

# Environmental CONNECTIONS

*“This internship provided me an excellent opportunity to meet many knowledgeable people in the environmental field. I learned so much.”*

-Senior Amy Phelan, on her work with the Army Corps of Engineers. See more on student internships inside!

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*Jonathan Fahey is a Connecticut College alum and a writer for Forbes Magazine. He spoke to our certificate students about “The Big Thirst: How Automakers, Politicians, Regulators and Drivers Keep the U.S. Guzzling Gasoline.”*

## Forbes Magazine’s Jonathan Fahey ‘92 Speaks to Seminar Class

By Melissa Mylchreest

On October 28<sup>th</sup>, Jonathan Fahey, a Conn alum and writer for Forbes Magazine, presented our certificate students with a lecture entitled “The Big Thirst; How Automakers, Politicians, Regulators and Drivers Keep the U.S. Guzzling Gasoline.” He discussed not only the idiosyncrasies of our nation that keep us the highest gas consumer in the world, but also possible outcomes and solutions.

A young and energetic speaker, he didn’t hesitate to share the realities he has learned from covering the auto industry, or to portray his disenchantment with the current situation.

“It is clear from our buying habits that Americans don’t care very much about oil consumption or the environmental effects of burning fossil fuels,” he said. This issue, coupled with the inaction of politicians and the hands-tied situation of the car companies, was the crux of his lecture. He explained that there is no one party to blame for the gasoline addiction of our country, but that all groups involved with the automotive industry are equally guilty.

According to Fahey, cars and light trucks – what the general population drives every day – account for 43% of U.S. oil use, 25% goes to shipping and airplanes, and the rest to industrial uses. As the biggest combined consumption group, cars and light trucks should have the most stringent regulations and the highest penalties for not adhering to these regulations. But, Fahey notes, regulation in this country has become less effective due to a trend of parceling out. The government regulates the fuel economy, but states are allowed to regulate emissions within the parameters of federal laws. This sounds good in theory, except that reduced emissions lead inevitably to a worse fuel economy – the easiest way to lower emissions is to burn less fuel – and therefore the policies are at odds, causing a mad-dash for loopholes on both sides.

Fahey spoke about the Corporate Average Fuel Economy (CAFÉ), which was imposed during the 1970s oil crisis in an effort to lessen the country’s dependency on foreign oil. It didn’t work, unfortunately, but it did manage to temporarily improve the nation’s fuel efficiency by dictating that cars in a company’s fleet must average 27.5 miles per gallon (mpg), and trucks must average 20.7 mpg. This worked until automotive companies began finagling the definition of “truck” in an effort to reduce the mandated efficiency of their fleets. Today’s definition of a truck, for CAFÉ purposes, dictates only that the back seat must be able to fold all the way down, and there must be a certain ground clearance. This led to the creation of the SUV, and allows cars such as the Subaru Outback to be classified as trucks, with a mandatory average fuel efficiency of only 20.7



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Established in 1993, the Goodwin-Niering Center for Conservation Biology & Environmental Studies is an interdisciplinary program that draws on the expertise and interests of faculty and students in the liberal arts to address contemporary ecological challenges. The Center strives to integrate all areas of learning to deal with the issues of sustainability and the natural environment. Building on a scientific understanding of the natural world, the Center invites the social sciences, the humanities and the arts to help understand and solve difficult environmental issues.

**From the Executive Director**

Next April the Goodwin-Niering Center is presenting a two day conference titled "Acid in the Environment: Lessons Learned and Future Prospects." People only peripherally aware of this issue may believe that acid rain (hereafter acid deposition, because it is more than just rain) was a problem that was solved in the US during the past twenty years, thanks to the Clean Air Act. Unfortunately, although the situation is much better in regard to sulfur emissions, nitrogen emissions have not changed significantly, and acid deposition is still common. It is still adversely affecting soils, vegetation, crops, lakes and streams in some locations, and the ability of these natural and managed systems to recover appears to be decreasing. Fossil fuel burning, primarily by large electrical generation plants and transportation vehicles, is the major source of acid deposition. The issue has important international implications as well, since pollutants in the atmosphere easily drift from one region or country to another.

