InsideESF

Fall 2008

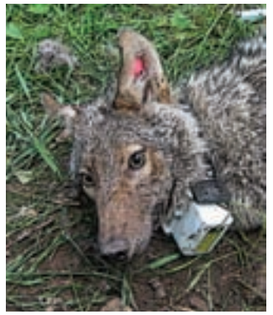
The Magazine of the SUNY College of Environmental Science and Forestry

Lights, Camera, Science!

ESF delves into the science in the movies.

Led by class marshals Daniele Baker, environmental and forest biology major, and Christopher Schalk, environmental science major, ESF graduates process onto the floor of the Carrier Dome during May 11 commencement exercises. For more commencement photos, see page 8.

Contents



On the cover: Photo illustration by Wendy P. Osborne

Photo opposite page by John Faranact, photo top by Wendy P. Osborne

New bike racks were installed on the east end of Illick Hall as part of the campus master plan. The new hanging racks are located under an overhang so they keep students' bikes dry during inclement weather.

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

Art Director
Wendy P. Osborne

Staff Writer
Karen B. Moore

Production
Vance M. Blackburn

Office Staff
Peggy Olrich

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Letters to the Editor

'Most complete and comprehensive'

I just received and read, cover to cover, the Spring 2008 edition of Inside ESF. It is the most complete and comprehensive coverage, that I have seen, concerning definitions, observations and interpretations of being "green," in particular, and environmental concerns in general.

Robert W. Carpenter, '54
Monson, Mass.

'We expect your support'

It seems that daily, we as representatives of the "greater forest industry," have to debunk wild accusations regarding the use of the most sustainable natural resource on earth — trees. I have just finished reviewing Inside ESF and imagine my chagrin when I saw on Page 4 that the College of Environmental Science and Forestry recommends "Baby steps to shrink your carbon footprint," limiting the use of paper bags, paper cups, paper packaging and paper products.

Please consider the "tree-mendous" impact your words carry when ESF suggests that "27 million trees a year are cut down for paper towels," and in the same breath endorses wood use for power generation. Is there a difference here that I am missing? Do you honestly believe that these words won't in some small way hurt our efforts to make common sense prevail during the current "Green Revolution"?

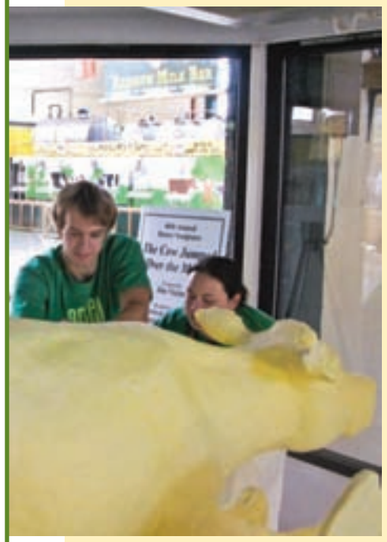
We expect your support on these issues. The public looks to you as leaders in the field of "wise use" of natural resources. Please, there are enough voices crying out to change things (make them "greener"), who have limited science education in their backgrounds.

David W. Norton
Smurfit-Stone Container Corp.
Madison, Fla.

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

*Inside ESF reserves the right to edit letters for content or length.

Campus Update



Once a Butter Sculpture; Now Fuel in the Tank

Nine hundred pounds of butter, sculpted into a cow jumping over the moon and positioned as a centerpiece attraction at the New York State Fair, ended up fueling ESF's vehicle fleet.

The College, in collaboration with the American Dairy Association and Dairy Council, Inc., and the Onondaga County Resource Recovery Agency, made the butter into biodiesel at the on-campus production facility, which routinely makes biodiesel from used cooking oil obtained from Syracuse University.

Graduate student Dan Nicholson said the conversion process took about a week. He said nine pounds of butter make about a gallon of biodiesel, so this year's 900-pound sculpture yielded some 90 gallons of biodiesel. ■

Graduate students Ryan Tappel and Jessica Hatch help disassemble the butter sculpture.

Overfishing Causes 'Dire' Conditions for Baltic Cod

A study of Stone Age fish unearthed on an island in the Baltic Sea suggests overfishing by humans is causing fish populations to evolve and driving commercially valuable species like cod to the brink of economic extinction.

In a report published this summer in the British scientific journal, *Proceedings of the Royal Society B*, ESF's Dr. Karin Limburg and her colleagues reported that 4,500-year-old earstones, known scientifically as otoliths, and vertebrae from Baltic cod found in a pre-Viking settlement on the Swedish island of Gotland indicate the fish harvested by Neolithic fishers were older and larger than those hauled in by 21st century trawlers.

Limburg, a fisheries ecologist who is the paper's lead author, described the status of the cod fishery in the Baltic as "dire."

"It's such an overfished system," Limburg said. "The big concern is that overexploitation is causing the fish to evolve. The finding that humans can actually cause evolution of fish populations, which in turn can drive their degradation, is relatively new and is drawing a lot of attention.

"Some fisheries, including that for cod, are now known to cause 'juvenescence,' or the evolution of younger, smaller adult fish. The ecological and economic consequences both appear to be negative," she said.

The findings were reported in one of two scientific journals published by the Royal Society, the United Kingdom's national academy of science. Proceedings B publishes articles about the biological sciences.

For the full story, go to: www.esf.edu/communications/news/2008/08.27.balticcod.htm. ■

Photo top by Karen B. Moore, photos at bottom courtesy of Karin Limburg

Walking the Walk

Greener pathways and a rain garden greet students

ESF students are walking to class this fall via new walkways around the quad, new outdoor stairways, and new — and more environmentally friendly — entrances at Illick and Marshall halls and Moon Library.

The bridge entrance to F. Franklin Moon Library is now surfaced with Flexi-Pave, a 50-percent ratio of stone and recycled tires mixed with a urethane binder. Underneath the Flexi-Pave is a Warm Zone heating system to eliminate snow and ice in the winter. Flexi-Pave is porous, so rain and melting snow flow through to the ground instead of producing puddles or runoff. Installation of this system means salt and sand won't be needed and that will help protect the newly refurbished library.

"We're thrilled to think that the snow will magically melt before our students reach the library front door! This should help keep our newly renovated space looking fresh and clean for years to come," said Elizabeth Elkins, director of College libraries.

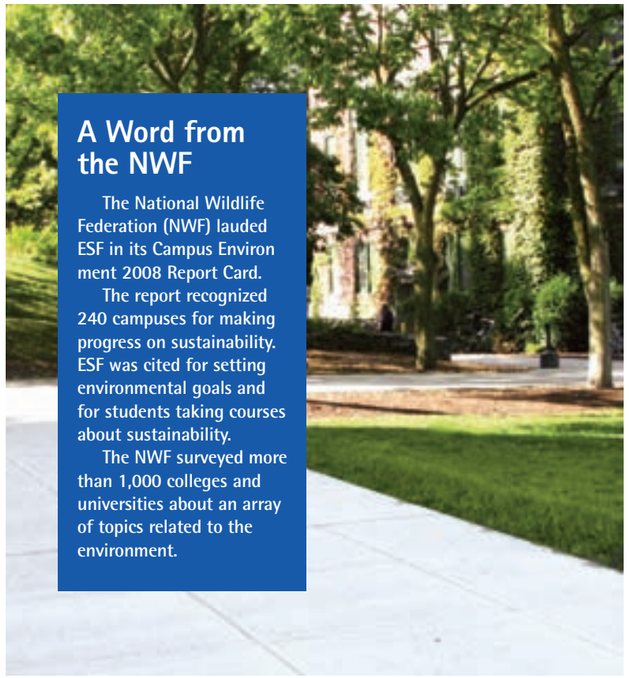
Flexi-Pave and new bicycle storage racks were also installed at Illick and Marshall halls.

The southeast corner of Illick Hall is the location for a new bioretention basin made up of soil and plants, where a third of the rainwater from the roof will be diverted. The idea, suggested by a class project, is to demonstrate how runoff can be controlled so storm drainage systems are not overwhelmed during heavy rains.

"What we're doing is diverting rainwater from the roof of Illick Hall to the bioretention basin instead of the storm sewers. Plants will use the water, evaporation will return water to the atmosphere, and excess water will be filtered through the soil before entering the natural environment," explained ESF ecological engineer Douglas Daley.

The plants include spice bush, chokeberry, Virginia sweetspire, witchhazel, and sweet bay magnolia, which are all very tolerant of wet soil.

