



# ENVIRONMENTAL NEWS

The Newsletter of the Environmental Peak at Middlebury

Fifth Issue • Spring 2004

Middlebury College • Middlebury, VT 05753

## *Dear Alumni and Friends:*



*Top-bottom: Lauren Throop '04 downloading data from meteorological tower; group photo from annual Snake Mountain hike; solar panels being installed on Farrell House.*

**F**ortunately, an increasing number of colleges and universities are educating students about the environmental world around them. However, the traditional model of higher education has been limited to bestowing knowledge through our teaching and making new discoveries through our research. Middlebury College has expanded the role of the “academy” by integrating education for the environment and sustainability into its teaching, research, and its practices. The College’s leadership is widely recognized as we endeavor to advance this system-wide approach through Middlebury’s Environmental Peak of Excellence.

As this semester draws to a close, so too concludes our three-year grant through the Andrew W. Mellon Foundation, “Towards an Enhanced Environmental Studies Program.” We would like to highlight the unique and integrative teaching and research opportunities this grant enabled us to provide. These include:

- *Infusing service-learning into ES curricula.* Grant funds enabled us to restructure the ES 401 senior seminar curriculum to incorporate fully a service-learning pedagogy. Funds also enabled our faculty to offer service-learning in the ES 360 environmental science practicum. The benefits of the service-learning approach and example projects from these courses are highlighted on page 10.
- *Exploration of environmental opportunities abroad.* ES students are encouraged to study abroad to expose them to different cultures, different ecosystems, different economic realities, and the ways in which environmental questions and problems are framed by different histories and political economies.

Grant funds enabled us to identify new environmental learning opportunities with the directors of Middlebury’s Programs Abroad. There turns out to be great potential for formal classes, field experiences, independent study, tutorials, and internships.

• *Student/faculty summer research projects.* Numerous innovative student/faculty research projects were provided through grant funds. These projects resulted in unique travel opportunities, presentations at national conferences, and collaborative publications. Project themes ranged widely and included research on social capital, the role of zebra mussels as monitors of trace metals, and using repeat photography to assess ecological succession. This last project, involving Will Roush '03.5, laid the foundation for his award-winning Watson Fellowship proposal (see page 5).

While these are just a few brief highlights of what the Mellon grant enabled, we wanted to emphasize our continued commitment to teaching, research, and practice through this grant. When a team of Mellon advisors visited campus in January, one of the advisors stated that Middlebury was the “gold standard” for environmental programs. The remainder of this newsletter will further illustrate the level of commitment and excellence we strive to achieve through the accomplishments of our students, faculty, and staff, as well as through the progressive, and even award-winning campus initiatives.

Nan Jenks-Jay  
*Director, Environmental Affairs*

Peter Crowley Ryan  
*Director, Environmental Studies Program*

## ALUMNI NEWS

**Daniel Suman '72** is a professor of marine affairs & policy at the University of Miami's Rosenstiel School of Marine and Atmospheric Science. He was recently named to the Marine Protected Areas Federal Advisory Committee that will provide recommendations to the Department of Commerce (NOAA) and the Department of the Interior on the use of marine protected areas in the United States. This year he was also named to the UNESCO International Advisory Commission on the Sustainable Development of the Volga-Caspian Basin in Russia. Suman is the project director for the Coastal Management Program of the Gulf of San Miguel (Darién Province, Panama). He also teaches courses in Coastal Law and Management, Environmental Law, and Environmental Planning at UM. Suman can be reached at: [dsuman@rsmas.miami.edu](mailto:dsuman@rsmas.miami.edu)

**Mark Dornblaser (aka Blaze) '84** attended SUNY, Stony Brook, where he received an M.S. in Marine Science after graduating from Middlebury. After SUNY, he shifted his emphasis from oceans to lakes while working at the Ecosystems Center of the Marine Biological Laboratory in Woods Hole, Mass., researching sulfur cycling in lake ecosystems and how it relates to the natural ability of lakes to buffer themselves against acid inputs. Four years ago Dornblaser moved on to the U.S. Geological Survey in Boulder, Colo., where he is working on a multi-year project conducting the first-ever comprehensive water quality study on the Yukon River. His group's focus is on carbon cycling and the exchange of greenhouse gases between the Yukon basin and the atmosphere. Mark also works as a landscape photographer, and you can view his beautiful images at: [www.fireandicephoto.com](http://www.fireandicephoto.com). Dornblaser can be reached at: [mmdornbl@usgs.gov](mailto:mmdornbl@usgs.gov)

**Jeremy Fryberger '88** works as an architect and builder in Ketchum, Idaho, where he has lived for most of the 16 years since graduating from Middlebury. He practices his profession and his trade with the belief that sensible, efficient design, combined with high-quality and efficient construction, will always be the first and most important step toward sustainable architecture. Fryberger can be reached at: [fryberger@sunvalley.net](mailto:fryberger@sunvalley.net)

**Peter Ericson '99** is in his second year of a master's degree program in urban studies and planning/environmental policy at MIT. His thesis examines the challenges and liabilities of "conservation based development" in the Rocky Mountain West, particularly in light of recent high profile criticism in the *Washington Post*, of one of the largest and best known non-confrontational conservation organizations, The Nature Conservancy.

**Daniela Salaverry ES/Geology '03** is working for The Nature Conservancy's Eastern New York chapter in Mt. Kisco, N.Y. She is working in development and fund raising, but is also a part of several research projects including one on sustainability. Salaverry is one of the primary researchers exploring the development of successful sustainable practices at other companies and institutions, including Middlebury College. The goal of this research is to assist TNC in developing its own set of sustainable guidelines for its future developments.



