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YOUTH & THE ENVIRONMENT

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GRAZIANO

Youth & The Environment

Sean Duffy

"TREAT THE EARTH WELL. IT WAS NOT GIVEN TO YOU BY YOUR PARENTS: IT WAS LOANED TO YOU BY YOUR CHILDREN "

KENYAN PROVERB

Two events that occurred in the Spring of 1990, more than anything else, shaped my desire to put together this special issue of *Nature Study*. On back-to-back days in May of that year, I attended the annual meeting of the Alliance for Environmental Education (AEE), and then the United Nations' Global Forum on "Youth and the Environment." Both events featured the environmental accomplishments of children; the U.N. Forum, especially, had a profound impact on my conception of environmental education. For an entire day, I sat in the balcony of the General Assembly and listened to group after group of children tell the world what they had done in their neighborhoods to make them better places to live—and sometimes against tremendous odds. It was one of the most inspiring things I have ever witnessed.

Three of the speakers are still fresh in my mind, although I never knew any of their names. One young man orchestrated a teleconference with the Minneapolis Youth Symphony, as we all learned of nine-year-old Clinton Hill and his dream of protecting the Earth. Next, a very young lady from Salt Lake City told of how she and her classmates at Jackson Elementary School wouldn't take "no" for an answer and eventuallv convinced the appropriate officials to clean up a toxic waste site containing 50,000 corroded barrels of hazardous waste. It was located just three blocks from their school. And finally, a white woman and two black children from South Africa shared the podium and told how they had worked together to improve their local environment. This last image does not fade quickly; in fact, one could say it nicely illustrates the belief of many, including Vice President Gore, who say that environmental problems should be viewed not as divisive issues, but rather as opportunities to help unite the peoples of the world.

With this said, it should come as no surprise that the United Nations Environment Programme and related articles are given center stage in this special issue of *Nature Study*. Two of the programs featured at that 1990 Forum are highlighted in this publication: Clinton Hill's Kids for Saving Earth (KSE), and Kids Against Pollution (KAP), which originated at the Tenakill School in Closter, NJ, and which was also featured at the AEE meeting on the day previous to the U.N. Forum. Both groups have accomplished some terrific things in the interim, and now have thousands of members in numerous local chapters. In addition, brief articles on the Forum itself and youth participation in the Earth Summit are included, as are a declaration by the participants of the 1992 Forum—to the leaders of the U.N. Earth Summit in Rio de Janeiro— and a "Youth Earth Charter" and "Youth Agenda 21," both of which were drafted by the youth participants in Rio.

We have also included articles on programs that adopt that same "environmental problems-as-opportunities" philosophy mentioned above: Renew America, Break Away, The Environmental Exchange, The Giraffe Project, Earthwatch, and The Greenway Experience, among others, fit this mold. Many of the programs could also be called models of effective and efficient environmental education, and/or are clearinghouses of technical information on such models, with the intent of helping others replicate those programs that are *already* successful. In compiling this document, I was struck by the frequency with which I was told, "We want to help people so they don't have to re-invent the wheel. The information, the models, the particular environmental projects, they're all out there, but people don't know about them or how to access them Our job is to help them save precious time and resources, help them learn from other people's mistakes."

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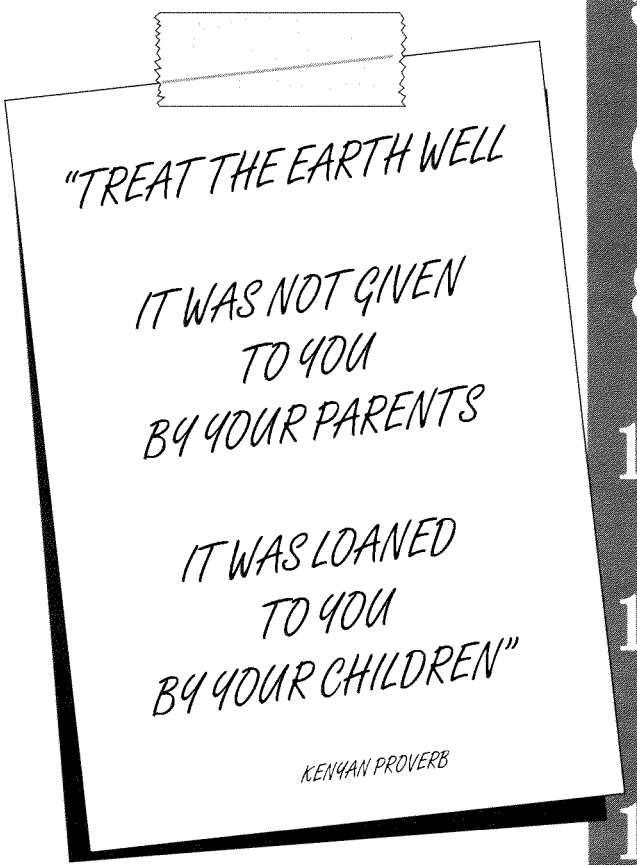

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UNEP Global Youth Forum

On June 5, 1985. on World Environment Day, United Nations Environment Programme (UNEP) executive director Dr. Mostafa Tolba made a special appeal to children and young people around the world to work together towards conserving their future through environmental protection. The following year, the Youth Environmental Agenda, "designed by young people for young people," was launched, with activities including the sharing of information and ideas about environmental protection, resource conservation, recycling, and other programs coordinated by youth. In order to strengthen ties among the world's youth, UNEP also initiated annual Global Youth Forums. Every year since 1987, several thousand children and youth from around the world have met in the General Assembly Hall at United Nations Headquarters in New York City. These Youth Forums highlight the vital contribution being made by the ever-increasing numbers of committed young people working to build an environmentally sustainable future.

The Global Youth Forums are an important component of UNEP's Outreach Programme, and aim to promote greater awareness of environmental issues, encourage direct contact between children and youth from different parts of the world, and contribute towards development of the leadership skills and confidence that will help youth assume an even greater role in caring for the Earth.

The Global Youth Forums have also become an invaluable focal point for information exchange. Young people learn about UNEP's work and its unique role as a clearinghouse of the latest and most comprehensive information on environmental issues. UNEP in turn gains insights into the continually expanding grassroots role of the environmental youth movement - insights which are incorporated into various editions of its publication, *Young Action for the Future.*

The essence of the Forums, however, is youth speaking to youth. They share their experiences of community level environmental action through talks, workshops, exhibitions and performance. The results extend far beyond those attending, as over the years the Forums have generated a formidable network of young people throughout the world. Working closely with the UN's Department of Public Information, the hundreds of thousands of youth who annually pass through the United Nations are also brought into contact with the issues raised by the Forums.

In his message to participants, Dr. Tolba has said the Youth Forum "should help leaders in the global environmental arena benefit from the energy and commitment of children and youth. For it is only by fostering awareness and building grassroots action that we can halt the current ecological crisis, and help build a sustainable world for future generations."

The participants at the 1992 Forum wrote a "Youth Declaration" that was presented to the world and the world's leaders at the Earth Summit. It succinctly and eloquently expresses the hopes and fears of the world's youth when they think about their—and the planet's—future.

For more information about UNEP, the 1993 Global Youth Summit, the Youth Environmental Agenda, or Young Action for the Future, write to UNEP, United Nations, Room DC1-590, New York, NY, 10017 212-963-7781. ❑

A Word About US/UNEP

The U.S. Committee for the United Nations Environment Program (US/UNEP) is the only not-for-profit organization dedicated primarily to supporting and promoting UNEP's work to increase environmental awareness and action in the UN and around the world.

US/UNEP aims to make UNEP well-known, positively regarded and fully supported by the U.S. public, and thus the U.S. Government as well. US/UNEP educates the American public concerning the critical environmental challenges UNEP confronts, and serves as liaison between UNEP, government, other environmental groups, industry, and the public.

A quarterly newsletter addresses current UNEP activities, related international environmental topics, and recent U.S. policy on international environmental matters. Other outreach efforts involve children and teachers. Present projects include the World Environment Day Youth Poster/Essay/Video Contests, an environmental newsletter aimed at students, books on UNEP for younger children, and increased public access to information in response to mail and phone requests.

For more information about US/UNEP, write to: 2013 Que St., NW, Washington, DC. 20009. Telephone: 202-234-3600.

The Rio Global Youth Summit

Kirk Bergstrom

A diverse group of 60 teenagers representing six continents and 25 nations gathered in Rio de Janeiro for the first annual Global Youth Summit (GYS) in June, 1992. This educational program paralleled the United Nations Conference on Environment and Development (UNCED, commonly referred to as the Earth Summit), the largest meeting of world leaders in history.

An ongoing program of the Worldlink Foundation, a California-based non-profit organization, the GYS was co-sponsored by AFS Intercultural Programs, the California Association of Student Councils, the '92 Global Forum, Pro Natura, and UNCED.

During the seven-day program, GYS delegates drafted their own version of an Agenda for the 21st Century, prepared a Youth Earth Charter for Global Citizenship toured an island rainforest preserve, met with diplomats and global thinkers, attended the Earth Summit and the concomitant Global Forum, visited a local favela (urban slum), and designed service projects for implementation in their own communities.

Special guests who joined the GYS delegates for dialogue and exchange included Jacques Cousteau, Noel Brown (North American Director, U.N. Environment Programme), Thomas Lovejoy (Smithsonian Institution), Bella Abzug (former Congresswoman), Peter Berle (President, National Audubon Society), and Maurice Strong (Secretary General, UNCED).

The youth delegate--chosen for their leadership and support roles, commitment to service, and interest in environment and development issues–held a packed press conference on the last day to announce their Youth Agenda 21 and Youth Earth Charter. Many adult attendees, including film director and actor Edward James Olmos, called it "the most inspirational experience" of their visit to Rio. The Youth Agenda 21 includes "youth action steps" related to Water Pollution, Ozone Depletion (see p. 3), Over-Consumption, Waste Management, and Youth Participation in the United Nations. A one-hour television special on the GYS is scheduled to air in April, 1993, to coincide with Earth Day celebrations. ❑

Worldlink Foundation is a non-profit organization dedicated to making available innovative educational programs to communities, schools and individuals worldwide. It provides teacher training services, develops curriculum-based learning programs, and offers channels for youth to discover solutions to global and local problems. The Foundation works with affiliate organizations in over 30 nations to equip young people with the knowledge,values, and skills required to effectively participate in our rapidly changing, multicultural world.

In addition to sponsoring the GYS, Worldlink is currently involved in EnvironmentBridge, which seeks to connect the classroom with real-world issues and experiences. The program features an integrated curriculum motivated by students' global and local environmental concerns, international electronic mail and computer conferencing between sister schools, student authorship of an Agenda for the 21st Century, and student-initiated environmental action service projects.

EnvironmentBridge debuted in October, 1991 with seed funding from the EPA Office of Environmental Education, and draws upon the resources of a number of leading educational and environmental organizations, including the Alliance for Environmental Education, National Science Teachers Association, The Smithsonian Institution, Institute for Global Communications, PBS, and the United Nations Environment Programme. Sir Francis Drake High School/ Marin School for Integrated Studies in San Anselmo, California, and Our Lady of Mercy School in Rio de Janeiro, Brazil, served as pilot schools.

Worldlink also produced an award-winning film entitled "Spaceship Earth" (an Emmy for outstanding special). The film is hosted by Krystyn Haje of the popular TV show "Head of the Class," and features rock star Sting and his efforts to save the rainforests and their indigenous peoples. It also features young people from around the world who are making a difference in their communities, and leaves the viewer with an upbeat message about "saving the planet" through many small, seemingly-inconsequential personal actions.

For more information about Worldlink, EnvironmentBridge, "Spaceship Earth," the Youth Agenda 21, or ongoing follow-up activities to the Rio GYS, including plans for this year's GYS, contact Worldlink at 2955 Clay Street, Suite 7, San Francisco, CA, 94115. (415) 931-6952.

(Following is an excerpt from Youth Agenda 21. It is reprinted with the permission of Worldlink Foundation.)

OZONE DEPLETION

The delegates of the Global Youth Summit feel that a vital environmental issue is the depletion of the ozone layer. Due to excessive emissions of chlorofluorocarbons (CFC's) and other chemicals, holes have formed in the protective atmospheric layer which prevent harmful ultraviolet rays from penetrating to the Earth's surface.

Current State

The current state of the ozone layer is frightening. One CFC molecule released into the atmosphere can break down 20,000 molecules of ozone, and presently there are 15,000 metric tons being released into the air per year. The CFC molecules remain in the atmosphere for 100 years. Therefore, the damage done by the massive emissions in the last two decades will continue to affect the next three generations. Some of the effects already apparent include a 6-12% decrease in the amount of phytoplankton in the world's oceans. Phytoplankton is at the base of the food chain and produces 90% of the world's oxygen. Increased ultraviolet radiation has induced blindness in 12-15 million people and has impaired the vision of 18-30 million others. Every 1% decrease in the ozone layer causes a 4-6% increase in the number of skin cancer cases across the world. The effect of UV radiation has similar effects on livestock and lowers agricultural yields. The other leading chemical involved in ozone breakdown is Hydrochloride (HCl). This chemical is released in the launch of space shuttles at the rate of 240 tons per launch. At this rate, the space shuttle alone could cause a 10% decrease in the ozone layer by 2005.

Preferred State

Our vision is that one day there will be no holes in the ozone layer. In the immediate future we want to see every government act on the treaty signed at UNCED in Rio de Janeiro, and enforce CFC bans in their countries. We advocate a well educated population that sees the harm in ozone depletion and takes positive action to help eliminate the problem. We want to be able to go out under the sun without fear of skin cancer or blindness. We envision a world where life can be sustained.

What Youth Can Do

- Minimize or eliminate the use of ozone-depleting chemicals in one's life.
- Organize a boycott of products or manufacturers of products containing CFC's. This would include pressuring local stores to purchase and sell ozone-friendly products. Use letters, demonstrations, petitions, and direct individual contact.
- Provide education to local communities:
  - public television and radio announcements;
  - local newspapers;
  - organize meetings.
- Encourage schools to use ozone-friendly products.
- Organize letter writing campaigns encouraging governments to pass legislation to further awareness of the danger, putting funds towards research of the issue, and providing environmental education for elementary and secondary school students.

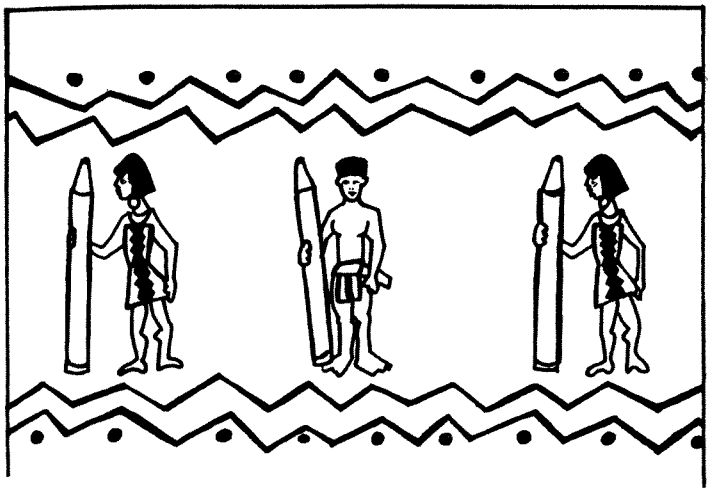
Crayon Power

Libby Bassett

Would you be surprised if your kid wrote the President about solar power? Or sent a letter to Brazil's Justice Minister urging him to protect rainforest people and products? Or if this same kid visited your local lumberyard to make sure the wood they sell doesn't harm earth's biological diversity?

You might wonder how your child got to be so environmentally aware, so politically savvy, so clever. You might ask him or her. Then you would learn about **Crayon Power**, the environmental action magazine for concerned kids, now completing its second year of publication.

Recommended by the United Nations Environment Programme, Scholastic Magazine's *Super Science Blue* and Cultural Survival, **Crayon Power** gives kids information they can act upon. Written in words most third and fourth graders can comprehend, **Crayon Power** information and action letters can be used by people of all ages to learn more about the environment — and do something about it.



By turning pollution and other development problems into picture-page solutions that children can color, tear out, fold and mail to adult policy-makers, each **Crayon Power** topic becomes a lesson in civics and personal responsibility. Because it is both informative and hands-on, teachers across the United States are using **Crayon Power** to add action to environmental studies.

The 40-page fall/winter 1992 issue updates and broadens the letter-writing message of the first **Crayon Power**, called "How We Helped Save the Rainforests," by providing other activities, like nutrition-smart recipes, face-painting, stickers and a story about a Druid and a little girl who loved trees.

The second **Crayon Power**, "How We Helped Save the Planet," broadens young horizons, with facts about solar power, medicinal plants and indigenous peoples. The spring/summer 1992 edition tackles many of the same problems world leaders debated at the Earth Summit last June: global warming, biological diversity, native rights, homeless children, clean water, toxic waste and recycling.

For two years, young "Crayon Warriors" have sent letters around the world. Next they will think globally but act locally. **Crayon Power's** first issue of 1993 will be developed in cooperation with New York City's new Environmental High School. Teams of EHS students and teachers will research and write about the environmental problems that affect them most. They will develop model projects other kids can emulate to create their own community plan of action, one based on the Earth Summit schedule for governmental action, Agenda 21.

The students will rely on information from **Crayon Power's** own network of environmental groups, which includes Greenpeace, Rainforest Action Network, Rainforest Alliance, and the Women's Environment & Development Organization (WEDO).

Created with grants from the Mary Reynolds Babcock Foundation and Give to the Earth (the Aveda Foundation), **Crayon Power** profits already help to support a student newspaper written and illustrated by children in the Brazilian rainforest.

Individual copies retail for $4.95 and are avaiable by mail-order direct from **Crayon Power**, or at Barnes & Noble/B. Dalton Bookstores across the country, and the United Nations Bookstore in New York City. Crayon Warrior membership is $25, and includes a t-shirt and two **Crayon Power** activity magazines per year.

For more information, write to Jennifer Ley, Project Director, c/o Crayon Power, P.O. Box 34, Jersey City, N.J. 07303-0034 (201) 433-3026. ❑

Plan It for the Planet

Children Across the U.S. to Take the Power Pledge and Speak Up for a Clean, Safe Energy Future

Kids are voicing their worries about the environment and their promise to protect it. "We want a clean, safe future," said Chris DiNero, a sixth-grader in Long Branch, New Jersey.

In the Spring of 1992, Chris DiNero and more than 500,000 American children joined the Children's Earth Fund's CO_2 Challenge to "beat the heat" and stop global warming. Each promised to save a ton of CO_2 through simple energy-saving steps that they selected.

For 1993, the Children's Earth Fund, a non-profit, environmental education organization, announces its next campaign, "Plan It for the Planet." In classrooms, clubs, and at home, kids will explore how sun and wind power can make possible a shift away from fossil fuels. They will be invited to take a "Power Pledge," promising to open America's way to sun and wind power, and to be energy-efficient.

Nickelodon, the first kids' network, and the Children's Earth Fund, will co-host the "Plan It for the Planet" Earth Summit at Nickelodeon Studios in Orlando, Florida, April 16-18. Kid delegates (selected through an essay contest) will learn about new energy choices and plan how to convince grown-ups-- including parents, teachers and political leaders -- to make clean energy a priority. A Nickelodeon Special Edition is planned to inform and involve Nickelodeon's 20 million viewers.

"Nickelodeon's mission is to give kids a voice. Our job is not only to entertain, but to offer tools kids can use to help shape our future," said Nickelodeon president Geraldine Laybourne, who added that "Nickelodeon Studios is a great place for kids to experience and explore new ideas."

In thousands of "Plan It for the Planet" classrooms, youngsters will learn about sun power by building solar box cookers (an insulated box that cooks food by trapping in heat from the sun). The blueprints for the solar box cooker will be provided in free teachers' guides for grades 4 through 6. They will be distributed to 100,000 classrooms through Scholastic Magazine, Inc., and kids' environmental groups. During Earth Week (April 18-24, 1993), the children will demonstrate this simple technology to their community. Many will use their homemade solar box cookers to celebrate Earthday by holding "sun-cookie" bake sales and "solar-cues."

At these local events kids can ask others to take the "Power Pledge" and raise "Pennies for the Planet." All the money raised will send solar box cookers to classrooms in countries around the world where sunshine is plentiful but firewood scarce. The solar box cooker is a safe, practical alternative to burning firewood, which causes air pollution and deforestation. The cookers can also be used to purify drinking water.

Throughout the "Plan It for the Planet" campaign, kids will not only learn about renewable energy and CO_2, but will work to open the way to sun and wind power.

"Kids know the Earth is in trouble and are willing to do their part to restore it. This campaign will help them be heard," said Annie Brody, Director of the Children's Earth Fund.

