

“Extension at Its Best”

Orlando citrus grower Jerry Chicone, who has more than 500 acres under Conserv II irrigation, says the wastewater irrigation program is “Extension at its best.”

“Extension has played a crucial

role in making this project a success,” Chicone says. “It’s a project where everyone wins—the urban areas get rid of treated wastewater, the growers get an almost unlimited supply of free water, and the environment is protected.” ■

Creative Young Minds Grow in the Outdoors

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by Katherine C. Gugulis, Chief, Media and Educational Services, Soil Conservation Service, USDA, Washington, DC

When the Iron Curtain came crashing down last year, Americans got a shocking glimpse of a ravaged landscape, mud-clogged rivers, and fouled air. That glimpse gave many Americans their first real picture of what could happen here if we don’t step up efforts now to safeguard our own environment. Along with the pollution, they saw long lines of people waiting to enter grocery stores with empty shelves . . . people waiting in line for hours for a loaf of bread, a turnip, a few potatoes.

Contrast that with a stop at any American grocery store where food of every kind, color, and variety fills rows of shelves; where you can get strawberries and oranges and apples in the dead of winter; where beef, pork, poultry come in all cuts and sizes; where

even bread comes in a mind-boggling array of types and flavors.

While the abundance at America’s grocery stores results directly from our economic and political system, it is just as much related to the wealth and variety of our natural resources. Caring for those resources is a high priority for those who own and manage three-quarters of America’s land—our farmers, ranchers, and forest owners. Unfortunately, not everyone who makes decisions about the use of natural resources has a stewardship ethic. And the number of those who do is likely to become even smaller, simply because the number of people who have grown up on farms becomes smaller each year as the population grows and the number of farms shrinks. The majority of future voters, legislators, commu-

nity leaders, developers, and corporate managers will grow up having had little opportunity to acquire a conservation ethic through direct experience with the land and the natural environment.

Outdoor Classrooms Open onto the World

Fortunately, thousands of youngsters are acquiring a conservation ethic through direct contact with nature. Their teachers and school administrators are opening the world to them simply by opening the classroom doors.

Things students would have learned about only through books and classroom modules suddenly

come alive to them. They see, touch, smell, taste, and hear the outside world, and they begin to know why it is important. Conservation education focuses on real-world, future-oriented issues and activities that are relevant to students and their communities.

In towns and cities throughout America, USDA's Soil Conservation Service, Extension Service, and Forest Service work with local soil and water conservation districts to promote and establish outdoor classrooms. Youngsters of all ages, backgrounds, and talents are learning to appreciate and protect their environment with the help of resource professionals, their teachers, and other people in their communities.

William Richards—a farmer, visiting college professor, and currently the chief of USDA's Soil Conservation Service—believes conservation education is critical if America is going to maintain a leadership role in the world agricultural market.

“We have to give young people an opportunity to learn about our natural resources and the importance of those resources to their lives if we really want to leave them a legacy that is worthwhile,” Richards says. “Outdoor classrooms are one way we can do that; it's as simple as walking outside and looking at the natural systems around you.”

Richards, whose father was a farm equipment dealer, bought a



Boy Scouts touring the SCS Conservation Trail at Camp A.P. Hill, VA, received advice ranging from gardening to soil science. Wayne Bogovich, SCS agricultural engineer, describes soil profiles taken from the area.

Tim McCabe/USDA 91BW0831

rundown 160-acre farm in Ohio when he and his wife were first married. Together, they restored the land through good conservation practices, including conservation tillage, and expanded it to a 2,000-acre-plus farm operation that their three sons now manage.

“I didn’t know anything about farming when I started. I read and got as much advice from the Soil Conservation Service and Extension Service as I could. I believe farmers today have an obligation to learn as much as they can about current technology and apply good conservation management to their farms. , I believe it’s critical for us in agriculture to help instill a conservation ethic into those young people who will one day become our community leaders and decisionmakers. We need them as much as they need us.”

Outdoor Classrooms Go Everywhere

Outdoor classrooms are more a matter of mind than of circumstance. They can be established virtually anywhere and under any condition, as long as there is a creative and dedicated sponsor.

In south-central Florida a few years ago, a third grade class of gifted students at Zion Lutheran School in Deerfield Beach realized during their study of threatened and endangered animals that there were few natural areas remaining in South Florida to provide habitat for endangered

animals. As a result of their study and with the help of their teachers and community, they brought a little bit of native Florida back to their school by turning a grassed courtyard into a virtual paradise with over 40 specimens of native plants.

