

Who are We?

Environmental Studies Program

Environmental Studies at Bowdoin equips students with knowledge, skills, and perspectives to understand the causes and consequences of local and global environmental problems, with the goal of developing just, equitable solutions.

Meet our faculty



Iris W. Davis Assistant Professor of Environmental Studies. Allison Guess comes to Bowdoin, most recently, by way of Princeton University where she was the 2023-2024 Visiting Research Scholar in the Department of African American Studies.



Shana Starobin, Assistant Professor of Government and Environmental Studies. Her research centers on the politics of transnational business regulation and institutional innovation in global environmental governance.



Matthew Klinge, Associate Professor of History and Environmental Studies, Director of Environmental Studies Program. A historian of the United States, his research and teaching focus on the North American West, environmental history, urban history, social and cultural history, and the history of science, technology, and medicine.



Mary Rogalski, Assistant Professor of Biology and Environmental Studies. Environmental impacts can affect the species we find in ecological communities and how these species interact. Human impacts can also trigger rapid evolutionary changes in populations strong enough to affect population dynamics, species interactions, and nutrient fluxes. In other words, anthropogenic global change can drive eco-evolutionary dynamics.



Conrad Schneider is an Adjunct Lecturer in Environmental Studies. Conrad is Advocacy Director of the Clean Air Task Force, a nonprofit organization dedicated to restoring clean air and healthy environments through scientific research, public education, and legal advocacy. He teaches Environmental Law & Policy for the ES Program and Gov & Legal Studies Department.



Kate Olson is a writer, climate sociologist, and scholar. Her work explores the interconnections among people, places, and livelihoods in a changing climate, from mega-dams in Southeast Asia to clam harvesting in rural Maine. Kate will co-teach ENVS 1101 Intro to Environmental Studies Fall 25 with Mary Rogalski.



Jill Pearlman is Senior Lecturer in Environmental Studies. Professor Pearlman teaches the history of architecture and urbanism.



Brandon Tate is Visiting Assistant Professor of Chemistry and Environmental Studies. Professor Tate's research centers on the development of catalysts for the production of renewable fuels and sustainable alternatives to petrochemicals.



Eileen Sylvan Johnson is Senior Lecturer in Environmental Studies. She teaches environmental social science courses that integrate digital and computational technologies with a particular emphasis on spatial analysis, GIS and remote sensing. Her teaching and research emphasize community-based research and her students engage actively with stakeholders.



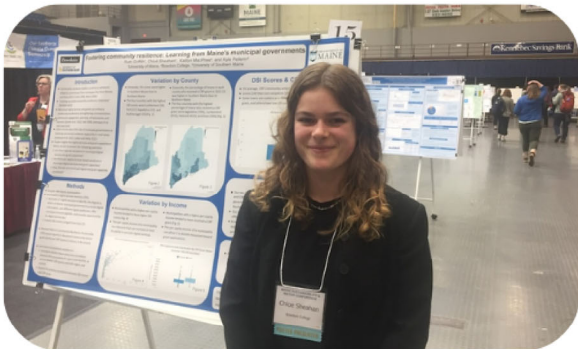
Ayana Elizabeth Johnson is Roux Distinguished Scholar at Bowdoin, and a marine biologist, policy expert, writer, and teacher working to help create the best possible climate future.

Where do we travel?



Dr. Eileen Sylvan Johnson with research students and collaborators at the Association of American Geographers Annual Meeting (AAG), March 2025

Intro to Environmental Studies class field trip to Schiller Coastal Studies Center (SCSC), Fall 2024



Chloe Sheahan ES/ Gov '25 presenting her research poster at the Maine Sustainability & Water Conference, Spring 2024

ENVS 2201 Perspective in Environmental Science field work at the Schiller Coastal Studies Center, Winter 2025



WHERE DO WE GO FROM HERE?

Environmental Studies Fellowships



Asher Savel, '26 Coastal Enterprises, Inc.
Asher worked with CEI's Climate and Agriculture team creating a tool kit for local clients to help them prepare for and recover from climate disasters.

