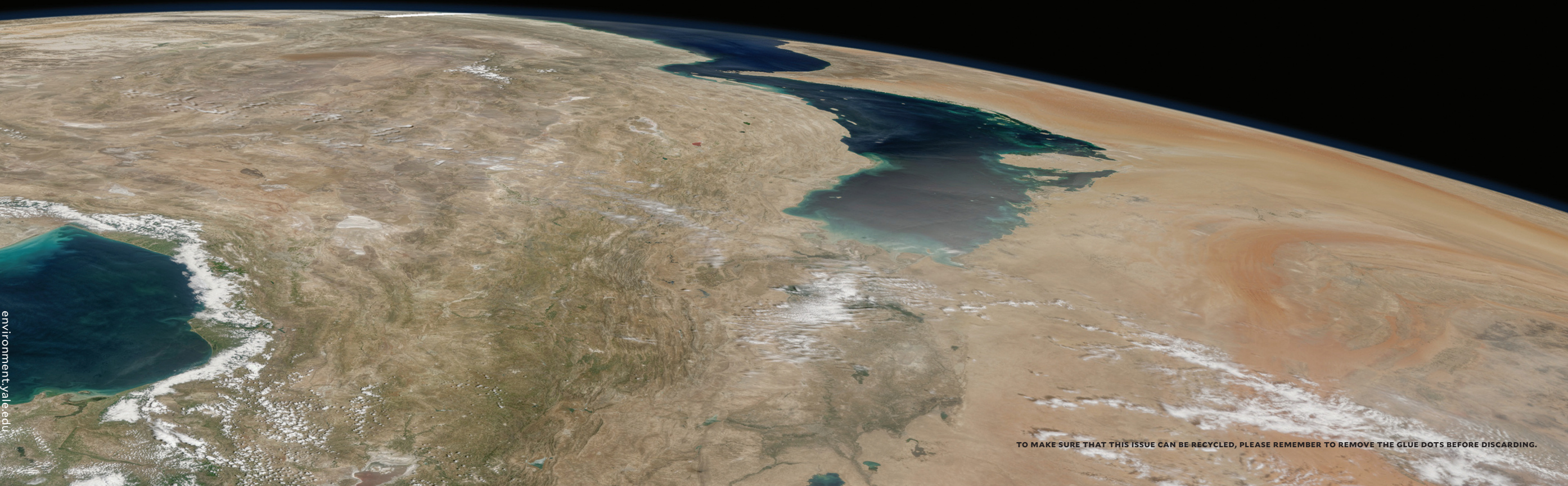


CANOPY

**WHO
WE
ARE:**

**YALE SCHOOL OF
THE ENVIRONMENT**

With a new name, our School honors the past and looks to the future.





DEAR MEMBERS OF THE F&ES COMMUNITY,

As most of you know by now, the Yale School of Forestry & Environmental Studies will change its name to the Yale School of the Environment effective July 1.

At the same time, we will also establish The Forest School at the Yale School of the Environment in recognition of our founding mission and the continued importance of forestry.

This is a historic moment for our School and, I believe, a vitally important one.

I feel strongly that our new name reflects who we are as a community and the far-reaching impact we have across many disciplines and sectors. Our faculty, students, and alumni are working on a wide scope of urgent and important issues – including climate change, clean energy policy, ecosystem science and biogeochemistry, hydrology, urban science, green chemistry, and environmental justice, among many others.

Yet, there has often been a disconnect between

the School's name and its impact. We frequently hear from alumni who report the difficulty of explaining to a potential employer why it is that someone interested in, say, energy policy attended a “forestry” school. Our career services director has reported disinterest among some employers at career fairs. Even our own faculty have avoided using the School's name on their publications because it seems outdated or irrelevant to their work.

As the Yale School of the Environment, we will be accurately communicating the breadth and depth of our scholarship, research, impact, and mission.

At the same time, it was extremely important to me that we reaffirm our commitment to forest science and global ecosystem management. Forestry remains an

anchor for how we study and teach practical resources management and ecosystem and land conservation. As Professor Mark Ashton, who will serve as the first Senior Associate Dean of Forests, writes in this issue of *Canopy* (page 6), our forestry program is strong now and will only get stronger.

I recognize and appreciate that the history and culture of this School is incredibly important to so many of you, as it is to me. The decision to change our School's name was not made lightly, but rather was the result of our long, deliberative, inclusive and inspiring Strategic Planning process, in which we articulated our diverse strengths and aspirations. We collected feedback from an external review committee and our Alumni Association Board, and, in November, the School's Board of Permanent Officers (tenured faculty) voted to approve the name.

The response, I am pleased to say, has been overwhelmingly positive and I am grateful for the many thoughtful and heartfelt messages that I have received from so many of you since this news was first announced.

Since its founding, this School has demonstrated the willingness and strength to adapt to the evolving challenges facing our world. And I think there has been no more compelling example of this than how our community has responded during the COVID-19 crisis, some of which you will read about in this issue

(pg. 40). There is so much I could say about how proud I am of our interconnectedness and of our collective response to this crisis – from our students and 2020 graduates who showed so much creativity, resilience, and concern for their classmates and their community in the face of great uncertainty; to our faculty and staff who moved ‘virtual’ mountains to continue providing an F&ES education to our students and supported them in whatever ways they could; to our alumni who offered advice to our graduates on pursuing their goals and entering the professional world in challenging times.

I will just say that I have never felt more confident about how well poised we are to fulfill our mission of providing knowledge and leadership for a sustainable future. The work that we do here is vital to meeting the many global environmental challenges we are currently facing and will face in the future. And, working together with all of you, I'm excited to continue this incredibly important work with a name that recognizes the full scope of what we do while maintaining the connection to our roots as a school of forestry.

Thank you for all that you do,

CANOPY

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Karen Seto (left), a professor of geography and urbanization science at F&ES, and Meredith Reba (right), a research associate in Seto's lab, meet with community members during a visit to Nepal this winter. Read about their work on page 24.

IN THIS ISSUE

<i>Unstoppable Rivers</i>	4
<i>Hybrid Vigor</i>	6
News & Notes	10
<i>Taking the Next Step</i>	14
Research Updates	16
<i>You Can't Be a Forester without Understanding Chad's Work</i>	18
<i>The Urban Effect</i>	24
<i>The New Forestry Is Urban</i>	30
<i>Integrity of Purpose</i>	36
Our Community Responds	40
Commencement 2020	44
Class Notes	46
In Memoriam	61
Bookshelf	62
Endnote	64

UNSTOPPABLE RIVERS:

BHUTAN'S QUEST FOR ENERGY SECURITY AND DEVELOPMENT IN A CHANGING CLIMATE

In mountainous Bhutan, water is critical. From Himalayan glaciers to Indian plains, rivers sustain hydropower—Bhutan's largest export. As climate change threatens, Bhutan must adapt to grow globally.

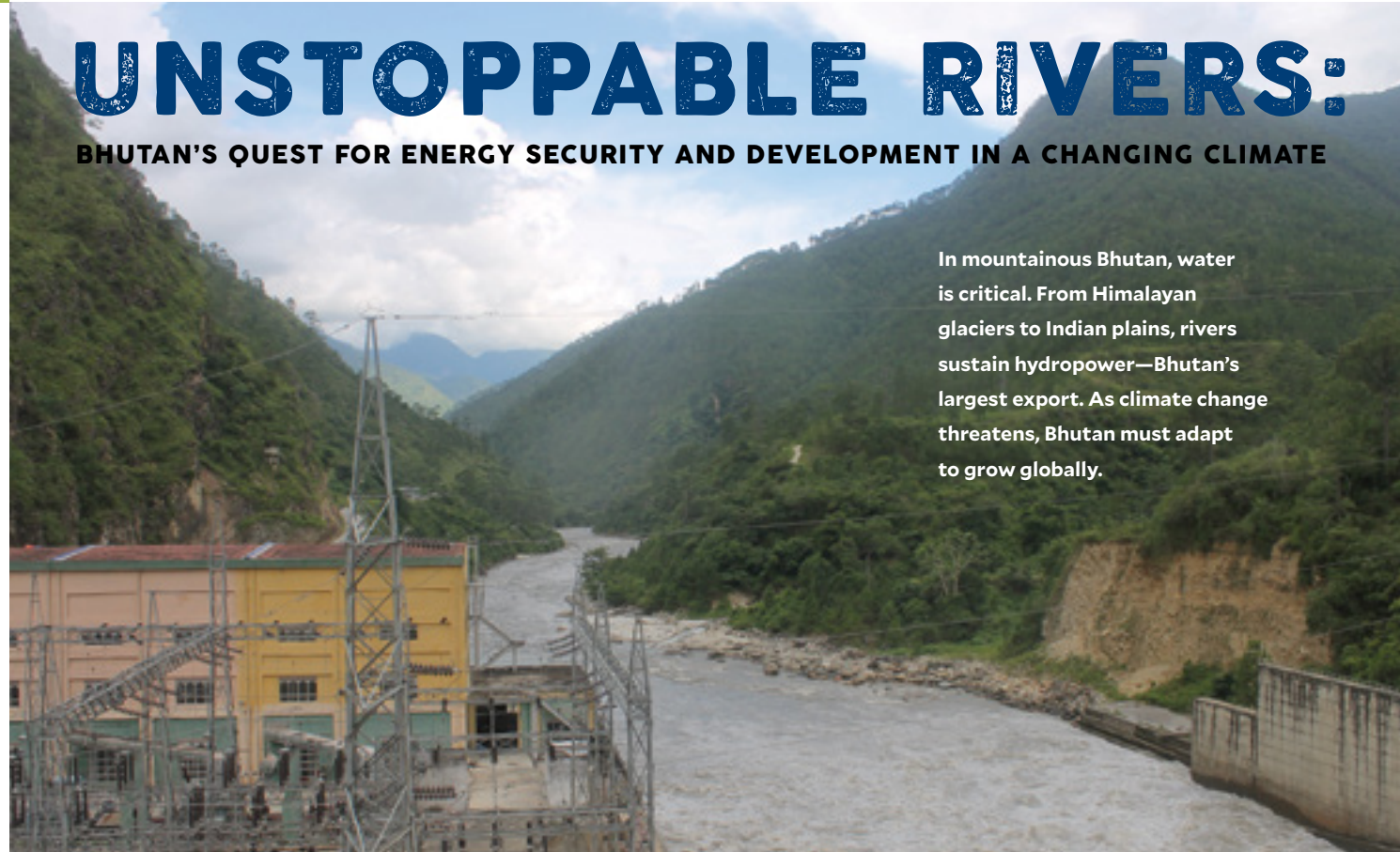


PHOTO CREDIT: EMMA JOHNSON

Before joining F&ES, Emma Johnson '20 M.E.M. spent a year in Bhutan, where she helped coordinate The School for Field Studies study abroad program and studied youth perceptions of climate change and the environment. Last summer, she returned to report this article with support from the Pulitzer Center on Crisis Reporting, where she was a reporting fellow, and the Yale Program on Climate Change Communication.

BY EMMA JOHNSON '20 M.E.M.

THE RUSH OF WATER RIPPED THROUGH THE VALLEY like an excavator. After an unusually heavy monsoon had created an artificial lake behind a wall of debris, a sudden collapse of that temporary dam on August 6, 2019, sent water gushing down a steep hillside above the Punatsangchhu River in Bhutan.

Boulders the size of buses tore through everything in their path. All that remained of a concrete bridge were the pillars on either end. Whole trees lay like toothpicks. Downstream, where this small river joins the much bigger Punatsangchhu, was chaos. Debris blocked the river, flooding the main highway.

The sudden floods on the Punatsangchhu were likely driven by the kind of extreme monsoon event that is becoming more common as a result of climate change.

As the climate warms, Bhutan may have more seasons of extremes: summers of flooding, intense monsoons, and glacier dam bursts followed by winters of drought. Because Bhutan is heavily dependent on rivers and the electricity they generate through hydropower — for its own development and to generate revenue from electricity-hungry India — shifts in climate will have implications for the country's international relations.

Many Bhutanese are grappling with how to grow their country in the face of these changes.

PERILS OF GEOGRAPHY

Imagine a flat piece of paper, then imagine crushing it into a ball. This is Bhutan's geography. Steep valleys descend into deep river gorges and climb back up. Defining the valleys are the rivers: Originating amid the peaks of Tibet or Bhutan, rivers weave downward to Bhutan's central temperate belt before cascading through the tropical south and into India.

The rivers look different between winter and summer. Winter means drought, when rains rarely fall and the water in the north is locked up in ice. The rivers flow at a fraction of their full volume. In summer, the Himalayan glaciers — the world's "Third Pole" — are melting faster every year, pouring water into Bhutan's rivers. Add to this the erratic Indian monsoon, which instead of bringing steady rain over a few months, as it once did, now dumps water in intense, irregular bursts. The result? Raging rivers ready to sweep away anything in their path.

"More and more people are thinking that winter will be drier, summer will be wetter with more floods and irregular rains, so we need to control the water that is coming down," says Chhewang Rinzin, managing director of the Druk Green Power Corporation, Bhutan's primary hydropower company.

Hydropower dams typically found in Bhutan are not like the large structures that span rivers in many parts of the world. These are run-of-the-river schemes, which means that water mostly flows through them rather than being stored behind them.

These dams may make Bhutan's economy more vulnerable to climate change. Since the dams don't actually store water, the energy production changes with the season: in the winter, when the river is low, the plants can only produce a fraction of their full capacity. But in the summer, with melting glaciers and the monsoon, most of the water must run through or past the dam without generating electricity because the plants can't accommodate such extreme flows. Summers also bring more flash floods, which means more debris cascading downstream, blocking and damaging the dam.

"What is going to happen when the glacier melts, when the snow melts, when the monsoons are not the monsoons that we are used to?" Rinzin asks. "Can the hydropower stations for which we have invested so much money be sustained?"

CHALLENGES BEYOND SOLUTIONS

There's no straightforward climate mitigation answer in Bhutan. From the outset, "it is unpredictable because the microclimate conditions are very

different than the regional climate conditions," explains Om Katel, dean and professor at the College of Natural Resources in Punakha. This also presents a challenge for modeling future climate changes. The country had no accurate weather stations until 1995, so any climate predictions use global models, which lack the resolution to take Bhutan's extreme geographical variation into account.

And even if there were clear solutions, that wouldn't be enough: "The biggest challenge is the implementation — there are no resources," says Tenzin Wangmo, the chief climate officer at the National Environment Commission.

Struggling with a lack of capacity and knowledge is especially difficult when Bhutan is not responsible for climate change in the first place. As a carbon-negative country, Bhutan actually has enough tree cover to compensate for its own emissions. By contrast, Bhutan's neighbors, China and India, rank first and third, respectively, in terms of national greenhouse gas emissions. "We have done nothing," Wangmo remarks, "but carbon has no border."

A STABLE ECONOMY IN AN UNCERTAIN FUTURE

"We are a hydropower-rich country," states Mewang Gyeltshen, director of the Department of Renewable Energy. In 2018, hydropower generation made up 13 percent of Bhutan's GDP. That is only expected to grow as more plants are built.

"The whole economy is dependent on hydropower," adds Wangmo. "And climate change will definitely impact hydropower. That is why it is our biggest worry."

Gyeltshen and his team have assessed sites for solar and wind projects in hopes of diversifying the economy, but with hydropower electricity being as cheap as it is, "we see these projects being more of a Plan B," he says.

The logical next question then is diversifying to what. Perhaps more tourism, other industries, cryptocurrencies. But, Rinzin reminds bluntly, "we should not forget that any diversification work that you do will need electricity. And the only source we have today is hydropower."

And so Bhutan continues to make huge investments in hydropower. Sitting in her small office in Thimphu, the country's growing capital, Wangmo worries aloud. "If in 30 years this water dries up, what do we do?"

This is an adaptation of an article published on the site Mongabay. The full article is also at environment.yale.edu. 🌱



Emma Johnson in Bhutan



HYBRID

VIGOR

BY MARK ASHTON '85 M.F., '90 PH.D.

How The Forest School builds upon Yale's traditional strength — and creates exciting new opportunities.

The F&ES forestry program takes students across the world for field studies, including Olympic National Park in Washington.

Stand dynamics. Second-growth forests. Silviculture. Watershed hydrology. Ecosystem ecology. Community forestry. Forest finance. Ecosystem services. Forest policy and governance.

What would sound foreign to most makes perfect sense to anyone who has come to study at our school. These subjects — and many of the more important advances in forestry and land conservation — have roots here. As a graduate myself and a faculty member for several decades, I presume I'm not the only one who takes great pride in this fact.

Since our school's establishment, forestry has provided us with our foundation. It's one of the most mature forms of environmental management and surely one of the oldest. It has structure in its skills and its professional recognition. Today forestry and understanding the human and biophysical attributes of a forest ecosystem still work as a strong anchor to the history of our School and provide students in all areas of study with that critical structure in their academic experience.

A new name will not change this — our forestry program is strong today and will only get stronger.

The creation of The Forest School within the Yale School of the Environment will ultimately solidify the long-term sustainability of the forestry program at Yale in several ways:

It will secure 12 endowed teaching positions, creating a core group of faculty members who represent the different disciplines of forestry and the natural and social sciences.

Creating a forestry school within a larger entity also neatly organizes our outstanding forest-related centers and programs under one banner. The pressing issues taught and researched by groups like the Urban Resources Initiative, The Forests Dialogue, the Environmental Leadership & Training Initiative, The Yale Forests, and the Tropical Resources Institute are vital to the future of forestry. Bringing them closer together encourages and facilitates the type of synergistic relationships that benefit our students, faculty, and program staff.

The master's programs for forestry and forest science will receive substantial endowed support to facilitate teaching and research among faculty and students, which includes workshops, apprenticeships, and fieldwork conducted across the world. Combining these unique opportunities with our

position as a forestry school will allow us to more directly target potential forestry students in areas we haven't been able to reach, particularly in rural regions. We can engage them digitally through webinars and a robust communications plan, partner with more rural universities, and network with our forestry alumni working in academia and the profession to identify promising undergraduate students across the world.

