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### **Green Acres: From a "green" summit to a residence hall dedicated to environmental awareness to state-of-the-art construction, the Colby community is collaborating to understand and confront environmental issues**

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# green acres

From a “green” summit to a residence hall dedicated to environmental awareness to state-of-the-art construction, the Colby community is collaborating to understand and confront environmental issues.

By Stephen Collins '74



If human beings don't curb their appetite for fossil fuels in short order, expect widespread economic instability, further increases in destructive weather, and general chaos that prevents societies from functioning. Those were the predictions of Elizabeth May, executive director of The Sierra Club of Canada, as she spoke at a Green Campus Summit held at Colby in April.

She told student activists from Maine and Canadian colleges that they might make more progress in their fight to stem climate change if they re-frame the debate as a security issue rather than an environmental one. "This is not some kind of tree-hugger issue. This is about whether we live or die in this world," she said. "There's no plausible terrorist scenario that comes close to climate change."

May acknowledged that climate change is a "very difficult issue to communicate." Though it is the top environmental issue of our time, politicians in Ottawa and in Washington don't consider environmental issues to be as important as security or economic problems, she said.

At Colby—where environmental policy has been a major for 10 years—May demonstrated the intersection of science and politics.

First she analyzed the build-up of carbon in our atmosphere and the dire consequences already in evidence. Recalling predictions in the late 1980s about what was likely to happen in about 2050, she said, "I'm seeing that now." From 1950 to 1996, greenhouse gases in the atmosphere increased four-fold. Carbon dioxide remained fairly stable and below 280 parts per million for 160,000 years, but the most recent figure was 379 ppm, she said. "We're swamping all of the natural sys-

tems that are capable of keeping carbon out of the atmosphere."

"And it's irreversible," she said. "All the CO<sub>2</sub> we release in 2005 will be with us for 100 years."

Then she turned to the politics. In Ottawa one of the major news items of this spring was the Kyoto Protocol, and the week of the Green Campus Summit Prime Minister Paul Martin's government was on the brink of being replaced, in part over that issue.

May pointed to what she sees as a policy of denial in Washington. "These are accepted realities of international law that the Bush ad-

ministration is denying," she said. "Worse than that, they're sabotaging the efforts of others."

Returning to her initial suggestion, that climate change be cast as a threat to security, she said, "When I think about who's a bigger threat to my thirteen-year-old daughter, whom I love more than life itself, it's not Osama bin Laden, it's George W. Bush."

The Green Campus Summit was a student-planned and student-hosted conference that brought delegations from Maine, New Brunswick, Nova Scotia, and Prince Edward Island schools to Colby for two days of workshops and discussions. It was funded by



# Environmental Initiatives

## College Initiatives

**Environmental Advisory Group (EAG):** Formed in 2000, the EAG includes administrators, faculty, staff, and students who advise the president and the College on environmental stewardship, including conservation, alternative energy, and other greening projects ([www.colby.edu/eag/](http://www.colby.edu/eag/)).

**Project RESCUE:** RESCUE (Recycle Everything, Save Colby's Usable Excess) salvages unwanted items and clothing that students leave behind at the end of each year. In three years it has kept literally tons of items out of the waste stream, reusing and recycling items through donations and annual sales. Listed on the EPA Web site among best management practices.

**Green Buildings:** A list of green building principles is given to architects and contractors. Colby is pursuing LEED (Leadership in Energy and Environmental Design) certification for both buildings under construction on Colby Green.

**Green Cleaning:** Where possible, traditional cleaning chemicals are replaced with citrus- and water-based products. Concentrated cleaners reduce the amount of packaging going into the waste stream.

**Electric Co-generation:** In 1999 Colby installed a turbine at the central heating plant to generate electricity using excess and waste steam. Co-generation produces 12 percent of the electricity used on campus.

