

Spring 2004

THE JOURNAL OF THE School of Forestry & Environmental Studies

# Environment Yale



**The Third Rail of American Politics: The Environment**  
**What the Presidential**  
**Candidates Aren't Talking About**

*Inside: How Wild Should Wildfires Be? page 14*

# Letters

To the Editor:

I agree with [Dean Speth's] conclusion that environmental concerns need to be center stage, and that those of us who are unwilling to switch parties must work to "take back the party" through groups such as REP America.

Environmental protection has unfortunately become wrapped up with a liberal agenda in this country. Part of the problem is that those who teach environmental education and those who are mentors to the next generation of young environmentalists are almost all liberals. This makes a young conservative feel very, very uncomfortable. And, even worse, it makes conservatives respond to environmentalists with a knee-jerk negative reaction.

I believe in the following: tax cuts, an aggressive foreign policy against terrorists, supporting our only democratic ally in the Middle East, the war in Iraq, the death penalty, the sanctity of human life prior to birth, keeping God in the Pledge of Allegiance and a moment of silence in schools, vouchers, judging people solely by the content of their characters and not the color of their skin in all cases, and environmental protection. Yet if I find myself at a function with environmentalists, I feel hard-pressed to admit to any position but the latter. Why? Why has environmental protection become a part of the liberal agenda?

Educators at universities [need] to look in the mirror. You must make sure there are conservatives on the faculty, [as] guest lecturers and [in] the student body. Don't attach environmental protection to your other agendas and make folks, like me, feel uncomfortable. Donate to REP America but make sure your own house is inclusive.

JASON COOPER  
FAIRFAX, VA.

*Dean Speth responds:*

*Jason Cooper suggests an important issue I did not address: how can one explain the widening gap between liberals and conservatives and Democrats and Republicans on the environment? It is a question that deserves rigorous study.*

*To answer his questions about educational institutions, I can only speak for F&ES, but from what I have observed I'd say the F&ES faculty is quite independent-minded with lots of disagreements with both environmental organizations and industry lobbyists. We had an ongoing lecture series this term on U.S. politics and the environment, and we've had politicians from both parties, pollsters from both parties and journalists who love to be contrary to both parties.*

Due to the volume of correspondence, *Environment: Yale* regrets that it is unable to respond to or publish all mail received. Letters accepted for publication are subject to editing. Unless correspondents request otherwise, e-mail addresses will be published for letters received electronically.

To the Editor:

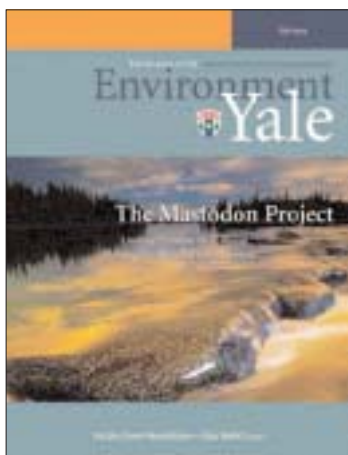
I read with interest [Dean Speth's] comments in the fall issue (*Green Republicans — Quo Vadis?*) relative to Green Republicans. I have been a lifelong Republican, but also consider myself a Green.

I had a look at the [League of Conservation Voters] website, and ... if the country totally followed [the LCV's] agenda, I am convinced that our economy would be experiencing zero or negative growth. I am also convinced that a major reason for the stagnation of major European economies, such as those of France and Germany, is the influence of Green parties.

I am also convinced that [Kyoto] is a flawed agreement, especially from the United States' point of view. The major issue is that China, India, Brazil and other major countries are not included, because those who wrote the treaty consider them underdeveloped countries. The argument is that pollution controls for these countries would weaken their ability to grow. By the same argument, pollution controls weaken the United States' ability to grow, and yet the United States is the driver of the world's economy. If the United States' economy suffers, the whole world suffers. I believe that it is time for the negotiators to go back to the table and produce an environmental treaty that reflects the real world.

In many other ways, I would agree with active environmentalists. For example, SUVs are not only more dangerous to normal cars on the open highways, their "truck" category, which exempts them from stringent gas mileage requirements, is ridiculous. I am also a strong proponent of alternative energy sources, especially wind and solar power. I must add, though, that many Green Democrats, as well as Green Republicans, are opposed to wind power if it is in their own backyard, such as Nantucket Sound.

F. DONALD HUDSON  
VERO BEACH, FLA.



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## SCHOOL HOSTS MULTIETHNIC CAREER PANEL

An F&ES career panel in March featured several multiethnic alumni/ae who shared their experiences as students and professionals in the environmental field. The aim of the panel, as well as a meeting the alums had with Dean Speth, was to strengthen professional networks that can be used to further diversify not only the U.S. student body and faculty at F&ES, but the environmental profession at large. The panelists were: bottom row, left to right, **Michel Woodard Ohly**, M.E.M. '01, Industrial Economics; **Russell Barbour**, D.F.E.S. '02, Vector Ecology Laboratory, Yale School of Medicine; and **Drena Howard**, M.E.S. '05, a member of the Multiethnic Student Association (MESA) and the moderator of the panel. Second row, left to right, **Olivia Carpenter**, M.E.M. '03, New Jersey Department of Environmental Protection; **Donald Chen**, M.E.S. '99, Smart Growth America; **Namrita Kapur**, M.E.M./M.B.A. '97, EcoLogic Finance; and **Ray Wan**, M.E.M. '01, Earthjustice. Top row, left to right, **John Perez-Garcia**, D.F. '91, College of Forest Resources, University of Washington; **Derik Frederiksen**, M.E.M. '02, Sealaska Environmental Services; and **Weslynn Ashton**, M.E.Sc. '03, F&ES Ph.D. program. **Gina Gutierrez**, M.E.S./M.P.P.M. '96, IBM, is not pictured. The event was co-sponsored by MESA and the offices of Alumni Affairs, Career Development, Admissions and the Dean. If you are interested in learning more about the school's diversity efforts, contact Assistant Dean Jane Coppock at 203-432-8980 or jane.coppock@yale.edu.

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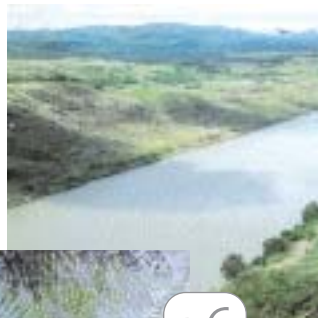
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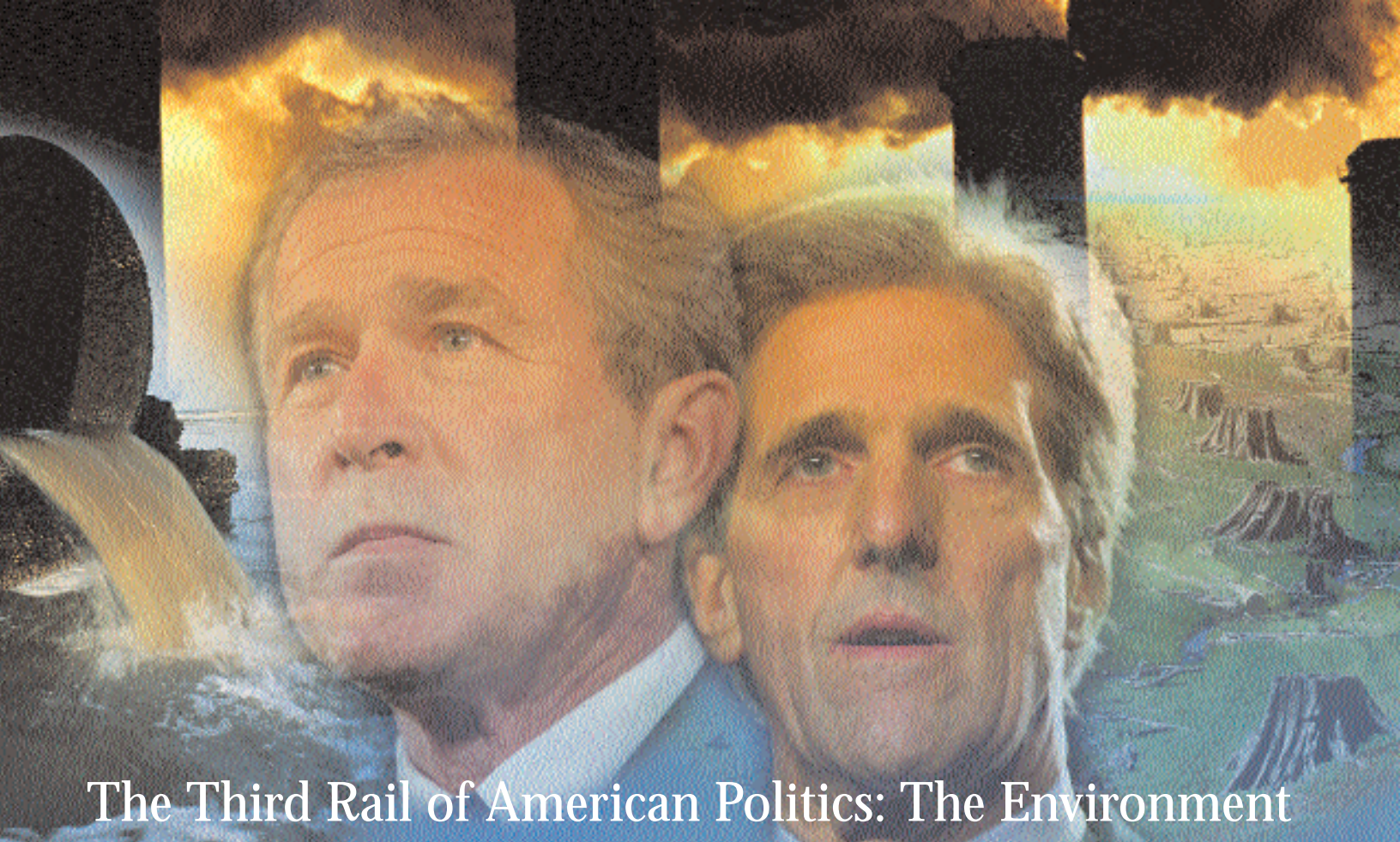
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# The Third Rail of American Politics: The Environment

## What the Presidential Candidates Aren't Talking About

By Alan Bisbort

**E**nvironmentalism as academic discipline, public policy matter, profession and movement has seldom stood at a more critical juncture. This year, in particular, the political philosophy of the two major parties toward the environment is wider than it has ever been. However, as we head down the homestretch of a presidential election, the environment as a political issue has been barely mentioned by the presidential candidates.

Adding to the urgency is the specter of monumental change being wrought by titanic issues like global warming, overpopulation, deforestation and species and habitat loss. Indeed, despite many noble efforts and laudable successes that have taken place since the start of the modern environmental

movement, it's becoming apparent that the decline of the global environment is very much a continuing reality. It is also arguable that many hard-fought domestic environmental gains are being undercut through shortsighted political partisanship.

This spring, F&ES sponsored a challenging series of public lectures under the heading "Politics and the Environment in the 2004 Election Year." Experts from across the political spectrum—policy makers, political advisors, politicians, pollsters and nonprofit environmental lobbying groups—were invited to share their perspectives with students, faculty and the public. A fascinating blend of issues and conundrums were raised by these freewheeling exchanges, as were a number of still unanswered questions.

We have put just a few of these questions to several members of the F&ES faculty in hopes of shedding light on the environmental challenges we face, as well as offering some

unique, even surprising suggestions for their solution. Among these questions were: What are the most pressing environmental issues being ignored by the candidates running for president? Why do these pose a particular urgency? Which environmental issues promise to demand attention in the next four years, regardless of who wins the election in November? Why is the environment given such a low priority as a political issue?

The respondents consistently cited some issues: global climate change, dwindling water resources and the need for a long-range national energy policy. Another consistent theme was personal responsibility. Politics and governments can do only so much. At some point, the people who inhabit this planet must change their behavior.

As Robert Mendelsohn, Edwin Weyerhaeuser Davis Professor of Forest Policy, said, "We're all environmentalists, all members of the world community. We need to convince



Stephen Kellert

“The government has a role, by offering an affirmative vision and connecting it to people’s quality of life.”

*Stephen Kellert*

people that it’s appropriate to make sacrifices. Start modestly, but start. We will have to do something eventually. The problems do not get solved by ignoring them.”

However, on the campaign trail, preaching personal responsibility and sacrifice may be courting the political equivalent of the Gulf of Mexico’s “dead zone.” As Lloyd Irland, Ph.D. ’73, a lecturer in forest finance and a senior research scientist, said, “Whoever got elected to anything by advocating carpooling, driving fuel-efficient hybrid cars, eating less meat and recycling cans?”

### **Global Threats Require U.S. Leadership**

A pioneer in the modern environmental movement, Dean Speth acknowledges past progress but looks ahead to the immense challenges facing the planet. In the 1970s, it was clear that decrying environmental abuses was one thing, addressing and redressing them another. To that end, Speth co-founded the Natural Resources Defense Council, and served as chair of the Council on Environmental Quality under President Carter before founding and leading the World Resources Institute.

Even though federal, state and local governments have taken large steps and garnered resounding bipartisan support in the past, the problems, Speth said, “have become deeper and truly urgent.” His new book, *Red Sky at Morning: America and the Crisis of the Global Environment* (see Bookshelf on page 22), offers a template for rethinking political strategies in the form of a “citizen’s agenda for action” that could serve as his answer to any or all of the above-mentioned questions.

“Global-scale issues absolutely require U.S. leadership to be addressed properly,” he elaborated. “It should be one of the highest priorities of government to take on these issues domestically and internationally. In the only major global concern with which the world has had success—protection of the ozone layer—the United States played a real leadership role. On every other issue, the United States—regardless of which party was in power—has been a foot dragger and sometimes an outright opponent. The Senate is a graveyard of a half-dozen unratified environmental treaties.”

Speth sees the three biggest global issues on which the United States needs to assert itself as climate change, biodiversity loss and the spread of toxic chemicals.

Similarly, Daniel Esty, director of the Yale Center for Environmental Law and Policy, cites four issues as being “fundamental to our future as a nation and a planet, none of which should be politicized”: climate change, integration of the environment into trade policy, domestic concerns about drinking water and a failure to proceed with progress on the residual effects of air pollution.

Mendelsohn also feels strongly that the United States must re-enter, if not once again take the lead in, the global-warming arena. “It’s one thing not to back the Kyoto Protocol, but to do nothing at all is unthinkable,” he said. “We have to be part of the equation. Maybe Kyoto wasn’t the answer. Perhaps we need a new and different Kyoto.”

Michelle Bell, an assistant professor of environmental health, has focused her research and teaching on the effects of pollution on human health.

“From a political and public perspective, environmental issues are sometimes couched in terms of moral decisions regarding protecting the ecosystem, or in terms of disasters,” said Bell. “While this is important, what’s missing is a discussion of the environment’s impact on our everyday health.”

With that in mind, she singled out key environmental health issues getting short shrift in political debates, including urbanization, conservation and climate change. “While the consequences of climate change may seem far in the future, their irreversibility and magnitude warrant more political action,” she said. “Among the ways global warming might impact Americans’ health in the near future are changes in malaria distribution and elevated ozone concentrations.”

### **Bemoaning the Loss of Bipartisanship**

Esty has seen all of these issues from every conceivable side, as a federal government policy expert (deputy chief of staff at the U.S. Environmental Protection Agency), former member of his

# Presidential Candidates



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Daniel Esty

“You need bipartisan support to accomplish anything. It is too easy to block an environmental agenda.”

*Daniel Esty*

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town zoning commission, task force director at the World Economic Forum and delegate to various world summits and forums.

While Esty, like Speth, does not discount America's environmental successes, the government, he said, is “underperforming,” and he places the blame on a “lack of leadership on both the Democratic and Republican sides. Both sides are playing politics and are not serious about governance. Real environmentalists, on the left and right, Democrats and Republicans, are making a *cri de coeur* about how things have deteriorated.”

While the environment as a political issue has assumed a higher-than-usual profile, Esty is disappointed that it is not resonating any louder than it currently is.

“It's striking how little a role the environment has had up to this point in this campaign,” Esty said. “Maybe it's a sign of how we've become ruled by polls. There is a very politically polarizing climate around the environment, which is deeply troubling. You need bipartisan support to accomplish anything. It is too easy to block an environmental agenda. On the other hand, it's very hard work to put together workable proposals.”

Stephen Kellert, Tweedy/Ordway Professor of Social Ecology, is a longtime Yale faculty member who has concentrated his research, writing and teaching on the interaction of humans and the natural environment. He is dismayed that the environment has lost bipartisan appeal as a political issue.

“That was the environmental movement's strength for a long time,” he said. “In terms of presidential politics, the first person who comes to mind is Theodore Roosevelt, the second is Franklin Roosevelt and the third is Richard Nixon.”

The one-sided, and somewhat strident, nature of the dialogue on the environment today was partly, he said, “self-inflicted by the environmental community.”

“There's a deeper dimension of the public's *ennui* about the environment,” he said. “Environmental issues have been presented as a negative proposition, emphasizing the problematic and a scale that defies the ability of individuals and even societies to get their arms around. Second, the message is almost apocalyptic. These things are contextual and enter the psyche in a subtle way, and I think that rather than offering an affirmative vision of how a positive relationship to the environment enhances the quality of our lives and our society as individuals and as groups, we've mostly been given the impression that there are all these bad things happening. That's unfortunate.”

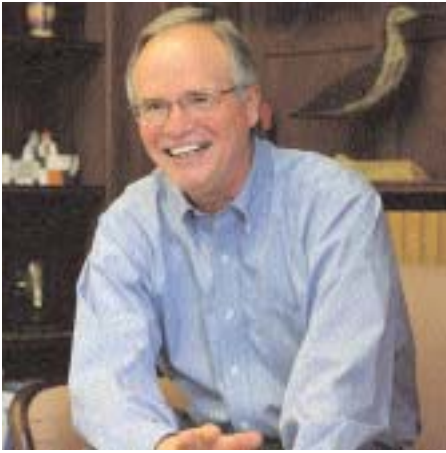
Bradford Gentry is a senior lecturer in sustainable investments and co-director of the Yale-UNDP Collaborative Program on the Urban Environment whose expertise is in strengthening the links between private investments and improved environmental performance.

“In an election you can appeal to a broader sense of community in many people,” said Gentry. “But elections are won by appealing to people's pocketbooks.”

Voters are affected by any number of issues that they may not directly associate with “the environment,” said Gentry. These include traffic, sprawl, availability of water, West Nile virus, asthma and other health problems that children may face due to idling school buses. Voters are also concerned with how the government deals with “energy security aspects of fossil fuels and a sustainable energy future,” he said.

Gentry sees the “growing absence of bipartisanship at the federal level” as “part of a deeper tension. ... It's no different than why we're so unilateralist globally. From my work on partnerships, I've learned that you get a lot more done if you can figure out how to combine and optimize.”

Mendelsohn has focused on assessing cost values for the environment and sees that as, ultimately, a way to reduce political partisanship. “Policy is analytically driven. Fact, not whim or emotion, is the guiding principle. We now know the cost, both for abatement and the damage caused by pollution, if we do nothing at all. Now we can weigh that when making policy. When a good case for a public policy has been made, science and economics both have played a part. In this regard, there has been a tremendous change since the 1970s.”



Dean Gus Speth

“Global-scale issues absolutely require U.S. leadership to be addressed properly.”

*Dean Speth*

### **Personal Responsibility Touchstone for All Things Environmental**

In his course work on environmental ethics, values and design at Yale, Kellert has made efforts to offer a more affirmative vision for the future, one that takes into account personal connections and responsibility.

He explained: “If people believe that they can incorporate the experience of nature into their lives and it makes a difference in the value of their lives—their adaptability, productivity and health—and ways are presented about how this can occur, then you’re hitting people where they live.”

If the environmental failures of the current administration have a silver lining, noted Kellert, it’s that people realize that the government can’t do everything.

“The government has a role, by offering an affirmative vision and connecting it to people’s quality of life,” said Kellert, though he offers a cautionary note about the government’s role in the past. “The approach to tackling environmental problems was viewed as regulatory in nature, that government imposes requirements that others have to meet. And as a consequence, it seemed imposed by both the government and an elite.”

He cites the Endangered Species Act as something that may be obsolete, saying, “The one thing we haven’t done in the endangered-species arena, and why I don’t think it’s worked very well, is that we haven’t made a good case for why endangered species and biodiversity are relevant to peoples’ lives, why endangered-species protection and restoration add value and meaning to peoples lives. There has been a disconnect.”

Lloyd Irland, a lecturer in forest finance and a senior research scientist, is guarded in his estimate of what the federal government can really do. He sees the real power residing in the people—through their everyday decisions.

“Somebody should be talking about how changing our individual behavior can contribute to a cleaner environment,” he said. “But politicians are not known for urging voters to act responsibly. Somebody should also be talking about reducing subsidies to sprawl.”

Gordon Geballe, associate dean for student and alumni affairs, agrees that personal connection has to be a component if the environment is to have any lasting political impact. He would like to see a candidate with a vision, and the ability to articulate it without hectoring or preaching, about a “new America” where “personal responsibility” becomes a touchstone for all things environmental.

“This sort of message could, if done properly, resonate with both liberals and conservatives,” he said.

### **Amazon River Development Threat to Freshwater Resources**

Visiting Fellow John Forgach has focused on one issue that serves as a cautionary tale and a reason why the United States needs to reassert its global leadership on environmental issues. Though it has an unlikely and faraway origin—a dramatic change in government in Brazil, where the left-wing Luiz Inacio Lula da Silva won the presidential election by a landslide in 2002—the issue has the potential to profoundly affect all of North America.

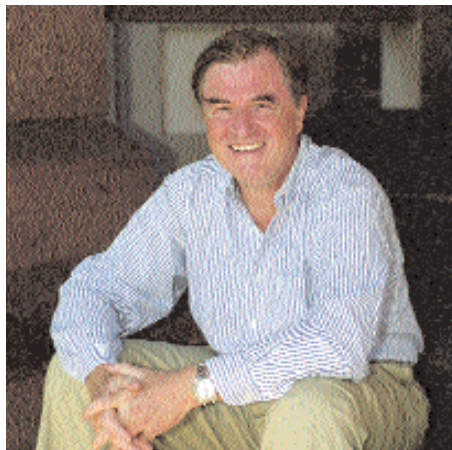
President Lula is resurrecting a full-scale infrastructure development plan in the Amazon River watershed. The 40-year-old proposal was originally presented by the military but abandoned as too invasive and costly. Theoretically, the plan would result in the production of 28 million tons of soja (soybeans) in a southern Amazon region that now produces 1 million tons. The area is particularly sensitive in that, said Forgach, one-fifth of our planet’s fresh water is found in the Amazon watershed. These freshwater resources are “already diminishing.”

“(Brazil’s plan) implies a violent deforestation to accommodate the new extensive plantations, displacing indigenous dwellers into the growing city slums, destroying biodiversity resources and promoting further gaps between rich and poor,” said Forgach.

The high-tech agricultural methods needed to implement this plan—what Forgach calls “replacing old-growth forest areas with extensive short-cycle plantations”—are already being funded in Brazil and elsewhere by the World Bank.

In order to transport the massive quantities of soja, a water transportation system would have to be dramatically expanded, necessitating the flooding of fields now tilled by traditional agriculture methods. Other plans call for constructing two giant hydroelectric plants that would also flood

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John Forgach

“The ecological disruptions to [the Amazon] should be of immediate concern to the United States.”

*John Forgach*

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extensive old-growth forest areas, and paving the 800-kilometer Cuiaba-Santarem highway through the heart of the Amazon rain forest.

Taken in its totality, the project would, said Forgach, “expose this key ecosystem of the planet to unprecedented stress.”

How this plays out in the American political arena is of vital importance to how, or even whether, this project is given the proper oversight or discussion it has so far not received, though it—one of the most massive invasions of natural habitat in human history—is about to begin. Because the government is experiencing financial woes, the initiatives are being carried out by the private sector in a total vacuum of government supervision and control. Forgach calls it “no-man’s-land law.”

Though the current administration, in Forgach’s view, seems oblivious to the potential negative impact of these development projects on the largest nation in Latin America, there would also be negative consequences for U.S. interests. “The ecological disruptions to a major watershed in the world should be of immediate concern to the United States,” he said.

With that in mind, Forgach and his students conducted a study last fall on how the Brazilian government, with some outside help, might build a conservation trust fund in order to properly address these issues in the Amazon.

“The project will be presented to the Brazilian government this spring,” he said. “It is clear that some interest from the U.S. government to help support such mitigating solutions would be most useful.”

## Improve America’s Cities

Geballe, who has focused his research and teaching on urban ecology, reserves his loudest pitch for policies to improve America’s cities, though he also singles out pressing issues like energy (conservation, incentives for hybrid vehicles and wind power) and health (reducing toxic substances and air and water pollution as they impact Americans in everyday life).

“As a species, we’ve always liked cities and many of us now live in cities, so they must be a good invention. They offer the globe right at our doorstep, the only places where cultures really mix,” he said. “But it’s easy to badmouth cities, for two reasons. They have easy negatives, like a perception of crime, dirt and panhandlers, and American xenophobia feeds into this. Plus, they go against this romantic vision of America’s rural past. There’s this false myth that the farmer and the cowboy—the rural type—are the original Americans. Boston, New York and Philadelphia are the places from which this nation grew. The roots of American culture are in the cities of the East.”