Another rainwater diversion project is being installed as part of the renovation work on Baker Laboratory. Four 1,000-gallon storage tanks have been installed in the basement of Baker Lab to collect rainwater from the roof. The water will be used in the building's cooling towers. ■



A Word from the NWF

The National Wildlife Federation (NWF) lauded ESF in its Campus Environment 2008 Report Card.

The report recognized 240 campuses for making progress on sustainability. ESF was cited for setting environmental goals and for students taking courses about sustainability.

The NWF surveyed more than 1,000 colleges and universities about an array of topics related to the environment.

Great Schools, Great Prices — ESF Ranked 15th Nationally

ESF has, for the eighth year in a row, earned a place among the top universities in America, as ranked by *U.S.News & World Report.*

In the "Great Schools, Great Prices" category of the 2009 edition of America's Best Colleges, ESF is ranked 15th. The formula used in that category relates a school's academic quality to the net cost of attendance for a student who receives the average level of need-based financial aid. ESF is the only SUNY institution listed in this category.

ESF is listed at 37 among the top 50 public national universities, and at 83 in the list of best national universities, which includes both public and private institutions.

"ESF is very pleased with our recognition in the *U.S.News & World Report* rankings of national universities," President Cornelius B. Murphy, Jr., said. "We are most proud of our listing of 15th in the category of 'Great Schools, Great Prices.' To be in the company of the University of Virginia, Brown, Emory and the University of North Carolina at Chapel Hill validates the work of our faculty and staff and supports the contributions of our outstanding students." ■

Photos by Wendy P. Osborne

312 Freshmen Join Ranks of ESF Students

ESF welcomed a record freshman class of 312 and 173 new transfer students for the 2008-09 academic year.

The freshman class includes students from 19 states and sets a record for ESF enrollment from out of state, with 21 percent of the class coming from outside New York. The class marks one of the highest percentages of out-of-state students in the 64-campus SUNY system.

ESF received a record 1,545 applications for the freshman class and accepted a record low 49 percent of those applicants. The College also received 643 applications for transfer admission and accepted only 41 percent of those applicants.

The academic quality of the entering class has also approached record levels this fall. Sixty-five percent of ESF's entering freshmen were ranked in the top quartile of their high school class, and 25 percent were ranked in the top tenth. The average high school GPA was just over 90. ■

ESF Faculty, Staff Honored by Chancellor

Christopher Nowak, Cheryl S. Doble and John Turbeville

Three ESF employees were honored by Interim Chancellor John B. Clark for their service to the State University of New York.

Associate Professor Cheryl S. Doble received the Chancellor's Award for Excellence in Faculty Service. The award recognizes the consistently superior service contributions of teaching faculty. Doble, a faculty member in the Department of Landscape Architecture since 1993, specializes in community planning and design, citizen participation, and site planning and design graphics.

She established the Center for Community Design Research (CCDR) within ESF's Department of Landscape Architecture. The CCDR is an outreach program that works in partnership with communities and other academic programs, to provide technical assistance, educational programs, and research projects that build community capacity to manage sustainable futures.

Dr. Christopher Nowak, associate professor in the Department of Forest and Natural Resources Management, was honored with the Chancellor's Award for Excellence in Teaching. This award honors those who consistently have demonstrated superb teaching at the undergraduate, graduate or professional level.

Since joining the ESF community in 1998, Nowak has provided a rigorous professional approach in the classroom and field, facilitating a positive learning experience for students and promoting intellectual dialogue. He regularly teaches both undergraduate and graduate courses in forest science including forest ecology and silviculture, Adirondack forest ecology and dendrology, and forest vegetation management, as well as focused seminars in forest ecology.

John Turbeville received the Chancellor's Award for Excellence in Professional Service. The award recognizes consistently superior professional achievement within and beyond the position and those who serve as professional role models for a university system in the pursuit of excellence.

Turbeville is coordinator of experiential learning and the Academic Success Center and has been at ESF since 2002. He was a driving force behind the establishment of ESF's new Academic Success Center that focuses on tutoring, academic guidance, and mentoring for undergraduate students. ■

Photo top by Christopher McCarthy, LA '11, photos bottom by Claire B. Dunn.

ESF Professor Honored for Excellence in Teaching

Alex Weir receives his award from Mary Berbee, chair of the Mycological Society of America Distinctions Committee. Photo courtesy of the Mycological Society of America©

Dr. Alexander Weir, ESF associate professor in the Department of Environmental and Forest Biology, has been honored by a professional organization for excellence in teaching.

Weir received the Mycological Society of America's (MSA) William H. Weston Jr. Award for Excellence in Teaching. The award is given annually to an outstanding teacher of mycology at the undergraduate and/or graduate levels.

In one of the many supporting nomination letters, a former student wrote, "(Weir) is not only passionate about mycology, he is dedicated to his students, he genuinely loves to teach, and he creates a positively infectious atmosphere toward the study of fungi and their relationships to ecosystem functioning."

The William H. Weston Jr. Award for Excellence in Teaching is named for the first president of the MSA, who was an inspirational teacher at Harvard University.

Another ESF faculty member, Dr. Chun Wang, won the award in 1990, making ESF one of only two colleges to have had more than one faculty member so recognized in the past 20 years.

Weir teaches mycology and diversity of plants. He is also director of ESF's Cranberry Lake Biological Station in the Adirondacks. ■

Student Receives Academic Honor

Daniele Baker of Hollidaysburg, Pa., was honored with the SUNY Chancellor's Award for Student Excellence during an April ceremony in Albany, N.Y.

Baker received a Bachelor of Science degree in environmental biology from ESF at its commencement ceremony in May.

Baker was presented with her award during a ceremony at the Empire State Convention Center, where she received a framed certificate and a medallion, which was worn at commencement.

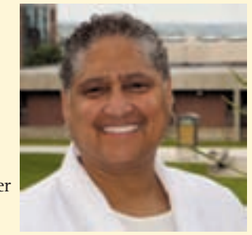
Chancellor Award honorees excel both in academic achievement and in at least one of the following areas: leadership, athletics, community service, creative and performing arts, or career achievement.

Baker was the student representative to the ESF Board of Trustees, an orientation leader and mentor, and a member of the Baobob Society. She also worked on multiple research projects. ■

Photos by Wendy P. Osborne

New Faces at ESF

ESF Names New Dean of Student Life and Experiential Learning



Dr. Cynthia Sedgwick has been appointed dean of student life and experiential learning at ESF.

Sedgwick holds a Ph.D. in higher education administration from the University of Virginia as well as a master of arts degree in human resources management from George Mason University and a bachelor of arts degree in psychology from Hampton University.

Sedgwick comes to ESF from SUNY Binghamton, where she was associate dean for assessment and special programs in the Division of Student Affairs. Previously, she served as associate dean for academic affairs and administration in the Watson School of Engineering and Applied Science at Binghamton and as director of Career Services at the University of Connecticut.

Sedgwick began her new position July 1.

ESF Names New Director of Information Technology

Yuming Tung was appointed ESF's new director of information technology.

Tung comes to ESF from Syracuse University, where he was head of Library Information Technology Services. Prior to joining SU in 1999, he held positions as manager of network and systems at LeMoyne College and as senior programmer/analyst at SUNY Upstate Medical University.

Tung holds a master of science degree in computer systems and information science and a master of library science in library and information science, both from Syracuse University, as well as a bachelor of science in mechanical engineering from Shanghai College of Mechanical and Electrical Engineering.

Tung began his new position June 2.

Governor Appoints New Trustees to ESF Board

Gov. David Paterson appointed three new members to ESF's board of trustees.

Matthew J. Marko, Vita DeMarchi, and Thomas C. Buckel Jr. have joined the volunteer 15-member board which provides development, support and oversight of the College.

Marko, of Syracuse, is senior project manager with Denver-based CH2M Hill. DeMarchi, of Manlius, is president and chief executive officer of Synapse Risk Management, LLC. Buckel, of Syracuse, is a partner with Hancock & Estabrook, LLP.

Jorge Barbosa, a senior environmental and forest biology major, will serve as the student representative to the board.

Commencement 2008

Life's Detours Don't Deter Her

by Claire B. Dunn

After Ana Maria Menezes' country overruled her plans for a law career, ESF helped her find another way to help the poor.