The "Plan It for the Planet" teachers' guide, including specifics on the essay and poster contests, is free. Teachers should send a written request with their grade level and school address to: Children's Earth Fund, Box 2335, 175 5th Ave., New York, NY 10010 (212) 727-4493. ❑

Clinton Hill's Dream Lives On

by the Target Community Relations Staff

Clinton Hill was a nine-year-old environmentalist. He was a passionate nature and science lover who believed that kids could really make a difference in helping save the planet. He was concerned about the neglect we show for our endangered animals. He was always turning off lights, riding his bike instead of asking his parents to drive him, pestering his parents to recycle, and cleaning up the neighborhood. When he was in sixth grade, he invited his friends and classmates at Sunny Hollow Elementary School in New Hope, Minnesota, to form an environmental club with him. At the time he was diagnosed with a malignant brain tumor. But his concern for the air we breath and the water we drink had already laid the groundwork for a national environmental organization called Kids for Saving Earth. On November 27, 1989, a year after the club was started, Clinton died of cancer. But his dream lives on.

An executive from Target Stores, a division of Dayton Hudson Corporation, was invited to speak to Clinton's class at Sunny Hollow about what businesses can do for the environment and what protection efforts Target was making. After meeting the kids and witnessing their dedication to helping the planet, Target immediately began its support for Kids for Saving Earth in 1989, helping Clinton's parents, William and Tessa Hill, turn their son's dream of educating and empowering children to help save the planet into a national organization. Brochures with details about Kids for Saving Earth were inserted into 33 million Sunday newspaper advertising supplements on Earth Day, April 22, 1990.

Books explaining how to start a KSE chapter were designed and distributed free to schools, parents and club advisors. Target broadcasted commercials nationally during Earth Week promoting the club and gave away millions of posters and educational materials listing ways for children to help protect the environment. Membership to KSE is free and includes certificates, educational materials and a quarterly mailing of KSE News. Today there are 23,000 clubs and 700,000 members worldwide in 46 countries.

KSE Clubs have touched many people. They've involved family members by working with them to conserve at home. They've marched in parades to inspire community members to protect the Earth. And they've even traveled to the United Nations to show the world what kids can accomplish. During the U.N. Earth Summit in Brazil, KSE sent 14-year-old member John Hegstrand to represent kids in the United States. Along with financial support, Target has writers, artists, environmentalists, and its nationwide network of employees working alongside KSE to help tell others how they can start Kids for Saving Earth Clubs.

☆ Target stores are the official "KSE Information Station." Near the snack bar in each store is a booth with free KSE materials and a bulletin board to display and promote some of the most recent KSE activities. That way, ideas can be

Target Earth

Target Stores has recently expanded its commitment to Kids for Saving Earth with the production of a new environmental education curriculum, Target Earth.

Written by the Center for Environ-mental Education at Hamline University in St. Paul, MN., the curriculum covers a full school year, with a plan for each quarter that includes practical, significant projects and experiments for students. The curriculum package, sponsored by Target Stores and Hanes, provides teachers with the materials needed to cover four environmental topics: Air, Land, Water and Living Creatures.

Every student in participating classrooms receives a Hanes T-shirt at the beginning of their studies and earns colorful Earth Achievement Badges for completing each area of study. These unique iron-on badges represent air, land, water and living creatures and, as a unique twist, they fit together like puzzle pieces to create the Target Earth logo on the T-shirt.

The Target Earth study guide was given free to teachers who responded to advertisements about the program. Teachers who are interested in participating in the 1993-94 school year can pick up a Target Earth brochure at the "KSE Information Station" in their local Target store, or can write to Target at 33 South Sixth St., P.O. Box 1392, Minneapolis, MN 55440.

shared with other clubs.

☆ At each store, a KSE coordinator can help answer questions. The coordinator helps with KSE projects, provides meeting space for clubs if desired, speaks about KSE at conferences, workshops, and schools, coordinates special activities, provides shopping carts for trash pick-up drives and recycling efforts, and offers KSE materials as hand-outs at community events.

☆ Target provides funding to publish and distribute a KSE newspaper four times a year, full of tips and activities to keep all clubs busy. *KSE News* has a circulation of 2 million.

Today, children all over the world are honoring Clinton's peace-loving spirit — by recycling, conducting clean-ups, planting trees, protecting endangered species, and in general, setting an example, through their actions, for the rest of us.

Clinton has been honored by the adult world as well. On World Environment Day, 1991, at a special ceremony at the United Nations, he was posthumously presented with a "Green Nobel," along with five other environmental leaders including the prime minister of Norway, the president of the United Mexican States, the Dalai Lama of Tibet, the executive director of United Nation's Children's Fund (UNICEF), and Ted Turner. Tessa Hill, now president of KSE, accepted on her son's behalf.

For more information, write to Kids for Saving Earth, P.O. Box 47247, Plymouth, MN 55447. ❑

Youth & The Environment

continued from inside front cover

The Boys and Girls Clubs, the National Association of Service and Conservation Corps, Campus Compact, Cool It!, Izaak Walton's Save Our Streams, The Center for Marine Conservation's national beach clean-up campaign, and YMCA's Earth Service Corps are all such programs. (Certainly, Renew America and The Environmental Exchange fit this category as well.)

Our original idea was to put together a "comprehensive" document on youth and the environment. Three years later, the best word to describe what has actually come to be might be "eclectic." It soon became apparent that no number of articles or pages was going to be adequate to do a comprehensive job. The focus shifted from "comprehensive" to "representative" of as many facets of the environmental education field as possible"—national environmental groups, child-initiated school groups, youth development/civic programs, international conservation/education efforts, clearinghouses, college-age programs, business-community partnerships, urban programs, publications, etc. Even with all of this, there are some "deficiencies," which we hope to redress in future issues of *Nature Study*: federal government initiatives, awards and grants, computer software and networks, so-called "adoption" programs, career awareness and internship opportunities, and more of just about everything—publications, examples of corporate support, governmental programs, etc.

Anyone out there with information on any of these topics, or on anything else that falls under the broad category of "youth and the environment" should send it to me. I, too, think we spend too much time re-inventing the wheel, which is why I have agreed to produce an on-going "Youth Column" for *Nature Study*. Considering the precarious state of our environment, we just can't afford starting from scratch in every community, youth center or classroom where somebody wants to do something to help the environment. The models are out there: those of us in environmental education need to take it upon ourselves to be well-educated (better educated than we are now?) about such models and to spread the word to those who want to "get involved" but just don't know where or how to start.

It seems to me there is a growing trend in environmental ed to provide children with community service opportunities as the end result of their studies; perhaps *our* "community service"—above and beyond what we are already doing—could be to recommit ourselves to being better educated about such exemplary, easily replicable models, and to go out of our way to spread the word about them. Don't we all seek expert advice on topics we know little about? Of course we do. Every person who asks for our expert assistance should be viewed as an opportunity to discharge this civic/environmental responsibility. In the long run, it's for our own children, too; they all deserve our very best efforts. And when you think about it, they'll never forgive us if we give them anything less.

S.D.,
Guest Editor

Sean Duffy, an ANSS Board member, is a teacher of fifth graders, and lives in Reston, Va. ❑

Kids Against Pollution

Tenakill School, Closter, N.J.

(This article is excerpted from KAP's 1992 Environmental Rights Day program.)

KAP is a group of kids who are learning about the complexities of pollution problems and their solutions, about the United States Constitution, and about making a real and signifcant difference in our community and in our nation. We began here at Tenakill School in September 1987 with the help, inspiration, and enthusiasm of our fifth grade teacher, Nick Byrne. It is he who made the study of the First Amendment right to free speech come alive.

We learned as much as we could about pollution problems so that we could have an informed opinion; we learned as much as we could about our political system so that we could express our opinions. We networked with other students so that we could really make an impact. To date, there are over 1000 KAP chapters across the United States, as well as in New Zealand, the Bahamas, Germany, the Netherlands, Mexico, Canada, Great Britain, Norway, Guatemala and Australia. KAP has been featured in a Soviet children's magazine, KOCTEP.

We have used our First Amendment rights well. Thousands of letters have been sent to newspaper and magazine editors and, or course, to public officials, about environmental concerns. Beach pollution, recycling, sewage disposal, and air pollution are just a few of our interests. The Closter Board of Education banned the use of styrofoam products in our school system after our presentation to them about its dangers. We have also succeeded in instituting the use of recycled paper throughout the Closter School System. We are presently trying to convince our Mayor and council to join Marcal Paper's "Municipal Outreach Program" to enhance our existing recycling program and save Closter money as well. We have spoken at churches, synagogues and schools, to our Mayor and Town Council, to the New Jersey DEP, and to the New Jersey and New York State Assemblies. We have testified at an EPA hearing in Washington, D.C.

To cover expenses, we have held car washes, cake sales, popcorn sales, and volunteer service auctions. Radio and TV stations have taped us; newspaper and magazine writers have interviewed us. KAP has been honored to receive several awards. Among them are "Take Pride in America," President Bush's "Thousand Points of Light" contest, and "To Give and Learn," a program designed to identify and honor outstanding teacher-student community service in America, sponsored by IBM in association with *U.S. News and World Report.* Along with 80 students from all over the world, and a dozen Nobel Prize winners, one of our students was selected to spend a week in Holland at the Peace Child Europe Conference. Our Environmental Bill of Rights was presented at the 1989 United Nations Youth Forum on the Environment. It has since been introduced as an amendment to both the New Jersey and the United States constitutions, by Assemblyman John Rooney and Congressman Frank Pallone Jr., respectively. (See box on p. 9)

Today we participate at our fourth annual Environmental Rights Day along with environmental groups, political leaders, entertainers, and friends. We learn and share our enthusiasm and our belief that we can work together successfully toward a cleaner, safer environment for all -- "not just for us but for future generations."

For $6, KAP will enroll you in the group and send you lots of information on pollution and what kids can do about it. Their 5th annual Environmental Rights Day is scheduled for May 15, 1993. Write to KAP at P.O. Box 775, Closter, NJ 07624. ❑

Environmental Bill of Rights

Our legislators are mandated in the Preamble of our Constitution to provide for our general welfare. Because of this, we believe we are entitled, by law, to clean air, land and water.

It does not appear that our right to a clean environment is being upheld. Therefore, we propose that an amendment be made to our State and National Constitutions which will mandate specific environmental rules. In this way, because all legislators have taken an oath to uphold the constitution, they will be compelled to enact and enforce the law.

AIR

We have a right to clean air uncontaminated with the poisonous byproducts of industry. We have the right to an atmosphere free of chlorinated fluorocarbons and high levels of carbon monoxide both of which are, today, contributing to a global warming (also known as the "greenhouse effect"). Every reasonable means should be taken to promptly accomplish this task.

WATER

Water is the life blood of our planet. We have the right to uncontaminated drinking water, not water that is increasingly laden with toxins and industrial byproducts. We have the right to swim in our Nation's waterways, to see its shores free of waste from ocean dumping, to catch fish that are not laden with mercury, PCB's, lead, dioxin, or other substances harmful to life.

LAND

Our land is a precious resource. We cannot continue to dump our waste on it without taking the strictest precautions. There must be tighter control of dumping and the lining of landfills, where landfills are necessary, to prevent contamination of the water supply. Recycling must be made mandatory and recycled products should be encouraged through tax breaks and government purchasing. We must reduce the volume of waste by returning it to its manufacturers.

EDUCATION

Finally, Environmental Education should be a subject taught as a separate course for at least one month each year starting at kindergarten and culminating in the 12th grade. This course should be a practical one which emphasizes how we can conserve our resources and how to eliminate all forms of pollution.

(Reprinted with permission of Kids Against Pollution.)

From Honduras to Hungary to the Gambia:

Environmental Education and the Peace Corps

Judy Braus

Along a strip of sandy beach in Tonga, a group of students carrying huge sacks donated by a local business are picking up plastic, metal, cans, rubber, and other debris washed up by the waves. Led by a Peace Corps volunteer, these students are spending their Saturday mornings helping to clean up Tonga's littered beaches.

On the other side of the world, in the hot Gambian sun, another Peace Corps volunteer is taking a group of village teachers on a walk through Kiang West—the country's newest national park. Together they are discussing how they can use the park to educate their students about the Gambia's natural resources and the problems with burning and deforestation.

These are just two examples of how Peace Corps volunteers are working to help improve environmental quality through education. Peace Corps has been actively involved in environmental education activities since the first volunteers traveled overseas in the early 1960s. Many countries have asked for Peace Corps volunteers to help them design effective environmental education programs—from infusing environmental contact into existing curricula to designing "nature newsbreaks" for local radio. And for more than thirty years, volunteers have been doing just that—working in schools, parks, local government, non-governmental organizations (NGOs), outdoor education centers, extension offices, and tree nurseries to help people gain awareness and knowledge about environmental issues and take action to improve environmental quality.

Given the increasing severity of global environmental problems, the growing importance of environmental education, and the need for comprehensive training and support, Peace Corps established a formal environmental education assignment area in 1989. Since then, more than 300 volunteers specializing in formal and nonformal environmental education have joined forces with the more than 1000 volunteers working on environmental projects as their primary or secondary assignments. Volunteers with degrees and experience in environmental education, science teaching, outdoor education, nonformal education, and related areas are currently being recruited to meet the demand for environmental educators.

Peace Corps activities and approaches

Emphasizing public participation and individual responsibility, Peace Corps programs are designed not only to increase awareness about issues but also to build problem-solving skills, group cooperation, self-esteem, and positive attitudes, and to decrease the sense of hopelessness. Like all Peace Corps programming, environmental education projects are developed in response to requests from the field and are designed to fit the physical, cultural, and social conditions of each country.

Examples of the environmental education projects that Peace Corps volunteers and their host country counterparts are involved in around the world include:

Environmental Education in the Schools: In many parts of the world, volunteers are working as teachers, teacher trainers, and curriculum developers to help integrate environmental education into the formal education system. In Tonga, Western Samoa, Fiji, Malawi, and Botswana, volunteers are incorporating environmental content into math and science lesson plans.

School children in Guatemala take part in environmental education activities.

In Hungary, Poland, Gabon, and Sri Lanka, volunteers who are teaching English as a foreign language use environmental issues to develop content based lesson plans. And environmental education volunteers in Belize, St. Kitts, Costa Rica, Paraguay, the Comoros Islands, and Honduras are working closely with the Ministries of Education to train teachers in hands-on discovery teaching and

to develop stupplementary curriculum materials that focus on country-specific environmental problems.

Environmental Education in Parks, Youth Centers, and Zoos: Environmental education is also a major component of Peace Corps nonformal education programs. Volunteers in Sierra Leone, Senegal, Poland, and Chile are working as interpreters in parks and protected areas, as youth leaders and club organizers in rural and urban commtlnities, as educators in museums and zoos, and as extension workers in forestry and agroforestry programs. Through nature hikes, interpretive displays, wildlife clubs, extension programs, and field trips, nonformal environmental education helps targeted audiences get involved and motivated. Nonformal education activities also help build community spirit and cooperation.

Community Outreach: Education is also an important part of Peace Corps environmental outreach programs designed to help communities understand and address local environmental problems. Volunteers, working closely with their local colleagues, help assess environmental problems, investigate feasible solutions, develop appropriate educational campaigns, and evaluate program effectiveness.

In Sierra Leone, Botswana, the Eastern Caribbean, Paraguay, and Tonga, volunteers have developed environmental newsletters, radio spots, and community leadership workshops to address specific environmental issues and encourage local participation. In Budapest, Hungary, volunteers are working with local officials to plan a system of urban bike trails to help lessen dependence on fossil fuels and decrease air pollution. Through public education campaigns and rallies, volunteers are helping to motivate citizens to get involved!

Environmental Education workshop models

Training is a critical component of Peace Corps environmental education initiative. During hands-on, participatory workshops, Peace Corps volunteers and their counterparts have an opportunity to learn more about formal and nonformal environmental education. Taking an "awareness to action" approach, these environmental education workshops help participants understand environmental issues and examine personal beliefs and perceptions about the environment.

To expand the reach and impact of training, Peace Corps also supports activities that train host country experts to conduct local, regional, and national workshops. These "Training of Trainers" workshops help build local capacity among host country educators, government agency personnel, and the staffs of non-governmental organizations and provide professional development for participants.

Looking Ahead

From English teaching in Estonia to small business programming in Chile, environmental education is a process that cuts across all disciplines and touches all volunteer activities, including health, agriculture, small enterprise, education, urban, and youth projects. As we move toward the 21st century, environmental education will continue to play a critical role in Peace Corps' development activities worldwide, helping citizens of the world take an active role in managing their resources sustainably and improving the quality of life in their communities.

Gardening in Botswana.

This article originally appeared in the September/October 1992 issue of Network Exchange, *newsletter of the Alliance for Environmental Education, of which ANSS is a charter member. Judy Braus is a former environmental education specialist in the Environment Sector of the Peace Corps. She is now director of environmental education for the World Wildlife Fund. For more information on Peace Corps environmental education activities, write to: U.S. Peace Corps, Environmental Sector, Office of Training and Program Support, 1990 K Street, NW, Washington, DC 20526. For information on becoming a Peace Corps Volunteer, call (800) 424-8580, ext. 2293.* ❑

El Bosque Eterno de los Niños

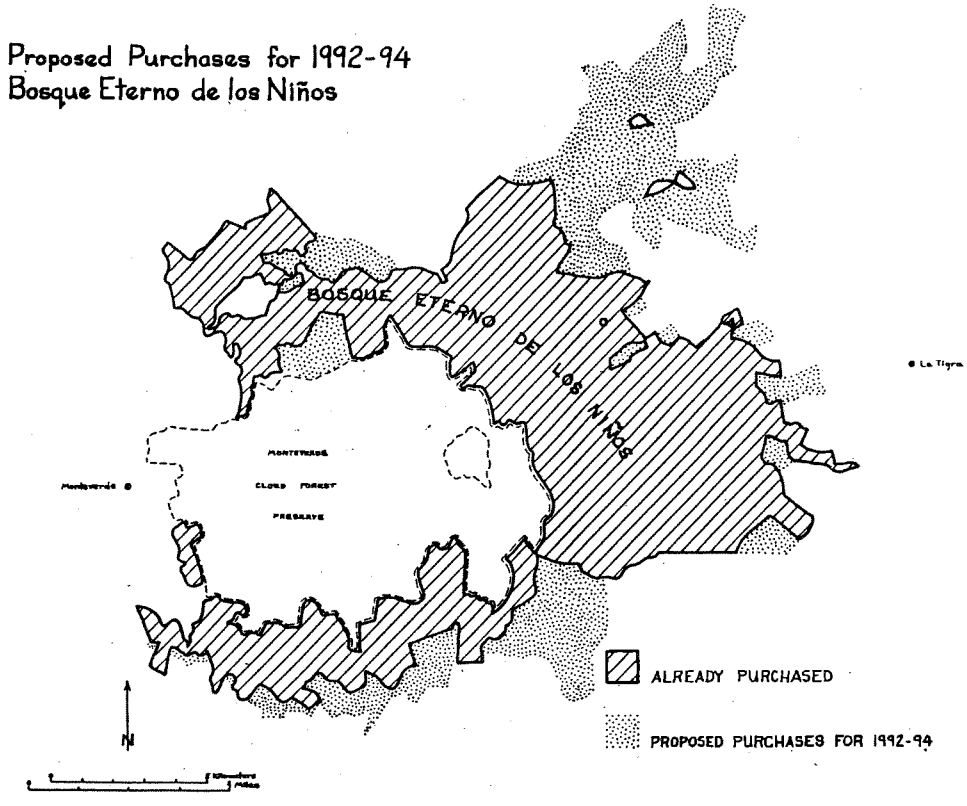
Monteverde Conservation League

Inspired by a Bates College tropical ecologist and a group of caring elementary school children in Sweden, children all over the world are raising money in a variety of ways and donating it to a conservation organization in Costa Pica. As a result, a dream is taking shape. Called Bosque Eterno de los Niños (Children's Eternal Forest), it is the first international children's rainforest in the world, a rainforest being saved by and for children, for the planet itself, for now and for tomorrow.

Established near the village of Monteverde in the Tilarán Mountains of northwestern Costa Rica in 1988, (adjacent to the Monteverde Cloud Forest Preserve—see map), Bosque Eterno de los Niños grew rapidly to 18,000 acres in its first two years. As of the fall of 1992, 32,827 acres had been saved, with the hope that several thousand more will be added in the next few years. As we all know, time is of the essence: acreage equal to the size of Iowa is being cleared in the world's tropical rainforests every year—that's 50 to100 acres lost every minute. To date, over $2 million has been donated to the cause worldwide, with approximately $300,000 coming from the United States.

The dream of a rainforest saved by children began in 1987 at a small primary school in rural Sweden. The study of tropical forests prompted nine-year-old Roland Tiensuu to ask what he could do to keep the rainforest and the animals who live in it, such as resplendent quetzals, tapirs, monkeys, and jaguars, safe from destruction. Roland's question launched a group campaign to raise money to help the Monteverde Conservation League buy and save threatened rainforest in Costa Rica. With the guiding hand of teacher Eha Kern and her husband, Bernd, and the assistance of tropical biologist Sharon Kinsman, the Bates College (Lewiston, Maine) professor who first introduced the Monteverde Forest to the school, Roland and his classmates raised enough money to buy 15 acres of the rainforest.

Out of this initial success, a group of children dedicated to saving the tropical rain forest formed Barnens Regnskog, ("Children's Rainforest" in Swedish). The vision took hold and soon other groups organized to lend a hand: The Children's Rainforest U.S., Children's Tropical Forests U.K., Nippon Kodomo no Jungle (Japan). As the spirit sweeps across other lands, more groups are forming



and individual contributions arrive from the far corners of the globe.