But perhaps the most exciting potential for The Forest School will be what I like to call hybrid vigor. One of our biggest strengths, from the beginning, has been that humanities and social sciences are put on equal footing with physical and biological sciences. It allows us to

bring in students from a diversity of backgrounds who are prepared to apply systems thinking and problem-solving to the technical aspects of forestry. Our position within a larger entity will expand their knowledge beyond forestry in areas like urban development, climate adaptation and mitigation, industrial and business synergies in resource use, and environmental justice.

The Forest School will create a critical stream of fresh ideas and perspectives about how we can sustain forests and their value to society well into the future, bringing a new dimension of hybrid vigor to the field of forestry. ♣

FINDING FORESTERS*

Our students remain engaged in forestry — on campus, in Yale Forests, and around the world.

8

STUDENTS IN THE
APPRENTICE FORESTER
PROGRAM AT YALE FORESTS

42

STUDENTS TAKING COURSE IN
SILVICULTURE

23

ATTENDEES AT
THE SOCIETY OF
AMERICAN FORESTERS
NATIONAL MEETING

14
MASTER OF
FORESTRY
GRADUATES
IN 2020



* during 2019–2020 academic year



The Yale School Forests provide a perfect setting for hands-on forestry experience, with experienced faculty members like Marlyse Duguid '10 M.F., '16 Ph.D., the School's first Siccama Lecturer in Environmental Field Studies.



Global Changemakers

Nearly 40 F&ES students traveled to Madrid, Spain, in December to take part in COP25, the annual “conference of the parties” hosted by the United Nations Framework Convention on Climate Change. Participants worked for nongovernmental organizations or served as delegates for countries like Mexico, Rwanda, Turkey, Morocco, Tonga, and Peru.

Environmental Justice Conference Welcomes Emerging Scholars

As part of the Environmental Justice and Health Initiative at F&ES, the School hosted the inaugural Global Environmental Justice Conference, a day-long event that brought emerging scholars from across the world and from across disciplines to discuss how scholarship, social justice, and environmental management can be effectively integrated.

The conference was held in honor of Natasha Chichilnisky-Heal, a Ph.D. candidate at Yale University who died in 2014. Her doctoral research focused on environmental justice issues related to natural resource extraction in the developing world. Natasha’s mother, Graciela Chichilnisky, established a fund that supported the conference and will fund future environmental justice conferences at F&ES.

Faculty Provide Expertise to Congressional Committees

Two F&ES faculty members traveled to Washington, DC, to testify before congressional committees related to climate change.

Daniel Esty, Hillhouse Professor of Environmental Law and Policy at F&ES and Yale Law School, spoke before the House Subcommittee on Environment and Climate Change of the Committee on Energy and Commerce in December. He urged the committee to create a multi-dimensional framework that includes public health, ecosystem science, and emerging technology in response to the climate crisis.

Justin Farrell, an associate professor of sociology, testified before the Senate Special Committee on the Climate Crisis in October about the “well-coordinated and well-funded” movement intended to deceive the American people about the reality of climate change. He called for “better data, more transparency, and access to information” to combat the misinformation campaign.

Additionally, Julie Zimmerman, professor of green engineering and senior associate dean of academic affairs, testified before the House Committee on Science, Space, & Technology last summer about innovations in sustainable chemistry.

NEWS & NOTES

Podcast Digs into Big Ideas

In the fall, F&ES published a book featuring 40 different pathways toward a sustainable future; in a new podcast, leading thinkers from the School and beyond dig deeper into those ideas. In each episode of the Yale Environmental Dialogue podcast, authors from the book “A Better Planet: 40 Big Ideas for a Sustainable Future” share their thoughts and then lead a discussion with colleagues and other experts about how their insights and innovations might achieve meaningful change.

“No single idea will solve the complex challenges we face,” said Daniel Esty, professor of environmental law and policy at F&ES and Yale Law School and editor of the book. “This will take big thinking that crosses disciplines, regional borders, and political ideology. It’s going to require us to think differently, to challenge ourselves, and to be open to sometimes difficult conversations.” The series, which is part of the Yale Podcast Network, is available on most major podcast platforms.

Thomas Easley, assistant dean of community and inclusion, discusses strategies to engage more people in environmental conversations for an episode of the Yale Environmental Dialogue podcast.



Daniel Esty, Hillhouse Professor of Environmental Law and Policy

Mapping New Haven's Street Trees

There are nearly 30,000 street trees in New Haven. We know this thanks to the Urban Resources Initiative (URI), part of the Hixon Center for Urban Ecology at F&ES, which curates a meticulous inventory of the city's trees.

Recently, Sabrina Szeto '16 M.F., a geospatial consultant and former geospatial analyst with the Ucross High Plains Stewardship Initiative at F&ES, helped build a comprehensive and interactive map of New Haven's street trees. Users can search by address to find the size, genus, and species of the trees in their yard or in their local park.

You can find the map at uri.yale.edu/maps/street-tree-inventory-map.



Find the size, genus, and species of New Haven's street trees using this map by the Urban Resources Initiative.



Renowned Scholar Taylor Earns Wilbur Cross Medal

Dorceta Taylor '85 M.F.S., '91 Ph.D., one of the nation's leading environmental justice scholars and activists, has been named a recipient of the 2020 Wilbur Lucius Cross Medal, the highest honor Yale Graduate School bestows on its alumni.

Currently a professor and the director of diversity, equity, and inclusion at the University of Michigan's School for Environment and Sustainability, Taylor has written several books and has piloted watershed studies on diversity in the environmental movement, including a 2014 study on the state of diversity in nearly 200 U.S. environmental organizations.

Taylor is only the third F&ES graduate to win the award, joining John Aber '73 M.F.S., '76 Ph.D. and Eleanor Sterling '83 B.A., '93 Ph.D.

F&ES Alum Takes Helm as New Haven Mayor

Justin Elicker '10 M.E.M./M.B.A., who first moved to New Haven in 2007 as a joint-degree student at F&ES and the Yale School of Management, was sworn in as the city's 51st mayor on January 2, 2020. Elicker, who had previously served as director of the New Haven Land Trust, has pledged

Earth Day at 50

This year marked the 50th anniversary of the first Earth Day, bringing the F&ES community together – virtually – to celebrate the landmark environmental event.

The day kicked off with an interview of former Secretary of State John Kerry by Dean Indy Burke. Kerry recalled helping organize events in Boston on the first Earth Day, discussed the progress that has been made since then, and plugged the launch of World War Zero – his latest effort in climate action.

More than 500 visitors then participated in an online event hosted by the Yale Environmental Dialogue, which featured insights from F&ES faculty Paul Anastas and Michelle Bell; Thomas Easley, assistant dean of community and inclusion; and renowned environmental scholar Thomas Lovejoy. The conversation, moderated by F&ES faculty member Daniel Esty, focused on past successes in the environmental movement and what steps are required to shift society onto a more sustainable trajectory.

In the days leading up to Earth Day, F&ES students shared their thoughts on Earth Day and the future of the environmental movement on social media, through powerful essays, visual art, poetry, and song.

An Earth Day-inspired drawing, "Wild Places," by Humna Sharif '21 M.E.M.

to increase government transparency, fight for more public school funding, and address the challenges of environmental injustice in the city.

He also wants to work closely with Yale to continue strengthening its long-standing relationship with the city.

Marjorie Shansky, an F&ES lecturer, taught Elicker in her course "Land Use Law and

Environmental Planning." One of the key takeaways of that course, she says, is the immense authority cities and towns have to forge a sustainable future by committing to renewable energy sources, creating access to affordable and diverse housing, and protecting water quality.

"These are all issues that are important to Justin," she said. "It makes you feel hopeful for the future."



Taking the Next Step:

Peter Pinchot '88 M.E.S. Reflects on the Name Change

BY KEVIN DENNEHY



Peter Pinchot (right) with Ethan Miller '18 M.F. and Nick Biemiller '18 M.F. in 2018.

When it was announced that the Yale School of Forestry & Environmental Studies would change its name to the Yale School of the Environment effective July 1, the news elicited thoughtful reflection from generations of former students. The more than 5,100 living alumni share a deep connection with the School — due in no small part to its historic link to the international forestry sector and the modern environmental movement itself.

For one alumnus, that history has a distinctly personal dimension. Peter Pinchot '88 M.E.S. is the grandson of Gifford Pinchot, co-founder of the school and first chief of the U.S. Forest Service. Peter spoke with *Canopy* this spring to discuss the history of the school, how it has adapted to changing environmental challenges globally, and why he believes it was time to change its name.

What did you think when you heard about the name change?

I think the change is highly appropriate. We took a step toward this change [in 1972] following the first Earth Day and during the emergence of the modern environmental movement. At that time, the School changed its name to the Yale School of Forestry & Environmental Studies to better reflect the many things we do. So it's not a great surprise that we now take this next step, which recognizes that forests are just one of the biomes that we're managing globally.

Your great-grandparents and grandfather established the Yale Forest School in 1900. What was their original intent?

Well, my great-grandfather, James Pinchot, was responding to the environmental crisis facing our country at the time: deforestation. Before that our family was in the business of deforestation, to put it mildly. But he recognized that the destruction of the nation's forests was bringing ecological destruction and dire economic consequences — and that something had to be done. There was a huge land grab going on and really there was no professional forestry happening in America.

Which is where this new School came in ...

Well, they didn't have qualified people to hire into the Forest Service. So, really, a big part of the original intent was human resources!

While the School's original focus was on forestry, in the bigger picture those early leaders were also developing these principles of responsible long-term management — what we'd call sustainability today.

Exactly. This is when my grandfather and President Theodore Roosevelt came up with what we now consider to be the three parts of sustainability:

that resources had to be developed for the benefit of the present generation; that they had to be preserved for future generations; and that the benefits should be distributed to all people, not just the rich and the powerful.

The issue then was the liquidation of forests. Today the issues also include climate change, water, energy, biodiversity, poverty and environmental justice, and many more. Forests and forestry are, of course, very relevant to almost all these things. And while forestry is no longer the sole focus, I think it was important for the School's current leadership to highlight its importance by simultaneously creating The Forest School. But in my opinion, changing the name to the Yale School of the Environment is 100 percent appropriate. This is what the field has evolved into.



Liza Comita (in pink), associate professor of tropical forest ecology at F&ES, uses the dense jungles of Panama to blend traditional teaching of forestry with ecology, biodiversity, and climate change.



Construction of the 14-floor Origine, in Québec, which is the tallest all-wood condominium building in North America.

RESEARCH UPDATES

Can Wood Construction Make Cities a Carbon Sink?

The world's growing urban population will drive an enormous demand for new housing, commercial buildings, and other infrastructure across the planet by midcentury. This building boom will likely escalate global carbon emissions to dangerous levels and intensify climate change — particularly if it relies on traditional materials such as concrete and steel.

However, if society transitions to more wood-based products to meet building demand, urban growth might actually present an opportunity to mitigate climate change, according to a

recent paper led by researchers at F&ES and the Potsdam Institute for Climate Impact Research (PIK). Writing in the journal *Nature Sustainability*, a multidisciplinary team of researchers and architects predicted that designing midrise urban buildings with engineered timber — rather than relying mainly on carbon-intensive materials — has the potential to create a vast “bank vault” that can store within these buildings 10 to 68 million tons of carbon annually that might otherwise be released into the atmosphere. (That would be the equivalent of the yearly emissions from 17 coal-powered plants.)

Simultaneously, society would drastically

reduce carbon emissions associated with the construction sector, says Galina Churkina, who led the collaborative research while she was a visiting fellow at F&ES. “Since the beginning of the industrial revolution, we have been releasing into the atmosphere all of this carbon that had been stored in forests and in the ground,” said Churkina, who is a senior scientist at PIK. “We wanted to show that there can be a vision for returning much of this carbon back into the land.”

Other contributors included Barbara Reck, a senior research scientist and industrial ecologist at F&ES, and Thomas Graedel, professor emeritus of industrial ecology at F&ES.

Energy Choices Are Contagious — but Why?

A growing body of research has shown that peer behavior has a significant influence on an individual's energy-related decisions, whether it's choosing to install solar panels or to buy a hybrid vehicle. But why exactly that occurs is less clear.

In a recent paper, a team of scholars led by Kenneth Gillingham, associate professor of environmental and energy economics at F&ES, examined the latest findings on social influence. They then describe pathways by which that information might be used to promote sustainable energy choices.

The authors suggest that future research should focus on identifying when during the decision-making process social influence is most impactful. They also call for more research into the role of peer effects across disciplines — including economics, marketing, sociology, and psychology.

Scholars have documented the effects of peer influence on energy choices. But those findings have rarely been integrated. “We wanted to bridge those fields of literature so that we can better understand how peer effects and contagion work, why they work, and why they're so powerful,” Gillingham said.

Climate Change and the American Diet

Shifting the American diet away from livestock production and toward more plant-based foods could significantly reduce greenhouse gas emissions. The majority of Americans, however, say they are unaware of this connection between food and the environment, according to a recent study by the Yale Program on Climate Change Communication (YPCCC).

In a report, “Climate Change and the American Diet,” researchers found that while more than half of Americans believe the production of beef, pork, dairy, and/or poultry contributes at least “a little” to global warming, only about 27 percent know that beef production contributes “a lot.” The findings were based on a survey of 1,043 American adults. While a majority do not consider themselves to be vegetarians or vegans, most said they would be willing to eat more plant-based foods, and more than half said they would cut back on red meat.

“Many American consumers are interested in eating a healthier and climate-friendly diet,” said Anthony Leiserowitz, a senior research scientist at F&ES and director of YPCCC. “However, many simply don't know yet which products are better or worse — a huge communication opportunity for food producers, distributors, and sellers.”

EPA Ignores Health Benefits in Mercury Proposal, Report Says

A U.S. Environmental Protection Agency proposal to weaken Obama-era rules on mercury emissions from coal- and oil-powered plants relied on a flawed cost-benefit analysis, according to a recent report by a team of environmental economists co-led by F&ES Professor Matthew Kotchen.

In trying to roll back the 2011 Mercury and Air Toxics Standards, the report finds, the EPA disregards the public health “co-benefits,” including a coincident reduction in particulate matter, which is hazardous to human health. In addition, the authors estimate that the Obama-era rule would cut U.S. healthcare bills by \$33 billion annually.

“Instead of weighing all the costs against all the benefits, the EPA is cherry-picking,” Kotchen told Reuters in December. “They pulled the biggest public health benefit off the scale.”

The report was produced by the External Environmental Economics Advisory Committee, an independent organization that provides non-partisan advice on the state of economic science. The committee was co-chaired by Kotchen.





You Can't Be a Forester without Understanding Chad's Work

BY RICHARD CONNIFF

The idea that forests are dynamic systems — that disturbance is the norm — might seem obvious now. But that's only because it was demonstrated by F&ES Professor Chad Oliver, one of the many ways the retiring professor has impacted forestry and forest education throughout his 45-year teaching career.

A few years ago,

visiting the Changbai Mountains on China's northeastern border, Chad Oliver listened quietly as local forest scientists described the surrounding landscape. They had inherited the old idea of the forest steadily progressing over time, with the bigger trees having arrived first, to prepare the way for the smaller, younger trees around them, which would eventually grow up in their place. It was a Peaceable Kingdom vision of nature, with a stable climax forest as the end result.

The next morning, Oliver woke up early and led a small group back to the site. There, says Xuemei Han '11 Ph.D., Oliver's doctoral student at the time, he took a core sample from a big tree and cut down some of the smaller trees nearby. His listeners joined him in aging the trees by counting tree rings. It turned out, of course, that the bigger trees weren't

any older than their smaller neighbors. In fact, the smaller trees were smaller, as Oliver puts it, in his soft Southern accent, "because the bigger trees had suppressed 'em."

It was a simple demonstration — and the heart of what he has taught over a 45-year career, first at the

University of Washington and more recently as Pinchot Professor of Forestry and Environmental Studies at Yale: There is no such thing as a balance of nature or some imaginary climax state. Forests are dynamic, and disturbance is the norm, whether by fires, droughts, wind storms, disease, insects, logging, or other factors. A mosaic of habitats is the usual result, from grasslands and scrub to dense forest, with each tree stand consisting mostly of even-aged trees, all of them having gotten their start in the aftermath of the same local disturbance. It's a big idea that can seem obvious now.

Chad Oliver set out to test the hypothesis of his mentor, David Smith, on study plots in the Yale-Myers Forest, conducting a kind of archaeological reconstruction of their history.

But that's only because it has become so widely accepted and influences how people manage forests in so many places.

"It is impossible to imagine the field of forestry without Chad's contribution," says Kris Covey '10 M.F., '16 Ph.D., a former student now teaching environmental science at Skidmore College. "You can't be a forester, and you can't be a forest ecologist, without understanding Chad's work. It is fundamental to our field in a way that is very rare for a scientist to achieve."

Groundbreaking Work at Yale-Myers

Chadwick D. Oliver began to work in the woods at 10 or 11, with the land survey crew for his father's forest management company in Camden, South Carolina. His official title was water boy, he says, "but every chance I got, I'd pick up a bush

ax for cutting a line through the trees, so the person with the transit could get a straight shot." He backed away from forestry for a time as an undergraduate, to separate himself from his father's influence. But when he revisited forestry in junior year, it took hold hard.

Oliver went on to study with the Yale School of

Forestry's David M. Smith, a legendary figure known for his ability to read a stand of trees from seemingly trivial clues and reveal its secret life. Smith suspected from the history of his own family's woodlot in Massachusetts that even-aged stands were commonplace. Oliver set out to test the hypothesis on study plots in the Yale-Myers Forest, conducting a kind of archaeological reconstruction of their history back deep into the 19th century and taking samples up the length of living trees to understand recent patterns of growth.



Chad Oliver (left) helps students measure a cut pine during a field trip to Yale-Myers Forest in 2018.

When his findings — the disturbances, the even-aged stands, the single species dominating the others — eventually appeared in the journal *Ecology*, the celebrated ecologist Robert MacArthur remarked that it might be true for the heavily disturbed forests of New England, “but it’s not true of the rest of the world.” Oliver, his own students, and others then went on to demonstrate the same pattern in the Douglas fir forests of Washington, the Sitka spruce forests of Alaska, the cherrybark oak forests of the American South,

and elsewhere until the Harvard forester Peter Ashton half-jokingly remarked, “OK, but not in the tropics.” Then he invited Oliver to send a student to his own study plots in Thailand, and the pattern held true there, too.