The paradox to Geballe is that politically it makes sense to tout cities and promote their health. And in doing so, many of the nation’s environmental problems could be addressed. Not only would more people be more likely to want to live and stay in healthy cities, the exodus to the suburbs and exurbs would slow, reducing the pressure on dwindling open spaces and farmland. Cities with commercial vibrancy would also eliminate the sprawl associated with malls. Perhaps most importantly, healthy cities would solve transportation and national energy problems.

“Much of our energy problem is related to transportation,” he said. “Other things are set in motion. We know how to build energy-efficient buildings and safe refrigerators and so on, but we’ve blown it on transportation. With improved intercity and intracity transportation we could reduce fossil fuel use and promote national security by reducing the need for foreign oil.”

Bell said that the percentage of the population that lives in urban centers is increasing, in both the industrialized and developing countries. In the 1950s, half the U.S. population lived in cities; today that number is close to 80 percent (including suburbs). “Providing clean air and water for a concentrated and growing population is a challenge that is best addressed at the early stages in urban planning rather than through retrofitting,” she said.

Mendelsohn said urban pollution is an issue that desperately needs attention. “Air pollution is not the same everywhere,” he said. “It wavers anywhere from 10 to 1,000 times worse and more harmful



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Michelle Bell

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Gordon Geballe

© Dana Keeton



William Burch

to health in cities than in rural areas. The rule for the Northeast Corridor is not the same as that for the Rocky Mountains. We need to go to greater lengths to tighten city air rules.”

The use of energy-efficient technologies, according to Bell, is among the cheapest and easiest ways to reduce environmental degradation and associated adverse health impacts. She also sees a political “disconnect” between the scale of health woes caused by environmental degradation and actual public policies. She cites statistics that suggest that as many as 100,000 American deaths are caused by air pollution each year, and as many as 350,000 hospitalizations for asthma occur each year.

Geballe would like to see cities “promote sound environmental management” as a way to get people to return. “By environmental, I don’t just mean clean air and water and more parks, but in the urban sense, an environment where crime is down and job opportunities are up,” he said.

William Burch, the Frederick C. Hixon Professor of Natural Resource Management, vociferously agrees with Geballe on the need to reclaim our cities. Burch has worked for both the federal (USDA) and state (Connecticut DEP) governments, and has held research positions with the National Park Service. Though his career has included work in natural areas from Asia to South America, it was his work in American cities like Baltimore that convinced him that urbanization is the most pressing environmental issue the federal government faces. Frustratingly, he said, it has been “ignored by the presidential candidates.”

“For the first time in the history of our species, the primary habitat for the majority is in urban places,” said Burch. “The growth rate is highest in developing regions of the Southern Hemisphere, but in the United States the edge city, sub- and exurban sprawl cities are further concentrating us into a new kind of urban life. Though metro regions around aging core centers are growing, they leave behind a tremendous capital investment in infrastructure while filling in farm, pasture and forest in the exurbs.”

He cites Baltimore, whose intact infrastructure can serve 1.5 million people but whose population has dropped below 700,000. As people fled Baltimore for the suburbs, Baltimore County had one of the world’s highest rates of deforestation. This “flight,” according to Burch, “put great stress on biophysical ecosystems, increasing congestion, frustration, anger, loss of time and loss of community and kinship ties.”

He understands the flight that “creates an ever-expanding urban sprawl,” spurred by the desire for a detached home, good schools, etc. But the realization of this goal requires two incomes, long commutes, home maintenance, “highly suspect” sewage systems, lawn fertilizers and chemicals that get into streams, consumption of land and time.

“And people wonder where it all went,” said Burch. “There is no attention to these environmental issues, such as how to design, develop and maintain livable urban areas that come close to meeting the desires of these spread-out populations.”

And equally ignored are the “leftover” urban centers in older industrial cities (like Baltimore), and the people who still live there. Burch finds it ironic that those on the ideological left and right haven’t ventured near these issues.

“Yet, true conservatives would wonder at the waste and loss of ‘culture,’ and true liberals would wonder at sustaining permanent populations of the poor in environments often devoid of hope. ...Those places of once-great pomp and power, the first homes of hope for our immigrant society, are no longer given a place of promise in our political discourse.”

### Revamp Land-Use Planning

Mark Ashton is a professor of silviculture and forest ecology as well as the director of Yale Forests. From his perspective, the most pressing issue—rather, the most desperate need—in the way of public policy and governance is a complete revamping of land-use planning across the nation.

“As it is, land-use planning is either nonexistent or inappropriate,” he said. “Some towns have no zoning whatsoever, other towns have the most minimal zoning regulations. But what is really needed is consistent regional regulations to halt forest fragmentation and to protect the water supplies and air quality and moderate the local climate in a long-term way. That is, plans implemented for the greater social good.”

# Presidential Candidates



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Mark Ashton

**“If you’re thinking about foreign aid and causes of poverty in the developing world, you have to look at water.”**

*Brad Gentry*



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Brad Gentry

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Several things stand in the way of realizing such a common-sensical goal in the United States, which Ashton said lags far behind most other Western nations in this regard. Among these are the seemingly sacrosanct issue of property rights, the pressure from powerful highway and automotive lobbies and, more generally, an ostrich-like failure across the social spectrum to see that current land uses are not sustainable.

“I am a firm believer in private property rights, but there are issues that transcend them, such as protection of air and water quality and intact, nonfragmented forests,” he said. “People want forests to look at but they don’t want to manage them. They don’t want forestland harvested. They have mythical ideas about forests that are divorced from reality, even though they sit on wooden chairs and write on paper and so forth. But they don’t realize that society’s welfare is intimately tied to how it uses its forest and farmland. The landscape has also changed, from a rural character that had a beautiful cultural impact to strip malls, fragmented suburbia and large houses.”

Such wasting of viable forest and farmland, due mostly to poor land-use planning, brings up two related issues, according to Ashton. The first is that this trend, if it continues, will debase American culture in the long run. And second, it feeds into the NIMBY (not in my back yard) syndrome.

“People are divorced from their connections with nature, with where their food, energy and resources come from,” he said. “It’s handed to them in little packages, and they have no ability to understand that because agriculture is so hard to sustain locally, for example, they get their produce from Midwestern factory farms or overseas. Or because they aren’t willing to pay for forestry to be practiced locally, they are willing to see Siberia exploited or the Amazon’s mahogany exploited.”

Speth singles out the destruction of the American landscape, everything from sprawl to damage of watercourses big (Everglades) and small (the neighborhood creek). To dramatize, he cites statistics such as the loss of 99 percent of America’s original tall grass prairie, 95 percent of the original primary forest and 50 percent of the wetlands.

While he admits that the federal government can’t do anything about landscape destruction, since most land-use laws are at state and local levels, he insists Washington can, and should, do a lot more in the way of “creating protected areas, putting real resources behind things like conservation easements and giving tax credits to those people who keep their land open.” Two other issues Speth would like to see addressed on the domestic front are the creation of a viable national energy policy and the decimation of our fisheries. Regarding the latter, Mendelsohn suggests issuing permits for a fraction of the fish harvest. “There are too many boats chasing too few fish.”

## **Invasive Species a Threat to Ecosystems**

Ann Camp, lecturer in stand dynamics and forest health, has helped shape public policy through her research on sustainable patterns of late-successional and old forest habitats in fire-regulated landscapes.

To her, the most pressing issue is one that is almost completely ignored—the impact of invasive species on ecosystems.

“The issue spans many areas: human health, biodiversity, habitat loss, fire and economics,” said Camp. “Only 4 percent of the containers entering U.S. ports are scrutinized; this is one major vector for invasives to get here. Another vector is the horticulture industry that resists efforts to regulate the sale of known problem plants. It’s big from a forestry perspective. Dutch elm disease, chestnut blight and white pine blister rust are all exotic pathogens that have impacted our forests. Others are on the way.”

Camp does not ignore the big picture. “Climate change ties into this,” she said. “But invasive species have been said to be the second-greatest threat to biodiversity loss in the world. Global climate change and water scarcity are also going to create conditions that will allow invasive species to play ever-increasing negative roles. We are sometimes so busy with the big picture, where nothing



Ann Camp

“[Eco-industrial parks] are systems designed so that one company’s waste becomes feedstock for another company located nearby.”

*Marian Chertow*



Marian Chertow

can really be done, that we forget the smaller picture. Even with things like climate change, you hear it is going to be a problem, but you don’t really hear about the mechanism, which for me are things like increased insect outbreaks.”

The government, in Camp’s opinion, could have an impact on invasive species despite the obstacles posed by climate change and water scarcity.

“There are things that could be done. Many involved with invasive species have long been saying that there needed to be more scrutiny about what is coming into our ports, but it wasn’t until 9-11 that anybody paid attention. The horticulture industry has been effective at keeping states and local municipalities from passing laws that restrict the use of plants that present the most egregious problems. You can still purchase autumn olive and purple loosestrife, both invasive plants, and put them in your garden.”

### Address Water in Foreign Aid

Regardless of who wins the White House or a majority in Congress, the issues that will demand immediate attention, in Gentry’s view, have to do with energy and water. Water is more than just an environmental issue; it’s linked to national security.

“If you’re thinking about foreign aid and the causes of poverty in the developing world, you have to look at water—access to water, cleanliness of water and diseases resulting from contaminated water. Targeting water in foreign aid programs is incredibly important. It’s not as though we don’t know how to get people clean water.”

However, the U.S. government is now at a standstill on this issue.

“That certainly links to the work I’ve been doing on private investment and the environment,” he said. “There is great controversy about what governments should do, what companies should do and what NGOs should do. It all gets back to basic good governance and transparency; it’s about governments having the will to do what should be done, in terms of actually giving people the means to access this water, and about governments knowing how to regulate and businesses responding to customers.”

Gentry also envisions the government playing a vital role in helping to foster efficient, cleaner energy use and production, which is growing worldwide at an annual rate of 25 percent.

“Part of that is being driven by state-level requirements that utilities purchase an increasing percentage of their load from renewables. This is a successful case of how government can intervene in the market in ways that businesses can run with.”

While Gentry sees opportunities, he is also aware of the dangers of turning complete control over to the private sector. “You need to articulate your goals and you need to stay on top of monitoring whether those goals are met. And you need NGOs to push people to do things.”

### Circular Economy Good for Environment *and* Bottom Line

Marian Chertow, assistant professor of industrial environmental management, has focused her considerable experience in government and at Yale on forging “a marriage” between technology and ecology. Her main thrust is industrial ecology, which applies ecological concepts to the organization and operation of industry. In short, she prods students and business leaders into “thinking ecologically” —the title of a book she co-edited with Daniel Esty.

Among the sorts of projects Chertow would like to see the government encourage are eco-industrial parks.

“These are systems designed so that one company’s waste becomes feedstock for another company located nearby,” she said. “In dry areas, like the western United States, a power plant, which needs lots of water to operate, could sit next to a sewage treatment plant, and they could swap. An added benefit is that water treatment plants don’t move to China or India.”

She cites the successful example of a Connecticut power plant that sells its residual steam to its neighbor, a plant that manufactures cardboard. Or another example of a waste treatment plant that sells its sludge to its neighbor, a plant that manufactures wallboard, which can safely incorporate the sludge in its product.

# Presidential Candidates



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Robert Mendelsohn

“[Crop] subsidies haven’t enriched farmers and they’ve created massive pollution.”  
*Robert Mendelsohn*



© Amy McCaslin

Lloyd Irland

CONTINUED from page 9

This circular economic model not only utilizes a product that was formerly wasted, it eliminates transportation costs (lessening pressure to build roads, cutting fossil fuel use, etc.) and reduces the level of potential pollutants in the ecosystem.

“China has officially adopted the circular economy as its model,” she said. “But the economics of this should be attractive to any profitable company. You save money, become more efficient and increase the bottom line.”

Chertow is concerned that the United States is faltering in this area. “The environment is not a useful topic in the political arena right now. It’s polarizing and that is damaging, especially if it scares off the business side. As major players, businesses need to be part of the process and solution. The environment is consistently high up there on the list of things Americans care about, but we have this divide, and it is not helping American businesses. Toyota, for example, is already two generations ahead of us on hybrid vehicles. The government may be ignoring these sorts of things now, but businesses are well aware of them,” she said

Chertow sees encouraging signs from her Yale perch. For the third year in a row, she has taken a group of students to Puerto Rico to consult on industrial projects and to promote the circular-economy concept. On their recent trip this March, they worked as consultants at four specific sites: a closed Navy base, a planned port, an airport that is being revitalized and a brownfield, an abandoned, polluted industrial site next to a power plant.

Though she works with the big picture of systems and industrial processes, Chertow realizes most Americans think smaller scale when they think environment.

“Choosing safe household cleaning agents or safe food are people’s contact points with the environment,” she said. “Reaching out to the moms of America is a good way to cross the partisan divide. We need to find the commonalities that exist, because we all want what’s best and safest for our kids.”

David Skelly, professor of ecology, believes that some of these changes can be made, in part, through personal and business incentives.

“The other way environmental issues are connected is the increasing realization that successful environmental regulation needs to incorporate incentives for participants,” he said. “The old stick-only approach is being joined by many different sorts of carrots, from transferable quotas in fisheries and energy to habitat conservation plans.”

Chertow sees industry as “a key environmental actor” in the expertise it can bring to business processes so that they integrate sustainable environmental management techniques.

“There is such a thing as probusiness environmentalism that the Republicans could do much more with,” she said. “Providing incentives to encourage more sustainable business practices could have a great impact. Transportation, for example, is a key driver that is ignored as an ‘environmental’ issue, and yet probably 90 percent of the things that go on in the modern world that directly impact the environment, like transportation, are never thought of in that way.”

To promote these goals, Gordon Geballe would like to see more federal financial programs for the redevelopment of brownfields.

“You get two for one when these sites are restored,” he said. “First, you eliminate what is a public eyesore and, second, you get the property back on the tax rolls. This can be done with tax breaks and grants and low-interest loans.”

## No Justification for Crop Subsidies

One incentive that Mendelsohn would like to see eliminated is the crop subsidies given by the Department of Agriculture.

“The subsidies haven’t enriched farmers and they’ve created massive pollution,” he said. “There was no justification for the government doing this. The market would have forced farmers to adapt or innovate to stay competitive. The fear of removing the subsidies now is that farmers will lose everything.”



David Skelly

“The next government will need to deal with [genetically modified organisms] from both environmental and food-safety standpoints.”

*David Skelly*

To address that, he suggests letting the poorest farmers, with incomes of, say, \$25,000 or less, keep the subsidies. All others should be cut.

“It would immediately make an impact on the deficit by returning \$70 billion to the USDA,” he said. “It would eliminate the environmental damage caused when factory farms, trying to meet quotas to qualify for subsidies, blanket hundreds of acres with powerful fertilizers. Once we stop paying to have bad things happen, we can decide what to spend our money on.”

Mendelsohn would like to see the government discard the belief that our national forests are only to provide timber. Many areas of timberland have little or no timber value and he believes they should be set aside as conservation areas. He would like to see large government-owned forest tracts in northern California and the Rocky Mountains set aside for this reason.

### Population Growth Cause of Crisis

Skelly observed that one of the big challenges in dealing with environmental issues is that so many are intertwined. This is exacerbated by the fact, he said, that the United States, among many other places on a planet with 6 billion inhabitants, is becoming “crowded.”

“What Jefferson and others viewed as inexhaustible in the way of natural resources has now reached the point where decisions by local, state and federal governments could put us on trajectories that may have profoundly negative, long-lasting consequences for a large fraction of Earth’s surface. We need to communicate to the public the nature of the alternatives and their overall benefits.”

Irland thinks population control is a “huge” long-term issue that no one is talking about. “I see population growth as a contributing cause to much of the developing world’s environmental crisis. Past Republican administrations have hidden from this issue because conservatives oppose family planning, and Democrats have done little better.”

Genetically modified organisms (GMOs) present another environmental challenge, according to Skelly, and one that no candidate has addressed.

“The next government will need to deal with GMOs from both environmental and food-safety standpoints, he said. “The issues are complex because there is little scientific understanding of the environmental impacts, and the issue of food safety has become highly charged.”

Other political issues that Skelly believes demand attention in the near future: Americans have the mistaken notion that “conservation is a tropical issue. Since most Americans do not see rain forests outside their doors, they assume biodiversity loss is not a critical issue for the ecosystems they live in.”

He said that conservationists in the United States tend to want to lock up places and prevent public use and access. “We will not enjoy public confidence without involving the public in the natural world to the greatest extent possible.” Many Americans have become cynical about conservation movements because they often seem, and in fact often are, NIMBY efforts. “This is another byproduct of our increasingly densely settled society. As a consequence, all local conservation efforts are painted with the same brush by those skeptical of the true motivations of conservation proponents. This is unfair and damaging.”

Finally, environmental groups, and environmentalists in general, would do well to do some soul-searching, said Kellert, as we face the daunting challenges ahead.

“They spent a lot of time legitimizing themselves, making their case in scientific and economic terms,” he said. “In the process, they forgot that they themselves and the public became involved because of a deep emotional and ethical dimension that we often underestimate. We dismiss something like loving whales as trivial, not realizing that whales are symbolic of something deeper.”

That, indeed, may be the bottom line for politics and the environment in the new millennium.

While William Burch agrees with most of the experts cited above, in that academics and politicians should spend time talking about global climate change, stretched food chains and loss of biodiversity, he worries that these have become “abstractions.”

“When the cause is ‘all of us,’ there are no politics to be made,” he said. “These big issues miss the human condition and scale, and therefore the politicians can easily escape exploring the reality that the majority of Americans face.” **EY**

# Politics and Environment

## Lecture Series Brings in Distinguished Speakers



“It’s easy for people  
to become  
complacent because  
changes in the  
environment  
happen slowly.”

*Al Gore*

**F**ormer Vice President Al Gore urged Yale students to become activists for the environment in a speech to 1,100 people at Battell Chapel in April. “The only way it’s going to change is if you decide you want it to change.”

Gore said it is easy for people to become complacent because changes in the environment happen slowly. He also said the Earth is so big that it is easy to think humans cannot harm it. But in his presentation, Gore showed that temperatures, polar ice cap melting and pollution have increased rapidly over a short period of time. At the same time, the human population has exploded around the globe, increasing pressures on natural resources.

“This is a crisis that has an unusual sense of urgency attached to it, and we should see it as an emergency,” he said.

Gore’s talk was the highlight of a student-initiated course and associated lecture series titled “Politics and the Environment in the 2004 Election Year,” which brought many distinguished speakers to F&ES this spring, including Congressman Christopher Shays (R-CT), Robert Kennedy Jr., Deb Callahan, president of the League of Conservation Voters, Nathaniel Reed, former assistant secretary of the Interior for Fish and Wildlife and Parks in the Nixon and Ford administrations, and John Podesta, Clinton White House chief of staff, as well as prominent Democratic and Republican pollsters. The student-initiated course was developed in response to concerns about the absence of environmental issues in mainstream political discourse, and to explore the future role of the environment in U.S. politics.

Dan Glickman, former U.S. secretary of agriculture and current director of the Institute of Politics at Harvard, presented the first lecture in the series. He said environmentalists are partly to blame for the low priority given to the environment by Americans. “National environmental groups have gotten fat, lazy and comfortable.” Rep. Shays noted that a bipartisan effort is necessary to restore and protect a healthy environment. “We must reach beyond the Democratic caucus. Success in the past has come when there [have been] substantial number[s] on both sides who want environmental progress.” Podesta said a vision of a cleaner environment, prosperous economy and country at peace is grounded in faith. “[T]here’s a tradition of faith in public life. ... And it’s a tradition that not only calls on each of us to stand up for the dignity of others, but requires us to act as responsible stewards of this Earth.”

**The series was organized by F&ES lecturer Jim Lyons and students Heather Kaplan '04 and Kathleen Campbell '04.**



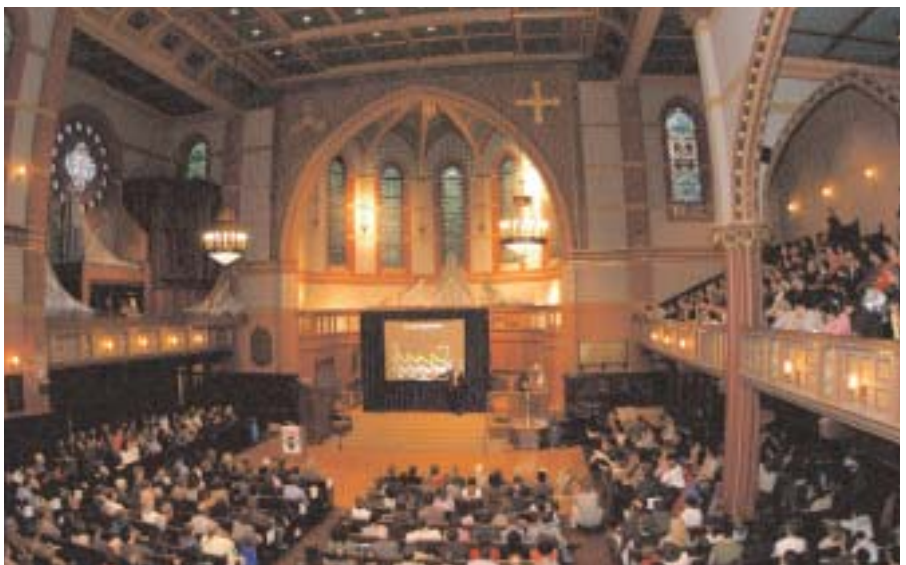
photos left to right: Heather Kaplan and Kathleen Campbell

“We must reach beyond the Democratic caucus. Success in the past has come when there [have been] substantial number[s] on both sides who want environmental progress.”

*Christopher Shays (R-CT)*



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Top left clockwise: Congressman Chris Shays (R-CT); Deb Callahan, president of the League of Conservation Voters; and John Podesta, left, former chief of staff in the Clinton administration (with F&ES lecturer and series organizer Jim Lyons) gave lectures as part of the series on Politics and the Environment in the 2004 Election Year; Heather Kaplan '04, Al Gore, Kathleen Campbell '04 and Dean Speth; and Gore delivers lecture to a full house in Battell Chapel.

# How Wild Should Wildfires Be?

“Today we are seeing fire that is exceeding our capabilities to model them with our most sophisticated tools.”

*Mark Rey*

**By Marc Wortman**

**Drawing on fuel loads accumulated over nearly a century as well as extended drought conditions, wildfires have been burning hotter and more widely than ever. With soaring population growth in the wildland-urban interface, so have the political firestorms they touch off. Forest and fire-management experts at Yale are trying to bring both kinds of fires under control. Even if they succeed, dangerous wildfires will continue burning for years to come.**

In the summer of 1988, America caught fire. Literally. Wildfires went out of control in the greater Yellowstone region, scorching 1.4 million acres, including more than a third of the national park itself. That put the nation on notice that its forests might be tinderboxes waiting to ignite. Over the next decade and a half, forest fires sparked a continent-wide conflagration.

No part of the country was spared, with an average of some 4.3 million acres burning each year—about a third more than the total landmass of the state of Connecticut. The fires seemed to be getting worse, or at least the damage they caused did. Two years ago, major wildfires threatened and darkened the skies in population centers in Arizona, California, Colorado and Oregon. The Double Trouble State Park fire burned 1,400 acres in New Jersey’s Pinelands, closing a 24-mile section of the Garden State Parkway. A drop in the bucket in a year when just under 7 million acres burned.

Then last year apocalyptic images of walls of flame bearing down on homes and people appeared at the top of the daily national news. In October at least 13 major fires covering 800,000 acres in Los Angeles, San Bernardino and San Diego counties in California killed 24 people, displaced 120,000 and destroyed 3,600 homes. Property damage was estimated at \$2 billion, putting the fires on a par with the devastation from major earthquakes and hurricanes, catastrophic events for which the nation is far better prepared.

“Today we are seeing fire that is exceeding our capabilities to model them with our most sophisticated tools,” says Mark Rey, undersecretary for natural resources and environment in the U.S. Department of Agriculture. “We see firestorms generating their own weather system, not unlike in Dresden during the firestorm set off by bombing in World War II. That’s not normal in the ecological system.”

Most forestry experts agree that the wildfires have resulted from a combination of conditions enabling what some term the “perfect wild firestorm.” But they disagree sharply on what to do about them. If consensus cannot be reached on ways to douse the flames, catastrophic wildfires of unprecedented scope will continue to reshape the landscape for decades to come.

## **A Tinderbox 70 Years in the Making**

“Wildfire is not an aberration,” says Rey, who is responsible for overseeing much of the 250 million acres of federal forestlands around the nation, including lands under management of the Forest Service. Fire, he explains, has been “a natural component” within the forest ecosystem for more than 400 million years, when the first charcoal appears in the fossil record. Many forest and range plant species are fire-adapted. For instance, some of the lodgepole pines (*Pinus contorta*), which make up extensive portions of Western forests, have serotinous cones that are sealed by resin until the intense heat of fire cracks the bonds and releases the seeds inside. Seedbeds are nourished by ash from ground fires. Other species, including a variety of sage brushes, grasses and prairie plants, depend on fire for their life cycle. While vast, high-intensity fires have made news, they are not new or uncommon. Even today, conflagrations of enormous proportion burn in the boreal forests of Alaska, northern Canada and Siberia, in some cases charring half-a-million acres at a time. “They just get less attention than 500,000 acres burning between Denver and Boulder,” Rey says.