The international project to save this piece of Costa Rican rainforest is coordinated by the Monteverde Conservation League. Costa Rican and international staff and volunteers work throughout the area in forest preservation, reforestation, soil conservation, environmental education, and sustainable development.

Springing from the children's vision, the league now has a dream of its own: an educational center in the Bosque Eterno de los Niños. There children from around the world can join Costa Rican children in environmental workshops and outdoor leadership training, young people can come together in an international theater fest that focuses on the environment, and a library will hold teaching and learning resources about the environment for children and adults.

Fund ralsing projects for the rainforest have been as varied as the children involved in them. They have collected aluminum cans and glass, baked cookies with rainforest ingredients (vanilla, chocolate, ginger), asked for an acre of rainforest as a birthday or Christmas gift, put on school performances, saved their allowances and spare changed, sold t-shirts, held garage sales, planted trees, and undertaken a host of other projects all in the name of rainforest preservation. One pre-schooler from Maine even donated $7 from the profits of her lemonade stand, and a group of sixth graders from Pownal Elementary School in Portland, Maine, actually visited a Costa Rican rainforest in August, 1991, and subsequently travelled about southern Maine visiting other schools and sharing their experiences.

Currently, an acre of rainforest costs about $100. All donations are formally acknowledged by the Monteverde Conservation League, and for donations of $50 or more, the league will send you an illustrated certificate and a one-year subscription to their newsletter, "Tapir Tracks."

Purchasing the rainforest, however, is not enough. It must be protected, too. The league's ongoing work in environmental education is a vital, long-term component of protection, but guards are also needed to patrol the rugged terrain, to watch for fires, illegal hunting, or logging. A small part of every donation goes into an endowment fund for protection and maintenance, to ensure that the Children's Eternal Forest is indeed, forever.

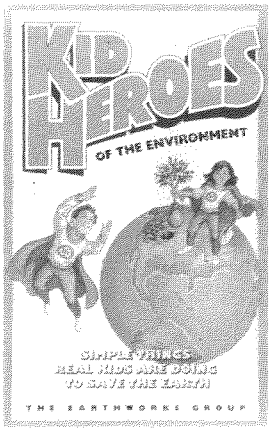
If you would like more information, write to: The Children's Rainforest U.S., P.O. Box 936, Lewiston, Maine 04240. Please enclose a long, self-addressed, stamped envelope. Enclose a $3 check if you would like to receive a 22-page educational resources guide. ❑

Books for Young People

Kid Heroes

Reviewed by Sean Duffy

In our special issue of *Nature Study* commemorating the 20th anniversary of the first Earth Day ("Environmental Celebrations," Volume 44, Numbers 2 & 3, February 1991), we printed an article by Diane Wiessinger entitled "Acting Lessons," which reviewed en masse 17 books that fit the generic category of helping individuals become more "green" in their everyday decisions and lifestyles. The main premise of all the books was that *wanting* to help the planet and *thinking* about helping the planet are both all well and good, but when it comes right down to it, the only thing that really counts is actually *acting* to help the planet.



Included in that review were two enormously popular books by The Earthworks Group of Berkeley, California: *50 Simple Things You Can Do to Save the Earth*, and *50 Simple Things Kids Can Do to Save the Earth*. Following up on the success of those books is The Earthworks Group's most recent publication: *Kid Heroes of the Environment*. As the authors say, the *50 Simple Things* books described what people--including kids--could do to save our planet, whereas *Kid Heroes* is a collection of stories about "simple things real kids are *actually doing* to save the Earth." One "hero" found in the book is Melissa Poe of Nashville, Tennessee, who is also a "Giraffe," and who is featured in our article "Stick Your Neck Out."

The book provides step-by-step details of how the "heroes" developed their plans and the actions they took, with results to date. Under the heading "You Can Be A Hero," they list addresses of organizations with information to help interested individuals emulate the particular program profiled. Several kids' "eco-groups" are listed in an appendix, as are a number of groups honoring kid heroes, many of whom are described elsewhere in this issue of *Nature Study*.

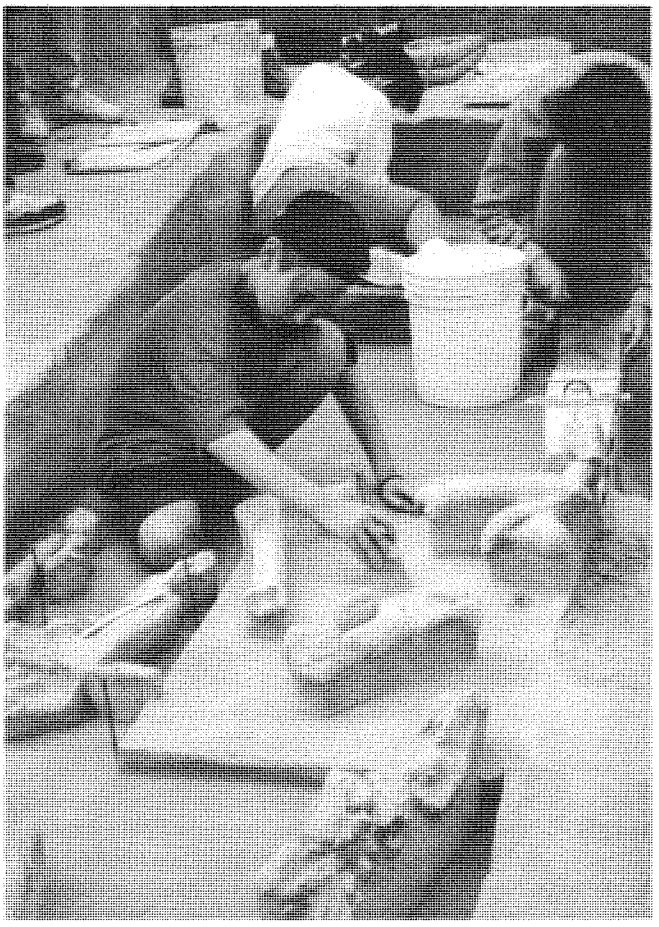
If you would like more information about The Earthworks Group or their publications, you can write to them at 1400 Shattuck Avenue, #25, Berkeley, CA 94709. ❑

Serving the Planet

Stephanie Barnhizer

Earthwatch, founded in 1971, is a non-profit international organization that sponsors scientific field research investigations into environmental and cultural issues around the globe. The mission of Earthwatch is to improve human understanding of the planet, the diversity of its inhabitants, and the processes that affect the quality of life on Earth.

The founders of the organization recognized that scientists, like entrepreneurs, need three resources to put their ideas across– funding, volunteers, and visibility. They saw that people need to be given equity in



Life will never be the same for this high school student participating in an Earthwatch project at Bison Kill paleontological dig in Nebraska.

solving problems that affect the quality of their lives, while participating in something larger than themsleves that is adventurous as well as altruistic.

Volunteers, who make up our "EarthCorps," have supported 1,523 projects in 111 countries on a cost-share and hands-on basis. For 10 days to three weeks, volunteers assist scientists in the field and work side by side at the forefront of research on some of the most pressing issues of our day. Insight, enthusiasm, and new-found skills are the fruits of partnerships between Earthwatch volunteers and scientists. Artists render into watercolor previously unknown rain forest insects. Dentists uncover 2,000 year old mammoth bones. Television producers climb glaciers to conduct geological surveys. Lawyers dance with Balinese children. Teenagers, having returned home with broadened horizons, mobilize peers around a local environmental issue, replicated from an Earthwatch expedition. Teachers gain a professional boost when they see themselves as scientists who lead students in problem-solving activities.

While known primarily as a scientific research organization, Earthwatch recognizes the benefits of educating the general citizenry, especially teachers and students; therefore, we actively encourage their participation in our expeditions. We do this by developing collaborative programs and affiliations with teacher organizations in major urban areas, with state science teacher associations, and with art and science academies. We also have developed programs targeted at teachers of specific grade levels focused on specific conservation issues, such as rain forest preservation and protection of endangered species. (So far, 113 teachers from New Jersey alone have worked with us in rain forests, and have come back and written curriculum for use with children all over the state.) As added incentives, graduate credit is available through Bank Street College in New York City, and some funding for teachers is available from private donors, foundations, and corporations. To date, over 2,500 teachers and 3,000 students have participated in Earthwatch expeditions.

The educational value of participating in Earthwatch research expeditions is appreciated year after year by teachers in the U.S.A. and overseas. New curricula has been created and rewritten for thousands of elementary, middle, and high school classrooms. TBS, PBS, and the BBC have produced television documentaries from Earthwatch field sites, volcanoes to dolphins. Textbook publishers (e.g., ScottForesman) have included hands-on uses of Earthwatch in their science and mathematics curriculum materials, and MECC Corporation has designed and marketed a computer software program simulating Earthwatch projects.

Several schools are using our field-based learning as the design for whole courses and project themes. As one example, Concord Academy in Massachusetts uses Earthwatch expeditions as the foundation for their new 9th grade Environmental Studies course. As another example, and in response to President Bush's

America 2000 strategy, Earthwatch joined a team of organizations and schools, submitted a winning design for "break the mold schools" to the New American Schools Development Corporation (NASDC), and now is building a project-based, skills-based curriculum from many of Earthwatch's research expeditions.

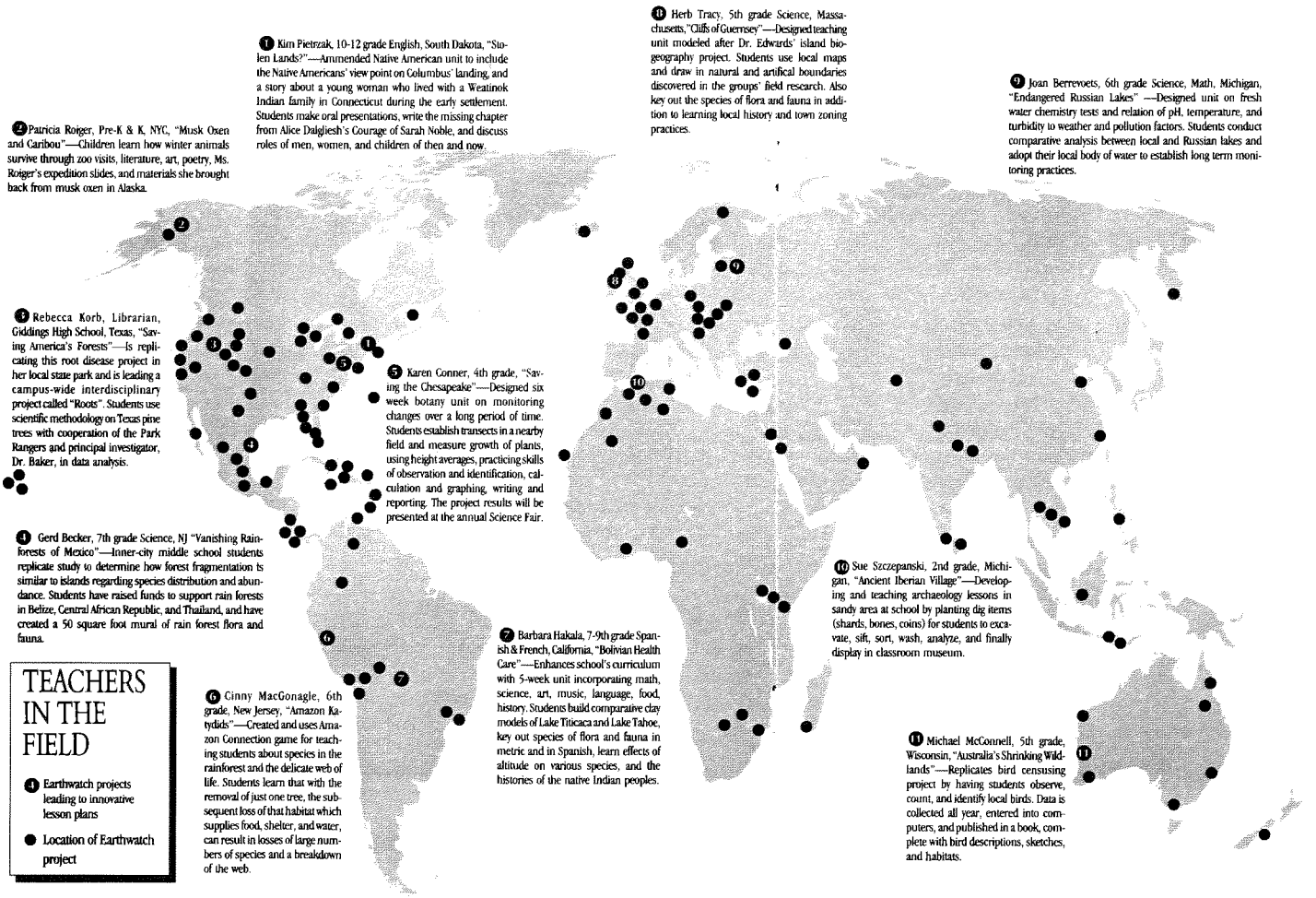
This exciting project is called The Co-NECT School (for "Cooperative Networked Educational Community for Tomorrow," pronounced "connect"). It is a partnership– a coalition of educators, corporations, and community leaders in the Commonwealth of Massachusetts, led by Bolt, Beranek and Newman, a world leader in communications technology. In addition to Earthwatch, the Co-NECT Partnership also includes Apple Computer, NYNEX, Lotus Development Corporation, several non-profit organizations, Boston College, and two pilot schools in Massachusetts. The Co-NECT School design will enable local communities to create their own schools that will bring together students, teachers, administrators, parents, and community leaders in radically new arrangements.

Students will be engaged in rigorous investigations with local, national, or global interest. Most activities will be undertaken with the use of interactive, multimedia and networked computer technologies, bringing the "real world" into the classroom. The Co-NECT School will be almost as good as being in the field on an Earthwatch expedition– almost.

Of course, nothing can truly replace the real thing. Why not become an Earthwatch volunteer yourself? Projects needing immediate additional support in 1993 include saving leatherback turtles in St. Croix, monitoring mountain lions in Idaho, preserving manatees in Florida, and banding birds and conducting wildflower surveys in the Rocky Mountains.

We believe that all people have talent, if put to the test. Wit, moxie, tolerance for surprise, and a natural inclination for seeking solutions are the common denominators of the members and friends of Earthwatch. We urge you to join us on one of our expeditions and to become a member of our organization.

Stephanie Barnhizer is in the Education Department of Earthwatch. For more information, you can call (617) 926-8200, ext 118, or write to: Earthwatch, 680 Mt. Auburn St., P.O. Box 403S, Watertown, MA 02272. ❑



Searching for Success

Renewing America's Community Spirit through Environmental Success

John Jester

"When we see land as a community to which we belong, we may begin to use it with love and respect. There is no other way for land to survive the impact of mechanized man." — Aldo Leopold

In the 1980's environmental issues came of age. The Earth spoke back as we experienced a rash of disasters: oil spills destroyed vast stretches of pristine wilderness, scorching summers foreshadowed potential dramatic climatic changes, and medical wastes washed up on our beaches with alarming frequency. Mothers became concerned about pesticides in their children's food, and evidence of a hole in the ozone layer shocked the world.

Yet as public concern and awareness of environmental issues have reached new heights, some citizens appear resigned to living with the environmental risks posed to our fragile environment and to public health and safety. At a time when we are bombarded daily by news of environmental disasters, it is vital to counter resignation with hope – not false optimism, but realistic hope based on actual success stories in addressing environmental threats.

We *can* take charge of our environmental future. Renew America, a nonprofit environmental education organization, coordinates a search for the most successful environmental programs that can be used as models for other communities in our national effort to protect, restore and enhance the environment.

We don't have all the solutions, of course. Only about 1600 of them! That's how many environmental success stories are listed in our *1992 Environmental Success Index*. (There's a lot of good news to tell about environmentalism in America.)

The *Index* serves as a clearinghouse of success stories that provides individuals, public interest groups, the media, industry, and policymakers with information on programs that are solving America's environmental problems. All programs in the *Index* are reviewed and verified for effectiveness by people in the communities where the programs operate. Renew America coordinates and disseminates this information so that successful programs may serve as models for replication in other communities.

The *Success Index* is organized into 20 different categories, ranging from food safety and transportation efficiency to conservation of America's wetlands, range, fisheries and clean air, to environmental education. The most outstanding programs in each of the 20 categories are chosen for national recognition in our "Searching for Success" awards program. Representatives of the exemplary programs receive their awards at our annual Environmental Leadership Conference in Washington, D.C.

Kids "renew America," too. Some of our Searching for Success awardees and dozens of the 1600 programs listed in the *Index* are youth-initiated. Following are a few examples of such programs:

☆ A group of sixth graders at Mountain Park School in Berkeley Heights, NJ, started a club called Help Our World (HOW). They have written to newspapers and elected officials, spoken before their town council and the NJ State assembly, and "spread the word" to other classrooms, among other activities.

☆ The Youth Litter Corps Program in Rhode Island involves youngsters all over the state in litter clean-ups of public places. During the last five years, over 1,000 youths have collected 2 million pounds of garbage and recycled 40 tons of it.

☆ Fourth graders at Silver Lake Elementary School in Bladen, Nebraska, recycle plastic milk jugs in their school cafeteria. To publicize their concerns, the students have made bulletin board displays and an educational video, and written to newspapers, magazines and their state legislators.

☆ The sixth graders at Westwood Elementary School in Casper, Wyoming, are involved in a long-term program to protect and restore Bolton Creek. They have planted streamside trees and are investigating the effects of a pipeline gasoline spill. Each year, the graduating sixth graders pass the project on to the next year's class.

Of course, there are hundreds of similar programs nationwide. It is encouraging to see so many people, of all ages, races, political persuasion, and economic standing, working together in a true spirit of cooperation. We at Renew America feel that it is only through these types of collaborative, intergenerational, even optimistic programs – – ones that break down barriers by emphasizing our common interests over our differences – – that some of our nation's most intractable environmental programs can be solved. To quote Aldo Leopold again, protecting and conserving our natural resources "... is a job not of building roads into lovely country, but of building receptivity into the still unlovely human mind."

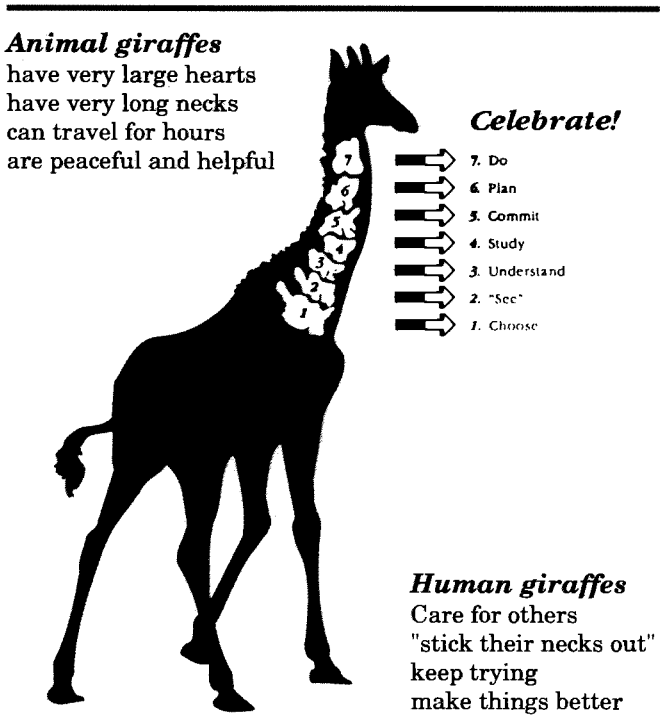
John Jester is Publications Coordinator for Renew America. Additional information on membership and the Environmental Success Index can be obtained by writing Renew America, 1400 16th St. NW, Suite 170, Washington, D.C. 20036 (202) 232-2252. ❑

Stick Your Neck Out

Jean Gaznier

Now more than ever, America needs people with vision and guts—people willing to put their ideas and ideals into action in solving the problems that trouble us most.

The Giraffe Project has been moving people into just such caring, courageous action since 1982. Our strategy is simple: if you want someone to take a risk for the public good, show them someone else going first. The Giraffe Project calls such role models "Giraffes"—because they stick their necks out—and has been finding them and telling their stories



through mass media for 10 years: people like Edmund Benson of Miami, Florida; Jeff Gibbs of Vancouver, British Columbia; and Melissa Poe of Nashville, Tennessee.

Mr. Benson left retirement behind to close down a toxic waste incinerator, kick off the largest curbside recycling program in the country, and found the Enviro-Cop program, which asks youngsters to pledge to "police pollution, arrest waste, and track down toxics." The organization provides these "green police" with badges, environmental "tickets" to hand out, membership cards, and ongoing programs.

Mr. Gibbs has fought urgent battles to save the world's ancient forests from clearcutting since he was 14 (he's now 24), including those on Canada's Queen Charlotte Islands. He has since gone on to help found the Environmental Youth Alliance (EYA), which in turn has grown into an organization of 20,000 high school students across Canada, and which sponsored a nation-wide tour to increase environmental awareness among Canada's youth (the SAVE Tour– Student Action for a Viable Environment). EYA is also working to save the endangered habitats of Borneo, sponsors wilderness trips for youth, and recently received the Prime Minister's 1992 Environmental Achievement Award.

