FALL 2025

DOWNSTREAM

ENVIRONMENT & SUSTAINABILITY PROGRAM

ENSP graduating class of 2025

Director's Note:

Professor Brent Kaup

The Environment & Sustainability Program (ENSP) has had an exciting year. In May, we graduated a record number of majors. We have welcomed two new ENSP faculty members. And this Fall, we officially became a primary major.

This Spring, ENSP graduated sixty majors and minors. We were able to celebrate our students' accomplishments on the shores of Lake Matoaka at the historic Keck Lab. Our students reveled in the moment by sharing an array of ENSP memories and a few words of wisdom.

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INSIDE THIS ISSUE

Many ENSP graduates recalled their joys of galivanting through the College Woods and canoeing on the lake. Now they are off doing incredible things. Several of our graduates are pursuing advanced degrees or off to the Peace Corps. Others have found jobs putting their ENSP knowledge to work as environmental consultants and advocates.

Brent Z. Kaup
Director of the Environment & Sustainability Program

Our two new faculty members do excellent research and fill key curricular needs. Juan Camilo Cajigas Rotundo joined ENSP in Fall 2024. Juan Camilo received his PhD in Cultural Studies from the University of California–Davis in 2019 and was an assistant professor at Pontificia Universidad Javeriana in Colombia prior to coming to William & Mary. His research focuses on alternative ways of knowing and interacting with nature and he is currently working on a book project titled *Compost Democracy*. He largely teaches courses in the Environmental Humanities. This Fall, Rio Park joined ENSP. Rio received her PhD in Political Science, also from the University of California–Davis. Rio's research examines the interplay between economic and environmental concerns, focusing on trade, protectionism, and climate change. Rio teaches our new "Environmental Policy" course as well as a course on the political economy of extreme weather.

ENSP has now also become a primary major. We still have three tracks: Environmental Humanities, Environmental Policy, and Environmental Science. In addition, each track still embraces the interdisciplinary nature of the program. But with increasing demand for students to just be able to major in ENSP, we redesigned the tracks to give students this option while still making sure they obtain the skills necessary to identify and alleviate the most pressing environmental problems of our times.

New Faculty Highlights

Juan Camilo Cajigas Rotundo: Associate Teaching Professor, Environment & Sustainability Program and American Studies

Tell us a bit about your research

In general terms, I address socio-environmental issues while drawing on Global and Non-Western theoretical perspectives. I believe there are many intellectual traditions that offer important insights into humanity's most pressing challenges. For example, as part of my work in the environmental humanities, I explore the emotions associated with the sense of place among agroecological collectives in Colombia.

What do you like most about teaching Environment & Sustainability students?

I really enjoy students' eagerness to analyze socio-environmental issues and their ability to approach them from different perspectives. They are willing to think beyond what seems obvious or like "common sense," and that makes teaching especially rewarding.

What is one piece of advice you would give to students seeking to make the world a more sustainable place?

I like to teach about the notion of *heterarchies*, which emphasizes the relative autonomy of every social context—from interpersonal relationships to government decision-making and planning. This means there is always room for potential world-making practices at subjective, social, and global levels. Collective creativity (including design and planning), hope, and a sense of humor—as a resilient strategy—can help us imagine and discover what a sustainable world might look like.

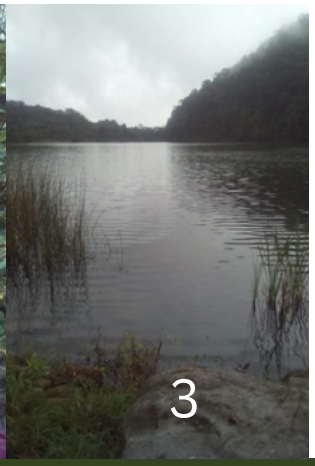
What is one book you think every ENSP student should read?

Paul Robbins' *Lawn People*, as it provides valuable insight into the disconnection between our beliefs and our environmental practices.

What do you enjoy doing in your free time?

I enjoy hiking. I also practice *capoeira angola*, a Brazilian embodied art form.



Rio Park: Assistant Professor in the Environment & Sustainability Program and Government

Tell us a bit about your research?

I am interested in how economic and security concerns affect support for environmental protection. In my dissertation, I examine how international economic competition affects environmental support in the U.S. Congress and among the American public. I pursue a variety of research methods, including observational studies, text analysis, and survey experiments.

What are you most looking forward to during your first year at William & Mary?