As has become our tradition, we will analyze this complex environmental problem in an interdisciplinary manner by bringing together scientists, regulators, economists, and political scientists from the US and Canada to explore the effects of the pollutant, the effects of past policies, and the potential for new and more effective measures to deal with acid deposition. Another conference series tradition is the fact that they are financially supported by a diverse coalition of college departments and outside funding sources. For the first time in 2005, the conference takes on its new name: "The Elizabeth Babbott Conant Interdisciplinary Conference on the Environment." This is the result of a generous gift from Connecticut College trustee Dr. Linda Lear '62, an environmental historian who established an endowment to support Goodwin-Niering Center conferences in honor of one of her favorite teachers.

I hope those readers who live close enough to New London will mark April 1 & 2, 2005 on their calendars and join us for what will surely prove to be a stimulating educational event.

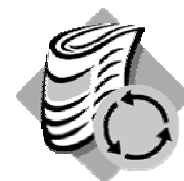
Glenn D. Dreyer, Executive Director

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# Environmental Internships, Class of 2005

Compiled by Melissa Mylchreest

The members of the Class of '05 have returned from their internships, and shared their many and varied adventures with Center staff, faculty, and fellow students. Now they are busy coalescing their summer experiences into their Senior Integrative Projects (SIPs), which they will present in the spring. The following summaries are taken from their internship reflection papers (found on the web at <http://goodwinieringcenter.conncoll.edu/Seniors>):

**Marcie Berry**, an environmental studies major, completed her internship at the South Carolina Aquarium in Charleston, an educational institution that places an emphasis on research and conservation. The Aquarium houses a number of animals, including many that can't be returned to the wild due to injury or illness, and organizes numerous programs, including the Sustainable Seafood Program and the Sea Turtle Rehabilitation Program. As an education intern, Marcie conducted daily programs, handled all kinds of animals, and learned to speak before large audiences. She also initiated a husbandry component of her internship, during which she worked with the sea turtle rehabilitation program. Marcie said of her experience, *"I definitely learned a great deal about the conservation of marine environments and how/why the general public needs to be educated on these topics. I feel comfortable with this knowledge so that I can pass it on to others."*



*Marcie Berry with Kiawah, a Red Tailed Hawk, at South Carolina Aquarium.*

**Allen Bunting** spent her summer working with Penobscot Bay Press in Blue Hill, Maine, a company that produces three weekly newspapers to serve towns along Maine's northern coast. Allen, who is an anthropology major, worked in all aspects of

newspaper production, including design, layout, production, and as an ad representative. She was put in charge of production of a walking map of the town of Blue Hill, which offered her the chance to try her hand at all the logistics of advertising and design. This knowledge will come in handy for the completion of her SIP this spring; *"I am excited to design and produce a series of pamphlets for my senior integrative project meant to "re-educate" the American consumer. I plan to address consumer issues such as nutrition, cleaning supplies, clothing, infant goods, alternative power, and waste. This series of pamphlets can then be used to inform people about the wide range of environmentally conscious products that are accessible today."*

Environmental studies major **Betsy Ginn** completed her internship with the Natural Resource Group (NRG), a division of New York City's Parks and Recreation Department. NRG is responsible for parks restoration and monitoring, natural area preservation, natural resource management, and natural area acquisition within the five boroughs of New York City. Betsy said of her time in New York, *"I spent the majority of my internship working on the Forever Wild Initiative, a New York State funded grant program designed to preserve natural areas within New York City."* Forever Wild areas are preserved land that provide natural habitats to support numerous types of wildlife. They also prevent erosion, filter groundwater, and provide open space for passive recreation like birding and hiking. NRG has been working to increase awareness of Forever Wild areas, and Betsy was able to help with this task; *"My responsibilities were almost exclusively within this publicity campaign. I wrote descriptions, found photos and trail maps for the website, added input to the new signs and bus ads, and negotiated all contracts for the ads with printers and agencies to post and maintain the ads."*