Eden Zumbrun '26 City of Bath Sustainability Office. Summer 2024, Eden's work focused on sea level rise in the city and the development of an updated climate action plan



The Environmental Studies Program offers paid summer internship opportunities with community partners in Maine and beyond.



Maine-Based Environmental Fellowships provide students with the opportunity to explore the environmental field while strengthening campus community partnerships.

The Cooke Environmental Research Fellowship funds students to conduct community-based research with a faculty mentor.

SCAN TO LEARN MORE



WHERE DO WE GO FROM HERE?

BOWDOIN ENVIROMENTAL STUDIES ALUMNI



Linnea Patterson '18 ES/Biology

Linnea was an ES Maine Based Fellow at CEI (Coastal Enterprises Inc) in Brunswick summer of 2016. She said of her experience:

"I explored the feasibility and profitability of growing specialty produce in Maine and designed questionnaires to help business counselors advise their farmer clientele on climate adaptation strategies. It was a special experience to work on impactful projects with people who truly cared about them. I was proud to be a part of the CEI team (if only for a short time)".

She expanded her horizons through a summer tropical field biology program and became interested in geographic information systems (GIS), computer mapping programs that analyze and display geographic data. She then went on to take every GIS and remote sensing class that Bowdoin had to offer which laid the foundation for her work's motivation: using science to inform management decisions.

"One of the biggest challenges for scientists is how to communicate the data they're observing, collecting, or analyzing to people who are in a position to use it on the ground." Patterson said.

After graduating, Patterson returned to work at Coastal Enterprises Inc. (CEI) where she worked as CEI's Environmental Lending Specialist helping loan officers conduct background research on lendees and supporting the expansion of solar investments in Maine— she later transitioned her role into a Program Developer in Climate Justice and Environmental Resilience with a focus on helping communities and businesses participate in the green transition.

Patterson is currently enrolled in a masters program at the Nelson Institute for Environmental Studies at the University of Wisconsin-Madison



