



catalyst

ENVIRONMENTAL LEADERSHIP CENTER

FALL 2003

WARREN WILSON COLLEGE

David Orr Coming to WWC



Dr. David Orr

Dr. David Orr, one of the nation's best known environmental educators, will speak on the campus of Warren Wilson College on Thursday, February 12, 2004. Orr's books, *Ecological Literacy*, *The Nature of Design*, *The Last Refuge*, and *Earth in Mind*, have had wide impact on campuses nationwide. He is a dynamic speaker and a passionate advocate for colleges and universities to play a

How can competence in the ecological design arts be taught within the conventional curriculum? ... The best but most difficult approach is to make over entire institutions so that their operations and resource flows (food, energy, water, materials, waste and investments) become a laboratory for the study of ecological design.

-David Orr, *Earth in Mind: On Education, Environment, and the Human Prospect*

leadership role in the sustainability movement.

"I'm excited to have the chance to return to Warren Wilson College at this particular time. This is a period of challenge and change like no other and we have to move aggressively to build a just and sustainable society. Warren Wilson is playing an important role."

Dr. Orr is professor of environmental studies at Oberlin College. Originally from Charlotte, NC, Dr. Orr is the author of six books and

more than 100 articles about environmental issues and related topics.

Commenting on his last visit to Warren Wilson, D'Etta Leach, Environmental Leadership Center Advisory Council member said, "Three years ago, after David Orr spoke in Asheville, a friend told me his message changed the way she was going to live her life and, it has. He is a compelling messenger and no one should miss him."

ELC Interns – Dedicated to Action

This year, Ginelle Heller, a WWC Integrative Studies major with concentrations in environmental studies and spanish, will deliver presentations to campus and civic groups in western North Carolina about her Summer 2003 Environmental Leadership Center Internship at the Tropical Forestry Initiative in Costa Rica and record an essay about her experience for the ELC's Swannanoa Journal, broadcast to a 5-state region bi-monthly on public radio station 88.7 WNCW (every second Monday at 7:30 am). ELC interns not only engage in real-life environmental work at some of the leading environmental organizations in the Americas, they return to WWC and the region to communicate about their experiences and teach others to value and derive inspiration from the impact just one individual can make toward a sustainable future.

Heller writes,

We did complete a number of projects this year including planting vitiver and peanut grass for erosion control, completing the construction of a composting toilet, building a small roof extension on the dormitory, chopping pioneers (invasive tree species), planting successional tree species, building stairs, and finishing a graywater system for an organization called the Global Classroom. One of the greatest parts of being at the Tropical Forestry Initiative was waking up to a symphony of different bird songs every morning. Planting the trees and patting the dirt over their roots was especially rewarding after having worked at clearing the site for so many hot mornings with nothing but my aching arm and an eighteen inch machete. It was so fulfilling to push the dirt back into the hole silently wishing the sapling good luck as I sang "Shady Grove" and other songs to the beginning of the tree's new life.

Aldo Leopold says, "A land ethic changes the role of Homo sapiens from



ELC Intern Ginelle Heller

conqueror of the land-community to plain member and citizen of it. It implies respect for his/her fellow members, and also respect for the community as such." I hope to take this ethic more and more into my everyday life, into my every action, so that I can become more grateful and act with more care towards the generous world we live in. I hope to dedicate my life to preserving the little land left that we have not already massacred and to replenishing what land we can back to its natural state.

For more information about the ELC's Internship Program contact Stan Cross at 828.771.3782 or scross@warren-wilson.edu.

Dear Friends:

The Environmental Leadership Center (ELC) has a compelling mission: "to inspire caring citizens – especially our youth – to reflect, to communicate and to act as responsible caretakers of the earth."

Involving WWC students in all aspects of our work and – in fact – drawing strength and energy from their restless idealism, we have in the past year.....

- delivered EcoTeam lessons to 65% of Buncombe County's third grade children;
- launched a dynamic partnership with Jane Goodall's *Roots & Shoots* Program;
- delivered 40 presentations to civic clubs, schools, and the 5-state radio audience that tunes in to our twice-monthly "Swannanoa Journal" on WNCW 88.7;
- delivered numerous Green Walkabout Tours of Warren Wilson's campus, showcasing our best practices and learning for NC State's Park Scholars, leaders from Berea College, and a visiting group of Russians with the Friendship Force;
- delivered consulting services (teambuilding, strategic planning, fundraising, Board development) to the Pacolet Area Conservancy, CooperRiis Healing Farm Community, the New River Earth Institute, the High Country Conservancy, ENVISION, and the Spruce Pine Montessori School;
- published a comprehensive, GIS-based change analysis report for Buncombe County entitled *Mapping Change in Buncombe County* to aid policy-makers in community planning;
- continued biological inventorying for the All-Taxa Biodiversity Inventory of the Great Smoky Mountains National Park, led by Dr. Paul Bartels who has identified eight new species of the Phylum tardigrada previously unknown to science;

Dear Friends (cont'd. on pg. 7)

ELC Works for Regional Organizations

The ELC is providing services for nonprofits in western North Carolina. Drawing upon the resources of the College and the region, ELC staff are working in collaboration with adjunct staff to deliver biological monitoring and inventorying, GIS mapping and change analysis, organizational consulting for nonprofits, and environmental education program consults.