After writing to President Bush about stopping pollution and getting no response, Miss Poe got a local billboard to put her letter on it. Now 250 billboards across the country display her letter. She also founded Kids FACE (Kids For A Clean Environment), which currently has 110,000 members in all 50 states and six foreign countries. Two million subscribers receive *Kids FACE Illustrated*, her organization's newsletter.

The Giraffe Project places Giraffe stories like these on all the major television networks. Giraffes have also been featured in *Time*, *The New York Times*, *People*, *Parade*, and many, many other publications, both national and local. Radio scripts have been narrated by Candice Bergen and John Denver, among other volunteers.

The Giraffe Project publishes *Giraffe Gazette* and *Giraffe News*, and in the last few years has developed an age-specific service-learning curriculum entitled *Standing Tall*. All versions of *Standing Tall* combine inspirational stories of "Giraffes" with challenging themes, questions, games and exercies.

The program helps students identify the qualities of courage, caring, and good citizenship that make a Giraffe, then moves to helping students identify those same qualities in themselves. The last section of the curriculum guide coaches students to identify community needs and to design and implement their own service projects. (This section of *Standing Tall* is creatively called "The Seven Neckbones"—choose, "see," understand, study, commit, plan, and do—with the idea being that people are sticking their necks out farther and farther as they move through to completing their projects.) Each *Standing Tall* packet comes with a videocassette of "It's Up to Us," the award winning documentary on Giraffes shown on PBS stations across the country.

While designed to work in any setting, *Standing Tall's* emphasis on role-models, development of personal competence and active involvement of students in service projects, makes the program especially powerful for "at-risk" youth. *Standing Tall* materials are so user-friendly that they can be used

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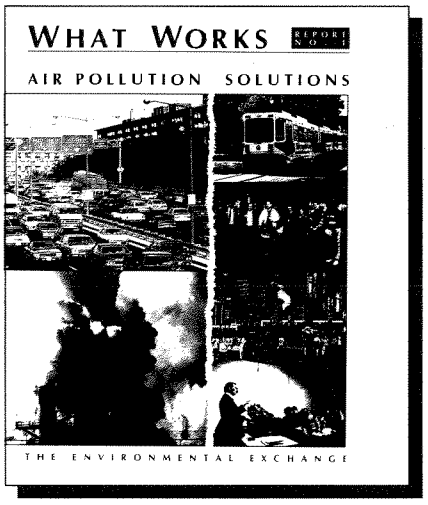
What Works

The Environmental Exchange Staff

Seventy-five percent of all Americans consider themselves environmentalists, according to a recent poll. The Environmental Exchange, a non-profit group in Washington, D.C., is working to translate this potential into lasting environmental progress by providing the public with examples of effective environmental programs, initiatives, and actions.



With input from a network of grassroots organizations, The Environmental Exchange identifies, analyzes, and publicizes outstanding environmental programs, and looks at trends in environmental action. This information is made available to the public through written and phone requests, television, radio and popular print. A modest fee is charged to cover the cost of mailing and processing.

Programs addressing a wide range of environmental issues are included in The Environmental Exchange's clearinghouse. From community organizing to address waste problems, to hands-on education projects, creative local, regional and national programs are meeting environmental challenges across the nation. The Environmental Exchange provides descriptions of these programs to groups and individuals interested in learning from the nation's collective experience.

In May, 1992, the Environmental Exchange published the first in a series of reports entitled *What Works*, which profiles model programs contained in the clearinghouse. Each entry brings informative accounts about environmental problem-solvers: their motivations,effective strategies, hurdles overcome, and results achieved. Programs include those being implemented by concerned citizens, non-profit organizations, civic groups, schools, youth, governmental agencies, and businesses.

What Works Report #1 is entitled "Air Pollution Solutions." Contained within its 113 pages are 11 programs described as air pollution education. The programs include:

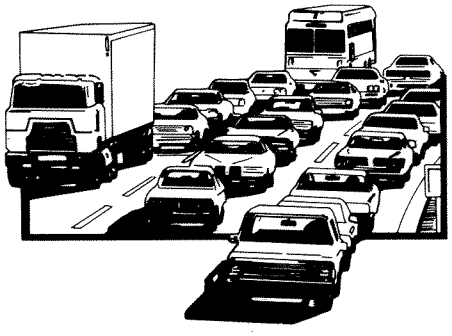
☆ students at Nob Hill Elementary School in Sunrise, Florida, under the leadership of teacher Charlotte Pine, who devised an effective car pool plan for 80 families at their school;

☆ students in California and Connecticut who are measuring ground-level ozone with inexpensive devices, and

☆ "The Air is Right," a game show available to elementary schools in Colorado, which is hosted by Whiff the Clean Air Pup, the popular mascot of Colorado's Clean Air Campaign. Each local elementary school receives an interdisciplinary curriculum package from the state to educate students and their families about air pollution issues.

Environmental problem-solving is complex. The Environmental Exchange believes that by putting those who want to take action in touch with the innovators behind already successful efforts, we can avoid reinventing the wheel and benefit from others' experiences. The range of effective programs profiled in *What Works* confirms what many citizens around the country already know: people from all sectors of society are responding to our environmental crises with energy rather than despair, and by rolling their sleeves up rather than by throwing their hands up.

The Environmental Exchange is always looking for examples of effective grassroots actions taken to protect or improve the environment. Do you know of any? Would you like to know of some? If your answer to either question is yes, you can contact them at 1930 18th St NW, Suite #24, Washington, DC 20009 (202) 387-2182. ❑



Youth Can!

Kathleen Selz

Using what the Wall Street Journal describes as techniques akin to those used by the fabled Depression-era Civilian Conservation Corps (CCC), youth corps are springing up rapidly across America. Some, such as the California Conservation Corps, have been operating for years, but the number in existence today is remarkable: the current tally is about 75 (20,000+ members) and new ones are being launched almost daily.

In the summer of 1992 a Vermont Youth Conservation Corps (VYCC) crew operated and managed the Hapgood Recreation & Park Area for the U.S. Forest Service in the Green Mountain National Forest.

The crew ran the park as a small business, getting visitors, collecting fees, selling concessions, acting as lifeguards on the beach, cleaning bathrooms, mowing the grass, patrolling the area and running a variety of naturalist and educational programs.

Just what is a youth corps? While the work undertaken by the individual corps varies greatly and is only limited by the imaginations of the local leaders and the corps members themselves, there are some generalities that pertain to all. They are above all, organizations that put into practice the belief that young people are community resources, not problems. They harness the energy and idealism of young people to help meet the needs of their communities, states, and the nation. Corps programs engage young people, generally 16-23 years old, in paid, productive, full-time work with visible benefits.

Corpsmembers most often work in teams of eight to 12 with a paid adult supervisor who sets and models clear standards of behavior. Youth corps crews undertake a wide range of work projects. Many are similar to CCC projects, hence the frequent references in the popular media; many others fill gaps in the services of urban parks, renovate housing, and assist human services agencies. Some of the most visible work done by Corps around the country in the last few years has been in response to catastrophic natural disasters: the Yellowstone fires, the San Francisco earthquake, and hurricanes Hugo and Andrew.

In addition to engaging young people in work and service, youth corps also provide benefits directly to participants. In most cases, corpsmembers receive minimum wage for full-time work at least four days each week, and devote part of the fifth day to improving their basic skills and preparing to search for a job when ready to leave the corps. Many corps also expose young people to information about skills adults need to live successfully, such as budgeting, parenting, and remaining healthy, and encourage corpsmembers to engage in tangible acts of citizenship such as voting and donating blood. Some corps offer end-program scholarships and bonuses. In 1985, the National Association of Service and Conservation Corps (NASCC) was founded to assist the growing number of local and state corps. It is an active network of youth corps operators and advocates led by a small national staff, working together to shape national youth policy, exchange information among members concerning corps management and operation, and provide technical assistance to those interested in launching new corps.

In its seven year history, NASCC has established itself as the voice of the growing youth corps network. In 1990, it saw years of hard work come to fruition in the passage of the National and Community Service Act, which provides federal funds to states on a competitive basis for the operation of school-based and full-time youth service programs. (The law also established the Points of Light Foundation.) NASCC has also established national parameters for quality program development, sponsors workshops on leadership and citizenship for corpsmembers, and staff development and supervisor training for local corps staff; has helped launch new programs in eight states and 18 local communities; compiled an extensive youth corps archive and developed a standardized data collection system; sponsors an annual national conference, and publishes *Youth Can!*, a quarterly

newsletter full of notes and updates on what corps and corpsmembers are doing all over the country.

The success of corps programs in diverse settings around the country augurs well for their continued funding and expansion as governments at all levels struggle to cope with the difficult task of not only providing services to the needy and maintaining public facilities, but also of meeting the needs of some of our youth, who, for whatever reason, need a second chance to help themselves become contributing members of our society. The comparative cost-effectiveness of the programs, with an approximate $130 million spent in aggregate in 1992, is beyond question. Also beyond question is the non-monetary value of the programs to our communities and nation. As corpsmembers go about their daily tasks, ostensibly helping others, in reality, they are performing a far greater service than merely rehabilitating what is traditionally thought of as our natural resources, and that is the long-term, arduous task of rehabilitating our truly most valuable natural resource: themsleves.

Kathleen Selz is the executive director of NASCC. For more information about your local corps, or about NASCC, contact NASCC at 666 11th St.NW, Washington, DC, 20001 (202) 737-6272. ❑

Student Volunteers:
Conserving America's Lands

Walter Elton

In the mid-1950's, Elizabeth Cushman Titus, then a student at Vassar College, had an idea: that high school and college students around the country could be mobilized to accomplish much-needed tasks in our national parks. She presented her idea in her senior thesis and in 1957, two years after Titus graduated, the Student Conservation Association (SCA) was born.

In that first season, approximately 50 student volunteers went to work in Olympic and Grand Teton National Parks. During 1991, SCA's 35th year, approximately 1,500 high school students, college students and other adults lent a hand at more than 200 sites from Florida's Everglades to the Brooks Range in Alaska. They all contributed to the stewardship of our national and state parks, national forests, and other public lands and natural resources.

Last summer, crews of SCA volunteers 16-18 years of age, under the leadership of trained supervisors, rehabilitated backcountry campsites at roadless Isle Royale National Park in Lake Superior, revegetated over-used wilderness in Yosemite National Park, and constructed a segment of the Continental Divide National Scenic Trail in Montana. Other volunteers participated in conservation exchange projects involving students from Mexico and the U.S.S.R. as well as the U.S.

photo by: Destry Jarvis

High School Work Group Program. Participant working on trail construction project in New River Gorge, WV, 1990

Those selected for the 420 openings lived in tent camps, usually in remote locations, and were provided with all food and group camping equipment. In addition to meeting important conservation needs, they gained valuable work experience, learned about outdoor living and local ecology, and met new friends.

How do participants feel about their SCA experiences afterwards? Here is what one volunteer wrote after spending three weeks with five other students constructing a trail in California's Kings

Canyon National Park:

"My friends at home do not understand what I did out there and why I loved it so much, nor can I fully explain it to them. It wasn't just moving some rocks around and digging into the ground. It was the little things that made it special. It was sitting at night around the campfire listening to Joe sing my favorite Beatles songs. It was being silly. It was learning new outlooks on life, new philosophies. It was laughing until my stomach hurt, and making people laugh; it was seeing a black bear playing in the cold stream, toasting marshmallows, making pizza in a frying pan. It was feeling comfortable with myself all day long. It was sharing with people who respect me for what I am.

"I learned up among the mountains of Kings Canyon that I count in the world, that I can make a difference. What did I do out there? I lived."

This year SCA celebrated its 35th year of work by adding the Conservation Career Development Program (CCDP) to select and mentor minority high school and college students through SCA programs and help them begin conservation careers.

SCA also operates a year-round program for college students and others at least 18 years of age. It publishes *Earth Work*, a magazine for and about people who work to protect the environment. SCA programs are sustained through a combination of conservation agency support and contributions from members, corporations and foundations.

photo by: John Spring

Hauling in freshly prepared logs for new Hayes River Patrol Cabin at Olympic National Park. Logs may weigh over 1000 lbs. each.

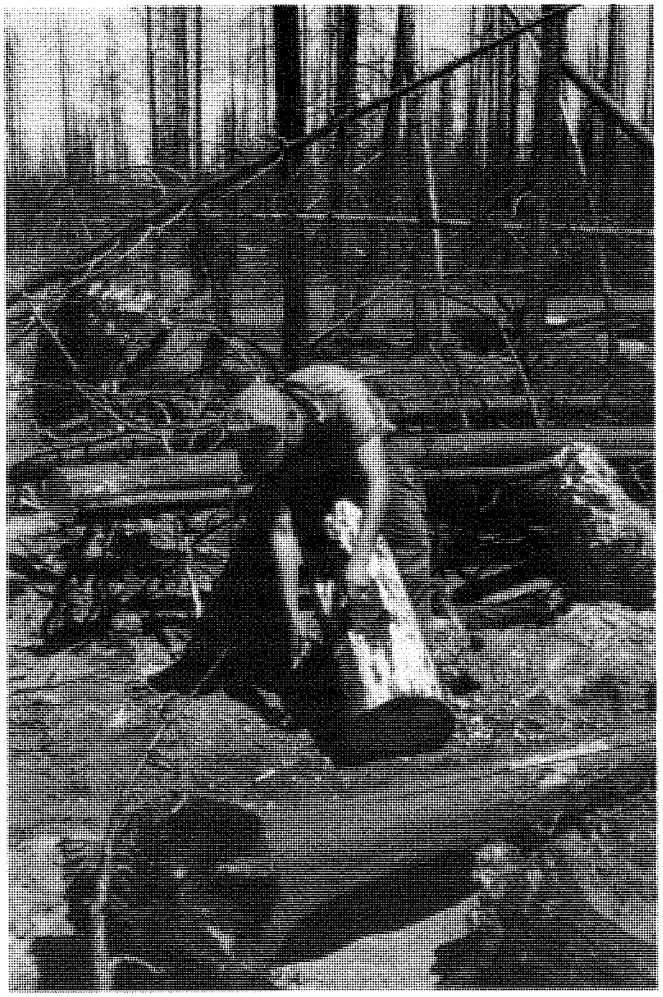


photo by: Destry Jarvis

Reconstructing a trail through a burned area in Yellowstone National Park.

Walter Elton is public relations director for S.C.A. For more information on any SCA program or on becoming a member, contact the Student Conservation Association, PO Box 550, Charlestown, NH 03603 (603) 543-1700. ❑

Campus Compact:

Where College Administrators Open Doors and Students Become Leaders

Roger Nozaki, Pearce McCarty, and Lara Schwartz

Campus Compact is an action-oriented coalition of college and university presidents, organized to create public service opportunities for students, and to develop an expectation of service as an integral part of student life and the college experience. A project of the Education Commission of the States, the Compact grew out of a 1985 meeting of higher education presidents who met to discuss efforts they could take to foster greater collegiate involvement in public and community service.

Now a coalition of over 300 institutions, Campus Compact provides information and technical assistance to member campuses, creates incentives for student involvement in service by helping to shape policy at all levels, and promotes a national awareness of the important resources students offer in the public interest.

Participants of the summer institute at Brown University visited six sites around Rhode Island for an afternoon of community service. Rob DiCarlo of SUNY Brockport helps clean up a vacant lot for a community garden in the Elmwood section of Providence.

Campus Compact member presidents are committed to developing in students an increased respect for the responsibilities placed on them in a democratic society. Students involved in service activities gain exposure to a range of social and economic concerns and become involved with others with different backgrounds, races, ages and classes. Service provides a real-life dimension to the theory that they discuss in the classroom; students return to academic studies eager to reflect on their experiences and incorporate solutions. Ultimately, public and community service can do more than any academic seminar to make social responsibility an integral part of students' lives.

Membership in Campus Compact requires a letter of interest and commitment from a university president. Member presidents agree to a series of expectations involving promoting and supporting service on their campuses, and pay a membership fee based on the size of their student body. In return, the Compact offers administrative and technical support. The Compact's members represent a full range of institutions from all parts of the country. They include public and private universities, two- and four year colleges, and small and large institutions. The organization as a whole works to build a strong coalition of college and university presidents and staff people, while working with service-related associations, and cultivating the support of community, state and national leaders.

Our 1992-93 members survey indicated that 70 colleges currently have Campus Compact environmental programs underway on campus and/or in the local community. Following are brief descritions of a few of them:

☆ Concord College in West Virginia is in the midst of an effort to reduce its solid waste volume by 50% through a comprehensive recycling program that was devised by the school administration, the student government, and various campus departments. The goal, in addition to helping the environment, is to save $25,000 a year, half of which will go to the college's Community Outreach Program.

☆ Environmental Studies is the most common major at Warren Wilson College in North Carolina. It's not surprising, therefore, to see the students involved in recycling efforts on campus and in the community, organizing river clean-ups, building habitat for the endangered red wolf, and planting trees for a number of community agencies.

☆ Students at Brevard Community College in

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Cool It!

Staff of National Wildlife Federation's Campus Outreach Program

College students on campuses around the country are on the march for the environment. Consider these examples:

☆ Students at Texas Southern University, in Houston, are teaching environmental education classes in the area's predominantly black elementary schools.

☆ At the College of William and Mary, in Virginia, the Director of Business and Administration hired student staff to coordinate and maintain their comprehensive recycling program.

☆ Similarly at Antioch College in Ohio, student activists are working with their physical plant manager to "close the loop" by purchasing goods made from recycled paper and other environmentally sensitive products.

☆ Students at Georgetown College in Kentucky worked with the food service staff to arrange that leftover food be delivered to needy local families.

☆ In an example that shows that any group willing to pitch in can make a difference, members of the sailing club at Thomas Nelson Community College in Hampton, Virginia, sailed out to an inaccessible island in Chesapeake Bay and hauled away bags and bags of marine debris as part of the Chesapeake Bay Foundation's annual coastal clean-up.

All these students, and students just like them on hundreds of other campuses, are not just organizing projects that will last only for as long as they are enrolled in school. Rather, they are asking their colleges to re-evaluate, in terms of environmental costs and benefits, the very nature of how they do business. In doing so, they are crossing traditional boundaries to work with purchasing agents, meal plan coordinators, engineers, architects, business school faculty, and college presidents themselves. With so many institutions potentially involved, and with so many resource distribution decisions affected, the impact of such a movement, not just for the campuses and their surrounding communities, but for the greater effort to "'save the environment," could be enormous.

As with many other grass-roots efforts, getting started is frequently half the battle. Realizing this, the National Wildlife Federation, in early 1989, issued a challenge to college faculty, students, and administrators from diverse cultural backgrounds to support Earth Day 1990 by starting environmental programs on their campuses and in their communities. By summer 1989, we established Cool It!, the Campus Outreach Division of National Wildlife Federation. The organizers soon identified college leaders interested in developing programs and asked those leaders to define goals and needs. Cool It! organizers then worked on developing the resources to help the on-campus leaders. The hope was that NWF, via Cool It!, could assist college leaders in implementing and sustaining programs that prevent pollution by conserving resources and by consuming them more efficiently. Our focus was and remains still on "backyard" solutions to global environmentai problems. Three years and 500 projects later (including those mentioned above), we are pleased that commitment to Cool It! has long outlasted Earth Day 1990. The dedication and involvement of leaders from diverse cultural heritages and academic backgrounds have enabled us to assemble a broad array of resources drawing on their wealth of experience and knowledge.

A major goal of the Cool It! Program is to reduce the need to "reinvent the wheel" of environmental action from campus to campus. We communicate to campus organizers what other students and the broader environmental community have collectively learned. We accomplish this in a number of different ways. Primary among our outreach efforts is *Students Working for a Sustainable World* and *Campus Ecology: A Guide to Assessing Environmental Quality & Creating Strategies for Change*. The former is a directory of campus groups making their campuses more environmentally sound, with details on how they got started, selected their issues, galvanized support and involvement, and what they have accomplished to date. The latter is a guide to performing a campus-wide environmental audit. It was produced by April A. Smith and the Student Environmental Action Coalition (SEAC), and is distributed by Cool It! at minimal cost.

Cool It! also maintains a speakers bureau and an environmental job bank, produces The Cool It! Connection newsletter, and compiles "issue packets" on specific environmental topics (e.g., composting, energy efficiency, and tree planting). In addition, regional coordinators tailor on-site workshops to meet the needs of particular colleges, and work one-on-one via telephone on a frequent basis.

Another basic tenet of the Cool It! program is sensitivity to cultural diversity. All schools are expected to recruit campus-wide involvement for their efforts, and we particularly stress working with students of color on campus. Accordingly, we provide staff to help with this, and have compiled

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Break Away

H. Michael Magevney

Although I have worked with alternative break programs across the country for more than a year now, it amazes me that it still catches me off guard when someone asks, "Exactly what is an alternative break?" An alternative break program places teams of college students in communities to engage in community service and experiential learning during their "breaks" in the college calendar schedule. The communities that host break teams may be near or far — programs may place students as close as the school's home town or as distant as another country— but one thing they all will have in common is an environment far different from that of a college campus.