Oliver went on to develop this new understanding of forests in his book “Forest Stand Dynamics,” co-authored with Bruce Larson ’78 M.F.S. of the University of British Columbia, a former student. (Another former student, Patrick Baker ’93 M.F., is now preparing a third edition.)



Last October F&ES hosted a “festschrift” during which colleagues, former students, and friends presented readings and lectures about Oliver’s defining research.

Recognizing the even-aged character of most tree stands was of course only a start. It meant that managing any given stand, typically anywhere from 10 to 60 acres in area, needed to happen in relation to other stands in a larger landscape that might cover 1,000 or 100,000 acres. That led Oliver and Jim McCarter, then a data-oriented doctoral student at the University of Washington, to develop a computer platform called the Landscape Management System for taking account of different values — economic output, protection of wildlife, carbon capture and sequestration, recreation — in the context of the larger ecosystem. The U.S. Forest Service now uses its own version of the program, called Suppose, to manage the 294,000-square-mile national forest system.

Ecological Benefits

Oliver’s science has sometimes put him at odds with environmentalists. During the spotted owl fight in the Pacific Northwest in the late 1980s, for instance, he took the side of local communities, pointing out that Douglas fir regeneration occurs only in full, or nearly full, sunlight in the aftermath of major disturbance. Clear cuts fit this natural pattern and also benefit other plant and animal species. He advocated an approach that would prevent further cutting of the old growth on which spotted owls depend but also manage dense younger stands to maximize future old growth and sustain the local logging economy at the same time. Neither that proposal nor another to open up dense young growth for forest fire prevention were implemented at the time.

Oliver’s work has also produced some environmental success stories; for instance, in the aftermath of that

demonstration of tree stand dynamics in the Changbai Mountains. It was 2006, and Oliver was just beginning to work with a team led by ecologist Jianping Ge at Beijing Normal University. The focus was on a vast area of northeastern China that had been indiscriminately logged in the 1950s and then left to regrow into a dense, scrubby forest. Ge wanted to know what it would take to make it

Oliver advocated an approach to prevent further cutting of old growth on which spotted owls depend but also manage younger stands to maximize future growth.

suitable habitat for the Amur leopard and the Amur tiger, both critically endangered and hanging on just across the border in Siberian Russia. He thought Oliver could help.

“We felt like old friends already at our first meeting,” says Ge, who had read “Forest Stand Dynamics” in the 1990s. “Professor Chad’s profound knowledge and global

ecological strategic vision provided key support for us to formulate a scientific protection plan for tigers and leopards in Northeast China.” That plan set out to recover the forest habitat; rebuild the population of deer, wild boar, and other prey species; and encourage some of the tigers and leopards that had been visiting the area from Russia to settle down and call it home. As a result, the Chinese government in 2016 created the Northeast China Tiger and Leopard National Park, protecting an area just north of the Changbai Mountains that is 1.6 times larger than Yellowstone National Park. Together with the surrounding forests, it could eventually support as many as 100 tigers and 200 leopards.

Oliver, meanwhile, will retire from Yale this June. He plans to divide his time thereafter between New Haven and Istanbul, where his wife, Fatma Arp Oliver, grew up. He will also certainly continue to be found, in person and in spirit, in forests almost anywhere. ♣

The



Effect

BY KEVIN DENNEHY

Over the past few decades, it has become increasingly clear that the existence and growth of cities are significantly linked to environmental issues. At F&ES, where a new urban specialization will be added this fall, nearly every member of the faculty is doing something that relates to the urban environment.

When she was 12 years old, Karen Seto boarded a train traveling from Hong Kong to Guangzhou, roughly 90 miles, during a family trip to China. It was her first glimpse of the enormity of urbanization.

As the train pulled away from Hong Kong (“which is like New York City on steroids”), Seto was transfixed by fields of rice that seemed to go on forever, a verdant eternity that fed millions of people. But within minutes, those bucolic fields gave way to growing villages and tall buildings. Soon another city appeared: Guangzhou, which at the time was home to nearly 2 million but today, just four decades later, has a population of nearly 14 million people.

“That train ride had a really big impact on me,” Seto says. “I thought, ‘Oh, I’m leaving the city,’ but the city was never really that far behind — even in the countryside. It occurred to me that, from the urban to the rural, all of these systems — food, economy, transportation — were interconnected.”

Over the past couple of decades, Seto, Frederick C. Hixon Professor of Geography and Urbanization Science at F&ES, has become one of the world’s leading scholars on urbanization. Through pioneering work integrating satellite remote sensing imagery with socioeconomic data, she has helped advance scientific understanding of just how much humans are changing the face of the planet and what it means for the future.

“Over time it has become increasingly clear that the consequences of urban growth across the planet are linked to every environmental issue.”

Indy Burke, Carl W. Knobloch, Jr. Dean, Yale School of Forestry & Environmental Studies

At F&ES, she is not alone in studying cities. Across the School, scholars and researchers are exploring the many dimensions of urbanization or working to create healthier urban systems. And beginning this fall, F&ES will offer a new urban specialization to integrate the disparate but related challenges and fields of inquiry related to urbanization. The curriculum will include core courses in urban ecology and urbanization as well as a range of electives that draw on the wide array of experts and disciplines across F&ES and Yale.

The fact is, there might not be *any* faculty member whose work doesn't connect with urban issues in some way, says F&ES Dean Indy Burke. “In the past, people didn't really think of urbanization as an environmental focus of study — it was too local, relevant only in certain places, and detached from global concerns,” she says. “But over time it has become increasingly clear that the consequences of urban growth across the planet are linked to every environmental issue.”

In the new specialization, Burke says, students will examine how environmental change affects urban areas and how urban areas affect the environment, from local studies in New Haven to the region and the globe. But this isn't just about identifying the challenges of urbanization; it will also explore the potential opportunities.

Shaping the cities of tomorrow

It is estimated that about 55 percent of the world's population now live in urban areas. By midcentury it will be more like 70 percent, including a surge in the number of megacities (those with populations of more than 10 million), largely in the developing world.

Researchers expect that this growth will intensify the burden on resources, consume vast areas of valuable agricultural land, and threaten biological diversity through habitat fragmentation in all corners of the planet. Increased demand for energy and loss of natural spaces will also likely exacerbate climate change.

Within the cities themselves there is an added risk; in many metropolitan areas, the urban heat island (UHI) effect, a common phenomenon that makes urban areas significantly warmer than surrounding areas, will only compound the consequences of climate change, increasing health risks for city dwellers.

Xuhui Lee, Sara Shallenberger Brown Professor of Meteorology at F&ES, studies how the UHI effect and other factors are already changing life in

the world's cities — and what those changes will look like in the future. Sometimes that work is applied in a very practical way locally. Three years ago, he and Brad Gentry, Frederick K. Weyerhaeuser Professor in the Practice of Forest Resources Management and Policy at F&ES, taught a capstone course that allowed students to evaluate the biophysical threats and social impacts of climate change in New Haven — and to make recommendations to city planners and administrators.

It can also be used to shape the cities of the future. In China, Lee's insights have helped inform the design of Xiong'an, which will eventually be used as the country's second capital. For the design, planners have tried to incorporate numerous sustainability strategies. Some are conventional: Many of the buildings will utilize the latest in green design. Others are more adventurous. During a recent trip, Lee was shown a system of riderless vehicles that transport food around the city's streets. Consumers are able to stop the vehicles and, with the swipe of a card, purchase groceries before sending the vehicle back on its way.

Researchers from China have reached out to Lee as they plan the city's layout, including the placement of streets and infrastructure. “They've asked me, ‘If you were to plan a city in such and such a way, would it create more of an urban heat island or less?’ If you're careful, you can configure cities in a way that promotes the kinds of outcomes you want.”

Street-level insights

There is also an urgency to reconfigure the cities of today. As sea levels rise, many coastal cities can expect increased flooding, including when rivers and other inlets push more water farther inland during extraordinarily high tides and storm surges.

One of the ideas often considered to confront this threat is actually an old one: tide gates, which utilize flap valves that open and close to manage tidal flow, have been used for a variety of reasons for centuries. They are now being eyed as a climate mitigation strategy. In New Haven alone, tide gates have been used on two different rivers, the Mill and West rivers, for decades.

But the environmental results haven't always been positive, says Gaboury Benoit, Grinstein Class of 1954 Professor of Environmental Chemistry at F&ES and co-director of the Hixon Center for Urban Ecology. On the West River estuary, for instance, by automatically closing when the tide rolled in, the gates controlled flooding but altered the freshwater tidal system and



Karen Seto discusses urban design with community leaders in Nepal.

degraded water quality. “This design completely alters the upstream ecosystem and turns it into a fresh tidal system from a salt tidal system,” he said. “As you can imagine, whether you’re bathed in saltwater or freshwater, it is going to create a completely different ecosystem type.”

In a long-term study, Benoit is monitoring how a new, self-regulating tide gate system, funded by a local NGO, has improved saltwater flushing in the estuary and supported the recovery of plant and animal communities.

“Because I have these very interesting local examples, it’s a New Haven-based research topic that has potentially global repercussions.”

The project is one of many research areas that allow Benoit to examine the impact of human communities on water in greater New Haven. Benoit and his lab are also studying how litter and road salts affect water quality, the abundance of microplastics in the environment, and the potential benefits of other green infrastructure technologies.

For instance, working closely with the F&ES-based Urban Resources

Initiative, the city of New Haven, and several other partner groups, Benoit has helped install and monitor a network of bioswales — landscaped areas near roadways that capture and filter stormwater before it can reach the sewer system. The bioswales, which are in place throughout the city, reduce stormwater flooding, decrease contaminated discharge into the Long Island Sound, and have advanced the understanding of the benefits of this low-cost technology.

“I love that kind of work because it has an immediate positive effect,” he says. “It’s very applied, and the nice thing about it is that I think it makes people much more aware of the water cycle in cities.”

Equity and justice

Across the world, advances in technology and innovative policies are creating new opportunities for billions of city residents every year. But often those benefits don’t reach the world’s middle-income and poor people,



The design of Xiong'an New Area, which will serve as a second capital for China, will incorporate sustainable urban design. © SOM.

“It can be difficult to roll out a strategy on a national scale, but if you can test solutions in a few cities and show that they work, then it’s easier to adopt them at a larger scale.”

Karen Seto, Frederick C. Hixon Professor of Geography and Urbanization Science

says Narasimha Rao, an assistant professor of energy systems at F&ES.

Rao, who came to Yale in 2019, studies the relationship between energy systems and human society. Perhaps nowhere are those links more complex than in the world’s urban areas. While millions of people stream into cities each year, he says, many are making that decision for the wrong reasons. They’re not lured by the promise of new opportunities but are forced to move because of lost jobs or livelihoods.

And when they arrive, they encounter a host of risks, from the high cost of living to elevated health threats. Using a combination of qualitative and quantitative research, Rao is examining why it is that so many people struggle to achieve well-being — including access to healthy foods and affordable air-conditioning — despite being surrounded by vast wealth.

In India, for instance, he has found that urban populations have access to a less nutritious and diverse diet than rural ones, despite the seemingly endless food offerings found in cities. Why? Because access to many food options are too expensive or simply unavailable to poor communities.

“The challenge is that you often find greater inequality in cities compared with rural areas,” he says. “Yes, there are higher concentrations of wealth, but you also have stark poverty, so often these innovative developments aren’t available to a broad population.”

Looking to the city

As a student, Karen Seto never intended to specialize in urbanization science. As a matter of fact, she never even took a class on urbanization. Her interest in the subject emerged from her interest in land system science. In time she came to see that you simply can’t separate land use from urban growth.

During the early 1990s at Boston University, she became part of a group of scholars that, long before Google Earth or the availability of data from commercial satellites, was taking advantage of NASA satellite data and advances in remote sensing to monitor, characterize, and map global land use. “It was incredibly novel back then,” she says. “We were on the forefront of using these data and integrating them with other types of data and analysis. The bird’s-eye perspective and regular observations of the planet available through satellite data enabled us to see things that the naked eye couldn’t see.”

Over the years she has explored how urban growth is exerting pressure on biological diversity, food systems, and the climate (including as one of two coordinating lead authors of the urban mitigation chapter in the UN

Intergovernmental Panel on Climate Change’s critical climate reports). But this work has also revealed promising insights into the relationship between urban form and environmental impact.

And it has put a spotlight on numerous cities that have become models for sustainable design and green policies. From Taipei (which has invested in green energy, public transportation, and sustainable waste management) to Minneapolis (which has prioritized transit-oriented development), a growing number of cities have embraced sustainable practices and seen reductions in carbon emissions.

“Most of the world’s population will live in urban places in the decades ahead, so that’s where the demand for energy, for food, for resources will be greatest,” she says. “But cities are also the places where so many sectors come together — and where you’re more likely to get things done. It can be difficult to roll out a strategy on a national scale, but if you can test solutions in a few cities and show that they work, then it’s easier to adopt them at a larger scale. That’s pretty exciting.”



Gaboury Benoit has taken a very hands-on approach to monitoring how well a network of bioswales across New Haven are performing — even descending into the city’s stormwater drainage system.

The **New** **Forestry** Is *Urban*

BY JOSH ANUSEWICZ

The Natural Areas Conservancy, led by Sarah Charlop-Powers '09 M.E.M., is helping to preserve and restore critical urban forests in New York City and beyond.



Clara Pregitzer, a doctoral student at F&ES and conservation scientist with the Natural Areas Conservancy, helped create a massive ecological assessment of New York City's forests, which required 25 field biologists and more than 1,000 land plots.

Sarah Charlop-Powers '09 M.E.M. remembers growing up in the Bronx, the child of a community organizer who helped establish Greening for Breathing, a group dedicated to tree equity in the borough's Hunts Point neighborhood.

As she tells it, an impromptu study by the group found an urban landscape in Hunts Point akin to a war zone, in that it was almost completely devoid of any vegetation.

By 2010, Charlop-Powers was making her own mark on New York City's ecology. She had recently graduated from the Yale School of Forestry & Environmental Studies (F&ES) and was working in the Hudson Valley when she was given the opportunity to write the business plan for a nonprofit organization that would work as a partner to NYC Parks to advance the management of the city's natural areas. Working closely with F&ES graduate Bram Gunther '91 M.E.M., she wrote the plan and secured the funds that led to the launch of the Natural Areas Conservancy (NAC) in June 2012.

Today the NAC is leveraging the decades of management expertise of the NYC Parks Natural Resources group, partnering with them to increase awareness and improve the management of New York City's 20,000 acres of forests and wetlands.

"Most of the natural areas in New York City are on parkland in the outer boroughs. They have low visibility compared to NYC's flagship parks," says Charlop-Powers, now executive director of the NAC, whose leadership was recognized by

F&ES in 2018 with the Alumni Association Board's Prospect Street Award. "The NAC is interested in not only increasing the visibility of the city's natural areas but utilizing science and data to inform their management. By working on a citywide scale, the NAC has been able to use the kinds of rigorous evaluation and best practices found in rural land management and strategically apply them to conservation across the city."

In 2018, the NAC partnered with NYC Parks to create the innovative Forest Management Framework to project a forest management budget for New York City for the next 25 years. It also undertook a massive field-based ecological assessment of the city to gather quantitative data, utilizing 25 field biologists and more than 1,000 land plots.

Its efforts recently expanded with a national survey distributed to 125 cities and organizations across the United States, aimed at gaining a better understanding of how urban forests and natural areas are being managed. The survey garnered an overwhelming response, producing a landmark report that detailed a lack of sufficient staffing and funding, an increase of invasive species, and growing concern over a dearth of data to properly handle the effects of climate change.



This is not the Adirondacks; this is Inwood Hill Park, located along the Hudson River a few miles from the Bronx Zoo and Yankee Stadium. Urban forests and natural areas like this account for more than 20,000 acres in the country's most populated city.



Native New Yorker Sarah Charlop-Powers '09 M.E.M. (right) has helped guide the NAC by using rural land management strategies to conserve the city's urban natural areas.

“We’ve learned so much,” Charlop-Powers says. “What we’re hearing really speaks to the increased sophistication and innovation in how people are assessing, prioritizing, managing, and monitoring forest conditions in cities across the country.”

POP QUIZ: WHICH WORLD CITY HAS THE LARGEST PERCENTAGE of tree canopy cover over its streets?

If you guessed Tampa, Florida – and it’s likely you didn’t – you are correct!

According to a study of horizontal street view imagery by the Senseable City Lab at the Massachusetts Institute of Technology, more than one-third, or 36.1 percent, of Tampa’s streets are given to tree cover, ahead of cities like Singapore, Oslo, Montréal, and Los Angeles.

“What we’re hearing really speaks to the increased sophistication and innovation in how people are assessing, prioritizing, managing, and monitoring forest conditions in cities across the country.”

Sarah Charlop-Powers '09 M.E.M., executive director of the New York City-based Natural Areas Conservancy

The ranking isn’t a surprise to those in charge of the city’s natural areas. Tampa boasts a robust planning and urban design division, including an urban forest management plan, and completes a comprehensive tree canopy analysis every five years. The benefits are tangible: According to the most recent analysis completed in 2016, Tampa’s urban forests annually reduce an estimated 808 tons of air pollutants, decrease residential air-conditioning costs by \$7 million, and reduce 50 million cubic feet of stormwater runoff.

And yet, even taking all of these measures, the city finds itself in a race against intense residential and commercial development, according to Charlop-Powers. In such a race, she adds, Tampa and Hillsborough County have created a comprehensive plan to acquire urban natural areas to protect the land.

In the fall of 2019, in the wake of the results of their national survey, the NAC hosted a workshop in New York City, “Forests in Cities.” Park and urban forestry leaders from 12 American cities – including Tampa – gathered to discuss shared challenges, opportunities for collaboration, and how urban forests can be part of a climate solution.

“Spending a week together – really digging into core themes around management and care of urban natural areas – created a lot of energy and excitement,” said Clara Pregitzer, a doctoral student at F&ES and a conservation scientist with the NAC. “We realized that cities face many of the same issues. We all agreed that we need to focus on how we can elevate this topic and raise awareness nationally to get some boots-on-the-ground work done.”