As Ana Maria Menezes envisioned the life she was working toward, it included some specific scenes: Be a lawyer. Get a Ph.D. from Duke or Berkeley. Work for the World Bank.

Reality, however, did not play out that way. The educational authorities in her native Mozambique said, "No!" to a legal career and shunted her into science. The Fulbright scholarship program said, "No!" to Duke and the University of California at Berkeley and directed her to a small school in Central New York, previously unheard-of by her. And days before she headed to Washington, D.C., to begin a consultancy with the World Bank, her prospective employer said, "No!" and explained that nepotism rules meant she could not be hired because she had a relative who worked there.

But Menezes remained undeterred. She had learned to see a bumpy journey in life as a way to search for a dream.

In May, she crossed the stage at the Landmark Theatre in downtown Syracuse, Ph.D. in hand, on the next step of a professional journey that began in a poor country in southeastern Africa. Her desire to be a lawyer started there, when she was a 12-year-old student in a re-education camp where she and some schoolmates were sent because they were considered troublemakers.

"Life is full of ups and downs, and I challenge myself every day to accept the good of life and preserve and cherish it, but also the not-so-good, as a way to learn a lesson and move on in the right direction."

Ana Maria Menezes

Her current stop is Washington, D.C., and a position with the United Nations' Food and Agricultural Organization, where she is searching for solutions to a potential global fish crisis.

"I learned how to look at the past in a positive way and learned what could have been done better," she said a few days after receiving her doctorate in environmental and natural resources policy from ESF. "Life is full of ups and downs, and I challenge myself every day to accept the good of life and preserve and cherish it, but also the not-so-good, as a way to learn a lesson and move on in the right direction."

At the request of the FAO, Menezes is doing work that grew out of her doctoral dissertation: studying the connection between natural resource policies and poverty-reduction strategies in developing countries. She will focus on artisanal fisheries.

"People's lives depend on artisanal fisheries. They have very little chance to develop and to look for opportunities beyond their communities. All this is related to poverty," she said. "In our country, less than 0.5 percent of the artisanal fishers have a motorboat to go fishing. They go in a sailboat, or a small boat they power themselves. Some of them live on less than 50 cents a day."

The questions, she said, are these: At what point are the national and local policies converging to reduce poverty? And are the policies being implemented properly?

Menezes will also contribute to the FAO database, providing information about small-scale and commercial fisheries in Mozambique and other African nations, looking at factors that include employment, food fish production, fuel consumption and fish caught per ton of fuel. She will work in collaboration with the World Bank's PROFISH program, which aims to promote effective fisheries strategies and policies both locally and globally, and the WorldFish Center, which works internationally to research and improve small-scale fisheries and aquaculture.

Menezes laughs now when she thinks about her initial reaction to the Fulbright program's interest in having her enroll at ESF. Fulbright officials caught her off guard, contacting her after previously rejecting her application. Menezes wasn't sure she wanted to do it. She was past her 40th birthday and was reluctant to undertake the rigors of a Ph.D. program.

"I said, 'I'm not going to apply. I don't want to do it.' Then: 'Well, when is the interview?' They said, 'Tomorrow.'"

She went to the interview and insists it was the worst such meeting of her life.

"I mixed English, Spanish, French, some Portuguese, you name it," she said, leaving out only Italian, her fifth language.

This time, the Fulbright program offered her a scholarship. Menezes immediately set her sights on Duke or Berkeley. But the Fulbright program wanted her to come to ESF.

A conversation with Dr. Richard Smardon, professor in ESF's Department of Environmental Studies, convinced her ESF was the right choice. She intermingled her environmental policy studies with classes at the Maxwell School of Citizenship and Public Affairs at neighboring Syracuse University.

"Ana is unique, and I don't think we have seen many Ph.D. students like her," Smardon said.

"Ana has an inner sense of what is fair and what is not and will stand up to anybody if she thinks someone has crossed the line. Some faculty and students alike have experienced this firsthand," Smardon added. "She has a great sense of community and works tirelessly for the sake of community-building, whether it be cooking and arranging a social event or mediating/initiating dialogue or developing new qualitative research designs to access her research subjects back in Africa."

Growing up in Mozambique, emerging from childhood in the mid-1970s, just as her country gained independence, Menezes dreamed of being a lawyer. She had seen injustice firsthand at the re-education camp and she wanted to pursue a profession in which she could speak out for those whose voices are not heard.

Her country had other ideas.

"Unfortunately, when time to go to college came, the administrators of educational services decided that I did not have the political fiber and political vision they thought necessary to study law," said Menezes. "For their political prejudice, I was forced to enroll in the School of Agricultural Engineering."

Menezes found a niche helping communities by promoting rural development and social justice.

"It was not really my passion when I began my career. But I found I could help represent these people by teaching them the best way to use their natural resources," she said.

Menezes researched the application of shrimp culture in Mozambique and led the nation's Aquaculture Department. She pursued a master's degree at Auburn University, focusing on the effects of agricultural pesticides on marine life and intensive production systems for African tilapia and catfish.

She decided that teaching about resource management policy can be just as beneficial to the underprivileged as a legal career.

"I came to understand I could promote equity and economic and social justice by giving the power of what knowledge I have to rural communities by teaching them their rights, the best practices of natural resource management and the power of collective action," she said. "I ended up in a field where I can have it all, where I still can promote justice, continuously learn and teach such values. And not just be — but become something more."

Ana Maria Menezes participates in the commencement weekend activities with ESF faculty member Jack Manno and College President Cornelius B. Murphy, Jr.

Commencement photos by John Faranact, photo top by Wendy P. Osborne

Photo by John Faranact

AS THEY GROW, POLLUTION SHRINKS

Story and photos by Claire B. Dunn

Donald J. Beevers, left, and ESF's Dr. Christopher Nowak survey the willows that are helping to clean up the groundwater at Fort Drum.

Fifty years of fuel leaks. Twenty-three thousand willows. Eight million dollars saved.

"It doesn't get any better than this," says ESF's Dr. Christopher Nowak.

Nowak makes the statement as he weaves his way through a stand of graceful willows at the Army installation at Fort Drum, 80 miles north of the ESF campus. It's a blue-skied early summer morning, and the willows' delicate leaves are backlit by a brilliant sun. The plants are healthy and growing fast, as willows are inclined to do.

As they soak up the sun's energy, they are also busy sucking contaminants out of the ground, helping to clean up a 164,000-gallon plume of fuel that has been spreading underneath the expansive North Country military base since World War II.

Nowak believes it's the largest phytoremediation effort — the process of using plants to remediate contaminated soils and groundwater — in North America.

"The phytoremediation is actually the last step, the polishing of the system," said Nowak, a professor in ESF's Department of Forest and Natural Resources Management. "We've worked out here for seven years."

The willows are part of an aggressive cleanup strategy to remediate groundwater contamination caused by fuel that leaked from the tank farm along Fort Drum's "Gasoline Alley." The military installation, home to the Army's 10th Mountain Division — Light Infantry, covers more than 107,000 acres. This year, the base is marking its 100th year as a military training site.

No one knows exactly when the leaks began — perhaps as early as World War II — but they were discovered in 1988, when the petroleum, which had been spreading in an underground plume for many years, began to foul small creeks on the base. The plume has been flowing downhill under the Old Sanitary Landfill, which closed in the mid-1970s. It moved through the sandy soil left behind by the ancient Lake Iroquois, the forerunner of Lake Ontario, and showed up in groundwater that surfaced as creeks in low-lying areas. The creeks were turning rusty brown with precipitated iron and bacteria as the petroleum surfaced in "seeps" that brought groundwater to the surface.

Donald J. Beevers, the installation restoration project manager, who is employed with contractor Applied Services & Information Systems at Fort Drum, said roughly $1 million has been spent on the remediation project. He estimated that constructing a treatment plant would have cost more than $8 million.

The goal is to develop a phytoremediation model that can be tailored for use at similar sites across the United States.

"We want to transfer the technology," Beevers said. "This isn't the only Department of Defense landfill."

Said Nowak: "This is just one military base of many, and it was clear that what we are doing here could be applied elsewhere. It's tailored phytoremediation."

Nowak and his colleagues began with a small pilot plot, which expanded over the years to 2 acres. He has experimented with some 30 varieties of willow trees and shrubs to see which ones grow best.