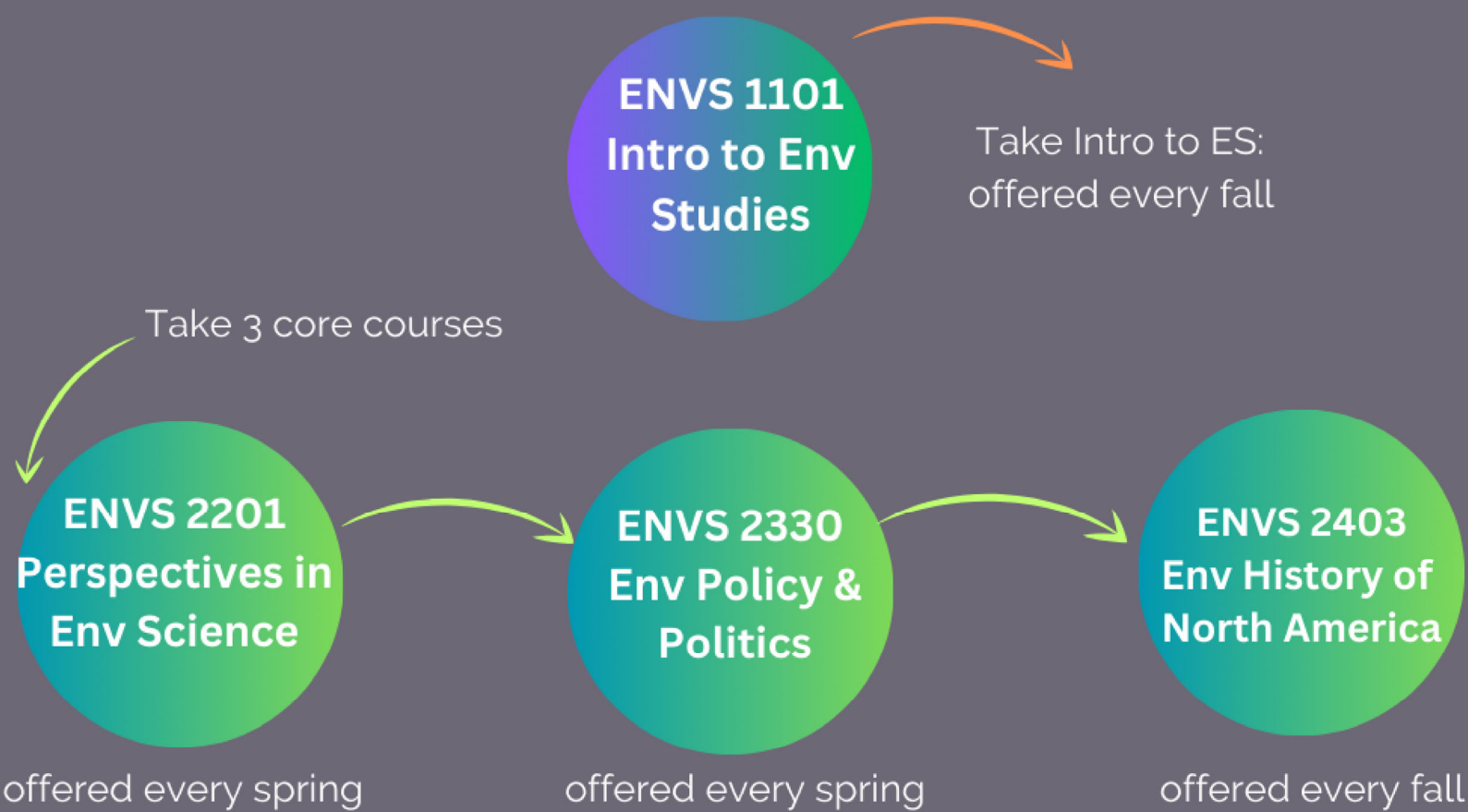
Leif Maynard '23 ES/Gov & Legal Studies

After graduation, Leif started a fellowship program at the Department of Energy. While working in DC, he applied for a fellowship to do research with Kara Solar, (he he first learned about Kara Solar as a Bowdoin student). He studied abroad in his junior year. "I got to know the world of sustainability in Ecuador , and I fell in love with the mission of Kara Solar given my interest in community-led clean everygy development," he said. Though Maynard did not receive the Fullbright, he did receive a job offer

from Kara Solar's founder Oliver Utne. (They spoke a lot duing the Fullbright application process.) "While I liked my job at the DOE, this felt like a once-in-a-lifetime opportunity, and a good learning opportunity," Maynard said. For his job, Leif writes and submits grant applications and manages relationships with long-term funders. "We hope that the global north and development organizations and funders willll see the value in indigenious-led initiatives that prevent deforestation by providing an alternative to building roads." Read the full story here: <https://www.bowdoin.edu/news/2025/03/dreaming-of-the-sun.html>

Environmental Studies Coordinate Major

Environmental Studies (ES) anchors students in both interdisciplinary environmental studies and a recognized academic discipline. ES students are trained to embrace interdisciplinary breadth and disciplinary depth.



Decide on a coordinate major: a disciplinary major in a department (e.g. Economics) or program (e.g. Asian Studies)

Choose an ENVS Advanced Seminar

Advanced seminars are offered across disciplines or are interdisciplinary. Usually taken junior or senior year

One study away course, or one semester independent study or honors work may count toward this theme.

Take 3 ENVS courses linked by a self-selected theme



Scan the QR code for ES major & minor requirements

Environmental Studies Minor

The Minor consists of five courses

**ENVS
1101**

Introduction to Environmental Studies: Interdisciplinary Approaches
(offered every fall)

Select two environmental studies courses (2000–2969) or higher, one of which must be outside a student's departmental major. One off-campus study course, Independent Study or Honors work may be used to fulfill the intermediate course requirement for the minor.

Discipline-Based Requirements

Natural Science Majors

**ENVS
2403**

Environment & Culture in North American History
(offered every fall)

**ENVS
2330**

Environmental Policy & Politics
(offered every spring)

Social Science Majors

**ENVS
2201**

Perspectives in Environmental Science
(offered every Spring)

**ENVS
2403**

Environment & Culture in North American History
(offered every fall)

Humanities Majors

**ENVS
2201**

Perspectives in Environmental Science
(offered every Spring)

**ENVS
2330**

Environmental Policy & Politics
(offered every spring)

Scan the QR Code to learn more





ENVS 1101 — Introduction to Environmental Studies: Interdisciplinary Approaches

Fall 2025

Bowdoin College

Environmental Studies Program

Lectures: Tuesdays & Thursday, 10:05-11:30am

Discussion Sections: L1: Thursday, 2:20-3:15pm, L2: Thursday, 3:25-4:20pm,

L3: Friday, 10:10-11:05am, L4: Friday, 11:15-12:10pm

Course Description: What is the course about?