PREGITZER, A NATIVE OF MICHIGAN’S UPPER PENINSULA and a graduate of Northern Arizona University’s forestry program, had always focused on rural areas. Urban forestry was never part of her plan, but a work commitment for her now-husband brought her to New York City in 2010, where she landed a job with the Natural Resources group of NYC Parks.

“I helped with a vegetation inventory of Van Cortlandt Park in the Bronx,” she recalls. “It really changed my perspective as

to what a forest could be in New York City. From there, I really began to see the potential in urban ecology.”

Eventually Pregitzer was recruited by Charlop-Powers to join the NAC as they prepared for the city’s ecological assessment. While working on the assessment, she met Mark Bradford, professor of soils and ecosystem ecology at F&ES, who encouraged her to pursue her Ph.D. at F&ES. Blending work from Yale and the NAC together, Pregitzer has used the data

“With our world becoming more urban, we have the opportunity to make urban forests part of a larger dialogue. ... We can invite millions of people to learn about forestry and forest management right in their own city.”

Clara Pregitzer, F&ES doctoral student

from the ecological assessment to understand how the urban context can influence forest structure and function and how best to manage complex and dynamic landscapes for the future.

Urban forestry, she says, should not be viewed as “a nuanced type of forestry” but rather a vital part of forestry writ large. Though the social and political issues may differ from a rural setting, urban forests require the same types of management plans and scientific rigor.

“And with our world becoming more urban, we have the opportunity to make urban forests part of a larger dialogue,” adds Pregitzer. “We can invite millions of people to learn about forestry and forest management right in their own city. How cool would that be?” 🌳



INTEGRITY *of* PURPOSE

Gerald Torres, who joined the F&ES faculty in January as a professor of environmental justice, talks about two pivotal events in his career that continue to inform and inspire his work and teaching on environmental and social justice.

BY PAIGE STEIN

Whenever he gets tired, stressed, or starts to think his work is difficult, Gerald Torres looks up at a photo hanging in his office. It's of a group of 30

Indian children and their elders standing in the ceremonial office of the Attorney General. It was taken in 1994 when Torres was serving as an advisor to then Attorney General Janet Reno. Several months before it was taken, Torres had accompanied Reno to the first "listening conference" with tribal leadership in Albuquerque, New Mexico. After the conference, the Attorney General Reno spoke at a pueblo in New Mexico. After speaking at length, Reno told those in attendance that

they shouldn't hesitate to reach out to her if she, or her office, could help with anything.

It may sound like typical "politician speak," but the children in the audience took her at face value. They began organizing their pueblo and drafting a list of things they thought the Attorney General might be able to help them with, including improvements to the juvenile justice system in Indian Country and the establishment of a senior center on the pueblo. They wrote a petition and ran a relay race from Albuquerque to Washington, D.C., to present it to Reno at the Justice Department. So, several months after the listening conference, when the guard at the Justice Department gate asked Torres what to do about the group of children who were asking to see the attorney general without an appointment, he replied: "let them in." After talking with the children and their elders and



Gerald Torres says he looks at this 1994 photo of Indian children and their elders gathered in the ceremonial office of the U.S. Attorney General whenever he needs a reminder that words matter.

explaining that Attorney General Reno was currently testifying on Capitol Hill, he asked the official Justice Department photographer if he were available to take a photo.

“I look at that photo to remind me that words matter,” Torres says. “I remain moved to this day by the faith of those kids in the power of their own beliefs, in the belief that the government would listen to them. It reminds me that I have to take my work seriously because it may produce good for others beyond myself.”

The listening tour, itself, could be counted as among the good that Torres’ work at the Justice Department produced. Reno, who was very interested in Indian affairs law, had asked Torres to establish a different model for communicating with the tribes and for setting priorities for the Justice Department’s work on tribal affairs. In conversations with Reno and Wilma Mankiller, the first woman elected to serve as Principal Chief of the Cherokee Nation, among others, the idea of the listening conference was born.

“We were just talking, and we thought, ‘why don’t we do it in reverse? Why don’t the tribes set the agenda,’” Torres says. “So, we created the first listening conference which brought all the tribes together with federal officers working on Indian issues, including three at cabinet level.”

The listening tour model created the basis for federal Indian policy in the Clinton administration and has had a lasting

influence on the way federal agencies develop and carry out Indian affairs law and policy. It also was one of the catalysts for the creation of The Office of Tribal Justice. Formed in 1995, the Office serves as a central point of contact and advisor to the Attorney General on Indian country-specific legal and policy matters.

THE ADVANCEMENT PROJECT

Although he doesn’t have a picture from that time hanging in his office, Torres also credits his work with the California-based Advancement Project beginning in the late ’90s as having a critical influence on his scholarship and thought on racial and social justice.

Dedicated to “transforming the public systems impacting the lives of low-income people of color in California,” Torres and his colleagues at the Advancement Project, including prominent civil rights activist and lawyer Connie Rice, wanted to track the public health dollars that California was spending by breaking it down to neighborhood level. Their goal was to understand better how and where money was being spent and make that data more usable, particularly as a tool to inform political work.

“We wanted to look at communities holistically, using mapping technologies and social science research to understand how people actually experience their lives,” Torres says. “We’d have meetings where we’d put a map on the wall and ask people

“That’s one of the many things that excites me about F&ES — you have people working in areas that have to become part of environmental justice scholarship.”

to identify places where they felt unsafe and ask why. Maybe there’s a liquor store there and a couch where people sit, and it’s on someone’s path to the grocery store. It’s not a crime scene, but enough to affect someone’s quality of life.”

To achieve their goal, the Advancement Project brought together interdisciplinary teams of experts, including geographers, public health workers, lawyers, economists, community organizers, sociologists, and others to try to define the myriad of problems closely linked to social and racial injustice in Los Angeles — and to develop solutions. It was an experience that Torres says reinforced for him how crucial interdisciplinary work is to not only in achieving solutions but even to define a problem sufficiently.

“That’s one of the many things that excites me about F&ES, you have people working in areas that have to become part of environmental justice scholarship,” Torres says. “Industrial ecology, for example, I’ve been trying to convince people that we need this discipline to help us assess the regulatory framework we have, whether it’s capable of working the way we need it to, and to figuring out how to achieve the goals of the statutes.”

Another way that the Advancement Project differed from many other organizations focused on civil rights and social justice, Torres says, is that group didn’t think of litigation or even legislation as the sole methods of addressing the problems

they were identifying. “We tried to look at what would offer the most redress to that set of problems in the community. It might be floating a bond; it might be helping to mount a political campaign or building a community organization so people could advocate for themselves,” he says. “We never assumed there was one solution or that the first solution you worked on would yield the results you wanted.”

When he looks back at those two pivotal times in his career, Torres says, two things come to mind: integrity of purpose — a purpose that was defined by goals that were larger than immediate objectives — and the importance of working in teams.

“I’ve been fortunate to work with many talented and gifted people throughout my career, and I never saw them patting themselves on the back,” he says. “They realized that we rarely accomplish anything by ourselves, and we’re never as smart as we think we are. Those are lessons I always try to pass on to my students — the importance of building teams and making sure that your work stays true to its principles — that and that no defeat or success is ever final.”

Note: Professor Torres uses the term “Indian” (as opposed to Native American) in conversation, explaining that many Native people feel that the term carries their history for the past several hundred years. In addition, many Native people prefer to be called by their specific tribal name whenever possible.

THE COMMUNITY RESPONDS TO A GLOBAL CRISIS

As the COVID-19 pandemic escalated this spring, the F&ES community – faculty, staff, students, and alumni – pivoted their efforts to respond to the crisis in meaningful ways. In the days after the New Haven campus was shut down, faculty and staff worked together to shift the entire curriculum online. Students adapted to online learning and identified new opportunities for research. Several faculty members shifted their research to better understand the pandemic and its myriad effects. And the entire community found new ways to appreciate some of the things we often take for granted, including the beauty of nature in our back yards and in our own neighborhoods.



PHOTO PROVIDED BY SHUTTERSTOCK

Has the Virus Entered Rivers?

Many scientists are studying the various direct and indirect ways that humans are able to transmit the COVID-19 virus, from respiratory transmission to touching a contaminated surface. Peter Raymond, a professor of ecosystem ecology at F&ES, is leading a research project that could reveal whether it can also be transmitted through rivers and streams. In an interdisciplinary study, funded by the National Science Foundation, the Yale study will sample streams and rivers in impacted areas of Connecticut for the presence of the virus. If they find that the virus is present, Raymond says, the next step would be to determine if it can be transmitted to humans – perhaps through the inhalation of aerosols generated by contaminated waters. Research on past coronaviruses and other pathogenic viruses has shown that they can be delivered to waterways via wastewater effluent and urban runoff, particularly when heavy rainstorms cause untreated wastewater to overflow from sewer systems. Collaborators will include F&ES Professor Julie Zimmerman and researchers from the Yale School of Engineering, School of Public Health, Department of Ecology & Evolutionary Biology, and the U.S. Geological Survey.

Climate Communications Program Retools for a New Crisis

As the COVID-19 threat escalated across the U.S., the Yale Program on Climate Change Communication retooled its efforts to investigate how Americans are responding to the crisis. In April, the F&ES-based program conducted a survey of 3,933 Americans, seeking to understand how much they understood the disease, which leaders and media sources they found trustworthy, how they'd changed their behaviors, and how these responses play out across the political, social, and cultural “fault lines” of American society. “We saw an opportunity to look at the COVID-19 crisis from an angle that’s often not fully appreciated, which is the communication side of it,” said Anthony Leiserowitz, a senior research scientist at F&ES and the YPCCC director. “There obviously has been much attention and research looking at questions like, what is this disease? Where did it come from? Who is vulnerable? ... And of course, that’s where much research attention should go. But when it comes to societal vulnerability and the actual impacts of the disease, communication arguably plays at least as big a role.”

Assessing the Risks and Impacts of COVID-19

In March, as cases of COVID-19 began to surge in New York City, Detroit, and other early epicenters of the crisis in the United States, Eli Fenichel – whose work examines the economic value of ecosystems as the Knobloch Family Professor of Natural Resource Economics at F&ES – helped produce an online dashboard that estimated childcare demand for healthcare workers and others responding to the crisis. Days later, he and a team of collaborators published an interactive database that documented worker risks, by industry, for every U.S. county. Fenichel, who has studied the benefits and tradeoffs of using social distancing as a response to epidemics for more than a decade, said society’s response to the COVID-19 crisis can offer insights into how it might address other complex, global environmental challenges. “One of the things I think is really important for us to remember – and for our School community to keep in focus – is that this is basically just climate change at warp speed. And, it’s biodiversity loss at warp speed. It’s every one of these sort of social-environmental dilemmas, because this is an environmental-social dilemma,” he said. “We all need to roll up our sleeves and do what we can. We know how to work with data and how to solve big, complicated systems problems. Let’s do it.”



PHOTO COURTESY OF DAN RENZETTI/YALE OPAC

A Yale Health employee helps prepare the university’s COVID-19 response.



Virtual Tour of Yale-Myers

The trails, classrooms, and labs at Yale-Myers Forest were quiet this spring. But a virtual trail map of the forest, unveiled in May, made it possible for learning at the school forest to continue. The online “StoryMap,” created by the Yale School Forests, will be used to complement courses taught by F&ES faculty, but is also available to anyone else interested learning more about forest ecology and management.

Rock to Rock Shifts Gears

Each April, the F&ES-based Urban Resources Initiative (URI) convenes a team of cyclists, from across the School community and beyond, for the Rock to Rock Earth Day Ride, a New Haven event that has raised more than \$1 million for local environmental organizations since 2008. The event looked significantly different this year, of course, as the URI team



Anna Pickett '10 M.E.Sc., third from left, Casey Pickett '10 M.E.M./M.B.A., and their two sons celebrate Earth Day at their New Haven home in April.

and other partner organizers urged riders to find alternate ways to support the cause while following guidance on social distancing. Participants took individual or family rides, hiked to the top of East Rock and West Rock, and made calls urging political leaders to

take climate action. And they decorated their homes. “My kids and I decorated our trees with ribbons and crepe paper, made signs, put chalk on the sidewalk,” said Anna Pickett '10 M.E.Sc., the development and outreach manager at URI and a longtime organizer of the Rock to Rock event. “I saw someone on social media was going around with chalk and labeling all the trees in their neighborhood, and I was inspired to do that, too.



Recent Grad Takes Lead at CitySeed

Organizations that fight for equal access to nutritious food have taken on a greater importance during the current global pandemic. In New Haven, CitySeed is dedicated to creating an equitable local food system that promotes economic and community development and sustainable agriculture. The nonprofit operates the city’s successful network of farmers markets, mentors and trains local food entrepreneurs, and works with city government to enact policies aimed at ensuring that all New Haven residents have access to healthy and affordable food. As of this April, CitySeed is led by executive director Cortney Ahern Renton '19 M.E.M., who brings considerable leadership experience with nonprofits dedicated to food systems and agriculture.

Socially Distant, Closer to Nature

An unexpected benefit of staying home in recent months has been the opportunity to get outdoors and explore. April’s F&ES Month of Wellness encouraged students, faculty, and staff to stay healthy and active. The Yale School Forests Instagram account (@yaleschoolforests) hosted Phenology Scavenger Hunts connecting everyone with local plant life. During a spring walk in New Haven, Austin Dziki '20 M.F. captured Wooster Square’s cherry blossoms blooming (right).



LEADERSHIP COUNCIL 2020

On April 24, the F&ES Leadership Council held its first-ever virtual annual meeting. Dean Indy Burke presented an update on the School, “The Yale School of the Environment: Why It’s Needed Now,” which discussed the reasoning behind the upcoming name change and stressed the importance of remaining focused on environmental challenges even in the midst of the COVID-19 pandemic. She was joined by senior members of F&ES leadership who detailed how the School has handled academics, internships, career placement, and student life through the pandemic.





COMMENCEMENT 2020



In May, F&ES honored the Class of 2020 with a virtual celebration, which was livestreamed on YouTube, allowing the entire community, family and friends to recognize the accomplishments of this year's 143 graduates. In addition to addresses by Dean Indy Burke, Gary Barrett '96 M.F., president of F&ES Alumni Association Board, and New Haven Mayor Justin Elicker '10 M.E.M./M.B.A., the one-hour celebration included a musical performance by the LoggerRhythms, the F&ES a cappella group; a presentation of student awards; an emotional photo slideshow; and a virtual Zoom photo session. Students celebrated from home in their own unique ways – and, in keeping with tradition, by creatively decorating their mortarboards.





An F&ES '05 pyramid at the Methow Valley, Washington, wedding of Eli Black and Bobby Hughes: Brett Galimidi, Jim Cronan, Brett Golden, Dan Stonington (bottom); Sarah Matheson, Jocelyn Hittle, Ann Grodnik (middle); Andrea Johnson and Kyle Jones '06 (top).

CLASS NOTES ★ Denotes a reunion class year. Reunion 2020 will be held October 9–11, 2020.

Editor's note: Class Notes were collected prior to the global COVID-19 pandemic.

51 **CLASS SECRETARY**
Peter Arnold,
arnoldp@sbbmail.com

Peter Arnold writes: “Still here, though the infirmities of old age are working me over. Finally quit bird hunting, though I did spend some pleasant hours in a duck blind watching my son miss a couple of birds. Biggest news is that, at almost 96, I am putting out a short book about hunting, fishing, dogs, etc. I am doing it at the behest of a New Zealand friend, himself a noted author who not only insisted I do so but then undertook putting it in readable form. Then the transcript went to Sicily, where a cousin who winters there did the final editing. Now back to California, where I hope to see it in print shortly. Wonder if I qualify for oldest author to put out a book at this age?”

56 **CLASS SECRETARY**
Seeking volunteers!

Patrick Duffy writes: “Dear classmates, I am passing my class secretary role over to **Michael Jensen-Sembos** in the Office of Development and Alumni Services. At 87, my hip and right humerus are healing, and I am working to get back to trekking.”

60 **CLASS SECRETARY**
John Hamner,
jhamner1@bellsouth.net

Thomas Fearnley writes: “I am now 86 years old, still a forester in good health, living in Norway. My son has taken over the estate and is doing well.”

61 **CLASS SECRETARIES**
Karl Spalt, kjspalt@yahoo.com
R. Scott Wallinger,
scott@scottwallinger.com

Javier Moro writes: “Still occupied taking care of my farm and attending too many funerals of friends and close relatives. In Spain the countryside is getting empty. Agriculture requires hard work and some profitability. But high taxes and greedy intermediaries make the last very difficult. Agricultural land is abandoned and becomes forested; forest land grows and with it the risk of forest fires. Luckily last year's were not too bad in Spain — nothing compared with forest fires in Portugal 2017 or California 2018. Let us hope that an intelligent forest policy might be effective. Best wishes to all.”

R. Scott Wallinger writes: “Last July I began a two-year term as chair of the Lowcountry Land Trust based in Charleston, South Carolina, which operates in 17 coastal counties. We're closing in on 150,000 acres under conservation easements.”

62 **CLASS SECRETARY**
Lawrence Safford,
larry.safford@yahoo.com

Brian Turner writes: “Enjoying retirement from teaching and research at Penn State University and Australian National University. I volunteer with Prisoners Aid and recently stepped down as co-chair of the A.C.T. Division of the Institute of Foresters of Australia.”

64 **CLASS SECRETARY**
Seeking volunteers!

Stephen Hanover writes: “It is indeed a sad situation presented by the rapid spread of the coronavirus. For the first time in many years, we are postponing our annual trip to China.”

65 **CLASS SECRETARY**
James Howard,
howard.caroljim@att.net

John Blouch writes: “Retired in December after 50 years in the specialty coated-paper business, including Wyomissing, James River, Specialty Papers, Rexam, DSI, and Miami Valley. Accumulated home maintenance will be my second career.”

Michael Greenwood writes: “I am co-author on a recent research article in *Journal of Forestry* on hybrid larch, based on work done during 30 years at the University of Maine. I am a member of the Hiram, Ohio, village council.”

