Spring 2008

InsideESF

The Magazine of the SUNY College of Environmental Science and Forestry



How GREEN IS ESF?

See What President Murphy Has to Say, Page 12

Photovoltaic panels grace the newly rehabilitated Baker Laboratory. The photovoltaics are one part of ESF's continuing effort to be carbon neutral by 2015.

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On the cover: Our many-shades-of-green mosaic displays ESF's students, faculty and staff engaged in activities that depict, quite literally, this issue's green theme. The staff of Inside ESF extends its thanks to the members of the College community who contributed the photos.

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Green is a wardrobe staple for Dr. Harrison H. Payne, vice president emeritus of student affairs and professor emeritus in environmental and forest biology. Payne has worn green every day for 30 years. "Green is a sign of life," Payne said. "Think about what the world would be like without some green around."

InsideESF

SUNY College of Environmental Science and Forestry

Cornelius B. Murphy, Jr., President *Robert C. French*, Vice President for Enrollment Management and Marketing

Office of Communications

122 Bray Hall 315-470-6644 www.esf.edu/communications

Editor

Claire B. Dunn cbdunn@esf.edu

Art Director Wendy P. Osborne wosborne@esf.edu

Staff Writer Karen B. Moore

Production Vance M. Blackburn

Office Staff Peggy Olrich

Inside ESF is produced by the Office of Communications of the State University of New York College of Environmental Science and Forestry.

We invite letters to the editor.* You can email your comments to InsideESF@esf.edu or mail them to us at: Inside ESF, SUNY-ESF, 122 Bray Hall, 1 Forestry Drive, Syracuse, N.Y., 13210-2778

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It's time for our own report card.



Outside the confines of a college dedicated to the environment, green has long been linked to an array of images: envy, money, illness and inexperience. It signifies the go-ahead or conjures thoughts of golfers lining up precise putts. It recalls the grass of home, the eggs and ham of Dr. Seuss, and frogs that have difficulties with their hue. It designates a comic-book superhero called Lantern, a cheerful giant who sells vegetables, and a knight who presents a challenge to Sir Gawain in a 14th-century English romance.

More recently, in the face of climate change and increasing awareness of Earth's limited resources, green has gone mainstream in an environmental sense. In a year when U.S. presidential candidates are discussing support for a cap-and-trade system to reduce carbon emissions, differing on fuel-economy standards for automobiles and debating the need to support the production of biofuels in the United States, it seems appropriate to turn the "green" lens on ourselves.

As ESF educates the next wave of environmental leaders, what is happening on our campus to show that – as our students have requested – we practice what we teach? Taking a cue from Richard Llewellyn's 1939 novel about a coal-mining family in a Welsh valley, this issue of Inside ESF asks, "How Green Is Our College?"

Claire B. Dunn, editor

Campus Update

ESF in the STARS

ESF is among more than 90 college and university campuses that will participate in the pilot phase of a rating system for sustainability in higher education.

The self assessment system, called STARS (Sustain ability Tracking, Assessment and Rating System), was launched in February. Participating campuses will test the system this year, then provide feedback to the Association for the Advancement of Sustainability in Higher Education (AASHE), which developed the system.

This is another step in our goal to be carbon neu tral by 2015, said ESF President Cornelius B. Murphy, Jr. It will help us understand how our photovoltaics, fuel cell, alternative fuel programs and energy effi ciency efforts are moving us to be a more sustainable campus. This effort will help guide us as we plan our next steps.

The participating campuses represent a wide range of institutional types, sizes and geography. They include public and private schools, community colleges and research universities. Input from the pilot participants will help AASHE finalize the system before it is shared with a broader audience next year.

This will give us some early feedback on how we re doing in regards to sustainability, said Michael Kelleher, ESF s director of renewable energy systems.

This program will help focus our efforts. We know that our students are very committed to sustainabil ity. We appreciate their voice and efforts to make us a more sustainable campus, and want to continue to expand opportunities to involve them in our sustain ability efforts.

STARS is designed to:

• Help gauge the progress of colleges and univer sities toward sustainability in all sectors, from gover nance and operations to academics and community engagement.

• Enable meaningful comparisons across institu tions as well as benchmarking within institutions.

• Create incentives for continuous improvement toward sustainability.

• Facilitate information sharing about sustainabil ity practices and performance in higher education.

• Build a stronger, more diverse campus sustain ability community.



State University of New York College of Environmental Science and Forestry

ESF Launches New Logo

ESF has unveiled a new College logo that has a contemporary feel while acknowledging the College's deep forestry roots.

The new "leaf and acorn" logo was developed by ESF's Office of Communications and was the frontrunner in a survey of ESF alumni, students, faculty, and staff.

The logo was updated because "many members of the College community felt the previous ESF logo had an outdated look and did not communicate the College's desired image of institutional vitality, quality and prestige," said Robert C. French, vice president for enrollment management and marketing.

"The College administration has considered a logo change for some time, and our Communications Office agreed to accept this challenge knowing that it might be difficult to reach consensus on this somewhat emotional and subjective design project. In the end, I think we developed a process that provided us with a lot of helpful input and suggestions, and we're pleased with the final results," he said.