This course is an interdisciplinary introduction to the environment as framed by perspectives from the natural sciences, social sciences, and arts and humanities. We will survey past and present status of environmental knowledge about major global and regional problems, explore both successes and inadequacies of environmental ideas to address specific crises, and assess potential responses of governments, corporations, and individuals. We focus on three core topics: place, relationality, and knowledge systems in environmental studies; food and agriculture; and climate change and energy. Within these contexts, we also examine biodiversity, population, urbanization, natural resource economics and policy, consumption, environmental justice, human and ecological health, and sustainability. This course meets the DPI distribution requirement.

Course Learning goals: What can you expect to learn?

This course will provide you with an understanding of how multiple disciplines inform our understanding of environmental questions, and how to synthesize these disciplines into a true interdisciplinary approach to understanding the complexities of environmental questions. As a student in this class, you will:

1. Explain the disciplinary and interdisciplinary perspectives and systems thinking inherent to environmental inquiry.
2. Identify and analyze social, historical, economic, political, ethical, scientific, and technological contexts and constraints of environmental problems and solutions.
3. Apply an interdisciplinary approach to analyzing environmental issues.
4. Understand and analyze the relationship between power, inequality, and environmental change and the role of different types of knowledge systems (e.g. indigenous, community science) in defining and achieving environmental justice.
5. Assess, evaluate, and critique key ideas, theories, and concepts, past and present, that inform and shape environmental studies.
6. Locate and critically assess varied sources of data and evidence to research, write, and communicate collaboratively within and across multiple disciplines.

Format: How is this course configured?

Your course instructors and several guest lecturers will provide a range of perspectives relevant to environmental inquiry during the two weekly 85-minute lecture sessions. You will have the opportunity to then engage with and synthesize these perspectives in small groups of 15 students or less in weekly 55-minute discussion sections. You will have the opportunity to understand, apply, evaluate, and analyze course materials during discussion sections, unit reflections, and unit assignments. There is also one required field trip to Schiller Coastal Studies Center that takes place on either a Saturday or Sunday during the first month of the semester.

**PERSPECTIVES IN ENVIRONMENTAL SCIENCE
ENVIRONMENTAL STUDIES 2201 / BIOLOGY 1158 / CHEMISTRY 1105
BOWDOIN COLLEGE**

Lecture: Tuesday & Thursday 10:05 - 11:30

Laboratory: Tuesday, Wednesday, or Thursday 1:15 – 5:00

Course Description

Understanding environmental challenges requires scientific knowledge about the different spheres of the Earth -- land, water, air, and life -- and how they interact. Presents integrated perspectives across the fields of biology, chemistry, and earth and oceanographic science to examine the scientific basis for environmental change from the molecular to the global level. Foundational principles are developed to address major course themes, including climate change, energy, soil/air/water pollution, chemical exposure and risk, land use change, and biodiversity loss. Laboratory sessions consist of local field trips, laboratory experiments, group research, case study exercises, and discussions of current and classic scientific literature. This is an MCSR and INS core course required for the ENVS co-major.

What should you expect to learn?

This course embraces the following LEARNING GOALS of the Environmental Studies Program:

This course is designed to engage you in a wide variety of issues and concepts within the field of Environmental Science. As a student in the class you, will:

- **Build foundational knowledge** of scientific principles relevant to environmental inquiry and life beyond Bowdoin
- **Approach environmental challenges scientifically** while accounting for inherent complexities
- **Apply, analyze, evaluate and communicate the core scientific principles** underlying contemporary environmental challenges
- Analyze, present, interpret, and effectively **communicate data** in graphical and written forms to a range of stakeholders
- Gain experience with the process of **scientific inquiry**

ENVS 2201 satisfies the following distribution requirements:

- INS: Students will explore the functioning of the earth system and understand the processes within and between four earth system compartments (air, water, land and biota). They will leverage key principles of chemistry, ecology, and earth system science to environmental inquiry and environmental dilemmas resulting from human impacts.
- MCSR: Students will apply mathematical and statistical concepts, along with quantitative models in coursework and laboratory sessions to understand, interpret, and anticipate environmental processes and problems in natural and engineered systems.