69 **CLASS SECRETARY**
Davis Cherington,
dcherington@comcast.net

Greg Sharp writes: “Hello to all — 50 years later. I've lived in Connecticut since graduation, initially working in newspapers hoping to cover the environmental challenges highlighted in the ‘Issues in the Environmental Crisis’ lectures. In 1972, disenchanted with journalism, I joined the newly created Connecticut Department of Environmental Protection (DEP), and in 1976 I married **Penelope (“Penni”) Chester Sharp '79**. While at the DEP, I attended law school at night and entered private law practice in 1979. I focused my legal career on environmental law, retiring in 2016. Fly fishing and organic gardening filled in the spare time. Sad-

ly, Penni passed away in 2014, and I miss her terribly. What triggered this note is the conflagration in Australia and my concern about our classmate **John Duggin**. The alumni office kindly provided an article from 2018 that placed him in Tasmania, hopefully out of harm's way. Pondering all this prompted memories of the late Herb Bormann's class on the carbon cycle and his warning about the potential global impacts of increasing CO2 emissions. Sadly, 50 years later, rising CO2 emissions are our greatest environmental crisis. I would like to hear from John or anyone who knows how to contact him.”

70 **CLASS SECRETARY**
Whitney Beals,
whitney.beals@gmail.com

Mike Gawel writes: “Retired December 31, 2019, after a decade with the U.S. National Park Service in Guam and Saipan. I served as the integrated cultural and natural resources manager.”

Pamela Parker writes: “I am managing a 2,100-hectare research farm, which includes a Ramsar site and 800 hectares of conservation covenants suffering four years of drought and facing the January Australian fires. Climate change is here.”

72 **CLASS SECRETARY**
Matthew Rosen,
m.rosen@mchsi.com

Helen Kim Barnes writes: “I retired from the Pharmacology and Toxicology Department at the University of Alabama at Birmingham School of Medicine, where I was a protein biochemist studying the molecular basis of dietary plant-derived bioactives. I would love to hear from alumni nearby!”

73 **CLASS SECRETARY**
Roy Deitchman,
rdeitchman@verizon.net

Roy Deitchman writes: “I have ‘retired’ twice but now continue working on short-term EHS assignments. I have determined that my hobby may be work. Our sons work as a water lawyer in Sacramento and an energy analyst for the Georgia Public Service Commission, respectively.”

Lloyd Irland writes: “This year was one of adventures. In April Connie and I did a road trip with relatives down the California coast through Big Sur, the Redwoods, Santa Monica Pier, and Hollywood, ending in San Diego. Then I spent a week in northern New Mexico at 8,200 feet on the Philmont Scout Ranch as a volunteer forester. These volunteers talk with groups of scouts as they pass

through, some of them staying overnight. They have many questions about the large recent fires and the variety of ecosystems they see at elevations between base camp at 6,000 feet and the summit of Mount Baldy at 12,000 feet. Over Labor Day we took our two sons trout fishing in Québec. So I checked off a few bucket list items.”

75 **CLASS SECRETARY**
Hallie Metzger,
hallie.metzger@rcn.com

Susan Bicknell writes: “If I had known that 2020 would be a part of the post-truth era, I may have never retired in 2004. We all have done good work as environmental leaders and educators, but has it been enough? I hope so.”

Mark Boyce writes: “My research focus has shifted to include grasslands conservation on the Great Plains to enhance carbon sequestration and storage as well as biodiversity preservation. Great ecology at University of Alberta!”



Mark Boyce '75 in the Great White North, Edmonton, Alberta.

Terry Chester writes: “I live in a mountain paradise, Sun Valley, Idaho. I will be traveling back to Florida more often to see my new granddaughter. My company, Adbiz.com, is still rockin'. Livin' la vida loca!”

David Kavon writes: “Hi, all! Three years into retirement from my dental practice — not bored for a moment. Tending my forest (of bonsai), maintaining my amateur radio station, studying, and being with our 13 grandkids.”

Hallie Metzger writes: “Thank you to everyone in my class who nominated and voted for me for the Alumni Association Board! It is an incredible honor and also a responsibility; don't hesitate to contact me with questions or comments.”



Douglas Ryan '75 and Lillian Ryan boarding Amtrak in Olympia, Washington, bound for Minnesota.

Douglas Ryan writes: "I retired from U.S. Forest Service research in 2012. Lillian and I are living in Olympia, Washington, where we are busy traveling, enjoying our three grandchildren, and being environmentally and socially active."

Helen Waldorf writes: "I have been involved in the Massachusetts League of Women Voters (LWV), including the environmental committee and registering voters, and the 2020 Census. I'm also trying to help organize a climate committee within the American Society for Testing and Materials (ASTM), with a focus on new international standards for businesses and organizations that are promoting climate-related products, goods, and services. Would welcome hearing from anyone interested in participating with either LWV or ASTM in these endeavors – email me at hawaldorf@aol.com."



Terry "Papa T" Chester '75 and granddaughter August with butterfly stickers on their noses.

76 CLASS SECRETARY
John Lundquist,
jlundquist@fs.fed.us

Philip Conkling writes: "After stepping down from the Island Institute, which I founded and led

for 30 years, I started a consulting practice, Philip Conkling & Associates. I'm currently working with Nordic Aquafarms for salmon."

Stuart Hart writes: "I've spent the past six years helping design and launch a completely new M.B.A. program at the University of Vermont on sustainable innovation. The goal? Reinvent business education."

Sally Hasted writes: "I've been teaching in a mental hospital for kids who are very discouraged about their lives. They love my geology and environmental adventures. I am also active online, trying to save the environment."

John McTague writes: "I taught a graduate-level course in forest biometrics (growth and yield) at the Federal University of Lavras in Minas Gerais, Brazil, in fall 2019 as a visiting professor."

Alan Poole writes: "Recently signed on with Cornell to write a book on the resplendent quetzal. Visit charity.gofundme.com/o/en/campaign/life-and-conservation-of-the-resplendent-quetzal for details."

Eric See writes: "After 32 years of working for government in environmental roles and as an environmental consultant, I have retired but will be working part time on smaller projects. Best to all classmates."

Robert Seymour writes: "I retired from the University of Maine faculty in 2017 after 39 years of mostly teaching and studying silviculture. I remain an active emeritus, hosting several field trips a year."

77 CLASS SECRETARY
James Guldin, jguldin@prodigy.net

William Glidden writes: "Still enjoying retirement east of Colorado Springs, continuing to edit The Smokey Wire. Stop by if you're (still) interested in forest policy and public lands issues and like friendly debates!"

Steven Hamburg writes: "Still chief scientist for the Environmental Defense Fund, where I am leading the design and launch, in 2022, of a satellite to quantify methane emissions from oil and gas operations globally in order to address climate change."

Charles Hewett writes: "I'm finishing two years developing the Roux Institute at Northeastern University in Portland, Maine – a graduate education and research institute focused on digital engineering and life sciences."

Howard Neufeld writes: "Just a short note about a story I was in on "All Things Considered" on NPR about Fraser firs and Christmas trees: npr.org/2019/12/24/790736803. The student featured, Scott Cory, was my master's student."

78 CLASS SECRETARIES
Susan Curnan,
curnan@aya.yale.edu

L. Magleby, lmagleby@att.net
Regina Rochefort, gibbons.rochefort@gmail.com

Bruce Larson writes: "At the end of June Julie and I both retired. I had been the FRBC chair of silviculture at the University of British Columbia since 2002. We now live in Squamish, British Columbia."



Loring LaBarbera Schwarz '78, Susan Babcock '83, and Ariane Lotti '07, trustees of the Friends of Spannocchia Foundation at Spannocchia.

Loring LaBarbera Schwarz writes: "Susan Babcock '83, Ariane Lotti '07, and I are trustees of the Friends of Spannocchia Foundation, which aims to expand the educational programming and the experience-based internship program at Spannocchia, a 1,000-acre sustainable farm/forest operation, cultural center, and nature reserve on the outskirts of Siena, Italy. The farm traces its management to medieval times and has been authentically restored to reflect the rich cultural and natural history of the region."

80 CLASS SECRETARY
Sara Schreiner Kendall,
sarabskendall@gmail.com

Thomas McHenry writes: "Notice to Class of '80 Nation: 40th reunion is a mere four months away on October 8 through 11, 2020. Block those dates, find those old photos, dust off those plant I.D. and mapping skills, and prepare to 'reune!'"

Patricia Millet writes: "Jack and I are still spending May to November in Cape Breton. Sadly, the

reunion timing coincides with my busiest time running my shop due to a large music festival. All welcome to come visit."

Steven Strauss writes: "Well, 'When I'm 64' (Beatles, of course) is now. But managing to still run in the forest in Oregon, referee soccer, and professorize. Also, I'm officially Everyman as I have joined a bowling league!"



Steve Strauss '80 in his GMO crop outreach outfit at the Genomics Conference.

81 CLASS SECRETARIES
Fred Hadley, fhadley@sit-co.net
Gail Kalison Reynolds,
gail.kalison.reynolds@aya.yale.edu

Martha Davis writes: "My definition of retirement is to not do any of the (administrative) work that I disliked while employed at the Inland Empire Utilities Agency and to do only the fun policy stuff. For me, it is the work needed to make California more climate resilient while ensuring environmental protections and the human right to water. I serve on several nonprofit boards (including Jonathan Kusel '82's outstanding Sierra Institute for Community and Environment) and work as a consultant to the Water Foundation. I can't believe that I am busier now than when I worked full time, but the need to prepare for the impacts of climate change is overwhelming!"

Mike Ferrucci writes: "I am in my 25th and final year teaching 'Forest Operations for Professional Foresters' at F&ES, where I also lead the southern forests field trip every March. While still consulting, after my Yale duties end, I plan to devote more time to hiking, camping, my grandkids, and my forest in southern Vermont."

Thea Weiss Hayes writes: "Turning 65 is unnerving, and life is still one damn thing after another (thank you, D.M. Smith), but I'm still here in the

great Pacific Northwest working as the managing director of the Preservation Beekeeping Council."

Christopher LaFarge writes: "Vicki and I are starting to think about retiring. I am working for a pharmaceutical company that makes therapeutics for neurodegenerative diseases – hopefully my last entrepreneurial adventure."

Priscilla Kellert (Cilla Leavitt) writes: "I have a new name: Cilla Leavitt. Still running the wilderness program for first-years at Yale. I'm on the F&ES Alumni Board. I have a farm near the Vermont Law School and spend time in Chapel Hill, North Carolina."

Beth Mullin writes: "I live in Washington, DC, and am an attorney with the city's Department of Energy and Environment. I focus on environmental enforcement and energy and sustainability issues."

Mark Plotkin writes: "I received the Shinagel Award for Public Service from Harvard in May 2019. My new book, 'The Amazon: What Everyone Needs to Know,' will be published by Oxford University Press in March 2020."

Gail Kalison Reynolds writes: "Doing well in central Connecticut. Dan is keeping an eye on a logging operation on one of our Vermont properties. I'm busy inculcating the UConn master gardeners with my native plant agenda. Peace."

Carol Youell writes: "After 16 years, I retired from the Hartford Metropolitan District Commission Water Supply Department, where I oversaw management of its 25,000+ acres of watershed for-



Dan Reynolds '82, Gail Kalison Reynolds '81, and son Randall Reynolds

est and also its source water protection program. I have since become a snowbird, spending winters in Cape Coral, Florida, with my husband, Russ. I enjoy gardening, swimming, and exploring! I am also engaged in learning about the major water quality issues associated with Lake Okeechobee and its tributaries. My best news is that I am now a grandmother with two grandsons, ages 3 and 1 – they are such fun!"

83 CLASS SECRETARY
Stephen Broker, ls.broker@cox.net

Madeline Pope writes: "I'm just retired from The Trust for Public Land with 25+ years in project management, including the development of the 60-acre Story Mill Community Park in my hometown of Bozeman, Montana."

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CLASS NOTES

Denise Schlenner writes: “After a long run of serving in executive positions in the environmental arena, I have launched a consulting practice to provide executive leadership during periods of organizational transition.”

84 CLASS SECRETARIES
Therese Feng,
Therese_feng@yahoo.com
Roberta Jordan, jordanr5@comcast.net

Constance (“Dusti”) Becker writes: “Doing giraffe conservation in Kenya (need volunteers this summer). Doing bird conservation in Ecuador (need volunteers in December). Living in Arizona with my hubby, Tony. Email me at dustbecker@lifenetnature.org.”



Constance (“Dusti”) Becker '84 and the Life Net Nature team in Kenya.

Therese Feng writes: “After 20 years in finance, I’m gobsmacked to be joining The Climate Service, a smart, thoughtful, and ethically aware fintech group that quantifies the physical and transition risks of climate change.”

85 CLASS SECRETARY
Alexander Brash,
alexanderrbrash@gmail.com

Mark Duda writes: “This is my 30th year as the owner and executive director of Responsive Management, a survey research firm specializing in natural resource issues. We’ve grown from a staff of one to more than 75.”

Edward Elliman writes: “With **Lauren Brown** '73, I’ve been writing a field guide to grasses, to be published in July. In the past year, I have by chance met **Henry Whittemore**, **Caroline Eliot**, and **Chris Donnelly**. A pleasure!”

Mark Judelson writes: “During a terrestrial ecosystems field trip with Tom Siccama, I remember him snipping a six-inch spruce, holding it up for us to see, and asking, ‘How old do you think this

is?’ As I recall, it turned out to be 60 years old. That lesson got my attention – and respect for patience and spruce. I was 31 years old and 60 sounded old. Now that I’m 68, it doesn’t anymore. Some aspects of life have slowed down with the benefit of being able to enjoy it more. One project several years in the making is a book I wrote and just signed a contract with Mascot Books to publish. ‘Michael’s Legacy: Transcending Life and Death’ is the true story of Michael Bovill, an active member of the United States Coast Guard, who died at the age of 23. His heart, lungs, liver, and kidneys were donated to five recipients who are alive today because of Michael and his gift. Publication is tentatively scheduled for late 2020.”

86 CLASS SECRETARY
Seeking volunteers!

Eric Carlson writes: “I’ve been back in Seattle for over six years. Here I work closely as an investor with cleantech startups and with NGOs active in the recovery of salmon in the Salish Sea. Classmates, say hello if you’re in Seattle!”



Triumphant Return of Salmon to the Salish Sea (oil on canvas, 32” x 48”), Eric Carlson '86.

James Chamberlain writes: “Aloha, I do research on the ecological and economic impacts of harvesting food and medicine from forests. I live in southwest Virginia, and my two children live in Colorado.”

Daniel Hellerstein writes: “Still living in DC suburbs. Semi-retired – perhaps you heard about Trump’s plan to move the USDA agency I work for to Kansas City? Otherwise, everyone is healthy (living at home), enjoying some travel, etc.”



Joshua Royte '87 on the Narraguagus River touring wood additions and lamprey nesting.

87 CLASS SECRETARIES
Christie Coon,
christie.coon@gmail.com
Melissa Paly, mpaly01@gmail.com

Melissa Paly writes: “F&ES was well represented at my big birthday party this winter, held at a ski-in hut in the mountains of western Maine – a reminder of how deeply our F&ES friendships weave through our lives.”

Jim Pissot writes: “Nothing new here in Canmore. I’d like to share these words of Mary Oliver: ‘It is a serious thing/Just to be alive/On this fresh morning/In the broken world.’”

Christopher Pratt writes: “I am still running Opensash, a window retrofit company in Montpelier, Vermont. It turns existing wood windows into state-of-the-art, energy-efficient units. It is hard work, but doing good is inspiring.”

Joshua Royte writes: “I’m with The Nature Conservancy in Maine, happily focused on land protection and river restoration. Just finishing a five-year advisory role, mapping barriers and developing guidance for restoring Europe’s free-flowing rivers.”

Yoel Seton writes: “Parenting is unusually challenging because our adopted sons (now 9 and 10) have fetal alcohol syndrome from alcohol exposure in utero, which results in many learning and behavioral difficulties. In the middle of these trials, God is faithful! This winter has brought a welcome abundance of rain to Israel. I went on a 40-kilometer mountain bike ride yesterday and enjoyed seeing the first red anemones (spring poppies) and bright-white almond blossoms on the green hillsides. Jerusalem continues to grow at a rapid pace – thankfully more up than sprawl – but it’s still a bit hard to accept. Happy to meet any F&ES folks visiting over this way.”

88 CLASS SECRETARIES
Diane Stark, salserad@yahoo.com
Philip Voorhees,
philiphvoorhees@gmail.com
Holly Welles, hwelles@princeton.edu

Jeffrey Campbell writes: “I will be retiring in July 2020 from my current gig at the Forest and Farm Facility here at the Food and Agriculture Organization in Rome. Then I hope to be in touch from Sebastopol, California – my email is jycampbell55@gmail.com.”

Chris DeForest writes: “I’m still at Inland Northwest Land Conservancy. Fun projects include Rimrock to Riverside and spending mining mitigation money to restore contaminated Coeur d’Alene wetlands – learn more at restorationpartnership.org.”

89 CLASS SECRETARY
Elizabeth Carlson,
betsycarlson24@gmail.com

Helena Brykarz writes: “I am working with the University of California at Berkeley, where I am the manager of the Center for Studies in Higher Education at the Public Policy School.”

Elizabeth Carlson writes: “Greetings from Washington. I’m still in Port Townsend at the Marine Science Center coordinating citizen science projects. I get into the field often and am slowly learning to I.D. seabirds.”

Christine Laporte writes: “I am eastern director with Wildlands Network (audacious, large-landscape connectivity – check us out). Delightfully, I cross paths with **Jennifer Melville** and **Conrad Reining**. Family and horse all good!”



Cyril the Sorcerer (“CJ”) May '89) tells a tale of scary potions to teach youth about household hazardous waste while performing his enviromagic show “The Wizard’s Dungeon” in Connecticut.

“CJ” May writes: “In 2019 I added an enviromagic show on household hazardous waste: The Wizard’s Dungeon. Through magic and storytelling, I teach the public about keeping scary items out of trash and water. Feedback wanted!”

Laurie Rardin writes: “I enjoyed our 30th reunion and the chance to see F&ES again! I managed to miss our classmates but showed off where I spent two of my most favorite years to our daughters. Great to be back.”