Fire is a part of nature. It is also part of human culture. “To talk about ‘natural’ fire is a misnomer unless you talk about humans as part of the natural cycle,” says Ann Camp, a lecturer in forest stand dynamics at the School of Forestry & Environmental Studies (F&ES). She teaches a course on fire science and policy, and studies the dynamics of old-growth forests in the context of fires as well as fire-policy issues. She points to Native Americans who have used fire to manage forestlands for more than a millennium. “They used fire to create widely spaced oak forests,” says Camp. “The thick bark allowed the trees to persist in fire. That way the Native Americans could see animals and enemies approaching through the forest.”

Prescribed burns—deliberately ignited fires intended to burn off excess ground growth and unwanted and diseased trees—were set and contained by settlers throughout American history. Such burns are a standard tool used by foresters to reduce fuel loads and to allow old-growth trees to thrive. As part of the curriculum, Camp’s class carries out a well-planned, two-acre prescribed burn in the Yale-Myers Forest (see “Fire: A Hot Topic and a Course,” *Environment: Yale*, Fall 2002). Ironically, given the heavy fuel loads that have built up in forests, prescribed burns have become dangerous in some parts of the country, and several major wildfires the prescribed burns were intended to prevent have been ignited inadvertently. “Fire is a component of forest health,” says Camp, “but fires are now burning under the worst conditions.”

Although fire has always been a part of the ecosystem and humans have used it for their own purposes as well, “the fires we have today are not natural,” Rey insists. “They burn with much more intensity and move with greater speed, burning much larger areas and with much more destructive effect because of their much greater intensity.”

A major source of the problem is widely acknowledged. Just as human introduction of fire influenced forest dynamics, human suppression of fire has also changed their character. A long-standing government policy contributed to the conditions that make today’s fires burn so intensely. Starting in the 1930s, the Forest Service sought to contain fires in all lands under its management. “They called it the ‘10 a.m. rule,’” says Camp. “Every fire out by 10 a.m. the next morning. That was the paradigm many people in the Forest Service grew up with.”

The 10 a.m. rule was part of a Forest Service mandate to aid the timber industry in extracting maximal numbers of logs from federal lands without regard for sustainability. Roasting a valuable natural resource did not appeal to a growing nation. Wildfires in rangelands as well as forests burned 140 million acres annually in preindustrial days. That dropped to 30 million acres a year in the 1930s and to between 2 million and 5 million by the 1960s. “In some places preventing fires did an awful lot of good,” says Chad Oliver, Pinchot Professor of Forestry and Environmental Studies and director of the Global Institute of Sustainable Forestry at F&ES. “A lot of towns could have burned, watersheds and water supplies could have been wrecked and the quality of wood as a usable resource would have been ruined.”

Virtually every fire outside of Alaska that could be stopped, though, was. That policy continued even when logging decreased dramatically and forests regrew, particularly in the western United States where the decline in timber industry activity and cattle grazing also extended forests into former rangelands. “A one-size-fits-all, stop-fires-everywhere policy,” says Oliver, “was a big mistake. We’ve been telling people that these

forests are going to burn for decades.” Instead of fires burning away small growth at the ground along with weak or diseased trees, all fires were put out, even in wetter weather when the damage from a fire might have been limited. Brush and dying trees started to accumulate.

Although large trees may require hundreds of years to reach maturity, smaller trees spring up rapidly. The fire-suppression policy created dense, complex forests with thick undergrowth and closely spaced trees with a mix of species and sizes. The uniformly crowded forests reduced the available habitat for various birds and other species that depend on greater room among trees and access to the ground.

Insects and disease also spread rapidly among tightly packed trees, leading to epidemics and widespread die-offs of trees, further building up dead materials in overgrown areas. Then drought arrived in the West nearly a decade ago. The parched landscape made plants and trees more brittle and dried out dead materials. Lack of water also increased trees’ susceptibility to infestation by insects such as the southern and western pine beetles. “Fuel loads build up,” says Rey. Adds Camp: “If everything is tinder-dry, it’s going to go up. It’s not a question of if. It’s when, and we’ve made ‘when’ the worse possible when it can be.”

When they occur, the fires have been especially devastating because of the high fuel loads. The complex mix of fuels composing dense forests provides tinder that can enable even a ground fire to jump into so-called crown fires, which burn the tops of trees and move and spread from tree to tree with great intensity and speed. Crown fires also expose flames to winds, further whipping the fire up. Crown fires can burn at temperatures in excess of 1,000 degrees Fahrenheit. When fires move up ridges, the large, hot flames suck air in, creating firestorm conditions. Where a less-intense fire might have halted at the top of a hill, winds created by the flames can sweep fire downward as well as upward.

The geographical extent of the problem is almost beyond grasping. According to Rey, 190 million acres of federal forest and rangeland—nearly double the size of California—are at risk because of high fuel loads. He says that between 80 million and 90 million acres represent critical areas because of particular threats to human life, property and ecological systems.

### **Danger: Humans in the WUI**

Rey points out that there is another factor making today’s highly destructive wildfires far more epochal than those in the past or those in boreal forests: the spread of human development into the wildland-urban interface (WUI). The fastest population growth in the nation as a whole has been in the semiarid states—Arizona, California, Colorado, Montana and Nevada—where fire is a component of the ecological system. Humans throw a literal spark into the WUI. “People cause most fires,” he says. With more people in fire-prone areas, the probability of human-caused ignition increases. The other impact is that fires in formerly remote areas now threaten lives and property. “The economic cost of fire and fighting fire is higher,” he says, “and people pay more attention to it.”

Fire-suppression costs can vary with the extent of wildfires annually. In the record-setting 2002 fire year, the federal government spent \$1.6 billion on fire suppression alone. According to Camp, that doesn’t begin to account for the real costs of wildfires. As part of a Yale team that carried out an assessment of the costs and benefits of several large recent

# Urgent Action Needed to Address Global Environmental Threats

**Editor's Note:** The following is excerpted from the book *Red Sky at Morning: America and the Crisis of the Global Environment*, authored by Dean Speth and published in March by Yale University Press.

A quarter century ago, scientists and others sounded the alarm regarding a set of linked threats to the global environment. Governments were put on notice, and, indeed, they acknowledged the issues and the need to address them. An “agenda” of large-scale threats was widely agreed upon and measures were put in place to address them. Yet the rates of environmental deterioration that stirred the international community continue essentially unabated today. The disturbing trends persist, and the problems have become deeper and truly urgent. The steps that governments took over the past two decades represent the first attempt at global environmental governance. It is an experiment that has largely failed.

It would be comforting to think that all the international negotiations, summit and conference agreements, conventions and protocols have at least got us to the point where we are now prepared to act decisively—comforting but wrong. The problems have gone from bad to worse; we are not yet prepared to deal with them; and many countries around the world lack the leadership to get prepared.

My exposure to global-scale environmental concerns began in mid-1977 when President Jimmy Carter asked the Council on Environmental Quality and the Department of State to prepare a report on “probable changes in the world’s population, natural resources and environment through the end of the century.” I was one of the three members of CEQ at that time and would later become its chair. It was a daunting assignment that took us several years to complete.

While our interagency team was working away, I was approached by Gordon MacDonald, a top environmental scientist, and Rafe Pomerance, then president of Friends of the Earth. They were seeking my help in calling wide attention to an emerging problem that I was just beginning to understand—global climate disruption. I promised to take the matter to the president if they would prepare a reliable, scientifically credible memorandum on the problem. It was not long before the report was on my desk, signed by four distinguished American scientists—David Keeling, Roger Revelle, and George Woodwell, in

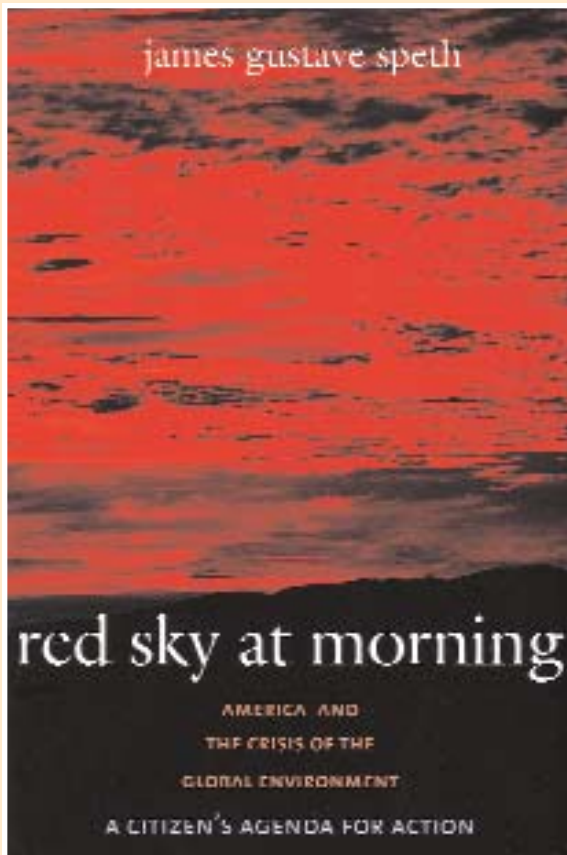


Dean Gus Speth

addition to MacDonald. Its contents were alarming. The report predicted “a warming that will probably be conspicuous within the next 20 years,” and it called for early action: “Enlightened policies in the management of fossil fuels and forests can delay or avoid these changes, but the time for implementing the policies is fast passing.” The year was 1979.

I soon presented the report to President Carter and others in his administration. The new Department of Energy reacted negatively. It was promoting a massive program of synthetic fuels to be made from coal, tar sands and oil shale, and these synthetic fuels would produce more climate-altering gases than most other energy technologies. DOE promptly produced a countermemorandum.

The administration responded by asking the National Academy of Sciences to assess the scientific basis for concern about man-made climate change. Massachusetts Institute of Technology scientist Jule Charney led the NAS review, and the “Charney Report” was published in late 1979. Its findings supported those in the report I had received at CEQ. The chair of the NAS’ Climate Research Board summarized them: “The conclusions of this brief but intense investigation may be comforting to scientists but disturbing to policymakers. If carbon dioxide continues to increase, the study group finds no reason to doubt that climate changes will result and no reason to believe that these changes will be negligible. The conclusions of prior studies have been generally reaffirmed. However, the study group points out that the ocean, the great and ponderous flywheel of the global climate system, may be expected to slow the



course of observable climatic change. A wait-and-see policy may mean waiting until it is too late.”

Emboldened, we at CEQ focused our most intense scrutiny on the issue of global climate disruption. In my foreword to our report, prepared in 1980, we sought to explain the climate disruption issue and its seriousness to a large audience:

“The carbon dioxide issue may present the ultimate environmental dilemma. Collective judgments of historic and possibly unique importance must be made—by decision or default—largely on the basis of scientific models that have severe limitations and that few can understand. To some, the competing factors will be seen as whether to provide the energy needed for economic and military security or whether to protect humanity from a distant and uncertain threat that currently affects no one. Further, addressing that threat will require a global effort in a world where international cooperation on the scale that may be required is seldom achieved.

“Yet, with atmospheric carbon dioxide already increasing and the pressures here and abroad to expand fossil fuel use, the world economy is well on its way to performing a great planetary experiment. Before the first

results are known, our children and future generations may well have been irrevocably committed to an altered world—one that could be better in some respects but that also involves unprecedented risks.”

These observations are more than 20 years old. For more than two decades even non-geniuses like myself have known not only the gravity of the climate challenge but also more or less what to do about it. And, of course, little has been done. We are still struggling to achieve international agreement on the first treaty with any teeth in it—the Kyoto Protocol—and it is only a beginning.

If I were a young person being handed this problem by indulgent predecessors, I would be angry. For 20 years thoughtful people and intelligent leaders should have known that we needed to get busy. Precious time has been wasted. And now a new generation has been given a climate problem that is deeper and more difficult. Climate is already changing—nine of the 10 hottest years since record-keeping began have occurred since 1990—and the time to begin responsive action has long passed.

But global-scale environmental challenges truly moved into American politics when the broader report that President Carter had requested was released in 1980 as “The Global 2000 Report to the President.” We presented the trends that might unfold between 1980 and 2000 in population and environment if societies continued their business-as-usual approach. Already referred to by some critics as “Bad News Jimmy,” President Carter showed courage in supporting this big dollop of gloom and doom in an election year.

From today’s perspective, we can look back and see what actually happened. Unfortunately, many of our projections proved correct, at least approximately. Global 2000 projected that population would grow from 4.5 billion to 6.3 billion by 2000. The actual number was 6.1 billion, so we were more or less on target. The report projected that deforestation in the tropics would occur at rates in excess of an acre a second, and for 20 years, an acre a second is what has happened. It projected that 15 to 20 percent of all species could be extinct by 2000, mostly due to tropical deforestation. Biologists Stuart Pimm and Peter Raven have estimated conservatively that there are about 7 million species of plants and animals. Two-thirds of these species are in the tropics, largely in the forests. They have estimated that about half the tropical forests have been lost and, with them, that about 15 percent of tropical forest species have already been doomed. So there

CONTINUED on page 18

# Urgent Action Needed to Address Global Environmental Threats

CONTINUED from page 17

is evidence that our species loss estimate was perhaps high but not far off the mark.

Global 2000 projected that about 6 million hectares a year of drylands, an area about the size of Maine, would be rendered nearly barren by the various processes we describe as desertification. And that continues to be a decent estimate today.

We predicted: “Rising CO<sub>2</sub> concentrations are of concern because of their potential for causing a warming of the earth. ... If the projected rates of increase in fossil fuel combustion ... were to continue, the doubling of the CO<sub>2</sub> content of the atmosphere could be expected after the middle of the next century. ... The result could be significant alterations of precipitation patterns around the world, and a 2 degree to 3 degree Celsius rise in temperatures in the middle latitudes of the earth.” Twenty-three years later, this description still falls neatly within the range of current estimates.

I present these numbers not to pat our Global 2000 team on the back. Some projections, like those on the prices of food and minerals, Global 2000 got wrong, and the report had many shortcomings. But on most of the big issues of population and environment, the report pointed to the trends and the consequences. Other reports—from the United Nations Environment Programme, the Worldwatch Institute, the National Academy of Sciences, and elsewhere—were saying much the same around this time. In short, the basics about emerging global-scale environmental concerns were known a quarter-century ago. Political leaders then and since have been on notice that there was a new environmental agenda—more global, more threatening and more difficult than the predominantly domestic agenda that spurred the environmental awakening of the late 1960s and the first Earth Day in 1970.

Global 2000 also called attention to the important ramifications of environmental decline for human security and social stability, noting that environmental threats “are inextricably linked to some of the most perplexing and persistent problems in the world—poverty, injustice and social conflict.” “Vigorous, determined new initiatives are needed if worsening poverty and human suffering, environmental degradation, and international tensions and conflicts are to be prevented,” it concluded. The 1980 Report of the Brandt Commission on International Development Issues was prescient in its plea for attention to these linkages: “War is often thought of in terms of military

conflict, or even annihilation. But there is a growing awareness that an equal danger might be chaos—as a result of mass hunger, economic disaster, environmental catastrophes, and terrorism, so we should not think only of reducing the traditional threats to peace, but also of the need for change from chaos to order.”

President Carter first addressed global-scale environmental issues in February 1980 during the Second Environmental Decade Celebration in the East Room of the White House, noting that they were “long-term threats which just a few years ago were not even considered.” He concluded on an optimistic note—“the last decade has demonstrated that we can buck the trends”—and shortly thereafter he requested that I, along with Secretary of State Ed Muskie, prepare a plan of action to do just that. In January 1981 we issued our report, “Global Future: Time to Act,” a 198-page agenda of what the federal government could do to address the challenges identified in Global 2000. By this time, of course, President Carter had lost the election, and our report became merely more fuel for the anti-environmental pyre of the early Reagan years.

Looking back over the past two decades, it cannot be said that my generation did nothing in response to Global 2000 and similar alerts. Progress has been made on some fronts. There are outstanding success stories, but rarely are they on a scale commensurate with the problems. For the most part, we have analyzed, debated, discussed and negotiated these issues endlessly. My generation is a generation, I fear, of great talkers, overly fond of conferences. On action, however, we have fallen far short. As a result, with the notable exception of international efforts to protect the stratospheric ozone layer, the threatening global trends highlighted a quarter-century ago continue to this day.

With more than two decades of dilatoriness behind us, it is now an understatement to say that we are running out of time. For such crucial issues as deforestation, climate change and loss of biodiversity, we have already run out of time: appropriate responses are long overdue.

No president since Carter has given priority to global-scale environmental challenges. The failure has been truly bipartisan. These issues more than most require true political leadership, which we have not yet had. But they also require changes that are far more sweeping and difficult than voting in a new slate of political leaders, as useful as that may sometimes be. **EY**

“Fire is a component of forest health, but fires are now burning under the worst conditions.”

*Ann Camp*

wildfires, she found that, aside from fire suppression and property damage, many costs remain unaccounted for ([www.yale.edu/gisf](http://www.yale.edu/gisf)). These include destruction of recreational opportunities and archeological sites, evacuations, closing of roads, damage to municipal water supply infrastructure, depletion of critical forest habitat and harm to human health from smoke. “These costs,” she says, “are rarely factored into the calculus of allocating suppression versus fire-prevention funds.”

The largest increase in costs of all kinds related to fire has come from the spread of development into the WUI. That has also been the focus of much of the firefighting effort. And it has greatly complicated the task and increased its urgency.

“How *can* we protect people, homes and communities from wildfire?” asks Camp. The WUI has become especially attractive for people building second homes or fleeing urban and suburban living. “As more people play out the American dream of a home on the range, a cabin in the woods and a mansion at the edge of town,” she says, “it will be more difficult and expensive to suppress fires.” She laments that “people with the responsibility for protecting lives and property have no authority to tell people that what they’re doing in the WUI is inappropriate and that they have to stop.”

The increased development in the WUI raises the risk that wildfires, even those in remote regions, could cause loss of life and property. “There are places in fire-prone areas where it is just stupid to build a house,” says Oliver. For those who do choose to build in the WUI, programs exist to encourage them to build using fire-resistant materials, to landscape so that all flammable plants are well away from their houses and to remove anything that can burn from the vicinity of all structures. “The first thing you put in if you live in the WUI,” says Camp, “is a big swimming pool and the second is a generator. That way you’ll have electricity and water to pump in a fire to save your house.”

### **No More One-Size-Fits-All Solution**

Under the Clinton Administration, the federal government focused heavily on supporting programs aimed at reducing the threat of fire to communities in the WUI. James Lyons ’79, professor in the practice of resource management at F&ES, held the USDA undersecretary post now filled by Rey. Under Lyons, investment in fuel treatment—thinning forests and removing brush and dead materials—increased significantly, as did the focus on communities in the WUI. He points to Firewise, a cooperative state and federal Forest Service program aimed at educating and supporting efforts to reduce the fire-susceptibility of communities in the WUI. “We increased investment in taking out small trees in these communities,” he says, “and worked more closely with the communities at risk to develop local strategies to reduce wildfires and their impact.”

The Forest Service increased thinning of forests, with a focus on reducing fuel loads in the WUI and nearby forests. Some environmental groups have advocated letting fire return in its naturally occurring form. Lyons disagrees: “You can’t let every fire burn out of control. Restoring fire to the fire-adapted ecosystem makes sense, but not where it will cause damage to property, life and societal resources.”

According to Oliver, allowing natural fire regimens to return to forests at this point would be ecologically damaging as well. “When you let nature do it,” he says, “you go from too much closed forest to too much open forest.” Fire causes the release of seeds and it also kills enough trees that any further fire will destroy seedlings, wiping out all tree regeneration. “It can take 200 years to restore the forest. You also have problems with streams getting silted up. Species get in short supply—plus towns and people can get burned up.”

Thinning the forests makes sense to Oliver, but he says “you have to do it in the right way. There is such a large area we have problems with, and you have to be deliberate and not repeat the mistakes of the past. There is not a one-size-fits-all solution.” He points out that treatment of the landscape should be planned based on knowledge about fire patterns within forest types.

# SPECIES RESHUFFLING in National Parks Caused by Climate Change May Lead to Extinctions

By Alan Bisbort

**A**s the Earth's climate changes due to rising levels of greenhouse gases, it only makes sense that plant and animal species will try to adapt to the changes in order to survive. Or, conversely, they will fail to adapt and meet with near-certain extinction.

Oswald Schmitz, professor of population and community ecology, began taking serious note of this global flux in 1997. The data, especially those gathered on bird and butterfly species in Great Britain and North America, clearly showed that species were already altering patterns in response to global warming, exhibiting significant shifts in range distribution (generally northward) and phenology (earlier breeding, flowering, migrating).

Schmitz set himself a great, if humbling, challenge: to use the data on the current rates of increase in atmospheric carbon dioxide—the primary cause of global warming—to assess what conditions may be like for larger species, such as mammals, 50 years from now.

To this end, he and two of his doctoral students, Catherine Burns and Kevin Johnston, conducted an intensive study of mammalian species in eight U.S. national parks: Acadia, Big Bend, Glacier, Great Smoky Mountains, Shenandoah, Yellowstone, Yosemite and Zion. They amassed data on 132 mammal species that currently reside in these parks, and data on 81 other species, all from the Faunmap database ([www.museum.state.il.us/research/faunmap](http://www.museum.state.il.us/research/faunmap)). Because current models of global climate change indicate that Eastern and Western ecosystems will be impacted differently, they aimed for an equal geographical balance of parks.

“We recognize that the wildlife species need the vegetation to live,” Schmitz said. “So if the vegetation is going to shift around on the

landscape, where's the wildlife going to go? What we've done is couple information on wildlife distributions and ecosystem change in response to doubling atmospheric CO<sub>2</sub> to simulate how mammal species will reshuffle on the landscape.”

Their challenge was not just to think longer-term and larger-scale but to step back and examine the possible interactions of the resultant new and complex biological communities—predators and prey, prey and plant food sources. Their findings, especially with regard to species gains, may surprise some people, because there is an expectation that climate change will lead to the immediate loss of species which can't cope with the new climate.

The results of their study, called “Global Climate Change and Mammalian Species Diversity in U.S. National Parks,” were, generally, as follows: The southernmost parks (Big Bend and Great Smokies) are expected to lose the most mammalian species. Nearly half the losses will be rodent species (44 percent), with bats (22 percent) and carnivores (19 percent) suffering as well. The study was published last September in the *Proceedings of the National Academy of Sciences*.

Paradoxically, the climate change will likely cause a positive net turnover in the numbers, with parks gaining anywhere from 11.6 percent to 92.5 percent more species relative to current numbers (the projected average for all eight parks being 48.1 percent). In general, most mammal species are expected to expand their range northward.



Oswald Schmitz, left, and doctoral student Catherine Burns and Kevin Johnston.



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**Current species found in selected U.S. national parks, and predicted species losses, gains and net turnover under a doubling of atmospheric CO<sub>2</sub>.**

Park	Current Species Richness ★	Species Lost	Species Gained	Turnover ▲
Acadia	43	3	8	5
Big Bend	48	10	22	12
Glacier	52	2	45	43
GSM	48	8	29	21
Shenandoah	33	3	11	8
Yellowstone	53	0	49	49
Yosemite	64	6	25	19
Zion	53	1	41	40

★ Based on park species lists and Faunmap data for mammal species available.  
 ▲ Turnover calculated as species gained minus species lost.

Faunmap is an electronic database documenting the distribution of many mammal species in the United States.

Though this initial increase in mammalian species may raise some eyebrows, Schmitz offered some cautionary perspective.

“The pool of species we’re dealing with is the total number of species existing in the United States,” he said. “We’re not going to see the evolution of new species, just an influx of new species. They’re moving northward and into parks. But the species that were in the parks, especially in the Northern parks, aren’t leaving those parks and going even farther north. So this migration crowds species much more. If you measure things only in terms of biodiversity, yes, it is going to be fantastic, but we don’t know what effect the crowding will have.”

Schmitz used the analogy of human migration during the Great Depression, when waves of people fled to cities, putting pressure on social services, housing and jobs.

“If we have those same kinds of pressure in the parks, we’re going to see extinctions precipitated by these influxes,” he said. “Even though biodiversity goes up for a while, eventually the pressure gets heavy. Mammals may redistribute on the landscape, but it’s the interaction that ensues once these animals have redistributed that could lead to their ultimate demise.”

Attendant to species crowding in these protected areas are the constant pressures on these same habitats from development engendered by increases in human population. Further, besides fear of species extinctions, the potential exists for the spread of Lyme and other animal-borne diseases into new areas.

Schmitz admits to feeling like he is entering uncharted territory. “In some sense it’s frightening, because you can imagine by piecing together different bits of information what the future is going to look like,” he said. “And, on the other hand, there are people who say, ‘Well, these are only

predictions and you don’t know how correct you’re going to be. ...’”

In the study, however, Schmitz offered this disclaimer: “As species assemblages change, new interactions between species may lead to less predictable indirect effects of climate change, increasing the toll beyond that found in this study.”

Further elaborating, he said, “There’s no guarantee the ecosystem won’t simply collapse. ... A lot of the mapping that we do, including what we did for the national park work, is assuming that things are going to change gradually, or linearly, but if things change abruptly, and you reach a threshold, you then fall over a cliff edge. The mapping approaches tend to be very conservative. So, yes, things could be worse.”

Schmitz now wants to turn away from this “grand scale” and concentrate on actual field studies. “The experimental phase is really needed,” he said. “Actually, it’s urgent.”

To that end, he and his lab partners plan to conduct field experiments intended to replicate the data across a New England gradient, from southern Connecticut to northern Vermont. They hope to explain how natural variations in temperatures along that gradient affect the interactions of species.