Almost 1,900 ESF students, faculty, staff and alumni participated in the "first round" of the logo project conducted during the fall 2007 semester. Respondents used a web-based survey site to provide ratings for seven proposed logo alternatives, and provided more than 50 additional pages of email comments. Communications Staff used that input to narrow the selection to two of the original choices and to develop a new option for consideration in a second round of the rating process. More than 1,000 people responded to the second round survey, resulting in the selection of the new logo.

The new logo will soon be seen on College publications, stationery, business cards, signs and merchandise.

Alumnus Will Oversee ESF's Forest Properties

Robert S. Davis, who holds three degrees from ESF, has been appointed director of forest properties.

Davis holds an associate of applied science in forest technology from The Ranger School, '83, a bachelor's degree in forest resource management, '85, and a master of science in silviculture, '88, from ESF. He is a Society of

American Foresters certified forester.

Davis, who lives in Owasco, west of Syracuse, is the owner of Sustainable Forestry Advisors, LLC in Skaneateles. He served as senior forester with the New York State Department of Environmental Conservation. He currently serves as treasurer of the New York Society of American Foresters and area chair of New York Tree Farm, Inc., and is a member of the finance committee of The Ranger School Alumni Association.

Robert S. Davis, '83, '85 and '88

New Graduate Programs Focus On Making a 'Real Difference'

ESF has established two new graduate programs in environmental studies. These programs focus on the social and policy dimensions of environmental issues, and take an interdisciplinary approach to solving environmental problems.

"These are programs that can make a real difference in the world," said Dr. David A. Sonnenfeld, chair of the Department of Environmental Studies.

The new programs are a master of science (MS) and a master of professional studies (MPS), both in environmental studies.

"The MS program is research-focused, offering students an interdisciplinary understanding of environmental issues, the problems that underlie them and the paths that lead to sustainable communities," said Sonnenfeld.

The MPS program is a non-thesis degree aimed at professionals already working in various environmental fields and others seeking a graduate program with less emphasis on research. Those choosing the MPS track will find a more career-focused program, often including an internship that adds real-world applications to the curriculum.

Both graduate programs offer unique blends of social science, humanities and physical science, and allow students to take a hands-on approach to developing their own personal curriculum.

A Notable Achievement



Green Campus Initiative (GCI) member Hannah Morgan shows off a notebook made from recycled paper and a cereal box. The GCI collects the paper, has the books bound in the campus Copy Center and sells them through the campus store, Small Stores.

GCI has been involved in a composting project, encouraging the use of reusable dishes in the campus snack bar, and conducting a campus energy audit. Some of the group's steps are the simplest possible: Open the blinds and turn off the lights in classrooms.

Said Morgan: "A lot of times when I have class this year, they close the blinds and turn the lights on, and I'm like, 'You people are silly." Morgan is a sophomore from Albany, majoring in envi ronmental science with a focus on atmospheric science.



Baby steps to shrink your carbon footprint

If you're looking for easy ways to reduce your carbon footprint, ESF's Green Campus Initiative (GCI), the activist group that encourages the college to "practice what we teach," has provided the following tips.

Replace all of your old light bulbs with energy-efficient compact fluorescent bulbs.

Use cloth bags when shopping instead of plastic or paper bags.

Use reusable mugs and water bottles instead of plastic or paper cups.

Wash your clothes in cold water. This cuts energy use in half.

Share rides and promote car-pooling. Most cars on the road these days have only one person in them.

Walk or bike to places.

Buy organic or local food.

Unplug appliances that are not regularly used.

Use kitchen towels instead of paper products. (27 million trees a year are cut down for paper towels.)

Recycle cans and paper.

Start composting.

Buy in bulk, or look for products that use less packaging.

Do not use pesticides on your lawn.

Buy some of your electricity from sources of wind power.

Reduce your junk mail.

Turn off lights when you are not in a room. During the day, avoid turning lights on.

Do not let the water run when doing the dishes, washing your hands or brushing your teeth.

New Projects in the Wind (among other power sources) by Claire B. Dunn

If you want to know how green our college is, Michael J. Kelleher, ESF's interim director of renewable energy systems, makes a good tour guide.

Start at ESF's southernmost New York property: the 4,000-acre Heiberg Memorial Forest and Field Station in Tully, the site of field research, instruction and demonstration, and a thriving sugarbush. Kelleher plans to install a 5kw wind turbine near the classroom building and a small solar unit that would track the sun through the day. The power generated by the two new pieces of equipment would offset electricity used in the classrooms.

At the Tully field station, where 66 acres are devoted to research plantings, Kelleher is looking at the possibility of installing a 10-to-12kw photovoltaic array on southfacing barn roofs. The project would serve as a demonstration of PV power, visible to those who visit the station to learn about the willow shrubs that are cultivated for ESF's wood-to-ethanol project.

On the main, 13-acre campus in Syracuse, a 250kw fuel cell occupies a former parking area behind Walters Hall. It supplies 17 percent of the College's electricity. It was installed with funding support from the New York State Energy Research and Development Authority.