Bruce '90, Melina, Vicki '90, and Ari Goldstein in Iceland

90 CLASS SECRETARY
Judy Olson Hicks,
hicksjudy@yahoo.com

Vicki Goldstein writes: “Bruce is working with collaborative learning networks around the world. I’m running the Inland Ocean Coalition and its 15 chapters. Ari is a sophomore at Denver University, and Melina will be a freshman at Tulane.”

Jennifer Lamb writes: “Thirty years – wow! I am eight years into working on wildlife habitat and watershed conservation for The Nature Conservancy in Lander, Wyoming. Husband Jim, 13-year-old son Bennett, and I ski, hike, and enjoy the landscape. Come visit!”

Blair Leisure writes: “Hi from Colorado! Been here working for 27 years as an environmental consultant at IRIS Mitigation and Design (wetland, wildlife, and native plant work). I am married to Jack, and we have two kids.”

Carla Wise writes: “Mark and I are in Corvallis, Oregon, and our daughter is in college. I run a climate advocacy nonprofit, Power Up for Climate Solutions (powerupforclimate.com). Please join! We’d love to hear from classmates!”



Blair Leisure '90, Eloise Adelfang, Karen Adelfang, Ted Adelfang, and Jack Adelfang at Blue Mesa Reservoir, Gunnison, Colorado.

92 CLASS SECRETARY
Katherine K. Farhadian,
farhadianfamily@gmail.com

Greg Knoettner writes: “Hi, all! I’m up in Plymouth, New Hampshire, married to Bridget Powers. We’re active on our conservation commission, conserving land, making trails, skiing, and biking. Our kids are well. Hope you are, too – cheers!”

Lisa Pagkalinawan writes: “I just started a consultancy with the Asian Development Bank in Manila to support environmental initiatives, including reducing marine plastics and other efforts to improve ocean health.”

George Pess writes: “Just wanted to let folks know if you ever find yourself in the Pacific Northwest, please drop a note. Still working for NOAA’s Northwest Fisheries Science Center. Happy to host, so let me know.”

John Petersen writes: “I’ve been teaching and raising kids in Oberlin, Ohio, since 2000. My research is focused on communications technology to promote systems thinking and community resilience: environmentaldashboard.org.”



John Petersen '92 and son Luke.

CLASS NOTES

Susan Pultz writes: “Still with NOAA Fisheries, I recently (August) moved back to Washington, DC, with my son after five years in Hawaii. I’m now the deputy division chief of Habitat Protection and glad to be back!”

Mary Verner writes: “The Washington Department of Ecology keeps me busy managing the state’s water resources, and I’m restoring a sustainable heritage farm between Olympia and Portland. Come visit!”



Elizabeth Conover '94 and family in Peru.

94 CLASS SECRETARIES
Jane Calvin, jcalvin@prospeed.net
Cynthia Henshaw, c.henshaw@comcast.net
Jane Whitehill, janewhitehill@gmail.com

Elizabeth Conover writes: “I’m the first director of the Salazar Center for North American Conservation at Colorado State University, based in Denver. Check it out at salazarcenter.colostate.edu. Ken and I live downtown.”

Carolyn Hope writes: “Greetings from the Pacific Northwest! In February, I will begin a new position as the parks, recreation, and cultural services director for the City of Burien, Washington. Still enjoying mountain biking!”

William Keeton writes: “Gratuitous plug: Our book, ‘Ecology and Recovery of Eastern Old-Growth Forests,’ was published by Island Press last year. We presented it at an organized session of the Ecological Society of America last August in Louisville, Kentucky.”

Ken Pruitt writes: “Fantastic seeing many of you at October’s reunion – we had a blast. Only problem: Lots of you didn’t come! I know you’re busy and it’s far, but please come next time. Javier will take a nice photo of you!”

Jane Whitehill writes: “February 2020. Impeachment of the U.S. President; primaries for the November election; Valentine’s Day approaches. A Swedish teen offers hope for the environment. Let’s join her.”

95 CLASS SECRETARIES
Marie Gunning, Mjgunning@aol.com
Ciara O’Connell, cmoconnell@comcast.net

Kerry Fitzmaurice writes: “I am using the skills I learned at Yale and in life to follow my passion. I’m opening Pure Grit BBQ – a plant-based, gluten-free barbecue joint in New York City – this spring. Come visit or follow @puregritbbq.”

Kelly Hogan writes: “I am currently living and working in Rochester, Minnesota, as a researcher at the Mayo Clinic focusing on the biology of the uterine environment in advanced maternal age. Soil science class prepared me well!”

James Jiler writes: “I just finished my sixth year of teaching at Florida International University and have begun working on a book, ‘Food in Security.’ Now moving from Miami to Valencia, Spain, with my family. Look me up.”

Lindsey Brace Martinez writes: “Celebrated my fifth anniversary running StarPoint Advisors; it has been rewarding helping companies scale sustainable finance solutions in the capital markets. Loved seeing my F&ES classmates at reunion!”

Jonathan Scheuer writes: “I am finishing my sixth year on Hawaii’s Land Use Commission, a unique statewide zoning body, as well as my two-year term as chair of the Hawaiian Islands Land Trust. Cami, Saul, and I are well.”



Ragnhildur Sigurdardottir '95 (left) gives Derek Halberg '96 a tour of her farm near Selfoss, Iceland, in September 2019.

96 CLASS SECRETARIES
Kathryn Pipkin, kpiplin9999@gmail.com
Julie Rothrock, jrothrock@maine.rr.com

Derek Halberg writes: “I am in my 15th year with Tar River Land Conservancy in North Carolina. My wife, Christy Johnson, and I visited Ragnhildur Sigurdardottir '95 and family during our recent 20th anniversary trip to Iceland.”

Robin Sears writes: “I am making a livelihood as an international consultant; any leads related to forests and people, please send them over. Starting new work in Ladakh, India, on climate change adaptation.”

Ryan Valdez writes: “I am honored to continue as director of conservation science for the National Parks Conservation Association while also celebrating my 10th anniversary leading the study abroad program in Kenya at George Mason University.”



The 10th anniversary of the George Mason University Kenya Wildlife Conservation study abroad program founded and led by Dr. Ryan Valdez '96.

97 CLASS SECRETARY
Paul Calzada, pcalzada@clf.org

Madeline Kass writes: “Last year I visited Belgium on a Fulbright to research U.S./E.U. comparative environmental law. This spring I head to the University of Dundee in Scotland as a global scholar. And I’m getting married in July!”

98 CLASS SECRETARY
Seeking volunteers!

Julie Herbst Bain writes: “I’m a district ranger for the Forest Service in Nebraska’s Sandhills. It’s been my great honor and pleasure to work on maintaining its intact, native, mixed-grass prairie.”



Madeline Kass '97 checking out the Antwerp Sewer System.

George Berghorn writes: “The land development team that I coach at Michigan State University took first place out of 40 universities in the National Association of Home Builders Student Competition for the second year in a row!”

Jessica Lawrence writes: “For the past 12 years at Earthjustice in San Francisco, I’ve been researching and lobbying on the ecological impacts of coal mines and power plants in Canada, Kenya, Bangladesh, Indonesia, and Australia.”

Katherine Lieberknecht writes: “I’m feeling fortunate to be back in Austin, close to friends and family and working as an assistant professor at the University of Texas in Austin.”

Keely Maxwell writes: “Just began my fifth year working in the Environmental Protection Agency’s Office of Research and Development, where I have been developing an environmental social science research portfolio.”

99 CLASS SECRETARIES
Jocelyn Forbush, jforbush@ttor.org
Christiana Jones, christiana@jonesfamilyfarms.com
Jennifer Garrison Ross, jennifergarrisonross@yahoo.com

In February, **Allyson Brownlee Muth** was honored with the Robert W. Bauer Outstanding Service to Forestry Award by the Allegheny Society of American Foresters.

00 CLASS SECRETARIES
Erika Schaub, easeff@hotmail.com
Zikun Yu, info@ayuglobal.com

Maureen Cunningham writes: “I now work as senior director for clean water at Environmental Advocates of New York. I am also serving in my first term on the town board of Bethlehem,

New York, where my husband and I are raising our two boys.”

Olena Maslyukivska writes: “I currently serve as a business development and innovation analyst at the United Nations Development Programme in Ukraine. I am actively involved in climate change-related issues, including adaptation.”

Jason Patrick writes: “In 2019 I moved to New Zealand to take the CIO role at the New Zealand green bank – great work in a great place. Hope you all are well.”



Abby Sarmac '01, Matt Clark '01, Rowan, and Quillan overlooking Malheur National Wildlife Refuge in southeast Oregon.

01 CLASS SECRETARIES
Leigh Cash, cash@statsrule.com
Adam Chambers, adam.chambers@por.usda.gov
Jennifer Grimm, jennywgrimm@gmail.com

Cordalie Benoit writes: “I have been very active on the boards of the American Community Gardening Association and the Mill River Watershed Association. I still love living in New Haven and am working to make biking safe.”

Matthew Clark writes: “The Caucapino Clarmacs – **Abby Sarmac '01**, Rowan (13), Quillan (10), and I – are back in Oregon after more than three years in Ecuador. I still work for Nature and Culture International but have clawed my way to CEO now!”

Dave Ellum writes: “I’ve moved to a dean’s position at Warren Wilson College. Mona has Ellum Engineering cranking. Townes is deciding on colleges, and Seija is tearing up the volleyball courts. Come visit Asheville!”

Aya Kimura writes: “My book, ‘Radiation Brain Moms and Citizen Scientists,’ received the Rachel Carson Award last year. I am continuing to work on citizen science in my new book, ‘Science by the People.’”

Jeff Luoma writes: “Hey, folks! I’m doing energy analyst stuff in the Hudson Valley, north of New York City. My treat for coffee or food if you swing through! I also have a nice enough guest room if you need a resting spot near Pine Bush, New York.”

Lech Naumovich writes: “The family and I have moved to Whitefish, Montana. I continue work as executive director of our restoration nonprofit, Golden Hour Restoration Institute. I’m looking for local opportunities and new friends.”

Chris Nyce writes: “**Aurelia Micko '00** and I met up in Nairobi, Kenya, in October to launch a project where we collaborate to counter wildlife trafficking in East Africa. Aurelia is USAID Kenya/East Africa’s director for environment and I’m the regional environment officer for East Africa with the Department of State. We welcome F&ES visitors to the region; Aurelia (amicko@usaid.gov) is based in Nairobi and I’m in Addis Ababa (nycecc@state.gov).



Jeff Luoma '01 and partner Marcy.

03 CLASS SECRETARIES
Benjamin Hodgdon, benjamin.hodgdon@gmail.com
Peter Land, peter.c.land@gmail.com

Katherine Dolan writes: “I published ‘Bella, the Wildlife Ambassador,’ a book for families about cougar conservation and pet owners (available on Amazon). I also attended a course in Yellowstone on these stunning creatures.”

Carlos Linares writes: “After supporting the United Nations Development Programme for the preparation of the National Environmental Policy of Myanmar, I am now happily retired and moving to Asheville, North Carolina. Hoping to link up with F&ES friends in Appalachia.”

Laura Ruiz writes: “I am now a middle school science teacher in Los Angeles. I still live in Los Angeles with my husband and two daughters, ages 11 and 8.”



Carlos Linares '03 celebrating the coming of 2020 in Alexandria, Virginia.

04 CLASS SECRETARIES
 Jennifer Bass, jennifer_vogel@yahoo.com
 Keith Bisson, keith_bisson@yahoo.com
 Daniela Vizcaino, dana.vizcaino@gmail.com
 Laura Wooley, le.wooley@gmail.com

Suzette Carty writes: “I had an amazing time at our 15th reunion with **Manmita Dutta** and **Ken Odaka** sharing fun memories and making new ones. Fate brought me and **Neha Sami (Menon)** together the following week.”

Cecilia Blasco Hernández writes: “I now direct SmartFish, an NGO that incubates small-scale fishers to improve sustainability and access better-paying markets. We are a St Andrews Prize finalist! Please visit me in La Paz, Mexico.”



Cecilia Blasco Hernández '04 is in fishy business.

Michael Kisgen writes: “San Francisco for a decade and still in love. Last summer I became the associate director for the University of California Natural Reserve System (ucnrns.org) after lawyering for the organization. Come visit!”

Amanda Mahaffey writes: “In 2019 I was promoted to deputy director of the Forest Stewards Guild. I get to collaborate with **Christopher Riely** on projects and occasionally see **Beth** and **Keith Bisson** around town here in Maine.”

Christopher Riely writes: “In 2019 I established Sweet Birch Consulting and started doing independent forestry and conservation work. Recently I have combined this with a new part-time role at the University of Rhode Island.”



Lauren Baker '05 and family at a recent weekend in Chesapeake Beach, Maryland.

05 CLASS SECRETARIES
 David Cherney, david.cherney@colorado.edu
 Dora Cudjoe, dcudjoe@worldbank.org
 Virginia Lacy, virg.lacy@gmail.com
 Benjamin Urquhart, bnurquhart@gmail.com

Lauren Baker writes: “I continue to work at the Policy Office at the U.S. Agency for International Development and am enjoying work and life! Rio is now 5 years old, and we bought a house in DC — come visit!”

Dora Cudjoe writes: “Aside from managing green investment operations, I have recently taken on the responsibility of the stakeholder engagement portfolio for the Climate Investment Funds, a task hedged on building partnerships.”

Ann Grodnik-Nagle writes: “I’m working in climate adaptation policy for the City of Seattle at Seattle Public Utilities. Kids are now 6 (Sam) and 9 (Sylvie). Kyle and I are happy to be back in Washington — come visit!”

Andrea Johnson writes: “I’m consulting for the Climate and Land Use Alliance, The Forestland Group, and various NGOs; restoring a degraded ranch; and training my horse in Costa Rica’s Osa Peninsula. Always love F&ES visitors!”



Diana Dimitrova '06 at a demonstration community vegetable garden in Sofia, Bulgaria.

06 CLASS SECRETARIES
 Krista Anderson, Anderson_kb@yahoo.com
 Flora Chi, flora.chi@gmail.com
 Reilly Dibner, reillydibner@gmail.com
 Sue Ely, suzie.ely@gmail.com
 Jill Savery, jillsavery@yahoo.com

Saima Baig writes: “Hello! I live in Liverpool, England, now and run my own digital marketing agency with my husband (married in 2011). We started it in 2018. I also started a science blog/podcast — 360onhistory.com.”

Diana Dimitrova writes: “Since 2017 I have been managing a small NGO in Bulgaria. One of the focuses of my work has been creating a framework and tools for the development of a network of community vegetable gardens in Sofia.”

Gonzalo Griebenow writes: “Last year brought many changes for me. Professionally, I moved to the private sector after being in multilateral development banks for some time. I also moved back home and often catch up with many F&ESers. Life is good in the tropics!”



Gudmundur Ingi Gudbrandsson '06 at a waterfall in River Hverfisfljót in Iceland.

Gudmundur Ingi Gudbrandsson writes: “In 2017 I took office as the minister for the environment and natural resources in Iceland, and last October I was elected as the vice-chairperson of the Left-Green Movement in my country.”

Kevin Ogorzalek writes: “Living the dream in Chicago with my wife, Heather; our son, George; and our dog, Freddy. I lead sustainable non-cocoa sourcing in the Americas at Barry Callebaut and also chair the Sustainable Agricultural Initiative’s North America group.”

Jill Savery writes: “I moved to a full-time role with 11th Hour Racing as their sustainability director in 2019, after several years of consulting. I’ve lived in Reno, Nevada, for more than six years, and I love the mountains!”

Myra Sinnott writes: “I have spent the last three years working on generator interconnection policy and watching our electric transmission system change rapidly at the Federal Energy Regulatory Commission.”

07 CLASS SECRETARY
Seeking volunteers!

Anamaria Aristizabal writes: “Loving my career in coaching and leadership development! Published a book in Colombia about declaring one’s purpose — a powerful step in the path. Fun fact: I’ve officiated three weddings with my husband!”

Matthew Brewer writes: “Living in Bogotá, working with organic cacao and commercial marijuana. I’m still climbing, surfing, and making sure to snuggle my sweet 4-year-old daughter!”

Derrick Dease writes: “Hi, F&ESers! Still living in Colorado Springs, but I’ll be moving to Denver soon. Let me know if you’re in the area and want to catch up sometime. I’d love to have a chat session!”

Tracy Magellan writes: “I am working at Montgomery Botanical Center, a nonprofit botanical garden growing palms and cycads for research, conservation, and education. I am also married and raising one sweet little boy.”

Brandon Middaugh writes: “I am now in Seattle and have taken on a new role as director of Microsoft’s Climate Innovation Fund. Fellow alums **Claire Gagne** and **Anton Chiono '08** visited recently on Bainbridge Island!”



Claire Gagne '07, Brandon Middaugh '07, and Anton Chiono '08 at Bainbridge Island, Washington.

Vanitha Sivarajan writes: “I continue to work in the Department of the Interior’s Policy Analysis Office in Washington, DC — going on my fifth year. My daughter will turn 2 in March, and we’re expecting another daughter in June!”

Karen Stamieszkin writes: “I am part of the NASA EXPORTS team, a large interdisciplinary group that studies the marine carbon cycle using satellite data. We will enable global views of carbon storage in the ocean.”



Georgia Basso '08 shares: “Our 10-year reunion — reliving old times with a good party at Kappa Kappa Linden.”

08 CLASS SECRETARIES
 Angelica Afanador Ardila, angelica.afanador@aya.yale.edu
 Kelsey Kidd Wharton, kelseyk.wharton@gmail.com

Georgia Basso writes: “I accepted a new position with the U.S. Forest Service as a national manager of recreation special uses. Fun in DC biking with **Tara Moberg**; hoping to catch the film festival in Banff with **Kellie Stokes '17!**”

Christopher Clement writes: “I am inspired each day by the entrepreneurs I work with, building enlightened and impactful enterprises. My lovely partner, Danielle, and daughter, Gracie (now nearly 3), keep me happy and sane.”

Jenny McIvor writes: “Last year was a big year: I started a new job as chief environmental counsel at Berkshire Hathaway Energy in January and got married in September! I have three awesome new bonus kids, too.”



Jenny McIvor '08 and Dan Hennings celebrating their wedding in Plattsmouth, Nebraska, with fireworks.