**Jen Godfrey** interned at the Mote Marine Laboratory Dolphin and Whale Hospital in Sarasota, Florida. The Dolphin and Whale hospital is supported by a small staff and many volunteers, and houses a number of animals in two 50,000 gallon tanks and a 200,000 gallon lagoon. It also serves as a temporary home for adult sea turtles that come in under the sea turtle conservation program. *"Both the sea turtle and dolphin and whale hospital provide critical and chronic care for stranded animals with the ultimate goal of returning the animals to the wild,"* Jen said. Her daily duties mainly consisted of animal care and facilities maintenance, although she also helped with the preliminary research for a study of the environmental enrichment of two chronic care patients. Jen, who is a zoology major, says this experience will prove helpful with her SIP; *"I will study a young female harbor porpoise at the [Mystic Aquarium] facility that has been declared unreleasable, investigating*

*techniques of integrating enrichment into her surroundings as well as the best method of acclimating her to captivity and training her in husbandry behaviors.”*



*Jen Godfrey (second from bottom) works to rehabilitate a dolphin with other members of the Mote Marine Laboratory Dolphin and Whale Hospital.*

**Cam Hewitt**, a sociology-based human relations major, spent his internship at the Wood River Land Trust in Hailey, Idaho. This conservation organization is dedicated to the preservation and stewardship of land in the Wood River Valley and surrounding areas. They strive to develop a working relationship with the local residents to maintain traditional land uses, as well as preserving open space for the benefit of native wildlife. Cam learned that *“The willingness to compromise and work with landowners and sportsmen on their own terms is essential.”* He got the chance to apply this knowledge while working with other land trust organizations to gain support for new tax legislation. Aside from this, Cam spent time monitoring and maintaining property, and mapping land using a camera, compass, and GPS unit. For his SIP, he will apply all of his observations gathered while in Idaho, and *“will focus on the rift between environmentalism and the ‘ranching lifestyle’ that is so prevalent in the American west...Hopefully, my project will expose the terms of this debate, as well as postulate some compromises between ranchers and environmentalists.”*

International relations major **Rory Jose** interned at the Department of Marine Resources in West Boothbay Harbor, Maine, alongside Carl Wilson, who is the chief lobster biologist for the state. Together, they worked on an ongoing study of lobster stock depletion, specifically on Monhegan Island, where lobster fishing is the foundation of the local economy. They investigated the relationship between numbers of traps, effort, and lobster mortality off the Maine coast, in an attempt to implement informed management actions. This involved setting test traps, tagging and recapture of lobsters, water sampling, GPS use, and data entry. Rory also attended meetings to discuss new laws and policies regarding fishing areas off the coast. He says, *“I did many different tasks at the Department of Marine Resources, and by the last day I felt like I made a contribution toward*

*solving a problem of the Maine fisheries.”*

**Sarah Lumnah** spent her summer with the Charles River Watershed Association (CRWA) in Waltham, Massachusetts, a group dedicated to clean-up and protection efforts of the Charles River. They focus not only on scientific solutions to watershed issues and sustainable watershed practices, but also on stewardship and educating for awareness. Sarah also had the opportunity to experience all aspects of CRWA during her ten weeks; *“My main responsibilities at CRWA included tasks such as laboratory analysis, data tabulation, assistance with mailings, volunteer coordination, Website maintenance, sample bottle washing and delivery and membership management.”* She also got a chance to utilize the communication skills she has honed as an English and government double major. *“To help CRWA increase their communication with the press, I developed a media list and a press kit.”* She learned the inner-workings of a non-profit organization, including the difficulties that arise in terms of funding and staffing, as well as the importance of things like membership, website maintenance, and research.



*Sarah Lumnah worked with the Charles River Watershed Association for her summer internship.*

**Cait McIntosh**, who is majoring in bio-organic chemistry and English, split her summer between two different internships, one here at Conn College, and the other at the Rochester Equine Clinic in Rochester, New Hampshire. At Conn, she worked in the lab under the direction of Professor Timo Ovaska *“to investigate biologically active and potentially important medicinal compounds which contain the 5-7-6-3 or other similar phorbol type skeletons.”* She investigated the most environmentally friendly way of completing a specific reaction, and focused mainly on the application of microwave technology to the cyclization/Claisen rearrangement reaction on a certain substrate. Her results will be published in the journal *Synlet and Synthesis*. During her time at the Rochester Equine Clinic, she worked under the intern on call, and performed a number of different tasks, including administration of medication, assistance in diagnosis, and preparing horses for surgery. She will combine her

internships in her SIP, during which she plans to “research invasive plant species which are poisonous to cattle and horses, specifically to look at the biochemical effects on the animal exposed.”