As a silviculturist, Nowak's specialty is the care and tending of tree communities. Part of the challenge in this case was finding a way for the willows to grow in the contaminated soil. He settled on planting boxes, bottomless wooden frames filled with soil that contained enough nutrients for the young plants to establish themselves before the roots reached soil that was soggy with petroleum-laced water.

It was a laborious task. His students lugged in enough soil to fill the original 60 planting boxes. The expanded system has nearly 900 planting boxes that were filled by contractors using a specially designed machine to pump soil across the site.

Now the landscape is dotted with monitoring wells and piezometers that track the level of the water table.

ESF is one of many partners in the project, which also involves installing a new cap on the old landfill.

Nowak said the willows are a cost-effective, environmentally friendly way to treat the contamination.

"Look, we're getting sedges and cattail in here. They came for free and are contributing to the phytoremediation," said Chris Nowak.

"Photosynthesis drives the system. It's a sun-driven system with transpiration of water as the key," he said. "Ecological engineering projects like this relinquish control to nature. Look, we're getting sedges and cattail in here. They came for free and are contributing to the phytoremediation."

There are also asters, goldenrod and several grasses thriving among the willows. Protected by fencing from foraging deer, the willows are leafy and densely planted. The biggest ones absorb five gallons of water per day. At the quarter-acre site of the pilot project 5,000 to 10,000 gallons of water per day are pumped from the site by the willows. Without the willows, that water would flow into the creek.

The willows do their work naturally. Uptake of water lowers the water table and allows roots to grow. Root systems create a habitat that invites the presence of bacteria and fungi that break down contaminants; the plant uses some of these molecules for its own growth; and willows recycle a lot of water back into the atmosphere through transpiration, releasing some contaminants in greatly reduced concentrations.

The goal is to reduce the volatile organic compounds, particularly the concentrations of benzene, toluene, ethylbenzene and xylenes, the compounds of concern in petroleum-based fuel.

"The reason the contaminant stream is there is the training," Nowak said. "It's the cost of doing business for the Army."

He said monitoring efforts indicate that the contaminant concentrations are lower than they were before the willows were planted.

ESF's many partners in the project include the Army Corps of Engineers; the Army Environmental Command; consultants Malcolm Pirnie Inc., Engineering and Environment Inc. and EA Engineering, Science and Technology Inc; and the New York state Department of Environmental Conservation.

"For us, it's fairly unique to have a university involved, but ESF has the expertise," Beevers said.

Nowak is on the verge of turning the willow plantations over to a contractor for long-term maintenance. But he will continue monitoring the site and using it as a learning opportunity for his students.

"It's very attractive for students for work, research and learning. They can see that they're really doing something to improve their world," he said.

Nowak checks the progress of willows in planting boxes on wet ground.

Todd Wills, EFB '90

On a rainy morning in May 2007, Todd Wills, EFB '90, was walking toward the Environmental Division offices at Fort Drum, N.Y., for an all-day meeting when someone yelled, "Toad!" Wills stopped short. "Toad" was a nickname bestowed upon him by classmates during his years at ESF.

He turned around and saw John Connell, EFB '91, whom he hadn't seen since graduation. Connell, now a regulatory project manager for the New York District Army Corps of Engineers, was in Northern New York dealing with wetland mitigation issues at Fort Drum. The two men spent a few minutes catching up before heading to their respective meetings.

The chance meeting turned out to be a sign of things to come.

Wills is a natural resources specialist with Booz Allen Hamilton, a consulting firm in McLean, Va. He supports the Army Environmental Command. As part of a project to develop a model integrated natural resources management plan for the Department of Defense, Wills brought a team to Fort Drum from Maryland. One of the team members was Jay Rubinoff, EFB '86, a specialist in threatened and endangered species for Booz Allen Hamilton.

At the conference table were representatives from the U.S. Fish and Wildlife Service, the New York state Department of Environmental Conservation and the Fort Drum Natural Resources Branch. During the course of presentations and discussions, someone at the table made a reference to ESF. Within a few minutes, Wills discovered he was at an ESF alumni reunion of sorts.

Representing the Fish and Wildlife Service were endangered species biologist Robyn Niver, EFB '97, and endangered species/federal activities biologist Sandie Doran, EFB '94, M.S. '99. Dick McDonald, EFB '91, M.S. '93, an aquatic stewardship biologist, was there from the DEC. Representing Fort Drum were Environmental Division Chief James Miller, M.S. '90; National Environmental Policy Act biologist Walker Heap, MPS '02; fish and wildlife biologist Chris Dobony, EFB '97; natural resources specialist Don Mahan, FNRM '82; forestry program manager Jason Wagner, EFB '99, M.S. '00; and forester Travis Ganter, FNRM '04.

Eleven of the 14 people at the table were ESF alumni.

When the meeting and reminiscing ended, Wills met up with Tom Lent, DUAL '91, manager of the Fort Drum Integrated Training Area Management program. The two were classmates at ESF.

"I told him about the high number of alums that were just involved in the daylong meeting and we talked for a while about how stumpies are scattered all over the country and you never know when you're going to run into one," Wills said.

"So, whether you're in a meeting, at a conference, at the mall, whatever, keep an eye out for your fellow stumpies. They're out there. All you have to do is look."

Editor's note: When Wills compiled the information for this story, he ran it past one of his Booz Allen Hamilton colleagues, Aaron Sprouse, an environmental compliance specialist and policy analyst. It should come as no surprise that among Sprouse's credentials is a bachelor's degree from ESF: ES '01.

Tell us about your ESF encounters

Did you ever bump into a former ESF classmate in an airport on a distant coast? Move in upstairs from people you recognize from a class in Marshall Hall? Or start a new job and hear a co worker talking about doing fieldwork at Cranberry Lake Biological Station? If you've encountered another ESF graduate, or former faculty member or staff member in an unlikely place, or if you're surrounded by former ESF people at work, Inside ESF wants to hear from you. The best stories will be selected for publication in a future issue. Please send stories by e mail to InsideESF@esf.edu or regular mail to: Inside ESF, SUNY ESF, Office of Communications, 122 Bray Hall, Syracuse, NY 13210

Letters should be a maximum of 300 words and may be edited for length and clarity. Please include an address and daytime phone number.

Photo courtesy of Todd Wills

CELLULOID SCIENCE

You walk into the movie theatre. The smell of popcorn and butter wafts through. You find the perfect seat. The lights dim and you prepare to lose yourself in the magic of a Hollywood movie. There's only one problem … Hollywood got the science wrong. We asked our ESF experts to review a slate of movies for us and tell us what the movies got wrong and, what they got right. Think of it as Siskel and Ebert meets Stephen Hawking and Archimedes.

'Soylent Green' Co-stars Nature in the Role of Victim

Spliced together by Karen B. Moore and Claire B. Dunn. Photo illustrations by Wendy P. Osborne

Assisted suicide and corporate-driven cannibalism aside, the thing that disturbs Dr. Mark Meisner about the dystopian future portrayed in the 1973 movie "Soylent Green" is the absence of nature in the lives of ordinary people.

"The loss of nature is soul-destroying," said Meisner, an assistant professor in the Department of Environmental Studies and coordinator of the undergraduate option in environmental communication and culture.

"Soylent Green" depicts a bleak world in 2022: The villains are overpopulation and pollution. The victim is the natural world, which most people have never seen. Meat and produce are available only to the wealthiest people; everybody else survives on processed wafers produced by the gigantic Soylent Corp.

Charlton Heston plays a police detective who investigates a homicide and discovers Soylent Green wafers are made from the flesh of dead humans.

"The movie is meant as a warning," Meisner said. "It addresses food shortages, global warming and increasing gaps in income, along with that isolation from nature. And, of course, all of these are things that we see in our world now. They are not as extreme as portrayed in the movie, but are present today nonetheless."

One of the most poignant scenes, in Meisner's eyes, is when the character played by Edward G. Robinson (in his last movie) discovers what really goes into Soylent Green wafers. In his despair, he chooses euthanasia at a government facility. As he is dying from a fatal injection, he is shown images of an idyllic forest: trees, running streams and animals.

"For 20 minutes, he watches movies about nature," Meisner said. "It evokes the complete absence of nature from people's lives. It's only in death that they have some access to a mediated vision of nature. How sad is that?"

"Soylent Green" exemplifies producers' attempts to use film to make a point about environmental issues, Meisner said. It's a film in which scientific accuracy and advocacy are in tension, much like Roland Emmerich's "The Day After Tomorrow," which portrays the apocalyptic effects of sudden climate change.