They’ve installed a big wooden deck, a post and rope fence, and a beautiful cypress sign to welcome everyone to their habitat. They’ve established a nature trail complete with guide book. Visitors can listen to all the birds, watch the butterflies, and marvel at the small mammals and reptiles that come to eat or hide. Fruits and flowers are everywhere.

The students obtained help from a wide range of community agencies and organizations including the Broward County Soil and Water Conservation District. Thaddeus Hamilton, the District’s naturalist, told them how to rebuild the sandy soil with mulch and compost. The city forester approved a permit for removing two non-native trees. Parents, students, teachers, administrators, and other volunteers helped remove the trees and ready the site for planting.

Pamela Farmer, the teacher and coordinator of the school’s gifted program, says, “There is something I can do as an educator—in still an understanding and appreciation of our fragile ecosystems in the children. When our young people are made aware,

they become concerned and want to help. Hopefully, they will later become responsible, caring, and informed adults who will take better care of their world than we have.”

At the North Pole Middle School in Alaska, students have categorized 160 trees in the Northern Boreal Forest where the school is located, determining the age of the trees and noting their growth patterns. They have studied aquatic life in the stream that runs across the schoolground; and they have studied beavers and their work, including the effect of a newly created dam on the insect population. This year, Teacher Gerry Young and her students are planning to reestablish salmon that used to hatch in the stream “back when the pioneers came.”

Young has been teaching for 25 years and has been at the North Pole Middle School for the last 5. “Wherever I have taught, I’ve always taught conservation,” said Young, who won first place in the 1989 Conservation Education Awards Program of the National Association of Conservation Districts. “I think, with a species disappearing daily, we need to learn all we can now.”

Denise Parsick, at the time a sixth grade teacher at the Broad River Elementary School in Beaufort, SC, enlisted the help of her students, fellow teachers, and members of the community in reclaiming a long-neglected nature

trail on the 25-acre schoolground. To raise money for materials, such as railroad ties for controlling erosion along the trail and wood for building birdhouses, Parsick wrote grant proposals and headed up a recycling center for newspaper and aluminum cans at the school.

“My philosophy of teaching science is that nothing beats experiencing it,” said Parsick. “You can memorize a lot from books and classroom discussion, but when you go to an outdoor classroom and touch, see, hear, and analyze, it makes a big difference.”

“For example, when we are studying decomposition, my students and I can go to the woods and find a rotting log,” Parsick said. “Then I show them that not only does the log have its own built-in community, but that it is also part of a much larger community that involves generating oxygen, making soil, growing new trees—the entire cycle. They watch. They record. They analyze. They gain a respect not only for nature, but also for each other.”

On the day after a 4-inch rain, at Cashion Elementary School in Cashion, OK, 25 students slipped plastic bags over their shoes and slogged to their 10 a.m. class in their school’s outdoor classroom. “It’s a little muddy, but that’s no reason not to go outdoors,” said Pam Deering, special education teacher at the small, rural school.

“In fact, the students found some interesting things like mushrooms, mold, and insects that hadn’t been there in dry weather.”

The triangular-shaped outdoor classroom is located in a corner of the schoolground and is slightly over an acre in size. It is enclosed by a chain link fence and has a small pond, trails made of landscaping timbers and wood chips, and a variety of trees and grasses. Soil removed when digging the pond was used to build up the landscape along the south side of the area to add diversity to the flat schoolground.

“Developing the outdoor classroom has really been a cooperative effort among the school, State and Federal agencies, businesses, and individuals,” said Jim Stover, Kingfisher County Soil and Water Conservation District manager. Stover helped the school get the project started by helping to develop a plan for the area. Jack Miller, a Soil Conservation Service soil conservationist in the county, made recommendations on the pond, trees, and grass cover, and provided soils information. Parents helped to install fencing and plant some of the larger trees.

Rural Areas Need Outdoor Classrooms, Too

Rural communities aren’t content to let their young people learn environmental values simply by osmosis. Many realize they have a

special obligation to instill conservation values into the young people who will one day manage their farms, forests, and ranches.

Western Kentucky University made available a 20-acre wooded site for an outdoor classroom and the entire community turned out to help. University volunteers identified and marked more than 30 species of trees and shrubs; a local contractor donated time and equipment to install a pond; and the garden club provided and installed bird nesting boxes along the 1/2-mile hiking trail.