Alternative breaks give students a chance to perform community service and to help the environment by working on an organic farm on the Texas border, testing streams for acid mine drainage in Appalachia, and working in any of the State and National parks throughout our country. One college even went down to the Florida keys to help clean up some coral reefs, by snorkeling and picking up trash underwater. Alternative breaks provide many grassroots environmental organizations with the labor they need to complete projects such as building a trail, educating people about the benefits of recycling, or testing for toxics.

By placing students in different environments, alternative breaks cause them to question fundamental assumptions about their values and how they ought to contribute to society. In class, students study the big questions, but on an alternative break they *live* them. They step outside the sheltered walls of their educational institutions and view first-hand the poverty and related problems which face much of our world's population. Alternative breaks bring the college campus and the community together.

The trips can take place over spring, summer, fall or winter break. Some schools spend a long weekend with an organization while others go for a week or a month. Each alternative break trip provides 10-20 students with a chance to leave behind the world of books and laboratories and enter communities grappling with issues as varied as urban poverty, racism, hunger, inadequate housing, and environmental degradation. Communities benefit from tangible work completed, while students gain a broader understanding of the world around them.

Break Away was founded by Laura L. Mann and H. Michael Magevney in June 1991, with the mission to promote service on the local, regional, national and international levels through break-oriented programs that immerse students in different cultures, heighten social awareness and advocate life-long social action.

Students have been going on alternative breaks since the early part of the century. What Break Away is striving for is to create a national network of schools with break programs, those wanting to start break programs, and community organizations that utilize students in their work. This way resources can be passed from region to region and schools can begin to work together to finish projects that normally would take longer than one week.

If you are interested in learning more about alternative break programs and what it takes to start one on your campus, then call the Break Away office. We can then begin to connect you to other schools in your region that are interested in alternative breaks as well as provide the following resources:

Break Away: Organizing an Alternative Break is a guidebook that explains how to work through many of the problems associated with starting an alternative break program.

Connections, our quarterly newsletter, will keep you up to date through articles, editorials, profiles, and resources that have all come from real life break experiences.

The *Break Away Site Bank* is a continually updated database that contains a comprehensive listing and information about potential worksites. Break Away can help place you with a community organization that will meet your needs for the week.

Our office also provides regional workshops and conferences so that you can attend a training session in the area nearest you, and has national training programs such as the Break Away Bootcamp where you learn how to run an alternative break program while actually participating in one. If you are interested in learning how to start an alternative break program, or you already have a successful one and wish to tap into a national network of ideas and resources, please contact co-directors, H. Michael Magevney or Laura L. Mann at 615/343-0385 or c/o Break Away: the Alternative Break Connection, 6026-B, Nashville, TN 37235. ❑

Break Away Contacts

Jennifer Walker	TN Environmental Council	Church Street Nashville TN	37203	615/321-5075
Brenda Garland	Florida State Parks/Vol. & Ed. Programs	1843 S. Tamiami Trail Osprey FL	34229	813/483-5944
Charles Dickerman	Florida State Parks-Lake	20007 S.R. 64 Bradenton FL	34202	813/741-3028
Reggie Norman	FSP- Cayo Costa State Park	P.O. Box 1150 Boca Grande FL	33921	813/964-0375
Robert Henry	FSP- Collier-Seminole St. Pk.	Route 4 Box 848 Naples FL	33961	813/394-3397
Pamela Murfey	FSP- Delnor-Wiggins St.Pk.	11100 Gulf Shore Dr. N. Naples FL	33963	813/597-6196
C/O Park Manager	FSP- Fakahatchee Strand	P.O. Box 548 Copeland FL	33926	813/695-4593
Valinda Subic	FSP- Koreshan State Historic Plantation	P.O. Box 7 Estero FL	33928	813/992-0311
Jeffrey DiMaggio	FSP- Myakka River St. Pk.	13207 S.R. 72 Sarasota FL	34241-9542	813/361-6511
JosephSmyth	FSP- Oscar Scherer St. Pk.-	1843 South Tamiami Trail Osprey FL	34229	813/966-3154
Hubert Dixon	Environmental Outreach	2316 11th Avenue North Nashville TN	37208	
Michael Miles	Anathoth Community Farm	2423 Round Lake Road Luck WI	54853	715/472-8721
Maude Fain	Clean—Up Orlando	1010 S. Westmoreland Orlando FL	32805	407/246-2752
Linda Shead	Galveston Bay Foundation	17324-A Highway 3 Webster TX	77598-4133	713/334-3665
Juanita Valdez-Cox	United Farm Workers	P.O. Box 188 San Juan TX	78589	512/787-2233
Lance Hughes	Native Americans for a Clean Environment (NACE)	P.O. Box 1671 Tahlequah OK	74465	918/458-4322
Randy Viscio	Student Environmental Action Coalition (SEAC)	P.O. Box 1168 Chapel Hill NC	27514	919/967-4600
Deidre Sebastian	Mashantucket Pequot Education Program	P.O. Box 160 Ledyard CT	06339	203/536-1779
Nancy Stringer	Heifer Project International	216 Wachusett St Rutland MA	01543	508/886-2221
Gail Fishman.	The Nature Conservancy	625 N. Adams Street Tallahassee FL	32301	904/222-0199
Ray Norris	Save Our Streams	4021 Sunnybrock Drive Nashville TN	37205	615/665-2324

Stick Your Neck Out

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not just by professional educators, but also by the average youth activities volunteer in after-school clubs and other non-classroom settings. The Giraffe Project is now working with Nickelodeon to produce a 26-part series for classroom television, based on *Standing Tall.*

In addition to publicizing "Giraffe" stories and developing *Standing Tall*, The Giraffe Project also offers training workshops to organizations, and conducts "Giraffe-A-Town" Campaigns, which help entire towns improve their ability to solve tough, long-term problems of race, poor schools, apathy and urban decay. Perhaps the most exciting recent initiative is Giraffes Russia, based in Moscow, which is emulating the program in the United States and inspiring Russians at all levels of society to take responsibility for the tremendous challenges they face.

Jean Gaznier is Education Director of the Giraffe Project. For more information contact: The Giraffe Project, 197 Second Street, P.O. Box 759, Langley, WA 98260 (206) 221-0757. ❑

The Ultimate Journey

Tom Smart

Surrounded by poverty and despair, constantly exposed to negative role models, ignorance and disdain, many young people in major urban environments give little thought to the natural world. These are the children Boys & Girls Clubs provide services to on a daily basis.

Since the founding of the first B&GC in Hartford, Conn., in 1860, more than 1300 Clubs have opened their doors throughout the United States, Puerto Rico, and the Virgin Islands. The Clubs serve 1.7 million youths annually in a variety of ways, based on a youth development strategy. Young people work with trained staff and volunteers to develop personal, academic, social and leadership skills, while learning to become contributing members of their communities, from their families and Clubs, to their schools and neighborhood streets and playgrounds.

One way B&GCA strives to meet its mission of youth development is through environmental education. B&GCA has developed an outstanding 10 week program to help young people in urban environments gain an awareness and appreciation for the natural environment. This new and exciting program, entitled "The Ultimate Journey," introduces young people six to 12 years of age to the natural world that is all around—even in the hearts of the largest cities.

Participation in special events and weekly activities helps members to see and understand that nature and wildlife are important parts of their lives. Each week The Journey leads to a different area of understanding through carefully selected games, crafts, and discovery activities. Members play games that help them see and experience the size of a blue whale and the speed of a running cheetah or a hummingbird's wing. Children explore the environment and discover many plants and animals that are as unique and amazing as anything found anywhere on the planet, and learn how they adapt to their environments.

Members also learn how some of our actions harm the environment and how our behaviors can also help protect, preserve, and even improve the environment. The Ultimate Journey reaches its destination when the children actually travel to a natural habitat such as the seashore, mountains, a national or state park, or other natural area. Here, members can experience the great out-of-doors with a new sense of wonder, excitement, and understanding.

Thousands of Club members around the country have already begun their "Journeys." For example, training workshops for local staff have been held in Akron, Ohio, and Providence, R.I.; Georgia Tech faculty are being trained to use the program with Atlanta's public school children; the Allentown, PA, Club now has two staff devoted full-time to "Journey"; Audubon Society volunteers in Phoenix, AZ, are conducting programs every day, and in perhaps the greastest achievement to date, the National Parks Service, through its Urban Parks and Recreation Recovery Inward Bound Program, has awarded $100,000 to the Boys and Girls Club of Somerville, MA, to bring The Ultimate Journey to as many of Somerville's children as possible.

Boys and Girls Club members are involved in environmental activities in other ways as well. Many local Clubs around the country have won the Interior Department's "Take Pride in America" award for initiating such projects as litter clean-ups at beaches and in parks and campgrounds, community recycling programs, and in Salt Lake City, UT, (Capitol West B&GC) for helping wildlife officials protect an endangered species (desert tortoise). In a new venture that ties all these environmental initiatives together, 110 Keystone Club members (service clubs for teens based in B&G Clubs) have been trained in The Ultimate Journey and are now hard at work conducting the program with younger Boys and Girls Club members.

It is myriad small successes of these types that inspire us at Boys and Girls Clubs of America to continually come up with new ways to meet the ever expanding and changing needs of urban youth as we and they prepare for the 21st century. As a socie-

THE ULTIMATE JOURNEY CREED

I promise to:

Use my eyes to see the beauty of the world

Use my mind to learn about and appreciate the environment

Use my hands to protect and preserve our natural resources

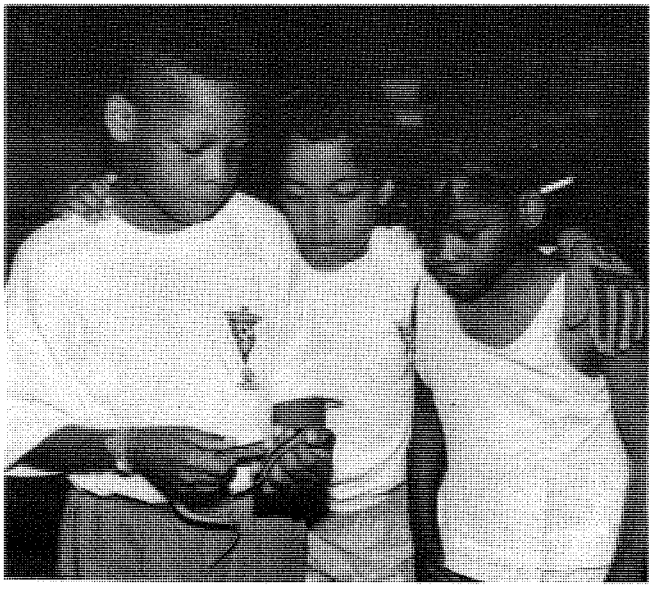
and through my actions
serve as a role model to others
as I make environmentally sound choices.

ty, we simply can no longer afford to neglect such a large segment of our population. If we can help inspire these youngsters to look beyond and overcome their humble beginnings, while at the same time doing a good turn for the environment, so much the better.

Tom Smart is Assistant Director of Program Services of Boys and Girls Club. Anyone interested in information about their closest Boys and Girls Club can call 1-800-854-CLUB or write Boys & Girls Club, 771 First Ave., New York, NY 10017. For additional information on The Ultimate Journey, call Tom Smart at (212) 351-5907. ❑

all photos by: Bill Tennessen

Upper Story Studies



Making Friends

A scoopful of a Whole New World

The Earth Service Corps

Adrienne Ross

Learning to keep our earth fit for life.

That's the mission of YMCA Earth Service Corps. Founded in 1989, Earth Service Corps empowers high school students to be effective, responsible global citizens by providing them with opportunities for environmental education and action, leadership development, and international or cross-cultural exchange.

Our youth and our planet share a common destiny. The basic premise of Earth Service Corps is that the young people of today will be the ones to determine if our earth remains fit for life.

YMCA Earth Service Corps is designed to be a cooperative educational effort between students, teachers, YMCA staff and the larger community. With support from high school teachers and YMCA staff, the students initiate and conduct environmental action projects ranging from urban forestry to school-based recycling to teaching elementary school students how to protect water quality. While most activities occur within the school-based clubs, often several schools will combine efforts for regional projects. YMCA staff organize environmental symposia, field trips with scientists to wetlands, old growth forests and other natural environments, and Leadership Weekends (interactive workshop/camping experiences that introduces high school students to leadership concepts and group building skills). Local businesses, universities and other educational institutions, government agencies, and community organizations will often volunteer expertise and other assistance to Earth Service Corps projects.

YMCA
Earth Service Corps
Learning to keep our Earth fit for life.

During the last three years, Earth Service Corps has empowered over 1,500 students across western Washington to encourage environmentally sensitive practices in their local communities. Students have:

- ☆ planted over 1,000 trees and 16,000 seedlings and shrubs to reforest fish and wildlife habitats, restore state forest lands and rejuvenate inner city neighborhoods;
- ☆ stenciled "Dump No Waste; Drains To Stream" on over 500 storm grates, educating the public that fish, wildlife and humans all live in a watershed;
- ☆ initiated over 40 school-based recycling pro-jects;
- ☆ established on-going water quality monitoring projects in five local high schools;
- ☆ cleaned trash and litter from miles of beaches, city streets and state park lands;
- ☆ written and illustrated several education and activity books about environmental issues such as urban forestry, recycling and energy conservation.

While young people need to be educated about environmental issues, they also need leadership skills to allow them to translate their knowledge into effective action. Many environmental education programs provide opportunities for service learning, bringing the classroom out of the school and allowing students to combine their volunteer efforts with academic learning. Earth Service Corps, however, is both an educational and a *leadership* program. The students, for example, do not just plant trees. They plan the major activities of a tree

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Greenway

Tama J. Kieves

Wearing molded-on Levi's and a Guns-and-Roses black "T", the teacher with tatooed forearms talks about conservation to today's fourth graders gathered alongside the Platte River. As the youngsters hush and listen, their leader wises up to lessons of a lifetime. For Joe is no ordinary instructor. Participating in The Greenway Experience program, Joe is an educationally "at risk" high school student for whom school has been a bore and a battleground of failure. Now, within this revolutionary program at Metropolitan Youth Education Center (a Denver alternative school) Joe, and other high school students like him, attentively lead elementary school children on environmental tours of a cleaned up river. And throughout every presentation, Joe, one fired up guide, vaults monster steps toward renewed self esteem and scholastic vitality.

The Greenway Experience, Denver's internationally acclaimed educational program, has trained teenagers to teach children about their environment since 1970 through the inspired charisma of Program Coordinator Carl Crookham. This public school teacher insists that the real credit belongs to an eighth grade girl who tugged at his arm years ago and begged him to let her "teach." Crookham recalls, "There was this look in her eyes that said she was excited about sharing something she'd learned." Sensing her enthusiasm and pride, Crookham says he flashed onto a vital way to motivate teenagers to care about education. "Self esteem is the trigger to all real learning," urges Crookham, "and the act of teaching someone something you know, is a major self esteem builder." He teamed up with several co-workers to develop this idea over the next few years.

From that point on, Crookham put two and two together to impact thousands of teenagers and to benefit the environment as well. "I observed two distinct problems needing solutions," he says. "I saw people not using and appreciating their natural environment, and I saw too many teenagers dropping out of school because of low self-esteem." He decided that presenting elementary school children with guided nature tours through parks and greenways would motivate the next generation (and today's parents) to assume more responsibility for their rivers, trees, and air. Simultaneously, he figured, high school students could conduct these tours, practicing valuable skills, and realizing self confidence through leadership.

Crookham figured right. Through The Greenway Experience, busloads of elementary school students, senior citizens, college students, and corporate employees have toured the Platte River Greenway and five adjacent parks, learning about their local river and native tree population through high school student tour guides. The program sponsors one hundred tours a year and in over nineteen years has reached more than fifty thousand children and adults. More impressively, seventy five percent of the educationally "at-risk" teenagers that participate in The Greenway Experience go on to earn their high school diplomas. The celebrated success of the program has inspired unique funding: joint sponsorship by the Denver Public Schools, the City and County of Denver, and the Platte River Greenway Foundation.

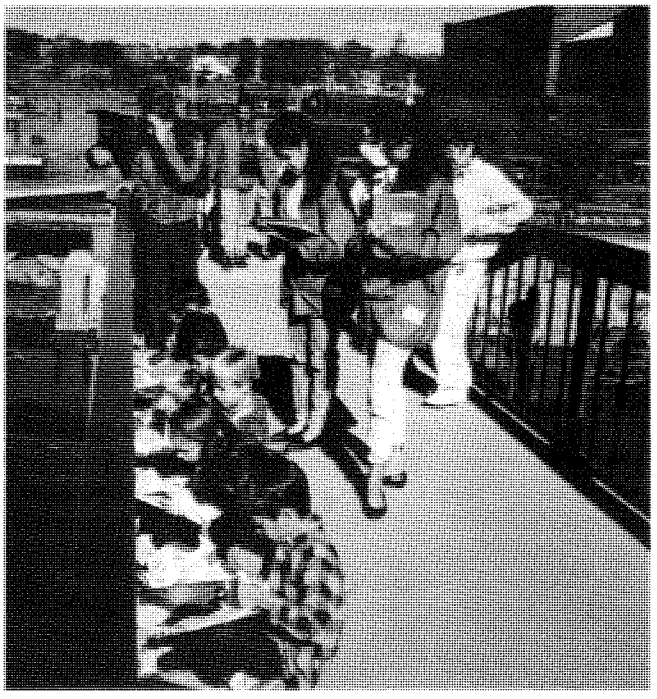
Crookham's cubbyhole classroom at Metropolitan Youth Education Center, like most urban high school classrooms, is crammed with books, blackboards, and several sobering AIDS posters. Similarities end there. For in this class, students learn gold panning, First Aid and C.P.R., science, history, geography, how to teach, and how to overcome languid attitudes toward learning. Crookham says the program converges on skills students can use beyond the semester. "They're not just being trained to give tours on the river, but to handle themselves, take real responsibility, and to communicate things that are really important in surviving in the real world."

"You're looking pretty good out there," booms Crookham as he opens class to about twenty five teenagers. He reads aloud a letter from an elementary school teacher praising last week's tour guides. A sprinkling of students smile shyly, briefly. Crookham paces the classroom like a tiger before

Teachers teaching teens to be teachers teaching children to be teachers teaching others.

At the start of a Greenway Experience Tour, teen tour guides introduce each other to a group of 4th graders

Jeff tells the story of the birth of Denver at the site where it happened.



From a bridge over the Platte River, Cheri and Christina help a group of 5th graders do an assignment on water quality.

feeding time at the zoo. He sports a sunburned face, a bear like build, Levis, and an official Batman watch. "We're going to have to wallpaper the room with these letters," Crookham trumpets.

When the period ends, the seven guides of the day don their "Greenway Experience" windbreakers, pile into "Jaws," Crookham's 1973 stationwagon, and head for the river. On the way they rehearse how they will introduce themselves to the elementary school teachers, divy up sections of a workbook they will teach from, and chatter excitedly about past experiences. "Remember what you say when a kid doesn't get the right answer to your question?" prompts Crookham. Donny answers from the backseat, "You tell them you're close, but... or you're on track, but..." "That's right" says Crookham. "Never tell the kids they're wrong," he instructs. "They hear enough of that at home." In the parking lot, the preparation continues, workbooks on top of the stationwagon's hood and questions in the air, until a yellow schoolbus pulls up.

This tour, like all the program tours, begins with the elementary school children seated on a concrete platform facing the gushing river. "So whose river is this?" asks Randy, the first tour guide. The answer reflects the message of the tour: the river belongs to all of us and we must take care of it as we would our own backyards. Next, the children learn about Colorado's gold rush, the history of Denver, the workings of old mines, the distinguishing features of mulberry trees and firs - lively information that engages the youngsters attention throughout the day. Crookham bounds along, coaching his guides, and quietly picking up cigarette butts and litter along the way.

The tour culminates with the highlight the fourth graders have been squirming for: each child enters the Platte river ankle high and pans for gold with his or her very own pan. And each child leaves the tour cherishing his or her own gold fleck, garnet, mica, or quartz taped to a souvenir card. The childrens' day by the river has been magical. Some will write as other children have before them, "this has been the best experience of my whole life." Others will simply send their teen guides scrawled thank you notes along with colored-in pictures from the day's workbooks.

Crookham's tour guides also sense the magic. They know their lives are changing, cleansing, coursing like the river. The Greenway Experience provides them with an emerging sense of maturity and prowess. "I've really learned to communicate," says Hilary, a senior guide who has taken the program twice. "I was never able to really talk to people before doing these tours."

"Some kids may sign up for The Greenway Experience to get out of class, but that's not the attitude we take in the program," says Cassie. She continues, "We have to learn a lot and be real caring. We take a positive, productive attitude." Tana joins in, "We can't smoke cigarettes, can't cuss around the kids, and can't wear dark shades." She adds, carefully arighting her posture, "We set

examples for those kids. We watch the way we wear our hair and our makeup because they're watching us."