I have heard many great things about William & Mary's student body, so I am excited to meet and engage with the students here. This semester, I will be teaching two courses (Introduction to Environmental Policy and Political Economy of Extreme Weather), and I am very much looking forward to meeting the students!

What do you like most about teaching students about environmental policy?

Because environmental policy attracts students from different fields, I really enjoy the variety of ideas and discussions they bring to class. Since environmental policy covers a wide range of topics, there is something that interests everyone (at least a little bit), and I love seeing that spark of curiosity in students.

What is one piece of advice you would give to students seeking to make the world a more sustainable place?

Make allies. Making the world a more sustainable place is not an easy task, and no individual can achieve that goal alone. However, that doesn't mean individuals can't make a difference. Collective action is difficult, but if done right, it can have a big impact. And when I say "make allies", it doesn't have to be anything grand. It could start from convincing your friends to use less plastic to writing a letter to your representatives for more (and stronger) environmental action.

What is one book you think every ENSP student should read?

As a political scientist who studies environmental policy, I highly recommend "Short Circuiting Policy" by Leah Stokes. It provides an insightful view on the development of clean energy and climate policy in the U.S., and helped me better understand how interest group politics affect environmental policy. If people are into movies (rather than books), I recommend Dark Waters (2019), which is based on a true story about an environmental lawsuit against a major chemical company.

What do you enjoy doing in your free time?

I like doing crafty things from journaling and paint-by-numbers, to building miniature models.

Field Adventures with Graduate Students

Sam Dutilly

What did you study and how did you study it? Give us the TLDR synopsis!
The Rappahannock Tribe recently reacquired ancestral lands along the Rappahannock River, on the Northern Neck of Virginia. My project focuses on helping the Tribe to assess the plant and ecosystem diversity at this site. Over the last two years, my advisor and I have been working to create a flora, or plant list, of every unique species on the property. We have collected over 450 plants in total so far. In addition, we are working on improving the population health and longevity of a federally threatened plant, sensitive joint vetch (Aeschynomene virgnica). This summer, we set up field plots to test novel methods to improve the establishment and success of these populations.

How did you come to decide on this project/topic?
The project actually started with talking with my current advisor, Doug DeBerry. I had done previous undergraduate research with him earlier in my college career. The Rappahannock Tribe had reached out to him about doing a floristic inventory of their site and wanted to support a graduate student through the process. I have always wanted to work on a very botany focused project and this one gave me both the opportunity for a floristic inventory and the opportunity to work with a federally threatened plant. Doug reached out to me with the project and the rest is history.

What is something you learned about your topic that surprised you?
I was surprised by how many different variables can contribute to the growth (or lack thereof) of a plant like sensitive joint vetch. My project aims to understand the most important factors for the growth and hopefully the success of this plant. However, there are so many variables, like soil type, competing vegetation, annual rainfall, soil type, elevation, etc. that contribute to the growth of a plant population. I didn't realize how many different environmental conditions could have a possible impact on the plant. But hopefully, we can understand the main drivers of the success and failure for these plant populations with our field plots this summer.



Sam Dutilly's field work continued

What worked well about your planning for this summer? How would you adjust your preparations given the hindsight of having gone through it?

Planning as far ahead as possible and planning in possible days to reschedule for weather changes has been the best way to prep for field work. Scheduling, especially with busy advisors, project partners, and landowners is like herding cats. I have been trying to plan a visit with some other scientists at the site for the last 4 months, and only just now got it on the calendar. The earlier you can set up a plan or reach out, the more likely everything is to run smoothly. This summer, I learned through trial and error that proper planning and communication can make a project radically more efficient and prevent many headaches.

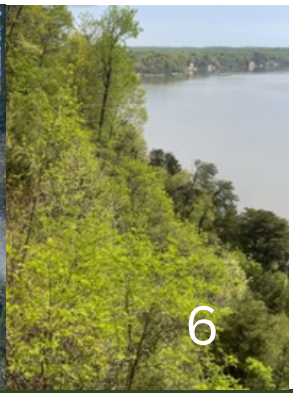
What is something you'd like others to know about the issue or organism(s) you studied this summer?

I think I would like people to understand the diversity of plants in relatively small areas. We are still actively working on the flora of the Rappahannock site, and already have over 450 species. This is an incredible number of species in only 2,500 acres. I think the average person seldom thinks about how many species exist in nature around them. However, in my experience and time at the site, there are vastly more species in more natural forests compared to post-logging or disturbed areas. The stark contrast is clear, even when a forest logged 25 years ago is compared to a forest that has been undisturbed for 50-60 years. There is a whole world of plants living under our noses and it's important to remember just how many species unique are growing all around us.

