

UPDATING THE ENVIRONMENTAL LAW TOOLKIT FOR A COMPLEX FUTURE

*Introduction to the Second Emerging Environmental Law Curriculum
Conference for Environmental Law Faculty on the Future of Environmental
Legal Education at Vermont Law and Graduate School, June 2024*

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INTRODUCTION

The field of environmental law continues to evolve beyond its roots in the major federal environmental statutes, and so too is the project of environmental legal education. In recent years, the federal judiciary has complicated and constrained federal authority to reduce greenhouse gas emissions, protect water quality, and limit dangerous air pollution—upending the legal frameworks that have dominated understandings of the administrative state for decades.¹ Against this deregulatory pressure, Congress has greatly expanded the use of complex tax expenditures to drive deployment of clean energy and promote environmental justice through the Bipartisan Infrastructure Law (BIL) and the Inflation Reduction Act (IRA).² In this context and with ongoing advancement of technology, the clean

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1. See, e.g., *Ohio v. EPA*, 144 S. Ct. 2040 (2024) (granting stay of EPA rules limiting interstate ozone pollution); *Sackett v. EPA*, 598 U.S. 651 (2023) (limiting waters subject to federal Clean Water Act); *West Virginia v. EPA*, 597 U.S. 697 (2022) (invalidating EPA regulation of power-plant greenhouse gas emissions under “major questions” doctrine).

2. Infrastructure Investment and Jobs Act, Pub. L. 117–58 (2021); Inflation Reduction Act, Pub. L. 117–69 (2022).

energy transition's momentum only builds, making energy and public utilities law more important than ever. "Environmental law" also increasingly requires engagement with the intersectional interests of marginalized communities and with principles and skills more commonly addressed by courses in torts, securities law, business law, the tax code, federal courts, international law, and Indigenous and civil rights. And now, the courts continue to consider fundamental challenges to the scope and reach of our major environmental laws and the second Trump administration promises a whiplash of deregulation, threatening more pollution and complete rollbacks of environmental justice efforts.³ Environmental law teachers face the task of adapting environmental law curriculum to these new realities—updating the environmental law toolkit.

So, we are innovating what we teach and how we teach it, recognizing that environmental law now encompasses disparate but interlocking doctrinal areas and practice settings. Amid the climate crisis, the imperative of redressing environmental injustices, and the deepening uncertainty about the efficacy and durability of legal pathways to address these and other environmental problems, setting students on the path to becoming capable and resilient environmental law practitioners has never been more challenging, vital, and exciting.

In a series of convenings organized by Vermont Law and Graduate School's Environmental Law Center beginning in 2019, environmental law teachers from around the country and the world have come together to explore the emerging environmental law curriculum and grapple with the gaps that persist between the teaching and practice of environmental law.⁴ In the original 2019 conference and the series' virtual roundtables, held in 2021, the trends discussed above were already coming into focus,⁵ and the evolution of environmental law since has only accelerated them. The 2024 conference, held in person in South Royalton, Vermont, provided a timely opportunity for environmental law teachers to gather and identify new pedagogical directions and best practices.

This issue of the *Vermont Law Review* captures the key learnings from the 2024 conference through selected transcripts of the conference sessions. Conferees attended a keynote address by then-Associate Administrator for Policy at the United States Environmental Protection Agency (EPA),

3. See, e.g., Michael Gerrard, *Environmental Law in Trump's Second Term*, N.Y. L.J. (Nov. 12, 2024), <https://www.law.com/newyorklawjournal/2024/11/12/environmental-law-in-trumps-second-term/>.

4. Jennifer Rushlow et al., *2019 Roundtable Series*, 46 VT. L. REV. 543 (2019).

5. See generally Jonathan Rosenbloom & Jennifer Rushlow, *Same Song, Different Chorus: Modernizing Environmental Law Curriculum*, 46 VT. L. REV. 543 (2019).

Vicki Arroyo, a series of panels, small group discussions, and a policy debate.

I. A NEW ERA FOR FEDERAL ENVIRONMENTAL LAW

Associate Administrator Arroyo's keynote address, entitled *Teaching and Practicing Environmental Law and Policy in Challenging Times*, underscored the challenges and opportunities for environmental law education from the vantage of a senior government leader with many years of experience as an environmental law professor.⁶ Associate Administrator Arroyo, who has since returned to her academic role at Georgetown University Law Center, detailed U.S. EPA's policy achievements during the first three and a half years of the Biden Administration, across the Agency's many program areas. She described both the massive investments in environmental and climate progress under the BIL and IRA, and the Agency's record of regulatory progress under the nation's "tried and true" environmental laws. As an example of how these efforts can be complementary, she highlighted EPA's successful use of its National Environmental Policy Act review authority to spur the U.S. Postal Service to increase its procurement of battery electric vehicles for its fleet, facilitated by IRA funding—a powerful example of interagency advocacy that will slash air pollution and save money for years to come.