“Then we will artificially heat the environment, utilizing computer models created by the Vegetation and Ecosystem Modeling Assessment Project, or VEMAP, and the General Circulation Models, or GMC, and see if we get some insights on how these linkages between wildlife distributions and climate change get disrupted and reassembled over time,” said Schmitz.

Some have argued that the environment has always been in flux and that the increases in CO<sub>2</sub> wrought by global climate change have historical precedent. While Schmitz does not dispute this, he said, “The problem is that the flux rates are much faster now. Animal and plant species don’t have enough evolutionary time to adapt.”

The profound changes we’re currently experiencing, he said, began only 150 or so years ago, with the dawn of the Industrial Age.

“People are not thinking about the world their grandchildren are going to inherit,” said Schmitz. “That’s the time scale we need to think about. When I talk about global warming to undergraduates, I tell them, ‘I will be dead long before CO<sub>2</sub> fully doubles. But toward the end of your life you are going to realize that your children are going to be stuck right in the middle of this kind of environment.’ Their eyes bulge, because they realize their actions today really can have an impact on their future.” **EY**

# BookShelf

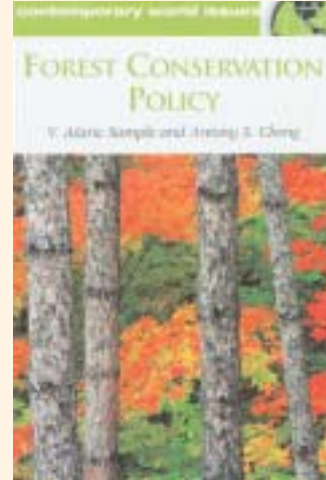


## Sorting Through Life

**I**n *Sorting Through Life*, Roger Wilde '77 indulges his love of poetry, which “arrived unscheduled to my life, bringing me unexpected passion and intensity. ...on a trip to Ireland, where I became acquainted with the poetry of William Butler Yeats. In Ireland, word play and poetry exist in everyday life. My poetry may have come from kissing the Blarney stone as the ‘gift of gab’ from Ireland.”

From the introduction: “This poetry is about finding metaphors in nature and applying them to humankind, pointing out that no matter how highly ‘developed’ we become, we are still subject to the laws of nature in our frail and fallible condition.” From the author: “I have always had a passion for California, its nature and its people. My intent is to write for the general public about the California landscape and its people, yesterday and today. My subjects are mountains, wildflowers, trees, rivers, national park treasures (Hetch Hetchy Valley in Yosemite and the Channel Islands), family, friends and myself.”

Wilde has had two previous careers, one as an environmental analyst and the other as a certified public accountant. The book is published by Chapbook Press, Santa Barbara, Calif., and is available by calling 805-565-9747.



## Forest Conservation Policy

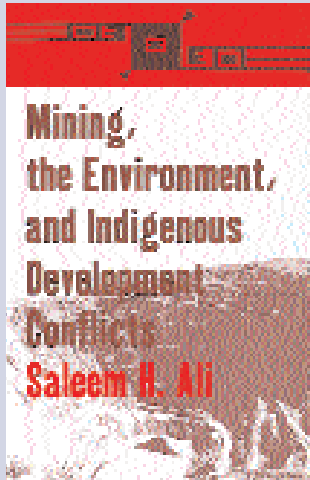
**T**he issues that define today’s U.S. forest policy debates form the core of *Forest Conservation Policy*, intended to be a reference rather than a comprehensive text on forest policy. It will be useful to students of forest policy, journalists and others seeking to better understand current policy issues both as they relate to one another and in their historical context. Authors V. Alaric Sample '80, Ph.D. '89, and Antony Cheng, assistant professor of forestry and natural resource policy at Colorado State University, hope readers will come away with a clear understanding of not only what the issues are, but also why they are issues and for whom they are issues. For those who wish to delve further, this work also serves as a guide to the broader literature on forest policy as well as an array of print and electronic resources.

As urbanized and technology-oriented as the United States has become, our forests continue to be key to the ecological, economic and social well-being of the nation. With barely a century between our nation’s adolescence and its current position in the world, it is important that we not lose sight of the important roles played by our forests as sources of abundant clean water, habitat for plants and animals, wood for materials and energy and as places for human refuge and renewal. Forests are a part of our history, culture and national identity.

Published this year by ABC-CLIO, this book is an important reference for citizens of all kinds who play a role in determining the policies that guide the conservation and sustainable management of our forests. To purchase *Forest Conservation Policy*, visit [www.abc-clio.com](http://www.abc-clio.com).



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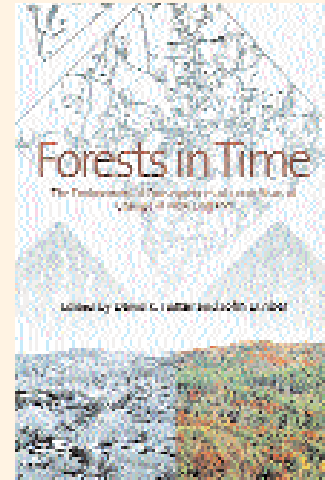
## Mining, the Environment, and Indigenous Development Conflicts

In *Mining, the Environment, and Indigenous Development Conflicts*, Saleem Ali '96, assistant professor of environmental studies at the University of Vermont, investigates why indigenous communities support environmental causes in some cases of mining development but not in others. He presents four cases from the United States and Canada—the Navajos and Hopis with Peabody Coal in Arizona; the Chippewas with the Crandon Mine proposal in Wisconsin; the Chipewyan Inuits, Dene and Cree with Cameco in Saskatchewan; and the Innu and Inuits with Inco in Labrador—to exemplify varying historical relationships with government and industry and varying degrees of resistance by native peoples in each country.

Ali challenges conventional theories of conflict based on economic or environmental cost-benefit analysis, proposing that the underlying issue has more to do with sovereignty, which often complicates relationships between tribes and environmental organizations. Activist groups, in failing to understand this tribal concern, may mistakenly attempt to work with tribes on the basis of an assumed common environmental interest.

The book, published by the University of Arizona Press last November, goes beyond popular perceptions of environmentalism to provide a detailed picture of how and when concerns of industry, society and tribal governments may converge and when they conflict. As demands for domestic energy exploration increase, it will become an important source for all involved.

To purchase the book, call 800-426-3797 or visit [www.uapress@arizona.edu](mailto:www.uapress@arizona.edu).



## Forests in Time: The Environmental Consequences of 1,000 Years of Change in New England

**F***orests in Time* relates the history of natural and human-induced changes that have occurred in the past 1,000 years in New England and explores the modern ecology of this largely forested landscape. Written by leading biological, physical and social scientists, the book uniquely demonstrates that an understanding of landscape history is essential for the study of ecology and environmental management. Edited by David Foster and John Aber '73, Ph.D. '76, the book was published by Yale University Press in March 2004.

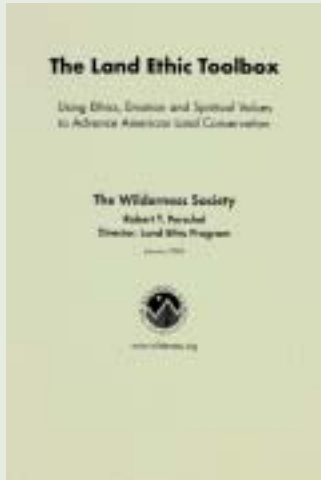
After a discussion of the elements that initially shaped the land, the authors describe how the New England landscape changed drastically with the arrival of European settlers nearly 400 years ago, as they cleared the land of forest and extensively farmed it. Observed patterns of forest regrowth, following a shift in agriculture to the Midwest, form the basis for explanations of changes in native wildlife populations and, more fundamentally, ecosystem structure and function.

Foster is director of the Harvard Forest at Harvard University and principal investigator of its Long Term Ecological Research program, one of 24 national centers for ecological research funded by the National Science Foundation. Aber is a professor at the Institute for the Study of Earth, Oceans, and Space and the Department of Natural Resources at the University of New Hampshire.

To purchase the book, call 203-432-0163 or visit [www.yalebooks.com](http://www.yalebooks.com).

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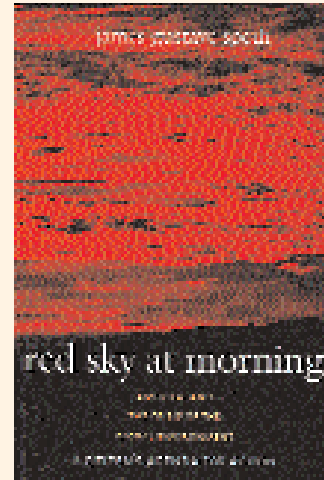
# BookShelf



## The Land Ethic Toolbox: Using Ethics, Emotion and Spiritual Values to Advance American Land Conservation

The *Land Ethic Toolbox* is for people who have fallen in love with wild places and want to help pass them on—healthy and intact—to future generations, whether they are in our backyard or in our nation's most magnificent wilderness areas. Its goal is to make us better advocates for wild places by rallying more people to join in this great initiative.

The book doesn't try to cover all the bases. Rather, Robert Perschel '79, director of the Land Ethic Program of The Wilderness Society, turns our attention to the inordinately powerful, yet least tangible, aspect of wilderness advocacy dealing with "matters of the heart." But he does so without discounting equally powerful rational, scientific and intellectual arguments. Based on Aldo Leopold's notion of a "land ethic," *Land Ethic Toolbox*, published in January 2004, provides critical-thinking tools to advocate for a range of ethical, empirical, emotional, spiritual and ecological wildland values. Ultimately, this is a call for an expanded form of land conservation advocacy, in which our passion and intellect become equal partners, legitimate in both public and private arenas and powerful enough to win the day. The book is published by The Wilderness Society ([www.wilderness.org](http://www.wilderness.org)).



## Red Sky at Morning: America and the Crisis of the Global Environment

The international community must take urgent action to address global-scale environmental threats or face an era of unprecedented environmental decline, argues *Red Sky at Morning: America and the Crisis of the Global Environment*.

"Time is running out," says Dean Speth, author and former chair of the Council on Environmental Quality (CEQ) in the Carter Administration. "We are on the verge of reaping an appalling deterioration of our natural assets. Only unprecedented action taken with a profound sense of urgency can forestall these consequences."

Surveying 10 major concerns, Speth says some progress has been made on reversing ozone depletion, stabilizing world population and curbing acid rain, but weak international environmental treaties and lack of U.S. leadership have failed to slow climate disruption, desertification, deforestation, extinction of species, freshwater shortages, fisheries depletion and the buildup of highly dangerous chemicals, despite the fact that these issues were brought forcefully to public attention a quarter-century ago.

Published in March 2004 by Yale University Press, the book outlines steps in eight areas that, taken together, would constitute the needed transition to sustainability. "These transitions require genuine partnership between countries of the North and South, as well as actions far outside the traditional areas of environmental policy," Speth says. "Collectively, they will do three things of immense importance. They will directly attack the underlying drivers of deterioration. They will greatly enhance the prospects for success of treaties and other agreements by altering the context in which the agreements are operating. And they will facilitate a very different, more hopeful and powerful way of doing the business of global environmental governance."

To purchase *Red Sky at Morning*, contact Liz Pelton (410-467-0989, [lizpelton@aol.com](mailto:lizpelton@aol.com)) or visit [www.redskyatmorning.com](http://www.redskyatmorning.com).

“Some places are more fire-prone,” he says. “Especially areas that are South-facing and at tops of ridges. You should treat them so fires there won’t spread as much or as fast.” He recommends establishing open forests and savanna-type areas to “cool down hot spots” and create “natural places to stop the fire.”

Under the Bush Administration, contending with the conditions that have made the devastation from wildfires possible falls to the forces under Undersecretary Rey’s authority. “It took 100 years getting into this problem,” says Rey, “and we’re not getting out overnight.” The Bush Administration has promoted an executive effort, the Healthy Forests Initiative, and congressional legislation, the Healthy Forests Restoration Act (HFRA), to speed up treatment of forest fuels to reduce the fire danger. “The goal,” he says, “is to reduce fuel load to where fire can return as a natural restorative component of the ecosystem.” Getting there will require extensive investment. “We need to go from under 1.8 million acres treated a year [on average during the previous decade] to this year’s goal of 4 million acres,” says Rey. “Ultimately we need to treat 8 million acres a year on a sustainable basis. That is the goal before the end of the decade. If we reach that level by the middle to the latter part of the next decade, the problem will be fixed. Once you treat the forest, though, you have to come back and maintain it.”

Many environmental groups contend, however, that the administration does not have a true commitment to fuel reduction and has, instead, used the need for fuel reduction to open previously closed areas to logging. The HFRA also limited input by environmental and local groups into forest management decision making. “The current administration,” contends Lyons, “made a commitment of funds to conduct fuel treatment, but instead used the increase to fund timber sales. When legislation called ‘Healthy Forests’ is passed, people want to believe it will lead to healthy forests. Healthy forests should not be simply a happy forest industry.”

Although federal funds go to pay for timber and brush removal, Rey contends that the government is not subsidizing the timber industry. “The sole purpose of this initiative is to reduce fuel load to assure sustainability of the forest left behind,” he says. “If some material has commercial value, it’s our view that we ought to use it.”

## Planning for Local Solutions

Oliver believes that information-technology-based planning tools now available provide a means of bridging the opposing sides. Software known as the landscape management system (LMS) assesses a forest’s existing fuel loads, trees and their commercial and environmental value, species habitat and potential fire-burn patterns. All those data can be input to create virtual models showing forest-growth dynamics based on different choices for thinning and tree removal (see “LMS Software: Changing the Face of Forest Management,” *Environment: Yale*, Fall 2002). With this information, decisions can be made to thin and create fire

breaks based on local realities. “If you use planning tools, you can write the specifications accordingly,” he says. “You can write guidelines with a growth model and a fire-sensitivity model to plan how many trees to remove to make sure the forest is protected.”

Importantly, using the LMS-generated models, forest managers can more effectively explain conditions and alternatives to local communities and other interested groups to gain their input into the decisions. Phil Rigdon ’02 uses LMS software as the fuels manager for the 650,000 acres of forests making up half the Yakama Nation Reservation in the eastern Cascade Mountains of Oregon. The Yakamas have the largest timber operations of any Native American reservation in the country. The forests, according to Rigdon, generate up to 90 percent of the economy supporting the reservation’s 20,000 residents. He is in the process of developing a 10-year fuels plan, reintroducing prescribed burns and commercial thinning, and prioritizing strategic areas especially threatened by wildfire to create firebreaks to contain fires

when they occur. “Our approach,” he says, “is both more conservative and progressive. We balance economics and preservation of the landscape. We leave the most economically valuable, large trees in the landscape. Whatever we do we have to live with it. We don’t pack up and leave.”

Rigdon has freedom to operate on his reservation unfettered by the environmental reviews and industrial demands faced by the timber industry and forest managers in U.S. forestlands. Nonetheless, gaining community support for his efforts is vital: “Our communities have lived in these forests since time immemorial and have used fires to manage significant resources for us. These are our sources for medicines, building materials, animal habitats and our livelihood. The community

is close to our resources. We have to communicate about what we’re doing and why, and what ecological problems our forests are facing.”

As American society moves ever deeper into the WUI, a similar need to educate and involve those communities—the timber industry, environmentalists and others—in decisions affecting forestlands grows in importance. “The big question is,” Oliver says, “can we go proactively back into the forests or will this be resisted? Can the activities be done with forest-planning models in such a way that people using them can be trusted and people will have confidence in what is going on?” Without that trust, getting wildfires under control may be impossible. **EY**

“A one-size-fits-all,  
stop-fires-every-  
where policy  
was a big mistake.”

*Chad Oliver*

# Reforestation Effort to Try to Convince Panamanians That Trees Are Good Business

By Christine Woodside

Since the 1500s, when Spaniards colonized Panama, the isthmus that separates the Atlantic and Pacific oceans, people have cleared and cut its tropical forests. Development, cattle ranching and farming have changed the landscape and the culture, and bit by bit, trees have disappeared from at least half of the country's land mass.

The cleared lands include most of the southern coast on the Pacific Ocean side and stretches of land on both sides of the Panama Canal. In some areas where trees still grow, plantations have replaced hundreds of native tree species with a single exotic species. In others, land has given itself over to introduced, invasive grasses that easily catch fire. Deforestation appears to be changing local hydrology. Two bad droughts, exacerbated by the lack of trees whose roots retain water, dangerously lowered the water levels of the Panama Canal's locks in 1997 and 2001.



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The banks of the Panama Canal are covered by *Saccharum spontaneum*, an invasive grass species.

This small nation, roughly the size of South Carolina, is home to 2,400 native tree species—more than 10 times the number in southern New England—and dozens of climatic zones. But this well of biological diversity is endangered, because more than half of the land has lost its tree cover.

The time has come to replant tracts across Panama with native trees, according to a group of researchers from the Yale School of Forestry & Environmental Studies (F&ES) and the Smithsonian Tropical Research Institute in Panama. Three years ago, these two groups formed PRORENA, an acronym that in English translates to Native Species Reforestation Project. PRORENA's goal is to do research so that Panamanians can re-establish diverse native forest cover across these extensively deforested lands. Even more challenging, perhaps, is a second goal, which

is to find a way to increase forest cover without marginalizing farming and ranching as occupations—a source of income for about 50 percent of Panamanians—and, as a result, interfering with Panamanians' ability to make a living.

Panama is known for the 50-mile-long canal that changed worldwide commerce when it opened in 1914. The waterway is a freshwater system that cuts through a mountainous region. Ships travel one-by-one through six giant locks that elevate or drop between two large manmade lakes. As the forests have diminished around it, the periodic dry years caused by El Niño (the warming of the Pacific Ocean) have lowered the water level in the manmade lakes and caused erosion in the valleys and on the shores of the lakes.



Mark Wishnie, center, project director for PRORENA, talks about how to make reforestation a financially viable enterprise, with, from left to right, Oliver Grantham '03, MBA '03; Ovidio Diaz, a Panamanian author, landowner and PRORENA donor; and Marco Zanini, an Italian designer, architect and project manager for a large restoration project in Panama.

“The trick is for us to try to find ways to make planting trees a reasonable land-use decision.”

*Mark Wishnie*

The land from which rainwater drains into the Panama Canal has lost more than half of its forest over the past three decades, according to the United States Agency for International Development (USAID), a U.S. government agency that assists foreign countries. In 1997, two years before the United States turned over the canal to Panama, USAID reported to the U.S. Congress that protecting forests around the canal is an urgent priority.

PRORENA's first steps have been to experiment with planting native tree species on deforested lands. The task of organizing these projects fell to Mark Wishnie '01, PRORENA's project director. Wishnie lives most of the year in Panama, where he travels around to research sites, and observes the work of companies and the government in their efforts to grow trees.

“When I first arrived in Panama, I thought it was going to be straight-ahead research,” Wishnie said. Within several months, by asking around, he located and met people who were beginning to plant small plots of native trees—for timber and better water quality, or to control erosion around the Panama Canal.

Wishnie said, “When I and my colleagues realized that there was this network of people doing work on the topic [we realized] that to be a useful organization we had to be collaborative. Everybody planting trees already knew more about this.”

In Panama, and other tropical countries, each acre of forest used to hold hundreds of different tree species. Today many of the remaining Panamanian forests consist of exotic trees. Much of the diverse ecosystem of the natural forest is lost. There, insects and animals depended on the multitude of tree species for their survival. And the trees depended on them in return to disperse the seeds (in the Northern Hemisphere, by contrast, the wind disperses most seeds).

The Smithsonian Tropical Research Institute has seven research stations and has studied the natural world of Panama for 80 years. Among its many topics of interest are its monitoring of 240,000 trees, coral reefs and mangrove forests.

PRORENA is using government and private lands to grow trees. The research sites include rainforest habitat in the Panama Canal watershed area within the Soberania National Park, transitionally dry forest habitat near the Achotines Bay on the Azuero Peninsula in southwestern Panama, and a drier area at a former military base in Rio Hato. They are comparing how trees grow in different amounts of rainfall and in different soil types.

In one experiment, Wishnie said, PRORENA will have planted 10,800 individual trees of more than 60 different species at each of four research sites by this June. They are also collecting seeds from multiple populations of the same species to test for genetic differences among species. “As far as we know, these are the largest selection trials in Latin America. At the end of two to three years, we will, hopefully, be able to identify the tree species that are performing best at each of these sites, and interpolate between them to be able to apply these results to a significant portion of Central America,” Wishnie said.

# Reforestation Effort

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Beginning in the 1990s, several private companies and groups independently started experimenting with planting native trees. In 1999, Mark Ashton, professor of silviculture and forest ecology and director of school forests at F&ES, visited Panama with some of his students. Ashton said he obtained seed funding to start

research on reforestation in collaboration with the Smithsonian. Ashton said the work was intended to complement his 20 years' worth of work in Sri Lanka, which has focused on how to regrow the trees and plants that once inhabited the depleted lands surrounding what is left of the Sinharaja forest, a 20,000-hectare (2-million-acre) Man and the Biosphere Reserve and World Heritage Site.

Ashton asked Wishnie if he would like to go to Panama. Wishnie had studied streamside trees in the Pacific Northwest and was looking for a project. Would he move to Panama to work on reforestation?

Wishnie said yes, and became the PRORENA project director, spending much of the year in Panama City. Over time, he located the various groups that were experimenting with planting native trees. He also discovered that a

group of Panamanian researchers had begun to consider how to regenerate the forests with native species.

“When I arrived in Panama, the project was a little bit daunting,” Wishnie said, “because my understanding was that there was just very little known about how to manage native trees in Panama.” That was because of the amazing diversity of native species over a tiny land mass. “The first thing I did was ask everyone I met whether they knew about reforestation with native trees,” he said. “I began to identify and meet different people, scattered all over the country, who for one reason or another were experimenting in an informal way with restoring native forests.”

He learned, for example, that the Panama Canal Authority was planting mixed native trees along the canal to control erosion and create a more diverse forest. He located a company in the west that was planting a variety of native and exotic trees for timber. Small farmers in central Panama were planting mahogany, and the Inter-American Tropical Tuna Commission was interested in restoring forests on cattle pastures near its southern coastal research lab to protect water quality for its tank experiments. Each of these enterprises was operating



*Schizolobium parahyba* (common name, *tinecu* or *gallinaso*), a very fast-growing native legume that is used for plywood production. The PRORENA team has it planted in a variety of trials. It grows almost 10 feet per year.

© Jose Deago, PRORENA

somewhat in a vacuum, and Wishnie began to work on ways to bring everyone together and to view reforestation from a broader perspective. Wishnie and the PRORENA team began integrating experiments into these ongoing projects and monitoring what had already been planted. To document the results of these dispersed efforts, PRORENA is developing a countrywide comparative reforestation database so that others can learn from these experiences.

Planting native trees across the country to restore the forests will succeed if it can include the small landowners, Wishnie said. Eighty percent of the land is held in small plots, mostly farms. About a third of the population depends on agriculture for their living. Small farmers won't make money for many years if they decide to give up on a field and plant it with trees. "Foregoing income from their land for 10 to 30 years is not an economically viable option for most people," he said.

PRORENA also has formed a network of organizations dedicated to reforestation, and offers consulting services for a fee. But perhaps the most challenging of its work will be to devise ways to make money while replanting native forests. PRORENA is studying the importance of forests to the preservation of drinking water supplies and the level of the canal, and is comparing the financial benefits of farming and growing timber.

For many of the PRORENA players, studying Panama's natural world is not a new enterprise, but finding a way to make reforestation profitable from a business standpoint is. During the economic boom of the 1990s and into 2000, investors put their money in sustainable timber and farming enterprises because they would produce crops and timber without denuding the landscape. But when the economy weakened, particularly after the Internet bubble burst, investors pulled out of these projects, which would have required years to provide returns on their investments.

PRORENA has called on an expert in environmental investment, John Forgach, a native Brazilian who came to F&ES in the fall of 2003 as a Dorothy S. McCluskey Visiting Fellow for Conservation. He stayed this spring to work with students to help PRORENA formulate a business plan—a blueprint for Panamanians to make money and protect the environment at the same time.

This year, PRORENA is forming a business arm, which will be called Forest Restoration S.A. The business plan, still in its infancy, will take form as "very much an environmental restoration project," said Brad Gentry, a senior

lecturer in sustainable investments and co-director of the Yale-UNDP Collaborative Program on the Urban Environment. Gentry, who also advises private industry on ways to make money from green projects, introduced Forgach to Ashton and first suggested Forgach visit Panama.

Forgach said that investors in sustainable enterprises had overly high expectations in 2000, when he founded a Latin American management firm, A2R Ltda., which specializes in finding investors for environmental projects. At the time, investors expected returns as high as 30 percent of profits from organic farming and timber sales on replanted forests. Fund managers promising less than that couldn't find investors, he said. Such deals ended with the economic downturn of early 2001 and the terrorist attacks of September 11.

Forgach believes that the post-9/11 world invites a different kind of environmental investment. That is, an investment in security. Trees do not provide timber for about 40 years from the time they are planted, but in a much shorter period, they can provide aerial and ground cover for the Panama Canal.

Forgach said that it is time to recognize that the canal is a nearly priceless transportation asset, one that has become vulnerable to drought and terrorism because so much of the land around it no longer is forest. He said he believes it would be possible to find investors in the insurance industry who will put money into protecting the many shippers who depend upon the canal.

"As a banker and opportunist, I see a small country sitting on an absolutely key strategic asset to the global economy," Forgach said. "No other country has it. If we can't use the canal, it takes 45 days to sail around the continent."