### Excerpts from the Field—Watson Fellow Dane Springmeyer '02



February 2, 2003  
Barranca de Sinforosa, Chihuahua, Mexico

Fireside, all together, after our first whole day in the canyon. Our field crew of mestizo horseman, Mexican university biologists, and local natives is full with catfish from the river, hand-patted corn tortillas, tomatillos, and beans. I am full too from today and our 6000-foot descent to the canyon bottom—completed by the songs of canyon wrens and elegant trogons, the names of plants that will rip your skin, and now the sound of the river.

This is my first entry in my Sierra Madre journal which I will transcribe everything into—bird notes, ethnobotany, the lessons of total immersion in the life of the sierra madre and the tarahumara Indians, and always, inevitably... the thoughts of a wayward Watson traveler. At mid-year I have just arrived from Panama and will leave with the end of spring migration to the Himalaya, in just three-and-a-half months.

Tonight I could ask to be in no other place. I feel at the edge of this life, surrounded by the rugged relief of the barranca, sleeping on a sand bar beside the burro rock corral, falling asleep to the call of whiskered screech owls and images of Black Hawks and vultures working the dusky canyon bottom. Above the hiss of the fire and the still steaming beans, somebody is snoring. Me next.

*Photo credit goes to Lee Perlow '02 ES major. It was taken in Cerro Colorado, Mexico, and depicts Dane discussing the regional Sierra Madran ethnoornithology with a local Tarahumara Indian and two mestizo farmers.*



Jon Isham with daughter Katie

Jon Isham, assistant professor of economics, jokes that while he felt he was “a pretty open-minded guy” before coming to Middlebury, he admits that his outlook changed through his involvement with the Environmental Studies Program and that was one of the best things that happened to him. In turn, Isham’s contributions to the Environmental Studies Program have been some of the best things that have happened to the program. Isham arrived at Middlebury in 1999, and, in addition to teaching Introductory Microeconomics and Environmental Economics, he has taken on teaching ES 211 (Environmental Policy) and has developed some provocative winter term classes related to climate change issues. Isham has also been a strong advocate and practitioner of service-learning, to the benefit of his students and the local community.

Over winter term 2003, Isham co-taught (with Lori Del Negro, now an assistant professor of chemistry at Lake Forest College) *The Scientific and Institutional Challenges of Becoming Carbon Neutral* which significantly advanced the efforts of Middlebury’s Carbon Reduction Initiative (see page 6) through student analysis of emissions reduction strategies. While that course was wildly successful, Isham is even more excited about the class he is cooking up for winter term 2005—Social Movements and Climate Change—where students will grapple with how the global community is mobilizing to address the profound issue of climate change. Isham

## Faculty Profile

### Jonathan Isham— Integrating Service, Research, and Teaching

plans to have his students combine diagnoses of social movements related to global warming with hands-on projects with existing climate change organizations designing ways to most effectively enact change by leveraging their research findings. This course will not only allow him to integrate his research on social capital and on social change and sustainability, but it will also allow him to incorporate current topics such as the Internet and democracy and the service-learning approach that he has been so successful in utilizing. Funding permitting, Isham hopes to end the class with a one-day roundtable with local and external speakers. Isham would welcome reader feedback on this course idea, so feel free to contact him at [jisham@middlebury.edu](mailto:jisham@middlebury.edu).

In terms of service-learning, Isham says it really matches his style and the way he likes to approach issues, and he has transformed ES 211 (Environmental Policy) to focus on this pedagogy. Students in this course have worked with the Town of Middlebury to assess the related issues of sprawl, transportation, taxes, affordable housing, and buying local. They have also conducted international research on ISO 14000 standards and worked with businesses and multi-faith consortia on local action surrounding climate change, just to name a few projects. He also recently joined Vermont Campus Compact’s expert speaker list, so he is available to give talks throughout New England to schools that would like to integrate service-learning in environmental studies, economics, and policy curricula.

In addition to giving students practical experience through his courses, Isham also actively involves students in his research. Most recently, Isham co-authored a paper with Chris Klyza and Andrew Savage ’03.5 on social capital in Vermont that will soon

be published in *Rural Sociology*, and has plans to work with other students researching state-level engagement and action nationwide. In addition to social capital research, Isham also conducts international research on water projects in developing countries, with a focus on Indonesia. While on leave this year, Isham is enjoying focusing on research and course development, being even more active in the community (he is organizing local Environmental Defense Meet-Ups in support of the McCain-Lieberman Climate Bill), and spending time with his family and its newest addition, daughter Lily, born in February.

We look forward to Isham’s return from leave and have no doubt that his unique blend of service, research, and teaching will benefit the ES Program and the local community for years to come.



Be sure to check out our *NEW* Environmental Affairs web page!

[www.middlebury.edu/offices/enviro/](http://www.middlebury.edu/offices/enviro/)

It not only provides a wonderful synthesis of activities and policies associated with our Environmental Peak of Excellence, but also is a great way to stay current on environmental events and the activities of environmental organizations, both on campus and in the community.

The e-newsletter BLUE GREEN is featured on this site and includes resources such as a calendar of events, grant and award opportunities, and student accomplishments.

Take a look to see these and other highlights!