What is something you saw or felt that you hope to remember for a very long time?

There was one day where I was able to borrow a John boat from one of the landowners to get to my study sites. It was a pretty typical morning on the Rappahannock river in the summer, but the river was dead flat. As I was pulling up to the first site, I saw a bald eagle flying overhead. Then, when I pulled up to the shore, I saw two more bald eagles fly out of a tree not 30 feet from me. By the end of the day, I think I saw a total of 6 different eagles. It was spectacular to see such a healthy population of the birds in one spot and I hope I never forget the sight of them flying over the quiet river.



Bryce Donaghue

What did you study and how did you study it? Give us the TLDR synopsis!
I'm assessing bat activity at solar facilities in the mid-Atlantic. The open lands required for solar farms are traditionally planted with grass monocultures or cover crops—but what if they supported diverse pollinator species that mimicked native meadows or prairies instead? I'm using ultrasonic acoustic monitoring to identify species-specific echolocation calls at solar sites with varying ground cover. How does bat activity change when native, pollinator-friendly plants are abundant? Because bats play a critical role in pest control, supporting them while generating solar energy could offer a productive ecological compromise as solar development accelerates in Virginia.

How did you come to decide on this project/topic?
I've always found bats incredibly interesting, and I've long been fascinated by bioacoustics and the ways animals communicate. My background in restoration and land management exposed me to massive solar farms that look like lakes in the middle of the desert. The Southern Paiute tribes throughout southern Nevada started managing the land beneath solar panels to provide better habitat for the federally endangered desert tortoise (Gopherus agassizii).
After moving to Williamsburg, I began to see bats at dusk flying up and down my street at dusk. I'd previously worked for a bat biologist but rarely saw them in Nevada, so they caught my eye. For a while, I went back and forth between focusing on birds or bats for this project. There has not been much research looking at how bats interact with pollinator habitats on solar sites.

What is something you learned about your topic that surprised you?
While researching bats and the ecosystem services they provide, I was amazed to learn that bats in North America contribute over $3.7 billion per year in agricultural pest suppression. I knew they were insectivores, but I hadn't grasped the scale of their impact. One paper reported that a colony of Mexican free-tailed bats can consume up to 8.4 metric tons of insects in a single night. This project has deepened my appreciation not only for the ecological role bats play, but also for their economic value.

Bryce's research asks how planting native species within a solar site might mimic natural meadows.

Doug DeBerry taking vegetation data at a solar site.

Bryce Donaghue's field work continued

What worked well about your planning for this summer? How would you adjust your preparations given the hindsight of having gone through it?
My advisor and I spent a lot of time preparing for the summer, regularly coordinating with partners to schedule site access, approve project methods, and communicate progress. One component of the project that I would adjust would be collecting more weather data while on-site setting up the equipment. Getting access to weather data has been proving harder than expected. If I had collected more data about expected conditions while on-site, I think analysis would be a lot easier.

What is something you'd like others to know about the issue or organism(s) you studied this summer?
Bats are essential to ecosystems, yet they're often misunderstood or associated with negative stereotypes. In reality, they contribute to our lives in many unseen ways—from pest control to pollination. The more we understand how bats use habitat, the better equipped we are to conserve and protect them.

What is something you saw or felt that you hope to remember for a very long time?
Seeing the sonographs after the first survey and realizing that a few bat species were present at the solar sites was a huge relief—and a moment of genuine excitement. It made me feel much more optimistic about the summer ahead. As the season progressed, bat activity seemed to increase, which was incredibly rewarding. Returning to each site and seeing how many files the recorders had collected throughout the week was a highlight every time.


Native meadows provide critical pollinator habitat.


Bryce checking bat detection equipment at a solar site.

ENSP Faculty Publications

We've had a busy year with Faculty researching, writing and publishing at a record pace. We invite you to explore some of their peer-reviewed work focused on the Environment and Sustainability we are passionate about!

Juan Camilo Cajigas. 2025. The Biopower of Abundance: Towards Agroecological Worldings. Bulletin of Latin American Research Vol. 44, Issue 3.

Grace E. Phillips*, **Daniel A. Cristol**. 2024.
Mechanisms of deer (Cervidae) impacts on birds: A comprehensive review
Biological Conservation Vol. 290.