"Did they get the science right? Maybe not," Meisner said, referring to "The Day After Tomorrow." "Did they get it right from the point of view of making an exciting movie? Did they get it right from the point of view of raising awareness of the issue? If it raises the issue in the minds of the people, they advanced their goals."

(For more on the science behind Emmerich's movie, see "The Day After Tomorrow" page 15).

Construction Management's Ken Tiss takes cover as he explains the pitfalls of making a movie about home renovation.

Meisner, founder and director of the Environmental Communication Network, maintains a filmography of nature and environmental movies on his ECN Web site. At last count, there were nearly 200 movies on it, ranging from "Babe," featuring a talking pig on a sheep farm, to "A Civil Action," based on the true story of a Massachusetts town whose water supply was contaminated by pollution.

The environment appears in movies in roles such as villain, savior, victim or obstacle. It can be sentimentalized, as in "Free Willy," featuring an orca rescued from a shady amusement park owner by a disadvantaged teenager.

"The movie is meant as a warning," Meisner said. "It addresses food shortages, global warming and increasing gaps in income, along with that isolation from nature."

There is the nature-as-mutant approach. (See "Prophecy," page 19) There is the man-vs.-wilderness approach, in movies like "My Side of the Mountain," based on the Jean Craighead George novel in which a boy from New York City takes off to the Catskills and lives alone in the trunk of an old hemlock.

But, despite the producers' efforts, do feature films really affect what people think?

"We can't easily say one way or the other," Meisner said.

Despite the box-office appeal of blockbusters like "The Day After Tomorrow," which grossed more than $500 million worldwide, Meisner said studies show feature films do not usually have a significant measurable impact on public opinion.

One exception is "The China Syndrome," the 1979 film that featured a barely contained accident at a nuclear power plant in California. The movie opened just 12 days before a reactor overheated at the Three Mile Island Nuclear Generating Station, outside Harrisburg, Pa. Compounding the coincidence was a line in the movie that said a nuclear meltdown could "render an area the size of Pennsylvania permanently uninhabitable."

The movie's timing amplified the public's anxiety about nuclear power, Meisner said, and familiarized viewers with some of the terminology used at nuclear power plants. Although not 100 percent accurate regarding the science of such facilities, the film helped fuel the no-nukes protests of the early 1980s.

For a scientist's look at some other feature films, read on. But beware: Spoilers lurk.

Moral of 'The Money Pit': Homebuyers, Beware

Much like a human drama queen, the mansion that stars in "The Money Pit" overacted a bit.

But despite the old house's histrionics, one of ESF's resident construction experts said the basic premise of the 1986 comedy was realistic.

"The overall intention of the movie — to indicate you can walk in and think the place is great and then once you start pulling things apart, heaven knows what you'll find — is certainly good," said Kenneth J. Tiss, a lecturer in the Department of Construction Management and Wood Products Engineering.

However, the details that provide comic moments as the characters, Walter and Anna, played by Tom Hanks and Shelley Long, try to tame a series of nightmares in their dream house had Tiss shaking his head.

"There's that one scene where one appliance after another is blowing up, it goes in a line right around the kitchen: first the toaster, then the microwave, then the others, right around the room. That's not going to happen," Tiss said. "Electrical fires happen deep within the wall and lots of times, nobody even notices them at first."

It's possible nobody will notice a hole in the floor, either, if it is covered with a rug. In "The Money Pit," Hanks' character, Walter Fielding Jr. gets wedged in a gaping hole hidden under an area rug.

The presence of a hole at a work site is realistic, Tiss said, because a builder might leave an open spot in the floor for later construction of a stairway or, during a renovation, to make it easier to dispose of debris. In fact, it's common enough that the U.S. Occupational Safety and Health Administration, with which Tiss serves as an outreach instructor, has rules governing how such holes are treated on a construction site. But those rules do not include hiding holes with area rugs, as happened in the movie.

A spectacular collapsing-scaffold scene also took some liberties, Tiss said. Scaffolding is typically made of metal, not wood. In the rare event of a collapse, a scaffold does not go down in an eye-catching, progressive fashion as does Walter and Anna's. A scaffold would have been secured to the house. And perhaps most significantly, if a scaffold did collapse, there is little chance that all the people who tumble down would walk away unscathed.

"Normally, when scaffolds collapse, people get hurt big time," he said.

But the challenges of renovating an old house, managing a budget and sticking to a schedule are realistic, as experienced by anyone who has ever tackled a home-improvement project. As the house continues to fall apart, Walter and Anna continually ask the contractors how long the next repair will take. The answer becomes a running gag: "Two weeks."

"That is so true," said Tiss. "It's the old adage: Buyer beware."

‘The Birds’: A ‘Great Movie’ Flies in the Face of Science

Maybe it was a depiction of the revenge of nature or a metaphor for the fear of abandonment. It could have been a comment on the inevitability of chaos or the fragile state of humans’ existence on Earth.

Dr. Guy Baldassarre, an ornithologist in ESF’s Department of Environmental and Forest Biology, has his own take on Alfred Hitchcock’s 1963 masterpiece thriller, “The Birds.”

“It’s Al,” he said, putting himself on a first-name basis with the iconic filmmaker. “Al’s great. It’s his imagination.”

Baldassarre’s EFB colleague Dr. William M. Shields considered that Hitchcock might have been warning his viewers to care for the environment, lest the animals unite and strike back.

“Even back in the ’60s, Alfred might have been thinking that,” Shields said. “Or maybe he just thought birds looked scary.”

The presence of actual science in “The Birds,” which features mobs of agitated avian creatures inexplicably attacking the clueless residents of a Northern California town, was quickly dismissed when Baldassarre, ESF’s current ornithology professor, and Shields, who teaches animal behavior, got together to talk about the movie.

“Basically, it’s all hocus-pocus,” Baldassarre said. “They would never attack people.”

“Never, ever, ever,” Shields continued. “They are more likely to defecate on people.”

But that doesn’t stop the two educators from admiring Hitchcock’s 119 minutes of menacing gulls and evil-eyed crows: “Great movie, though,” Baldassarre said.

“Hitchcock picked the smartest and dumbest of birds,” Shields said. “Crows are exceptionally intelligent, and sea gulls are extremely stupid. So it’s very interesting that he picked one of each. Or maybe he planned it that way. I don’t know.”

“What species of gulls?” Baldassarre wondered.

Shields: “California.”

Baldassarre: “Probably.”

Shields: “Not many people distinguish between species of gulls, you know.”

Baldassarre: “I’ve never looked to see if he has different species mixed in there. I don’t think so.”

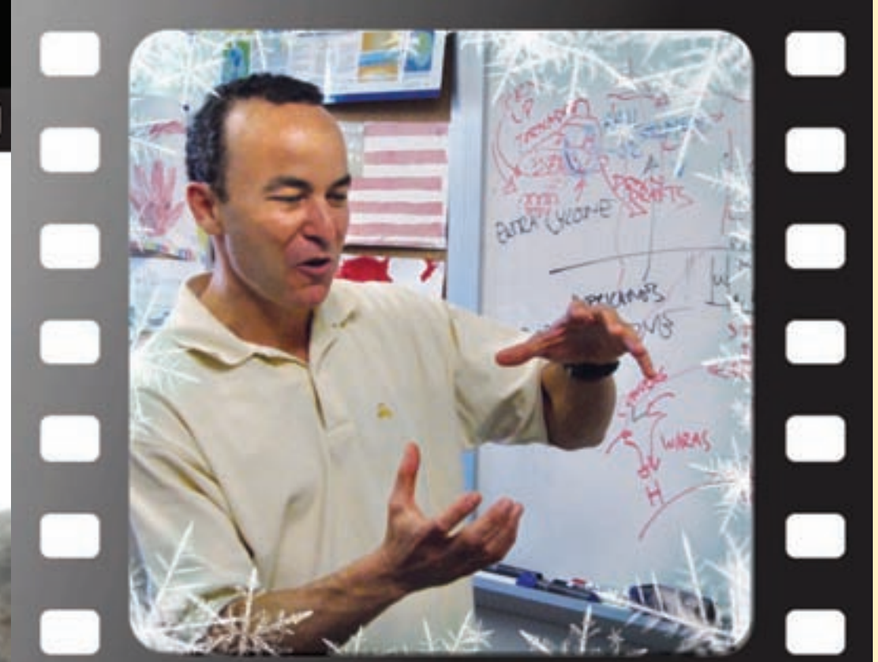
There is a bit of truth in the movie, they said, but it stretches reality. Both crows and gulls will fly at a human interloper and peck at the person’s head, but only to protect a nest occupied by live young. And one crow might be seen on a beach near a flock of gulls, scavenging for the leftovers from a vacationer’s lunch, but you won’t see flocks of both species lined up on power lines together, looking sinister.