This parking lot at the east end of campus is rich with alternative fuel sites. At the east side of the lot, on the campus border with Oakwood Cemetery, two 3,000gallon storage tanks await spring installation, which will establish a fueling station

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for the college fleet so cars and trucks can tank up on E85 and B20, made with ESF's own ethanol and biodiesel.

At the same end of campus, atop the roof of the one-story section of Walters, photovoltaic panels provide 15.4kw of energy, or about 1.5 percent of the College's total energy needs.

Next to the photovoltaics, atop another part of Walters, is a green roof, where selfpropagating, drought-resistant plants help control storm water runoff and mitigate urban heat-island effects. It conserves building energy, reduces sound transmission and creates a pleasant, aesthetic environment that can even provide wildlife habitat.

Earlier this year, a 23kw photovoltaic array was installed in the south wall of Baker Laboratory as part of a \$29 million rehabilitation project that uses the latest in green construction practices. Combined with the photovoltaic (PV) array installed earlier this year on the roof of Walters Hall and the carbonate fuel cell that went to full



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power this past spring, the new Baker PV system means 20 percent of the College's electricity needs now come from alternative, renewable energy resources.

ESF also installed state-of-the-art chillers in Illick and Walters halls as part of a partnership with the New York Power Authority.

Kelleher also has plans for the College's properties in the Adirondacks.

An energy audit is in store for the Adirondack Ecological Center, and a location is being sought for photovoltaics there.

For The Ranger School in Wanakena, Kelleher is seeking a grant from the New York State Energy and Research Development Authority to replace an aging oil boiler with an efficient wood-burning unit. The unit would be fueled by wood chips that result from the school's forest management operations.

"The wood boiler would save the College between \$10,000 and \$15,000 a year and be carbon neutral," Kelleher said.

The "carbon neutral" designation is one the College strives for throughout its campus facilities.

"The new SUNY initiatives say our BTUs per square foot must be reduced 37 percent by 2010, when compared to where we were in 1989-90," Kelleher said. "The Campus Climate Change Committee is developing ideas to engage the campus community to conserve energy and improve efficiency," Kelleher said. "ESF's own goals are more aggressive than some of the SUNY targets. We want to be carbon neutral by 2015."

It Isn't Easy Defining 'Green'

Environmentally speaking, green's a feeling as much as anything else. To find out what it feels like at ESF, *Inside ESF's* Karen B. Moore asked people on campus, **"What does green mean to you?"**

Renewable

Environmentally Friendly



Deanna Russell, freshman, environmental and forest biology

"It means environmentally friendly and having to deal with nature."



Christopher Taveras, junior, environmental and forest biology

"Renewable things, like energy. I think of things that are conservative and not wasteful, steps that can be taken to make things more efficient and incorporate nature in our social lifestyles."



Malaika Green, master's student, environmental science

"It's one of the toughest questions you can ask. It's different for me, being from the Caribbean and growing up in a country where it's all green. I think I associate green with being natural, pure. Some form of cleanliness. Having resources intact. More and more I consider green natural."



Baseball

Kevin Moulthrop, sophomore, landscape architecture

"The Adirondacks. Clean water. Going swimming. Baseball – the grass."

Original

Easy Stuf



Sarah Darkwa, Ph.D. student, environmental studies

"Green to me means a natural environment, original; an environment that has not been tampered with, and a healthy one."

Healthy

Wark St tional su environm and fore "Saving is g

Mark Storrings, instructional support specialist, environmental resources and forest engineering"

"Saving is green: conservation to save, slowing down, checking the air pressure in your tires, combining trips, car pooling. The easy stuff."



Erin Jennings, freshman, forest and natural resources management

"In general it can be anything that's environmentally friendly, but honestly I don't like that term because it's overused. People say they're being green but no one wants to define it."

Practica

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Hikes



Mike Schmitt, freshman, environmental resources and forest engineering

"Green is something that's renewable and economical and practical. So it's something you could actually use in the real world."

Clean wate



Jean Juliano, SU, Outing Club

"The first things that come to mind are things relating to nature — like the Outing Club. I think of hikes, trees and forests. Recycling. Not walking on ESF grass co to mind."

(Jean was in Marshall Hall recruiting for the SU Outing Club.)

SETTLING FOR LESS

By Claire B. Dunn

ESF educators try unique solution at site ravaged by pollution

The Solvay Settling Basins, the scene of years of industrial pollution on the shores of Syracuse's Onondaga Lake, is the setting for a novel approach to restoring brownfield sites for beneficial use.

Instead of capping them with clay and plastic, fencing them and posting "Keep Out" signs, a partnership of engineers, scientists and new corporate owners has taken a different tack on a portion of the site: Restore the ecosystem. Remediate the environmental concerns. Grow and harvest something useful.

Then invite people in.

"We're in such proximity to the urban core of Syracuse that this can be a destination for people who live in Central New York," said Douglas J. Daley, who teaches environmental resource engineering at ESF. "They can come out for recreational purposes and, at the same time, experience how this restoration process works."

The settling basins present an unusual set of circumstances: a large area (more than 1,000 acres) that contains industrial waste (mostly the mineral calcium chloride) in what was once a unique ecosystem (an inland salt marsh) on the edge of a midsize city.

ESF has worked at the site in partnership with Honeywell International, which owns the land. The settling basins contain the byproduct of soda ash production conducted by a previous industrial operation.