Wishnie said, "The trick is for us to try to find ways to make planting trees a reasonable land-use decision. Could it be possible for a farmer to get up and decide one day that instead of planting corn he'll plant a tree? Or, to put it a better way, that he'll plant corn and trees? Is there a way for us to make that happen?" **EY**

# Yale College Class of 1964

## Making a Difference in Environmental Education

A summer fellowship established by the Yale College Class of 1964 enabled two Yale College architecture students last year to study how extreme climates affect the design of buildings in the Australian outback, Fiji and Iceland.

Kent Gould and Lisa Rothman, both seniors, were recipients in 2003 of the Class of 1964 Environmental Summer Fellowship. For the past three years the Class of 1964 has provided funding to sponsor summer fellowships for Yale College juniors who wish to explore an environmental project. The 2001 Class of 1964 fellow was Leah Zimmerman '02, who traveled to Buryatia, Russia, and Abhimanyu Sud '03 studied urban agriculture in Bangalore in the summer of 2002. The fellowship is administered by the School of Forestry & Environmental Studies (F&ES).

Recognizing the importance of environmental education at Yale and in honor of classmate Dean Gus Speth, the Class of 1964 has been instrumental in contributing to the successful training of the next generation of environmental leaders and citizens. The Class of 1964 has also created the Class of 1964 Environmental Initiative, which provides financial assistance to F&ES students, as well as funds that supplement F&ES teaching in the Yale College major in environmental studies.

“The purpose of the fellowship is to encourage juniors to pursue a project that expands their horizons into unfamiliar or challenging areas,” said Frank Basler, a member of the Class of 1964 who is in charge of the fellowship program. “Our hope is to identify students with leadership potential who have yet to fully commit to an environmental career, and provide them with a summer travel experience which would be impossible without our support. The fellowship is

important to the extent that it succeeds in adding to the pool of committed environmental leaders.”

Anthony Lee, class secretary, said one of the benefits of the fellowship is that it is enabling his class to get to know undergraduates. “We get to see what current students are like—see how talented and smart they are—and to try to help them along.” He also finds it personally rewarding to be connected to F&ES. “The school is doing a terrific job, especially [Dean Speth’s] effort to enhance the undergraduate curriculum with environmental studies.”

### Sustainability Goes Beyond Green Design

Gould and Rothman used the fellowship to complement their academic study of architectural design in extreme climates and the work of Finnish architect Alvar Aalto. Their examination of the ways that arctic, desert and rain forest climates affect the architectural design of buildings and homes resulted in a report titled “Environmental Design in Extreme Climates,” and a presentation to the Class of 1964 class council in February.

“In our research of native buildings in arctic, desert and tropical regions, we observed examples of economically and environmentally efficient architecture,” Rothman said. “We noted many ways in which a minimalist and utterly simple home could not only exist sustainably in a harsh climate, but could cooperate and benefit from such conditions.”

Gould and Rothman observed that in Reykjavik, Iceland, many of the city’s structures are designed to deal with long periods of little to no sunlight. Buildings are not tightly spaced so as to allow light



In the Australian town of Coober Pedy, many homes are built into the desert rock, which keeps interiors cool during the day and warm during the evenings.



“I am incredibly thankful for the role the Class of 1964 has played in the development of my ideals and direction thus far.”  
*Leah Zimmerman*



Overlooking hills (*taiga*) in Primorsky Krai, the region in Russia where Leah Zimmerman, Yale College Class of 2002, lives.

into as many openings as possible. In humid Fiji, homes sit on stilts or cement pillars above ground to take advantage of breezes. In the Australian town of Coober Pedy, many homes are built into the desert rock, which keeps interiors cool during the day and warm during the evenings. The homes are ventilated by shafts, sometimes 49 feet in length.

This semester, Rothman and Gould are participating in an international competition to design an eco-tourist lodge in Machu Picchu, Peru. The challenge is to create a sustainable hotel at the top of a mountain overlooking Machu Picchu. According to Rothman, the site is inherently unsustainable—the lodge is to rest at the top of a very steep mountain, without any natural water source, without any protection from wind and with limited access to building materials.

“I have no choice but to approach my design with a precise attention to landscape,” Rothman said. “But, to me, sustainability goes beyond green architecture. After visiting the site in Peru, I was immediately struck by cues from the harsh topography that dictated exactly why green design, efficient building materials and resource consumption are necessary for architecture to function in such conditions. However, just as vital, I noticed that a certain visual cooperation with the surrounding environment plays an equally imperative role in environmental design. I think the importance of visual sustainability cannot be ignored. That is to say, successful architecture not only pleases the land, it pleases its occupants.”

### **Fellowship Widened Her Perspective**

Leah Zimmerman is now studying at Far Eastern State University in Vladivostok, Russia, as a Rotary Ambassadorial Scholar. She is a full-time Russian language student, but also takes classes at the Institute of International Relations. “I am incredibly thankful for the role the Class of 1964 has played in the development of my ideals and direction thus far,” she said.

Zimmerman spent the summer of 2001 in the Republic of Buryatia, which is located in south central Asia along the eastern shore of Lake Baikal. The population of Buryatia is over 1 million people. She worked in environmental education with an organization called REAP (Rural Enterprises Adaptation Programs) International, based in Cedar Rapids, Iowa. “The two months I spent in Siberia served both to solidify my attitude toward the environment and environmental education in my day-to-day life and to focus my perspective on the importance of integrating certain ideals into my life and career,” she said.

After spending the summer in Russia, she said she realized how “advanced” the environmental conscience of the average American is compared with the rest of the world. “I was surprised when I arrived in Russia to find myself relieved that in America, at least there are people who are fighting the battles that need to be fought. In Russia, trashing the environment literally is a cultural norm, both on the individual and corporate levels, and the voices of opposition are marginalized and few in number.”

Her summer in Buryatia widened her perspective on the environment in two ways: she developed an appreciation for the magnitude of Russia’s natural resources, and spending time outside of the United States has enabled her to better understand the role the United States could play as a leader in the movement toward sustainable development throughout the world.

“We have all the resources and influence needed to make decisions that will positively impact world development as it relates to the environment. I dream of a future America that makes better decisions about the environment, especially regarding energy production and consumption, and uses its role as a world leader to influence other countries’ decisions regarding the environment.” **EY**

# Combined-Degree Program

## Shifts Social, Cultural Perspective on Environment to Forefront

By Stacey Stowe

**I**t was viewing forest ecology through the lens of a social framework that led Andrew Mathews to the combined-degree doctoral program in the School of Forestry & Environmental Studies and the Department of Anthropology.

Mathews, who recently defended his dissertation, is one of eight students at Yale who are pursuing the combined degree. In the past dozen years, 10 students have worked toward a degree that combines anthropology and environmental science in a program started by former Provost Alison Richard. The program was formalized in 2003.

A social and cultural perspective on the environment is hardly new. Indeed, the theme is increasingly woven into many of the courses at F&ES. But the combined-degree program moves the perspective from the periphery to the forefront. Most of the students in the program do research in developing countries, where development and environmental conservation often seem to be at odds, a crucial and hotly debated topic.

The program is emblematic of F&ES' commitment to strengthen the school's ties at home, with Yale College and abroad, with students engaged in long-term, often collaborative research around the globe.

Intensive research projects, one to several years in length, have taken students to countries that include Vietnam, Indonesia, Mexico, Nepal, Panama, Cambodia, Pakistan and India.

Strengthening intrauniversity ties and making F&ES a global school of the environment are persistent themes voiced by Dean Speth, who first articulated both goals when he arrived at Yale to lead the school in 1999.

The combined degree in anthropology and forestry and environmental studies, the only one of its kind in the United States, is cross-cutting: it bridges the divides between the social and natural sciences, theory and practice and local and global levels of analysis, said Michael Dove, coordinator of the combined-degree program.

"There's an ongoing debate about how best to study the global environment, said Dove, the Margaret K. Musser Professor of Social Ecology, and professor of anthropology. "It is tempting to sit in a conference room in Tokyo, Paris or New Haven and think that one can develop global policy, forgetting that little, if anything, actually happens at the global level, but only at the level of individual people, households and communities."

A passion for community forestry brought Mathews to southern Mexico, where he spent almost two years in the forests of Oaxaca. His work combined forest management and sustainability with a political and social framework.

"You have a forest and you establish management rules but what do you do when the regulations are ignored or they are out of step with the people who live



© Michael Doolittle

Michael Dove, right, coordinator of the combined-degree program, with students in the program, left to right: Julie Velasquez Runk, Anne Rademacher, Jonathan Padwe, Shafqat Hussain and Andrew Mathews

“The hybrid nature of the combined-degree program, partaking of multiple disciplines but beholden to none, gives us one of the best shots at figuring out what critical questions we haven’t even asked yet.”

*Michael Dove*

there?” said Mathews, a recipient of numerous academic awards and fellowships, including Fulbright, Switzer and National Science Foundation Fellowships.

Discussion of the human impact on the environment has been threaded with increasing frequency into courses at F&ES. Students explore the ethical and political implications of environmental policy and practices. But the combined degree is a hand-and-glove approach to anthropology and ecological studies where human development and sustainability are equally weighted.

“Anthropology takes a human perspective and puts it into an environmental setting,” said Oswald Schmitz, professor of population and community ecology and former director of the F&ES doctoral program. “We need to train a new generation of people who understand that dimension.”

To Schmitz, the anthropological perspective in forestry and ecological practices and policy is a matter of common sense. Take his example of the sea change in preserving tropical forests: the original approach of maintaining the forest by barring people from it is being replaced by integrating human interaction with ecological needs and encouraging sustainability.

An anthropological approach to environmentalism is also by necessity an historical one, and is a particular thrust of the program. In studying the human role in an ecosystem, students explore both the contemporary use of resources by people and the legacy of historic uses.

Beginning with local dynamics, students focus on understanding how communities are integrated into national, regional and global socioecological systems, Dove said. The now-discredited tendency to blame all environmental degradation on local communities stems in part from a research focus on the community alone. “It is vital to study the wider social forces involved in degradation, including those that impact less-developed countries but originate in the industrialized nations.”

Not surprisingly, the rigorous nature of the program has attracted students with extraordinary creativity and intellectual ability as well as commitment. On average, the combined doctorate takes six to seven years to complete.

Students in the program have been regular recipients of awards supporting their research from the Fulbright program, the National Science Foundation, the Environmental Protection Agency and a number of private foundations.

Anne Rademacher is a student in the combined-degree program who expects to complete her doctorate in the fall. She was awarded the Rappaport Prize by the American Anthropological Association for her dissertation research on the cultural politics of river restoration in Katmandu, Nepal.

For her doctoral work, Rademacher has visited Nepal many times since 2000; prior to that, her master’s-degree work at F&ES also took her to Nepal. Her study examines the different kinds of restoration projects along the two rivers that converge in the capital city of Nepal, the fastest-growing city in Southeast Asia. Depending upon the observer, these rivers are freighted with religious, political and developmental significance, Rademacher said.

“There are many different groups making claims on the river and framing their understanding of river degradation and river restoration in different cultural terms, she said. These groups include landless migrants who have colonized the riverbanks, human rights groups concerned about the migrants living in a flood

CONTINUED on page 34

# Combined-Degree Program

CONTINUED from page 33

plain, cultural preservationists focused on Nepal's social and religious heritage and national and international development agencies concerned about improving water quality and solid-waste management.

Students in the program work closely with the Yale Center for International and Area Studies, Dove said. The center and its various area study councils contribute funding and support language studies for doctoral students pursuing the combined degree and doing research abroad.

Language study is an integral part of the preparation for all students in the combined-degree program. "All of the students in the program have studied a national language and often a local one as well, starting at Yale, and continuing with intensive language programs during the summer or in their place of study," Dove said.

One student in the combined-degree program, Jonathan Padwe, who has made multiple summer visits to Cambodia, is studying three languages: Khmer, the national language; French, the archival language; and Phnong, the tribal or local language. He will commence long-term research in Cambodia this summer.

Another important dimension of research preparation involves establishing working relationships in the region of study. In most cases, the students in this program carry out their research in formal collaboration with local governmental bodies, universities and communities.

A good example of this is reflected in the work of Julie Velásquez Runk. She negotiated a 100-page collaborative research agreement with the Wounaan tribe in the Darien Peninsula in Panama before beginning her fieldwork. In her case, as in others, she has made explicit efforts to share the results of her completed research with her study communities.

The students' attentiveness to supra-community-level social and political dynamics results in the inclusion of some unorthodox subjects in the research. For example, the current political instability in Nepal posed a challenge to Rademacher in carrying out her research, but she also incorporated it into her analysis of state-making processes in that country.

Earning a doctorate in anthropology and forestry and environmental studies means graduates are flexible in their career trajectory, Dove said. They can pursue academic careers in environmental studies or anthropology, or work with international conservation and development agencies.

Whatever path graduates of the program choose to pursue, they will be able to apply to it "unique insights into the global environmental challenge of the 21st century," said Dove. The program attempts to meet this challenge, in part, by reframing it. New answers to old questions will no longer suffice. Dove's hope is that "the hybrid nature of the combined-degree program, partaking of multiple disciplines but beholden to none, gives us one of the best shots at figuring out what critical questions we haven't even asked yet." **EY**

# ClassNotes

1942

**CLASS SECRETARY:**

**Hamlin Williston**

[williston@watervalley.net](mailto:williston@watervalley.net)

**Mel Chalfen** enjoys painting and playing the piano, but laments that he is suffering from osteoporosis.

**Dick West** says he is the lone survivor of the faculty at Louisiana State University right after WWII. He and his wife, Betty, are living in a Presbyterian retirement home in New Jersey, where he is chair of the finance and landscape committees, started an arboretum and is a member of the Township Shade Tree Commission. He says central New Jersey is experiencing tremendous building activity, and believes the state is on the cutting edge of tree ordinances.

**Sid McKnight** and wife, Bonnie, live in Skylake, a gated community in northern Georgia, where Sid is tree warden. Sid says if you can't remember a man's name, just say, "Hello, Podner."

In his last thespian effort, **Johnny Gray**, as Abraham Lincoln, had to deliver a 23-page monologue. He's looking forward to his annual tennis match with **Paul Burns '46, Ph.D. '49**, on the Fourth of July.

**S. Gayley Atkinson** lives in a Quaker retirement home in Gwynedd, Pa., where he attends every meeting involving forestry that takes place nearby.

**Cliff Pearson** at 91 is still able to live by himself and continues to be deeply interested in the forest products industry.

In the fall of 1940, **Bill Guttentag** and **Ham Williston** were working nights in a funeral home on Whitney Avenue. Bill left school and subsequently served in the Coast Guard, then worked in the hardwood plywood industry in Vermont and Canada. Last July, Bill and Ham saw each other for the first time in 63 years, having lunch with their wives in Ashland, N.H. Ham feels touched by greatness because he shared a cabin at Crossett with **Dave Smith '46, Ph.D. '50**, **Art Pingree '47** and the late **Wayne Byrne '47**.

**Dick Jorgensen** and wife, Kay, live in Pittsburg, Calif., where he serves as treasurer of his retirement association. He keeps busy despite problems with spinal stenosis.

**Bob Martin** lives in Pittsfield, Mass., and visits his wife of 60 years every day in the nursing home. He has "retired" from his volunteer job of maintenance on the Massachusetts section of the Appalachian Trail.

**Ben Eggeman** lives in Alexandria, Va.; he sold his boat and gave up sailing. He reminisced about his days in "paper manufacturing school" in Orono, Maine, with the late **Cliff Beebe**.

FORESTER AWARD RENAMED IN DAVID SMITH'S HONOR



At the Yankee Division meeting of the Society of American Foresters on February 12, Paul Dolan, left, received the David M. Smith Outstanding Forester Award, previously known as the Yankee Outstanding Forester Award, from David Smith at the Radisson Hotel in Enfield, Conn. On hand for the occasion were Mark Ashton '85, Ph.D. '90, Adam Moore '95 and J.P. Barsky of the Connecticut Agricultural Experiment Station. Smith, the Morris K. Jesup Professor Emeritus of Silviculture, received his master's degree in forestry in 1946 and doctorate in 1950 from the Yale School of Forestry.

**REUNION 2005**

1945

**Gus Tryon** and his family recently transferred ownership of the old Tryon farm in Pownal, Maine, to the local land trust and the state for open-space purposes and on favorable terms. This parcel provided linkage between Bradbury Mountain State Park and 500 acres of other open-space land. **Mike Whitney '63** and his wife, Rosemary, had a role in the arrangements with the Pownal Land Trust. Gus is still at a retirement home in St. Louis.

1946

**CLASS SECRETARY:**

**Paul Burns** [pyburns@lycos.com](mailto:pyburns@lycos.com)

1947

**CLASS SECRETARY:**

**Evert Johnson**

[swede-doc@mindspring.com](mailto:swede-doc@mindspring.com)

1948

**CLASS SECRETARY:**

**Francis Clifton** [fhcpbyfor@webtv.net](mailto:fhcpbyfor@webtv.net)

**Hap Mason** writes: "I attended a meeting of the Yankee Society of American Foresters on February 12, at which the division expressed great appreciation for **Dave Smith '46, Ph.D. '50**, all his good work, interest in students and sense of humor. . . I have kept in fairly close touch with him over the years and he came to my 80th birthday celebration in 2000. I have not much special to report other than I have an artificial knee and hip and just had a basal carcinoma removed from my nose, which should be a warning to all dirt foresters who go around without

hats and sunscreen. I am still living on my tree farm and heating my house with my own wood."

**George Hindmarsh** reports: "Not much new. Jan has her troubles. Another granddaughter is getting married in Oakland, Calif. I am trying to make the wedding in March but it doesn't look good. All the kids will be there."

**Francis Clifton** writes: "Attended WWII Navy PBV-Catalina Patrol Squadron reunion at Jacksonville, Fla., in October. The Navy gave us a good show."

**Darwin Palmer** reports that he turned 85 on August 26, 2003, with good health, yet poor balance.

**Steve Pryce** reports that he initially retired to Key West in 1983, but moved to Carlsbad, Calif., in 1997. He enjoys the ocean view and gratefully is not facing the devastation due to fire and subsequent rain, flooding and mudslides to the east. Steve is in good health and keeps active. He sends good wishes to all of his class members.

1949

**CLASS SECRETARY:**

**Frank Armstrong**  
[farmst1037@aol.com](mailto:farmst1037@aol.com)

**Dan Dick** and **Dave Fordyce** assembled updates and photos from class members for a "virtual reunion" publication. **Herb Winer** assisted with memorial notes. All class members received hard copies in March.

**REUNION 2005**

1950

**CLASS SECRETARY:**

**Kenneth Carvell** [kencarvell@aol.com](mailto:kencarvell@aol.com)

# ClassNotes

1951

CLASS SECRETARY:

Peter Arnold [arnoldp@nccn.net](mailto:arnoldp@nccn.net)

Harold Andersen and his wife, Sybil, are at a retirement center in Sandpoint, Idaho, where their daughter resides.

1952

CLASS SECRETARY:

Milton Hartley Jr.  
[redheded@olympus.net](mailto:redheded@olympus.net)

1953

CLASS SECRETARY:

Stanley Goodrich  
[smygood@qwest.net](mailto:smygood@qwest.net)

George Tsoumis has a long article on the Internet site of the *Encyclopaedia Britannica* under the title "Wood." This is the current revision of the article printed in the encyclopedia in 1974. The contents include data on worldwide production and consumption, harvesting, industrial utilization (products) and wood as a material (structure, properties). Information on bark and bark products is also included. The article appears on CD-ROMs and DVDs in abbreviated form.

1954

CLASS SECRETARY:

Richard Chase [RACHase@aol.com](mailto:RACHase@aol.com)

REUNION 2005

1955

CLASS SECRETARY:

Howard Spalt

1956

CLASS SECRETARY:

Jack Rose [jackrose@iopener.net](mailto:jackrose@iopener.net)

1958

CLASS SECRETARY:

Ernest Kurmes  
[Ernest.Kurmes@nau.edu](mailto:Ernest.Kurmes@nau.edu)

Herster Barres writes: "My associates and I have developed and now run a U.S. Initiative on Joint Implementation program to develop, demonstrate and document a model to offset U.S. CO<sub>2</sub> emissions in tropical farm reforestation projects, now in Costa Rica. [See brief description on Class of 1958 website.] I have been working in the tropics for 40 years, part of that time as a United Nations forestry officer and UNDP project manager. Our program, the Klinki Forestry Program for Costa Rica, has been approved by both the United States and Costa Rican governments as part of the Kyoto Protocol. We have

also been approved in the draft of the Connecticut Greenhouse Gas Protocol Initiative Management Plan. Forty-two U.S. emitters are participating in 230 acres on farms in Costa Rica. Our model is unique, and is based on decades of experience. The model has been developed, and we are now interested in expanding its use in New England in a new six-year program for which we are seeking funding from the EPA, DOE and other sources."

1959

CLASS SECRETARY:

Hans Bergey [hberg16@aol.com](mailto:hberg16@aol.com)

David Challinor is an emeritus scientist at the Smithsonian Institution at the research lab of the National Zoological Park in Washington. He is also the octogenarian member of a crew of seniors who compete in regattas at home and abroad.

REUNION 2005

1960

CLASS SECRETARY:

John Hamner [jgham@bulloch.com](mailto:jgham@bulloch.com)

1961

CLASS SECRETARY:

Roger Graham

Keville Larson has become a director of the Forest History Society.

1962

CLASS SECRETARIES:

James Lowe Jr.

Larry Safford  
[lsaffordnh@earthlink.net](mailto:lsaffordnh@earthlink.net)

1963

CLASS SECRETARY:

James Boyle [jim.boyle@orst.edu](mailto:jim.boyle@orst.edu)

Jim Space recently donated more than six boxes of books and notes to the Lew Grosenbaugh '36 Memorial Library at Marsh Hall. Jim had spent some of his career implementing sampling schemes developed by Lew.

1964

CLASS SECRETARY:

G. Wade Staniar

Stephen Hanover writes that he moved from his longtime residence in Raleigh, N.C., to his retirement home in Cape Coral, Fla. "The weather is more agreeable to engage in year-round aquatic sports, such as boating. For all you classmates, come on down for a visit and bring your ax. I am still active in international consulting on wood drying and secondary wood processing. I would like to hear from classmates: e-mail [kilnman@earthlink.net](mailto:kilnman@earthlink.net).

John Worrall taught dendrology from 1968 until mandatory retirement in '03. He writes: "I'm still teaching, however, but don't get paid for it anymore! So there you go! I'm still reeling from the death of Bart Thielges '64, Ph.D. '69. The three boys are helping Judy cope. There was, of course, no Plan B (Plan A being his new teaching position at San Luis Obispo). Now, after 40 years of friendship, I've no one to talk to about Yale days and people (and life in general)."

REUNION 2005

1965

CLASS SECRETARY:

James Howard [jhoward@sfasu.edu](mailto:jhoward@sfasu.edu)

Patrick Duffy writes: "Sixteen years into retirement here in Vancouver, British Columbia, and I am on my 102nd project and 37th country, this one for FAO Forestry (Rome)." He was recently appointed as a volunteer to the research planning committee of the (Canadian) Sustainable Forest Management Network (SFMN), which concentrates on the boreal forest and is based at the University of Alberta in Edmonton. The SFMN is a national partnership in research and training excellence. Its mission is to deliver an internationally recognized interdisciplinary program that undertakes relevant university-based research.

Bruce Weber, Ph.D., retired to Las Vegas, Nev., after 33 years of federal service, mostly working for the National Park Service and U.S. Fish and Wildlife Service. Bruce and his wife, Kathy, enjoy the superb natural resources of the Las Vegas valley.

1966

CLASS SECRETARY:

Howard Dickinson Jr.

1967

CLASS SECRETARY:

Robert Hintze [bclues@aol.com](mailto:bclues@aol.com)

1968

CLASS SECRETARY:

Gerald Gagne  
[Gerald.gagne@sympatico.ca](mailto:Gerald.gagne@sympatico.ca)

1969

CLASS SECRETARY:

Davis Cherington

REUNION 2005

1970

CLASS SECRETARY:

Whitney Beals [wbeals@neforestry.org](mailto:wbeals@neforestry.org)

Whitney Beals is associate director of land protection for the New England Forestry Foundation,

# ClassNotes

where he works on a variety of conservation easements and acquisitions to provide for sustainable management of forests and their protection from development for other uses.

**1971**

**CLASS SECRETARY:**

**Harold Nygren** [Tnygren@juno.com](mailto:Tnygren@juno.com)

**Richard Hanby** has been elected a fellow of SAF.

**1972**

**CLASS SECRETARY:**

**Ruth Hamilton Allen**

[ruth.allen@aehinstitute.com](mailto:ruth.allen@aehinstitute.com)

**Mike Bulfin** writes: "I have been carving my own niche in Irish forestry but will be finishing soon. I have worked in the field of land use—mostly for forestry—and have a major project to develop a national forest productivity map for the country. This will be used for the development of local, regional and national indicative forest strategies, as we call them over here. Valuable byproducts of this work are a national soil parent material map, a land cover map and a soils classification map. This was carried out using remote sensed imagery, so everything is in digital form. My personal research area is the management of young plantation broadleaves, using formative shaping, tending and now thinning. Our farmers are now very generously aided with grants to plant broadleaves, and because my organization is involved in all forms of agricultural research, education and advice, we are the vehicle for such research. I have also been involved in Irish/European Union forestry politics and policy making for many years and will end up being president of the Society of Irish Foresters."