**Keiko Nishimoto** interned at the Philmont Scout Ranch in Cimarron, New Mexico, a high adventure base operated by the Boy Scouts of America. Scouts at Philmont go on treks into the backcountry, learn the Leave No Trace ethic, and complete conservation projects. Keiko, who is a botany and environmental studies double major, worked on one of the conservation projects in the Valle Vidal, at Philmont’s Seally Canyon location, a part of Carson National Forest. She worked with members of the Forest Service to designate conservation projects for the scouts to work on. “I was able to work with Forest Service staff and to learn about



*Keiko Nishimoto works on a conservation project in Seally Canyon, New Mexico*

the methods of and policies concerning conservation in the national forests”, says Keiko, which helped develop her interest in how land is used and cared for. “Working in the Valle, I became necessarily engaged in the politics governing land management there and in the rest of our national forests... I could see what kinds of environmental impacts policies have had in the Valle,[and] a number of discrepancies in the way the land is managed were brought to my attention.” These discrepancies have led to the development of her SIP, which will focus on proposed drilling in the Valle Vidal unit and how multiple-use policies leave land vulnerable.

Environmental studies major **Amy Phelan** interned with the New England division of the U.S. Army Corps of Engineers in Concord, Massachusetts. She was able to assist them in their goals of “trying to achieve environmental sustainability, seeking balance between human development activities and natural systems, building a greater understanding of the environment to help protect and enhance it, and understanding the human impact on the environment.” She worked with wetland scientists in the environmental resource section in the regulatory department, and learned about the processes of granting protection to wetland areas. She

was able to travel all over New England to visit various wetland locations, to monitor mitigation sites and determine functionality. During these trips, she helped with identification of species of trees, shrubs, and vines, observed hydrology, and collected soil samples. “This internship provided me an excellent opportunity to meet many knowledgeable people in the environmental field... I learned so much. I came out of there having a strong understanding of wetlands, Clean Water Act section 404b, how permits are given to people and how they are regulated.”

**Lauren Richter** decided to stay in Italy after studying abroad there, and completed her internship in Rome at the Food and Agriculture Organization (FAO) of the United Nations. Lauren cites their objectives, saying “FAO contributes to global efforts to ameliorate hunger through four central approaches: providing information, sharing policy expertise, providing a meeting place for nations, and bringing knowledge to the field.” Working under an agricultural economist, she learned how they analyze global environmental trends, and create and recommend policy based on their observations. As a sociology major, she was especially interested in the research she did for their publication; “I worked for the editor of the department’s flagship publication ‘The State of Food and Agriculture’ (SOFA); this year’s edition posed the question: can biotechnology meet the needs of the poor?” This experience, coupled with the opportunity for further research, access to conferences hosted by FAO, and the current debate about genetically modified organisms inspired Lauren’s SIP plans; “I would like to address two perhaps related issues: namely the question of economic growth and environmental sustainability and the question of economic valuations of the environment.”

**Emily Weidner** also opted to lengthen her stay in her study abroad country, and interned at the Smithsonian Tropical Research Institute on Barro Colorado Island in Panama. This research station has been in place since the 1920s, and offers a base for tropical ecological study to scientists from around the world. Emily, who is a botany major, served as a research assistant to Jason Watkins, a student in the mycology PhD program at the University of Georgia. Together they studied the diversity of oomycete fungi in the rain forest, and investigated their effect as pathogens on tree seedlings. She helped set up and complete field experiments, collected soil samples and assisted in designing, developing, and setting up greenhouse experiments. Being at the research station, she was able to gain far more experience than just that of her one project; “In addition to skills and information learned from the field and lab work during my internship, I was able to gain much more. Exposed to a unique community of leading tropical researchers, I was able to inquire about and witness firsthand a diverse set of studies being conducted on the island.”

