNITY PROJECT

Tri-State Water Quality Council, Idaho

The goal of the Pack River Watershed Community Project is to partner educators, students and landowners in a non-confrontational approach to water quality issues and solutions by building a partnership of local high school students and landowners working together to investigate river water quality;

identify effective land use practices that improve water quality and reduce nutrient loading; promote pollution prevention through the education and involvement of students and landowners; and integrate the program into the local high school science curriculum.



Four monitoring sites were sampled at five different times for 10 parameters (e.g., dissolved oxygen, pH, fecal coliform, etc.) to provide baseline information for evaluation of future progress in meeting water quality goals in the Pack River watershed.

Students from three science classes compiled all the water quality monitoring data and delivered a PowerPoint presentation on results, conclusions and recommendations to the landowner-based Pack River Watershed Council.

Monitoring data has also been compiled, published

and distributed on the statewide SITE web page (www.wqi.org) and was also distributed to natural resource professionals on the Pack River Technical Advisory Committee.



LESSON LEARNED

Because landowners were not available weekdays when students were monitoring, there was no opportunity to have the landowners actually monitor with the students during the school year. And, because school was not in session during the summer, the students could not capture data during critical low-flow months. Therefore, a landowner volunteer monitoring program had to be created for the summer months.

RIVERSAFE CARWASH CAMPAIGN

RiverSides Stewardship Alliance, Toronto

The RiverSafe Carwash Campaign is a national non-point source pollution prevention initiative, encouraging Canadians to use RiverSafe carwashes under the slogan, “The key to clean water starts with your car.” This unique stewardship program provides easily implementable, sustainable solutions to address the problem of untreated runoff from lot level car washing at the individual, industry and municipal levels. In partnership with community groups and high school groups, RiverSides is holding RiverSafe Community Carwash events on a containment pad system or at a Certified RiverSafe Commercial Carwash facility to demonstrate sustainable, run-off free carwashes. The key to the success of the RiverSafe Carwash Campaign lies in effectively communicating a message of prevention and stewardship at the individual level. Youth participation has been RiverSides’ main volunteer base for the campaign.



NAPA RIVER EDUCATION PROGRAM

Friends of the Napa, California

The River Education program was created to educate 3rd-5th graders to appreciate the role that rivers and tributaries play in nature, and the interrelationships that plants, animals and the people of Napa have to our watershed. Friends of the Napa has presented a series of three hour-long lessons to 24 classrooms throughout Napa Valley, contacting over 600 students. Each lesson

was presented by a docent and is supported with a teacher’s guide that has specific enrichment activities to help reinforce each lesson’s concepts. These guides are an integral part of the program as they give over twenty additional lessons for a total of three weeks of river education. These lessons are augmented with videos, student guides, insect specimens and interactive demonstrations. The concepts and themes given in these lessons are based on the standards set forth by the California State Science Framework for grades kindergarten through grade twelve.

continued on page 14

VOICES FROM THE FIELD...

cont. from page 13

FIRST CAST: YOUTH FLY FISHING EDUCATION INITIATIVE

Trout Unlimited



First Cast is Trout Unlimited's nation-wide initiative to introduce youth to coldwater conservation through fly fishing. As part of TU's efforts to identify and train the next generation of coldwater resource stewards, the First Cast initiative helps local TU chapters throughout the country start or expand youth programs. First Cast programs teach kids the skills of fly fishing in a wide variety of ways. These programs range from week-long conservation youth camps to in-school programs to one-day casting or fly tying clinics. In addition to doing stand-alone programs, TU has partnered with other organizations to bring First Cast to a wider audience of kids.

To find out if the TU chapter in your area has a youth education program, visit www.tu.org. If you have any general questions, please contact Duncan Blair, TU's National Youth Program Coordinator (dblair@tu.org or 703/284-9425).



URBAN ECOLOGY FIELD STUDIES PROGRAM

Urban Ecology Institute, Massachusetts

The Urban Ecology Field Studies Program brought over 500 students outside to measure dissolved oxygen in the Charles River, count Great Blue Herons at the Neponset Estuary, monitor salinity levels in the Rumney Marsh and observe crow behavior at Leverett Pond. The Program provides professional development opportunities, materials, curriculum, an on-line database of school data and on-going support for teachers from UEI scientists, Boston College professors and AmeriCorps*VISTA Volunteers. UEI serves as a forum where teachers share and exchange ideas among each other and with the staff. This experiential, classroom-to-field-to-classroom approach is designed to fit the changing needs of the greater Boston public school system. At the end of each school year, students present their work to fellow students, community members and environmental professionals at the Annual Student Research Conference sponsored by the Urban Ecology Institute and held at Boston College. For more information, visit www.urbaneco.org.