**Dick Porterfield** is president of the Forest History Society.

**1973**

**CLASS SECRETARY:**

**Lauren Brown** [leb481@aol.com](mailto:leb481@aol.com)

**John Aber** started in August 2003 as vice president for research and public service at the University of New Hampshire. "It is a different kind of challenge," he says, "but a good chance to give back to the institution that has made so much possible for me. Also, David Foster, director of the Harvard Forest, and I have edited a book that came out at the end of March, published by Yale University Press (see Bookshelf). The book is called *Forests in Time: The Environmental Consequences of 1,000 years of Change in New England*, and it summarizes results from the Harvard Forest LTER project in a semipopular format."

**Lauren Brown** has written *A Passion for Plants: The First Century of the Connecticut Botanical Society*, a centennial history of an organization that has played

an important role in documenting the state's flora. She writes: "One of the interesting aspects of the research for the book was to see the changes in conservation priorities over a century. For instance, in 1923, Botanical Society members fretted that commercial collecting would lead to the extirpation of mountain laurel!"

**Roy Deitchman** continues to have interesting challenges as the assistant vice president-environmental at Amtrak, working at Union Station in Washington, D.C. Amtrak joined the Chicago Climate Exchange (CCX) in 2003 to trade greenhouse gas credits, and Roy now serves as the chair of the CCX environmental compliance committee. Roy was also elected chair of the Rockville, Md., board of appeals, which decides local land use and zoning variance issues. He writes: "Since leaving the school in 1973, I have worked in the environmental health and safety field and earned degrees in public health and law. After 22 years in the Bell system, I joined Amtrak in 1999. I have been involved in environmental issues having to do with utility poles and now railroad ties. I wonder if there is a way to integrate some of the needed problem solving with ties and poles into a student project or course lecture."

**Tom Dunn** is still product development director for Printpack, a supplier of flexible packaging materials in Atlanta. He writes: "Now that the kids are moving on, I am engaging in more civic and professional activities. . . . on the board of directors of the Georgia chapter of the Product Development and Management Association, the Georgia Shakespeare Festival and the national Radiation Technology organization. My younger son, Mark, entertained at F&ES back in January, with his Yale College undergraduate singing group "Mixed Company." So far he loves New Haven, but stays away from Science Hill."

**Lloyd Irland, Ph.D.** '73, came to Yale last fall to teach forestry financial analysis. His youngest daughter, Johanna, a soccer player, cheerleader and singer, finishes high school this spring. Lloyd delivered the keynote address at the Allegheny Society of American Foresters meetings in February.

**1974**

**Len Lankford** visited the school on his way to Washington, D.C., in January. He had a chance to walk around town in the unusually cold New England winter, meet with students to describe his work in words and slides and visit with faculty.

**REUNION 2005**

**1975**

**CLASS SECRETARY:**

**Ann Corcoran**

**1976**

**CLASS SECRETARY:**

**Howard Corcoran**

**1977**

**CLASS SECRETARY:**

**James Guldin** [jguldin@prodigy.net](mailto:jguldin@prodigy.net)

**1978**

**CLASS SECRETARIES:**

**Susan Curnan** [curnan@brandeis.edu](mailto:curnan@brandeis.edu)

**L. Marie Magleby** [LoMaMag@aol.com](mailto:LoMaMag@aol.com)

**Regina Rochefort**

[regina\\_rochefort@nps.gov](mailto:regina_rochefort@nps.gov)

**1979**

**CLASS SECRETARY:**

**John Carey**

[john\\_carey@buisnessweek.com](mailto:john_carey@buisnessweek.com)

**Hob Calhoun** reports: "I have been able to finish raising my son on Mount Desert Island on the great coast of Maine. Doug is now in his senior year at Colby College, Waterville, Maine. He spent a great year studying in Kyoto, Japan, for his junior year. I finished my work at the Neighborhood House on Mount Desert Island two years ago and eventually, after much soul-searching and research, I decided to pursue a career in the medical laboratory sciences. I enrolled in the University of Connecticut's Diagnostic Genetic Sciences certificate program a year ago. As a part of the program, I will be heading next month to Spokane, Wash., for a six-month clinical rotation at the Sacred Heart Medical Center's Cytogenetics Laboratory. Being a full-time student taking courses in such things as medical cytogenetics, statistics and human genetics has been quite a challenge, but quite satisfying."

**Jim Lyons**, executive director of Casey Trees Endowment Fund, visited the sites of many downed and surviving trees in Washington, D.C., during the week following Hurricane Isabel. According to the *Washington Post* (September 28, 2003), one of the trees damaged during the storm, a 63-inch little-leaf linden measured by Lyons, had the largest diameter of any of the city's street trees. Casey Trees works with government officials, conservation groups and residents to protect the city's trees from "disease, poor maintenance and development."

**Bob Perschel** writes: "For the last few years I've been director of the land ethic program for The Wilderness Society (TWS). In the fall of 2003 we published a *Land Ethic Toolbox* (see Bookshelf) and placed it on the TWS website. I've also been working on a book to help environmental advocates use ethics, morals, values, spiritual and religious perspectives and principles of leadership in their advocacy. It's been a personally rewarding experience to explore what has

# ClassNotes

been a major interest of mine since my time at F&ES. It's allowed me to draw on my career experiences as a field forester, with The Land Ethic Institute, and a number of wilderness campaigns with TWS, including my primary work as chair of The Northern Forest Alliance."

## REUNION 2005

### 1980

#### CLASS SECRETARY:

**Sara Schreiner-Kendall**

[sara.kendall@weyerhaeuser.com](mailto:sara.kendall@weyerhaeuser.com)

**Ruben Rangel** writes: "I'm in management at Los Alamos National Laboratory. I ride my bicycle 10 miles a day to catch a bus to and from work. I've logged over 500 miles since starting this summer. I enjoy the rides, even when it is 5:10 a.m. and 11 degrees out. I'm fairly fit now. Daniella and Dante are in high school and junior high school, respectively, and doing great. Daniella, a freshman, has expressed interest in attending Yale. Beatriz is still teaching and enjoys the diversity of students. I hope to do more hiking and camping this year. I got a GPS unit recently and we've started geocaching in the mountains. It's great to be outdoors, and the children enjoy the treasure hunts. Stop by and visit us in Santa Fe."

**Jane Sokolow** writes: "I am still working hard to preserve open space and the Hudson River shoreline in Riverdale and the City. I am now working on a new project to organize an advocacy group for the Harlem River, both for preservation and to bring recreation and boathouses for nonmotorized craft back to the river. In the southwestern Catskills, I am working on open space and riparian restoration issues and a project to document the history and traditions of the Beaverkill Valley. We have published one volume of stories, photographs, maps and interviews and have begun work on a second volume. On a more personal note, our first grandchild, a girl, was born in September. So although I neither look nor feel like a grandmother, I am enjoying the role."

### 1981

#### CLASS SECRETARY:

**Carol Youell** [envstew@snet.net](mailto:envstew@snet.net)

**Thea (Weiss) Tarbet** lives in Portland, Ore. She has two daughters, Hanna and Rachel, and teaches middle school science, health and reading. Thea is coordinator for Gear-Up Oregon.

### 1982

#### CLASS SECRETARIES:

**Barbara Jean Hansen**

**Kenneth Osborn**

[forstman@fidalgo.net](mailto:forstman@fidalgo.net)

**Mir Javed Hussain** is on the staff of the Southeast Asian Development Bank in Manila.

## VIDEO EDITING CENTER CREATED WITH CLASS OF 1980 GRANT

With a grant from the Class of 1980, the Tropical Resources Institute (TRI) has established a documentary video editing center, which includes a computer loaded with video production software and a professional-quality video camera that students can borrow for their projects. Students who are interested in combining independent research projects with the production of a documentary video can borrow the equipment; priority will be given to students interested in working in tropical countries. David Kneas '05 is working on two projects: editing video footage from his previous work in Ecuador and preparing to return to Ecuador and Peru to begin a new video on the effects of the international mining industry on local communities.

## CLASS OF 1980 SUPPORTS LAND USE SPEAKER SERIES

With generous funding from the Class of 1980 Fund and additional support from the Student Affairs Committee, the Land Use Coalition at Yale (LUCY) sponsored a spring speaker series. The series featured Bruce Katz, director of the Center on Urban and Metropolitan Policy at the Brookings Institution, who discussed the future of regional and transportation planning; Don Chen '99, executive director of Smart Growth America, who discussed community design in the United States; Dennis Glick, director of the Sonoran Institute, who discussed changes in land use at the rural/urban interface and the effects of fringe development on communities and the environment; and Dolores Hayden, professor of architecture and American Studies at Yale, who discussed the rise of suburbia and its social implications. LUCY has a membership of 40 students from the School of Forestry & Environmental Studies, School of Management and School of Architecture, and its officers are Ona Ferguson '04, Alison Van Gorp '04 and Brian Marcaurette '04.

### 1983

#### CLASS SECRETARY:

**Stephen Broker** [lkbroker@snet.net](mailto:lkbroker@snet.net)

A new report from the Center for Environment and Population (CEP) and The National Wildlife Federation provides scientific evidence for considerable population impacts on New Hampshire's land use, natural resources, wildlife and habitat. According to CEP director **Vicky Markham**, "New Hampshire, like other states, has critical human population-environmental impacts that are often overlooked as we address these issues at the global level. This report demonstrates that New Hampshire is a microcosm of how these issues play out at the national and global levels. We need to understand not only how fast population is growing, but also how and where people live, to be successful in preserving our environment. How this affects New Hampshire is an example of how population changes loom large over natural resource issues in the United States today."

**Betsy Blair** serves as manager of the Hudson River National Estuarine Research Reserve and has made major headway in mapping the 160-mile Hudson River Estuary. Betsy and her husband, Michael Chrobot, have two children, Ben and Maya.

### 1984

#### CLASS SECRETARIES:

**Therese Feng**

[therese\\_feng@yahoo.com](mailto:therese_feng@yahoo.com)

**Roberta Tabell Jordan**

[rjordan@clinic.net](mailto:rjordan@clinic.net)

**Nobby Riedy** writes: "I am living in California, wedged in between redwoods and the coast, south of San Francisco, with my wife, Hilary. She is a cinematographer and I manage a philanthropy dedicated to preserving California's remaining wilderness. All is well here and we are hoping to adopt a child this year. I can be reached at [Nobby@WildSpaces.net](mailto:Nobby@WildSpaces.net).



# ClassNotes

**Susan (Huke) Stein** is in her 15th year with the USDA Forest Service in Washington, D.C. She is now managing several private forestland studies, including a new GIS effort to analyze opportunities and threats to private forests across the lower 48 states. She and husband Bruce have two sons, Benjamin and Noah, ages 5 and 2.

**Amy Horne** lives in Truckee, Calif., and is manager of all water in California that flows east!

## REUNION 2005

1985

### CLASS SECRETARIES:

**Alexander Brash**

[alex.brash@parks.nyc.gov](mailto:alex.brash@parks.nyc.gov)

**Margaret Rasmussen King**

[theskjings@attbi.com](mailto:theskjings@attbi.com)

**Henry Whittemore** writes: "On March 15, I joined Hancock Land Company of Casco, Maine, as executive vice president of acquisition, investment and conservation strategies. I am very much looking forward to my new work and to my association with Matt Hancock and the great team he has assembled. Hancock Land Company (HLC) has been in the forestland ownership business for six generations and is closely associated with the sawmills and retail businesses of Hancock Lumber Company ([www.hancocklumber.com](http://www.hancocklumber.com)). HLC is certified as both an owner and manager of forestland by the Forest Stewardship Council and has about 40,000 acres of forestland under its management. My role at HLC will be to help build the company's land base through new purchases and management contracts; identify and attract new, long-term capital into forestland ownership; develop and implement conservation strategies that protect HLC's ownership; and enhance the forestlands' economic viability and contribution to Maine's forest products economy."

1986

### CLASS SECRETARY:

**Caroline Norden**

[cnorden@maine.rr.com](mailto:cnorden@maine.rr.com)

1987

### CLASS SECRETARIES:

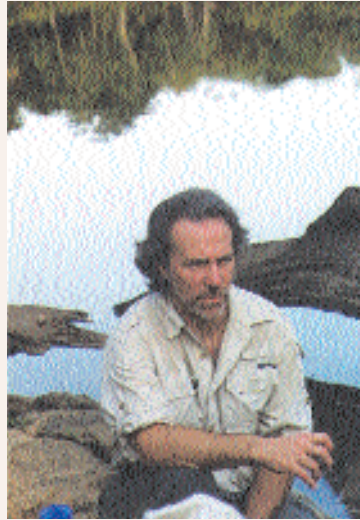
**Christie Coon** [caco07@aol.com](mailto:caco07@aol.com)

**Melissa Paly** [mpaly@aol.com](mailto:mpaly@aol.com)

**Andy Brower** is battling for tenure at Oregon State University and reports that he should have gone to law school instead. He and his wife have been busy breeding horses.

**Walt Chomentowski** left the University of North Carolina and the seacoast "in 1997, after getting married and moving to Michigan. I work at Michigan State University (MSU) in the Center for Global Change and Earth Observations, where I use GIS and

## PLOTKIN RECEIVES ROY CHAPMAN ANDREWS DISTINGUISHED EXPLORER AWARD



Mark Plotkin '81, Ph.D.

**Mark Plotkin '81, Ph.D., has been awarded the Roy Chapman Andrews Society Distinguished Explorer Award for his work in the Amazon.**

An ethnobotanist devoted to preserving and investigating the medicinal use of rain forest plants, Plotkin serves as president of the Amazon Conservation Team ([www.amazonteam.org](http://www.amazonteam.org)), a nonprofit organization that works closely with indigenous peoples of the Amazon to protect their forests and culture. To date, Amazon Conservation Team has helped indigenous partners map, protect and improve management of over 27 million acres of ancestral lands.

The Roy Chapman Andrews award, named after the early-20th-century explorer, is not the first recognition Plotkin has received for his work. In 1998, *Time* magazine named him an environmental "Hero for the Planet." He is perhaps best-known for his popular book, *Tales of a Shaman's Apprentice: An Ethnobotanist Searches for New Medicines in the Amazon Rain Forest*, which was made into the IMAX film "Amazon." Plotkin played a leading role in the film, which was nominated for an Academy Award.

Plotkin, who began his ethnobotanical fieldwork in South America while a student at F&ES, made his first trip to the rain forests of South America in 1979 while serving as a curatorial assistant at the Museum of Comparative Zoology at Harvard. That journey inspired a lifelong study of the medicinal use of local plants by the indigenous peoples of the region. He has made countless trips to the Amazon since then, both to record the diversity of the flora and its associated healing properties and to encourage the preservation of that knowledge among the forest's native inhabitants. Plotkin has written a series of books about his experiences and discoveries, including *Tales of a Shaman's Apprentice* (Viking-Penguin, 1993) and *Medicine Quest: In Search of Nature's Healing Secrets* (Viking-Penguin, 2000). He co-authored, with Michael Shnayerson, *The Killers Within: The Deadly Rise of Drug-Resistant Bacteria* (Little Brown, 2002). His book for young readers, *The Shaman's Apprentice: A Tale of the Amazon Rain Forest*, with co-author and illustrator Lynne Cherry, became a featured book on the award-winning PBS children's series "Reading Rainbow."

# ClassNotes

remote sensing to observe and analyze land-cover changes in the tropics. Our two children, Medeline and Hugh, are 5 years and 18 months, respectively. My wife is a professor in the zoology department at MSU.”

After founding a D.C.-based consulting venture in 1997 called IAG Environmental, **Rob Lester** moved last year with his wife and baby boy to Guatemala. He’s been publishing environmental commentary in the press since then and has now launched a new environmental consultancy, Gerencia Ambiental Internacional. The bilingual website can be found at [www.gai-sa.com](http://www.gai-sa.com).

**Elysa Hammond** writes: “I’m an environmental scientist with a special interest in agricultural ecology. During the past 15 years, I’ve worked in ecological research and education in a variety of places, including Mexico, Peru and Indonesia and more recently in New York, where I now live. My work has varied in setting and task, but has always revolved around food, agriculture and resource use. I’m very excited about working for Clif Bar. This is not an ivory tower. This is a company that makes healthy food and seeks to make the world a better place along the way.” As staff ecologist at Clif Bar, Elysa guided the company’s efforts to take part in the NativeEnergy program through which Clif Bar has purchased enough renewable energy credits to neutralize about 2,000 tons of carbon dioxide emissions. Elysa is also a Ph.D. candidate at F&ES. She conducted fieldwork for her dissertation in western Borneo from 1990 to 1995 for her thesis titled “The Transformation of Peat Swamp Forest to Agroforest in Coastal West Kalimantan.”

**Kate Lake** is in Falmouth, Mass., and is a fund-raiser for the Woods Hole Marine Biological Laboratory, where **Dan Nepstad** is also based, though he spends most of his time in Brazil doing research.

**Dan Nepstad, Ph.D. ’89**, participated in the TRI anniversary on April 1, “Celebrating Two Decades of Interdisciplinary Tropical Research at Yale,” with other Yale graduates and affiliates, focusing on the transitions and trajectories of tropical studies since the 1980s. Also on the panel was **John Parrotta ’83, Ph.D. ’87**. John works as national program leader of international science issues and coordinator of the IUFRO division (Silviculture) for the USDA Forest Service, Research & Development.

**Anne Hartley** writes: “I’m on the faculty of the environmental studies department at Florida International University in Miami. It’s a snow-drought year here every year, still kind of a novelty. I’m teaching environmental resource management and restoration ecology, so anyone working in those fields who’d care to give me some real-life environmental problems for my students to chew on, please get in touch ([hartleya@fiu.edu](mailto:hartleya@fiu.edu)).

**Julie Dunlap, Ph.D.**, writes: “My tenth children’s book will appear this fall, *John Muir and Stickeen: An*

*Icy Adventure with a No-Good Dog* (NorthWord). My four kids are getting big, so this is my new ‘baby.’”

## 1988

### CLASS SECRETARIES:

**Diane (Pierce) Stark** [dstark@bart.gov](mailto:dstark@bart.gov)

**Phillip Voorhees III**  
[pvoorhees@npca.org](mailto:pvoorhees@npca.org)

**Chris DeForest** recently celebrated the Inland Northwest Land Trust’s 10-year anniversary with celebrations, a few choice words and the sale of 30 watercolors by Wes Hanson, one of their conservation easement donors. You can visit the trust’s website at [www.inlandnwlandtrust.org](http://www.inlandnwlandtrust.org).

**Betsy Edwards** is thriving in her position as executive director of Washington’s National Park Fund, which is the official nonprofit fund-raising partner for Mount Rainier, North Cascades and Olympic National Parks.

**Brian Lockhart** is doing hardwood research in the Mississippi bottomlands at the USFS Research Center at Stoneville, Miss.

## 1989

### CLASS SECRETARIES:

**Susan Campbell**  
[susan.campbell@attbi.com](mailto:susan.campbell@attbi.com)

**Jane Hoyt Freeman** [isweb@idiom.com](mailto:isweb@idiom.com)

**C.J. May**, Yale University’s recycling coordinator, oversaw Yale’s first zero-waste event. The annual F&ES picnic, hosted by Dean Speth, incorporated disposable cups, knives, forks and spoons, which were made of totally biodegradable corn and potato starch. “We’ve tried out these Biocorp products at other events with normal Yalies,” May explained. “But it’s wonderful to come to an event where everyone is like, ‘Ooh-ooh-ooh!’”

### REUNION 2005

## 1990

### CLASS SECRETARY:

**Carolyn Anne Pilling**

**Elizabeth “Lise” Aageenbrug** is program director at the Colorado Conservation Trust (CCT). Her responsibilities include the development and implementation of CCT’s grant program and policy initiatives. Prior to joining CCT, Lise served as deputy director of programs for the Great Outdoors Colorado Trust Fund and was with that organization since its inception in 1993.

**Najib Murtaza** writes: “I resigned from the World Bank as senior environment and natural resource specialist last October. A Montessori school we set up in 1992 has grown into one of the finest schools in Islamabad. It has an enrollment of about 1,200 students and a faculty and staff of about 160.”

**Ann Camp** is chair of the Forest Science and Technology Board of SAF.

## 1991

### CLASS SECRETARIES:

**Deb Beardsley** [DEBPDC@aol.com](mailto:DEBPDC@aol.com)

**Dorothy Beardsley**

**Kristin Ramstad**  
[kramstad@odf.state.or.us](mailto:kramstad@odf.state.or.us)

**Tim and Betty (Kim) Charnon** live in Girdwood, Alaska, and have two kids, Dylan, 5, and Jacob, 3.

**Creed Clayton** writes: “After teaching biology courses at the University of Maine at Fort Kent for a year, my family and I have moved to Ventura, Calif. Both my wife, Bridget, and I now work as fish and wildlife/endangered species biologists for the U.S. Fish and Wildlife Service. I can be reached at [creed\\_clayton@r1.fws.gov](mailto:creed_clayton@r1.fws.gov).

**Kristin Ramstad** is about to go on maternity leave.

**Chris Rodstrom** and his wife, Jennifer, had their first child, Mark, born on November 19. They live with their two dogs, Maya and Pedro, in Stow, Mass., just a few blocks from **Lisa Vernegaard ’92**. Chris works on land conservation projects throughout Massachusetts at The Trustees of Reservations, a statewide land trust where he has worked since leaving Conservation International in 1997.

**Jennie Wood Sheldon and James Sheldon ’92** report: “We are moving next week, just a half mile down the road. Tyler’s 9 (Dudus Maximus) and Jessie’s 6 (losing teeth). James is doing environmental consulting and Jennie’s coordinating a teaching garden at Islandwood, an environmental learning center. Maybe it’s time for a West Coast reunion—Callie, where’s that Y Camp on the Oregon coast?”

## 1992

### CLASS SECRETARY:

**Katherine (Farhadian) Kearse**  
[farhadian@aya.yale.edu](mailto:farhadian@aya.yale.edu)

## 1993

### CLASS SECRETARIES:

**Dean Gibson** [deang@acpub.duke.edu](mailto:deang@acpub.duke.edu)

**Molly Goodyear**  
[mandm4@mindspring.com](mailto:mandm4@mindspring.com)

**Josh Foster** writes: “After nine years as a contractor for NOAA, I am finally being offered a full-time federal position, most likely in the new NOAA climate program office.”

**Tom O’Shea** is chair of the New England Society of American Foresters.

# ClassNotes

1994

## CLASS SECRETARIES:

Jane Calvin [Calvin3621@aol.com](mailto:Calvin3621@aol.com)

Jane Whitehill  
[janewhitehill@hotmail.com](mailto:janewhitehill@hotmail.com)

Cynthia Wood

**Keith Moser** of the USFS North Central Research Station is acquisitions editor of the *Journal of Forestry*, for which he seeks paper submissions. In the SAF he also represents the management and utilization fields on the Forest Science and Technology Board.

**Harriet Honigfeld** writes that she had a baby, Meredith Claire Weiner, born on February 20. She weighed 6 lbs., 9 oz., and was 19.25 inches long. "You should get to meet her at the reunion."

**Geoffrey Blate** writes: "Sujata and I bought a house in the Washington, D.C., area. No, I'm not done with my Ph.D.; I've opted for the remote dissertation completion plan."

**Amity Doolittle, Ph.D. '99**, is program director at the Tropical Resources Institute at F&ES. TRI has lots of new and exciting initiatives, such as a video editing center, growing partnerships with the World Agroforestry Centre and the World Conservation Union, and the development of new courses and research focused on issues, such as environmental justice and the effects of globalization on the environment. Amity's dissertation will be published this year by the University of Washington Press as part of their new Nature and Culture Series. The working title of the book is *Property and Politics in Sabah, Malaysia (North Borneo): A Century of Native Struggles over Land Rights, 1881-1996*.

**Nick Shufro** participated in the Industrial Environmental Management Student Interest Group panel of alumni at F&ES on February 19. He writes: "Last August I joined PricewaterhouseCoopers (PwC), based in Hartford, Conn., and New York City. I've joined the U.S. Sustainable Business Solutions team of about a dozen professionals working on sustainability, corporate governance and compliance. Worldwide, we have over 400 professionals in the sustainability group. We are doing interesting and exciting work with companies and government agencies seeking to go beyond compliance, including moving beyond traditional financial reporting and to include triple bottom line reporting on social responsibility, economic performance and environment, health and safety."

**Sean Murphy** now lives outside Burlington, Vt., after finishing his "pesky" Ph.D.

**Steve Harrington** and wife, Shirl Ann, have a daughter, Sionann, 3, and a son, Oisin, 1. He is still coordinating the Forest Stewards Guild.

**Erik Kulleseid** writes: "Mark's and my journey with surrogate Wen Murphy to have children will be the

subject of a Cinemax documentary airing on Father's Day (June 20) this spring. The film is titled *Paternal Instinct*, and tells the story of our decision to have children, our finding Wen and our efforts to have children, culminating in the birth of our eldest, Cecilia. It's also slated to show in film festivals in Orlando, Miami, Cleveland and London between now and then. Right now we're keeping our fingers crossed that it gets into the Tribeca Film Festival in New York City at the beginning of May!"

**Cynthia Caron** is a postdoctoral associate at the Polson Institute for Global Development, Cornell University, conducting research in Sri Lanka.