**Kate Williams**, an English major, stayed close to Conn for her internship, which she spent at the Williams-Mystic Maritime Studies Program, in Mystic, Connecticut. This program enables students to complete research in history, literature, policy, or science while living at Mystic Seaport, a working maritime museum. While she was there, she conducted independent research on the Hurricane of 1938, as well as assisting in all aspects of museum life, including assisting with graduate student studies, volunteering at the Sea Music Festival and Small Boat Festival, and working one day a week on wooden boat construction. In addition,

she was able to spend time doing research for her SIP, which will be a study of Herman Melville's *Moby Dick* as an example of ecocriticism. *"I was able to read and examine several logs from whaling voyages of the Charles W. Morgan, the only surviving wooden whale ship, which was built in New Bedford at the same time as the Acushnet, the vessel on which Melville made his whaling voyage."*



*During her internship, Kate Williams studied the hurricane of 1938, the aftermath of which is seen here on New London's own Pequot Avenue.*

## Student and Faculty Research Collaborations, Summer '04

Each summer, students have the opportunity to collaborate with faculty on research projects. The following are those conducted during the summer of '04 with an environmental theme:

**Training of captive Beluga Whales for husbandry at Mystic Aquarium;** Brandon Richards; Professor Robert Askins (Biology)

**Floristic inventory of the West Farms Land Trust Avery tract in Waterford, CT;** Susan Munger and Amanda Mohammed; Professor Christine Small (Botany)

**Ongoing study of prescribed burning in restoration of regionally rare pitch pine sand plain ecosystem at Hopeville Pond Natural Area in Griswold, CT;** Susan Munger, Amanda Mohammed and Amy Phelan; Professor Christine Small

**Observation of the scaled Chrysophyceae and Synurophycean flora on several Cape Cod, MA ponds, and their relationship to environmental gradients;** Sara Jayanthi; Professor Peter Siver (Botany)

**Morphological examination of Frustulia (Bacillariophyceae) along the eastern U.S. coast;** Jeffrey Pelczar; Professor Peter Siver

**Climate and water color analyses of regions for NSF Biotic Survey and Inventory Grant;** Carrie Hackett; Professor Peter Siver

**Hydrology of erosion dominated channels;** Adam Weinberg; Professor Doug Thompson (Physics)

**Trophic cascades and interacting control processes in a detritus-based aquatic ecosystem;** Randy Jones, Erin Shields, Erin Miller (graduate student); Professor Scott Warren (Botany)

**Monitoring tideland restoration in the lower Connecticut River Estuary;** Annie Curtis, Katherine Dugas, Ashley Booth, Michael Wrubel; Professor Scott Warren

## Jonathan Fahey Speaks

*Continued from page 1*

mpg. Fifty-four percent of the nation's fleet are now "trucks" by CAFÉ standards. Fahey said, "CAFÉ used to set a level to work up from, now it's setting a floor to keep things from getting any worse."

He spoke about the financial problems plaguing American automotive companies, and how these are hindering the development of forward-thinking technologies. "[Production] is more expensive for Ford, GM and DaimlerChrysler, partly because they are not as efficient [as foreign companies], and partly because they have higher labor costs, and partly because they can't lay people off because of union contracts... Added to the cost of materials and manufacturing, they have huge pension and health care obligations. GM has 2.5 retirees for every 1 employee. Those retirees get a pension and health care coverage. That eats up a lot of profit."

Because all of their factories are unionized, the automakers are in a tight spot; they can't close the factories that produce outdated and unwanted cars, which leaves them with thousands of salaries to pay and cars that aren't being bought. When presented with the idea of creating new factories to build cars with new technologies – hybrids, for instance – they are extremely cautious, knowing that if they do open a new factory, the union dictates that they'll never be able to close it. And besides that, new technologies carry a far higher price tag than old technologies, and they aren't about to invest in a gamble when their current average profit is only .3% per year.

Consumers aren't doing much to help the problem either. The reason automakers can't sell cars is because people have decided (or have been convinced via advertising) that they don't want ordinary cars, they

*continued on next page*

# Invited Speakers

During the Fall of 2004, the Goodwin-Niering Center was pleased to welcome two guest speakers as a part of the Certificate Program. One was Jonathan Fahey, whose lecture is covered in the front page article. The other was Professor Doug Thompson of the Connecticut College Physics department.