ROUGE EDUCATION PROJECT

Friends of the Rouge, Michigan

Friends of the Rouge coordinates the Rouge Education Project (REP), a multidisciplinary, school-based initiative that combines water quality testing and watershed education to encourage students to affect positive change in their communities. During the 2001-2002 school year, more than 80 elementary, middle and high schools involving 158 teachers, 6,300 students and countless volunteers participated throughout southeastern Michigan. Schools participating in the REP first teach their students about the river in the classroom, and then take a field trip to the river to monitor chemical, biological and physical parameters at least once a year. Schools are encouraged to use the data they collect and additional research to develop and implement projects to improve the health of the river. Some of the biological data is reported to the Michigan Department of Environmental Quality through its volunteer monitoring program. All data received is posted on the Friends of the Rouge web site (www.therouge.org) and shared with participating schools, program sponsors and local communities. Two unique aspects of the REP are its Adopt-a-School Campaign, which partners local businesses with schools and College Student Assistants, college student volunteers who are trained in water quality monitoring and assist teachers with monitoring.



WORDS OF ADVICE

Consider the following when initiating a school-based program:

- Start small.
 - Clearly communicate expectations to all participants.
 - Develop a quality assurance plan early on.
 - Work with teachers to recruit new schools.
 - Cultivate support from school and district administrators.
 - Manage the growth of your program to ensure that quality doesn't diminish as its size increases.
-

SALMON CORPS

Columbia River Inter-Tribal Fish Commission, Oregon

Salmon Corps' goal is to inspire Native American youth, ages 18-25, in the Pacific Northwest to repair disappearing salmon habitat. Through the incorporation of native languages, tribal environmental knowledge, natural resource management practices, and cutting-edge science and technology into the program, young people are reclaiming connections to their communities, history and rivers. This approach serves a dual purpose by rehabilitating both salmon and young people from the tribal communities of the area—many of which are facing severe social and economic challenges. Each year over 100 young adults join the Salmon Corps with a pledge to provide 1,700 hours of service to their environment, their communities and themselves. For more information, visit:

<http://www.ccrh.org/scsite/index2.htm>.



continued on page 16

VOICES FROM THE FIELD...

cont. from page 15

GEORGES CREEK "WATER" DAYS - WATERSHED ACTIVITIES TO ENCOURAGE RESTORATION

Georges Creek Watershed Association, Maryland

The goal of WATER Days is to educate students and citizens on the importance of sound land use planning and floodplain management, as well as to promote on-going watershed restoration efforts. The day combines a service learning project with outdoor classroom activities that highlight local watershed projects. The first WATER Day was held on April 15, 1999 with 90 students from Westmar Middle School. Since then, Allegany County has sponsored 3 more WATER Days, with groups of high school, middle school and elementary school students.



*Stream Cleanup, April 1999
Westmar Middle School Students*



*Discussion on Floodplain Management,
Frosh Elementary School, April 2000*

The day begins with community service projects such as a stream clean-up or riparian tree plantings. Additionally, 3 to 4 activity stations are coordinated by local resource professionals. Groups of 20 to 25 students are then cycled through the learning stations. Activities include a mix of lecture/presentations, as well as hands-on projects including: water quality monitoring, macro-invertebrate sampling, discussion of stream restoration techniques, measurement of stream velocity and discharge, and discussion of floodplain regulations and flood mitigation tools. For more information contact Ursula Lemanski, National Park Service, Rivers and Trails Program, P.O. Box B, Harpers Ferry, WV 25425.

STORM DRAIN AWARENESS PROGRAM

*Housatonic Valley Association,
Massachusetts*

The Storm Drain Awareness program introduces students to the impacts of storm drains on water quality. After viewing an informative PowerPoint show, students are asked to sprinkle 'pollutants' onto a 3-dimensional model watershed and then apply rain and watch the effects of runoff as it flows into storm drains and into the river. On a later day, students apply storm drain decals to selected storm drains. To date, 8 classes have participated in the program and four have completed our decal application—involving approximately 55 students and the placement of 60 decals.