## Featured Speakers on Campus

### Margolin Speakers



*2003 Scott Margolin Environmental Affairs Lecture*

#### **Paul Ehrlich**

*Bing Professor of Population Studies  
Director, Center For Conservation Biology  
Stanford University*

March 20, 2003 – “Population, Consumption, Power, and International Ethics”

Paul Ehrlich is a noted conservation biologist and environmental advocate. Ehrlich's biological research ranges widely among fields, including ecology, evolutionary biology, and behavior. His collaborative work has focused on the interactions between population growth, per capita consumption, choices of technologies, equity issues, and warfare. He has also been active in the area of ecological economics. Perhaps the most notable of his many awards is the Crafoord Prize in Population Biology and the Conservation of Biological Diversity, the Nobel Prize equivalent for areas where the Nobel is not given.

Ehrlich's talk coincided with the first full day of the U.S. attack on Iraq and many of his comments highlighted the linkages between environmental issues and our current political trajectory. Amidst his strong political commentary, Ehrlich used the framework of the IPAT model (Impact = Population x Affluence x Technology) for his talk, touching on strategies for how to minimize each of these variables.

*2004 Scott Margolin Environmental Affairs Lecture*



#### **J. Baird Callicott**

*Professor of Philosophy  
University of North Texas*

April 29, 2004 – “Should Endangered Species Have Standing”

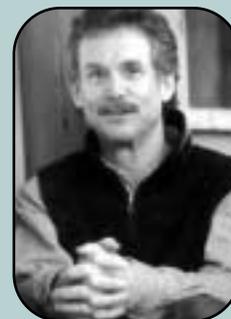
Callicott's research proceeds on four major fronts: theoretical environmental ethics, land ethics, the philosophy of ecology and conservation, and comparative environmental philosophy. He is the author of a number of books, including *Earth's Insights: A Survey of Ecological Ethics from the Mediterranean Basin to the Australian Outback*, *In Defense of the Land Ethic: Essays in Environmental Philosophy*, and *American Indian Environmental Ethics: An Ojibwa Case Study*. Callicott has also written more than 100 book chapters, journal articles, encyclopedia entries, and book reviews. From 1997 to 2000, Callicott served as president of the International Society for Environmental Ethics.

Callicott's talk focused on the explicit and implicit values that species are given in the Endangered Species Act (ESA)—what he called America's strongest piece of environmental legislation. While at first glance, the explicit values highlighted seem solely human-centered and utilitarian, some scholars have argued that the legal standing clauses of the ESA implicitly recognize the intrinsic value of species. Through a discussion and comparison of several realms of valuation, Callicott set the stage for his commentary on how these explicit and implicit values have played out in some high and low-profile Supreme Court cases.



## Other Notable Speakers

### David Quammen and Warren Leon



*David Quammen*

David Quammen, speaking about “Big Predators on a Small Planet,” explored the subject of man-eating predators and their ancient, complicated relations with humanity. Drawing on research and experiences from his most recent book, *Monster of God: The Man-eating Predator in the Jungles of History and the Mind*, he strove to portray the role these predators play in our ecosystems and culture, and what our world might be like without them.



*Warren Leon*

Leon, co-author of *The Consumer's Guide to Effective Environmental Choices*, came to campus on April 12 and presented a talk entitled, “Prioritizing: Making Good Environmental Choices.” In collaboration with colleague Michael Brower, the two undertook extensive research at the Union of Concerned Scientists of consumer environmental impact. Noting that some consumer choices have a huge impact on the environment and others have very little, Leon discussed some of the more significant actions individuals can take in their personal lives to reduce environmental damage.

## Student Awards, Internships, Independent Study Projects, and Theses

### 2003–2004 AWARDS

The 2004 Margolin Award, given annually to an outstanding senior Environmental Studies Major was given jointly to **Lucas Farrell '03.5** and **Will Roush '03.5**. **Will Roush '03.5** was also one of the two Middlebury College students who were awarded Watson Fellowships in 2004. The prestigious Thomas J. Watson Fellowship Program funds a year abroad to pursue an in-depth innovative project. Will's project is entitled, "Envisioning a Changing Alpine Environment Through Repeat Photography," and will have him traveling through Canada, New Zealand, and Norway. Congratulations to **Phil Aroneanu '06** and **May Boeve '06** who received an National Wildlife Federation Campus Ecology Fellowship to study vermicomposting. Working with Dining Service Director Matthew Biette, Phil and May will begin to add worms to the greenhouse soils located adjacent to the College's compost facility. The nutrient rich worm castings will assist these gardeners in growing salad greens for dining operations. **Doug Dagan '03** was the recipient of a teaching fellowship from the Knowles Science Teaching Foundation. The fellowship provides both monetary and professional development support for Doug for up to five years, and helps to fulfill the foundation's mission to enhance the quantity of high quality high school science and mathematics teachers.

### 2003 THESES

**Rob Chisolm '03**, "Drawing the Line: Informal Property Rights in a Nova Scotian Lobster Fishery," Chris Klyza and Jon Isham, advisors.

**Dalton Cox '03**, "Modeling the Relationship Between Sediment Loading and Native Plant Species Recovery in Vermont Lakes," Sallie Sheldon, advisor.

**Kaitlin Gregg '03**, "Peace on Earth and with Earth: Stories of the Earth Charter and Vermont Activism," Rebecca Kneale Gould, advisor.

**Glenn J. Olds, Jr. '03**, "Suburban Sublime: A Parent's Guide to Reconnecting with your Children Through your Backyard," John Elder, advisor.

### 2004 THESES

**Will Roush '03.5**, "Envisioning a Changing Alpine Environment Through Repeat Photography, Glacier National Park, Montana," Jeff Munroe, advisor.