Associate Administrator Arroyo's progress report provided cause for optimism amid the uncertainty of impending Supreme Court decisions and the challenges of environmental injustice and climate disruption, leading to her invocation of three important cross-cutting themes that should inform environmental law teaching: risk management, resilience, and purpose. She called on the conferees to consider these themes in designing curricula and in guiding our students into government and other careers where they will make a difference.

The first panel, *Environmental Law Professors Who Answered the Call of Government: What They Learned*, built on the themes from Associate Administrator Arroyo's keynote.⁷ The panelists, all academic colleagues who answered the call to join the Biden Administration in senior leadership roles in agencies across the Executive Branch, discussed lessons learned from their government service that should inform environmental law curriculum and our teaching. Along with Associate Administrator Arroyo,

6. See *infra* Vicki A. Arroyo, *Keynote Address: Teaching and Practicing Environmental Law and Policy in Challenging Times*, 49 VT. L. REV. 155 (2024).

7. This first panel was not recorded or transcribed.

the panel featured Maxine Burkett of the White House Office of Science and Technology Policy,⁸ Sarah Krakoff, of the U.S. Department of Interior,⁹ and Clifford Villa, of the EPA.¹⁰

The panelists described the growing value of interdisciplinary thinking in confronting the risks of climate change, emerging contaminants like per- and polyfluoroalkyl substances (PFAS), and the social disruptions of national disasters. The panelists agreed that mastery of the shifting landscape of administrative law had never been more critical to durable federal actions, encouraging conferees to emphasize with students, for example, the often-overlooked role of executive orders and Office of Management and Budget review in the rulemaking process. In diverse domestic and international contexts, the panelists shared perspectives on the importance of teaching the levers of effective advocacy, including engaging at the right time and with the right tactics, and addressing the potential for unintended consequences.

Reflecting on their own experiences in federal leadership, panelists underscored how environmental law teaching should be reaching topics as diverse as the strategies for international negotiations, human rights, anti-discrimination law, and appropriation and procurement statutes. Panelists also emphasized that community engagement and environmental justice have become increasingly central to the Administration's approach to environmental problems, requiring new professionals to grow their skills and competencies in these areas.

II. IMPORTANCE OF QUANTITATIVE LITERACY

In the second panel *Teaching Numerical and Statistical Literacy in Law School*, panelists discussed how to integrate scientific, economic, and statistical analyses into law school classrooms.¹¹ Achieving environmental law's aspirations for a healthier and cleaner environment requires working with scientific and economic analysis. The purposes of major environmental law are framed with terms like "fishable and swimmable" and "promote the public health and welfare," or require that actions will serve the "public

8. Maxine Burkett, Assistant Director for Climate, Ocean, and Equity, White House Office of Science and Technology Policy, and Professor of Law, University of Hawai'i William S. Richardson School of Law.

9. Sarah Krakoff, Deputy Solicitor, Parks and Wildlife, U.S. Department of Interior, and Moses Lasky Professor of Law, University of Colorado Law School.

10. Clifford Villa, Deputy Assistant Administrator, Office of Land and Emergency Management, U.S. Environmental Protection Agency, and Professor of Law, University of New Mexico School of Law.

11. See *infra* Mark James et al., *Teaching Numerical and Statistical Literacy in Law School*, 49 VT. L. REV. 173 (2024).

convenience and necessity.”¹² These terms capture the challenge of environmental law while providing a shared set of values that everyone can agree to. But turning those terms into numbers and analyses that can determine whether adequate actions, protections, and precautions are being taken requires integrating science, math, and economic disciplines into the practice and teaching of law.

The panelists, Professors Ed Richards,¹³ Steph Tai,¹⁴ and Lisa Heinzerling,¹⁵ leveraged their combined decades of teaching experience to provide examples of how they build fundamental knowledge and skills in their students. The discussion covered how to convince students of the value and usefulness of this knowledge in the practice of law, how to select course materials and case studies, and how to assess student competence. Each panelist showed how turning a critical eye onto a specific area of science and economics—from climate modeling, to peer-reviewed studies, to discount rates and cost-benefit analyses—can better prepare future environmental lawyers.