“We realized we were living in one of the best agricultural areas of the State and our young people were learning very little about it or about natural resource conservation,” said Pete Dotson, an assistant professor of agriculture at Western Kentucky University and a district board member of the Warren County Soil and Water Conservation District. “Students weren’t learning enough about protecting our soil and water and the wise use of our forests.”

The idea for an outdoor classroom came when a local committee was formed of representatives from such groups as the Warren County Board of Education, FFA, the Bowling Green Women’s Club, the Kentucky Division of Forestry, and the Soil Conservation Service to address these conservation education needs. The Tennessee Valley Authority contributed \$17,000 through a 3-year grant, which is

being used in part to purchase bleachers and a podium for a group instruction area, improve hiking trails, and construct a bridge over the pond. A 4-acre conservation tillage plot was established adjacent to the outdoor classroom to show students erosion control methods for croplands.

The site is maintained through a scholarship provided by the Warren County Conservation District to all university students studying environmental or conservation issues. The classroom is presently being used by local elementary and high schools and by



The soil profile building area is a popular stop along the SCS Conservation Trail at Camp A.P. Hill, VA. Under the guidance of SCS Conservation Technician Burleigh Kay, scouts built soil profiles and learned how to control soil erosion around their homes.

Tim McCabe/USDA 91BW0832

university students for aquatic studies, soil classification, soil testing, and other environmental and agricultural studies.

The agriculture and biology departments at Montevideo Senior High School in southwestern Minnesota are the primary users of an 80-acre outdoor classroom at their school. But, the teachers in those departments also provide teaching assistance to students and teachers of other K-12 classes from throughout Chippewa County.

Kevin Hansen, an agriculture teacher at Montevideo, credits the local conservation district and Joe Keller, an SCS technician, for being instrumental in developing the design and management of the 80-acre site in the early 1970's. Conservation education activities are being expanded in that school district. Last spring, the school district worked with the local SCS, the soil conservation district and the Sugarbeet Growers Association to secure 1,000 trees to plant on 3 acres near an elementary school in Montevideo.

Nearly 400 students, ranging from kindergartners to sixth graders, were involved in planting the bare-root trees in holes dug by the school's maintenance department using a tractor and power-driven auger. As the trees need to be thinned, the students and teachers will plant them either on school-owned land or on community-owned easements or other community owned or managed

property. The 3-acre site will also be used by high school biology and agriculture classes.

Concrete Doesn't Deter City Kids

While open space is limited in most big cities, kids can look beyond the concrete to learn about nature. In Washington, DC, teachers, administrators, and kids are being helped to do just that through the District of Columbia Soil and Water Conservation District (SWCD) and the Thomas L. Ayers outdoor classroom program. Through the Ayers program, sponsored by the SWCD and the local chapter of the Soil and Water Conservation Society, schools can receive technical assistance and funding for supplies and plant materials. Volunteers from the city's Cooperative Extension Service and Recreation Department, the U.S. Department of the Interior's Geological Survey and National Park Service, USDA's Soil Conservation Service, and other Federal and city conservation agencies also help with outdoor learning projects and activities.

The Francis Scott Key Elementary School, one of over 50 schools to participate in the Ayers program, assisted by SCS through the SWCD, involved students in building terraces and planting ground cover to control soil erosion. James V. O'Connor, a geologist at the University of the District of Columbia, helped stu-

dents develop a topographical map of the school site.

At Green Elementary School, runoff from a steep hill had for years deposited silt and sand on the schoolyard and flooded the basement. SCS technicians planned the installation of drainage tile to carry away excess water, and students planted a thick cover of grass to reduce the rate of runoff.

Woodson Senior High School students joined the effort to help restore the Chesapeake Bay by repairing damaged streambanks along Watts Branch to reduce the amount of sediment and other pollutants discharged into the



SCS District Conservationist Richard Shockey explains the uses and benefits of a homemade compost pile to Boy Scouts touring the conservation area at Camp A.P. Hill, VA. SCS provides onsite demonstrations and conservation education. *Tim McCabe/USDA 91BW0830*

stream system and eventually the Bay. Woodson lies along Watts Branch, the largest tributary of the Anacostia River to enter the Potomac River and flow into the Chesapeake Bay.