Hitchcock’s winged stars went from sinister to downright terrifying, pecking their way into houses so they could aim their beaks at the occupants. But the only bird that could survive such an attempt is the aptly named woodpecker. The built-in shock absorbers in its head would prevent it from literally beating its brains out on a wooden shingle.

“Take that little bird that doesn’t weigh very much and have it try to peck its way into a house,” Shields said, pointing at a mounted crow he and Baldassarre had brought along for a photo shoot. “Its brain is going to go bang!, bang!, bang!, bang!, bang! inside its head. That’s called subdural hematoma and death for a crow.”

He gave the film another moment’s thought and concluded: “It’s not inconceivable that a suicidal bird and its compatriots could peck its way into a house and attack people. It’s not inconceivable at all, in imagination. Just in reality.”

Standing in for the California gull of Hitchcock’s Northern California town is a herring gull, borrowed from the Roosevelt Wildlife Collection at ESF. The birds join Guy Baldassarre, left, and Bill Shields.



Dr. Theodore Endreny explains the laws of conservation of mass in relation to “The Day After Tomorrow.”

Drama Trumps Accuracy in ‘The Day After Tomorrow’

“The movie was dramatically exhilarating!” said Dr. Theodore Endreny about “The Day After Tomorrow.” And what it lacks in meteorological accuracy it makes up for in special effects as climatologists race to save as much of North America’s population as possible before an abrupt climate shift ushers in a new ice age.

In a speech before the United Nations Conference on Global Warming, paleoclimatologist professor Jack Hall warns that global warming is a serious problem and a new ice age could happen in 100 to 1,000 years if action isn’t taken now.

But polar melt has disrupted the warm North Atlantic Current and is affecting weather systems worldwide. The massive climate change and new ice age are now only weeks, if not days, away. Hall knows this because his team of crack scientists ran weather forecast models that told them about weather systems and their exact locations for weeks into the future.

“(Weather) forecast models are pretty accurate three or four days out, but beyond that because of chaos they degrade and become worse,” said Endreny, who taught meteorology in ESF’s Department of Environmental Resources and Forest Engineering. “So being able to predict where and when the storms emerge 16 weeks ahead isn’t going to happen.”

That is, unless you have Professor Hall’s modeling program.

“The model he used was another treasure in the movie,” said Endreny.

Hall uses a paleoclimatological model based on variables such as past records of pollen and ice core temperatures, and then he asks one of his team to “incorporate storm scenarios” into the model.

“Storm simulations are very difficult. If you had a million dollars in National Science Foundation funding and months to put it together you might get something, but they’re able to do it in 48 hours,” said Endreny.

“They probably had NOAA (National Oceanic Atmospheric Administration) climatologists drooling for his (Hall’s) code,” he said. “I’d like to have that team join us as post-docs at ESF.”

Naturally, the situation is worse than everyone thought. The world doesn’t have 16 weeks, it has seven to 10 days as the super storms batter the globe before the big freeze arrives. Tornadoes are ripping apart Los Angeles, hail is falling in Japan, it’s pouring in New York City, and Northern Europe is experiencing record storms and snowfall. And there are three super-cell hurricanes moving over major population areas.

“The special effects capture the force of nature accurately,” Endreny said, “but there are a number of flagrant inaccuracies that would only concern scientists or engineers.”

If one ignores the laws of conservation of mass, then the storms might all take place. But since these super storms need equal amounts of air going up as coming down, so many storms close together — like the multiple tornadoes that destroy Los Angeles — would rip each other apart and cancel each other out, Endreny said.

A disaster movie just isn’t a disaster movie if the Statue of Liberty doesn’t take one on the chin. Here, Lady Liberty is up to her waist in ice. But for the water to get that high in New York Harbor, Endreny said, all the ice in the Arctic would have to melt, which would take 2.5 years of all the sun’s energy, which means “you’d have to tip the earth to do that.”

In one tension-filled scene, Hall’s son and a friend are racing through the famed New York Public Library on Fifth Avenue, where they have taken refuge from the storm. They’re running from a massive cold front. It’s so cold — and so fast — that it is freezing the marble floors behind their footfalls.

“If the cold air is chasing them, what would cold move quicker through? Marble or air?” asked Endreny. Pesky science aside, in the movie, the cold moves through the marble faster, creeping along the floors, up the columns and across the walls as our heroes rush to the safety of a room with a fireplace.

“The weather in the movie is so powerful it just started tearing logic apart,” Endreny said.

‘Cars’ Speeds through the Issues to Arrive at a Happy Ending

Disney/Pixar’s animated feature movie “Cars” is about a rookie race car who, through an encounter with the residents of a forgotten town along Route 66, learns there’s more to life than winning races. From an ESF standpoint, it’s also about the revival of a once-prosperous community.

The arrival of Lightening McQueen, the aforementioned race car, to the town of Radiator Springs ultimately results in the town’s rebirth. In reality, it takes more than “a hotshot race car” to revive a town.

In “Cars,” McQueen returns to Radiator Springs and makes it his racing headquarters. With the race car comes money, resources and tourists.

“‘Cars’ ends with a silver bullet, but the CCDR often doesn’t get that,” said Cheryl Doble, director of the Center for Community Design Research. “We have to look at the resources available and build upon that.”

The CCDR, an outreach program within the Department of Landscape Architecture, works in partnership with communities and other academic programs to provide technical assistance, educational programs and research projects that build a community’s capacity to manage sustainable futures.

“Radiator Springs’ new life comes as a result of the individual hero coming back,” said Doble.

In reality, revitalizing a town takes many people and much thought. “The residents have to understand what they value, describe the vision that they hold for their community and identify the actions that they can take to achieve their vision.”

Doble notes that “Cars” does accurately portray aspects of life in such towns. Radiator Springs was once a thriving town on the much-traveled Route 66. When the interstate bypassed Route 66 and the towns along the way, those towns began to wither.

Rural villages throughout New York have experienced a similar fate, she said. Once-thriving downtowns and Main Streets have disappeared as major highways allow people to travel around towns rather than through them. Doble said this has been particularly true in Northern New York, where cars zoom past towns on the highway, and while the residential core of the community often maintains its integrity, its commercial centers have disappeared with the advent of the highway.

“It (the movie) was interesting because it illustrates a common phenomena; a lot of communities have been bypassed as a result of new highway construction,” said Doble. “It’s complicated when a community goes through change.” In the case of Radiator Springs, it is a once-prosperous tourist town that hasn’t found a way to recapture its past glory.

Doble notes that “Cars” does accurately portray aspects of life in such towns.

“Clearly at one time it (Radiator Springs) was a happening place,” said Doble. “And now in spite of its economic decline, it has an interesting collection of residents that have no intention of leaving.”

Doble said a group of die-hard residents is common in such situations.

“People who have lived there all their lives stay. Some — like Sally, the Porsche — come to get out of the rat race and are able to find the beauty of the place and try to stimulate something to happen. Others, like Mater the tow truck or Flo the show car, stay out of loyalty.

“This is something we see a lot of with the CCDR,” said Doble.