How is this course configured?

Each week you will engage in lectures, readings, and/or videos. Lectures will include PowerPoint presentations, active learning activities (e.g., think-pair-share, group work, problem solving), and discussions and take place T and Th mornings. You will then engage with course principles and gain hands-on experiences with scientific inquiry and communication in the weekly laboratory sessions, either T, W or Th afternoons.

You will demonstrate your ability to understand, apply, evaluate, and analyze course materials during laboratory assignments, quizzes, assignments, and exams.

Workload: Please be prepared to dedicate 10 hours per week, including class/lab time, to complete and reflect upon the readings, study for assessments, and work on assignments.

What are the Course Policies?

We request that you make a commitment to:

- be respectful of other's perspectives and opinions
- take risks—confusion and failure are steppingstones to learning
- challenge yourself to bring your unique perspectives to the table
- share the responsibility for working towards the course learning goals

Course Topics

- Biodiversity and Ecosystem Science
 - Labs include amphibian/vernal pool surveys, forest ecology and carbon storage
- Pollution and Solutions
 - Labs include chemical partitioning, acid rain and cation exchange, PFAS contamination and wastewater treatment
- Climate Past and Present
 - Sustainability at Bowdoin and GIS and spatial data analysis using ArcGISPro



Alexis Rockman, *Manifest Destiny*, 2004, oil and acrylic on wood, Smithsonian American Art Museum, © 2004, Alexis Rockman, <https://americanart.si.edu/artwork/manifest-destiny-80072>

ENVS 2403/HIST 2182: Environment & Culture in North American History

Professor Matthew Klinge, Department of History & Environmental Studies Program

<https://www.bowdoin.edu/profiles/faculty/mklinge/index.html>

mklinge@bowdoin.edu

Course Description: This course examines the changing relationships between human beings and the natural world through time from the fifteenth century to the present. Topics include Native American uses and views of the natural world, the ecological effects of Europeans in the Americas, resource exploitation from the colonial period through the present day, the emergence of the preservationist and conservationist movements, the origins of environmental injustice and inequalities, and political responses to environmental problems. Although this is a history course, we will also draw from literature, philosophy, the visual and performing arts, religion, and other academic disciplines and types of inquiry.

We will approach environmental history from several perspectives. First, how have human activities historically depended on and responded to a dynamic natural world? Second, how have attitudes toward the natural world, particularly those in the United States, changed over time, and how have those attitudes shaped our nation's cultural, social, and political foundations? Third, how have human ideas, activities, and technologies affected the North American landscape, and what have been the consequences of those changes? Over the semester, we will add still more questions to this list.

The central purpose of this course is to improve your ability to think historically and conceptually while broadening your knowledge of North American history as viewed from an environmental angle. Historical thinking does not come naturally. It is hard, difficult work that includes learning to recognize the complexity, ambiguity, and uncertainty in human affairs; developing a critical eye toward sources of information about the past (and present); and understanding that events occur sequentially and that order matters. Placing events and details in context is a key to thinking historically. Imposing order on the messy, numerous, and diverse information from the past is neither easy nor quickly learned. Thinking historically, then, requires learning details, accounting for discrepancies in sources, placing events in context and applying this knowledge to support your interpretation in a scholarly, persuasive manner.

This course meets the DPI Distribution requirement (Difference, Power and Inequity) and c. Division Requirement (Humanities)

Learning Goals: These build upon goals developed by the Department of History and ES Program:

- Apply historical thinking and practice to understand relationships between environmental, social, economic, and political changes with a focus on what became the United States

- Identify, locate, assess, and analyze diverse primary and secondary documents as part of a major research project on a selected topic;
- Create and apply specific forms of historical methodology and interpretation to write a major individual research paper;
- Sharpen your writing skills through rewriting, revising, and responding to constructive criticism;
- Refine your ability to research, write, and present within and across multiple disciplines while connecting your work to the principles of historical thinking.