Paula Randler writes: “In January I got to hang out with **Julie Witherspoon** and **Yuliya Shmidt** on a trip to the Bay Area! We ate noodles, went to yoga, and Julie and I spent over an hour in a mystical crystals shop.”

Yuliya Shmidt writes: “Still an advisor to a commissioner at the California Public Utilities Commission, working on electric vehicles, renewables, and many other policies. This year my partner and I moved to the East Bay and got a kitten. I’m trying to improve my skiing by reading a library book.”



Yuliya Shmidt '08 hugging a huge redwood on a backpacking trip in Humboldt, California.



Yong Zhao '08, Wanting Zhang '11, and the Junzi team in front of the first Junzi Kitchen on Broadway in New Haven.

Kelsey Kidd Wharton writes: "I was delighted to spend time with **Jamie Quigg** and **Terry Unger** in the Phoenix area not too long ago. I'm also happy to share that Chris and I are expecting our third child, a daughter, in March."

Julie Witherspoon writes: "Huge year! In no particular order, I ran a Spartan race, decided to take a break from 'work,' and upgraded the dog kennel from standard wire to a custom wood and wrought iron statement piece."

Yong Zhao writes: "I'm currently leading Junzi Kitchen to change the image of Chinese food in America. We have five stores in New Haven and New York — expanding rapidly. I also have a 2-year-old daughter named June."

09 CLASS SECRETARIES
Rajesh Koirala, rajesh.koirala@aya.yale.edu
Neelesh Shrestha, neesh.shrestha@gmail.com
Simon Tudiver, tudiver@gmail.com
Judith Wu, jude.wu@aya.yale.edu

Mark Richard Evidente writes: "I've been running TwoEco, a policy and planning sustainability consulting firm, working in tourism development, heritage conservation, and urban planning. Come visit the Philippines!"

Nancy Marek writes: "Hi, F&ESers! I am (finally) finishing my Ph.D. this year at the University of Connecticut. My research involves using deep learning and drones to detect understory invasive shrub species. I'm enjoying the challenge!"

Andre Mershon writes: "I continue to work for USAID's Center for Resilience. Kristin and I enjoyed taking our family to Senegal for a two-month work trip last summer. In October I made it back to F&ES for the reunion."

Stephanie Niall writes: "We have had many of you reach out and ask how things are after having seen the horrifying coverage of the Australian fires in the media. Nick and I have been safe, losing no property or loved ones — a small consolation. This situation is as bad as it looks; my country is on fire, at a scale never seen before. The images of dying animals and climate refugees are seared into my mind. I know each and every one of you is fighting your own battle — many as horrible as this, in many places, at many scales, and through so many different means. Please use this catastrophe, this pain and shock, this horrific footage — use any of it to drive the change we so desperately need. We will be."

Elise Paeffgen writes: "I continue to enjoy practicing environmental law in Washington, DC, and was elected to the partnership at my law firm, Alston & Bird. I live in Capitol Hill with my husband, Matthew, and welcome visitors!"



Megan Selby '09 with a juvenile great spotted kiwi, captured to replace a radio transmitter for a study on survival in areas with and without treatment for invasive predators.

Megan Selby writes: "I work for the New Zealand Department of Conservation, managing the national research program for protecting endemic fauna from invasive predators. I still love mountain running, laughing, and cooking."

10 CLASS SECRETARIES
Luke Bassett, lhbassett@gmail.com
Paul Beaton, seneca.maior@protonmail.com
Changxin Fang, clara@earthdeeds.org
William Lynam, william.lynam@aya.yale.edu
Kristin Tracz, kristintracz@gmail.com
Daniella Aburto Valle, daniella.aburtovalle@gmail.com

Jennifer Baldwin writes: "**Ian Starr '11** and I were blessed with a baby boy in August. Little Linden has already visited F&ES twice! I sing him to sleep

with Logs songs. We also made a move to South Africa for my job with USAID."

Gillian Bloomfield writes: "Aaron and I welcomed into the world our second kid, Flora, born in November 2019. We have settled into our life in Pittsburgh and look forward to summer hikes with Flora and her older brother, Daniel."

Jesse Burkhardt writes: "I am a professor of environmental economics at Colorado State University. I live in Fort Collins with my wife and twin 5-year-old girls. I still climb, but now I also mountain bike and do jiu jitsu. Life is good."

Eric Desatnik writes: "I'm 50 now. That is all."

Katie Hawkes writes: "My girlfriend and I got engaged last year, so 2020 has some big changes in store. Moving from Philly back to SoCal in September, getting married in San Diego in October, and who knows what from there!"

Hsin Tien Shiao writes: "I'm living in Oakland, California, working at a water nonprofit, the Pacific Institute. I got married at the end of 2018 and bought a townhouse. Come and visit!"

Kristin Tracz writes: "I recently had a vision: The world needs a sustainable source of queso. So I'm overjoyed to announce that I'm launching Keek's Queso. High-end, carbon-negative queso coming via e-bike to you soon."

11 CLASS SECRETARIES
Margaret Arbuthnot, marbuthnot@gmail.com
Lucien Bouffard, lbouffard@gmail.com
Elizabeth Friedlander Escott, efrie.friedlander@gmail.com
Gabriel Mejias, gabrielmejias@gmail.com
Randal Strobo, rastrobo@gmail.com

Efrie Friedlander Escott writes: "We welcomed a new little person into our family last June, bringing us to a total of four: Efrie, David, Starbuck, and Alex. I'm still working on life cycle assessment-related issues at KieranTimberlake in Philly."

Mario Peixoto Netto writes: "In 2019 I came back to Yale for CBEY's Financing and Deploying Clean Energy program. Very nice to be back at Yale. I am looking to do more for Brazil's clean energy matrix."

Jamie Pool writes: "I recently moved to Santiago, Chile, for my husband's foreign service tour. I've been at the U.S. Bureau of Land Management, working on legislative affairs and conservation. Say hi if you're in town!"



Mario Peixoto Netto '11 (middle left) and the first Financing and Deploying Clean Energy cohort at Kroon Hall.

12 CLASS SECRETARIES
Simon De Stercke, simon.destercke@aya.yale.edu
Naazia Ebrahim, naazia.ebrahim@aya.yale.edu
Alison Schaffer, schaffer.alison@gmail.com
Leigh Whelpton, leigh.whelpton@gmail.com

Paulo Quadri Barba writes: "I'm very happy to say that I will be joining the ranks of Sky Island Conservation as their conservation manager to use science to protect the unique Sky Island region of Arizona and Mexico."

Jason Arlen Clark writes: "After a long, cold, and dark five years surrounded by stunted and twisted black spruce and squishy moss in his cave deep in the frozen wastelands of central and northern Alaska, Jason has crawled out and hopped, skipped, and jumped to the warmer climes of Flagstaff, Arizona. He now gazes upon the wonders of the North through the eyes (lenses) of the stars (satellites). His quarries are the most elusive *Castor canadensis* and their friends, the numerous and tasty shrubberies. Spy satellite technology has advanced to allow scientists to probe deeply into the lives of innocent beavers and shrubs. When not bothering faraway flora and fauna, he is content to spend hours chasing his husky mutt, June Bug, by bicicleta de montaña through groves of majestic *Pinus ponderosa* or sampling fermented beverages (beer)."

Daniel Constable writes: "I am working on climate vulnerability modeling of water resources in California, playing with spatial data, biking most days, and trying to get outside when possible. Come visit!"

Rita Effah writes: "I'm currently living in Abidjan, Ivory Coast, next door to my home country of Ghana. I'm working with the African Development Bank, supporting its work on environment and energy across Africa."

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Soojin Kim writes: "I celebrated the first year of being an independent consultant. Being my own boss is challenging but super fun! I got to catch up with so many F&ESers in 2019, and I hope to keep up with this tradition!"

Sameer Kwatra writes: "I continue my work with the Natural Resources Defense Council on climate change and clean energy in India. My daughter, Ajooni, is now 6. If you are in DC, let's catch up!"

Stephen Liapis writes: "I earned my Ph.D. in molecular biology at Harvard before becoming a strategy consultant at L.E.K. Consulting in Boston. I currently head up strategy at Arbor Biotechnology, a gene-editing startup."

Alisa Mills writes: "I'm living and practicing architecture in Honolulu. Current projects include affordable housing and a net-zero-energy public high school campus. Come visit to enjoy jungle hikes and perfect waves!"



Rita Effah '12 in Ghana.

Juan Ramirez writes: "Alejandra and I just had a baby girl! Her name is Luciana Ramirez Petersen, and we are really happy! Still enjoying my job at ViveSolar in Guadalajara, Mexico. Please call us if you're nearby."

Emily Schosid writes: "Hi, friends! I'm still working at the University of Denver as the sustainability coordinator. My intern army has grown to 54 students, and they are awesome. Banjo is still loud. Not much has changed."



F&ES alumni and honorary alumni (left to right) Jasmin Qin '15, Sabrina Szeto '16, Tirthankar Chakraborty, Stace Maples, Daniel Constable '12, Jeremy Malczyk, and Soojin Kim '12 having fun at Geo for Good in Sunnyvale, California.

Lauren Sparandara writes: "I've been working for Google's real estate sustainability team for over six years now. Published a whitepaper this year with the Ellen MacArthur Foundation focused on commercial deconstruction."

Pablo Torres writes: "Gabi and I welcomed our second daughter into the world. We live in the DC metro area, and I continue to work in climate change mitigation and adaptation international development projects."

Leigh Whelpton writes: "Greetings from DC, where I am still with the Conservation Finance Network and continue working closely with CBEY and our team of student writers. We'll be back at F&ES for boot camp this June."

Andrew Zingale writes: "I began a new job at Gilead Sciences as the company's director of state government affairs for California. I'm engaged to be married; Amy and I live in Oakland, California."

CLASS NOTES

13 CLASS SECRETARIES
Judith Ament,
 judith.ament@gmail.com
 Adedana Ashebir, adedana.ashebir@gmail.com
 Rebecca de Sa, rebecca.desa@aya.yale.edu
 Laura Johnson, laura.a.johnson@aya.yale.edu
 Victoria Lockhart, victoria.lockhart@aya.yale.edu

Rui He writes: “I am back at school again getting a Ph.D. at the University of Chicago, focusing on the marriage between sustainability science and artificial intelligence.”

Michelle Lewis writes: “I founded the Peace Garden Project (PGP). PGP examines the intersectionality between food justice and other justice issues while growing food. We have grown a ton of food. Check us out: peacegardenproject.net.”

Katherine Romans writes: “I’ve been leading the Hill Country Alliance for four years now, working to advance sound land use planning, water management, and land conservation in central Texas. Come see us in Austin!”

Hank Seltzer writes: “After two years in Charlottesville, we (four of us now) moved back to Nashville and are acquainting the kids with The Music City.”

Mona Wang writes: “Took a leap of faith out of the sustainability sector and into community development. Conclusion? Good gourd! Sustainable development needs significant integration with equitable development.”

14 CLASS SECRETARIES
William Georgia,
 william.georgia@gmail.com
 Chetana Kallakuri, chetana.kallakuri@aya.yale.edu
 Lin Shi, linshi@aya.yale.edu
 Cary Simmons, cary.simmons@tpl.org
 Karen Tuddenham,
 karen.tuddenham.yale@gmail.com

Erin Beasley writes: “Working on global policy and climate action with Conservation International, based in DC. Also supporting a growing movement with Ecosystem Restoration Camps. Ch’aska les manda saludos!”

Katharine Cooper writes: “We are now homeowners in beautiful southwest Vermont. Daughter June is 4 and daughter Iris is 1. I happily share that I recently took a position at MSK Engineering, a rapidly growing civil engineering firm.”

Angel Hertslet writes: “I’m working these days on forest management in the Sierra Nevada and en-

joying life in the East Bay. I recently got a dog and named him Haven to pay homage to The Elm City.”

Pablo Montes Iannini writes: “Based in Paris since 2017, working for the United Nations Environment Programme on private-sector engagement in collective impact processes. Most recently, leading the development of the Global Tourism Plastics Initiative.”

Marissa Knodel writes: “I’m adulting in DC with a new husband and a new house! Lawyering and lobbying at Earthjustice by day, teaching wine classes by night, and finding balance by running ultramarathons.”

Kaylee Mulligan writes: “It was an exciting year! In January 2019, **Grant Mulligan ’15** and I moved to Colorado. We’re also expecting our first kiddo in May! If you’re passing through the Denver area, we’d love to connect.”

Sarah Nielsen writes: “I live in Michigan and work for Consumers Energy, an electric/gas utility. I started in the corporate strategy group and now run several programs for electric vehicles, demand response, and renewables.”



Vrinda Manglik ’13, Angel Hertslet ’13, Lin Shi ’14, and Yiting Wang ’14 performing “Deck the Halls” as old Loggerrhythms at the F&ES holiday party in the Bay Area.

Yiting Wang writes: “I have been living in sunny San Diego since August 2019 – hope to connect with alums in the area. I am now with The Sunrise Project working on aligning our financial system with Paris goals.”

15 CLASS SECRETARIES
Akiva Fishman,
 fishman.akiva@gmail.com
 David Gonzalez, david.j.x.gonzalez@gmail.com
 Philip Kunhardt, pbkunhardt@gmail.com
 Frances Sawyer, frances.sawyer@gmail.com
 Eric Vermeiren, EricVermeiren@gmail.com



Katie Beechem ’15 pruning an ash tree from a bucket truck in Hamden, Connecticut.

Katie Beechem writes: “I currently work as a tree climber for the Davey Tree Expert Company, based out of the Hamden, Connecticut, office. I also train as an amateur CrossFit competitor and coach CrossFit classes.”

Lindsay Crum writes: “Last year was a particularly busy year because I gave birth to a delightful baby boy, Wesley – he was born on April 1, 2019!”

Rebecca Gilbert writes: “I had a busy 2019 – moved to Maine, started a new job in higher education, got married, and started looking for a house! I’d love to connect with other F&ESers when they’re in town.”



Gina La Cerva ’15 on the trail of the wild meat trade in the Democratic Republic of Congo.

Corey Johnson writes: “Thanks to the match-making talents of **Maggie Thomas**, I got married in February. My wife, Rebecca, and I are moving from DC to Portland, Maine, to be closer to the ocean, mountains, and family.”

Gina La Cerva writes: “My book, ‘Feasting Wild: in Search of the Last Untamed Food,’ will be published by Greystone Books in May 2020. It’s

about wild food, hunting, gathering, and environmental conservation – and it’s a love story!”

Samuel Miller-McDonald writes: “Finishing a Ph.D. at University of Oxford in human geography. On the side, helping run *The Trouble* (the-trouble.com) and *Epilogue* (epiloguemag.com), two new anthropocene mags. Check them out!”

Maha Qasim writes: “Hi, everyone! I’m currently working in the climate and health space in Islamabad. In the past year I’ve traveled to some amazing spots in northern Pakistan: Hunza, Skardu, and Swat. Do come visit!”

Byron Ruby writes: “Since leaving New Haven, I have been living in San Francisco, working at McKinsey & Co. Recently we published a report I worked on that explores the severity of climate risks to business and society.”

Maggie Thomas writes: “I started the year working on Gov. Jay Inslee’s presidential campaign and am now the climate policy advisor for Elizabeth Warren’s presidential campaign.”

16 CLASS SECRETARIES
Mohammad Aatish Khan,
 mohammadaatish@gmail.com
 Nicholas McClure, nicholas.mcclure@yale.edu
 Paloma Caro Torres, pfcaro@gmail.com
 Mariana Vedoveto, mari.vedoveto@gmail.com
 Lisa Veliz Waweru, lisa.v.waweru@gmail.com

Anne Haas writes: “My husband, Rich, and I live in Albany, New York, where I am an attorney at the New York State Department of Conservation, specializing in marine resources law. Our daughter, Abigail, was born on November 3, 2019.”

Michael Johnson writes: “Leah and I continue our environmental service in Tacoma, Washington, she with the city and I with the state, focused on Puget Sound health and recovery. We’ve enjoyed hosting F&ESers and exploring the Cascades!”

William Murtha writes: “I left the world of energy journalism for energy trading late last year before welcoming the birth of my son, Finn, in January – a great start to the year!”

Sabrina Szeto writes: “I now live near Munich, Germany, and have started a geospatial consulting business focusing on sustainable development and the environment. Let me know if you’re in the area – would love to meet up!”

Raymond Waweru writes: “Hello from San Francisco! **Lisa Veliz Waweru ’17** and I had a beautiful

baby girl in April, Kamila Veliz Waweru. We spent the holidays with family in Kenya and met up with some F&ESers as well!”



Lisa Veliz Waweru ’17, Raymond Waweru ’16, baby Kamila, and Adedana Ashebir ’19 in Nairobi, Kenya.

Logan Yonavjak writes: “I’m starting a new financial services company focused on investing in regenerative natural resources. It will include a combination of advising, deal structuring, and, eventually, asset management.”

17 CLASS SECRETARIES
Niko Alexandre,
 nisalexandre@gmail.com
 David McCarthy, david.mccarthy@yale.edu
 Rebecca Shively, rebecca.shively@gmail.com
 Emily Wier, emily.wier@yale.edu
 Farrukh Zaman, rmfarrukhzaman@gmail.com

Ralien Bekkers writes: “I met **Chris Nyce ’01** in February in Addis Ababa to talk about my work with the NDC Partnership in Ethiopia. The NDC Partnership is a global coalition of countries, institutions, and NGOs that work collectively to accelerate climate and sustainable development action on the ground. During our meeting, Chris shared updates from his work as the regional environment officer for East Africa for the Department of State. We shared ideas on future collaboration around environmental work, climate change, and improving Ethiopia’s overall resilience.”

Laura Hammett writes: “I’ve been in Bangkok for about two years now working with the United Nations Development Programme on climate adaptation and urban resilience projects and exploring the region. It’s been fun to see fellow F&ESers when they come through!”

Heidi Hurd writes: “Yale’s Ann Camp and I took my Illinois law students to Costa Rica to study tropical forest conservation. I regularly take students to the Driftless Area to learn about local natural treasures.”

Siegfried King writes: “I’m working on sustainability challenges around the Chilean fresh-fruit sector.”