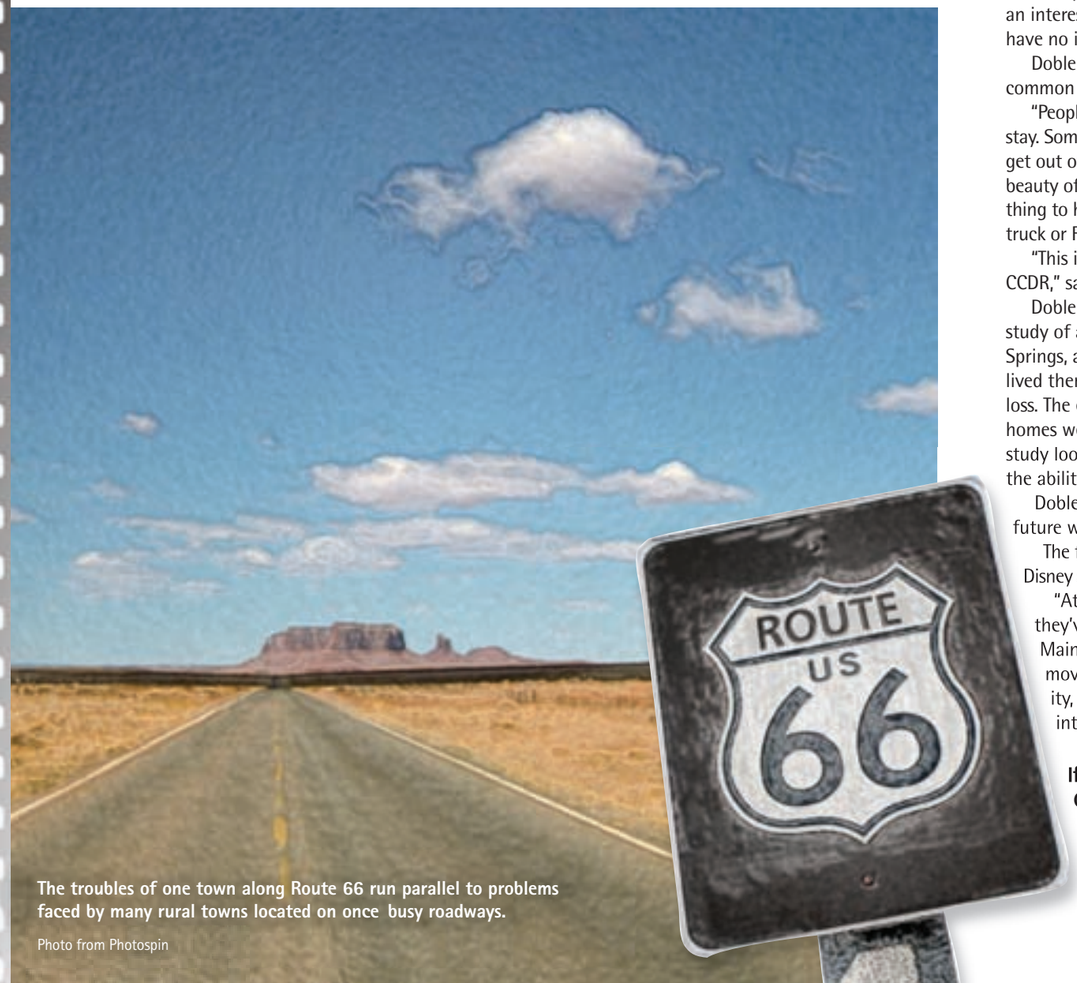
Doble said a former student once did a study of a rural community, like Radiator Springs, and often found “people who had lived there for years and feel a real sense of loss. The empty storefronts and boarded-up homes were hard for them to accept. The study looked at how that sense of loss affects the ability to plan for the future.”

Doble added, “It’s hard to plan for a new future when you want the past to return.”

The fact that the movie was produced by Disney also interested Doble.

“At Disney World and Disneyland they’ve frozen and celebrated the idea of Main Street, and to see Disney present a movie that portrays the loss of the vitality, and then revival, of a main street is interesting.”

If you’d like to screen more Celluloid Science visit us online at www.esf.edu/communications/movies for additional movies dissected by our panel of experts.



The troubles of one town along Route 66 run parallel to problems faced by many rural towns located on once busy roadways.

Photo from Photospin

Raging Sow Bear Delivers a Nature Lesson in ‘Prophecy’

“Prophecy,” a nature’s revenge tale from 1979, hits all the high points: big business polluting the waterways, a clash between cultures, commentary on reproductive rights, the plight of the poor and, of course, a mutant she-bear terrorizing a small Maine town.

The big business is the local papermill, which, it is discovered, is discharging mercury into the water. On the plus side, boy, the fish sure are biting and are they ever big! On the bad side, it’s making people crazy and mutating bears into froth-mouthed killers.

“Mercury is used in the production of caustic soda,” said Linda Fagan, project staff associate in the Department of Paper and Bioprocess Engineering, but “most mills claim the water going out is cleaner than the water going in.”

Fagan said there was a time when people living near a paper mill would claim they could tell what kind of paper was being made by the color of the water coming from the mill. “It sounds heinous now, but everyone lived that way,” she said. “It really is so much better now. In 1970 we had Earth Day and the EPA (U.S. Environmental Protection Agency) soon after, and things changed.”

These days, paper mills go to great lengths to improve the processes. Mills have environmental engineers on staff, and the mills must have permits for discharge.

“Today mercury is so tightly regulated that all suppliers go through stringent testing before their product is allowed in the mills,” said Fagan.

The movie isn’t completely off base, though. In one scene the mill manager says, “People think that the paper industry is using up all of the forests. We plant a seedling for every tree harvested.”

Said Fagan, “We’re doing even better than that in 2008.”

According to the Abundant Forest Alliance, “The wood and paper industry more than makes up for what it harvests by managing forests and planting more than 1.7 million tree seedlings every day — more than 600 million tree seedlings a year. Since 1952, when national statistics were first reported, forest growth in the United States has exceeded the rate of harvest. On commercial forestland, net annual growth surpasses the rate of harvest by almost 50 percent.”

“As Tom Amidon (PBE faculty member) would say, ‘Growing trees is a solar-powered enterprise. Renewable and sustainable,’” Fagan said.

There was one more thing “Prophecy” got right, according to Fagan. The costume designer nailed the look of the mill manager. “I know that guy,” she said, “right down to the hair and the contrasting plaid outfit.”

Fagan’s one-sentence review: “It wasn’t as bad as I thought it was going to be, but I can’t imagine that I would recommend it.”

Playing the part of the she-bear is the brown bear, ursus arctos, from ESF’s Roosevelt Wildlife Collection. The bear, minus the foam, is on display in the lobby of Illick Hall.

A New House

A partnership with the DEC and the Open Space Institute puts the historic Masten House at the center of ESF's broad-ranging educational institute in the Adirondacks.

A rambling, historic mansion called Masten House, deep in the Adirondacks, will be the site of a new leadership and training institute that focuses on the research and man agement of northern forests.

The Northern Forest Institute for Conservation Educa tion and Leadership Training, which will be administered by ESF's Adirondack Ecological Center in Newcomb, will educate and train policy makers, business leaders and educators to guide future decisions and learn more about the 25 million acres of forested land that blanket portions of four northeastern states.

"It's about making connections between those who are in need of the information and those who do the science that generates the information," said Dr. William F. Porter, AEC director. "In the northern forest, it's all about how you can simultaneously promote wilderness, and at the same time, grow the economy to provide the quality of life for the people who live there."

Establishment of the institute was announced this summer, with Department of Environmental Conservation (DEC) Commissioner Pete Grannis, ESF President Cornelius B. Murphy, Jr., and Open Space Institute (OSI) President Joe Martens gathering at the AEC with other state and local officials.

"This world class educational facility will help DEC learn more about the forestry resources and challenges unique to our region, while also contributing significantly to local economies," Grannis said. "By supporting the growth of public and private higher education with this and other initiatives in the Adirondacks, Governor David A. Paterson, DEC, and our partners are supporting the economic and environmental future of northern New York."

The northern forest region extends from Lake Ontario at Tug Hill, across the Adirondacks to northern Vermont, New Hampshire and Maine. The institute's location is adjacent to the Adirondack High Peaks region and includes the historic town of Adirondac, which has a rich industrial and cultural heritage.

The project is a cooperative effort that will enhance forest preserve and wildlands management research and contribute to the local economy. ESF will run the Northern Forest Institute (NFI) on a 46-acre portion of a property owned by OSI' s Open Space Conser-vancy and leased on a long-term basis to the College for $1 a year. Establishment of the institute is being aided by a $1 million grant from Empire State Development to OSI and $125,000 from DEC to ESF. In addition, DEC has committed $1.6 million over the next four years to ESF scientists who will conduct three research projects on visitor demand, experiences, and impacts, as well as a training pro-gram for DEC employees responsible for managing recreational visits to New York State forest preserve lands.

The NFI will operate in a section of the Adirondacks that has a rich industrial and cultural history and that is adjacent to the popular High Peaks area.

The eight-bedroom Masten House was built in 1905 near secluded Henderson Lake. The house was used as a corporate retreat by NL Industries, which operated a nearby mining site. Masten House is within the state historic district that encompasses the former town of Adirondac at the southern entrance to the High Peaks Wilderness area. The town was settled in 1826 and was home to one of the region's first iron mines and early blast furnaces. The remains of one blast furnace still stand near the Masten House.