**Green Electricity:** Purchased electricity comes entirely from green sources—half hydroelectric, half biomass. The latter burn wood waste and are CO<sub>2</sub> neutral, since CO<sub>2</sub> released during combustion is given off whether wood burns or rots. Hydro-power produces no greenhouse gases.

## Education Initiatives

**Dorm Electricity Competition:** In a voluntary two-week competition in the Alford Apartments, the winning apartment decreased energy consumption 82 percent. Nine of 21 apartments cut consumption by 25 percent or more; three apartments by 50 percent or more.

**Green Living and Purchasing Guide:** Purchasing and lifestyle choices by students affect Colby's environmental footprint. This guide, posted in the dorms and sent to new students, promotes environmental stewardship.

**Personal Action Guides:** Personal Action Guides for staff and students seek to minimize negative environmental effects of day-to-day activities, e.g., driving and computing.

## Grounds and Landscaping

**Integrated Pest Management:** Non-chemical solutions are explored before chemicals are used, inside and outdoors.

**Sedimentation Ponds:** Three ponds and 1.5 acres of constructed wetlands in the Colby Green project decrease erosion and filter sediment to protect waterways.

**Composting:** Composted lawn waste, sand collected from roads and parking areas, and dirt from campus projects are mixed to create topsoil used in campus landscaping. In three years two to three thousand cubic yards have been generated.

## Dining Services

**Sustainable Seafood:** "The Fish List" is a nationally recognized guideline to avoid overfishing and destructive fishing practices. Colby and Sodexo comply with and exceed Fish List recommendations.

**Local Food:** Buying locally requires less packaging and less transportation, reducing solid waste and emissions. Colby's "Maine First" policy uses out-of-state goods only when native items are not available.

**Organic Food:** All three dining halls feature some food grown without pesticides, chemicals, hormones, or antibiotics. Foss specializes in vegan and vegetarian fare, with more than 20 organic items on the menu.

**Green Coffee:** Coffee sold in the Spa and the Miller Library "Street" includes fair-trade and organic options. Coffee drinkers get a discount for using their own mugs instead of paper cups.

**Composting:** In 2003, 67.77 tons of food waste were collected and delivered to a commercial composting facility. Colby buys back some compost for use on campus.

**Waste Reduction:** Dining halls avoid buying and discarding more than 150,000 paper cups per year by not stocking them. Boxes in each dorm collect stray mugs and glasses for return to dining halls. "Trayless Tuesdays" in Dana Dining Hall cut the amount of food wasted an average of 260 pounds per day.



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number of areas over the years.”*

*David Coon, policy director of the Conservation Council of New Brunswick*

a grant from The Henry P. Kendall Foundation, which chose Colby as the host institution after foundation officials visited the campus last year and went away extremely impressed with the College's community approach to sustainability, led by its Environmental Advisory Group, according to Kendall Foundation Executive Director Ted Smith.

Mitchell Family Professor of Economics Thomas Tietenberg, one of the architects of the concept of emissions trading as a pollution mitigation strategy, led off. Despite all the discouraging scientific evidence about the nature and especially the rate of climate change, Tietenberg and other speakers Saturday morning found reasons for cautious optimism. With oil prices above \$55 a barrel, and with gasoline at more than \$2 a gallon in the U.S., conservation and alternative energy solutions were growing increasingly attractive. And despite inaction at the federal level in the U.S., regional coalitions—including one encompassing New England states and Atlantic Canada provinces—were setting their own goals for reducing greenhouse gas emissions.

Beth Nagusky, director of energy independence in the Office of the Governor of Maine, said she saw an unlikely coalition forming between neo-conservatives and environmental activists in Maine as energy prices rose. She talked about the promise of technologies like biodiesel and capturing methane from landfills to heat greenhouses, whose produce would replace foods now being trucked to Maine from Central America or the southern U.S.

David Coon, policy director of the Conservation Council of New Brunswick, told students, “Good science and national argument has never convinced those holding power of anything. Political action, on the other hand, has accomplished many great things in a number of areas over the years.”