Recent projects include these:

- inventory of the Phylum tardigrada for the All-Taxa Biodiversity Inventory of the Great Smoky Mountains National Park funded by Discover Life in America;
- completion of a GIS place-based change analysis report, funded by the Community Foundation of Western North Carolina, called *Mapping Change in Buncombe County*;
- strategic planning, Board development, fundraising campaign planning, program development, non-profit management assistance for such organizations as the High Country Conservancy, Committee for the New River, Picolet Area Conservancy, CooperRiis, and ENVISION.

What Our Clients Say ...

The application of the GIS technology in the Mapping Change report helps people better understand changes and trends occurring within the county and the relationship of these changes and trends to each other. -Mac Williams, Economic Development Director, City of Asheville

The facilitation is rock solid as we deal with some very delicate issues in our Operating Committee. Constructive, encouraging, creative, candid. -Virgil Stucker, President and CEO, CooperRiis

When you invest in Dr. Bartels and his student research assistants, you certainly get a big bang for your buck. -Discover Life in America grant reviewer

On behalf of the Board of Directors and our staff I would like to commend you for a fine job of facilitating the strategic planning work and our Board retreat. As the Executive Director of a land trust in transition, I would like to personally thank you for your support, encouragement and valuable insights and suggestions. -Linda Keller, Executive Director, Picolet Area Conservancy

WWC Students Support Town of Fletcher's Greenway Project

by Jim Cooper

Jim Cooper is a senior in Integrative Studies who intends, after graduation, to develop an afterschool program in WNC focusing on environmental education, self-awareness, and service. He currently serves on the ELC's work crew as an EcoTeam teacher for Buncombe County third graders.

Rarely does the opportunity come along for a class to do a real time, real impact assignment – one that is not a hypothetical run-through, nor a simulation of what you can do with certain skills and experience, but the effectual use of these skills and knowledge. During Spring Semester 2003, our *ENS 426 Environmental Education: Methods and Materials* class was presented with

the opportunity to design trail signs along the Town of Fletcher's newly formed nature trail – a component of their Greenway Project.

We met with Elizabeth Teague, who was the City Planner for Fletcher and instrumental in designing the Fletcher Greenway Project, to discuss the idea and walk the nature trail. Ms. Teague explained the need for educative and more formal nature trail signage, but expressed concerns about the time and money required to develop them. Later, as we seven students discussed this project with WWC professor Dr. Mallory McDuff, we decided to do what we could. We brainstormed where we could get materials for signposts on and off campus and which topics should be the focus of the signage.

A signpost prototype was quickly assembled and in April, McDuff and four students attended a meeting of Fletcher's Board of Parks and Recreation. All seven members of the Board were impressed with the prototype and were delighted to know that we would construct and deliver these signs at no cost. We delivered the finished product in time for installation and the official trail opening and these signs can now be seen along the formally established "Cane Creek Nature Trail."

Our *EE: Methods and Materials* class considered this to be a wonderful active learning experience and a true example of environmental outreach to our immediate community. Go check out these signs if you're out walking in Fletcher's park!

Environmental Leadership Center Mission Statement

"To raise awareness of local, national, and global environmental realities and to inspire citizens – especially youth – to reflect, to communicate, and to act as responsible caretakers of the earth."

Dr. Bartels' Box

Mapping Change in Buncombe County, a recent publication of WWC's Environmental Leadership Center, uses maps to analyze change over the past 10 years in this rapidly growing western North Carolina county. The final section of *Mapping Change* studies housing trends and reports the following data:

- In 2000, there were about 206,000 residents in Buncombe County and about 80,000 housing units;
- 47% were single family homes worth <\$100,000;
- 38% were homes worth >\$100,000;
- 15% were mobile homes;
- less than 1% were multi-family apartment buildings.

In the 1990s mobile home construction represented almost 35% of new home construction and this percentage has been growing steadily since WWII. During the 90s 4,308 mobile homes were added to the county compared to only 1,115 homes valued at less than \$100,000. With apartments being few, far between – and expensive (purchase and rental prices are higher in Buncombe County than any other county in the state) – mobile homes are clearly the affordable housing of choice in our neck of the woods.

The number of homes built on steep slopes on our mountains has been rapidly growing, as well. Almost 1,100 new homes were built in the 1990s on slopes >20%. What's wrong with that? Well, for one thing, it's very easy to cause erosion when building on slopes, and sediment from erosion is the number one source of stream pollution in the mountains. Trout can't reproduce in mucky streams, and many people like to catch trout from time to time. Secondly, building on slopes also equates to sprawl. In case you haven't noticed, towns are spreading into the hills, and our once scenic hills are becoming visibly populated.

It is projected that the population of Buncombe County will grow to 266,000 by the year 2020*. That's an additional 60,000 people to house in twenty years! There are really only three logical options:

- We can allow continued growth into rural areas, and accept the change in their scenic, rural quality.
- We can develop high quality, high-density housing in town.
- OR, we can limit growth.

What will it be?

Contact Dr. Paul Bartels at pbartels@warren-wilson.edu for more information about *Mapping Change*.



President Doug Orr welcomes guests at *Mapping Change* reception at WWC's Grove Arcade Shop.

WWC's Environmental Researchers Focus on the Region

WWC faculty and students are studying western North Carolina's rich biodiversity and endangered natural resources. In keeping with the College's tradition of engaged learning, faculty/student research teams are developing valuable datasets that measure the state of the environment.