Doug specializes in geology and hydrology, and presented our students with a lecture entitled "Environmental Impacts of Channel Restoration." In his lecture – and subsequently the following article – he addressed instream structures, which can take many forms, but are often used to create "pool and riffle" sequences. In these cases, a series of deeper pools and shallower, higher flow sections are artificially created. This restoration technique is used to provide safe habitats for aquatic creatures, and often includes placement of structures in the river or devices used for bank stabilization. While such techniques often strive to replicate natural geological forms, they often give rise to geomorphic processes which are different than those which would occur naturally. Doug investigated these effects in his paper "Long-Term Effect of Instream Habitat-Improvement Structures on Channel Morphology Along the Blackledge and Salmon Rivers, Connecticut, USA," published in *Environmental Management* Vol. 29, Number 1.

## Environmental Impacts of Channel Restoration

By Doug Thompson

The use of instream structures to improve aquatic habitat has a long history in the United States, with the first published use of instream structures in New York during the 1800s. Evidence of early structures can still be found along the Beaverkill River, New York, demonstrating the potential for long-term impacts. In the 1930s, after only three years of scientific investigation at the University of Michigan Institute for Fisheries Research, cheap labor and government-sponsored conservation projects spearheaded by the Civilian Conservation Corps allowed the widespread adoption of instream structures throughout the United States. World War II temporarily ended the government conservation efforts and prevented the evaluation of structures installed. During the 1940s, 1950s and 1960s, designs of instream structures remained essentially unchanged. Meanwhile, the few studies that were undertaken to evaluate the impact of the structures often were flawed. Despite these facts, the use of habitat structures became an 'accepted practice' and early evaluation studies were used as 'proof' that the structures

*continued on page 8*

*Fahey continued from previous page*

want big and fast, and big and fast is what sells. Fahey claims that the problem isn't just advertising or safety or even a lack of awareness, "the problem is that there's no *penalty* for owning a big fast gas guzzler." Some may quote the current gas prices as a penalty, but when compared to the prices in European countries – all over \$5 a gallon – our \$2 a gallon seems like pocket change.

Which leads to the role of the politicians; the reason gas prices are so high in other countries is that there are gas taxes. Politicians admit that this would be a wise move on American soil as well. But, the likelihood of a political candidate getting elected on the platform of higher gas taxes is pretty slim, and to do so would cause such an uproar that no one ever even mentions it. The irony is that we *do* pay a

gas tax, it's just combined with other taxes. If politicians could just muster up the courage to say that, things might start changing. But, if politicians did decide to implement change, they would have several very large and very angry auto makers on their hands, auto makers employing thousands of voters who don't want to lose their jobs.

As for potential catalysts of change, Fahey cited another oil crisis, environmental disaster, or the development of new technology, hoping that the country will have the wisdom to enforce the last option before the first two make it unavoidable. He did note some encouraging facts; several car manufacturers are doing research on hybrid vehicles, especially Toyota, which has licensed its battery technology to other companies, thereby eventually lowering the costs of development and production. Also, preliminary research is being done into hydrogen-fueled cars, GM currently makes a hybrid bus, which it is trying to scale down into a more marketable vehicle, and alternative fuels, such as biodiesel and ethanol, are becoming more widely used.

Fahey ended his lecture on a note that most speakers tend to avoid; instead of claiming to have all the answers, he refreshingly said that he didn't know what the next step should be, that he's not sure what the country is going to do about this situation. He chose to leave the questions open-ended and the future unknown, an excellent choice in a roomful of intelligent, eager, and environmentally minded students.

### Welcome to the Certificate Class of 2007!

The following students from the class of 2007 have been accepted to the certificate program:

Noah Fralich; Environmental Studies/German

Susana Hancock; Art/Slavic Studies

David Hecht; Government

Saraswati Jayanthi; Environmental Studies/Biology

Rebecca Mason; Biology/Botany

Christine Monahan; International Relations

Jesse Taylor-Waldman; Environmental Studies

Jennifer Vasquez; Environmental Studies

Laura Zerra; Biology

were beneficial to aquatic organisms. A reanalysis of evaluations of instream structures completed between 1930 and 1970 showed that very little statistical evidence exists that the use of habitat structures benefited fish populations. The literature review reveals that despite published claims to the contrary, little evidence of the successful use of instream structures to improve fish populations exists from the period 1930 to 1980. In addition, the Blackledge River, Connecticut provides a good illustration of the historic problems with channel-restoration using instream structures. This river was the first site for scientific investigation of the impact of instream structures on fish populations. Remarkably, some of the 1930s-era structures still survive today in various stages of decay. A case study was undertaken to determine the current state and geomorphic impact of habitat improvement activities after almost 60 years of existence. Tree recruitment along riprap revetments and cover structures was retarded leading to less undercut habitat than along undisturbed reaches. Even where structures remain, traditional restoration techniques do not replicate natural channel processes and often fail to create the improvements envisioned by restoration