May echoed that sentiment Saturday evening, when she began by saying, “Youth activism on campuses in the U.S. is one of the things that gives me more hope than anything else.”

In afternoon sessions representatives of the 10 colleges and universities swapped best practices for campus greening initiatives. Allison Stewart '05, one of the organizers of the conference, said, “It was really valuable to learn what's possible and get more ideas about what to do.” Though Colby has an ambitious approach to campus greening, Canadian schools set the standards for recycling, since their provinces have mandatory recycling programs and manage to recycle 75 percent or more of the waste stream. At one college there are no trash cans in rooms; instead there's a label by the door saying where the nearest recycling bins are, Stewart reported.

Networks were established, and residents of next year's environmental Green House at Colby have e-mail addresses of students in a similar theme house at Mt. Allison University, a top Canadian liberal arts college in New Brunswick.

Careful to ensure that the conference itself didn't contribute to environmental degradation, planners insisted on green practices wherever possible during the weekend. And when it was over they purchased “Green Tags” (a payment toward costs of production of environmentally friendly energy) to offset emissions from the vans that brought students to Mayflower Hill.

A contradance Saturday night went until 1 a.m. and, because of the change to Daylight Saving Time, conferees lost an hour of sleep between then and the 8 a.m. workshops on Sunday. “The biggest crisis we had was the fair-trade coffee ran out,” Stewart said.

Then on Sunday afternoon the Canadian guests headed east and lost another hour crossing into the Atlantic time zone.

## *Green House Effect*

Dialogue Housing, a pilot project allowing students with a shared academic interest to live together for a year, begins in 2005-06 with The Green House—an experiment in sustainable living. Two dozen students in the environmental house will take up residence in Goddard-Hodgkins, on Roberts Row.

The Green House will be home to students interested in or curious about environmental issues, allowing them to explore classroom theories in the residential setting. The house will be a model to initiate, test, and strengthen greening efforts for possible adoption elsewhere. The entire campus will be invited to participate through a year-long program of activities, organizers said.

Emilia Tjernström '06 put the proposal together and recruited Clara C. Piper Professor of Environmental Studies David Firmage as the academic advisor and students to be pioneers in Colby's Dialogue Housing pilot. Firmage said he was impressed with the proposal and the likelihood that “it will increase the ability to talk with others about issues important to the students living there, as well as providing a venue for events related to the environment.”

The house will sponsor one campus-wide event per month, each with an environmental theme. Tentative topics or activities include a green Halloween dance, a locally harvested and sustainable Thanksgiving, a national Green Party political speaker, an ecological spring-break event, an eco-feminist speaker during Women's History Month, and Earth Week activities.

In addition, semester-long activities will include a seminar on an environmental book and a model green dorm room. Some of the green practices to be adopted by the house: growing plants in public spaces, composting waste, and implementing a multi-pronged strategy for reducing energy consumption.

*To learn more Dialogue Housing Pilot Program criteria, guidelines, and requirements, go online to [www.colby.edu/dos/housing/dialo506.html](http://www.colby.edu/dos/housing/dialo506.html)*





# Granting Green

Colby's environmental leadership, both in the curriculum and practices on campus, was bolstered by several recent grants.

**Andrew W. Mellon Foundation** \$300,000 for a package of curricular innovations in environmental studies to build on momentum from a 1999 Mellon grant. The new grant will develop and enhance Geographic Information Systems (GIS) across the curriculum, infuse environmental justice into the curriculum, expand environmental studies offerings by adding one course per year, develop environmental methods and tools, enhance the concentration in environmental policy, expand research assistantships for students and off-campus research partnerships through internships, and implement a visiting lecture series.

**Oak Foundation** \$250,000 toward a geothermal heating and cooling system in the new Schair-Swenson-Watson Alumni Center and another \$250,000 toward construction of a state-of-the-art GIS laboratory in the Diamond Building, currently under construction.

**Hollis Foundation** A challenge grant of \$100,000 to endow three student research fellowships in environmental science, permitting students to work closely on projects with faculty members.