YOUTH RIVER CAMPAIGN

Amigos Bravos, New Mexico

The Youth River Campaign's goal is for youth to design and implement a simple, positive river awareness message targeting the Central Rio Grande's younger population. Initially, a river crew of young adults aged 18-25 met to get to know one another by sharing stories, theories, histories and resources, building unity as a core group and exploring how to reach a younger audience. The Campaign has now entered its second phase which includes an intensive training period. Campaign development, public speaking, river education and media training are the focus through the next month. The completion of this phase will bring participants to a third phase: finalizing the message, developing several multi-media products and a public debut with street and public performance venues, including performance art during the February "River Day" at the Roundhouse. For more information, contact the Amigos Bravos' Albuquerque Office at 505/924-2223 for details.

RIVER QUEST: A YOUTH ADVENTURE PROGRAM

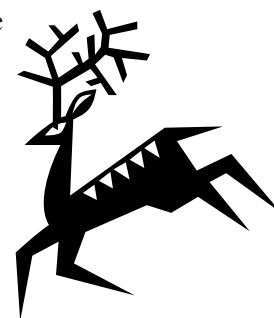
Friends of the River, California

In an effort to open new horizons for at-risk youth in the San Francisco Bay area and Sacramento region, Friends of the River (FOR) developed River Quest: A Youth Adventure Program. Since the program's creation in 1997, FOR has introduced more than a thousand youth to the river conservation movement while empowering them via outdoor adventure and environmental education.



A low-cost community-based outdoor adventure program, River Quest provides 200 youth per year with the personal and group challenge of river rafting, and includes interactive exercises designed for cultivating teamwork, leadership and environmental education. Young people and their adult mentors benefit from new and exciting experiences: they work as a team to prepare river equipment for a day-long expedition, paddle through Class III whitewater rapids, and learn about the natural resources and wildlife habitat in a historically significant river canyon: the South Fork of the American River.

The trips are organized in partnership with select community groups such as the Canal Community Alliance in San Raphael, the Asian Immigrant Women's Advocates in San Francisco and the Washington United Youth Center in San Jose. These partnerships build awareness and grassroots support for both environmental and social justice issues.



WATER QUALITY MONITORING PROGRAM

St. Louis River - River Watch, Minnesota

The St. Louis River-River Watch project is aimed at secondary school students, promoting and inspiring stewardship of the largest U.S. tributary to Lake Superior. Since 1997, with grants from the United States Department of Agriculture and guidance from the Minnesota Pollution Control Agency, Fond du Lac Tribal and Community College (FDLTCC) has coordinated this monitoring effort.

Currently, students and teachers in 21 secondary schools and FDLTCC students gather chemical, physical and biological data twice per year at river sites located throughout the 3,650 square mile watershed. In most of these public, private, tribal and alternative schools, River Watch activities are integrated into the secondary science curriculum. An estimated 500 River Watchers per year perform “real-life science” while working together to serve their communities and their watershed.

LESSON LEARNED

The key to the St. Louis River—River Watch project's long-term success is maintaining our foundation of many dedicated teachers and community leaders. By making the program's activities scientifically valid and rewarding for students, yet easy for teachers to incorporate into their schools, we retain our volunteer base from year to year.



BRING ON THE “SENIOR” CITIZENS!

By Rob Buirgy



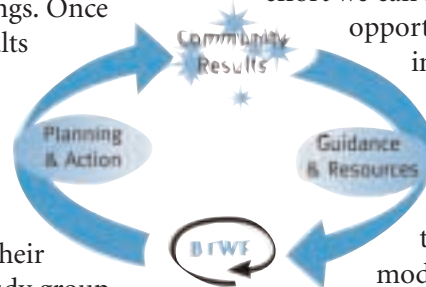
ten years ago two Chemistry students undertook an extra credit project to measure water

quality in their local river. Having completed their analysis of several basic parameters, they returned to the classroom with a summary of their findings. Once their classmates heard the results and discussed the methods of analysis, they came up with the universal question—What does it all mean? Easy answers turned out to be in short supply, so these students and their teacher formed a hands-on study group to research aquatic ecology and water quality regulations. Within a few years, this project grew to become a science course in its own right, and laid the foundation of a collaborative water quality forum for the entire watershed. Well, you have probably guessed by now that I was teaching Chemistry on that fateful day, when a simple extra credit project changed the course of my life and my community. As a result, I have become an advocate of working with youth in community improvement—and I hope to convince others to take the plunge!