How to support the Northern Forest Institute

You can make a gift to support the Northern Forest Institute by mailing a check made out to the ESF College Foundation (note "Northern Forest Institute – General Fund" on the memo line), 214 Bray Hall, 1 Forestry Drive, Syracuse, NY 13210-9974. Or make your gift online at www.esf.edu. Click on "Make a Gift to ESF." In the "Scholarships & Other Funds" section, click on "N" in the alphabetical list and then click on "Northern For-est Institute – General Fund." For assistance call 315-470-6683 or e-mail gifts@esf.edu.

Open Space Institute President Joe Martens, above, talks about the history of a blast furnace during a tour in Newcomb. At top, visitors get a close-up look at the exterior of the Masten House.

The village was resettled in the late 19th century as the Tahawus Club. Then-Vice President Theodore Roosevelt was staying at Tahawus in 1901 when he learned that President William McKinley had taken a turn for the worse after being shot by an assassin.

NL Industries refurbished the Masten House in the 1990s and in 2003, the Open Space Conservancy acquired the 10,050-acre Tahawus tract from the company. DEC acquired 6,813 acres outright earlier this year with funds from the state's Environmental Protection Fund and is working to purchase a conservation easement on an additional 3,237 acres. The easement will enable public access while also contributing to the economy by continuing sustainable timber harvesting.

The institute will also incorporate the Arbutus Great Camp and the Stone Carriage House at the AEC. Both buildings, which were donated to ESF by Archer and Anna Huntington in the 1930s, will provide housing and conference facilities. These buildings are several miles to the southwest of the Masten House, which will be renovated to also provide housing, conference space and facilities for educa-tional programming. Complete development of the institute is expected to cost up to $13.5 million.

Porter credited state Senators Betty Little and Joseph Griffo and Assemblywoman Teresa Sayward with helping the College secure $2.5 million to renovate the Stone Carriage House.

In addition to the Open Space institute and DEC, partners in the project include the Adirondack Park Agency, the Town of Newcomb, the Adirondack Museum, the Natural History Museum of the Adiron-dacks, and the Association for Protection of the Adirondacks.

Photos by Claire B. Dunn

Coyotes Leave A High-Tech Trail

by Claire B. Dunn

Across forests and farmlands, leafy suburbs and sparsely populated mountain ranges, coyotes throughout the East spent the spring and summer doing what they do well: adapting and thriving.

And right behind some of them, with global positioning system units and motion-activated cameras, were ESF researchers.

"They are about the most plastic and cosmopolitan species out there," said Dr. Jacqueline Frair, an ESF wildlife ecologist. "They are the ultimate opportunistic omnivore. They will eat anything: crickets, corn, small mammals or deer."

Coyotes are the most common large carnivores in New York state. They are particularly interesting, Frair said, because they are not native to the eastern United States.

Frair is a principal investigator in a five-year, $670,000 study, funded by the New York state Department of Environmental Conservation (DEC), that aims at getting a better idea of how many coyotes live in the state, where that population is distributed, and what effect, if any, their eating habits could have on New York's white-tailed deer herd.

Frair and graduate students Robin Holevinksi and Christina Boser, along with volunteers both in the field and in ESF laboratories, are taking a high-tech approach to those questions. They have been trapping coyotes, collaring them with global positioning system (GPS) units or VHS radios, and then painstakingly tracking them in search of feeding sites and scat piles.

This past spring, Frair's team used remote cameras at den sites to record the coyotes' behavior.

The $4,500 GPS collars record the animals' location at specified intervals and transmit the information to the researchers' handheld units. The scientists download the information into a computer, map the coyotes' whereabouts, and return to the field to backtrack where the animals have been.

They find feeding sites and assess what the coyotes have been eating. They also find scat deposits along trails and bring them back to the lab, where ESF students develop a DNA fingerprint that identifies each individual animal. The students also do microscopic inspections of the scat to determine in great detail what types of prey have been consumed. Their research can indicate, for example, not only that a certain coyote ate deer, but whether it was an adult or fawn.

"It involves a lot of people walking around looking at trails," said Boser, a master's student. "It can be interesting. People have seen bobcats and bears out there. It's a lot of work. Eight-hour hikes can be tiring."

The scat is washed and dried, which removes the fecal matter, leaving behind undigested hair, teeth and bones that are clues to the coyotes' diet.

"The hair is the most valuable tool we have," Boser said. She can sort it by size, shape and color, then use a microscope to look at the scale patterns for more detailed information about its source. She has found evidence of adult deer; fawns; small mammals such as mice, chipmunks and squirrels; and turkey.

The current research sites are in Steuben County, in New York's Southern Tier; and in Otsego County, southeast of Cooperstown. The locations were chosen because neither is densely populated by humans and both are highly agricultural, but they have different numbers of deer. The deer population is much denser in Steuben County.

This is the second year of the five-year study, and Frair said early results show coyotes in Otsego County appear to be eating more deer than their Southern Tier counterparts. The reason for this is unclear.

The researchers have determined that most of the deer that were eaten had not been killed by the coyotes.

Coyotes are the most common large carnivores in New York state. They are particularly interesting, Frair said, because they are not native to the eastern United States. They spread from their native Western range only after humans extirpated wolves and cougars in the East. The first recorded sighting of a coyote in New York state occurred in 1925. The DEC now estimates there could be 20,000 coyotes in the state. They have been seen in every county outside New York City and Long Island.

Scientists are not sure how the coyotes affect the ecosystem. Frair said coyotes often kill red foxes, which are their closest predatory competition. Reducing red fox numbers can alter the abundance of their rodent prey. That change can, in turn, affect the plants that the rodents eat. And coyotes seek out the same food as lynxes and bobcats, which can leave the felines short on meals. Coyotes do kill adult deer and fawns. Frair's research will identify how often coyotes kill deer that are already weak or injured, which will help the researchers assess the effect of coyotes on deer populations.

Coyotes in New York weigh an average of 35 to 40 pounds. They live in family groups, typically a mated pair and their offspring, until the parents drive away the young before the next litter arrives. Their home range is about seven square miles.

The animals are often erroneously referred to as "coy-dogs," but Frair said they rarely breed with domestic dogs. When coyotes first appeared in New York, they sometimes bred with dogs, but their own species is now plentiful enough that interbreeding is not required, Frair said.

"The idea of the coy-dog persists," she said.

To see a video on coyotes go to http://www.esf.edu/communications/news/2008/03.13.coyotes.htm

Gary Golja of the New York Department of Environmental Conservation, prepares to release a coyote wearing a GPS collar. Golja was working in Otsego County.

Photos courtesy of Jacqueline Frair

ESF freshman Steven Tyrell aids in the men's soccer team's match against Elmira. The match was a great showing for ESF as after giving up a goal in the first half, ESF rallied with strong offense to win 3–1. Tyrell is a student in ESF's Department of Paper and Bioprocess Engineering. The team is coached by Daniel Ramin, coodinator of college athletics. He also coaches the women's soccer team. Photo by Christina Chan, ES '10

Awards

Honors and Awards

General Chemistry students, first place, American Chemical Society's "Adopt-a-Stream" College Student Club Contest

Curry, George and Capella-Peters, Christine, 2008 Levi L. Smith Civic Education Award, Onondaga Citizens League Board of Directors

Lai, Yuan-Zong, elected as a Fellow of the International Academy of Wood Science

Townsend, Jason, Mewaldt-King Award for 2008 from the Cooper Ornithological Society

Wickham, Jake, selected by National Science Foundation for its East Asia and Pacific Summer Institutes (EAPSI) Program

On the Calendar

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

October 20 - 22

Sustainability and Forest Biorefinery II Conference, Renaissance Syracuse Hotel, Syracuse. For additional information: www.esf.edu/outreach/pd/2008/biorefinery; ESF Outreach, 315-470-6888/x6817; mwakefield@esf.edu

November 7 - 8

Conversations on the Land: Indigenous and Scientific Principles for Sustainable Communities, ESF campus. For additional information: www.esf.edu/outreach/pd/2008/conversations; ESF Outreach 315-470-6888/x6817; mwakefield@esf.edu

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State University of New York
College of Environmental Science and Forestry
Office of Communications
1 Forestry Drive
Syracuse, New York 13210-2778

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