designers. Deficiencies in the beneficial impacts of the historic restoration efforts are not primarily due to a failure to follow acceptable designs practices, but in the inadequacies of the designs themselves. As the case study highlights, there were few advances in the use of instream structures since the 1930s and the structures are of questionable benefit to the channel.



Sushil Bhattaria '00 visits an instream structure on the Blackledge River.

## Alumni Publications

### Works Published by Recent Center Grads

#### Marjorie Lundgren '02

Marjorie's paper "Influence of Land Use and Site Characteristics on Invasive Plant Abundance in the Quinebaug Highlands of Southern New England," has been published in the scientific journal *Northeastern Naturalist*, Volume 11. This paper is based on research that she completed for her SIP/honors thesis during the summer of 2000 and the following academic year. She worked with both Professor Christine Small (Botany), and Professor Glenn Dreyer (Botany/Executive Director of the Center). Their research was conducted in the Quinebaug Highlands, a 34,000 acre area protected by The Nature Conservancy, located in Northeastern Connecticut and Southern Massachusetts. Marjorie's study focused on the distribution and abundance of non-native invasive plant species relative to the proximity to and size of roads, trails, and unbroken forest. Her study also considered the effects of historical land use, current land use, as well as various natural factors. Currently, Marjorie is enrolled in the botany PhD program at Wesleyan University, in Middletown, CT.

#### Hannah Shayler '02

Hannah stayed at Conn after she graduated, and has been conducting research with Professor Peter Siver (Botany). So far, they have jointly published two papers: "Biodiversity of the genus *Brachysira* in the Ocala National Forest, FL, USA," in *Proceedings 17<sup>th</sup> International Diatom Symposium 2002*; and "Description of a new species of the diatom genus *Brachysira*

(Bacillariophyta), *Brachysira gravida* sp. nov. from the Ocala National Forest, FL, USA," in *Nova Hedwigia* Volume 78. Hannah is currently finishing her work at Conn and planning to attend graduate school, where she hopes to develop more creative and accessible means of teaching environmental science.

#### Lauren Hartzell '03

Lauren, who was a philosophy major, collaborated with Professor Derek Turner (Philosophy) on a paper entitled "The Lack of Clarity in the Precautionary Principle." Their paper was published in November in the leading environmental philosophy journal, *Environmental Values*. Lauren writes from California, "In our paper, Derek and I philosophically examine the Precautionary Principle—a principle capturing the idea that it is better to take precautionary measures now than to deal with serious harms to the environment or human health later on. We conclude that the Precautionary Principle, specifically the version of this principle that came out of the Wingspread Conference, fails to indicate who must bear the cost of precaution; what constitutes a threat of harm; how much precaution is too much; and what should be done when environmental concerns and concern for human health pull in different directions. Whether this vagueness is a strength or weakness of the principle depends on what purpose(s) the precautionary principle is supposed to serve." Lauren is currently pursuing a PhD in philosophy at Stanford University.

For more information on alumni, please visit our website and check out both the "Alumni Spotlight" and the "Alumni Grapevine." And if you happen to be a center alum yourself, take a minute to fill out the questionnaire so we can post an update on you too!



# On-Campus Update

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Currently, there are several student-initiated environmental projects being developed on campus. One of the groups – the Renewable Energy Club – has been around for a number of years, and is now setting its sights on bigger and better goals. The other two groups are newly founded this year, and are focused on Biodiesel and Organic Gardening. The following are summaries of their purposes and plans.