Interdisciplinary Approach to Outdoor Learning

Outdoor classrooms teach more than conservation education. They provide opportunities to participate in interdisciplinary approaches to solving problems and making decisions. Not only do students learn math by measuring and calculating, and science by observing natural phenomena, but they also learn important lessons in the social sciences, languages, arts, and esthetics.

As part of a bilingual conservation education project of Brooklyn School District No. 32, students are learning to speak English at the same time they are learning gardening. The students turned a vacant lot that was used as a dump site for building debris into a vegetable and flower garden, a sitting area for adults, and a play area for children. A mural depicting themes chosen by the youngsters decorates a wall facing the garden.

The group began the project with \$480,000 in bilingual education aid from the U.S. Department of Education. Harvey Mack, district conservationist for USDA's Soil Conservation Service in New

York City, held hands-on teacher workshops to show the instructors how to teach gardening and provided technical assistance at the gardening sessions from time to time.

Bilingual science teacher Bianca Tirrito, who regularly helps out with the gardening sessions, sums up the project's importance this way: "The students will improve their neighborhood. They will learn as they do these activities. Not only will they speak the words, but they will see what they represent."

Tirrito said the project will also encourage many students to love the land. "Many come from countries with strong agricultural bases," she added, "but respect for the land can quickly disappear within Brooklyn's concrete environment."

How To Start an Outdoor Classroom

If there is one thing to remember when starting an outdoor classroom, it is that there is no one right way to go about it. Every outdoor classroom is different. While some schools have the advantage of being able to devote several acres of school property to it, an outdoor classroom can just as easily be a playground, a courtyard, a woods, a window ledge, a grassy slope, a patch of sky, or a concrete sidewalk. What it really takes to be successful is creativity, determination, cooperation, and

commitment by teachers, students, administrators, parents, and the community. Like anything else in life, outdoor classrooms are what you make of them. But there are some guidelines that will help ensure success when planning an outdoor classroom.

- Develop a well-thought-out presentation and strategy to obtain the support of the school board and administrators. You'll need their backing for making changes to the school property and, in some cases, even for taking children outside.
- Clearly define your educational objectives. That will make it easier to secure support.
- Not all outdoor classrooms have a cost associated with them. But if yours does, prepare a preliminary budget estimate. If school funds are not available, include some suggestions for raising the necessary funds through donations, bake sales, car washes, or other ways.
- Ask your principal or other administrator to name a small committee to take leadership in developing the outdoor classroom. You'll want like-minded teachers as well as resource specialists, students, parents, and, in some cases, representatives from community groups, businesses, and professional organizations. Be sure to include the maintenance staff—many a

new planting has been mowed down by an unknowing groundskeeper!

- Enlist the help of a professional to survey the area's natural features and resource areas, identify conservation problem areas, and develop plans for improving those areas through student projects. Sources of such help include your local conservation district and local offices of the USDA's Soil Conservation Service, Extension Service, and Forest Service.
- Perhaps most importantly, involve your students in the planning. Remember, people support what they help create. Give your students the opportunity to learn important life-long lessons about assuming responsibility for their environment by giving them the opportunity to help make and carry out their own decisions.

An outdoor classroom is a natural for supplementing a school's environmental education program. As a place for creative learning experiences, it gives depth, meaning, and new dimension to the words that are used to describe the relation between humans and the environment.

Today, school programs often provide the only opportunity for many young people to learn how they depend on natural resources and how our use and care of soil, water, and air affect our environment. Much can be learned from

textbooks, lectures, and discussion. But outdoor classrooms add another dimension to learning. A sign at an outdoor classroom in Cuthlamet, WA, says it aptly:

*May there grow here
The rack of the buck
The reach of the pine
The mind of a child
The heart of a man
And the spirit of our
community. ■*

Extension and Private Sector Work Together on Youth Programs

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by Greg Crosby, National Program Leader, 4-H and Youth Development, Extension Service, USDA, Washington, DC

The Cooperative Extension System (CES) in the 1990's is using public-private partnerships to

help expand its capacity to offer youth programming in environmental education and other areas.



Linda Jordan (center), a teacher at the Dale City Discovery Preschool in Dale City, VA, explains how plants grow to P. J. Hammond (left) and Michael Lyons (right) while on a field trip to the Belvedere Plantation in Fredericksburg, VA.

Ken Hammond/USDA 91BW0739-23