Crookham says working with "wide eyed little kids" allows teens, ordinarily "swept up in being cool," to open up to a softer, loving side of themselves they may have "stuffed down" into tight jeans and stiff leather jackets. "In their world they have to be surly hardnoses," Crookham says matter of factly, referring to gang fights, drugs, abusive home lives, and other travesties many inner city kids regularly encounter."But on the river it's different. It's safe to be someone's little friend, to wipe a nose or bandage a knee." Younger children rekindle the buried ideals of the prematurely hardened teenager. Crookham spins many a story of "amazing turnarounds" he has seen spawned on the river's banks; his favorite among them, a former student named Mike.

This group of 4th grade students and their parents get a lesson on building log cabins from Lee.

"Mike was one of those kids in the Iron Maiden skulls and crossbone tee shirts and shredded Levis who sit there like Dr. Death. He never spoke and rarely let down his sunglasses,"recalls Crookham. "But on the river he was great with the kids, real gentle and loving." Crookham says one day Mike, deeply troubled, approached him with a letter written by a third grader. The letter read 'I had a great time on the river and when I grow up I want to be just like you, Mike.' 'What's the problem?' I asked him," says Crookham. "Mike got real fidgety and his voice cracked as he answered: 'I don't know if I want him to grow up like me.' "

Crookham beams. He says he jumped at that opportunity to introduce the teen to a special side of himself, a part he could be proud of, the part The Greenway Experience program endeavors to reach and recover. "I asked Mike 'Who did that kid meet on the river? Some hood in a leather jacket and steel shades? No. That kid met someone in a Greenway Experience windbreaker who knew "everything" just like God and looked straight into that kid's eyes with beautiful blue eyes when he spoke.' " says Crookham. "I told him 'Always remember that person is there inside that black leather jacket.' " Crookham grins and adds, "Mike came down to the river to visit a year later. He was clean cut and wearing ordinary jeans. He seemed real happy. He had a high school diploma and a satisfying job."

Transformations like these have steadily made The Greenway Experience a splash. Parents and teachers alike laud the proud professionalism they have seen the program inspire in teenagers once thought to be unruly and unreachable. Crookham says that recently he took along several guides to an international environmentalism conference held at Estes Park, Colorado. While there, some of the leaders took him aside and whispered, "Where do you find these kids, they're so wonderful!" Crookham confides, "I wanted to say in drug rehabs, jails, and broken homes, but I just smiled," he chuckles. Positive transformation just naturally results when "you allow kids to experience their potential," he says. "The program's just a catalyst that touches off these kids' natural zest for life. Every person has that zest if they'll let it come up."

The Greenway Experience and Crookham, personally, continue to win major awards, and attract attention from around the globe. While Crookham has received invitations from England, Israel, and Australia to discuss his program, so far he has focused his attention closer to home. Crookham says he launches nationwide conferences dedicated to "mobilizing teens as teachers" and regularly works with regional schools as well to implement educational programs modeled after The Greenway Experience. He reflects, "My mega, mega goal is a movement taking place worldwide where every school system in every country allows students to take on leadership roles in environmentalism." He continues, "Teens are an untapped resource with enough enthusiasm and energy to become a major teaching force in the field of environmental education throughout the planet."

As the day's tour ends, the tired guides load into "Jaws" and Crookham escorts them to Burger King. During the ride, he reminds them that eighty five percent of the wealthiest people in America have earned their high school diplomas. Searching for seats, the group clumps close together at three adjacent tables. At the table ahead of Crookham's, one of the guides speaks up, "Did we do good today, Mr Crookham?" Crookham looks at the teen and asks, "How'd *you* feel?" "Great," says the smiling teen. Crookham grins back. "*Great!*" he responds.

Tama Kieves, a Denver author, prepared this article to publicize the program of Denver's Metro Youth Education Center and the leadership of Carl Crookham. For further information write or phone Metro Youth Education Center, 2417 W. 29th Ave., Denver, CO 80211 (303) 433-8751.

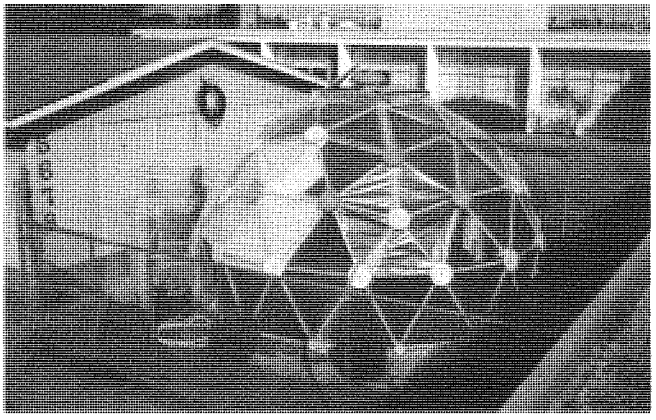
Rebirthing the Earth

Adrienne Howell & Fontaine Ralph

In October of 1989, seventh graders in Ecology and Science Inquiry Analysis classes at Portor Middle School in Austin, Texas, combined talents and ideas to create the EARTHNAUTS. Our motto, "Joining Forces to Rebirth the Earth," says a lot about us. We aim to educate and to make a difference through youth; someday, worldwide. Although youth is our main target, our message is compatible with people of all ages.

Problems exist in actually getting the views of young people heard and taken seriously. The EARTHNAUTS address these needs and environmental issues in several ways. Members provide organizational strategy suggestions to young people who would like to become involved in solving local and/or global environmental problems. Our goal is to network young people worldwide through a variety of foundations and organizations, using computer link-ups wherever possible.

EARTHNAUTS already serves as a clearinghouse for statistical data from surveys and research information



The Biodome

about domestic toxic and hazardous chemical disposal, recycling and composting, business and industrial cardboard recycling in our area, and, to a limited degree, community profiles. We offer effective ideas that have worked in other communities, and instruction in leadership, action, and articulation between young people and municipal agencies. Since the primary focus of EARTHNAUTS is environmental education, we do not lobby.

EARTHNAUTS is actively pursuing community education and service opportunities such as public speaking, volunteer river and beach cleanup programs, and interaction with the various ethnic communities that make up Austin, as well as the public and private schools.

With the development of Suitcase Science Kits on environmental subjects and elementary teacher training workshops, EARTHNAUTS reaches into the elementary schools. The organization has expanded that effort into a vision for a hands-on Sustainable Future Studies Center for school children and the general public. Using our experience with the "Biodome" Project, a hydroponics/aquaculture research station designed, built, and maintained by middle school students, we are working toward realization of that dream. (Our Biodome Project is an adaptation of one developed by the Windstar Foundation of Colorado, and is based upon R. Buckminster Fuller's geodesic dome.)

We also designed an after school care science program that has attracted the attention of the Texas Education Agency. This program will soon include our "Dirt Theatre," which was piloted at Becker Elementary School during the Summer of 1992. An equal number of EARTHNAUTS and music, art, theatre, and environmental science teachers teamed up to create the program aimed at "at risk" elementary students. The program was so successful that a detailed curriculum guide will soon be available at low cost to those who would like to replicate the idea.

EARTHNAUTS proposed a plan for mobilizing young people to provide significant ground level verification of information collected by the LANDSAT earth observing satellites. Last August we participated in the initial phases of field testing at Aspen Global Change Institute/NASA Ground Truth activities. These included analysis of air, water and soil, and establishing baseline vegetation profiles along standardized transects.

The organization has recently become incorporated with the State of Texas and is functioning independently with a Board of Directors composed of an equal number of young people and adults. We have adopted a team/task model of management, with no hierarchical power structure, organizing around a specific committee chair for the duration of a project, then dissolving the committee and forming around a new focus. The Board felt that volunteers would be more inclined to continue to work with the organization if they were able to share in the leadership.

Each adult member of the Board is paired with a student member and each member of that team has one half of a vote in all policy decisions. Negotiation, consensus, and a team spirit are required in order to create or change policy. The EARTHNAUTS' approach to leadership has been deemed "refreshing" and "appropriate" in establishing the spirit of cooperation necessary to solve difficult environmental problems.

As an organization, we have received recognition from the school district, the City of Austin Solid Waste Commission, the Austin City Council, Keep Austin Beautiful, Keep Texas Beautiful, Keep America Beautiful and most recently, the USEPA's National Youth Environmental Award for EPA'S REGION 6.

With our successes to date providing a strong foundation, and now with EARTHNAUTS "graduates" (high school students) spending their afternoons and weekends working with us and our elementary school colleagues, there is no telling "how high" we can go. For EARTHNAUTS, the sky literally is the limit!

Adrienne Howell and Fontaine Ralph are high school students in charge of correspondence and grant writing for the EARTHNAUTS, 5108 Woodgreen Cove, Austin, TX 78745 (512) 447-1437. ❑

Saving Our Streams

Karen Firehock

The Izaak Walton League of America's Save Our Streams (SOS) program has been active for 20 years, teaching citizens to adopt and protect rivers. One of the best aspects of the program, according to many SOSers, is that all ages can participate. The SOS program provides fun, family oriented activities such as walking along the stream to check for pollution problems, conducting "critter-counts" with a kick-seine, holding stream cleanup days, planting trees, stabilizing banks or just observing the river environment. In addition, the flexible and educational nature of the SOS program makes it an ideal project for youth education.

Schools across the country use the SOS program to provide students with a "real world" activity that teaches them scientific applications of what they learn in the classroom. SOS makes science come to life because it uses a hands-on approach to learning.

John Hermesmeier, a sixth-grade teacher at the Tandem School in Virginia, used the SOS program to provide his students with a new approach to learning about science. In the first several months that his students took on an SOS project they: 1) made a large-scale map of their watershed using topographic maps and an overhead projector; 2) conducted regular biological water quality monitoring; 3) visited a nearby construction site called Willow Lake to assess erosion control; 4) contacted a farmer upstream about cattle which were destroying stream banks; and 5) invited a reporter to cover their class project, which resulted in a newspaper article on their activities.

"It (SOS) certainly wasn't things you could get out of a book or in class, it was things you could apply in the real world."

Since then, the students have made presentations on their findings to local planning boards and have many more ambitious projects underway. The students even write letters to the League's national office when they have questions, demonstrating a personal responsibility for their stream. According to Hermesmeier, "I see no end to the possibilities for stream preservation, locally as well as nationally!"

This past February, when Hermesmeier's class again toured the Willow Lake project, observant students noticed that a sediment holding pond had become full and sediment was bypassing the pond and going directly into the stream. When the students alerted their tour guide, construction site manager Bob Hauser, he expressed concern. The students revisited the site a few days later and observed that Hauser had indeed corrected the problem. Hauser even supplied the Tandem students with detailed site plans of the construction projects.

However, in their review of the site plan, students became concerned when they noticed a new housing project would be located only twenty feet from their adopted stream. Students decided the best way to protect the stream would be to educate the developer. Students again contacted Hauser and took him stream monitoring. During the monitoring students explained to Hauser about the sensitive macroinvertebrates that live in the stream and depend on good water quality and clear water to survive. Students also explained the problems associated with construction site runoff for the stream organisms and the importance of planting vegetated "buffer zones" to filter and trap runoff pollution from housing projects. Hauser seemed impressed with the student's knowledge and informed them that he had decided to move the building away frem the intended location and to install a 100-foot wooded buffer zone! When asked if Hauser would do a better job in the future, Tandem student Adrienne Johnstone replied "I think that the fact he's aware we're keeping an eye on him will affect the way he does things." In response to the question of whether SOS was a good way to learn about the environment, Adrienne stated "It (SOS) certainly wasn't things you could get out of a book or in class, it was things you could apply in the real world."

The students were asked if SOS was a good way to teach people about river protection and the environment. Tabb Sullivan noted "I think if people knew more about streams before they start projects it would help a lot (in protecting streams)." Student Pat Huddleston added "I think they would probably try to do a better job (of not polluting) if they knew about streams." Scan Schoonover admitted he didn't know anything about streams before his class at Tandem. Scan added "If more schools were doing this (SOS), Virginia would be a lot cleaner." Willow Troy expressed the same sentiment as his fellow students as he summed up "I learned a lot. I didn't know very much about streams before. I probably wouldn't have learned about it without this class."

When asked if SOS is a good way to learn about the environment Troy stated "It's more interesting than just learning in the classroom and a lot more exciting. You can learn more than from a book. I think it (SOS) should be taught in all the schools.

They (other students) might not care about a stream now but they will have to 20 years from now when its polluted." Finally, when asked how streams in their area could be protected in the future, Frederick Scott summed it up, "I think the stream might get harmed in the future from all the development." When asked the best way to protect the stream in the future, Frederick said "We need to inform the community about monitoring and about streams."

As the story of Tandem School illustrates, SOS offers an ideal outdoor learning program for both individual projects, such as science fair displays, and the entire class. The following list provides suggested projects for school groups, scout troops, 4-H clubs, other youth clubs or your own children.

■ **Map the watershed of a stream, showing drainage patterns, land uses and potential pollution sources, such as farms, housing developments or factories.** Try to discover what types of pollutants might be coming from each site, such as sediment, nutrients, toxics or animal waste. Research what effect each different land use has on the stream's water quality.

■ **Conduct a stream monitoring project.** Pick locations along a stream and use the League's biological monitoring technique to determine the stream's health. Choose sites along potential trouble spots such as below cattle feed lots or construction sites. Monitor above and below point sources of pollution such as wastewater treatment plant discharge pipes. Determine if there is a difference in water quality above and below the discharge point.

■ **Research different stream pollution problems, such as nutrient enrichment, toxic contamination, acid rain, siltation or thermal pollution.** Find out if any of these pollutants are impacting the stream.

■ **Become familiar with state construction site regulations governing sediment control.** Visit some local construction sites to see if they are in compliance with the law. Have sediment retaining fences fallen down as a result of a recent rainfall? Call your local site inspector's office to alert them of any problems.

■ **Learn about different types of Best Management Practices (BMPs). BMPs are conservation practices designed to reduce runoff pollution from farms, timber operations, cattle feed lots or other land-disturbing activities.** Find out how land conservation projects can prevent runoff pollution into streams. Visit a local farm that employs BMPs. Contact your state's environmental agency for a copy of the state Nonpoint Source Pollution Management Plan to learn about different types of BMPs and existing programs.

■ **Visit and tour a local wastewater treatment plant to learn how water is purified.** Find out if the plant adequately treats its water before discharging it to a receiving stream. Contact the state environmental agency to determine if the plant is in compliance with its discharge permit.

■ **Organize stream restoration projects such as stream cleanups, tree planting, bank stabilization projects or building spawning beds for fish.**

Reprinted from "Splash," the Izaak Walton Newsletter. Karen Firehock is S.O.S. Program Director.

If you would like SOS brochures on school projects and monitoring, order an SOS Kit from the League's national office:

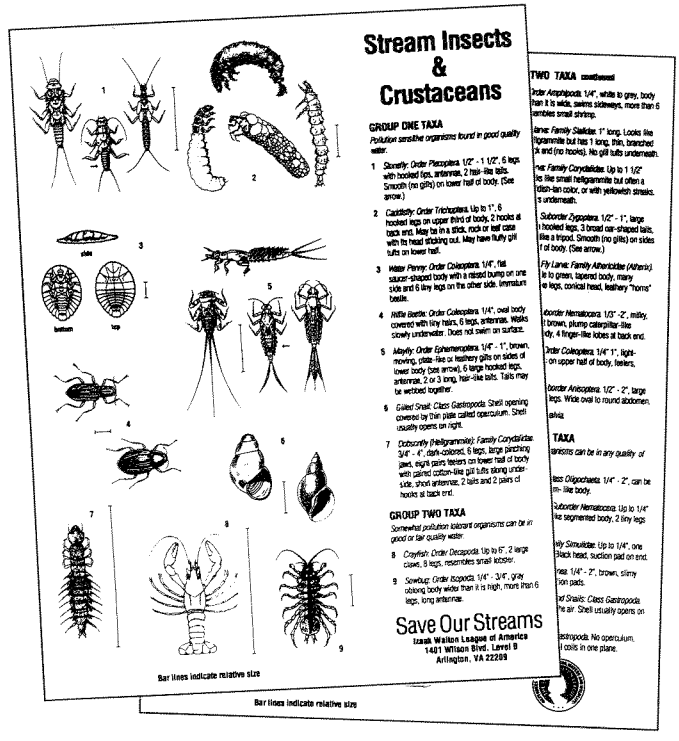
Save Our Streams

Izaak Walton League of America
1401 Wilson Blvd. Level B
Arlington, VA 22209

Remember, initiating an SOS project with youngsters now, will ensure a conscientious and environmentally aware citizenry for the future.

If you are thinking a year ahead,
sow a seed.
If you are thinking ten years ahead,
plant a tree.
If you are thinking one hundred years ahead,
educate the people.
Chinese poet, 500 B.C.

[The following is an example of an S.O.S. instructional bulletin, produced and distributed by the Izaak Walton League of America.] ❑



Making Waves with Beach Cleanups

Lisa K. Younger

Most of us at one time or another have visited the beach. Our beaches vary greatly from one area to another, but no matter what beach we visit, no matter what time of year, the one thing we can be sure of finding on our coastlines is garbage.

We all know that garbage looks bad on beaches and waterways, and spoils the view we love to enjoy. But of even greater concern is the hazard this trash, particularly plastic trash, poses to wildlife. Thousands of marine mammals, sea turtles, seabirds, and even fish die every year from entanglement in debris such as rope, six-pack rings, or monofilament fishing line, or from ingesting plastic bags and sheeting. Marine debris can also jeopardize vessel navigation by tangling propellers, causing damage and endangering human safety.

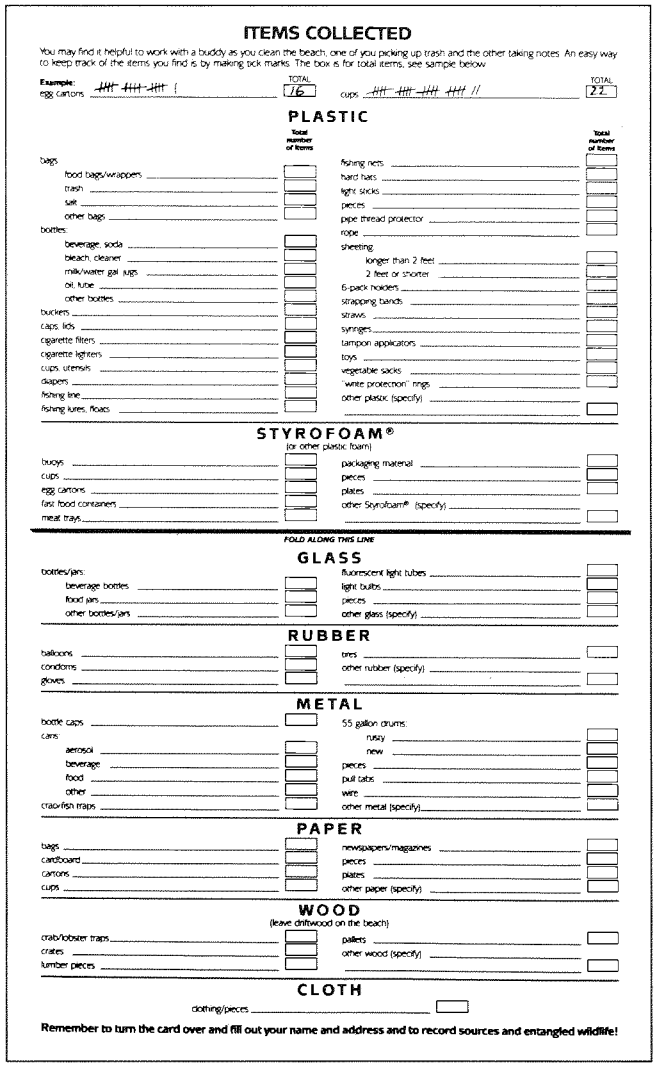
The sources of this trash are as varied as the trash itself, making it difficult to pinpoint any specific group or individual. But the Center for Marine Conservation (CMC) has developed a program that not only gets this trash off the beaches, but also pinpoints the sources responsible for putting it there in the first place.

The first CMC-coordinated beach cleanup was actually a statewide cleanup of Texas beaches in 1986. Approximately 2,800 volunteers turned out to collect not only the trash, but also information on the types and amounts of trash they found. They used Beach Cleanup Data Cards designed by CMC specifically for this purpose (see graphic on this page). Forty-one different debris items were listed on this first data card, and spaces were left for volunteers to record entangled wildlife they found, or debris with identifying markings. Volunteers at that first Texas cleanup recorded 171,296 individual debris items. This information was analyzed and compiled into the first beach cleanup report, giving us a profile of the debris littering Texas beaches. This report showed us that a significant portion of Texas beach debris was generated by shipping and cargo vessels, and provided the first of many directions for CMC to move to get to the sources of marine debris.

But the report did more than just inform us about Texas' marine debris problem; it gave a very stern look at the extent of the marine debris problem throughout the United States, and was used to support U.S. ratification of Annex V of the MARPOL Treaty, which put a halt to the dumping of plastic trash from ships at sea. The 1986 cleanup report was also used to support passage of the Marine Plastic Pollution Research and Control Act of 1987, which implemented Annex V in U.S. waters.