## **Biodiesel Project:**

Biodiesel is diesel fuel made from vegetable oil, which can be used to run virtually any kind of diesel-powered vehicle. Some of the best biodiesel can be made from used fryer oil, the kind that is common in fast-food restaurants. The plan of the Biodiesel Club is to use the leftover oil from the dining halls to create fuel for some of the campus' fleet of grounds vehicles, especially the lawnmowers and garbage truck. Trent Hardman '07, president of the Biodiesel Club says, "The purpose of the biodiesel club is to promote awareness of alternative fuel on campus. By replacing diesel with biodiesel, harmful emissions are substantially reduced. After the initial cost of implementation is covered the college will actually save money by producing biodiesel." This is because the school currently pays to have their used fryer oil carted away, which they will no longer have to do, and the cost per gallon for production of biodiesel is cheaper than the price per gallon of diesel. To get started, the club plans to make enough biodiesel for a diesel Volkswagen rabbit that was donated to the club.

## **Organic Garden:**

The Organic Garden project is in its very first stages, but is moving along as quickly as any garden can during the winter months. During the fall, a number of students got together and cleared a 50' by 50' plot on the northeast corner of campus. Further clearing will be completed over winter break, while students research and plan the best crops and layout. Then in the spring, planting will begin! Alaya Morning '07, founder of the Organic Garden projects says "It will be an ongoing student experiment in sustainable gardening and garden management. The goal is that the garden will eventually be both environmentally and economically sustainable. We hope to make enough profit selling the produce to be able to pay a student or two to stay on campus for the summer and manage it." She also mentioned that there are new connections forming with the New London community and a tentative plan to incorporate this garden into a community garden project which will focus on supplying food to low-income families, and also serve as part of a youth-development program. Alaya also wants to stress that it shouldn't necessarily be called an "organic" garden yet, because organic certification takes years to obtain. However, the goal is to use all sustainable and organic farming practices, and to aim for organic status in the future.

## **Renewable Energy Club:**

In just a few short years the Renewable Energy Club has made a name for itself not only on campus, but across the nation as well. Connecticut College uses one of the highest percentages of green energy of any college in the country, and its renewable energy policy is often cited as a model for other schools to emulate. Currently, the school purchases Renewable Energy Credits (RECs) from wind energy sources in the Midwest. These RECs offset campus energy use with renewable sources. Forty-four percent of the school's electricity is accounted for by these credits, which is no small feat. However, the Renewable Energy Club isn't satisfied with this, and knows that there is more work to be done. Currently, they are in the research and planning stages of a much larger project for the school, namely, figuring out a way to get the school on 100% green energy. They are looking into several options right now to find the most feasible possibilities. One suggestion is that the college build its own green energy facility; so far, two low-impact hydroelectric sites in Connecticut have been discussed, as well as wind turbines and hydrogen fuel cells on campus. There is also the option of buying power from a number of green energy suppliers on the grid in New England. The Renewable Energy Club is learning a lot from this process, specifically, real-world economics and the challenges of balancing environmental ideals with feasible solutions. But, they are as determined as ever, and if their past successes are any gauge of the future, Conn will soon be seeing great strides forward in its green energy policy.



*Alaya Morning, founder of the Organic Garden project, worked to clear land in October. The 50' by 50' plot will be ready for planting in the spring.*



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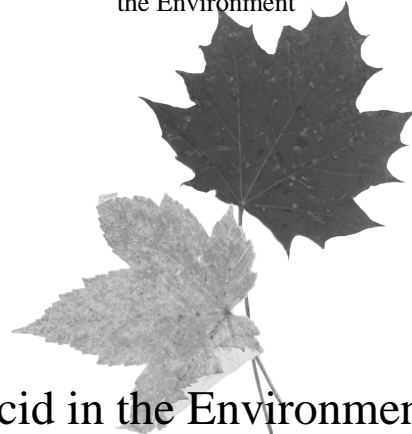
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*Center student Emily Weidner was introduced to some impressive tree species during her internship at the Smithsonian Tropical Research Institute on Barro Colorado Island in Panama. See more on our students' summer internships inside!*

## Mark Your Calendar!

The Goodwin-Niering Center Presents:  
The 2005 Elizabeth Babbott Conant Interdisciplinary Conference on  
the Environment



## Acid in the Environment: Lessons Learned and Future Prospects

Friday and Saturday, April 1<sup>st</sup> and 2<sup>nd</sup>, 2005

For more information, please see our website:  
<http://goodwin-nieringcenter.conncoll.edu/conferences>