The moral of this story is that we can all benefit by engaging youth in our watershed work, especially that special class—the Seniors! Think back to your own senior year in high school (for some of us that is quite a while ago), and remember your desire to make a difference in the world, the excitement of meeting new people in your community and the fun of getting outdoors with your friends for fresh air and sunshine. Chances are, there's even a water body that is central to your memories. Young people today are not so different from you and me—they are

on their way to adulthood and most are eager to get their feet wet in a real-world setting.

This is where the watershed movement can be an important influence, and with a little effort we can find abundant opportunities for youth involvement in our own organizations. For example, in the Big Thompson Watershed Forum we often refer to the simple organizational model shown above. In this model, we solicit guidance and resources from the community, which we use to develop and prioritize our action plans. The cycle is complete when our actions generate community results, leading (we hope!) to additional guidance and resources to support our work. I believe high school seniors in every community are ready and willing to be involved in each aspect of this model, providing the perfect opportunity to involve them in our watershed work.



Guidance & Resources

High school seniors make high quality volunteers—they are used to steep learning curves, often academically gifted and (usually) responsible.

Supported by a carefully designed plan, teens can also provide their own transportation. Curious and willing volunteers bring a fresh viewpoint to planning efforts, and we all know that our work demands lots of energy—a commodity your seniors will provide in abundance!



Rob Buirgy is the Coordinator of the Big Thompson Watershed Forum and a Science teacher in the Thompson School District, Loveland, CO. Rob also serves as Environmental Education coordinator for the Thompson School District. He has taught Chemistry and Stream Ecology at the High School level for 20 years.

Consider also the community resources that follow teens to your door: experts, facilities, cash and in-kind support. Many organizations have a strong directive to work with youth and are eager to provide highly trained employees to work with your volunteers. Community development



programs and grants often target youth involvement—especially in school to work initiatives, which are often directed specifically at high school seniors. Colleges, universities and local school districts are all interested in keeping seniors engaged in the learning process, and very willing to support successful programs.

Planning & Action

By including our high school seniors in the project planning phase, we have developed clear goals and a solid support base for our volunteer water quality monitoring program. Students from Thompson Valley High School collected and analyzed four years of water quality data that is still referenced today as the original basin-wide data available for the Big Thompson watershed. River cleanups are always a popular activity with our seniors, and we have come to rely on them not only for their willingness to roll up their sleeves, but also for their developing skills as team leaders and public speakers. Imagine the self-confidence you will instill in your seniors by providing them the opportunity to speak to



the press, participate in workshops or even read a river-friendly book to elementary students. These activities have a synergy that will continue to grow, benefiting both your volunteers and your organization.

Community Results

When assessing the effectiveness of our actions in the Forum, I look for results at several levels. Most importantly, we hope to achieve lasting improvement in two areas: water quality and community perceptions. Many of our past accomplishments can be attributed directly to the efforts of our teen volunteers. Senior student volunteers have participated in two state rulemaking hearings, directly influencing regulatory changes that established more appropriate standards for the Big Thompson River. In 2000, the City of Loveland led the development of a four-part water quality seminar intended specifically for our high school seniors. Surprisingly, attendance at each seminar was much larger than the number of students alone—this became a community education event which reached well beyond the initial audience, and opened our eyes to the added value in blending our student and community outreach. Last but not least, our community benefits from the optimism generated by

adults working side by side with healthy teens—heart warming satisfaction with a job well done transfers to improved relations in other walks of life.

Working with high school seniors has brought new resources into our organization and enables us to energetically accomplish projects with higher levels of success than ever before. If you are looking for positive results in your rivers, lakes and community, please consider recruiting “Senior” citizens from your watershed community this Fall. The timing is perfect!



THE YOUNG WARRIORS SOCIETY

By Jolene Catron

The Wind River Reservation, located in west-central Wyoming, is home to the Eastern Shoshone and Northern Arapaho Tribes. It is the third largest reservation in the U.S., encompassing an area roughly equal to the size of Yellowstone National Park: 2.2 million acres from the Owl Creek Mountains to the Wind River Range. These lands fall within the Greater Yellowstone Ecosystem and contain some of the most

pristine mountainous areas in the U.S. Conserving the pristine nature of this land was important enough to the Tribes that as early as 1938 they set aside over 187,000 acres in their portion of the Wind River Range as a wilderness area. These areas, along with 265 lakes and reservoirs and 1,109 miles of river and streams, drain a large portion of the Wind River watershed, the largest watershed in Wyoming. Reservation lands support a great diversity of fish, wildlife and their habitats including 241 birds and 66 mammal species. Recently, grizzly bear and the gray wolf have re-established historical ties with the Reservation.