Monitoring water quality...

Dr. Lou Weber, zoologist and Chair of WWC's Environmental Studies Department, was working with her Invertebrate Zoology class this fall to sample the water quality of the Swannanoa River. The biological drama that unfolded underscores the vital role water quality plays as life support to western North Carolina's rich biodiversity.

Dr. Weber recounts this story: On August 29th, the Friday before the September 4th fire at the Beacon Plant, students in Dr. Weber's class tested the water quality of the Swannanoa River at a site near the WWC campus garden. They used a macroinvertebrate water quality assessment technique called the Hilsonhoff Biotic Index which identifies insects and other invertebrates to the family level. This type of assessment is effective because some families are particularly good indicators of poor or good water quality.

On Friday September 5th, WWC students went swimming in

the river after work and noticed large slicks of brown toothpaste-consistency oil sticking to their bodies. WWC professor of chemistry and environmental studies and former CDC toxicologist Dr. John Brock and his students performed a chemical analysis on the oil and determined it was some form of heating oil. Weber's class monitored the water quality in the Swannanoa River again on September 12th near the same initial spot and just above and below the oil spill. Preliminary analysis of the data revealed a dramatic drop in the number of invertebrates in the downstream site compared to the first sampling and compared to the upstream site. Weber's class will continue to monitor both sites until it appears that they reach the same level of water quality.

For more information about this project, contact Dr. Lou Weber at lweber@warren-wilson.edu.



WWC Faculty Dr. Mark Boudreau, Dr. John Brock, Dr. Lou Weber, Dr. Amy Boyd, Dr. Dean Kahl

WWC Faculty Illuminates Sustainable Agriculture

Mark Boudreau is currently writing the book *Farming at the Fenceline: The Desperate Search for a Sustainable Agriculture*. It examines the attempts to create an environmentally sound food and fiber production system that is economically viable and socially just. The book is meant for an educated general audience who want answers to questions like "Should I spend the extra money to buy organic produce?" or "What are genetically modified crops, and are they hurting the environment?" Several chapters are devoted to organic farming, with

additional discussions of biodynamic agriculture, permaculture, and other alternatives. With a Ph.D. in plant pathology and ongoing research in alternatives to chemical fungicides, Boudreau feels that a comprehensive look at organic agriculture and similar methods from a scientific perspective will illuminate some of the charged rhetoric emanating from all parties in one of the fastest growing sectors of today's economy. His book is under review by the University of Nebraska Press for their "Our Sustainable Future" series.

For preservation of rare & endangered plants...

Dr. Amy Boyd, WWC professor of environmental studies and biology, has conducted an inventory of eight plant species for The Nature Conservancy's Monitoring Programs for Rare and Endangered Plant Species – the Biltmore sedge (*Carex biltmoreana*), divided-leaf ragwort (*Senecio millefolium*), bunched arrowhead (*Sagittaria fasciculata*), New Jersey rush (*Juncus caesariensis*), green pitcher plant (*Sarracenia oreophila*), swamp pink (*Helonias bullata*), mountain sweet pitcher plant (*Sarracenia jonesii*), and the white irisette (*Sisyrinchium dichotomum*). Most of these species are found in mountain bogs or rock outcrops, both of which are threatened and fragile ecosystems in western North Carolina. This inventory will be used by The Nature Conservancy's Mountains District and their field scientists to monitor rare and endangered plant species. WWC's Environmental Leadership Center Interns referenced this inventory in their data collection for The Nature Conservancy's Mountain District in the summer of 2003.

Monitoring air quality...

WWC chemistry and environmental studies professor Dr. Dean Kahl serves on the governing board of the WNC Regional Air Quality Agency that monitors pollutants and enforces the Clean Air Act for Buncombe County. The work of the governing board is to supervise the Agency, set policy within the parameters of city/county government, and hear appeals when a facility or individual violates air pollution regulations.

Kahl is working on a Natural Science Seminar project with WWC senior James Beider, collecting data from the WWC ozone monitor and creating a sophisticated air pollution map of Buncombe County that will allow WWC to input weather and air quality data using EPA data, DAQ data (Department of Air Quality, NC), and WWC's site collection data. Kahl hopes to create this map and inspire a network of ozone monitors in Buncombe County, develop a website to make this data accessible, and help to create detailed ozone maps of the county.

According to Kahl, "areas of western North Carolina have

Air (cont'd. on pg. 6)

WWC Environmental Research Gets a Boost

Thanks to the CDC and the EPA, WWC has enhanced research capabilities for students and faculty. According to the story told by Dr. John Brock, WWC chemistry and environmental studies professor and former toxicologist for the CDC, "two middle aged guys were caught loading up instruments into a Warren Wilson College van from a US Government warehouse in Atlanta..." In fact, they were WWC faculty participating in a US Government program to route surplus equipment to colleges and universities. Brock and Kahl worked over surplus equipment for an entire day and came away with two nearly new gas chromatographs to analyze PCB's and DDT in human blood. This instrumentation will be used to strengthen curriculum in undergraduate courses and the capstone research experience.

On loan from the EPA, ozone monitoring equipment is supporting faculty/student data collection at the WWC site in the Swannanoa Valley. Working with chemistry and environmental studies students, WWC's Dr. Dean Kahl is establishing an air quality databank and planning to network with other sites in Buncombe County.