**Amanda Helwig '04**, "Conserving a 'Living Fossil': Charting a Sustainable Management Policy for the Atlantic Horseshoe Crab Fishery in Delaware Bay," Chris Klyza, advisor.

**Erika Holsman '04**, "Destructive Fishing Practices in the Sulu-Celebes Sea Region: Comparing National Management Strategies for Sustainable Reef Fisheries," David Rosenberg, advisor.

**Erin Jensen '04**, "Why Can't We Sustain a Definition of Sustainability? From Ideology to Theory and Practice," David Stoll, advisor.

**Sara Smith '04**, "The Many Roads to Remediation: Differing Motivations for Communities Facing Toxic Contamination," Kathryn Morse, advisor.

**Lauren Throop, '04**, "A Multi-dimensional Analysis of Wind Energy Potential at Middlebury College's Worth Mountain," Rich Wolfson, advisor.

### 2003–2004 Independent Studies

**Sophie Esser '04**

Garden Education in Vermont

**Tim Perrin '03.5**

Inorganic Geochemistry of Otter Creek Water and Sediment, Addison County, Vt.

**Ian Ausprey '04**

Biological Reserve Design in Maine: Recommendations for the Southern Foothills Region

**Andrew Savage '04**

The Dean for America Campaign and Civic Engagement

**John Hanley '05**

Making Cents of Global Climate Change in the Middlebury Community

**Ainsley Close '05.5**

A Comparison of Nectar Diversity and Abundance to Butterfly Diversity in Vermont Meadows and Hayfields

**Thomas Hand '05.5**

The Costs and Benefits of Heating with Vegetable Oil Fuels: A Biodiesel Feasibility Study for Middlebury College

**Kyle von Hasseln '05.5**

Biodiesel: History, Applications, and Production

**Leah Koenig '04**

Eco-Judaism in Relation to the Jewish Renewal Movement and the Larger Development of American Judaism

### 2003–2004 INTERNSHIPS

Hillary Billman '05 . . . . . Yellowstone Wolf Project  
Benjamin Brouwer '04 . . . . . USGS Glacier Field Station  
Timothy Connolly '04 . . . . . Environmental Protection Agency

Susannah Cowden '04 . . . . . Green Corps  
Burch Fisher '04 . . . . . USGS – BRD  
Jean Hamilton '04 . . . . . Native Seeds/SEARCH  
Andrea Hamre '05 . . . . . Center for a New American Dream

Kelly Hines '04 . . . . . The Nature Conservancy  
Kelsey Ingmundson '03 . . . . . Audubon Vermont  
Raime Masket-Roth '04 . . . . . Conservation Volunteers Australia

Carmody McCalley '03 . . . . . The Marine Biological Laboratory  
Allison Nagel '03 . . . . . Environmental Protection Agency

Clare O'Reilly '04 . . . . . NYC Parks and Recreation  
William Roush '03.5 . . . . . USGS Glacier Field Station  
Alicia White '04 . . . . . USGS Glacier Field Station  
Andrea St. John '03.5 . . . . . USGS Glacier Field Station



# CARBON REDUCTION

## *Trustees Formalize College's Commitment to Carbon Reduction*

For the past several years, Middlebury College has been actively engaged in developing a plan for reducing campus greenhouse gas emissions. A Carbon Reduction Initiative Working Group comprised of administrators, faculty, staff, and students—using an emissions inventory and a report produced by a winter term class that compiled more than fifty strategies to minimize campus climate impact—has developed a portfolio of initiatives to meet an initial target reduction goal by 2012. An excerpt from the College's commitment to carbon reduction, endorsed by the President and Trustees at their May 2004 Board meeting, follows.

### Middlebury College's Commitment to Carbon Reduction

#### In recognition that:

##### *The Environment is a Peak of Excellence.*

Environmental education and sustainable practices are continuing traditions that radiate throughout and beyond this institution. Middlebury is in a respected position to share this expertise and infuse ideas for environmental excellence amongst our campus community and alumni, peer institutions, and the professionals with whom we work.

##### *"Everything we do is an opportunity to educate."<sup>1</sup>*

The solutions to global warming and climate change require innovative thinking within a global and local context. The shift away from a worldwide fossil fuel based economy will require the best of the liberal arts tradition.

##### *Responsible leadership is a guiding principle of Middlebury College.*

Carbon reduction must be a goal in every planning process to ensure a broader articulation of risks and opportunities and enabling more informed decisions for the College's future within the context of climate change.

##### *The College burns significant quantities of fossil fuels.*

A greenhouse gas emissions inventory calculating the impact from heating and cooling, electricity use, transportation, and solid waste disposal identified that 35,000 metric tonnes of carbon dioxide equivalents were emitted to the atmosphere from campus operations in FY 00–01.

##### *The College is preparing to replace a boiler.*

Three quarters of the College's carbon emissions are the result of space heating and cooling.

*The New England Governors and Eastern Canadian Premiers (NEG/ECP) have called on institutions of higher learning to respond and provide models for meeting the unprecedented and imminent challenge of global warming.*

The NEG/ECP developed a Climate Change Action Plan (Plan) in 2001 that commits these states and provinces to reducing regional greenhouse gas emissions by at least 10% below 1990 emissions by 2020. In August 2003, President McCardell signed a voluntary pledge committing Middlebury College to support the Conference of New England Governors and Eastern Canadian Premiers in meeting the goals of its Plan.