The settling basins are part of a larger area that was once covered by an inland salt marsh. The area now includes Alliance Bank Stadium, home to the minor league Syracuse Chiefs baseball team; the bustling Central New York Regional Market, one of the oldest farmers' markets in the state; and the regional transportation center, which is a hub for train and bus travel.

The site borders the city of Syracuse and is bounded on two sides by highways. To the east is Interstate 690, the major east-west corridor through the city of Syracuse, and to the south is New York Route 695, which links communities in western Onondaga County.



Douglas Daley and student Danielle Benati take measurements to determine whether water is moving into the soil, ponding on the surface or running off the site. As part of the Honeywell project to restore the Solvay Settling Basins, this work demonstrates the effectiveness of willow as an evapotranspiration landfill cover. "Humans have developed the area for their benefit but, unfortunately, destroyed a relatively unique environment: an inland salt marsh," Daley said. "We're trying to reclaim some of that lost ecological history on an otherwise unusable site, while providing a benefit, both now and in the future."

One of his ESF colleagues, Dr. Donald J. Leopold, is working on restoring the salt marsh. He and his students are planting native prairie grass, dune plants and salt marsh species that will contain saline runoff, prevent erosion and create wildlife habitat. Interestingly, the industrial waste, which contains a lot of chlorides, is salty and contributes to growing conditions not unlike those that exist naturally in a salt marsh.

ESF's Dr. Timothy Volk leads an effort to grow shrub willow on the settling basins. The willow can be harvested, chipped and transported to an upstate biomass plant for use in its electric power facility. Harvesting has already begun, marking the first time productive willow shrubs have been grown at a site where former industrial operations resulted in soil with a high ph content, meaning it is unusually alkaline. Honeywell fertilized the site several years ago with biosolids that were the byproducts of a wastewater treatment operation, said Volk, who helps lead ESF's short-rotation woody crops program. He said the fertilization enhanced the growth of the willow shrubs, which typically do not thrive in such conditions.

Daley said the healthy willow crop demonstrates the long-term success of using biosolids and yard waste mulch in brownfield redevelopment projects.

"We're using other waste generated in an urban enviroment, harnessing that energy and those nutrients to do something good," Daley said. "And the 'something good'



Laura Hahn, junior environmental interpretation major and member of the ESF SCIENCE Corps, works on a salt marsh restoration project in July 2007.

is both raising willow for energy and supporting the ecological restoration. It's unusual to bring all these approaches together in a large, complex problem."

Daley is working on a computer model to demonstrate the likely success of a system composed of willow plantations, salt marshes and drainage swales, known in engineering circles as an evapotranspiration landfill cover system. All the elements work together to reduce the percolation of water into the waste beds.

In addition to generating energy through a sustainable source, this system provides other benefits, Daley said. Conventional landfill covers require mowing grass and aggressive measures to reduce the number of animals that could dig into and damage the cover material, and fences to keep out trespassers. Part of this site will eventually provide animal habitat and encourage recreational use for area residents.

"A conventional approach, by itself, won't solve the long-term problem, so we're taking a systems approach to it," he said. "It's a unique solution to a unique problem."

Mulch and fertilizer treatments are used on the saltmeadow haygrass plantings on Solvay wastebeds.



We're Making Strides...

...but ESF must take even bigger steps to erase its footprint, Murphy says

> As Inside ESF took a look at our college's approach to being green at home, we went right to the top and had a conversation with President Cornelius B. Murphy, Jr.



Claire B. Dunn, director of the Office of Communications, interviews President Cornelius B. Murphy, Jr., to find out how green ESF really is.

Q: Why is it so important for the ESF campus to be environmentally friendly?

A: It is important for us to be green because our students have said, "If you're going to teach green, you have to be green." That goes back to a strategic planning session where we engaged students in terms of their perspective about us as a college and what we needed to be as we go forward to the year 2020. That would have been around 2002 or the spring of 2003.

Q: What's happened between then and now to make us greener?

A: As an educational institution, it's in part our mission to spread the technology and the policy, and to spread the social fabric of what it means to be green. I think the biggest impact is that we're now seeing in the media a reflection of our values as an institution. All of the things that we have done, whether it be the photovoltaics or the fuel cell or the green roof - all those kinds of things - have given us that opportunity to be in the media and to spread the word about our values as an institution. And through the media, the biggest thing is that we are beginning to affect in a very positive way the communities that we serve. Q: What is the biggest success on campus in our effort to practice what we teach?

A: I think the 16kw photovoltaics that we have on Walters. And the 23kw photovoltaics that are part of the window shades and the rehabilitation of Baker. In terms of technology, those are certainly some of the most important steps we have taken. Another very important point is that midstream in the renovation of Baker, we said, "This is going to be a LEED silver-certified building."

Q: That wasn't part of the goal originally?

A: No, there was no target when we started the renovation of Baker to have Baker be a green building.

Q: How hard is it to stop in the middle of a 10-year renovation and say, "OK, we are going to make it LEED silver-certified?"