EcoTeam ... Where We Teach in Buncombe

by Ginger Landers, ELC Student EcoTeam Coordinator

On average WWC's Environmental Leadership Center student work crew teaches EcoTeam – a seven-unit, third grade, science-based, environmental education curriculum – to more than half the third graders in Buncombe County. This year, the number is up to 65%! Local third grade teachers state EcoTeam fits nicely into their curriculum, building upon conceptual knowledge through fun and interactive lessons that help students gain an appreciation and understanding of the environment in which they live. Here are the elementary schools where you will find our student instructors this fall:

Buncombe County: Avery's Creek, Barnardsville, Charels C. Bell, Candler, Emma, Glen Arden, Haw Creek, Johnston, North Buncombe, Pisgah, West Buncombe, William W. Estes, Woodfin

Public Charter: Art Space, Evergreen Community Charter School
Asheville City: Claxton, Hall, Fletcher, Issac Dickson, Jones Primary, Vance

EcoTeam (cont'd. on pg. 6)

Green Walkabout – Come Join Us

The best way to learn about WWC's greening initiatives is to come to campus and take the Green Walkabout Tour. You will visit the gardens, the farm, the EcoDorm, the Cowpie Cafe, the solar charging station and many other sites where WWC showcases sustainable practices. Knowledgeable guides will tailor the tour to your interests. It's a great way to view initiatives that can be implemented throughout the region and learn more about the College. Contact John Huie, Environmental Leadership Center Director, at 1.828.771.3780 or jhuie@warren-wilson.edu for more information.



EcoDorm Opens

EcoDorm opened its doors to thirty-two residents this fall – WWC students committed to living more sustainable lifestyles. Although the College is no stranger to 'green' construction practices, the EcoDorm is WWC's first new building to showcase sustainable practices and provide students a live-in laboratory for environmental education.

In support of state-of-the-art 'green' construction features, students have committed to such lifestyle practices as no televisions, no dishwasher, use of compact fluorescent lights, monitoring of the dorm's energy and water usage, lights off when not in use, personal power surveys, and a willingness to take greater personal responsibility with regard to daily habits that impact energy conservation.

Resident Director Marc Williams, a senior at WWC majoring in sustainable agriculture, says "the EcoDorm is really a work in progress. "So many of the tangible and intangible hopes and dreams of the student planning committee are being realized." Williams is convinced that a heightened environmental conscience also fosters a deeper sense of community – one of the committee's intangible goals for the EcoDorm. "Students are willing to think about things outside themselves and this translates to caring about one another, as well. They are helping to make the EcoDorm a very special place to live."

For more information about WWC's EcoDorm contact Paul Braese, Physical Plant Director, at pbraese@warren-wilson.edu.

ELC Takes Campus Greening to Ball State

This past September, at Ball State University in Muncie, Indiana, ELC Education Director and WWC Campus Greening Committee Member Stan Cross delivered a presentation on the evolution of the greening of Warren Wilson College. Higher education institutions from across the US attended this national conference on sustainability.

Cross's presentation *From Action to Policy: Bridging the Gap* at Warren Wilson College focused on WWC's campus greening history and the recent implementation of an Environmental Management System (EMS) to enable the College to manage a strategic and accountable campus greening action plan. The EMS will integrate sustainability into academic curricula, allow WWC to measure the effectiveness of its greening activities, and ensure the College operates as a responsible member of the global community.

According to Cross, "Warren Wilson has an important leadership role to play in the national movement toward greening higher education institutions. I am receiving calls now with requests for WWC to participate in the development of a national agenda for sustainability education."

To learn more about WWC's greening initiatives contact Stan Cross at scross@warren-wilson.edu.

THE ENVIRONMENTAL LEADERSHIP CENTER

Director
John C. Huie, Ph.D.

Science Advisor/Director of Programs
Paul Bartels, Ph.D.

Education Director
Stan Cross

Director of Community Outreach
Margo Flood

Administrative Assistant
Ellen W. Querin

ELC Student Work Crew
Marisa Albert
Martha Barbee
James G. Cooper
Kelly D. Davis
Samantha Davis
Lucas Driggers
Kristal McKelvey
Ginger Landers
Joy Proctor
Joy Vandervoort-Sneed

Catalyst Editor
Margo Flood

CAMPUS GREENING at WWC

by Paul Braese
WWC Campus Greening Committee Chair and Physical Plant Director

Campus Greening Committee Commits to Green Goals

The first Campus Greening Committee meeting for 2003 – 2004 was held in September to review the past year, discuss the previous challenges of WWC's greening program, and determine critical elements for a successful program. The charge of the committee, as outlined by WWC President Doug Orr, is this:

- monitor current campus greening programs;
- facilitate new initiatives across the campus such as developing and monitoring an environmental management system (EMS) for campus facilities using ISO 140001;
- launch efforts such as the Green Walkabout Tour;
- work closely with the College's communications personnel to keep the campus informed of its greening efforts;
- involve the campus community as well as off-campus constituents;
- review the efforts of the past 15 years and build upon these successes.

Physical Plant Promotes Sustainability Campuswide

The following initiatives are ongoing or will be implemented this year and represent WWC's commitment to continuous improvement of its ecological footprint.