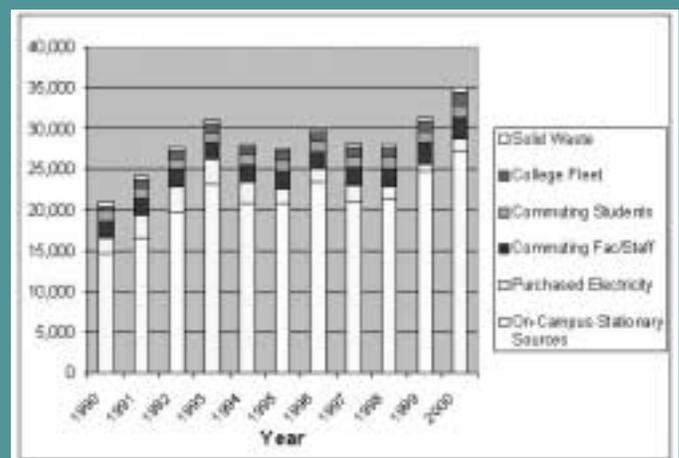
*Immediate and longer-term strategies exist for carbon reduction.* Students in Winter Term class ES 010 *The Scientific and Institutional Challenges of Becoming Carbon Neutral* created a 200-page report summarizing fifty strategies to minimize campus climate impact.

##### *Long-term sustainability is a wise investment.*

In developing strategies for reducing carbon emissions, the College commits to investing in a portfolio that, when considered as a whole, is cost neutral including capital costs.

**The Trustees of Middlebury College therefore support carbon reduction as a priority of the Middlebury College community, recognizing that it will require a commitment of resources to achieve necessary technological and behavioral shifts.**

Middlebury College Emissions Inventory 1990–2000



On-campus stationary sources (space heating and cooling) comprise the largest portion of College emissions.

<sup>1</sup> President John M. McCardell, Jr.

# CARBON REDUCTION

We join with the College's administration, students, faculty, staff, and alumni in the dedication of intellectual and fiscal capital to responsibly engage in this paradigm shift away from our fossil fuel dependency.

We endorse the College's Carbon Reduction Initiative Working Group's initial target goal of reducing College greenhouse gas emissions by 8% below 1990 levels by 2012, adjusted on a student (per capita) basis, and recognize that at present levels of energy use, this will require attaining carbon emission levels 35% below FY 00–01 levels by 2012. We believe in our call to leadership and charge the College with developing a sound plan for attaining this or greater levels of carbon reduction, integrating a series of strategies that ultimately advance sustainability for this institution and our planet.

*The entire text of Middlebury College's Commitment to Carbon Reduction resolution is available at:  
[www.middlebury.edu/offices/enviro/initiatives/carbon.htm](http://www.middlebury.edu/offices/enviro/initiatives/carbon.htm)*



Dean Ouellette installing grid-intertie system.



Snowbowl meteorological tower at sunset.

## Renewable Energy on Campus

The state of Vermont is moving forward in its support of renewable energy. Grants from the Department of Energy are currently funding wind demonstration projects on farms and schools; renewable energy portfolios are being debated in the statehouse; small grants for residential solar and wind installation are available from the Department of Public Service; and dairy farms are being encouraged to capture methane from farm residuals and generate power with this source of natural gas.

The Environmental Studies Program at Middlebury College has felt challenged by these initiatives and impressed by their momentum. Last summer the ES Program installed a 1KW photovoltaic array on Farrell House's south-facing roof, an installation that is projected to generate one third of the building's electricity need through a grid-intertie system (i.e., approximately 1300 KWh/yr of solar electricity are generated by the panels and fed to the grid, offsetting the building's electricity demand). The project was funded

by the Environmental Council's Campus Sustainability Grants Program and initiated by students in the core ES course Natural Science and the Environment.

An additional Environmental Council Grant, awarded this past spring, is being used to fund consultation with Middlebury-based Vermont Green Energy Systems, who will identify the best campus-land sites for a 10KW wind turbine based on economic, ecological, and educational criteria. Data from a recently installed meteorological tower on the Snow Bowl predicts that the 10KW turbine would generate approximately 24,000KWh/yr. Alternative, lower elevation sites, would generate half the electricity but be closer to campus and to established transmission lines. State and federal funds are currently available to pay for 50% of this proposed project.

The grant may culminate with a proposal to the Administration for siting a small wind turbine on campus.



## Awards

*Middlebury College has received the Excellence in Energy Efficiency Award from Efficiency Vermont, a statewide energy efficiency utility. The award was developed to recognize an organization that has effectively partnered with Efficiency Vermont to fully integrate energy efficiency into its organizational practices. Middlebury has consulted with Efficiency Vermont on a number of construction, renovation, and educational projects, including the new library currently under construction, the new dining and residence halls for Atwater Commons, and the distribution of compact fluorescent bulbs to all new first year students. When completed, the new library will save \$35,000 annually in energy costs due to energy efficiency measures applied to building construction and lighting. These efforts equate to avoided annual production of carbon emissions by approximately 500,000 pounds.*

## Alumni in Action

### Linda Morse '67

#### Making a Difference Through Advancing Sustainability



Linda Morse, senior sustainable development technologist with CH2M HILL, a multinational engineering consulting firm, says that she has come to recognize

over the course of her career the need to blend her personal values with her professional work. The principles of sustainability resonate with her personal values and the manifestation of these values through her energetic dedication to her work and her community have advanced sustainability initiatives on a variety of fronts.