Zachary E. Ormiston*, **Daniel A. Cristol** 2025.
Are golf courses good or bad for birds: A synthetic review
Landscap and Urban Planning Vol. 253.

DeBerry, D.A. and D.M. Hunter*. 2024. Impacts of invasive plants on native vegetation communities in wetland and stream mitigation. Biology 13(4) p.275.

DeBerry, D.A. and D.M. Hunter*. 2024. Drivers of plant invasion in stream restoration. Forests 15:964.

Dicenta, Mara 2025. "Haunting as Anti-Method: Ecological Rage in the Wake of Organized Disappearance," Anthropological Theory.

Dicenta, Mara; Micah Dill; Elena McCullough 2025. "Losing Touch with Herring in the Rappahannock River," Edge Effects.

Dicenta, Mara 2024. "The Promise of Interspecies Desegregation: Allying with Capybaras against gated communities in Buenos Aires' Wetlands." Environment and Planning F: Philosophy, Theory, Models, Methods and Practice.

Haisu Huang, Claire W. Herbert. 2025. "Long-Term Temporary" Disaster Recovery Housing: Living in RVs Post-Wildfire. Rural Sociology Vol. 90, Issue 3

Annie Powell M.A. '18, Ph.D. '24 excerpt from **Haisu Huang**. 2025. Rising from the Ashes. The William & Mary magazine Vol. 90, Issue 3

**D.M. Hunter W&M class of 2018*
**Grace E. Phillips W&M class of 2023*
**Zachary E. Ormiston W&M class of 2024*

Faculty Publications

J.G. Kahn and M.A. Allen (Guest Editors)
2024 Special Issue on Zooarchaeology and Human Ecodynamics in East Polynesia. Archaeology in Oceania 59(2): 1-313.

Kahn, J.G.
2024 Pig and Dog Use in the Pre-Contact Society Island Chiefdoms: Integrated Ethnohistoric, Archaeological, and Use-Web Analyses. Archaeology in Oceania 59(2): 219-232.

Allen, M. and **J.G. Kahn**
2024 Advances in East Polynesian Zooarchaeology (2016-2024): Special Issue Introduction and Literature Review. Archaeology in Oceania 59(2): 157-175.

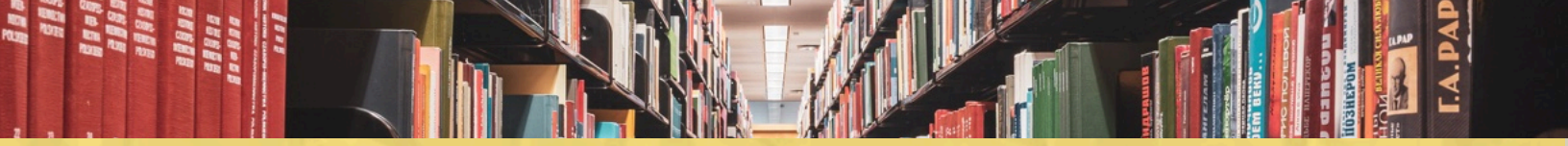
Ohman, A. and **J.G. Kahn
2024 Tracking Shifts in Society Islands Marine Subsistence Through Time: Intra-Site Analysis of Faunal Remains and Fishing Gear. Archaeology in Oceania 59(2): 198-218.

Puleston, C., **J.G. Kahn**, O. A. Chadwick, N. Belluzzo, and P. V. Kirch
2024 People of the Sea, or of the Soil? How the Balance of Marine and Terrestrial Resource Availability informs Maximum Population on four Polynesian Islands. Human Ecology

Kaup, Brent Z., and Kelly F. Austin. The Pathogens of Finance: How Capitalism Breeds Vector-Borne Disease. Vol. 16. Univ of California Press, 2025.

John P. Davis, P. Garrett Burroughs, W. Churchill Wilkinson, Ellora Majumdar, **Nathanael M. Kidwell**, "Bimolecular Collision Outcomes on Multidimensional Potential Energy Surfaces: Infrared Spectroscopy and Activation of NO-Alkane Collision Complexes", Faraday Discuss., 2024, 251, 262-278.

P. Garrett Burroughs, W. Churchill Wilkinson, Ellora Majumdar, Jacob D. Bole, Reeva Subedi, Joshua T. Kerrigan, **Nathanael M. Kidwell**, "Infrared-Driven Dynamics and Scattering Mechanisms of NO Radicals with Propane and Butane: Impacts of Pseudo Jahn–Teller Effects", Phys. Chem. Chem. Phys., 2024, 26, 24849-24860.