**Greg Corbin** writes: "I will be in Spain with my family in May so I will miss the chance to see old friends. Meg and I welcomed our second child, Andrea (Andi) McKenzie Corbin, into our family February 7. The family is doing great, and Andi's big brother, Tyler, 2, is adjusting well. We continue to live in and love Portland, Ore. Visitors welcome! My law practice remains focused on natural resource issues, with a recent emphasis on renewable energy development. I also am serving on the board for the Natural Resources Law Institute, housed at Lewis & Clark Law School in Portland. We are about to launch some new programs that I hope will provide exciting internship opportunities for Yale students interested in natural resource issues in the Pacific Northwest. Best wishes to the class of '94 and have a great reunion!"

**Lorna (Calder) Johnson** is living in Melbourne, Australia, and is married with a stepson. She is a strategy and reporting manager for AXA.

**Susan Stout, D.F.E.S.**, a research silviculturalist and project leader for the USDA Forest Service's Northeastern Research Station in Warren, Pa., received an SAF fellowship. She and her father, Dr. Benjamin Stout, are perhaps the only father-daughter fellows in SAF history. Susan recently received an appointment as adjunct professor in forest resources at Pennsylvania State University's School of Forest Resources. Susan is also a member of the plateau chapter of SAF's Allegheny section, and has served as an officer in SAF's silviculture working group.

**Brooke John Barrett** is a consultant with Exterior Research and Design in Seattle, Wash. In the forestry realm, the firm recently co-authored a Forest Service General Technical Report (FPL-GTR-142). Brooke spends about half his time managing active construction remediation projects in Portland and Seattle, with the remainder of his time devoted to participating on both domestic and international project teams. In 2000, he was proud to have earned his journeyman card with the United Brotherhood of Carpenters and Joiners of America, after several years in the trade. Moreover, he received a full fellowship to Stanford University to complete his M.S. in civil and environmental engineering, with a specialty in construction management the same year. For the past

decade he has mostly been in Seattle, where he recently enjoyed coffee with **Chris Filardi**, who was completing his Ph.D. at the University of Washington. One of Brooke's more exciting experiences involved working as a carpenter at McMurdo Station, Antarctica, during the southern summer of 2001-2002, along with his related travel in New Zealand and Australia. [See the F&ES website for a photo of Brooke hiking the Castle Rock Trail outside of McMurdo Station with Mt. Erebus in the distance.]

## REUNION 2005

1995

## CLASS SECRETARIES:

Marie Gunning [mjgunning@aol.com](mailto:mjgunning@aol.com)

Ciara O'Connell  
[ciaramoconnell@aol.com](mailto:ciaramoconnell@aol.com)

**Dwight Barry** writes: "I am the manager of an 1,800-acre wildlife management area near Dallas, Texas. Kate was born on August 25. My wife, Tami, and I are loving being new parents—if I'd known kids were so much fun I might have done this sooner! Anyway, pictures (Kate, family, work, etc.) and all my work info are on my web page at [www.ias.unt.edu/~llela](http://www.ias.unt.edu/~llela).

**Marie Gunning** and her husband, Michael Murphy, welcomed the arrival of their new baby daughter, Mary Kathryn, born in December. Mom, Dad and baby are all doing fine, and enjoying life in southern Maine.

1996

## CLASS SECRETARIES:

Kathryn Pipkin [kate@goodisp.com](mailto:kate@goodisp.com)

Julie Rothrock  
[julie.rothrock@amec.com](mailto:julie.rothrock@amec.com)

**Saleem Ali's** new book, *Mining, the Environment, and Indigenous Development Conflicts* (see Bookshelf), was published in November 2003. The book examines environmental conflicts between mining companies and indigenous communities, and offers a comparative study of the factors leading to those conflicts.

**Joe Burckle** writes: "I have been working at The University of the South as domain manager for the last six years. The domain is the local term for the university's land holdings. The job involves forest management, GIS development and urban planning. In April 2001, I married Melissa Garcia, M.P.H. '95 (Yale). We live in Beechgrove, Tenn., with our dogs and cats. No children yet."

**Bryan Foster** is a Ph.D. candidate at the University of Vermont, studying under **Deane Wang '79, Ph.D. '84**, and **William Keaton '94**. He also does environmental consulting for Jackson Hole Mountain Resort and writes for *American Forests* magazine.

**David Ganz** finished his Ph.D. in August 2002. He

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consulted abroad with the Food and Agriculture Organization and IUCN before returning to California to join an environmental consulting firm, ECORP, in Oakland as a senior manager. He recently was married.

**John Gunn** has his own consulting business.

**Chris Hanson** is working in Washington, D.C., with Booz Allen Hamilton.

**Robin Sears** and **Mary Ford '01** presented a workshop at a symposium for New England educators last fall. The symposium, titled "The Role of Tropical Ecology in the New England Classroom," was a one-day event geared toward middle and high school educators.

**Lara (Nachiem) Swenson** married Jack Swenson in September 2002. Her son, Joseph, 7, is very excited about the imminent arrival of a baby brother. Although currently on hiatus, Lara teaches math and science courses at Shoreline Community College and is involved with her Christian Ecology Group (CEG), which she founded. CEG's mission is "to challenge people's theology regarding stewardship of the Earth." On October 5, 2002, CEG held an environmental seminar on topics including raising environmentally conscious kids, biotechnology and the environment, social and environmental justice, biodiversity and extinction.

**Christian Kull** writes: "I'm teaching at Monash University in Melbourne, Australia, after a three-year stint at McGill University in Montreal. I still specialize in natural resource management issues in Madagascar; my first book, *Isle of Fire: The Political Ecology of Landscape Burning in Madagascar*, will be published by the University of Chicago Press in July. More important news, however, is that my partner Frédérique and I are expecting our first child any day now!"

**Jared Hardner** is managing partner of Hardner & Gullison Associates in Palo Alto, Calif. This past year they set up an endowed trust fund for the protected areas system of Bulgaria, designed a conservation program for the Antamina in Peru (the largest copper and zinc mine in the world) and worked with Shell Oil Company and the National Fish and Wildlife Foundation to evaluate the impacts of their conservation partnership, called the Shell Marine Habitat Program. On the latter project, Jared had the pleasure to meet with classmate **Carter Smith** and discuss his work with Shell funds through The Nature Conservancy. Jared pointed out that his other interviews in Texas showed, not surprisingly, that Carter seems to be about the best-liked and highly regarded person in the conservation community in Texas. On a volunteer basis, Jared set up a conservation fund-raising club called the Jackalopes. The basic idea of the club is to use outdoor events to build corporate sponsorships for management of

underfunded national parks. This past summer, F&ES grads **Richard Osbaldiston**, **Greg Dicum** and **Nina Luttinger** joined Jared and a group of 15 other mountain bikers and traversed Rila National Park in Bulgaria. Richard proved his weight in gold by replacing countless broken spokes on the trailside, including one with only a piece of Teflon string. [See a couple of photos from the field on the F&ES website.]

**Andi Eicher** and his wife, Sheba, have now completed a year in Thane, a satellite city of Mumbai on the west coast of India. They are working with a community-based HIV/AIDS care program called Jeevan Sahara Kendra, and are hoping to start a five-bed inpatient care unit this July to back up the home-based care work. They are blessed to have two wonderful kids, Asha, 3, and Enoch, 1. Andi writes: "It is strange to have gone to New Haven to do rural community forestry and now to be in an entirely urban setting!" They can be contacted at [jsk@vsnl.net](mailto:jsk@vsnl.net). [Family picture on F&ES website.]

**Jennifer (Beck) Plourde** and her husband, Brenon, welcomed their second son, Elliot Alphonse, into the world on November 16. Jen is taking a sabbatical from her teaching career to be at home with the boys.

**Ali Jalili** and his wife, Courtney Chubb, are still in Mexico City, where they will be staying until the summer of 2006. Ali is covering economic issues at the embassy, while his wife is a Foreign Service officer with USAID. They are the very proud and happy parents of Brady, 3, and Aidan, 6 months. They welcome visitors and would love to hear what folks are up to.

**David Casagrande** writes that he and Donna are doing well and living in Tempe, Ariz., where David is a postdoctoral research associate with the Central Arizona-Phoenix Long-Term Ecological Research Program at Arizona State University.

**Julie Rothrock** and her partner, Nancy Bonnevie, are the proud parents of twin girls, Alice and Jane, born on January 14. All are healthy and happy, including the three dogs! They are still living in the Boston area and can't wait for warmer weather so they can start introducing the girls to the New England outdoors.

**Anne Reynolds** writes that she and her husband had a baby boy on August 21. Timmy Patrick McCorry was born in Albany, N.Y., weighing 8 lbs., 9 oz. Anne says, "We're doing great."

**David Newman** is director of health, safety and environment for Millipore Corporation. Millipore is a multinational company that supplies the biotechnology and pharmaceutical industries. He started in August 2003, and loves his new job so far. He has a 10-minute commute to work and has been doing some traveling to sites in Europe and Puerto Rico.

**Kath Schomaker** is enjoying e-mails and phone

calls back and forth to New Zealand while her daughter, Claire Kendall, now 21 and a junior at Smith College, enjoys her semester abroad at the University of Otago in Dunedin on the South Island.

## 1997

### CLASS SECRETARY:

**Paul Calzada** [pcalz@metro2000.net](mailto:pcalz@metro2000.net)

**Jon Kohl** is no longer with RARE Center. He is now consulting on a variety of areas, including conservation, and is writing, editing, researching and working on the Worldview Change project.

**Geraldine Lee** writes: "I am now working for the Singapore International Foundation. The program I work on is the Youth Expedition Project and I develop community projects in East Malaysia, Indonesia, Cambodia and Laos for youth teams from Singapore. It's International Service Learning, which means they learn while doing the community service. It's great because I am doing what I want to do, a form of community forestry and some development work, and I get to travel as well!"

**Josh Reid** is practicing environmental law with the environmental, energy and natural resources department of Parsons Behle & Latimer in Salt Lake City, Utah. Josh was an associate attorney with Lionel Sawyer & Collins in Las Vegas from 2001 to 2003, where he practiced environmental, gaming, land use, public utilities and administrative law. He is married to Tamsen Burk, with one son, Liam, and another yet to be named.

## 1998

### CLASS SECRETARIES:

**Nadine Block**

[nadineblock@alumni.williams.edu](mailto:nadineblock@alumni.williams.edu)

**Claire Corcoran**

[corcoran\\_claire@hotmail.com](mailto:corcoran_claire@hotmail.com)

**Jackie Cefola** left the Environmental Defense's Alliance for Environmental Innovation in October. She is the consulting services manager at the Center for Women and Enterprise, an economic development nonprofit based in Roxbury, Mass.

**Rebecca Gratz** is teaching an elective in natural history at the Sound School in New Haven. She and her husband, Joe Callahan, are enjoying trying to keep up with their 17-month-old son, Isaac. Joe's business, Invisible Chef, is doing well.

After graduating from F&ES, **Brad Kahn** began working with Pyramid Communications as a public affairs consultant to nonprofit organizations. In his four years there, Brad has worked on everything from indicators reports to national campaigns to promote smart growth and livable communities. He is focusing on forest certification in Washington State forests and a national effort to promote physical activity by

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creating policies and places that encourage compact, mixed-use development.

**Marie Claire Paiz** writes: "I have resigned from directing Sierra del Lacandon National Park with Defensores de la Naturaleza to become the Maya Forest program manager with The Nature Conservancy. This is a happy change, both personally and professionally. Nevertheless, I cannot negate the nostalgia I feel leaving Lacandon Park's management, which was much more than just a job for me. With all of its complexities, Lacandon gave me five years of preoccupations but also lots of joy. Conserving this treasure is without a doubt an endeavor worth the effort. And just as much as the park, I will very much miss my workmates, whom I deeply respect for their commitment to conservation and whose friendship I will always appreciate. You can continue reaching me at [mcpaiz@intelnet.net.gt](mailto:mcpaiz@intelnet.net.gt)."

**Laurel Stegina** is employed by Wilbur Smith Associates in its transportation, finance and technology division, doing economic analysis of transportation projects and traffic congestion studies. She lives in Naugatuck, Conn.

**Liane Hores Wedemeyer** and her husband, Greg, are proud to announce the birth of their son, Gregory Tyler, born on August 11.

**Gong Zang** writes: "I have been working for the China Education Association for International Exchange (CEAIE) since the second half of 2003, though the work is very similar to my old job at the World Bank loan office of the State Education Commission. I am in charge of the international academic exchange program for the CEAIE. I attended the breakfast with Yale President Richard Levin and Vice President Linda Lorimer during their visit to Beijing in November. That was a great party—many alumni in Beijing were there."

**Pascal Collotte** reports that he is still in the same institution, the European Commission, but is now in charge of the deployment of innovative health applications of trans-European IT networks, mainly broadband and mobile networks.

**David Konisky** is a Ph.D. candidate in the department of political science at the Massachusetts Institute of Technology. His dissertation will examine the influence of interstate economic competition on environmental enforcement behavior.

**Kevin Drury** plans to finish his Ph.D. at the University of Chicago this spring, and start a postdoc with the Center for the Study of Complex Systems at the University of Michigan, in conjunction with Fisheries & Wildlife at Michigan State University.

**Nadine Block** is living in Washington, D.C., working for the American Forest and Paper Association, and trying to find time to plan her May wedding. She recently saw **Sarah Whitney**, who has relocated to eastern Pennsylvania.

## 1999

### CLASS SECRETARIES:

**Jocelyn Forbush** [jforbush@ttor.org](mailto:jforbush@ttor.org)

**Jennifer Garrison**  
[jennifermgarrison@yahoo.com](mailto:jennifermgarrison@yahoo.com)

**Christiana Soares**  
[christiana@aya.yale.edu](mailto:christiana@aya.yale.edu)

**Concho Minick** participated in the IEM SIG alumni panel at F&ES on February 19. He joined Benevolink in December 2002 to develop the company's financial forecasts, complete its first initial public offering to raise capital and establish its finance organization, processes, controls and systems. He was also recently elected to serve on the board of the Theodore Roosevelt Medora Foundation based in Bismarck, N.D.

**Jenna Borovansky** writes: "My husband, Ryan, and I have taken to remodeling 'underloved' homes in beautiful places, completing a vacation home fixer on the Oregon coast before moving to Boise, Idaho, where I have been conservation director at Idaho Rivers United since January 2003. It didn't take us long to discover beautiful McCall, Idaho, a mile high on Payette Lake nestled in the mountains, where we are tackling another remodeling project. Also, I have taken up freelance editing with *Experiments in Consilience: Integrating Social and Scientific Responses to Save Endangered Species*, published in November 2003 by Island Press. The volume contains two chapters that I co-authored, based on research I did for my master's project, and I am exploring publishing more of my writing. Since moving West, I've become quite the ski bunny—well, I can make it down most runs still standing! I'm still not a fly fisherwoman, despite spending most of my years on river protection work. If anybody needs a good editor, or just wants to say 'hi,' I'd love to hear from you."  
[jennab@aya.yale.edu](mailto:jennab@aya.yale.edu)

**Charles Thompson** is teaching silviculture to undergraduates at the University of Massachusetts.

**Anders Halverson** writes: "Charles Cowperthwaite Halverson was born on February 14, weighing 8 lbs., 6 oz. Charlie and Ginna are home now and both are doing well. If you would like to see photos go to <http://mywebpages.comcast.net/vjones14/CharlieBDay/>."

## REUNION 2005

## 2000

### CLASS SECRETARIES:

**Erika Schaub** [eschaub@geog.umd.edu](mailto:eschaub@geog.umd.edu)

**Zikun Yu** [yuzikun2001@yahoo.com](mailto:yuzikun2001@yahoo.com)

**Bryan Garcia** participated in the IEM SIG alumni panel at F&ES on February 19. He is director of programs at the Connecticut Clean Energy Fund. Bryan works with grass-roots nonprofit organizations, foundations and public agencies to initiate and manage social and environmental investments and projects that create awareness of renewable

energy and its benefits to society.

**April Reese** moved to Santa Fe, N.M., in October to write for an online publication called *Land Letter*. Her byline also shows up occasionally in *High Country News*, *E Magazine*, *Paddler Magazine*, *Tribune Media Services* and the *Denver Post*. Previously, April was working as an assistant producer at Radio High Country News and living in Paonia, Colo.

**Laura Meyerson, D.F.E.S.**, joined the Heinz Center in September as a fellow and research associate. Meyerson is also a research associate at the Smithsonian Institution. Before joining the Heinz Center, she was an AAAS Environmental Fellow at the Environmental Protection Agency.

**Sylvia Stone** writes: "After graduating, I lived in New York with **Berry Brosi** (and for a brief time with **Robin Sears '96**) and worked for the Wildlife Conservation Society (WCS) at the Bronx Zoo as a program officer for the living landscapes program. A year ago, I moved back to California and live in San Francisco. I am still with WCS, working as a program manager for the North America program. I frequently see **Anne Eschtruth** and **Berry**, who are both doing their Ph.D.s (at Berkeley and Stanford, respectively). I also see **Lena Brook '99**, **Matt Fladeland**, **Roger Williams** and **Michael Stevenson**—we have quite a group of F&ES alums here in the San Francisco Bay area!"

**Janet Sturgeon, D.F.E.S.**, writes: "I will be starting a tenure-track position in geography at Simon Fraser University in British Columbia in the fall. They wanted someone who works on China and I fit the bill. It's clear I'll need to get a place with a guest room—everyone I know plans to visit!"

## 2001

### CLASS SECRETARIES:

**Leigh Cash** [leighcash@aya.yale.edu](mailto:leighcash@aya.yale.edu)

**Adam Chambers**  
[sebastianchambers@hotmail.com](mailto:sebastianchambers@hotmail.com)

**Jennifer Grimm**  
[jwgrimm@earthlink.net](mailto:jwgrimm@earthlink.net)

**Jesse Johnson** and interior designer Anthony Cochran started Q Collection ([qcollection.com](http://qcollection.com)), a company that creates furniture and textiles that won't harm the environment. Q stands for *Quercus*, which is Latin for oak.

**Heather Langford** left Boston last May and is now working with **Jim Lyons '79** and **Jim Woodworth** at Casey Trees in Washington, D.C.

## 2002

### CLASS SECRETARIES:

**Roberto Frau and Catherine Bottrill**  
[sageboy02@yahoo.com](mailto:sageboy02@yahoo.com)

F&ES '02ers are working hard in Washington, D.C., to push the environment to the top of the agenda. **Suzanne Sessine** joined our class's D.C.-ites in 2004,

# ClassNotes

working as a grants manager for National Fish and Wildlife. Suzanne is enjoying working on a variety of conservation projects involving riparian/habitat restoration and watershed management. **Becca Brown** and **Rachel Fertik** are doing well in their D.C. jobs with the EPA. Becca recently bought a lovely home in the capital. Rachel spent New Year's Eve with **Colleen Ryan** and **Becky Tavani** in Rome. **David Vexler** married his longtime love, Erika, in Lima, Peru, this summer and is now keeping it international as he shoots back and forth to Latin America with his work for ERM. He recently saw **Roberto Frau** during a business trip to Mexico City. **Mahua Acharya** has just moved to D.C. Mahua got married in December in Bangalore, India, and she spent the last year and a half in Geneva working for the World Business Council for Sustainable Development on climate change policy.

Many of us continue to live it up in New Haven. **Cassie Hays** is working on her Ph.D. in sociology, under the guidance of professor Paul Gilroy. Cassie keeps abreast of the goings on at Sage Hall through lots of socializing with F&ES doctoral students. **Marc Stern**, a Ph.D. student at F&ES, under the guidance of professor Bill Burch, has been busy doing his field research this year in St. John, Ecuador and Tennessee. **Justin Ruben** has stayed in his hometown and has been very busy working for GESO. **Madeleine Weil** is a coordinator for the New Haven Community Clean Air Initiative, the city's comprehensive air quality program. She also participated in the IEM SIG alumni panel at F&ES on February 19.

Others making their mark in the East include **Becky Tavani** and **Carrie Magee**, who have kept true to their Jersey Girl heritage and live in their home state, working for the New Jersey Tree Foundation as urban foresters. **Colleen Ryan** moved to central Maine, where she works for The Nature Conservancy and enjoys the quiet and beauty of her surroundings. **Adam Wolfensohn** is working as a documentary filmmaker, and got married on Oscar Night. **Cat Ashcraft** moved to Boston to pursue a Ph.D. at MIT. Other doctoral students include **Nalini Rao**, who battled the cold Ithaca winter but continues to be her festive self in the second year of her Ph.D. at Cornell.

Out West, **Ryan Bennett '03** has been working for GE Wind Energy in Tehachapi, Calif. (Ryan raves about the Borax mine, apple picking and, of course, the wind farm tour.) Ryan has been selling windmills to the Canadians mostly, which gives him the opportunity to visit Calgary, Lake Louise and Moose Jaw, Saskatchewan. **Brad Hunter** is starting a new job, based in Portland, as a forestry consultant. **Josh Zaffos** has been based in western Colorado, where he is doing a mixture of environmental writing and consulting, plus, some woodworking. **Kendra Kinscherf** and **Neal Etre** have been living

together in Denver. Kendra has been working for Colorado Open Lands during the last two years. Last year they completed 38 conservation land easements; normally they do about 10 a year. Kendra has now decided to refine her toolkit by going to law school back East. **Derik Frederiksen** has been based in Juno but manages to visit Seattle frequently. Derik has been busy working on natural resource issues and setting up an environmental consultancy for his tribe. Derik recently spoke at F&ES as a distinguished Alum of Color for Native Americans. Derik's daughter, Ella, is 5.

Those who have recently moved or are moving soon to America's heartland include **Shalini Gupta**, who moved back to Minneapolis after spending a year in Germany. Shalini is now working for a nonprofit on renewable energy policy. She is looking forward to seeing **Nalini Rao** when she comes to visit. Shalini is planning a jaunt back to Germany this May for **Yemi Tessema's** wedding. **Ramsey Ravenel** has had a great string of independent consulting projects since graduation—Yellowstone (Park Service), Indonesia (TNC), New Hampshire (the Lyme Timber Company), Panama (PRORENA/Smithsonian) and, at the moment, South Norwalk, Conn. (with a small private equity firm). Ramsey will be on the move again shortly with Sarah (Nursing '03) to Davenport, Iowa.

Many of us are working and living outside the United States. **Erika Diamond** is living life to the fullest in Punta Gorda, Belize, where she moved right after graduation and started managing the ecotourism program/business of the Toledo Institute for Development and Environment. Erika has since become the development director for the organization, working hard to strengthen projects and relationships with the local community. Erika has loved living and working in Belize and the wonderful Caribbean and having the world's best rum at her doorstep. Kendra has had fun visiting Erika. **Kim Thurlow** has also been enjoying the Caribbean life since graduation. Kim has been working for The Nature Conservancy in St. Croix. **Dave Howlett**, too, moved to this small island after graduation, where he works for the Forest Service and enjoys life with his wife, Jemina. **Catherine Bottrill** has found herself back in the United Kingdom, working at the Environmental Change Institute, which is part of Oxford University. It has been terrific for her to be back in the United Kingdom, seeing old friends and making new ones. She is working on a climate change, Web-based resource for students and she managed to go to COP9 for the Kyoto Protocol with **Mahua**, **Roberto Frau** and **Citlali Cortes** are both in Mexico. Roberto (rfrau@hotmail.com) took an eventful road trip from New Haven (with a wild stop in New Orleans) to his birthplace in Mexico City, where he is an urban transport specialist at El Colegio de Mexico and has a Fox International Fellowship. "As a Fox International Fellow, I am

studying Mexico City's transportation infrastructure development as a model for other Latin American cities." Citlali is in her home region of Guadalajara working as a forester—she is currently subdirector of the Reserva de la Biosfera de Manantlan in Jalisco, Mexico, where she is involved with conservation/development program implementation and operation, focusing on biodiversity conservation and forest management in a 139,000-hectare protected area in western Mexico.

**Nicole Maywah** is living in Florida, but has been traveling extensively to India, Madagascar and Mauritius, where she met other Maywahs. **Cesar Alcacer** and **Paola Amador** got married in December and are living in Malaga, Spain, where Paola is freelancing and Cesar works for the IUCN. Another couple now married, **Michael Funaro** and **Zhanna Beisembaeva**, is living and working in Almaty, Kazakhstan, with their daughter, Danna. Michael and Zhanna are working at KIMEP (Kazakhstan Institute of Management, Economics and Strategic Research). Zhanna writes: "The goal of my work is to establish a KIMEP alumni association and make it a self-sustaining organization."

**Viviana Araneda** writes: "I am working directly with the director general of Chilean International Economic Relations. So, I have more work relating to political issues than the environment. Dan Esty, director of the Yale Center for Environmental Law and Policy, stayed in Chile for a seminar on the Free Trade of the Americas agreement between Chile and the United States, and also promoted the Yale World Fellows program. It was nice to see him here, and people at the seminar got a very good impression of the work of Yale on environmental issues."

**Barbara Bamberger** is working for an international environmental consulting firm, EDAAW, in its applied social sciences division. She was brought on to help expand its international market, working on sustainable development issues in developing countries and managing projects in the applied sciences. While based in San Diego, a lot of her work is in the North Slope of Alaska, where she is evaluating the effects of offshore drilling on the Inupiak.

**Elizabeth Ban** is doing coral reef conservation for the University of the Virgin Islands' Center for Marine and Environmental Studies.

**Cesar Alcacer Santos** wrote a study case for the IUCN on environmental flows in the Elbro River in Spain. The study was included, along with nine other cases, in an environmental flows book. He has recently accepted the position of WANI project officer for the IUCN Centre for Mediterranean Cooperation, based in Spain.