A mathematics major while at Middlebury, Morse enjoyed the more non-analytical courses she pursued as part of her liberal education as they let her express her creativity and prepared her for the various changes in direction that her career has taken. She also fondly remembers her times spent outdoors and physics labs with Professor Benjamin Franklin Whistler and his passion for teaching about how the physical world operates.

Morse went on to pursue a graduate degree in landscape architecture with a focus on environmental planning at University of California, Berkeley, in the School of Environmental Design. She decided to focus on this newly emerging field after feeling drawn to work in the environment by the seminal environmental movements in the early and mid 70s. Her current focus on sustainability was shaped by her ensuing professional work.

The impressive list includes working for the Association of Bay Area Governments (ABAG) in Berkeley as an environmental planner in the areas of environmental assessment, solid and hazardous waste management, renewable energy, solar subdivision design, special wastes (wood waste), and facility siting and permitting. She then moved to a small consulting engineering firm, Brown Vence and Associates, in San Francisco where she continued working in many of these same areas. Her next step brought her to CH2M HILL as senior environmental planner and project manager, where her career took a new turn in the mid 1990s.

“Fueled by exposure to emerging literature, conferences, presentations, and peer discussions on sustainable development (SD) and by my own increasing discontent with projects that seemed to either ignore the larger environmental and social questions or offer only band aid solutions,” she says, “I veered into a deep exploration of new ways of looking at project planning, design, engineering, and operation.”

In recognition of her innovative ideas, she was appointed to lead CH2M HILL's National SD Program which included developing tools to move SD from broad theory to applied solutions, to train staff, and to deliver services to clients interested in SD. Early in 2004 Morse decided to refocus her work, both within and without the company, on direct action consistent with SD values, and stepped down from her national position. She

now serves as Senior SD Technologist, providing services for projects in CH2M HILL.

Morse also actively applies her environmental and social values at the community level, working as president of the board for the Friends of Sausal Creek (FOSC), an urban creek restoration and environmental education non-profit organization in Oakland, Calif. She is also active on Oakland committees that have focused on developing sustainable community policies and on defining best practices for sustainable businesses. And,

Morse is a lifelong educator, conducting too many sustainability trainings and workshops to number.

Morse has begun to spend more and more time in Randolph, Vt., relearning the place of her birth. “I am seeing with old and new eyes and ears the hills, streams and forests of home,” she says.

The community will undoubtedly benefit from her re-engagement with it.

Lastly, Morse comments that she is gratified to see the strength of Middlebury's environmental curriculum and commitment to environmental excellence and believes that Middlebury's graduates will be better prepared to envision both a society that is more responsible environmentally and socially and to build this ethic into their career choices, just as she has done throughout her career.

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*“I am seeing with  
old and new eyes  
and ears the hills,  
streams and forests  
of home.”*

*—Linda Morse*

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## Alumni in Action

### Barry King '74

#### Vermont's Environmental Education Soul Mate



Barry King is a tracker—out in the Ripton woods, stooped down over clawmarks in the snow, bent over piles of scat, looking for fur snagged on the bark of passing trees.

She'll hand you one of the laminated tracking cards she's drawn up so you can play too, trying to figure out the hidden lives of the elusive creatures that haunt the Vermont forest. It's not easy, but the more you do it the more you understand the connections that sustain life out there.

And the more you track King herself, the more you understand the kind of connections that keep a human community working. Quiet, reflective, alert, and constantly on the move, the 1974 history graduate has—among many other things—spent eight years directing the Keewaydin Environmental Center; helped organize and lead Vermont's Statewide Environmental Education Partnership; served on the board of the New England Environmental Education Alliance; supervised the Otter Creek Natural Resources Conservation District;

and organized the Vermont State Envirothon, an annual competition for youth testing knowledge of forest biology and ecological issues. Oh, and chaired the board of Keeping Track, the innovative statewide project that organizes local residents to, yes, track animals as a way to map and protect the crucial habitats within their towns.

Most of that is evening work, demanding a tolerance for meetings; in the morning, life is different. Working

*Find your place on  
the planet, dig in,  
and take responsibility  
from there.*

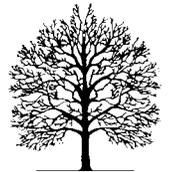
—Gary Snyder

with her husband Warren, an avid and nationally renowned ornithologist, she's likely to be up at four to check out a new area for the next edition of the state's Breeding Bird Atlas. Or walking a transect through some swamp in the Bread Loaf wilderness to check on indicator species like woodcock or barred owl. Late rainy nights in the spring she's out on the valley roads helping a volunteer crew shepherd thousands of salamanders across the highway and safely into the vernal pools on the other side. Mid-morning she's more likely to be found wading the Lemon Fair River to rip out water chestnuts or some other exotic invasive.

"I think she's what an ecologist would call a 'keystone species,'" says Bill McKibben, scholar in residence in environmental studies and a Ripton neighbor of the Kings. "It seems entirely possible that were she ripped out of the Addison County environment, whole chains of wildlife, and community life, might come crashing down."

Happily, she seems firmly planted in the soils of the Middlebury region. Having come to Vermont to ski as a child (she was later the first woman to be hired as part of the ski patrol at Mad River Glen), she can be found most winter afternoons at Bread Loaf, waxing her Nordic skis for a spin in the woods. A frequent guest, and occasional lecturer, at the College's weekly environmental studies symposium, she's also a founding trustee of the Spirit in Nature paths on College land off the Goshen Road, not to mention an officer of the town's food co-op. Oh, and an organizer of the annual Ripton Ridge Run to raise money for the town school. And then there's the Watershed Center in Bristol. Oh, and the Otter Creek Audubon Society, and...