A: It definitely wasn't easy. But during the second phase of Baker, we held a charrette, which is a planning exercise where we brought in students, faculty, administrative staff and outside architects. That charrette was facilitated by Rick Fedrizzi, who is now the president of the U.S. Green Building Council. And Rick walked us through a day's worth of discussion about the renovation of that building and how that building could be made more sustainable. And as a result of that, the ideas came to the surface and literally the commitment was made at the end of that day that this will be a silver LEED renovated building.

Q: What do we need to do that we haven't done yet? What's out there as a big thing that we haven't done on campus?

A: In terms of what we should do as we go forward, we have only scratched the surface. I mean we are only about this far (holding thumb and forefinger an inch apart) on a timeline that is much larger. One of the exciting things that we are doing now is campus master planning. Clearly, all those participating agree that we have to make this not just a campus with a green building, but we have to make this a green campus. We have also said that it is inadequate for us to just make it a ho-hum green campus. We have to make it a commitment that we want to make this a campus that when anybody steps foot on this campus they say, "This is a special place." And in the context of the special place, it has to reflect the values of the institution: sustainable practices, green technology, all of those kinds of things. Thinking about what we have spent today in greening the campus, it wouldn't surprise me that we have spent in the range of \$3 million, maybe \$4 million, but in this campus master plan we are talking about a program that might be a \$200-million program and so that's why I say we have gone just this far (fingers an inch apart) compared to this (arms outstretched).

Q: If there was a list of the greenest people on campus, whose personal and work habits are environmentally friendly, who comes to mind?

A: Our students, no question about it. I can't honestly put myself in that category, but our students I put in that category every day. There was one day, it was maybe last spring, I was incredibly impressed at how many bicycles were on this campus. I actually asked someone in student affairs could they please take the photographs and estimate the number of bicycles. I wish I could remember the exact

number – I can't – but it was something like 225 bicycles on this campus. If you think about it, very few of our students ever drive onto this campus and then drive back. They ride bicycles, they walk. And you look at how they carry themselves: They have a mug on their backpack. The vast majority of them live what they believe is important. They first have the values and then live it. Unfortunately, I can't put myself in the same category. I'm trying to be better.

Q: What does the word "green" in terms of lifestyle mean to you?

A: It means the individual has made a commitment to minimize their impact on our global environment, that they made deliberate choices, for example to walk and ride a bike instead of necessarily driving a car. Or when driving a car they make an overt decision that on Saturday morning they are not going to drive it three times and they figure out what they are going to do, driving only once, to get all that accomplished. They make decisions to minimize their own excessive consumption. They make decisions to reduce the amount of electrical energy and natural gas they consume; they make decisions like wearing a sweatshirt or sweater and keeping the temperature down to a reasonable level. It is a lifestyle change.

Q: Has the College made any efforts to make the president's home greener?

A: Yes. I went away for about a week and a half to do some skiing and we headed up to Vermont, and when I came back I noticed that the light bulbs weren't quite as bright as they used to be. While we were gone all the incandescent light bulbs were replaced with the compact fluorescents.

Q: What is your biggest failing in your effort to be green?

A: My personal effort? I drive a vehicle that's too big. I think that is probably the biggest one. I haven't measured my carbon footprint, but I'm also afraid to calculate what it really is because I might embarrass myself.



President Cornelius B. Murphy, Jr., talks about shrinking ESF's carbon footprint.

Dr. Hall Explains It All

The world's changing environment and energy needs have created a new generation of buzzwords. Inside ESF asked the College's own systems ecologist and energy expert, Dr. Charles Hall, what these terms mean to him.

Biodiversity: This means many things, but generally the number and quantitative distribution of species in a given area.

Carbon footprint: An assessment of how much CO2 is released into the atmosphere per day from economic and other activities. It is often calculated in terms of how many acres of actively growing trees would be required to absorb the CO2.

Carbon neutral: Releasing no net CO2 to the atmosphere. For example, if you heat your house with wood from a wellmanaged woodlot, the growing trees will be taking up as much CO2 as you release when you burn the wood.

Climate change: Climate is the long view of weather. The climate at any spot on Earth is and always has been variable. If there is a directional change in this variability, it is climate change. For example, according to much evidence, the Earth has been warming recently. A more difficult question is, "Are humans responsible?" Most scientists believe that the answer is yes. **Closed loop:** In this context, it refers to matter that is used and reused, i.e. recycled. Sometimes it means that there is negative feedback within a practice that limits its indefinite growth.

Eco-tourism: The provision of vacation activities with minimal impact on environments and maximum exposure to nature.

Environmentally friendly: An activity that occurs with minimal impact on the environment, i.e. little release of CO2 or other greenhouse gases, without endangering wildlife and without depleting resources.

Green business: A means of providing employment/services with minimal environmental impact.



Greenwashing: A practice that has the reputation or appearance of being environmental but which in fact is not (similar in concept to whitewashing someone's political record).

Peak oil: The point at which the production (actually extraction) of oil reaches a maximum and then declines. This occurred in the United States in 1970 and has occurred in some 60 of 80 oil-producing countries. The question is whether, or when, it will or has occurred for the world.