New Construction

Develop library of all sustainable practices/products used in current and future construction • use recycled siding and sheathing in new and retrofit construction; recycled insulation and cellulose insulation (recycled from newspaper); high efficiency double pane low e windows; recycled cabinets; superinsulated basement walls; heat recovery ventilators to insure fresh air in tight envelopes; radiant roof barriers; floor tiles with high recycled content; "Core-ten" steel for a portion of the steel work • study building footprints to minimize impact on the surrounding environment.

Building Services

Install jumbo toilet paper dispensers in all high use areas • use general housecleaning chemicals with Greenseal approval • purchase Energy Star Appliances where cost effective.

Recycling and Grounds Crew

Create a surplus program • use cardboard compactor so that recycling cardboard becomes a profit instead of an expense.

Utilities Data Program

Document all utility meter locations on campus and confirm

what buildings they serve • enter all previous utility data into the new work order system • analyze consumption and determine where to concentrate energy efficiency efforts • update energy audits performed in previous years.

Grounds Crew

Install state-of-the-art Bioretention ponds and level spreaders, which are environmentally friendly storm water runoff practices, at Schafer and behind 104A Southwest Lane.

Painting

Use radiant barrier powder in all exterior paints to prevent heat from entering the building and protect wood against carpenter bees • use low VOC paint in interior applications.

Plumbing

Insulate domestic hot water piping.

HVAC

Insulate steam and hot water heating piping.

Purchasing

Purchase recycled inkjet cartridges (about 1/2 the price of new cartridges).

Customer Service

Determine recycled content in WWC office supplies • purchase a certain percentage of recycled content products.

Automotive Shop

Purchase synthetic oils that reduce the number of oil changes • purchase biodiesel fuel for a portion of the diesel driven engine fleet.

How Large is Your Footprint?

In a world of finite resources, how individuals and institutions use natural capital either depletes or sustains the earth's ecological capacity. The concept of ecological footprint measures this expenditure and provides a valuable yardstick for analysis. ELC Director of Community Outreach Margo Flood recently visited Redefining Progress at rprogress.org to take an Ecological Footprint survey and measure her sustainability impact. She states, "I was surprised to learn that I am *substantially* exceeding my fair share. It was an education. I thought I was doing well with all but my daily commute."

The premise of the Ecological Footprint is this: There are only 2.1 global hectares (5.3 acres) of biologically productive space available per person on the Earth. The world average Ecological Footprint of 2.9 global hectares (7.1 acres) per person means humanity is currently exceeding the biosphere's ecological capacity by over 35% (using 1997 data). The biosphere needs about one year and four months to renew what humanity consumes in one year. Humanity, as a result, is depleting the earth's natural capital stock.

When human demands exceed ecological production, the natural capital (assets on which current and

future generations depend) declines. This situation is called "overshoot," or the global ecological deficit. The average world citizen has an Ecological Footprint of 2.9 global hectares (7.1 acres), the average German's is 6.0 global hectares (15 acres), and the average American's is 12.5 global hectares (31 acres).

In numerous international forums, particularly the 1992 United Nations Conference on the Environment and Development (the *Earth Summit*) in Rio de Janeiro, national governments have embraced the concept of sustainability. Sustainability refers to ability of a system to continue and maintain a production level or quality of life for future generations. Ecological Footprint surveys utilize data collection to transform "sustainability" from a vague concept into a measurable goal.

The UN General Assembly's resolution for a "Decade of Education for Sustainable Development" begins on January 1, 2005. UNESCO is serving as the lead agency of this initiative and nations are being encouraged to measure their footprints and establish their own Decade-oriented objectives. Visit Redefining Progress at rprogress.org to learn more about your footprint.

Living Green

Did you know ...

The average American meal is reported to travel 2,500 miles from point of production, to processing, distribution, and finally, your plate. Add petro-chemical fertilizer, pesticide, and herbicide use and you have a food system dependent upon cheap oil.

The nations' mono-culture food system pollutes surface water and drains our depleting aquifers.

What can you do about this?

Take action by buying locally grown food. Buying local food casts a vote for family farms, preserves fertile bottom land from development, preserves genetic diversity and wildlife habitat, stimulates local economies, provides communities with fresh nutrient-rich food, and ensures the availability of food for the future.

Visit the Appalachian Sustainable Agriculture Project website for more information at www.asapconnections.org

Roots & Shoots at WWC



Joy Proctor

by Joy Proctor, ELC student EcoTeam teacher and *Roots & Shoots* member

Roots & Shoots is an international environmental and humanitarian program for young people. It is a program of the Jane Goodall Institute designed to foster respect and compassion for all living things, to promote understanding of all cultures and beliefs, and to inspire individuals to take action to make the world a better place for the environment, animals, and the human community. The program began in 1991 and its member groups, pre-K to university, plan and implement projects based on their group's unique interests, resources, and community concerns to address these themes:

- Care and concern for the environment;
- Care and concern for animals;
- Care and concern for the human community.

WWC's chapter was formed during the 2002-2003 year. The first project was to assist in the development of the *Roots & Shoots* Annual College Summit, hosted by WWC last spring. A group of dedicated *Roots & Shoots* members from around the world met at the Blue Ridge Assembly to discuss this theme: *Reasons for Hope: Drawing Hope from Within and Without*. A special feature was the presence of Dr. Jane Goodall, who joined in many of the sessions.