CMC coordinated the second statewide cleanup in Texas in 1987, revising and refining the process and materials into a smooth-running, meaningful experience. In 1988, CMC expanded the cleanup to include all the coastal states in the nation. The resulting National Beach Cleanup was the largest, single-day cleanup ever, encompassing some 25 U.S. states and territories. Approximately 47,000 volunteers turned out and collected 1,953,800 pounds of trash from 3,518 miles of beach. Analysis of the data paralleled findings from the previous cleanups in Texas -- approximately 65% of everything collected was plastic, supporting the earlier findings that plastics are the major component of our naton's marine debris.

Participation at beach cleanups has continued to grow at an amazing rate, from 65,000 volunteers in 1989 to 108,000 in 1990, to an estimated 200,000 in 1991. As it became more and more evident that the marine debris problem was global in scope and that we alone could not solve it, the cleanup began to outgrow its U.S. borders. In 1989, Canada and Mexico joined



ITEMS COLLECTED

You may find it helpful to work with a buddy as you clean the beach, one of you picking up trash and the other taking notes. An easy way to keep track of the items you find is by making tick marks. The box is for total items, see sample below.

Example: egg cartons ||||-|||-||| | TOTAL 16 cups ||||-|||-|||-|||-||||-|| TOTAL 22

PLASTIC

Total number of items

bags: food bags/wrappers; trash; salt; other bags
bottles: beverage, soda; bleach, cleaner; milk/water gal. jugs; oil, tube; other bottles
buckets; caps, lids; cigarette filters; cigarette lighters; cups, utensils; diapers; fishing line; fishing lures, floats
fishing nets; hard hats; light sticks; pieces; pipe thread protector; rope
sheeting: longer than 2 feet; 2 feet or shorter
6-pack holders; strapping bands; straws; syringes; tampon applicators; toys; vegetable sacks; "wrist protection" rings; other plastic (specify)

STYROFOAM® (or other plastic foam)

buoys; cups; egg cartons; fast food containers; meat trays
packaging material; pieces; plates; other Styrofoam® (specify)

FOLD ALONG THIS LINE

GLASS

bottles/jars: beverage bottles; food jars; other bottles/jars
fluorescent light tubes; light bulbs; pieces; other glass (specify)

RUBBER

balloons; condoms; gloves
tires; other rubber (specify)

METAL

bottle caps; cans: aerosol; beverage; food; other; crab/fish traps
55 gallon drums: rusty; new; pieces; pull tabs; wire; other metal (specify)

PAPER

bags; cardboard; cartons; cups
newspapers/magazines; pieces; plates; other paper (specify)

WOOD (leave driftwood on the beach)

crab/lobster traps; crates; lumber pieces
pallets; other wood (specify)

CLOTH

clothing/pieces

Remember to turn the card over and fill out your name and address and to record sources and entangled wildlife!

Reproduced here is one side of the Beach Cleanup Data Card

the United States in the first "North American" coastal cleanup. The results of the Canada and Mexico cleanups again pointed to plastics as public enemy number one in the marine world.

Hopes were high as the 1990 cleanup date approached. With MARPOL's "no dumping" regulations in effect for one full year, cleanup organizers anticipated a decrease, however slight, in the amount of debris collected. Unfortunately, the data told almost the identical story as in past cleanups. The percentage of plastics remained within 2% of the 1988 figures, with no significant decreases in the types of debris attributable to specific sources. This raised some serious questions about the effectiveness of the MARPOL legislation, questions that are still being explored to find solutions to the marine debris problem.

As policy makers and others grapple with the issue of whether MARPOL has been effective, the cleanup continues to gain momentum. In 1991 eleven foreign countries on four continents joined 35 U.S. states for the largest international cleanup ever. Enthu-siastic coordinators overcame the language barrier by translating the Beach Cleanup Data card into Japanese and Hebrew. It will be fascinating to note the differences and, more strikingly, the similarities, in the debris problem between different areas of the globe.

Center for Marine Conservation

What makes this event so attractive to so many people around the world? After all, picking up trash is not an activity that most of us would choose voluntarily. So why does participation continue to grow each year? These questions may have several answers. The cleanup is an activity that anyone and everyone can participate in. From four-month old babies riding their fathers' backs to 97-year-old "Auntie Litter" in Mississippi, everyone can participate in a beach cleanup. Perceptive parents can turn this three-hour trip to the beach into a powerful educational tool, while educators see the cleanup as a golden opportunity to develop lesson plans around the cleanup itself, data collection, and analysis. Old-timers who have experienced the changes in our environment through the past years can give first-hand testimony to youngsters about "the way things used to be" and how they have been altered, for better or worse.

Or perhaps it is knowing that the information they collect is useful. Comments from volunteers have led to revisions to the data card and streamlining of cleanup procedures. But more importantly, the data collected by this army of volunteers has given us, for the first time, an accurate picture of the specifics of the marine debris problem. We now know that, without a doubt, plastics make up the largest percentage of trash on our beaches. We also know that, while plastics are consistently high on all beaches worldwide, the sources of debris may vary greatly from one geographic area to another. For example, the Gulf of Mexico can attribute a significant portion of its beach debris to ocean-based sources, such as commercial fishing vessels and offshore activites, while Japan seems to have its biggest problem with land-based garbage left on the shore by beachgoers.

Because beach cleanup data points so clearly to the specific sources of trash, a variety of individuals and organizations are using the information to halt the flow of marine debris. North Carolina State University is using the cleanup reports as baseline information for a study to determine the economic impacts of marine debris. The finding of 531,828 cigarette butts during the 1990 cleanup certainly

caught the attention of R.J. Reynolds Tobacco Compoany, who has begun an anti-littering campaign targeting proper disposal of not only cigarette butts, but of all debris that may be generated while recreating on the beach.

Debris found during the 1991 cleanup identified more than 150 organizations and individuals. After researching these markings to determine the company name and address, CMC sent each company or organization a letter and information packet, letting them know where their product was found, when, and the potential hazards debris can cause.

For example, CMC received a number of data cards from volunteers in the Gulf of Mexico containing information on blue plastic bags marked with the Morton Salt name and logo for a product called "Ship 'n Shore Salt." This product is used by commercial fishermen, specifically shrimpers, to treat their catch. When Morton Salt received the information packet from CMC about this problem, they decided to take action. They are now printing "Stow It, Don't Throw It" and "Don't Be a Litter Boat" on their bags and are currently test-marketing this salt package in a paper bag instead of a plastic one. For the plastic bags they still have in stock, they have produced a sticker bearing the same message.

These are just two examples of the positive responses CMC has received from companies who were identified by their debris. In many cases, including R.J. Reynolds and Morton Salt, it is not the manufacturer who has disposed of this debris improperly, but the buyers of the products. But they both chose to accept the responsibility to help educate their patrons about proper disposal of their products. Three cheers for them and for all the volunteers whose data collection creates success stories like this!

Perhaps most important is the fact that information collected during these cleanups seems to be telling us that legislation designed to "fix" the marine debris problem is having little or no effect. Are people ignoring the law and dumping their trash? Do they even know about the law? Or do they realize that this may be an unenforceable regulation, given the manpower and resources available? Or is there just so much trash in our oceans that we are still collecting debris from years ago? These questions and many more are currently being explored by CMC and other organizations, including federal lawmakers, to determine what must still be done to solve this enormous problem.

Perhaps the main reason the cleanup is so popular is that it gives people the opportunity to actively do something to help the environment. The hands-on aspect of the cleanup gives volunteers a positive feeling about immediately improving the environment, rather than simply giving money to an organization and "hoping that it helps."

If you have participated in a cleanup, you know well the good feeling you get surveying the clean beach that is a direct result of your hard work. If you haven't yet joined the cleanup effort, don't despair. The next International Coastal Cleanup is set for September 18, 1993, and we anticipate another great turnout. Working together, we can make a difference!

Lisa K. Younger formerly was CMC's coordinator for The International Coastal Cleanup. For more information and the opportunity to participate in 1993, contact Karen Hodge at CMC's Chesapeake Bay Field Office, 306A Buckroe Avenue, Hampton, VA 23664 (804) 851-6734. ❑

Campus Compact:

continued from page 22

Florida, as lovers of the Earth, began the Terraphile Society. Members are committed to protecting, preserving and improving the environment, and as such, organize clean-ups, recycling drives, tree plantings, and youth education activities. They also volunteer for Merritt Island National Wildlife Refuge, the Florida Department of Natural Resources, and the Sea Turtle Preservation Society.

Myriad similar success stories on over 300 college campuses are testimony to the growing scope, sophistication, and academic articulation of service programs, and to their lasting impact on the local communities of America. Campus Compact's goal is to help college and university presidents step to the forefront of the movement, with their thousands and thousands of students in tow, and in the process broadening the very nature and definition of what we call "community service."

The Compact also works at disseminating information about innovative, successful programs, in the hope of providing for ease of replication. At a time when resources of all types are in short supply, we simply must not waste the opportunity that advanced communications provides us: the ability to share information instantaneously, thereby more than ever before, allowing us to learn from one another's successes and failures, as we in the community service "business" go about the arduous and never-ending task of working for a better tomorrow.

Roger Nozaki is Coalition Coordinator for Campus Compact. Pearce McCarty and Lara Schwartz contributed to this article as part of their internship responsibilities. For more information, write to Campus Compact, Box 1975, Brown University, Providence, RI, 02912. ❑

New Yorkers Get Involved in Stewardship

Wendy Rosenbach

The New York State Department of Environmental Conservation's Division of Water sponsors a Stewardship Program that encourages and recognizes individuals and groups who take action to protect New York State's waters. The program aims to increase public awareness of water-related issues and to make everyone aware of the ways people can prevent water problems. It focuses on commitment, taking action, and helping others get involved in water stewardship.

Sixth graders of Harley School take water sample from a nearby bog.

DEC's Stewardship Program is made up of two parts, "Adoption" and "Take Credit". "Adoption" encourages long term commitment to protect the waters of our state. Anyone can get involved in an adoption project. A lake, stream, pond, or even a fire hydrant can be adopted. All it takes is making the commitment to take care of a waterbody or water related structure.

"Take Credit" is DEC's way of commending stewardship projects done by individuals and groups. When a stewardship project or activity is reported, the Division of Water awards a Take Credit certificate. Stewardship projects include water monitoring, erosion control, clean-up of water-related areas and community Water Week programs.

There are more than two hundred examples of people taking on stewardship responsibilities since the NYS Stewardship Program began in 1988; many are school and youth groups. For example, the Youth Environmental Action Club of Liverpool High School in Syracuse, New York, conducts clean-ups and monitoring of local waterbodies. The sixth grade class at the Harley School in Honeoye Falls, New York, adopted a creek on school property. The students do year-long water monitoring, macroinvertebrate testing and periodic clean-ups of the creek. The plan is for this program to continue for future sixth graders at the school.

Water stewards see firsthand how they can improve the environment and make a difference. Stewardship activities are educational, fun and help the environment.

Wendy Rosenbach works with youth programs for the NYSDEC Division of Water. For a brochure describing New York State's water stewardship program, write for "Adopt a Waterbody" to: Public Participation Section, NYSDEC Division of Water, 50 Wolf Road, Albany, NY 12233-3501. ❑

Cool It!

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"issue packets" that address various aspects of environmental racism and eco-justice, such as the general degradation of the environment in communities of color. Since our inception, 13 Historically Black Colleges and Universities (HBCUs) and three Native American Tribal Colleges have registered with Cool It!

We all know that all sectors of society must be included in our decision-making if we are ever to solve the pressing problems of today—be they social, economic, or environmental. In the end, they all come down to human problems. We at Cool It! feel that working with institutions of higher learning, with their ameliorative and egalitarian ideals and effects on society, is an excellent way to break down traditional barriers and get minorities, the poor, the young, women, and other historically powerless sectors of society working together with those in positions of authority. We are happy to say the process is underway at over 500 campuses around America, and the number is growing every day.

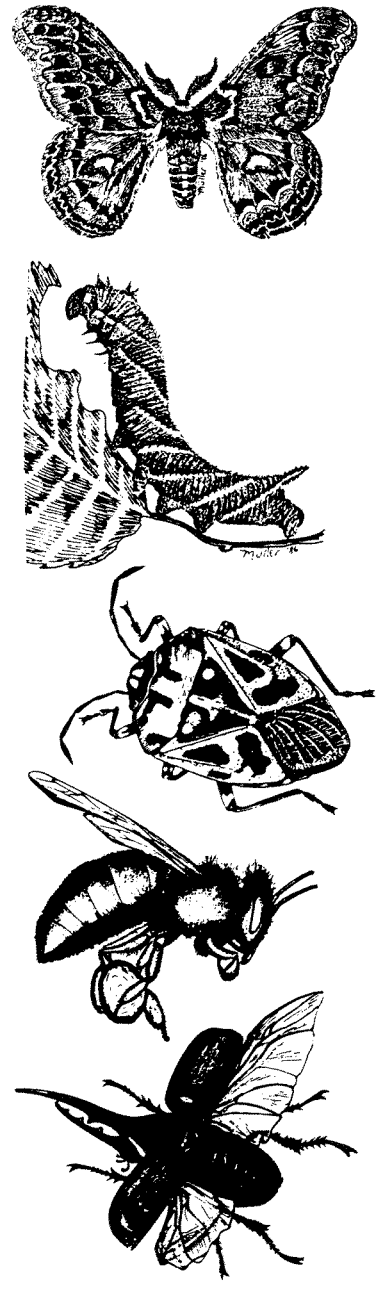
For additional information on this project, contact the National Wildlife Federation's Campus Outreach Program, 1400 Sixteenth St. N.W., Washington, D.C. 20036-2266. ❑

YES!

Help Is Available to Young "Bug" Enthusiasts!

Gary A. Dunn

Do you know a child who has been bitten by bug-catching or bug-watching fever? If so, there's no need to worry. This condition is very common among young people. These tiny, six-legged creatures frequently stimulate intense curiosity on the part of many youngsters. For some children this fascination with insects can turn into a lengthy (even life-time) hobby. In a few instances it even develops into a rewarding career as an entomologist - a scientist who specializes in the study of the insect world.



Many parents wish to encourage their child's investigations into the amazing world of insects, but they just don't know where to turn for help and information.

A solution to this problem can be found in a unique organization founded in 1965 by a group of enthusiastic teens interested in bugs, beetles and butterflies. The Young Entomologists' Society (Y.E.S.) is the only "bug club" in the world that caters to the special needs of young people interested in insects. Y.E.S. is able to provide the peer support and adult guidance that may not be available locally.

Y.E.S. specializes in bringing young people together (primarily through their mailboxes) so that they can learn from other youth by sharing information, advice, and even insect specimens - dead or alive.

Because the group also serves adult amateur entomologists, there is a ready supply of knowledgable adults willing to act as role models to guide the personal and educational development of the youth members. This arrangement provides a unique method for sharing entomological knowledge and expertise, as well as personal talents and cultural backgrounds. Specifically, the organization's goals are to provide encouragment, assistance, and enrichment opportunities for young insect enthusiasts; to promote the idea that the study of insects can be a lifelong hobby, avocation or career; and to provide opportunities for development or improvement of important life skills such as leadership, cooperation, communication, and self-confidence.

Current Y.E.S. membership is composed of boys and girls of all ages and backgrounds, as well as men and women who are amateur insect collectors, teachers, naturalists, and youth group leaders. The group has over 675 members from nearly all the States and Canadian provinces, plus 60 other countries! It is truly an international organization and it can expose young people to a wide variety of positive experiences.

The Society produces several publications, including Y.E.S. QUARTERLY (a journal of international amateur entomology), INSECT WORLD (a "bugletter" for school-aged youth and the adults who work with them), FLEA MARKET (ads by members looking to buy, sell or trade entomological goods and services), as well as special publications (for example, a resource guide to entomological goods and services around the world, including businesses, insect zoos and butterfly houses, and entomological organizations; a resource guide to children's books on insects, and manuals on teaching insect study to young people). Y.E.S even sponsors skill contests and awards for its members, so there are ample opportunities for young people to expand their horizons while learning about the amazing world of insects.

Gary A. Dunn is director of Educational Programming for Y.E.S. His experiences with young people and insects extends over 14 years. Inquiries for further information on programs, activities, publications or membership should be addressed to the Young Entomologists' Society, Inc., Dept. PR1, 1915 Peggy Place, Lansing, MI 48910-2553 (517) 887-0499.

Global Nature Study Through Local Action

Eugene Dunton

What kind of trees are there behind your school? How good is your soil? How much water do the students in your grade drink in a month? How much ozone pollution do you have? Let's compare weather reports.

Had enough? What's the point? Here's the point!!! It's students from twenty schools in ten states and two foreign countries engaged in shared nature study projects. Yes, and doing them at the same time. It's cooperative learing on an inter- and intra-state, and international level; with communication via computer modems, satellite viophone hook-ups, exchanging vio tapes, and face-to-face convocations.

You've probably heard of this high tech stuff before. The AT&T Learning Network, National Geographic's Kids Network, and TERC's Global Lab are using methods similar to ours.

So why haven't you heard of us? The answer: Because we're just us, fifteen to twenty middle school teachers and a half dozen ivory tower types from New Jersey and Virginia. Since 1982, we have bonded together to strengthen each other's resolve toward active learning, especially in nature study, and environmental ed. We have no corporate hierarchy, and are beholden to no one but ourselves. Occasionally our university colleagues at New Jersey Institute of Technology and Lynchburg College, Va., manage some grant money with strings attached to a curriculum product. This we do gladly, since curriculum products are exactly what we need. Why is that? Simple! Involving students in active learning is hard. Sometimes it's downright scary! Imagine our squirming under the call for accountability, mandatory testing, national curriculum!! By working together we strengthen each other's resolve to do right by the kids in our classes, allowing them the best of educational experiences.

Our electronic bulletin board is the Electronic Information Exchange System, otherwise called EIES. Three years ago we decided to call ourselves the Wizards of EIES. Presumptuous? Yes! Fun? Of course! Most of the program offerings of the more visible groups already mentioned were done first by us Wizards. I say this without rancor. We wizards share willingly with each other. It's only natural that this sharing spreads. We have discovered and shared activities for oceanography, acid rain, garbage source reduction, water pollution, soil pollution, and forest ecology.

In 1990 we joined the FAST group. FAST, or Foundations Approach to Science Teaching, published by the University of Hawaii, is a nature study based program for instruction in life science, physical science and earth science. Several of us Wizards have shared FAST projects with schools in Hawaii, Japan, Russia, and Canada.

One of these was based on the concern for the health of middle school students all over the globe. These students are of the age of greatest susceptibility to heavy metal poisons. There is much attention being paid to the occurrence of these metals in the drinking water provided to students. The project that evolved from this concern is Operation Big Gulp. Maryann Behr of the Woodrow Wilson School in Edison, NJ, is the primary organizer.

A standard method for measuring the amount of water consumed by a middle school student was the first goal. A variety of methods were tried by the participating schools. These methods were discussed via computerized communication called electronic mail. This method is quick and direct and fits well the impatient natures of our students. Once agreement on methodology was achieved, a time limit for testing was established. The results were flashed around the world. After some adjustments were made for differences in climate, the results were published. School officials were amazed at the impact the project had made. They recognized it as real science. Soon, more testing of water was going on in most of the participarting schools. Student awareness of a major health hazard was heightened. Another project, this one sponsored by FAST and elaborated by my students, proved that air pollution is real. Anything one can find direct evidence of must be real! Right?

FAST has a lesson whereby it is possible to detect the presence of atmospheric ozone, one of the main components of photochemical smog. All it involves is the hanging of a strip of natural rubber anywhere out of doors. Ozone gas will perforate the rubber in a very short time. My students came up with a method of standardizing this simple test. Keep the rubber strips the same length and width, stretch them in a similar manner, hang them for a set length of time, and keep them protected from other contaminants and the elements. They devised a standard grid for counting the number of perforations per cubic centimeter and flashed it around the world.

At a meeting with our Canadian counterparts we compared results and found the Canadian air preferable. We also shared the appearance of our strips with other students via videophone transmission.

You can try this too, using rubber dam, or slices from a latex glove. Please try the Big Gulp also. The procedures we tried are included as part of this article. Remember that these procedures were invented by students through consensus. How you try it doesn't matter. Challenge our procedures. Invent your own processes. Discuss them with us and others. Revise them. Test them and tell us! Help us resist education by recipe. It doesn't help. There is no recipe book for life.

Eugene Dunton is a long-time teacher of general science and environmental education at Wandell School, 97 East Allendale Rd., Saddle River, NJ 07458 (201) 327-0727. Further information on the Wizards of EIES program can be obtained by contacting Mr. Dunton or Dr. Lisa Novemsky, Pre-College Education Department, N.J. Institute of Technology, University Plaza, Newark, NJ 07102 (201) 596-5795

Some Shared Research Techniques:
Water Consumption by Middle School Students

The Big Gulp

Part A

Purpose: The purpose of this investigation is to determine the volume of water in one gulp.

Materials:

graduated cylinder, 500 ml
baking pan
sponge
plastic garbage bag
watch with sweepsecond hand

Procedures:

1. Students are to work in pairs. One will sip and collect unsipped water from a fountain. The other student will time the length of a drink from the fountain.
2. The SIPPING STUDENT should practice synchronizing placement of the baking pan beneath the stream of water with the placement of the lips on the stream of water to begin sipping.