Sustainable: An activity that is thought to have a long endurance in time. There are many definitions, often conflicting. From an environmental point of view, it would be an activity that pollutes or impacts minimally and that operates on renewable fuels and other resources. The Earth is sustainable. The Earth will be here indefinitely, unless a huge meteor smashes into it, which is unlikely. There's no need to save the Earth. It may go forward without us or without some of the species we've become accustomed to, depending on how we affect them. But the Earth will be here.



Four at ESF take pains to help preserve planet by Karen B. Moore

ESF strives to practice what it teaches, and the people who work at the College make the effort to tread lightly on the earth. Meet some of ESF's green people. They might walk to work, make art from trash, delve into what it means to be green or raise the next generation to be an even deeper shade of green.

Dr. Peter Black: Many Miles in His Shoes





When someone utters the axiom "A journey of 1,000 miles begins with one step," it could be a reference to Dr. Peter Black, who has logged approximately 10,000 miles walking to work.

Black, professor emeritus in the Department of Forest and Natural Resources Management, walks between his home in Syracuse's university area and the ESF campus every day a two mile round trip. Multiplied over 20 years, that's roughly 10,000 miles.

"Now do you want to know how many pairs of shoes I've gone through?" Black asked.

Black takes other steps toward green living. He uses cold water to wash his laundry. All the vegetative debris gets chipped up and used on the Blacks' property. And when shopping, Black and his wife use cloth shopping bags. "I even weigh the apples in the cloth bags," he said.

Robin Hoffman: A Lesson in Green

Dometimes "being green" means helping others explore what that phrase means.

Associate Professor Robin Hoffman from ESF's landscape architecture department taught a sus tainability seminar during the fall with colleagues Tim Toland and Stewart Diemont.

"Everyone's throwing 'green' and 'sustainable' out there and we're asking students to process this," explained Hoffman.

Students in the seminar came from four ESF departments and Syracuse University. Every week a student made a class presentation on a parti cular green topic. Their subjects included stream restoration, coral reef restoration and LEED certi fication.

"It was neat to see them teach each other within their areas," she said. The students also studied ESF's master plan. "We had the students look at the campus as it exists, then in the pro posed condition, and had them crunch the num bers," Hoffman said.

"We taught them that it's not enough to say it looks pretty. You have to carry through with ideas. Not only will it look better and the function of the campus will improve, but yes, it will be greener."

The students were not only green in their professional lives but also in their personal lives. Hoffman noted there was a level of disappoint ment among students as they wondered why others weren't doing more to live green.

"A number of the students were kind of frus trated," Hoffman said. "They asked 'Why don't people walk? Why aren't they using canvas bags for shopping?' It was a good opportunity for them to vent.

"By allowing the students to learn from each other, they could figure out what being green meant personally."

Dr. Mark Teece: Old Stuff, New Art

Uld tins, a combination lock, a discarded film reel: All these things and more have found a sec ond life in the green art of Associate Professor Mark Teece of ESF's chemistry department.

Chemist by day, artist by night (or whenever time allows), Teece takes cast off items and turns them into mobiles, jewelry, clocks and mirrors.

Teece's inspiration for his mobiles came when he saw a mobile by the late artist Alexander Calder, who is famed for inventing the art form, in Wash ington, D.C.

"I thought it was the most amazing thing," Teece said. "I wanted one, but it turns out they're extremely expensive. So I began to make them."

Teece finds his materials in his travels, and some supplies have been donated by friends and family.

"Because I'm slightly green, I used recycled tin for cheap materials," Teece said, "and as I explored tins I realized they worked best because they have colors, words and images on them."

To see some of Teece's work, visit www.whirly world.com.

Dr. Melissa Fierke: 'Local First'

On a recent wintry day in Syracuse, Assistant Professor Melissa Fierke rode her bike not once, but twice, to and from home to campus.

"I hit the ground twice," she said. But she doesn't let the occasional header deter her commitment to living green. Since joining the Department of Environmental and Forest Biology in August, Fierke has yet to drive to work.

"I live a mile from campus and enjoy the ride or a walk through the (Oakwood) cemetery," she said. "It's good exercise."

Fierke embodies ESF's commitment to green. She has ingrained habits and activities in her daily life and that of her family.

"I bring my own water bottle, cups and plates to campus functions." This, she points out, cuts down on the need for Styrofoam cups and plastic utensils. Fierke is surprised more people on campus don't do the same and that they consider her efforts extraordinary.

"It's so astounding. People say, 'You're so green.'"

When Fierke and her family moved to Syra cuse, they chose a house that put them within walking or biking distance of the necessities. To get to all these places, the family walks or rides their bikes. "It's why we bought our house where we did. It's near the food co op, a park, the library and the College," she said.

The Fierkes tend their own garden, canning salsa, tomatoes and applesauce for the rest of the year. The family shops at the local food co op, buys in bulk and repackages the food. They also buy locally produced food, including eggs, lamb and pork from nearby farms.

"Anything to support the local growers," she said. "Local is good. Organic is preferred, but local first."

Fierke's children, 9 year old K.C. and 8 month old Coen, are growing up green. "K.C. takes it for granted," she said. "She knows no other way."

(For the record, baby Coen Fierke does not ride on his mother's bike. He joined his mother for the photo op.)