Lectures and Discussion: Class meetings will focus on lectures as well as all-class and smaller group discussions about assigned readings and/or other materials. Lectures will rarely take the entire allotted time, so expect regular discussions. Occasionally, we will watch a video or have another activity instead of lecture and discussion. We will also have one library research methods seminar and two visits to the Bowdoin Museum of Art. See the full preliminary schedule in this syllabus. Please note that lectures, videos, and readings will not always align thematically or chronologically. I will help you to connect them, but this means you also need to do the work. Moreover, I expect you to treat lectures as another piece of evidence that you interpret, critique, and analyze alongside the readings for the course and your own research assignments.

Ecology

BIO 2327/ ENVS 2227

Lectures: Tues & Thurs 10:05 – 11:30 am
Labs: Tues. 1:15 – 5 pm -or- Weds. 1:15 – 5pm

Course Description: Ecology, the study of how organisms interact with each other and their environment, incorporates topics from how organisms cope with environmental stressors to global carbon cycling. Addresses current questions in ecology, from global change to food security to invasive species. Lectures, labs, primary and popular literature emphasize how scientists use the tenets of ecology to address current environmental issues. Labs, discussions and activities focus on practical applications of ecological theory, scientific writing and data analysis on topics such as plant-insect interactions, amphibian decline, river restoration and natural history.

Rationale: Ecology is the study of interactions between living organisms and their environment. Ecology is a fundamental determiner of evolution, speciation, and behavior and is necessary to understand the extraordinary diversity of life on our planet. We live in a time of incredible environmental change. The field of ecology is of central importance as we try to understand how our changing climate, habitat loss, and pollution will impact ecosystems on backyard to worldwide scales. Ecology may seem quite intuitive, given that we are a part of our ecosystems; we strive to take students deeper than this basic understanding - to appreciate the foundational principles of the field and how the scientific process contributes to this understanding. We also strive to bring in more diverse voices than are typically found in traditional, foundational papers in Ecology.

The primary **learning objectives** of this course are for you to develop:

1. Understanding of the theoretical underpinnings of the field of ecology
2. Application of these concepts to current environmental issues
3. Comfort with study design and basic ecological data collection, analysis and interpretation
4. Confidence in turning to and interpreting the scientific literature to find answers to ecological questions
5. Skills in communicating scientific concepts, both orally and in written form to a variety of audiences

Further, this course satisfies the INS (Inquiry in Natural Science) distribution requirement or can count towards the Integrative Biology (Group 3) or EEMB Biology (Foundations in EEMB) concentrations. Environmental Studies coordinate majors may count Ecology towards the concentration requirement.

Format: The lecture component of this course will provide you with the building blocks needed to understand and apply scientific concepts in ecology. The field of ecology is extremely broad! While we will cover a diverse array of topics, we will also slow down to explore *what these ideas look like in practice*. Some lecture periods will incorporate more traditional lecture with active learning opportunities, while other class periods will be largely discussion focused. Topics covered in lecture will provide context for the hands-on activities undertaken in lab.

Working with ecological data: As with journal articles, purpose, inquiry, and data analysis and interpretation are key to understanding any scientific discipline, including ecology. Lab handouts provide the **purpose** of the study; the **process** of inquiry and data collection will be explored in labs and

analysis of data will occur in lab as well. You will report **key results** through graphs and provide your **interpretation and application** of the findings through lab assignments. During lab we will learn to use R software to analyze data. You will have two **R assignments** to complete outside of lab to practice using the software. You will be required to attend **an R workshop** outside of class time with Liam Taylor. 4% of your course grade.

Course Topics: Course topics include community ecology, biodiversity, population dynamics, species interactions and ecosystem function and recovery.

Labs include: ecological inquiry and study design, data analysis using R, freshwater systems, pollinators and reb-backed salamander long-term population data collection.