This year, *Roots & Shoots* has merged with WWC's Environmental Action Club and meets twice a month to share proactive ideas on creating positive environmental change on campus and in the community. Thus far, a protest has been organized against Office Depot to urge them to avoid supporting non-environmentally friendly organizations when purchasing wholesale paper products. Proposed for the 2003-2004 school year is to construct a giant peace dove out of recycled materials. This idea was inspired by Dr. Jane Goodall who asked that each *Roots & Shoots* group make one so they may all be viewed from space via satellite. *Roots & Shoots* has thousands of members around the world that unite young people of many cultures in the effort to make the world a better place for all living things.



President Doug Orr hosts representatives from WWC, Berea, and Furman.

WWC Hosts Sustainability Conversation

This past September, WWC President Doug Orr convened a two-day dialogue on campus for WWC, Berea College and Furman University. Berea College President Larry Shinn and Furman University President David Shi worked with Doug Orr to develop the meeting plan and were joined by representatives from their respective institutions to engage with WWC in a valuable conversation about the pursuit of environmental practices and curricula at each campus. Representatives from academic, administrative and physical plant depart-

ments were present and best practices were examined. There was unanimous agreement about the value of the dialogue and the group committed to a follow-up meeting and the implementation of a pilot "shared" project among the group.

According to Orr, "This very productive gathering of three institutions committed to environmental citizenship and sustainability gave us the opportunity to share best practices and begin a collaboration that we can build upon. It represents a promising partnership of compatible colleagues."

ELC Represents WWC at National Conference

ELC Education Director Stan Cross joined leaders from government, business, academia, and the nonprofit community this November in Washington, DC at a conference convened by the newly-formed United States Coalition for Education for Sustainable Development (USCESD).

They began work on a cross-sectoral plan of action to launch a US Decade of Education for Sustainable Development. This plan will help to implement the Recommendations for Education for a Sustainable and Secure Future (www.NCSEonline.org/NCSEconference/2003conference/) developed at the 3rd National Conference convened by the National Council for Science and the Environment (NCSE) in January, 2003.

Leaders in the sustainability effort and their colleagues will use this plan to hone their own efforts and to work more effectively with other organizations and individuals to achieve common goals in sustainability education.

The Great Smoky Mountains National Park has been at the forefront of conservation biology in recent years with the work of its All-Taxa Biodiversity Inventory – a bold attempt to identify, map distributions, and learn basic ecological relationships of every species of life in the 600 square mile park. Thanks to grants from the ATBI, Dr. Paul Bartels (the Environmental Leadership Center Director of Programs and Science Advisor), Dr. Diane Nelson from East Tennessee State University, and a team of WWC students have been working on a little known phylum of microscopic invertebrates called tardigrades or “water bears.”

According to Bartels, “Many students have the idea that all the basic stuff is known about biology and ecology, so there’s not much they can add. Nothing could be further from the truth. We are still basically ignorant of much of the biodiversity even in our own backyard. It’s estimated that we only know 10% of all the

species in the Smokies. In two years of work on water bears we’ve found forty-seven species in the park, while only three had previously been reported. Eight of these are new to science! We’re the first people ever on earth to see these tiny yet complex and fascinating creatures! We’re likely to find twice this number when we’re through.

“The eight new species have yet to be named. *Doryphoribius n. sp.* was found in caves near Cades Cove and may be the first record of this genus in the New World. *Milnesium tardigradum* is a widespread, large, predatory species. To date only one species is known in North America, but we’ve discovered a species with a very large mouth, probably adapted for eating very large prey, which will certainly also be named a new species. *Pseudechiniscus n. sp.* is an armored water bear with unusual prongs on its armored plates. *Isohypsibius* is a genus of aquatic tardigrades that has been little studied. They have long claws for holding on to sediment

grains and rows of “gibbosites” or knobs. Our *Isohypsibius* samples have now been studied by several world renowned authorities and, based on the pattern of knobs, five new species have been identified!”

Warren Wilson students have been major contributors to these discoveries. Sharon Fabrega, Indika Somaratne, and Scott Steinbrueck did Natural Science Seminar research on the little “Smoky” bears. Todd Kindberg attempted the world’s first GIS-based ecological distribution model for tardigrades in his project for WWC’s *Introduction to GIS* class. Ayres Christ, Erin Worthy, Kristal McKelvey and Stacey Hollis have worked as lab assistants. Ecology classes, invertebrate zoology classes, and even the ELC’s Environmental Science Camp middle school participants have assisted with field collections. This past summer, WWC student Sara Mitchell interned at the Purchase Knob Science Center in the Great Smoky Mountains National Park working

with an enthusiastic group of high school students on ATBI related projects and collecting tardigrade samples at two remote sites.

Volunteers, student researchers, and all interested in joining the water search, contact Dr. Paul Bartels at 828-771-3781 or pbartels@warren-wilson.edu.

BRIDGEBUILDERS

“One should not search for an abstract meaning of life. Everyone has his or her own specific vocation or mission in life; everyone must carry out a concrete assignment that demands fulfillment.”

Viktor E. Frankl

Charles and Betty Cheek have made it their life’s work to serve and give. Their partnership has spanned nearly 60 years and, during that time, working together, they have been pivotal in the development of organizations that are truly making a difference in the state of North Carolina – the Center for Creative Leadership, the North Carolina Outward Bound School, and WWC’s Environmental Leadership Center to name just a few.