Natural Purifiers

Choosing the right trees can affect a city's air quality

by Claire B. Dunn

Cities can improve their air quality simply by planting the right mix of trees for their climate, according to a study by ESF researchers.

The ideal combination of greenery can increase carbon sequestration and reduce the emission of volatile organic compounds (VOC), such as isoprene, resulting in betterquality air and a reduction in greenhouse gases, the study shows.

"We can make the air a lot healthier for people to breathe," said Dr. Allan P. Drew, an ESF forest ecologist. "By modifying the planting mixture and using recommended management practices, we could reduce the carbon emissions."

The ESF researchers supplied their local officials with a list of recommendations based on the city's typical weather conditions. But city officials anywhere could adapt the methods to their own climate, Drew said. In Syracuse, where the average annual temperature is 47.4 degrees Fahrenheit, the ideal mixture would consist of 31 species of trees, including American basswood, dogwood, Eastern white pine, Eastern red cedar, gray birch, red maple and river birch.

"Any one of these trees has value in an urban setting for one reason or another," Drew said. "Some of them are attractive, others will grow in compacted soil. They all serve a purpose."

While trees perform the beneficial function of removing carbon from the atmosphere, they also emit volatile organic compounds, primarily monoterpenes and isoprene, that are involved

in the formation of ozone and carbon monoxide, and they can exacerbate smog problems. While ozone in the upper atmosphere is beneficial to humans, provid-

ing protection from ultraviolet radiation, it is considered a pollutant at ground level, causing respiratory ailments, damaging vegetation and causing some rubber and plastics to deteriorate.

An increase of carbon in the atmosphere is believed by many researchers to be tied to rising global temperatures. Removing it from the atmosphere and sequestering it in vegetation may help mitigate climate change.

Some tree species are better at sequestering carbon than others. And some emit fewer VOCs than others. The ideal tree mixture combines the best of both types.

"It all helps," said Dr. Richard C. Smardon, of ESF's Department of Environmental Studies. "If you reduce carbon emissions, you really can cut down on greenhouse gases."

Studies have been done regarding changes that can be made in automotive emissions and construction practices, he said, but no one knows precisely how much trees affect the equation.

"Nobody has really factored in the effect of vegetation. Trees serve other functions, too. They are aesthetic, they help control runoff, they affect the microclimate," he said. "Trees do a lot of things, but it would take a lot of trees in the right mixture to maximize the benefits."

The researchers considered only native species or non-native species that are not invasive.

"You wouldn't want to plant buckthorn out there. Norway maple's another one you wouldn't want," Drew said, referring to two non-native species that spread vigorously. "And you won't see the tree of heaven on that list." To determine the best mix of trees for Syracuse, the researchers used the Forest Service's Urban Forest Effects Model (UFORE), which helps quantify urban forests and the functions they perform. The model uses field, air pollution and meteorological data to calculate attributes about a particular city's forest, including species composition, diameter distribution, tree health, species diversity and exotic vs. native species distribution. The model can also calculate the effect of an urban forest on air pollution and greenhouse gases.

"Not every city has UFORE data," said David Nowak, a Forest Service project leader who is based at ESF. "In this case, the researchers refined the data in a new way to make recommendations. They went a step further with how they used

the information. As far as I know, no one else has done it this way before."

The researchers used Forest Service management recommendations that suggest planting trees with specific qualities: large size (at least 25 feet tall), long life (50 years plus), disease resistance, and native or non-invasive status.

In the case of Syracuse, the 31 species they recommended are less than half the 72 species currently listed as part of the city's urban forest, which is defined as all the trees on public and private land, along streets and in residential areas,

parks and commercial developments.

The report recommends that the total include a maximum of 10 percent of any one species, 20 percent of any one genus and 30 percent of any one family. The species name for Eastern white pine, for example, is Pinus strobus. The genus Pinus comprises about 100 species, and the tree falls into the broader family Pinaceae, which includes pines, firs and larches.

"We have shown that significant reduction in greenhouse gases can be achieved using a few simple recommendations in the urban forest of Syracuse," the study says. "If the urban forest mixture is changed to include more desirable trees, and the locations of certain trees are chosen carefully, Syracuse can easily become a contributor to the reduction of greenhouse gases in the atmosphere."

Drew and Smardon worked on the study with four students: John Domm, Eric Ripley, Janet Tordesillas and Richard Greene.

atmosphere is believed by many researchers to be tied to rising global temperatures. Removing it from the atmosphere and sequester ing it in vegetation may help mitigate climate change.