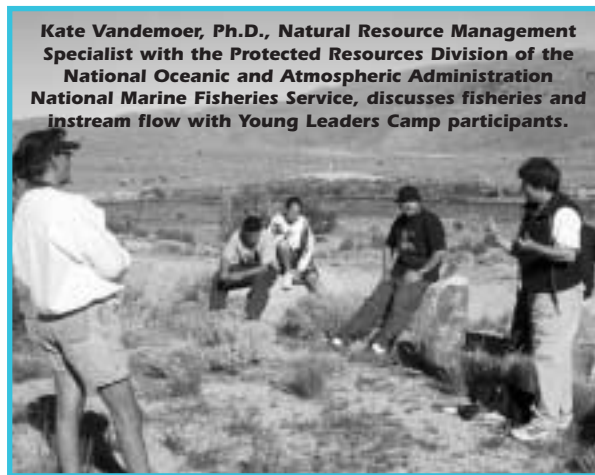
The Young Warriors Society (an affiliate project of the Seventh Generation Fund) is a grassroots organization located on the Wind River Reservation and is dedicated to creating positive change for the residents of the Reservation. Originally established in 1997, the focus of the group is to reinforce cultural values and ties to natural resources, instill a respect for all living things, and maintain the values of a traditional warrior, as one who is a protector, provider and spiritual person, within young people by bridging relationships between tribal elders and youth.

Recently, the Young Warriors Society partnered with Native Waters, a water education program based at Montana State University in Bozeman, Montana, to create a Young Leaders Camp. The emphasis of the camp was to teach young leaders about the spiritual, technical, cultural and recreational values of water by providing a week-long, hands-on camp experience. Through this field experience, young leaders learned the

importance of being grounded in the cultural and traditional values of tribal people and to live their lives in reverence for the land, even though we live in a capitalistic society. The

Young Warriors Society encourages youth to lead by example through trust, teamwork and unity—values that will ensure strong leadership from our future leaders. By educating our young people about the natural resources on the Reservation, we hope that they will pass their knowledge on to their families and others. This in turn will promote a community that is educated about the natural resources of the Reservation.

No matter what race, religion or country we come from, all people should strive to live in balance with our environment. Out of respect for our ancestors who fought and died for the life we are living now, it is important to teach our future leaders, our young people, about the values of water and natural resources to ensure that we have strong leaders who are making educated, informed decisions for the welfare of their generation and future generations to come.



Kate Vandemoer, Ph.D., Natural Resource Management Specialist with the Protected Resources Division of the National Oceanic and Atmospheric Administration National Marine Fisheries Service, discusses fisheries and instream flow with Young Leaders Camp participants.

Jolene Catron is a member of the Governing Council of Young Warriors Society on the Wind River Reservation in Wyoming. She is an enrolled member of the Navajo Nation, and currently works as a water permit technician with the Office of the Tribal Water Engineer of the Eastern Shoshone and Northern Arapaho Tribes.



RESOURCES & REFERENCES

EARTH FORCE

These programs give youth the skills and knowledge to turn their passion for the environment into lasting change in their communities. Earth Force has field offices around the country focused on training educators and involving students.

<http://www.earthforce.org>

Earth Force Programs and Resources:

- Community Action and Problem Solving (CAPS) pairs young leaders with adult educators to identify local environmental concerns, and then develop and implement an action plan for long-term improvement of the environment.

<http://www.earthforce.org/caps.htm>

- The Global Rivers Environmental Education Network (GREEN) offers educators the necessary tools and training to involve youth in water monitoring. The GREEN web site offers an online monitoring database, special project pages, extensive resources for taking action and much more.

<http://www.earthforce.org/green/>

<http://www.green.org/resources/>

- Earth Force After School joins youth with community leaders to explore the environment and supplement classroom work with real-life experiences. Educators are given a step-by-step kit with instructions and activities for guiding youth through a community action and problem-solving project.