Kevin Lee writes: “I live in sunny San Diego County and am the environmental impact and compliance specialist with Dr. Bronner’s, an organic and fair-trade soap company!”

Lucyann Murray writes: “From a copper mine in Arizona, to cardboard box manufacturing in Memphis, to the Permian Basin – unimaginable places since graduation. Stretched and challenged, seeking to make companies do better.”



Heidi Hurd ’17 in the Zambezi River atop Victoria Falls, Zambia

Marisa Rodriguez-McGill writes: “I am living in Brooklyn Heights and working on the public policy team at Lyft with **Tommy Hayes ’15**!”

Sarah Sax writes: “I’m now working as an environmental journalist and producer in New York, doing a lot of stories on forests, commodities, land rights, and climate change. Hit me up if you have a story or a tip!”

Farrukh Zaman writes: “I’m currently based in South Korea, where I work with Green Climate Fund. The fund just concluded its first replenishment, which will help us finance \$10 billion in climate projects in developing countries.”

18 CLASS SECRETARIES
Eve Boyce, evedboyce@gmail.com
 Santi Zindel Mundet Cruz,
 santiago.zindel@gmail.com
 Kelechi Eleanya, kelechieleanya@gmail.com
 Caroline Hobbs, crlnhobbs@gmail.com
 Yishen Li, yishen.li@aya.yale.edu
 Kate Richard, ka.c.richard@gmail.com
 Weiyang Zhao, china.wyz@hotmail.com

Eve Boyce writes: “I am living in New York City, working as a land project manager for the Open Space Institute. I spend a lot of my free time in the woods of the northern Catskills.”

Caitlin Chiquelin writes: “I got married again (kidding)! I have spent the past year gearing up for my second run for select board in Hudson, New Hampshire. **Sara Harari** is my campaign manager, and this time we’re going to win on March 10!”



Emily Dolhansky '18 and colleagues perform reconnaissance to identify areas in the Mendocino National Forest that will be reforested.

Emily Dolhansky writes: “I am currently employed with the U.S. Forest Service as a forester with the Mendocino National Forest. In 2019 I aided in post-fire restoration efforts after the forest experienced the largest wildfire in California history.”

Gregory Haber writes: “After a year of unemployment, I’ve been happily working as a forester in the Bronx since the beginning of September! The already-pretty-big F&ES community in NYC Parks continues to grow.”

Hannah Peragine writes: “I am loving life in New Haven! Wonderful changes are afoot at F&ES, and I get to work each day to connect all you wonderful alums to each other! Paul and I have now been foster parents to five children, two of whom are still with us, and we are looking forward to what life will bring next.”

Aidan Smith writes: “I just transitioned from Fresno, California – where I was working on air quality and environmental justice – to Boston – where I’ll be helping the city implement a new community choice aggregation program.”

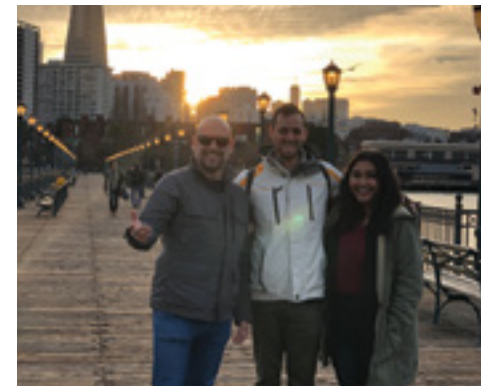
19 CLASS SECRETARIES
Prerna Bhat, prerna.bhat@yale.edu
Christine Ventura,
christine.ventura@yale.edu

Jesse Callahan Bryant writes: “Since graduation, I’ve started two environmental podcasts. One is called Yonder Lies: Unpacking the Myths of Jackson Hole and the other is Sustainabullshit! Both are available on iTunes & Spotify.”

Frank Cervo writes: “I’m overseeing our operations up at Myers and beyond! It was a busy fall, with three separate logging crews at work, and we’ve got more to come this winter. Reach out for more information!”

Alina Rodriguez writes: “I launched a skincare startup, Alta Mara, and we’re now selling our first product and will be in stores in New Haven soon.”

Purchase at altamarabeauty.com. P.S.: Living with Vivian – it’s the best!”



Santiago Zindel '19 (center), Sharada Vadlamani '18 (right), and Leandro Vigna '19 (not pictured) now make up half of Upndo's workforce — pictured here in San Francisco with Upndo founder Alvaro Lopes-Cardoso (left).

Brittany Williams writes: “I spent the summer post-graduation working with the USDA’s Foreign Agricultural Service based in Guatemala City. I then got hired at the World Wildlife Federation to work on forest and climate policy and moved to Washington, DC.”

Santiago Zindel writes: “I started a job with Upndo, a social impact tech startup in the intersection of corporate social responsibility and employee wellness, and recruited two other F&ESers to join us! Living in the Miami area; looking for friends!”

REUNION 2020

SAVE THE DATE **October 9–11**

IN MEMORIAM

Heather Coleman-McGill '08 M.E.M. (1981–2019) passed away in November 2019. Coleman-McGill had a deep love of nature and the environment and a tremendous zest for life. Before falling ill, she took every opportunity to be outside and enjoy the natural world. She was an advocate for action on global climate change and an activist for increased funding for research on myalgic encephalomyelitis, which she first developed as a teenager. She earned a B.A. in biology at Bowdoin before attending F&ES and worked as a United Nations consultant on biodiversity loss, protected area management, and climate change.

Ian Stewart Ferguson '63 M.F., '67 D.F. (1935–2019) passed away on July 10, 2019, in Australia. Ferguson was an eminent forest economist in Australia and was head of the School of Forestry at the University of Melbourne from 1981 to 2003. He masterminded the Institute of Foresters of Australia (IFA) Registered Professional Forester program while serving as the president of the organization in the 1990s and was a fellow of the IFA and three other professional groups. Ferguson was respected among those in the forestry industry for his wise advice and gentle nature.

Keith Stanley Jennings '70 M.F. (1941–2020) passed away on January 19, 2020, in Australia. Jennings was the former national president of the Institute of Foresters of Australia (IFA), which he joined as a student member in 1964, holding various offices over the years. Jennings also served as executive director of the International Union of Societies of Foresters. Affectionately known as the Silver Fox, Jennings loved playing sports, particularly cricket and rugby.



David B. Kittredge Jr. '80 M.F.S., '86 Ph.D. (1956–2020) passed away in March 2020 in Shutesbury, Massachusetts. Kittredge earned his bachelor’s degree in forestry from the University of Vermont before attending F&ES, where he earned a master’s degree in silviculture and earned a doctorate working with Professor David M. Smith. After a year with the New England Forestry Foundation, Kittredge joined the faculty at the University of Massachusetts, where he would teach environmental conservation for the next three decades. He also held a part-time appointment as the forest policy analyst at the Harvard Forest in Petersham, Massachusetts, for more than 20 years and held positions on several local and regional forestry boards. Kittredge has been remembered as an author of countless research publications, a renowned advocate for family-owned forests, and a superb mentor to numerous young foresters.

Akira Osawa '86 Ph.D. (1954–2019) passed away on May 22, 2019. A professor in the departments of forestry and global environmental studies at Kyoto University, Osawa’s work focused on self-thinning phenomena, stand development, natural disturbances, and ecosystem carbon dynamics. Chad Oliver '70 recalls: “Akira always brought out the best in people. On the one hand, he was very comfortable, enjoyable, and uplifting to be with; on the other hand, he was durable, strong, and resilient. And he was stimulating as a scientist.”

Theodore L. Richardson '48 M.F. (1921–2019) passed away on August 4, 2019 in Jersey Shore, Pennsylvania. Richardson received an undergraduate degree from Williams College before earning his Master of Forestry degree from F&ES, which he earned following service in the 10th Mountain Division and the 11th Airborne during World War II. A lifetime member of the National Ski Patrol, Richardson was also an avid tennis player, paddler, forester, draftsman, carpenter, and hunter. He will be remembered as a kind, generous man who loved life, his family, and the great outdoors.

Charles Davis Roberts '57 M.F. (1934–2019) passed away on December 30, 2019, in Vidalia, Georgia. A native of Georgia and a U.S. Army veteran, Roberts had a long career with Union Camp. After retiring, he continued to work as a consultant for private equity timber firms throughout the Southeast. In addition to being a deacon and choir member of his church, Roberts had numerous hobbies and interests ranging from the outdoors to music and woodworking.

Jean Tam '80 M.F.S. (1949–2019) passed away on June 28, 2019, along with her husband, Scott Christy. Tam, a bird lover and devoted naturalist, served on the board of the Anchorage Audubon Society since the 1980s. The couple spearheaded a popular loon cam, complete with “the Cadillac of artificial nesting islands,” which allowed people from all over the world to watch a pair of Pacific loons. Classmates remember many fun times with Tam back in the old school days, especially in Steve Berwick’s wildlife classes, as well as flights and visits from Tam and Christy, who loved to fly and took extended trips to visit friends and family in the lower 48.



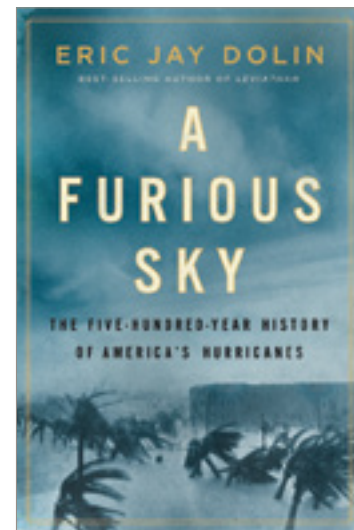
Herbert Winer '42 B.A., '49 M.F., '56 Ph.D. (1921–2019) passed away on December 11, 2019, in New Haven, Connecticut. Winer was a member of the Yale College Class of '42, where he majored in classics and botany, later returning as a fellow of Berkeley College. Winer served in the U.S. Army in the Pacific during World War II before returning to Yale, earning a Master of Forestry degree and a Ph.D. in forestry. Winer stayed on, teaching at the School until 1964. He then moved to Montréal, working at the Pulp and Paper Research Institute of Canada and

then the Forest Engineering Research Institute of Canada, returning to the U.S. in 1979 as head of woodlands management at Mead. Upon retirement, Winer eventually returned to F&ES, where he taught, provided guidance for students, and even helped design the School’s shield.

An excerpt from Winer’s obituary in the New Haven Register reads: “A devoted son and brother, husband and father, grandfather and great-grandfather, Herbert Winer was a mensch, a man of great integrity and high standards, a generous and compassionate person, curious and knowledgeable, and a great wit. He will be sorely missed by extended family, colleagues, friends, and all those whose lives he touched.”



An aircraft surveys the damage from Hurricane Harvey in 2017.



**A Furious Sky:
The Five-Hundred-Year
History of America's
Hurricanes**

by Eric Jay Dolin
Liverlight

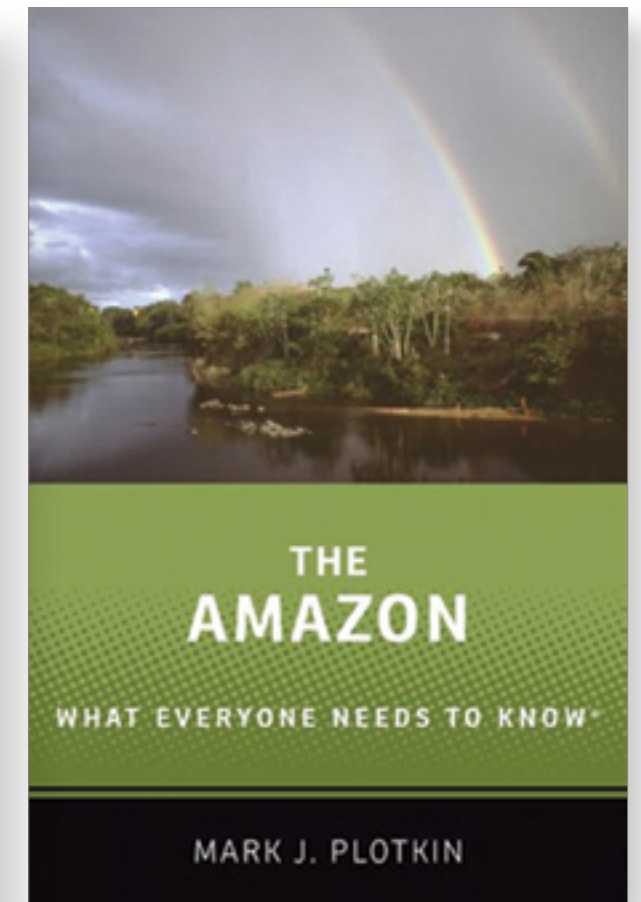
In "A Furious Sky," Eric Jay Dolin '88 M.E.M. presents the story of American hurricanes from the nameless storms that threatened Columbus's New World voyages to the devastation wrought by Hurricane Maria in Puerto Rico and the escalation of hurricane season as a result of global warming. This narrative is populated by unlikely heroes, such as Benito Viñes, the 19th century Jesuit priest whose revelatory methods for predicting hurricanes saved countless lives, and journalist Dan Rather, whose coverage of a 1961 hurricane changed broadcasting history. Dolin's story uncovers the often surprising ways we respond to natural crises and offers important insights into what the country faces in the future. *Available June 9.*



**Feasting Wild:
In Search of the Last Untamed Food**

by Gina Rae La Cerva
Greystone Books

Two centuries ago, nearly half the North American diet was found in the wild. Today so-called "wild foods" are becoming expensive commodities, served to the wealthy in top restaurants. In "Feasting Wild," geographer and anthropologist Gina Rae La Cerva '15 M.E.Sc. traces humankind's relationship to wild foods and shows what is sacrificed when these foods are domesticated — including biodiversity, indigenous knowledge, and an important connection to nature. Along the way, she samples wild foods herself, sipping elusive bird's nest soup in Borneo and smuggling Swedish moose meat home in her suitcase. The book challenges the reader to take a closer look at the food we eat today.



**The Amazon:
What Everyone Needs to Know**

by Mark J. Plotkin
Oxford University Press

Did you know that the Amazon covers an area about the size of the continental U.S.? That the Amazon River discharges about 57 million gallons of water per second — enough in two minutes to supply every resident of New York City with water for a year? Or that one in four flowering plant species on Earth resides in this ecosystem? These are some of the incredible facts detailed by Mark J. Plotkin '81 M.F.S., co-founder and CEO of the Amazon Conservation Team, in this new book, which is part of the "What Everyone Needs to Know" series. But beyond providing an overview of the incomparable ecosystem, Plotkin — who has spent 40 years studying the people, flora, and fauna of this region — takes a closer look at the challenges it faces in the coming decades.

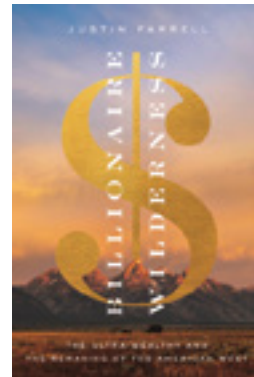
PARADISE LOST OR FOUND?

While researching and writing his new book, “Billionaire Wilderness The Ultra-Wealthy and the Remaking of the American West,” sociologist and F&ES Professor Justin Farrell spent five years in Teton County, Wyoming — the richest county in the United States and the one with the greatest income inequality. He conducted hundreds of in-depth interviews with the area’s working poor and with the ultra-wealthy who come from across the country to find a paradise in this awe-inspiring wilderness. We were eager to find out more about his work and what he learned about wealth concentration and environmental conservation in this corner of the rapidly changing American West.

BY PAIGE STEIN

In the acknowledgments of “Billionaire Wilderness,” you write that this book was “far and away the most challenging piece of research and writing you’ve ever done.” Why was that the case?

The sensitive nature of the topic and the difficulty gaining access. The topic of ultra-wealth is hot-buttoned, and my study was always prone to be sucked into the vortex of our politicized and polemical age of “twitterized” impulsiveness. The book is not an exposé but is instead a carefully and scientifically designed piece of research, and it was difficult to describe the study and carry it out without being stereotyped as either unfairly targeting the rich or propping up privilege. And, as I explain in the introduction, my sampling and interviewing process was so difficult because these folks have all sorts of layers of protection, which is why they are rarely, if ever, systematically studied.



In the book, you describe the “environmental veneer,” which defines, at least partly, the philanthropic philosophy of the ultra-wealthy in Teton County. What is the environmental veneer?

It’s a popular assumption that environmental conservation is, in a vague sense, an altruistic public good rather than a vehicle for protecting wealth, achieving social status and integration, expressing group identity, sustaining societal advantages, and generally reinforcing many of the social mechanisms that give rise to environmental problems in the first place.

You also describe in detail what you call the “community veneer,” or the disconnect between the way Teton County’s ultra-wealthy and its lower-income residents perceive each

other. For example, the ultra-wealthy often referenced what you call the “myth of the modern-day penniless nature-loving type,” such as the ski bum, when in reality the majority of the working poor in the area are Spanish-speaking immigrants working multiple jobs in the service sector. How do these differing perceptions affect the social and economic climates in Teton County?

Yes, that’s right. As I describe in the book, this “community veneer” deliberately conceals outward indicators of socioeconomic, racial, and ethnic inequities while rewarding trivial acts of individual charity and selective environmentalism. It hides patterns of structural harm, alleviates personal guilt, and ultimately forestalls the need for economic and political action to address pressing local and global problems.

The final chapter of “Billionaire Wilderness” is titled “The Future of Wealth and the West.” What does the future hold for environmental

conservation and income inequality in the West? What factors will determine that future?

As I chart the future of the socioenvironmental policy in the West, I note in the epilogue just how rapidly the region is changing — from climate change to sharp population growth — and argue that it requires an all-hands-on-deck approach. And, frankly, better collaboration among scholars, policymakers, agencies, and the general public. That is why our School, and Yale as a whole, is so well positioned to be a leader and to train students who can develop the skills so necessary to tackle these complex problems. ♣

“Billionaire Wilderness” is published by Princeton University Press.



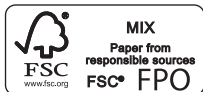
ILLUSTRATION BY ALEX GREEN — FOLIO ART

CANOPY

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*Knowledge and leadership
for a sustainable future*

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