**Laura Meadors** writes: "I left the hedge fund last September. I am now in Bend, Ore., working on a different commodity—water—and doing some

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economic analysis for water markets out here.” She is with the Deschutes Resources Conservancy as a program officer.

**Hatsy Moore** is in New Haven and frequently visits her home in Rhode Island, where she has been kept busy with renovations. Her pesky wrist continues to give her trouble, but she doesn't let that keep her down. She continues taking classes at F&ES.

**Karen Manasfi** writes: “I returned to New Haven early last year after spending some time at home in Beirut. I got a position at F&ES as a postgraduate research fellow (a new title they had to create for me because they couldn't exactly call me a postdoc), and am now working with **Alex Finkral '98** and **John McKenna '00** on their research projects. It's been a lot of fun especially since I get to spend a lot of time up at Yale-Myers and finally have the chance to do things around campus I never had time for when I was a student. Granted it's not the same without all you guys there, which serves as a constant reminder that ours was probably one of the most fun classes F&ES has seen in recent years. There are a few people I still see every now and then. Hatsy is still around and oftentimes **Becky Tavani**, **Rachel Fertik**, **Sarah Canham**, **Colleen Ryan** and **Vic Edgerton** drop by. We all congregate at Hatsy's, and for an evening it feels just like the old days. I plan on heading home for good this summer. I never thought I'd make it through two years in New Haven. Now it's nearly been four and I feel thoroughly saturated. Drop by Beirut if you feel like experiencing something totally different. The open invitation still stands.”

**Rutu Dave** is a fellow at the John F. Kennedy School of Government at Harvard University, and doing research in science, technology and public policy. Rutu also is a policy analyst on issues of development, trade and climate for the Dutch government in the Global Sustainability and Climate unit of The Netherlands Assessment Agency.

## 2003

### CLASS SECRETARIES:

**A-L: Brian Goldberg**  
[Brian.Goldberg@aya.yale.edu](mailto:Brian.Goldberg@aya.yale.edu)

**M-Z: Scott Threadgill**  
[Scott\\_Threadgill@yahoo.com](mailto:Scott_Threadgill@yahoo.com)

**Naamal De Silva** is marine biodiversity coordinator for Conservation International.

**Lyn Munno** writes: “I just accepted a job as a conservation planner with The Nature Conservancy in Vermont. It is a wonderful position and exactly what I was looking for. The position is in Montpelier and I started on February 2. **Sarah Wakefield '02** is also working there. Nick and I just put an offer down on a house in Montpelier, so it is all very exciting.”

**Liz Shapiro** has moved to Berkeley, Calif., where she passes her time testing new varieties of

sunscreen and hangs around the campus, waiting to see if they will give her a doctorate.

**Andrew Winston** participated in the IEM SIG alumni panel at F&ES on February 19. He is settling into a new career, writing a book with Dan Esty on corporate environmental strategy and consulting. Andrew also recently became a father.

**Ruth Baker** writes: “I will attend the University of Tennessee in the fall for a master's in geography, while working with the EPA, TVA, USGS and USDA Forest Service on the regional vulnerability assessment.” [ruth\\_e\\_baker@hotmail.com](mailto:ruth_e_baker@hotmail.com)

**Ryan Bennett** writes: “Hello F&ES, I am in the commercial group at GE Wind Energy in Tehachapi, Calif. I am an analyst at the moment, working on wind transactions in Canada, the Upper Midwest, offshore and in parts of Latin America. Might be moving to Moose Jaw, Saskatchewan, pretty soon. I'm really excited—the hockey is great up there, but Montreal might be more likely.”  
[ryan.bennett@ps.ge.com](mailto:ryan.bennett@ps.ge.com)

**Jay Shepherd** is real estate project manager with Weston Solutions in Washington, D.C. Jay's role is to assist in the redevelopment of real property with environmental issues. This involves public/private partnership creation, insurance product development, financial and risk feasibility assessments and managing subcontractors for both horizontal and vertical development. Weston is a progressive company with excellent benefits and is looking to establish an intern program with both F&ES and SOM. For further information, contact him at [Jay.Shepherd@westonsolutions.com](mailto:Jay.Shepherd@westonsolutions.com).

**Daniela Cusack** writes: “I am living in Berkeley working away at my Ph.D. in the University of California-Berkeley Department of Environmental Science, Policy and Management (just as much a mouthful as 'Yale School of Forestry & Environmental Studies!'). I am researching the nitrogen cycle in tropical forests. I am in love with the Bay area, and hope never to leave. Come visit.”  
[Daniela.cusack@aya.yale.edu](mailto:Daniela.cusack@aya.yale.edu)

**Kate Hammond** writes: “I'm working for the National Park Service as a project manager based out of Denver, Colo., managing multimillion-dollar design and construction projects around the United States. It's great to be back out West biking, hiking, skiing and playing with Che.”  
[khammond@prodigy.net](mailto:khammond@prodigy.net)

**Krithi Karanth** writes: “I married a fellow Yalie (Denis got his Ph.D. in chemistry) on December 25 in India. I will start my Ph.D. in August.”  
[krithi.karanth@aya.yale.edu](mailto:krithi.karanth@aya.yale.edu)

**Vic Edgerton** writes: “This fall, I made an unsuccessful bid for Alderman of Ward 9 in New Haven but am really glad I did it. Now I'm looking for the right job and doing a lot of volunteer work, and loving it.” [Vic.Edgerton@aya.yale.edu](mailto:Vic.Edgerton@aya.yale.edu)

**Andrew Clack** writes: “I am working in the ancient DNA lab here at Oxford and I have successfully extracted and sequenced nuclear DNA from five species of extinct moa (the giant flightless birds of New Zealand). This is the first time this has ever been done for an extinct bird. It's all very exciting, to be sure, but unfortunately ancient DNA—even if it's only a few hundred or thousand years old—is highly fragmented and impossible to sequence more than a few hundred base pairs at a time. That's bad news for when I want to construct a phylogenetic tree. I have been offered a D.Phil. position with the animal behavior group, and if I get funding for it I will most likely stay here for another three years.”  
[andrew.clack@st-cross.oxford.ac.uk](mailto:andrew.clack@st-cross.oxford.ac.uk)

**Jeffrey Firman** lives in California. He is renting a house and starting to settle in.

**Alison Forrestel** writes: “I am still enjoying California hiking and the snowy Sierras. Playing a lot of Scrabble and trying my best, sometimes with little success, to avoid poison oak.”  
[alison.forrestel@aya.yale.edu](mailto:alison.forrestel@aya.yale.edu)

**Becca Brown** writes: “I'm living in D.C., working at the EPA on a children's environmental health study, and enjoying the city and the proximity to other F&ESers.” [rebecca.brown@aya.yale.edu](mailto:rebecca.brown@aya.yale.edu)

**Ted Lanzano** writes: “I am a program analyst for the EPA in Denver in the office of planning, budget and management. I enjoy the work and it's a great opportunity to put to use what I learned at F&ES. I live in Boulder with Monica and am trying to climb as much as I can. Let me know if you are ever in the area ([tlanzano@hotmail.com](mailto:tlanzano@hotmail.com)) and we can meet.”

**Brian Goldberg** writes: “I am living in Brooklyn, converting a landfill into a park, and exploring the city's natural areas at every opportunity. Eager to meet with any F&ESers passing through town and gladly offer a free overnight on my living room futon.” [Brian.Goldberg@aya.yale.edu](mailto:Brian.Goldberg@aya.yale.edu)

**Cherie Lim** writes: “I am working in our family company in California. I am in charge of marketing handmade abaca paper products from the Philippines. I am learning a lot and it's nice to be one's own boss.” [cherie.lim@aya.yale.edu](mailto:cherie.lim@aya.yale.edu)

**Becca Ashley** writes: “I have been conducting research for The World Agroforestry Centre on agroforestry in protected area landscapes. I am based out of Nairobi, but we are conducting the study in Uganda, Cameroon and Mali.”  
[rebashley@yahoo.com](mailto:rebashley@yahoo.com)

**Boris Mendez Paiz** writes: “I am working as a teacher at Universidad de San Carlos in Guatemala City, teaching forestry, including agroforestry, forest inventories and forest fires. I am doing okay; I would like to do more and, if possible, get a better-paid job.”  
[bmpaiz@yahoo.com](mailto:bmpaiz@yahoo.com)

**Elizabeth Allison** writes: “I'm in Nepal, trying to figure out how to do environmental research in the

# ClassNotes

midst of a war. The embassy has banned us Fulbrighters from going anywhere interesting (i.e., dangerous), and the Maoists control about two-thirds of the country—armed conflict not having been covered in the F&ES curriculum. ... The Khumbu (Everest) region is one of the few places we're allowed to go, so I expect to spend a few months up there this spring. F&ESers are warmly invited to visit!" Elizabeth.Allison@aya.yale.edu

**Taka Kobayashi** writes: "I am just overwhelmed by spatial mathematics and statistics." tkobayas@indiana.edu

**Steve Dettman** writes of the past few months: "Eating Korean food with **Brian Goldberg**—that probably covers it." sdettman@nyc2012.com

**Melanie Cutler** writes: "I'm working as an environmental scientist for The Bioengineering Group in Salem, Mass. I'm enjoying my job and taking my dog, Sadie, and husband, Mark, for walks in the woods near our home in Andover, Mass." Melanie.cutler@aya.yale.edu

**Pete Land** is based in Vermont, but is often on the move. He and Bill Finnegan have launched Tamarack Media, a nonprofit that provides communication support to environmental organizations (hire us!). Pete says that the Class of '03 should start thinking about how it wants to leave a legacy that rivals that of the infamous Class of '80. peter.c.land.99@alum.dartmouth.org

**Flo Miller** is still working in the environmental education department at WWF and living in Washington, D.C. She sorely wishes that she had an interest in politics so that she could make some friends in the city. Florence.miller@wwfus.org

**Terry Miller** writes: "Kate and I now live in our hometown of Portland, Ore., and have been soaking up all the of the wonderful things we missed while in New Haven. Skiing, snowboarding, surfing, hiking, coaching and spending time with family and friends are, once again, common activities. Oh yeah, we work too." tmiller@ci.portland.or.us

**Fuyumi Naito** writes: "I'm still working for the Ministry of the Environment of Japan. I'm doing something about trade and environment issues and marine pollution stuff. I have to do more about climate change as well. About my private life, I just married my boyfriend in November and we spent our honeymoon in Italy! We now live in the center of Tokyo." fuyumi\_naito@env.go.jp

**Kabir Peay** writes: "Still at U.C. Berkeley working on getting my Ph.D. Looks like I'll study the ecology and co-evolution of trees, their fungal pathogens and insect vectors. If that's not enough to get you excited, I've been wearing flip-flops in February, which I think is a damn good thing." kabir.peay@aya.yale.edu

**Dima Reda** writes: "I'm in Beirut, Lebanon, working on an energy efficiency project for the UNDP and teaching economics at a local university. dimareda@yahoo.com

**Liz Roberts** writes: "I am living in the Bay Area, soaking up the sun, and have been working for Paul Hawken since November. I am mainly doing research and business-plan writing for new ventures involving wind power generation and marine propulsion systems using biomimicry designs. The hiking and snow-fun are wicked, and California really is marvelous—you know you want to be here!" elizabeth.roberts@aya.yale.edu

**Laura Ruiz** writes: "I work part time teaching and I'm back at school part time, completing a single-subject credential to teach high school science, and am extremely happy and warm living in Los Angeles. Didn't realize how much I missed home, and I don't plan on leaving L.A. for a long time." yatzachi@hotmail.com

**Ninian Stein** writes: "I am finishing my Ph.D. in archaeology and anthropology at Brown, and hope to graduate in the spring or winter of 2005." ninian\_stein@brown.edu

**Laura Tam** writes: "After our wedding in August, we moved to San Francisco where I am a program analyst for the EPA Office of Inspector General. I'm evaluating some RCRA programs, but hope to have water-related work soon. Darryl is working on corporate social responsibility in the Gap's Global Compliance department. We've been biking, hiking, skiing and enjoying California's great outdoors. We welcome visitors to San Fran!" lauraetam@yahoo.com

**Scott Threadgill** writes: "Paula, Sage and I are all doing great. I'm still teaching, doing research and taking classes at UGA. We miss you all terribly. Please check out [www.geocities.com/paula\\_threadgill](http://www.geocities.com/paula_threadgill) to keep an eye on Sage boy (and sign the guest book). We update the site fairly frequently." scott\_threadgill@yahoo.com

**Toru Uemachi** writes: "Since last August, I have worked for JICA's (Japan International Cooperation Agency) China office. My son, Takeshi, has begun to

attend an international nursery school, and my daughter, Nozomi, who is six months old, has started rolling over." tuemachi@qb3.so-net.ne.jp

**Jason Wilmot** and Kate Wilmot live in Jackson, Wyo. Kate was due with their child March 18. Jason is executive director of the Northern Rockies Conservation Cooperative. Jason.Wilmot@aya.yale.edu

**Sasha Gritsinin** is working in Paris as a water consultant in the EAP Task Force of the OECD Environmental directorate.

**Marissa Yao** reports that she is now in the Corporate EHS Sustainable Development group. "I'm the rookie, the youngest and the only female in the group, so it is a bit intimidating! But it's exciting to work with the guys who've been around and done quite a lot in the field. They have been really supportive, so I'm hoping I'll be able to keep up. Also, the life cycle paper has been accepted at the China EcoDesign Symposium and at the IEEE/ISEE conference.

**Andres Luque** writes: "I'm at the London School of Economics, getting an M.Sc. in city design. But I miss New Haven and all the F&ES crowd. However, pretty soon, I'll be working toward the sustainability of cities in the developing world."

**Naamal De Silva** writes: "I recently started working for Conservation International as marine biodiversity analysis coordinator."

**Maria Ana de Rijk** writes: "I am busy interning at Conservation International and have had my internship extended until the end of May. Fortunately, my internship has turned into a paid one. I am enjoying D.C. and the work is interesting and challenging."

**Brooke Parry Hecht, Ph.D.**, led a trip to the "Heart of Namibia" from April 18 to 28 for the Harvard Museum of Natural History.



# It's News to Us

## It's News to Us

Please tell us about your promotion, new job or start-up project. Let the F&ES alumni/ae community take pride in your hard-earned advanced degree or special honor. Inspire us with news of your volunteer work. And let the world know about your marriage or new baby.

*(Wedding and baby photos will be posted on the website.)*

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Kathleen Schomaker, Director of Alumni/ae Affairs  
 Yale School of Forestry & Environmental Studies  
 205 Prospect Street, New Haven, CT 06511

Fax: 203-436-3400

E-mail: [alumni.fes@yale.edu](mailto:alumni.fes@yale.edu)

[Please Note: Memorial announcements require a newspaper obituary.]

Name

Former Name

Degree(s)

Social Class Year

Home Address

City  State  Zip

Home Phone

E-mail

Name of Spouse or Partner

Names of Children

Names of Grandchildren

Work Organization

Work Address

City  State  Zip

Your Position

Work Phone

FAX

Work E-mail

Your News:

Signature & Date

# Obituaries

**Carl Abarr '58** (1929-2003) came from the northern California coast and held a B.S.F. from the University of California at Berkeley. He served in the Air Force during the Korean War. For 16 years he was a fire meteorologist for the California Forestry Service; he later was a forester for the Bureau of Indian Affairs. In 1970 a disability forced him to retire to Heber Springs, Ark., where he became an artist and devoted his attention to the art of fly-tying. He served as chaplain of the Disabled Air Force Veterans. He died on October 20. Survivors include Joanne, his wife of 50 years, two daughters, his mother, four grandchildren and one great-grandchild.

**Charles Ingersoll ("Ingy") Arnold '42** (1916-2004) grew up in Woodbridge, Conn., attended Bowdoin College in Maine and then went on to Yale. Classmate and longtime friend Will Brown '41 recalled the few months he and Ingy spent in Swanzey, battling sun, bugs and daily life in a small cabin, while surveying a tract of Yale-owned land near Keene during the summer of 1940 under the supervision of "Pop" Hawley: "We even went haying in the neighboring farmer's fields after hours in return for milk. Cruising conditions were far from ideal since the 1938 hurricane had wreaked havoc in the forest. Pine stands of a certain size were blown flat, covering much of the area." Ingy served as an Army field artillery lieutenant in Europe and in the Pacific from 1944 to 1946, receiving several service medals and the Purple Heart. His Army hockey team won the European ice hockey championship in 1946. He operated Russ Forest in Decatur, Mich., and later operated New Hampshire's State Forest Nursery in Gerrish until his retirement in 1982. He earned the moniker "Mr. Walnut Seed" for collecting seeds from black walnut trees, grafting them so they would be hardy enough for New Hampshire winters and tending rows of tiny trees at the nursery to perpetuate this strong, coveted wood. His black walnut orchard is still doing well. An avid hockey fan, he founded the Concord Youth Hockey program in 1960, coaching until 1985. He also played hockey in various leagues into his early 70s and refereed games into his early 80s. His wife, Dorothy, predeceased him. Survivors include a daughter, Anne Arnold Field of Concord, and a granddaughter. He died on January 6.

**William Bramble '30, Ph.D. '32** (1907-2003), was born in Baltimore, Md., and earned an undergraduate degree in forestry from Penn State University in 1929. After graduating from Yale, he taught botany at Carleton College from 1932 to 1935. In 1936 he spent a year as a Natural Resource Council fellow at the Swiss Institute of Technology in Zurich, then taught and conducted research in forest ecology at Penn State from 1937 to 1958. He interrupted his research to serve in the WWII Mediterranean theater as a captain in the Army Air Corps from 1942 to 1945. In 1958 he became head of the Department of Forestry and Natural Resources at Purdue University, a position he held until his retirement in 1973, when he was named professor emeritus and began working as a research consultant in forest ecology. From 1962 to 1963, he was a member of the President's Committee on Forest Policy; he was a fellow of the Society of American Foresters and a member of its council from 1960 to 1966. In 1972, he co-founded Environment Services, well-known for extensive research in ecology, the management of vegetation beneath power lines and its effects on wildlife. He received the Outstanding Alumnus Award from Penn State, a Distinguished Service Award from the Pennsylvania Electric Association and an Education Award from the Utility Arborists Association. In 1980 he was still doing research and publishing frequently, mostly on forest ecology, while otherwise enjoying

retirement from Purdue and doing some consulting with public utilities. He died at the age of 95 in West Lafayette, Ind., on October 4. His survivors include his wife, Dorothy, and three daughters.

**Kirk Cooper '41** (1918-2003) came from the state of Washington and earned a B.S. in forestry from the University of Washington in 1940. He worked as a forester for lumber companies on the West Coast until he started WWII Army service in the Pacific in 1944. After the war, he was a consulting forester in Tacoma, Wash. In 1950 he started a career as a production manager in West Coast plywood companies—Fir Mfg., Multnomah, Roddis and Weyerhaeuser. From 1965 until he retired in 1974, he was president of Columbia Plywood Corp. He resided in Portland, Ore., until his death on September 5.

**Virginia ("Gini") Fowler-Mariotti '86** (1958-2003) was born in Concord, N.H., and received her bachelor's degree in forestry from the University of California at Santa Barbara. After attending Yale, she became vice president of Retec (formerly RPM) in New Haven. She was most recently executive director of Read to Grow, a nonprofit in Branford, Conn., working on early childhood literacy. She was also involved in quilting, hiking, biking and various other outdoor activities. She died in New Haven on October 2. Her survivors include her husband, Jack Mariotti, their four children, Siena, Nina, Jackson and Spencer, her five siblings and special family members Laura Zilyte and Rolandus Kiaulevicius.

**Samuel Hall '41** (1917-2003) studied mycology and forest pathology as an undergraduate at Brown, graduating in 1938. After attending Yale, he served in the 10th Mountain Division of the U.S. Army from 1943 to 1946 as a lieutenant with the Army Engineers. In 1946 he joined Draper Corp. as head forester and surveyor, and in 1952 he became resident manager of the Beebe River Plan for 12 years. During that time he was a member (and president) of the New Hampshire Woodcrafters Association, Lakes Region Industrial Management Club (past president), New Hampshire Society of American Foresters, New Hampshire Forest Fire Warden and Yale Club of New Hampshire, among others. He conceived, designed, constructed and operated Tenney Mountain Ski & Snowboard Resort for over 20 years. He died in Plymouth, N.H., on December 27, leaving his wife, Bernice, three sons, six grandchildren and five great-grandchildren.

**James H. Hamlen II '48** (1913-2004) died at his home in Little Rock, Ark., on February 15. He was born in Portland, Maine, and graduated from Harvard in 1937. He joined the Army in 1941, trained as a flight engineer and glider pilot and was commissioned a first lieutenant in the 366th Field Artillery Battalion at Guam. After WWII, he went to Yale, then returned to Little Rock, where his primary interest was the family cooperage and hardwood lumber business, J.H. Hamlen and Son, begun by his great-grandfather in Portland in 1846. He sold the business to Weyerhaeuser Company in 1988 but kept a keen interest in the lumber industry. His service in the Army Air Corps confirmed his aviation interest and he enjoyed flying, and especially gliding, until well into his 80s. In his latter years, he began the disposition of his estate to charities, many related to his early life. He was a member of the Arkansas Forestry Association and the Cooperage Industry Association of America. His sister, Mary Hamlen, died in 2001. His survivors include his longtime friend, Natalie Kirby, her daughter, Dale Selakovich, and several cousins. He was buried in Portland.

**Roger Krinard '58** (1928-2003) came from Alton, Ark., and served in the Army during the Korean War. Following the war, he studied forestry at the University of Idaho, graduating in 1957. After studying at Yale, he did hardwood research for the USFS Southern Forest Experiment Station at Stoneville, Mich., for more than 30 years, retiring in 1989. He and his wife, Willough, moved to Mountain View, Ark., where they enjoyed mountain music and crafts and where he died on August 14. His wife and two sisters survive him.

**Theodore Pickus '48** (1922-2002) came from Long Island and received a B.S.F. from the State University of New York at Syracuse in 1943. During WWII he was a marine lieutenant in the Asian-Pacific theater. After graduating from Yale, he managed a hardware store in Valley Stream, Long Island, N.Y., until 1959. Then for many years he was a science teacher and administrator in the Huntington, L.I., school system. In the 1980s he and his wife retired to Huntington Beach, Calif., where he died on June 29.

**Howard Spalt '55, D.F. '59** (1931-2002), came from Kingston, N.Y., and earned his bachelor's degree from Rutgers University. From 1974 to 1981, he was chair of the Department of Forestry at Southern Illinois University in Carbondale. He was also an advisor to many student organizations during his tenure. He was vice president of research and development for Masonite Corporation from 1981 until his retirement in 1994, during which time he served as a member of the board of directors of Masonite, South Africa. Following retirement, he continued to reside in St. Charles, Ill., where he was active in civic affairs. He died there on July 2. His survivors include Jane, his wife of 47 years, his three children and three grandchildren, his mother and two brothers, a twin, Dr. Harry Spalt of Martinsburg, W.Va., and Karl Spalt '61 of Prescott, Ariz.

**Bruce Stowe** (1928-2003), professor emeritus of botany, biology and forestry, died on September 21 in Gainesville, Fla. He was born near Paris, the son of Leland Stowe, a famous war correspondent. His grandfather, Charles, and other members of the Stowe family had many associations with the school's early management of the Eli Whitney Forest of the New Haven Water Co. He served in the U.S. Army Radio Signal Corps (131st Bat.

C) in occupied Europe, then attended Cal Tech University, where he earned a B.S. with honors in 1950. He went on to earn an M.A. and a Ph.D. in biology and physiology from Harvard University. After three years of teaching there, and completing a National Science Foundation fellowship at the University College of North Wales, he came to Yale in 1959 and taught for 39 years, serving at various times as faculty secretary, head of the premedical advisory program and director of the Marsh Botanical Gardens. He did groundbreaking research in the area of plant growth hormones, receiving many honors including a Guggenheim fellowship. He did this all while caring for his wife, Betty, bedridden at home with multiple sclerosis until she died in 1983. Several years ago he moved to Florida because of ill health. His survivors include a brother and two sons.

**Douglas Urban '76** (1948-2003) completed his undergraduate degree at St. John Fisher College in Rochester, N.Y., before pursuing his M.F.S. at Yale. He worked for over 26 years at the U.S. Environmental Protection Agency (EPA) in Washington, D.C., where he was held in high esteem by his colleagues, one of whom noted: "When Doug was confronted with a controversy, he would always ask, 'What does the science say?'" At a March event at the EPA, Division of Environmental Fate and Effects in the Office of Pesticide Programs, Doug's friends and associates remembered and recognized him both for his contributions as a biologist and for his skill in facilitating collaboration among scientists. Doug was one of the authors of the EPA Guidelines for Ecological Risk Assessment; he was also instrumental in the implementation of the Endangered Species Act, with respect to pesticides. As a senior scientist, he worked on many programs and received many awards over the years. Doug was also a devoted family man and active in St. Martin Parish in Gaithersburg, Md. He was married for 29 years to his wife, Linda, who has been home-schooling their children for the last nine years. Jonathan, 28, is a graduate student in toxicology at the University of North Carolina; twins Mike and Chris, 27, are both working in computer-related fields; Daniel, 25, is studying biology at the University of Maryland; Elizabeth, 22, graduated from Catholic University last May and works at the National Institutes of Health; and Teresa, 19, and Mary Catherine, 15, are both being home-schooled by Linda. Doug died on December 26. **EY**

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