Drawn to mission-driven organizations that effect real change, Charles and Betty have dedicated their lives to supporting programs that develop leaders with the skills to help shape a better world. According to Betty Cheek, they simply “were brought up to be grateful for what they had, to share with others, to be honest, and to counter all

the evil.” Their service is an extension of these early lessons.

R. Randolph Richardson said of Charles Cheek, “he is a man of absolute integrity .. and his service is decorated with large achievements.” Large, quiet achievements.

Charles and Betty Cheek serve as models for all aspiring leaders. In fact, they embody the tenacity, accomplishment, faith, and humility the ELC seeks to develop in the young leaders who participate in all its programs. These qualities are especially vital for environmental leaders who must stay the course, weather downturns, and remain faithful to their ‘concrete assignment.’ The Environmental Leadership Center considers the Cheeks true bridgebuilders, living lives worth emulating, supporting programs that are developing effective, faithful, mission-driven young leaders.

According to ELC Director John Huie, “With humility, these two people have created so much that is good in our state. They *live* servant leadership. I wish every student we touch could spend a day with Charles and Betty.”



Dear Friends (cont'd. from pg. 1)

- supported twenty outstanding Warren Wilson College ELC Interns at some of the most creative and effective environmental programs in the Americas;
- stimulated dialog through high quality publications; Heartstone 2003 was selected as the Common Reader for the College; and Catalyst increased its distribution to 7,000;
- collaborated with Lyceum and the Dean of Students Office to bring author Peter Marin to campus;
- supported Campus Greening initiatives through awarding mini-grants to support student-initiated conservation projects.

Looking ahead, we are mindful that our job is to engage as many as we

can to join in our mission. We know that each individual environmental act ripples far beyond us, inspiring others. Together, we will build a sustainable future and, in the words of one of our Interns, keep hope alive as we “work towards restoring the health of the human spirit.”

For this journey, we are grateful to have you alongside!



John Huie, Ph.D.
Director
Environmental Leadership Center

WWC's Secret is Out

It used to be said that Warren Wilson College was a well-kept secret. This is no longer true! In the past year, the College has received numerous recognitions for national excellence:

- for service and enhanced learning programs by *US News and World Report*;
- for the campus community's commitment to sustainability by the National Wildlife Federation (one of the top 24 higher education institutions in the nation);
- for its triad of academics, work and service, in the *Princeton Review's* listing of the top 100 colleges in the south;

- most recently, for *Outside* magazine's selection of Warren Wilson College and Asheville as number 4 on its list of “Forty Best College Towns” – the cover story for the September 2003 issue. According to *Outside*, the list includes “40 schools that turn out smart grads with top-notch academic credentials, a healthy environmental ethos, and an A+ sense of adventure.” The magazine labels Warren Wilson “one of the most earth-friendly colleges on the planet.” It also notes the college's highly regarded environmental studies program and extensive outdoor activities on and off campus.

Heartstone Focus

This next issue of *Heartstone* will address the theme Environment & Social Justice. Diverse contributors will weigh in from many angles – global warming, pesticide use among indigenous populations, a Native American look at the Everglades Restoration Project, how the Gullah were dispersed from South Carolina's barrier islands, and Carol Browner, former director of the EPA during the Clinton Administration, on government's role in mitigating environmental justice.

Here are a few of the many outstanding contributors -

- Carol Browner – former director of the EPA, *Heartstone* lead interview

- Naomi Tutu – international voice for social justice
- Emory Campbell – former director of SC's Penn Center
- Sanho Tree – drug policy specialist at Washington, DC's Institute of Policy Studies
- Dr. Bill Schlesinger – Dean of Nicholas School of the Environment
- Donna Livensby – Catawba Riverkeeper

Heartstone will be available in February, 2004. Contact *Heartstone* Editor Margo Flood at 828.771.2002 or mflood@warren-wilson.edu for more information.

ELC Council of Advisors

| | |
|---------------------|---------------------|
| Joel Adams | Asheville, NC |
| Susan Andrew | Asheville, NC |
| Taylor Barnhill | Mars Hill, NC |
| Bill Bondurant | Chapel Hill, NC |
| Andy Brown | Asheville, NC |
| Ginger Cecil, Chair | Asheville, NC |
| Mimi Cecil | Asheville, NC |
| Jane Craig | Charlotte, NC |
| John Curry | Asheville, NC |
| Ellie Daniels | Asheville, NC |
| Robert Deutsch | Asheville, NC |
| Joe Epley | Charlotte, NC |
| Sharon Fahrer | Asheville, NC |
| Ric Felker | Atlanta, GA |
| Jay Fields | Asheville, NC |
| James Hendrix | Atlanta, GA |
| Olson Huff | Black Mountain, NC |
| Ben Keys | Greenville, SC |
| Page Kizer | Denver, NC |
| Jim Kuhns | Sonoma, CA |
| D'Etta Leach | Marshall, NC |
| Michael Leonard | Winston-Salem, NC |
| Mary Hill | Asheville, NC |
| Glenn Magley | Asheville, NC |
| C. H. Maguire | Charleston, SC |
| Gerald McBrayer | Banner Elk, NC |
| Jeanne McCarty | Silver Spring, MD |
| Bill McCoy | Davidson, NC |
| Pamela McDougald | Tryon, NC |
| Henry McHenry | Charlottesville, VA |
| Cyndee Patterson | Charlotte, NC |
| Mack Pearsall | Fairview, NC |
| Doug Rader | Raleigh, NC |
| Sally Rhoades | Asheville, NC |
| Susan Roderick | Asheville, NC |
| Brad Searson | Asheville, NC |
| Ralph Simpson | Winston-Salem, NC |
| Ed Smith | Asheville, NC |
| Peter Sterling | Clyde, NC |
| Alan Thornburg | Asheville, NC |
| Larry Trull | Henderson, NC |
| Wally Wallin | Asheville, NC |
| Michael Welchel | Asheville, NC |