Suffice it to say, her footprint is larger than almost any other creature in this part of the world.



#### Middlebury College recognized for outstanding use of wood

The Northeastern Loggers' Association (NELA) recently awarded Middlebury College the association's Outstanding Use of Wood Award. Over the past seven years, Middlebury College has used more than 375,000 board feet of locally harvested and green certified Vermont wood in campus construction and furnishings. Green certified wood has been harvested and processed through ecologically sensitive means. Jack Davis, a log purchaser, the former president of the NELA, and a resident of Vermont's Northeast Kingdom, nominated Middlebury College for the award.

## Service-Learning in Environmental Studies

*This pedagogy has enhanced the learning experience of our students; strengthened their collaborative, critical thinking, and problem solving skills; and has allowed for some real community needs to be met. Integration of service-learning into environmental studies curriculum has been facilitated by support from Tiffany Sargent and the College's Alliance for Civic Engagement and Vermont Campus Compact, of which Middlebury is a member institution.*

### 2003–2004 ES 401 Projects

#### Spring 2003 (Christopher McGrory Klyza)

*Vermont Family Forests and the LaForce Project: A Case Study in Sustainable Forestry* Partnering with Vermont Family Forests (VFF) this group analyzed the benefits of using locally harvested, green-certified wood in the construction of the Ross/LaForce building. VFF was interested in the results of this analysis to guide and inform their future projects.

*Champlain Valley Clayplain Forest Restoration: A Landowner's Guide* Partnering with the Champlain Valley Clayplain Forest Project (CVCFP) students designed and implemented a clayplain forest (native natural community for the Champlain Valley) restoration on ten acres of College land. Over 2000 seedlings were planted and a guidebook for area landowners was developed.

#### Fall 2003 (Kathryn Morse)

*Toxics in Vermont: A Spatial Representation* Working with the Toxics Action Center (TAC), this group developed a series of GIS maps conveying information about environmental hazards in Vermont. An explanatory report and a town-by-town profile were also produced. All materials were the focus of a statewide press release earlier this year.

*It's Not Just Dirt: Permitting the Storage of OMYA, Inc. Mine Waste in Florence, VT* Students developed a comparative summary of mine waste regulations in New England states and interviewed Florence, VT residents to assist the efforts of Vermonters for a Clean Environment and Residents Concerned about OMYA—two citizens groups organized over concerns about a mining company's proposal for a new, unlined tailings pile above the town's water supply.

*Service Learning with Clarendon Families Interested in Researching Sickness Together (Clarendon FIRST)* Clarendon FIRST is a citizens group from Clarendon, VT formed in response to high levels of both childhood leukemia and adult cancers which they suspect are due to several environmental pollution issues. Students helped administer and code a public

health survey and conducted a GIS analysis of soil and slope characteristics to determine the potential for groundwater and surface water contamination in the town.

#### Spring 2004 (Kathryn Morse)

*Service Learning with Clarendon FIRST* Continuing work with Clarendon FIRST, students continued to conduct research into potential environmental causes for the cancers facing the town. This included EMF (Electromagnetic Field) measurements & mapping and a survey of pesticide usage in the area.

*Vermont Brownfields: A Look at Existing Policy and Where We Should Go From Here* Partnering with the Toxics Action Center and the Vermont Public Interest Research Group, this group developed a lobbying package focused on brownfields in Vermont which included GIS maps, photos, summaries of key legislation, and recommendations for funding redevelopment projects.

*Addison County River Watch Collaborative Database: A Manual* Students developed a Microsoft Access database for 10 years of water monitoring data the Collaborative had collected and designed query and display functions so that this valuable data is now safely stored and quite usable.

*Otter Creek Basin Planning Public Opinion Survey* Partnering with the Addison County Regional Planning Commission (ACRPC), this group designed a public opinion survey to gain valuable public input on water quality issues of concern for residents of the Otter Creek Basin. The results of this survey will directly inform the ACRPC's planning efforts.

*The Safe Lawn Campaign* Working with the Voice for Potash Brook, a watershed organization in So. Burlington, this group actively canvassed So. Burlington residents and businesses to promote reductions in fertilizer and pesticide usage for the benefit of environmental and public health. They also developed a presentation to be used at public meetings to further promote this important message.

### ES 360 Projects

#### Spring 2002 and Spring 2004 \* (Steve Trombulak and Pete Ryan)

*A Survey of Groundwater Composition in North Addison County, Vermont: Geologic Sources of Contamination* Students measured the concentrations of 19 elements, including uranium, in well water in northern Addison County, to identify potential sources of health risks from these elements that can originate from natural sources through the weathering and dissolution of minerals in the bedrock. The results of the study were quite informative and will serve as an excellent resource for the Vermont Geological Survey and the Vermont Department of Health.

*Relationships Between Soil Nutrients and Forest Health: Implications for Modeling Effects of Acid Rain on Vermont Forests* In order to examine a model recently developed under a mandate from the New England Governors-Eastern Canadian Premiers, students carried out a study in conjunction with community partners from the US Forest Service and Ecosystems Research Group, a Vermont-based ecological research group. Students sampled 21 forest sites and analyzed soil nutrient concentrations and tree growth rates across a range of forest types with different degrees of susceptibility to acid rain. The results of the class' work will be applied to assessing relationships between acid rain, soil quality and forest health. *\*This course is offered every other year*

### ES 211 Projects

#### Spring and Fall 2003\*

Students in Jon Isham's ES 211 class conduct a wide range of service learning projects. Examples include researching international environmental standards for Middlebury-based ECOLOGIA and tackling complex issues of sprawl, affordable housing, and transportation for the Town of Middlebury. Other service-learning partners include Spirit in Nature, the 10% Challenge, Forest Watch, and Dean for America. *\*Jon Isham on leave Spring 2004*

ES401 web site: [www.middlebury.edu/depts/es/sturesources/es401/default.htm](http://www.middlebury.edu/depts/es/sturesources/es401/default.htm).