An increase of carbon in the

ESF Hauls Away 88 Tons of Recyclables by Claire B. Dunn

Recycling bins around campus collected 88 tons of recyclables during the yearlong period that ended March 31, 2007. Here's how it broke down, according to the College's physical plant department:



BATTERIES: .1 ton (New York Yankees' Derek Jeter, if he were holding a 5-pound weight)

PAPER: 48.9 tons (more than the average male sperm whale)



MOTOR OIL: 1.4 tons (equal to the world's largest Salvation Army red kettle, which is nearly 6 feet tall and more than 8 feet in diameter)



CORRUGATED CARDBOARD: 9.9 tons (more than an 11-foot-tall woolly mammoth)

TIRES: .7 ton (the weight of a wheel of cheese given to President Andrew Jackson by a New York dairy farmer in 1837)









RETURNABLE CONTAINERS: .4 ton (same as the average Holstein heifer)

PLASTIC: .7 ton (more than two grand pianos)

USED ELECTRONICS: 4 tons (the amount of krill a blue whale can eat during a single day in the feeding season)





Books and Monographs

Hall, Charles A. and Gregoire Lecler, editors, *Making World Development Work; Scientific Alternatives to Neoclassical Economic Theory*, University of New Mexico Press, 655 pages, June 2007

Hunter, Malcolm L., and James P. Gibbs, *Fundamentals* of *Conservation Biology*, Third Edition. Blackwell Science. 516 pages. 2007

Gibbs, James P., Alvin R. Breisch, Peter K. Ducey, Glenn Johnson, John L. Behler, Richard Bothner. *Amphibians and Reptiles of New York State: Identification, Natural History and Conservation*, Oxford University Press. 504 pages. 2007

Gibbs, James P., Malcolm L. Hunter, Jr., and Eleanor J. Sterling. *Problem-Solving in Conservation Biology and Wildlife Management*, Second Edition. Blackwell Science, Inc., 328 pages. 2008

Smardon, Richard, "A Comparison of Local Agenda 21 Implementation in North American, European and Indian Cities," Management of Environmental Quality; An International Journal, volume 19, No.1 pp. 118-137.

Honors and Awards

Baker, Danielle, Chancellor's Awards for Student Excellence

Baldassarre, Guy 2008 Wetlands Conservation Achievement Award in the research/technical category from Ducks Unlimited

Buckman, Robert H. and Gibson, Kathy Buckman, Herman Louis Joachim Excellence in Management Award from the Syracuse Pulp and Paper Foundation, October

Eallonardo, Anthony, and Spiese, Christopher, An update: STAR/GRO fellowships from the U.S. Environmental Protection Agency

Eby, Ronald; Fowkes, Mary E.; and Ketchledge, Edwin, Graduate of Distinction Awards from the ESF Alumni Association

Muller-Schwarze, Dietland, Certificate of Appreciation for lifetime achievement, from the U.S. Department of Agriculture Wildlife Services Program

Signell, Steve, "Best Design in Small Format Map" category from the North East Map Organization



Take a Look at Energy Technologies in CNY

ESF is co-sponsor of a two-day conference that will highlight energy innovations both locally and globally.

The event, "Sustainably Energizing New York's Creative Core," will be July 17 and 18 at the Oncenter Complex in Syracuse. The conference will draw global leaders to highlight developments in renewable energy technologies, policy solutions, business attraction and research around carbon and climate issues.

Several field trips are scheduled for July 16. Participants will tour several sites around Central New York where sustainable energy technologies are being used.

On the Calendar

To see the full ESF calendar, go to http://web.esf.edu/calendar.asp

Earth Week, April 21 - 26

A weeklong traditional event of barbecues, presentations, community service projects, bands, and speakers. For complete Earth Week details visit, www.esf.edu/earthweek

April 21

29th George J. Albrecht Memorial Lecture, 4:30 - 5:30 p.m., Marshall Hall Auditorium. "Parks and Their Public: Planning and Ideology in U.S. National Park Design," Ethan Carr, associate professor landscape architecture, University of Virginia.

April 24

Alumni Event – Washington, D.C., Greenberg House, 2301 Calvert Street, NW Washington, DC. Sponsor: ESF Alumni Association. Join fellow ESF Alumni for a tour of the National Zoo in the afternoon followed by a reception at SU's Greenberg House. Additional information: ESF Alumni Office, 315-470-6632, alumni@esf.edu

May 9

ESF Board of Trustees Meeting, 9 a.m. - 1 p.m., 229 Bray Hall

May 10

ESF Convocation 1 - 2:30 p.m., Landmark Theatre. For additional information: http://www.esf.edu/students/graduation/.

May 11

Commencement, 9:30 a.m. - noon, SU Carrier Dome. For additional information: www.esf.edu/students/graduation/

May 22

Alumni Event – Metropolitan New York Alumni Reception, The Lubin House, 11 E. 61st St., New York, NY. Additional information: ESF Alumni Office. Guided tour of Long Island's premier public arboretum and historic site. For additional information: Alumni Office, 315-470-6632, alumni@esf.edu

June 5

Senior Alumni Reunion, June 5 – 7. Join us as we celebrate the 50-year reunion for the Class of 1958. Also celebrating milestones will be the classes of 1953, 1948, 1943, 1938 and 1933. For additional information: ESF Alumni Office, 315-470-6632, alumni@esf.edu

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When you support the ESF Annual Fund you help generate the energy that keeps the College at the forefront of the technologies and education crucial to solving the environmental problems facing today's society.

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You are making an investment in ESF and in the creation of a sustainable future. Your gift ensures the College continues to grow and that students and faculty can, in turn, positively impact the world community.

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By Phone: Call 315.470.6683 Online: Visit www.esf.edu/development/annualfund By Mail: Send a check to the Development Office, 1 Forestry Drive, 214 Bray Hall, Syracuse, NY 13210

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