**Henry P. Kendall Foundation** \$25,000 for Colby students to organize and host a Green Campus Summit in April, bringing colleges and universities from Maine and Atlantic Canada together to share strategies for combating climate change and for adopting sustainable practices on campus.



# LEEDing the Way

Green building design may be an idea whose time has come, but in Maine it came to Colby first.

Several colleges represented at the Green Campus Summit on April 2 boasted buildings under construction that will incorporate geothermal heating and will seek LEED (Leadership in Energy and Environmental Design) certification through the U.S. Green Building Council, but the Schair-Swenson-Watson Alumni Center (SSWAC), which will open this summer on the Colby Green, is on track to be the first LEED-certified and geothermally heated academic building in the state—and one of the first dozen or so nationwide. The Diamond Building, an academic hall for which ground was broken April 15, also will be built to LEED specifications.

The LEED program is a formal, voluntary, and consensus-based national standard for developing high-performance, “sustainable” buildings. It uses a point system that takes into account a wide range of environmental and conservation concerns, and buildings can earn one of four LEED levels—certified, silver, gold, or platinum. Energy efficiency is a key concern, but renewable energy sources, water conservation, and minimization of waste in construction as well as up-keep are all considered.

“A lot of this was just the way Colby does things anyway,” said Russell Cole, Oak Professor of Biological Sciences and a member of Colby’s Environmental Advisory Group. “The LEED program has forced us to focus and go a little deeper.”

The alumni center, which includes offices for about 50 employees, includes bike racks and a shower to promote cycling to work. Outlets are available for electric cars. Natural light is maximized in the offices, and excess water from the geother-

*“The premium is really small, but the payback over time is quite substantial.”*

*Russell Cole, Oak Professor of Biological Sciences and a member of Colby’s Environmental Advisory Group, speaking about sustainable buildings.*

mal heating and cooling system will be used to flush toilets. Wood siding is made from finger-jointed mill ends that otherwise would have ended up in a scrap pile. Materials were selected to minimize emission of adhesives, sealants, paints, etc., and copiers and printers will be in specially ventilated rooms to maintain indoor air quality. Lumber comes from sustainable forest practices, contractors are sorting debris for recycling, and 11 percent

of the building is made of recycled materials. Joseph Feely, the College architect, said the LEED list becomes part of the building program. “Until you measure yourself against something like this you don’t know how you stack up,” he said. He noted that the industry is just beginning to acknowledge the demand for these innovative products.

Green choices, particularly those that involve conservation, make good economic sense, Cole insisted. “The premium is really small, but the payback over time is quite substantial.” And, as with

Colby’s green electricity contract, the College’s leadership in adopting green building technology will help create markets that will make these materials more readily available for the next generation of green building adopters.

“Nobody just builds a building anymore,” Cole said. “You make a statement.” And Colby’s statement—about its commitment to responsible and sustainable choices that will protect the environment—is one that should resonate with prospective and current students, faculty, and alumni, he added.

After all, the Schair-Swenson-Watson Alumni Center is the first building on campus where grant money was earmarked essentially for a furnace—when the Oak Foundation gave \$250,000 toward the geothermal heating system.

## What Makes a Building Green

Among a wide range of initiatives that earn points toward the Schair-Swenson-Watson Alumni Center’s LEED certification are:

- Geothermal heating and cooling of entire building
- Use of electricity generated on campus through co-generation at the steam plant
- Clapboards fabricated from mill ends
- Wallboard made of recycled materials (95% of gypsum comes from industrial smokestacks, 100% of facing and backing from recycled newsprint)
- Sprayed foam insulation for high energy efficiency
- Use of green cleaning products for building maintenance
- Elevator’s hydraulic system uses vegetable oil instead of petroleum products
- Special exterior light fixtures reduce light pollution
- Toilet-stall partitions made using 30% post-industrial recycled plastic
- Carpets made using 32% post-industrial recycled material