ES360 web site: [www.middlebury.edu/depts/es/sturesources/es360.htm](http://www.middlebury.edu/depts/es/sturesources/es360.htm)

ES211 web site: [community.middlebury.edu/~jisham/teach.html](http://community.middlebury.edu/~jisham/teach.html)

## Faculty and Staff News

**Vickie Backus** (Biology) published a collaborative paper in *Behavioral Ecology and Sociobiology* looking at the interaction between food, nest sites and social parasites on the ecology of the small forest ant *Leptothorax longispinosus*.

**David Eaton** (Soc/Anthro) is on sabbatical this year, working on a book on men coming of age in the Republic of Congo, supported by an NEH fellowship. His course SOAN 159 (Human Origins, Culture, and Biodiversity), to be taught again in Fall '04, offers an anthropological perspective on evolutionary sciences and human ecology. David recently published an article "Understanding AIDS in public lives," in *HIV & AIDS in Africa: Beyond Epidemiology*.

**Nan Jenks-Jay** (Env. Studies) was included in Who's Who in America based on her achievements in the environmental field. Nan authored a chapter entitled, "Integrating Education for the Environment and Sustainability into Higher Education at Middlebury College" for the book, *Higher Education and the Challenge of Sustainability: Problematics, Promise, and Practice*. Nan presented lectures at nine different institutions, participated on two external review committees and served on Island Press' Consortium for Environmental Education.

**Don Mitchell's** (English) new novel *The Nature Notebooks* arrived in bookstores April 1. It's right up the alley of anyone interested in environmental literature, "nature writing," and aggressive forms of environmental activism. The book raises lots of difficult questions, and Don expects it to be greeted with a degree of controversy.

**Tom Moran** (Chinese) published "Lost in the Woods: Nature in Soul Mountain" in *Modern Chinese Literature and Culture*, Vol. 14, No. 2. This is "a rare example of ecocriticism of Chinese literary studies," according to the editor of MCLC.

**Kathryn Morse** (History) published her first book, *The Nature of Gold: An Environmental History of the Klondike Gold*

*Rush*, in October 2003. An article, "Putting History at the Core: History and Literature in Environmental Studies," appeared in the November 2003 issue of *History Teacher*.

**Jeff Munroe** (Geology) advised Will Roush, '03.5 ES/Northern Studies, on a Mellon-funded project investigating 20th century treeline changes in Glacier National Park through rephotography. He also coordinated the winter term Glacier National Park internship program, and had a paper published in *Arctic, Antarctic, and Alpine Research* detailing the results of his rephotography work in northern Utah.

**Andrea Olsen** (Dance) has several new publications including "Breath, Air, Voice" in *A Book on Air* and "Whitireia Dancing," in the magazine *DANZ*. This winter/spring Andrea taught two new ES-related courses—"The Dance of Physics" with Rich Wolfson (Physics) and "Nature and Creativity" with John Elder (English). The Dance Company of Middlebury, under her direction, produced a February concert which won top honors at a regional festival. The seven-member Dance Company was selected by adjudication to present at the biannual national festival at the Kennedy Center in NYC this June.

**Pete Ryan** (Geology/ES) published two papers, one in the refereed journal *Clays and Clay Minerals* on soil formation and evolution in Costa Rica (with Chris Kautz '02), the other a co-authored paper on relationships between tectonic evolution and paleoclimate in western Montana in a Society of Sedimentary Geologists book. Pete also received tenure and was appointed Director of the Environmental Studies Program.

**Amy Seidl's** (Env. Studies) research currently focuses on how open space in the Vermont landscape facilitates butterfly diversity. Amy developed a new set of lab exercises for ES112 focused on genetically modified organisms and their efficacy in deterring herbivores. Amy and her students have been awarded two Environmental Council Grants geared toward bringing renewable energy to the Middlebury

campus and a National Wildlife Federation Campus Ecology Grant to begin a vermiculture composting project.

**Steve Trombulak** (Biology/ES) is serving on an EPA Science Advisory Board (SAB) to review the EPA Draft Report on the Environment. This report is the first of what EPA hopes will be a tri-annual review of the health of the U.S. environment, and thus the SAB is helping the EPA to create a model for how such a long-term monitoring program should be developed.

**Rich Wolfson** (Physics) and Steve Trombulak have collaborated on a research study of climate change in New England over the twentieth century. They've submitted their work to *Geophysical Research Letters*. They find that New England has warmed at nearly twice the global rate given by the Intergovernmental Panel on Climate Change and also explore regional variations within New England.

### Faculty Books Published in 2003–2004

David Bain–	<i>The Old Iron Road</i>
Bill McKibben–	<i>Enough</i>
Don Mitchell–	<i>The Nature Notebooks</i>
Kathryn Morse–	<i>The Nature of Gold: An Environmental History of the Klondike Gold Rush</i>



## ENVIRONMENTAL NEWS

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This issue of Environmental News was edited by Diane Munroe.



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