   The TIMING STUDENT should practice identifying the moment lips touch the stream of water to begin sipping.
3. To begin, the SIPPING STUDENT turns on the water faucet. The baking pan should be placed under the stream of water at the time that the lips touch the water to begin sipping. As the student drinks, he or she must count the number of gulps taken.

   The TIMING STUDENT begins timing at the same time the sipping student's lips touch the water.
4. The SIPPING STUDENT drinks until thirst is satisfied.

   The TIMING STUDENT stops timing when the sipper simultaneously turns off faucet and removes his or her lips from the water.
5. Record the number of seconds the sipping student drank from the fountain. Record the number of gulps the sipping student counted while drinking from the fountain.
6. Pour the unsipped water collected in the baking pan into a graduated cylinder. Record the volume of the unsipped water.
7. The SIPPING STUDENT again turns on the water faucet, and allows the walter to collect in the pan for the number of seconds recorded in Procedure 5 above.

   The TIMING STUDENT tells the sipper when to begin and end the collection of all the water in the pan.
8. Pour the water collected in the pan into a graduated cylinder. Record the volume of all water collected.
9. Calculate the volume of water in one gulp.

Observations: Record all data on chart attached.

Analysis:

1. If you had any difficulties in collecting data, describe them.
2. Can you see any sources of error in data collection? Identify them and suggest how the errors might be avoided
3. Based on the data you collected what is the volume of water contained in an average gulp of a middle school student?

Conclusion:

Part B

Purpose: The purpose of this investigation is to determine the volume of water consumed over a two-week period in a middle school.

Materials:

note pad
pen

Procedures:

Record the number of sip (gulps), of water you drink at a school water fountain every day for two weeks. During Earth Week tabulate your data along with that of your classmates. Present the data on EIES by April 26th to tabulate THE BIG "electronic" GULP.

Observations:

Volume of Water in a Gulp

Students	Grade	Time in Seconds	Number of Gulps	Volume of Unsipped Water in mL	Volume of All Water in mL	Volume of Sipped Water in mL	Volume of Water in One Gulp

Student Gulp Record

Date	Time	Number of Gulps	Volume of H20 Consumed (Refer to Part A)

Amount of Water Consumed
Two-Week Totals of all Participants

Students' Names	Total Volume of water Consumed Over a Two-Week Period

Identifying Ozone Gas in the Air

Objective: Apply the scientific method to a determination of ozone gas in the atmosphere.

Background Information:

Ozone gas, 03, is a faintly bluish gas with a pungent odor. Its name comes from a Greek word meaning to smell. It is formed from oxygen during high voltage discharge, and sometimes can be smelled around arcing electrical equipment. Ozone in the upper atmosphere results from lightning or the bombardment of upper atmospheric oxygen with ultraviolet radiation, and in fact, screens us from much of this harmful radiation.

Ozone is also poisonous. Harmful levels of this gas are being measured at ground level. It forms when sunlight reacts with the volatile organic compounds emitted from internal combustion engines that use the current mixtures of alkanes we call gasoline.

One of the many things it can damage is natural rubber.

Materials:

rubber crib sheet, a cardboard 2 quart container, two 40 gram masses, string and other fastening material, black construction paper, glue, a transparent centimeter grid, a 10x to 20x magnifier, a tall, clear glass or plastic container.

Method:

1. Make a weather proof container to put over rubber strip.
2. Cut a 1 x 8 cm strip from the crib sheet.
3. Suspend the strip inside the container, stretched by a 40 gram mass.
4. Hang the container and rubber strip from a tree.
   Set up a control strip in a sealed container.

5. Observe any changes in the rubber strip. [If the rubber strip cracks in 2-14 days, ozone is in the air.] Note elevation, wind direction, other weather phenomena, location, pH of precipitation, and traffic patterns. While waiting for the rubber to react, map locations of test units. Make predictions as to what variable(s) may have the greatest impact on ozone occurrance.

6. After the test units are taken in, stretch each test strip to 12 centimeters, glue to a piece of black construction paper, and using the transparent centimeter grid, determine the average number of holes per square centimeter. Don't forget to compare with your controls.

Questions to be Answered:

1. Under which conditions did the most holes occur?
(The assumption is that the number of holes is an indication of the ozone concentration.)

2. What are some of the problems caused by surface ozone?

3. What can be done about these problems?

The Earth Service Corps

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planting event, negotiate details with community leaders and/or government officials, and organize other students and community members to participate.

To do this, students must learn to identify and listen to the many perspectives and concerns surrounding environmental issues. They learn to work with diverse members of the community, forming effective partnerships with scientists, corporations, community leaders, public officials or agencies and many others. In addition to these practical skills, the students learn about themselves and their relationship to the environment, the range of diversity within their communities, and the complexity of the environmental problems facing our world.

The environmental hazards facing local communities, however, are often part of a global crisis. *Global citizenship* requires understanding the perspectives and cultures of people from other nations and learning how to work cooperatively to build a shared, sustainable future. One way that Earth Service Corps promotes this global citizenship is through international and cross-cultural exchanges. In June 1992, a delegation of students (and adults) attended the United Nations' Earth Summit in Rio de Janeiro. The students gave presentations on Earth Service Corps and youth leadership at the Global Forum, a gathering of thousands of representatives from environmental and other (non-governmental) organizations. They met with elected officials from the United States (including Vice-President Al Gore) and, perhaps most important of all, had a chance to share information, experiences and a vision for the future with young people from around the world. In 1991, students traveled to Japan, Hong Kong, Singapore and Malaysia to participate in environmental conferences and tree planting projects with students from those countries.

YMCA Earth Service Corps stems from the YMCA's long-standing commitment to providing opportunities for youth that promote both personal development and social responsibility. In 1989, the YMCA of the USA named youth work as a priority area for the 1990's. To help young people develop the skills and talents to become responsible public citizens means addressing the issues that matter most to them. The rapid growth of YMCA Earth Service Corps demonstrates the strong interest young people have in learning to protect the environment. More than that, it shows that young people are eager to meet the challenge to become educated, effective leaders.

Thanks to a grant from the W.K. Kellogg Foundation, Earth Service Corps has begun training YMCAs across the United States to develop their own programs. There are currently 10 U.S. cities with Earth Service Corps programs: St. Louis, MO; Chattanooga, TN; St. Paul, MN; Dayton, OH; Aurora, CO; and, in the state of Washington, Olympia, Seattle, Kitsap County, Skagit County, and Whatcom County. Programs modeled after Earth Service Corps are currently underway in Hong Kong, Singapore, Malaysia, Philippines and Brazil.

Adrienne Ross is Communications Coordinator for the YMCA Earth Service Corps. For more information about this program write the YMCA Earth Service Corps National Headquarters, 909 4th Avenue, Seattle, WA 98104 or call 1-800-733-YESC. ❑

Good Reading

The Experience of Place

Tony Hiss
Alfred A. Knopf, New York, 1990. $19.95

We in ANSS have long held that nature study can be pursued in urban as well as suburban and rural places. Today we know it must be. Tony Hiss strengthens our arguments by writing from the viewpoint of an author who has been researching a variety of especially pertinent fields such as planning and psychology. His synthesis in this book has an original flavor to add to his carefully collected data.

PART I, EXPERIENCING CITIES, starts in New York's Grand Central Station to introduce Simultaneous Perception, using as many as possible of one's senses at the same time. (That challenges us to go beyond one-thing-at-a-time teaching - a tough challenge). In Brooklyn's Prospect Park, he expounds Connectedness, simultaneously experiencing space, light and dark, grassland, and humanity's ancient origin in African savannas matched with today's researched psychological preferences. Times Square, yesterday and today, stimulates his thoughts on The Possibilities Of Planning and interpersonal relationships - among other matters intriguingly presented.

PART II, ENCOUNTERING THE COUNTRYSIDE, stresses the importance of recognizing Working Landscapes, introduced by giving the history of the sole-surviving farm in New York's Queens. After The Highways then deals with demography and problems and possibilities of development in other parts of our nation. Computer-generated bicycle maps serve as an example for relating people's feelings to their experiences of places. Creating Public Value deals with a regional approach to landscape, and I quote (p. 80-81):

> "Recent work in a number of research fields, such as education and health care, has been advancing the regionalist approach by making it clear that certain human activities, including both learning and healing, can be enhanced when they take place in a setting that offers people countryside connections in addition to the support systems already in place. In the next few years it will be possible to see what some familiar small-scale institutional settings will look like once they've been recountrified, so to speak."

He also mentions England's Learning Through Landscapes Project, which "investigates how schools can restructure a number of paved and windswept schoolyards to give them a country look and so provide 'a complete environment for learning'." ANSS has worked at that for over 85 years; more work is needed!

A concluding chapter, Thinking Regionally, presents past and future of the Connecticut Valley in Massachusetts by discussing the work of Robert Yaro and his associates in creating the DESIGN MANUAL (Univ. of Mass. Amherst, 1988). Tony Hiss concludes with a postscript, A BEGINNING. A bibliography and index complete this book's significant contribution to current thought about people-nature relationships.

Reviewed by John W. Brainerd
80 Lyme Road, Hanover, NH 03755-1218

☆ ☆ ☆ ☆ ☆

Family Book Review

A play in three acts by the Wiessinger Family

Characters
JOHN, a middle-aged father and long-time naturalist and environmental educator.
DIANE, his wife, a not-quite-so middle-aged mother and avocational environmental educator.
SCOTT, their 7th grade son, avid paleontologist and compulsive reader.
ERIC, their 4th grade son, dilettante and reader-for-pleasure.

Synopsis: The family has been asked to review some children's nature books from their different perspectives. They approach their task in characteristic ways. ERIC sits down with the stack and makes a brief, incisive comment on each book after reviewing it for ten seconds. JOHN looks the books over carefully and makes notes that he keeps with each one. DIANE records ERIC's comments faithfully but adds her own only after repeated reminders. SCOTT is busy somewhere else until the last possible moment. The scene opens as all characters complete their assessments.

ACT I: LITTLE-KID BOOKS

Flower. M. Butterfield, 1991. Simon & Schuster, 16 pp. $3.95. The life history of flowers in simple, brief text.

JOHN: I wondered about the plant and animal choices until I realized it's a British book.
DIANE: It's a small, pretty book, the kind that both our boys liked to read over and over when they were just a few years old. There are plenty of rich details, and on a couple of pages children can watch the flower get bigger and bigger and bigger. Because it tries to emphasize how many different kinds of flowers and fruits there are, the message gets a little confusing, and it's a pity that the plants and animals are British, not American. But hey, I think my first sentence says it best.

SCOTT: It says that when the flower is given pollen it

can begin to grow a fruit. But before that, it said that the flower already had pollen. And the apples and blackberries and nuts have nothing to do with the kind of flower they've been talking about. It's not a cuddly book. It's just kind of cold and informative. Little kids like storybook stories.
DIANE: Has Scott forgotten? Or have I?
ERIC (now more than a few years old and inclined to tote Calvin and Hobbes around instead of small, pretty books): This is definitely for little kids. (Puts it aside.)

Frog. M. Butterfield, 1991. Simon & Schuster, 16 pp. $3.95. The life history of a frog in simple, brief text.

DIANE: Maybe British frogs are very, very different from American frogs, but I never saw tadpoles like these! I don't think it's fair to foist these pictures off on <u>any</u> little kids, and the ones who know their tadpoles will be outraged. Stick to the Flower book. Better yet, buy American.
SCOTT: First of all, I don't like those huge feathery gills. And kids won't understand the difference in scale between the fish and the tadpoles in the pictures. "The egg becomes a tiny tadpole"?
ERIC: Oh, this is gonna be the same as Flower. (Flips through it.) Yeah. "The egg grows a head and a tail"? Hey, tadpoles don't have gills like those, do they?
JOHN: Both boys objected to the confusion of egg with embryo, because they see the growing tadpole as something contained <u>within</u> the egg. I wonder what images the text conjures up for really little kids. So what can we do with this book? The boys are way past books like this, and I'd hate to give pictures like these to the library. Maybe we should just recycle the pages.

One World. M. Foreman, 1992. Arcade Publishing (Little, Brown and Company), 28 pp. $14.95. Two children tend a tidal pool, discover it to be a little world, and find similarities between it and the larger world.

JOHN and DIANE: The illustrations are beautiful, and there's a lot going on in them. It will certainly capture children's interest. We like the message, too.
SCOTT and ERIC: We don't like the pictures. They're muddy and blurry.
DIANE: What about the idea at the end that children hold the world in their hands?
SCOTT and ERIC: That's silly. <u>We</u> don't hold the world in our hands. <u>You</u> do.
DIANE: So grownups like the illustrations and grownups like the message. I think those are two fine reasons for reading the book to children!

ACT II: BIG-KID BOOKS

Earthwatching III: An Environmental Reader with Teacher's Guide. Institute for Environmental Studies and Sea Grant Institute, 1990. 160 pp. The scripts from over 200 one-minute "Earthwatch" radio "spots". The "spots" have appeared on radio stations since 1972, and describe environmental research projects, issues, and trends both in the U.S. and around the world. This is the third volume of published scripts. In the back is a teacher's guide, with instructions for concept mapping, classroom investigation, sample activities, and curriculum integration.

DIANE: It turns out that none of us wanted to look at it, because the cover makes it look like a textbook. But once John and I started reading, we didn't put it down. The scripts are interesting, and so wildly varied that browsing through the book is like nibbling Party Mix - you keep coming back for the next bit. Some of the "spots" lend themselves well to additional school activities, others don't, but just reading one a day would fill the school year with cumulative small doses of environmental food for thought. (As for the brief section on concept mapping: it looks to me like an energy-intensive way to kill the interest generated by the scripts.)
SCOTT (after agreeing to read "just one"): Boring.
ERIC (after the same request): Hey, these are good!
JOHN: You mean they actually stored Lord Nelson's body in a barrel of rum?
DIANE: See page 105 if you're curious.

Backyard composting: your complete guide to recycling yard clippings. 1992. Harmonious Press. 96 pp. $6.95. A slim but comprehensive book on the hows and whys of composting.

JOHN: A good "how to" guide for creating a home compost pile or for teachers to use in setting up a school composting project. It would have been good to see some school activities laid out in the book.
DIANE: Its small size and short pages make it "reader-friendly" for anyone old enough to start a compost pile. The paragraphs are short, too, and there are plenty of illustrations and photos. Not a bad layout for teaching composting to a squirrelly classroom of varied abilities and interests.
ERIC: I think this would go for third or fourth grade. Hold on, it's got a cartoon in it. (Reads cartoon.) Yeah, third or fourth grade could handle this.
DIANE: Interesting how cartoons catch a child's eye. I think Eric would be willing to read about renaissance revival furniture if it came in the form of a cartoon strip!

ACT III: MIDDLE-KID BOOKS

Nature Conservancy Nature Cards: Lions & Tigers & Bears. 1992. Houghton Mifflin Company. $8.95. 32 12 cm x 18 cm cards, each with a color photo of a mammal on one side and habitat, range map, food, and other facts on the reverse. Habitat and food are depicted with symbols, for the purpose of playing assorted matching games with the cards.

ERIC: I think these would be excellent for a school program. I mean, just perfect. I don't think you could

get much better.
DIANE: Like many kids his age, Eric loves cards like these. There certainly is merit in that, and the idea of information "quickies" is a favorite approach in this family. Fortunately, Eric hasn't shown any interest in using the cards for the games recommended by the publisher; it wouldn't be easy to play "memory" or even "go fish" when some of the categories have an odd number of cards! And I have mixed emotions about simplifying habitat descriptions to the extent that the koala, tiger, porcupine, cotton-tail rabbit, and white-tailed deer share the same habitat symbol.
SCOTT: I like the scale that shows a person and the animal. I like the way they show the animal with its baby quite often. A lot of these pictures are nice. (Examines each photo carefully and with pleasure.)

Nature Conservancy Nature Cards: Frogs & Toads. 1992. Houghton Mifflin Company. $8.95. 32 12 cm x 18 cm cards, each with a color photo of a frog or toad on one side and habitat, range map, food, and other facts on the reverse. Habitat and food are depicted with symbols, for the purpose of playing assorted matching games with the cards.

JOHN: The photos are beautiful, but there are so many colorful and interesting North American species (especially if they included salamanders) that it's a shame to use exotics. Why not stick to our native species?
SCOTT: In this picture, you can't see what the frog looks like. All you can see is his eyes and his mouth and his feet. And this one just shows an immature. Most of the rest of these are pretty good. The maps are good, but kids aren't going to read the back.
JOHN: That may be true, but the back would be a good starting point for a library project. Of course, they'd have trouble finding more information on some of the exotics...

Peterson First Guides: reptiles and amphibians - a simplified field guide to the snakes, turtles, frogs, lizards, and other reptiles and amphibians of North America. Conant, Stebbins, and Collins, 1992. Houghton Mifflin Company, 128 pp. $4.95. Designed like the regular Peterson Guides, but in abbreviated form.

JOHN: I like the differentiation, right at the start, between reptiles and amphibians. The book encourages kids to release their captives after a short time - a good concept that could use even more emphasis. The conservation tips are a nice touch. I like the idea here - a simplified version that's not so overwhelming for beginners.
SCOTT: Pretty good, except for the fact that some of the illustrations are in black and white. Can I have this one to keep?

Peterson First Guides: Seashores - a simplified field guide to the seashores of North America. Kricher, 1992. Houghton Mifflin Company, 128 pp. $4.95. Designed like the regular Peterson Guides, but in abbreviated form.

*DIANE: The introduction states that "by narrowing the choices... [the First Guides] make identification much easier." I would have said they make mis*identification *much easier. Small pictures and at least one mislabelling don't help. I think the First Guide books will be cherished into grubbiness by children who love to own and tote "important" books, but by the time children are old enough to start using a Field Guide, I think they deserve the Real Thing. John and I differ on this one, but we agree that both schools of thought are valid.*

Journey of the Red-Eyed Tree Frog. M & T Jordan. Green Tiger Press (Simon & Schuster), 33 pp. $16.00. A tree frog makes a perilous journey to try to save his forest from the ravages of humankind.

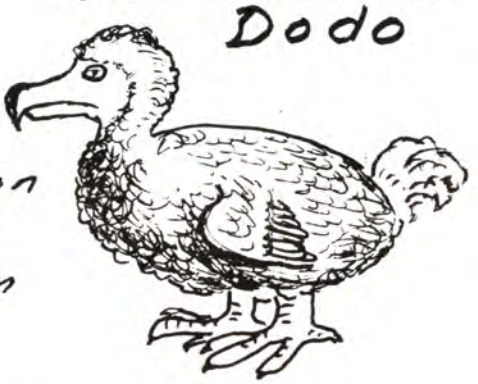
DIANE: I know we're not supposed to condone anthropomorphism, but I never voluntarily read non-fiction. I'm old enough and smart enough to wince when Hops-a-Bit takes his moist little amphibious body across long stretches of sand and ocean with no apparent consequences.
JOHN: I had the same problem.
DIANE: But I had fun reading it, anyway, and as a result I know more about the rainforests and their flora and fauna than I did. Anthropomorphism was the sugar coating on all the nature books I read as a child - and apparently it still works for me. Gorgeous pictures don't hurt, either.
SCOTT: The illustrations are nice. And this book seems more like a book little kids would like. This just sounds more like a cuddly book to be read to a little kid. (Reads a paragraph aloud, then continues his comments.) I don't know; this book doesn't seem too good. Most of it's just introducing a lot of different animals... (despite his comments, he continues to flip through the book for some time, scanning the text and peering closely at each picture.)
ERIC: (following his 10 second assessment): Definitely this. I'm gonna like this. May I read it? I'm gonna go curl up. (Leaves room, with book under arm.)

Curtain falls on a boy, and a book, in a chair.

The Wiessingers live between a country road and the creek in Ellis Hollow, near Ithaca, NY. ❑

Naturalist's Notebook

Dead as a Dodo



The flightless dodo lived only on the island of Mauritius in the Indian Ocean. The Dutch landed and took possession in 1598, and in 1681 the last dodo died. It was the first documented victim of human thoughtlessness and greed.

The great auk once ranged abundantly through coastal waters and islands of the North Atlantic. Hunted and killed relentlessly, it had disappeared nearly everywhere by the early years of the 19th century. The last two recorded individuals were clubbed to death by trophy hunters on Eldey Rock, off Iceland, on June 4, 1844.

Ranging over most of eastern North America, the passenger pigeon was probably the most abundant bird species in America in 1800. By the end of the century it had all but disappeared under the onslaught of market hunters. The last living individual, a female named Martha, died in the Cincinnati Zoo in 1914.

The dusky seaside sparrow lived only in salt marshes near the Kennedy Space Center. Its numbers declined because of mosquito-control and other operations that changed and destroyed its critical salt marsh habitat. The last individual, a male, died in 1987.

Untold numbers of other birds throughout the world are threatened with extinction today because of the activities of *Homo sapiens*.

"...when the last individual of a race of living things breathes no more, another heaven and another earth must pass before such a one can be seen again." (William Beebe)

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