Faculty Publications

Lanouette, K. & Taylor, K.H. (2025). Sociopolitical geographies of climate learning and climate futures: A comparative case study across two coasts. In A. Sezen-Barrie & H. Kang (co-chairs), Climate Education for Justice: Navigating Geographies, Data, and Agency. In Rajala, A., Cortez, A., Hofmann, R., Jornet, A., Lotz-Sisitka, H., & Markauskaite, L. (Eds.), Proceedings of the 19th International Conference of the Learning Sciences - ICLS 2025 (pp. 2354-2362). International Society of the Learning Sciences.

Lanouette, K., Van Wart, S. & Parikh, T.S. (2025). Participatory digital mapping, dynamic data, and children's science argumentation about local socio-ecological systems. Journal of Science Education and Technology, 34, 215-235.

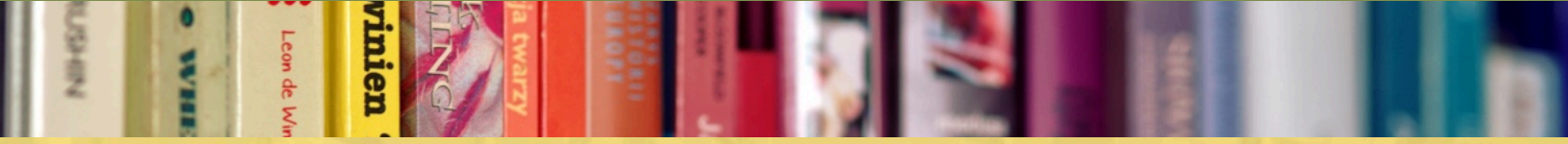
Lanouette, K., Cortes, K. L., Lopez, L., Bakal, M., & Wilkerson, M. H. (2024). Exploring climate change through students' place connections and public data sets. Science Scope, 47(3), 18-25.

Lanouette, K. & Taylor, K. H. (Eds). (2022). Learning within socio-political landscapes: (Re)imagining children's geographies. Occasional Paper Series, 48, 3-12.

Zach Conrad, **Matthias Leu**, Eli Fulcher, Songze Wu, Chloe DiStaso, Juan Boston, Tomalita Peterson, Beth Roach, Tommy Tupponce, Jessica Phillips & Troy Wiipongwii. 2025. Exploring the crop suitability of first-contact tribal lands in the eastern United States: impacts of past and near-future climate conditions. Scientific Reports 15; Article number: 27854

M Luchs 2025. Consumer wisdom and the UN Sustainable Development Goals The Elgar Companion to Consumer Behaviour and the Sustainable Development Goals

CA Trujillo, **M Luchs** 2025. The role of Consumer Wisdom in the interplay of motivations affecting pro-environmental behaviors Journal of Cleaner Production



Faculty Publications

Park, RyuGyung. 2025. "Is Trade the Enemy of Environment?: Congressional Voting on Environmental Policies after the China Shock." International Interactions 51 (4): 598–638.

Park, RyuGyung & Lee, Jaemin. 2025. 'Greening WTO: A Lost Cause or Potential Solution?'. Journal of World Trade 59, no. 4: 603–626.

Stafford, Sarah L. 2025. "How Is Climate Change Impacting the Educational Choices and Career Plans of Undergraduates?" Sustainability. Vol. 17(14): 6324,

Donna Marie Bilkovic, Andrew M. Scheld, Robert Isdell, Pamela Mason, **Sarah Stafford**, Molly Mitchell, Cirse Gonzalez-Dorantes, **Randolph Chambers**, **Matthias Leu**, Susanna Musick, Sean Gregory, Jessica Hendricks, Oluwakemi Dada, Gabriel Benson. 2025. Valuing present and future benefits provided by coastal wetlands and living shorelines, Nature-Based Solutions, Volume 8.

The Year Ahead

The year ahead looks to be as exciting as the last. In October, we will host our annual homecoming festivities at the Keck Lab. It will be a kick-off of sorts for the ENSP 25th Anniversary. If you are around for homecoming weekend, please do come and join us for tasty morsels and to revel in old ENSP memories. In the Spring, we look forward to graduating another near record class of ENSP majors and minors and celebrating with them when the moment comes. In our downtime, we will all keep making ENSP and William & Mary what it is. We will undoubtedly continue to trek through the muck around Lake Matoaka while also tending to the Keck Bees. If we are lucky, some of us may even stumble across a patch of ripe paw paws in the College Woods!

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