Educational Advisors

| | |
|-----------------------|---------------|
| Tom Bohn, Ph.D. | Ithaca, NY |
| John Brock, Ph.D. | Asheville, NC |
| Hans Cole | Berkeley, CA |
| Dean Kahl, Ph.D. | Asheville, NC |
| Carl Leopold, Ph.D. | Ithaca, NY |
| Amory Lovins, Ph.D. | Snowmass, CO |
| David Orr, Ph.D. | Oberlin, OH |
| Ed Raiola, Ph.D. | Asheville, NC |
| Janisse Ray | Baxley, GA |
| Rob Routhieaux, Ph.D. | Asheville, NC |
| Lou Weber, Ph.D. | Asheville, NC |

Justice and Beauty: Peter Marin Poses Tough Questions

by John Huie, Ph.D.

Director, Environmental Leadership Center

Pastor Martin Niemoeller, German Lutheran clergyman who resisted Nazism, gave us these words to remember: "When they came for the Jews, I said nothing. When they came for the Communists, I said nothing. When they came for the trade unionists, I said nothing. And when they came for me, there was no one to speak up."

These thoughts rise in the wake of a recent visit from our friend, Peter Marin, author of *Freedom and its Discontents*. In speaking to students and parents on Family Weekend, Marin posed the question: "Which has the greater claim on our moral commitment – justice or beauty?" It's a timely question – and a timeless one. We should not dismiss it lightly.

I am tempted to argue that preservation of natural beauty is fundamental to human health and is the universal antidote for human cruelty, greed, and destructiveness. From personal journeys with young people in pristine wilderness settings, I know that experiences of raw natural beauty can transform a life, inspire a vision. These experiences are a major source of my personal commitment to environmental leadership.

And yet, and yet there is more. Justice in the social realm – to say the very least – transforms and enriches lives, gives people a chance for fulfillment. Beauty alone is not sufficient. As a Southerner, I have been a close-up observer of racial cruelty and injustice taking place in lovely natural surroundings.

Beauty and justice have to flow together. Social justice is itself fundamentally beautiful. As a citizen, I know this in my bones.

The task is to fuse the realms of justice and beauty, to treat them as inseparable. Clean air, clean water, healthy forests, open land are essential to the survival of us all – whether we live under a bridge or in a gated community. It is essential that we become aware of and protect the natural beauty around us for future generations. *To do this in a moral context, however, we must simultaneously commit ourselves to social justice.* Homelessness, hunger, poverty, violence, interpersonal cruelty – these are a blight on the moral environment in which we live, and they threaten our survival no less than dirty water and air.

In the spirit of Pastor Niemoeller, Warren Wilson alumnus Jordan Miller spoke at Commencement a few years ago: "The world is

in desperate need of people who know how to live and work with others cooperatively and lovingly, to care for others, and to embrace them as valued and loved – not in the future but *Now!*" As we each grapple with the tension between beauty and justice, this is the spirit that must flourish in our work as humane environmental citizens – both on this campus and in the world beyond.

There is no time not to do this.

Peter Marin—contributing editor of *Harper's Magazine*, essayist, novelist, poet, activist, and intellectual provocateur—visited the campus of Warren Wilson College this past September to meet with classes, present a public lecture, and address a convocation for families. Sponsored by the Lyceum, the Dean of Students' Office, and the Environmental Leadership Center, Marin visited campus on Parents Weekend and challenged the WWC community to balance concerns about the natural environment with concerns about social justice, homelessness, poverty and hunger.

LET US HEAR FROM YOU!

Please cut off this response form and mail it to us at the following address:

Environmental Leadership Center
Warren Wilson College
CPO 6323
P.O. Box 9000
Asheville, NC 28815

Name _____

Address _____

City _____ State _____

Zip _____ Email _____

Phone Number _____

If you are a donor, may we list you in our annual acknowledgement of donors?
Yes No

Would you like to receive our publications?
Yes No

I'm interested in getting involved with the ELC as

- contributor
- volunteer
- Expeditions participant
- Please send me more information.

- I would like to send a tax-deductible contribution to the ELC.
- My check is enclosed. Please call me to discuss.

Please contact Ellen Querin at the Environmental Leadership Center, 828 771-3006 or querin@warren-wilson.edu, with any questions.

Printed on recycled paper



Asheville, NC 28815-9000
PO Box 9000
CPO Box 6323
Warren Wilson College

Environmental Leadership Center



NONPROFIT ORG.
US POSTAGE
PAID
ASHEVILLE, NC
PERMIT #575