<http://www.earthforce.org/afterschool.cfm>

- The Youth Advisory Board (YAB) brings together fifteen young people ages 12-17 to provide leadership for the organization in a number of important areas. If you are interested in applying to be on the YAB, email cjenkins@earthforce.org for an application.

- The Earth Force catalog offers equipment for the GREEN program, After School Kits, Earth Force merchandise, and other products. Some available materials include:

1) **Low-Cost Monitoring Kit:** Considered the industry standard, the kits comes complete with an instruction guide and materials to test 10 water samples, three for coliform bacteria.

2) **Standard Water Monitoring Kit:** a great chemical and biological testing kit for either a classroom or occasional volunteer monitoring group; comes complete with an instruction guide and materials to test 100 water samples, 44 for coliform bacteria.

3) **Field Manual for Water Quality**

Monitoring: The latest edition of the standard text for school-based water quality monitoring programs that is used in schools around the world.

4) **Protecting Our Watersheds:**

A comprehensive action package that gives educators a step-by-step process to guide young people in improving the health of their water resources.

Many products are also available in Spanish.

For more information, visit:

www.earthforce.org/catalog or contact Earth

Force at: 1908 Mount Vernon Ave., 2nd Floor, Alexandria, VA 22301; 703/519-6877;

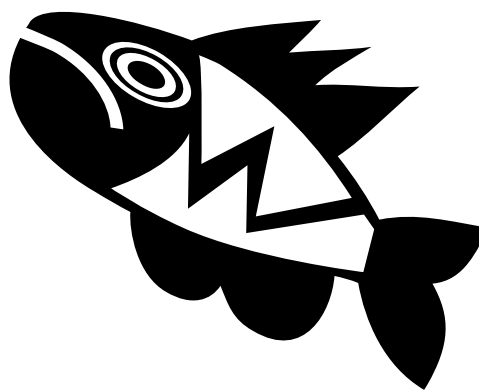
greensales@earthforce.org.

OTHER RESOURCES

Center for Youth as Resources

Providing small grants to youth and supporting them as they design and implement issue-related projects. Past organizational and youth participants help provide training and technical assistance. 1700 K Street, NW, Suite 801, Washington, D.C. 20006; 202/261-4185;

www.yar.org



continued on page 22

Resources & References, cont.

Community Partnerships with Youth, Inc.

A national training and resource development organization dedicated to promoting active citizenship through youth and adult partnerships. 550 East Jefferson Street, Suite 306, Franklin, IN 46131; 317/736-7947;

<http://www.cpyinc.org/index.htm>

Do Something

Through its BRICK Awards program, Do Something funds innovative projects started by community activists under the age of 30. 423 West 55th Street, 8th Floor, New York, NY 10019; 212/523-1175;

www.dosomething.org

U.S. EPA

Offering projects, art, experiments and educational materials to involve kids and students with various aspects of water protection. Office of Water (4101M), 1200 Pennsylvania Avenue, NW, Washington, D.C. 20016;

<http://www.epa.gov/water/kids.html>

National Youth Leadership Council

Providing training and technical assistance related to youth leadership and service-learning, through their Strategic Youth Initiatives. Each training is developed to meet the needs of the client and is lead by at least one adult in partnership with at least one young person. 1910 West Country Road B, St. Paul, MN 55113; 651/631-3672;

www.nylc.org

River Network

On the RiverSmart homepage, there is a RiverSmart Treasure Hunt for kids to do with their parents. It will show children that their everyday actions do have an effect on how clean the rivers are and that by changing practices around the house, they can make a difference. 520 SW 6th Avenue, Suite 1130, Portland, OR 97204; 503/241-3506;

www.riversmart.org

Youth Action

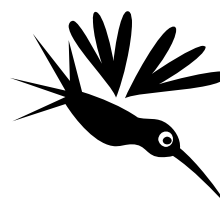
Helping young people learn about community organizing. Their site connects young community organizers with one another and teaches organizing skills.

<http://www.teaching.com/act/>

Youth on Board

Bridging the gap between adults and youth by providing practical information, training, publications and supports—the all-important “how-to’s” that can be key to the success of young people as community leaders. Youth on Board offers a wide array of trainings, support and publications for the public. 58 Day Street, 3rd Floor, PO Box 440322, Somerville, MA 02144; 617/623-9900 x1242;

www.youthonboard.org



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Starting Up: A Handbook for New River and Watershed Organizations

River Talk!

The Clean Water Act: An Owner's Manual

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