The future of environmental law requires familiarity and comfort with scientific and economic analyses and the process for creating those analyses. Implementing state water quality standards under the Clean Water Act to “protect the public health or welfare,” and “enhance the quality of the water” requires an understanding of aquatic biology, organic chemistry, and toxicology.¹⁶ Actions to mitigate and adapt to climate change can have temporally disparate costs and benefits that regulators and courts reconcile using discount rates and cost-benefit analyses. An environmental lawyer must be able to understand both the findings of a peer-reviewed study and the methodology under which the study was conducted. Law schools can start building those skills, but only if law professors teach familiarity with different disciplines and the fundamentals to interpret and question how the conclusions produced by those disciplines are used to support or oppose efforts to promote a healthier and cleaner environment.

12. Clean Water Act, 33 USC § 1251(a)(2); Clean Air Act, 42 U.S.C. § 7401(b); Natural Gas Act, 15 U.S.C. § 717f(c)(1)(A).

13. Professor Emeritus and Senior Fellow in Climate Change Law and Policy Project at Louisiana State University’s Paul M. Hebert Law School.

14. Professor of Law at the University of Wisconsin-Madison School of Law, and the Associate Dean for Education and Faculty Affairs at the Nelson Institute for Environmental Studies.

15. Justice William J. Brennan, Jr., Professor of Law at Georgetown University Law Center.

16. 33 U.S.C. § 1313(c)(2)(A).

III. IMPORTANCE OF NATIVE AMERICAN LEGAL PERSPECTIVES

In the third panel, *Teaching at the Intersection of Federal Indian Law and Environmental Law*, panelists discussed the pressing need to train the next generation of environmental lawyers with an understanding of Federal Indian Law.¹⁷ The seminal cases of Federal Indian Law provided a legal justification for the removal of Native Americans from their ancestral territories, thus clearing the way for concepts such as “wilderness,”¹⁸ the establishment of federal public lands, and the birth of the American tradition of natural resources management.¹⁹ Following periods of federally mandated forced removal²⁰ and the implementation of the Dawes Act,²¹ Tribal Nations²² were dispossessed of two-thirds of their remaining lands.²³ This equates to the loss of 80 to 85% of the overall economic value of Tribal lands.²⁴ Today, there are 574 federally recognized Tribes in the United States, with their reservations making up 56 million acres.²⁵ Between the sovereignty exercised to govern the lands and waters of their reservations and the regulatory interests in larger swaths of ancestral territory, Tribal Nations are key players in environmental law, policy regulatory frameworks, and decision-making processes in the United States.²⁶ Even so, Federal Indian Law has only recently begun to be more widely recognized as a key course in environmental law curricula.

17. See *infra* Mia Montoya Hammersley et al., *Teaching at the Intersection of Federal Indian Law and Environmental Law Courses*, 49 VT. L. REV. 202 (2024).

18. Michael-Shawn Fletcher et al., *Indigenous Knowledge and the Shackles of Wilderness*, PNAS, Sept. 27, 2021, at 3; Victoria Tauli-Corpuz (Special Rapporteur of the Human Rights Council), *Rep. on the Rights of Indigenous Peoples*, ¶ 34, U.N. Doc. A/71/229 (July 29, 2016); see Indigenous Peoples L. & Pol’y Univ. of Ariz. James E Rogers Coll. of L., *Conservation’s Dark Secret*, PRESERVATION PAUSE <http://www.preservationpause.org> (last visited Dec. 19, 2024).

19. See DORCETA TAYLOR, *THE RISE OF THE AMERICAN CONSERVATION MOVEMENT: POWER, PRIVILEGE, AND ENVIRONMENTAL PROTECTION* 25–26, 352–53 (2016).

20. W. Tanner Allread, *The Specter of Indian Removal: The Persistence of State Supremacy Arguments in Federal Indian Law*, 123 COLUM. L. REV. 1533, 1552 (2023).

21. See Judith V. Royster, *The Legacy of Allotment*, 27 ARIZ. ST. L. J. 1, 9 (1995).

22. See generally Angelique EagleWoman, *The Capitalization of “Tribal Nations” and the Decolonization of Citation, Nomenclature, and Terminology in the United States*, 49 MITCHELL HAMLINE L. REV. 623 (2023) (discussing the importance of the intentional capitalization of titles referencing Native peoples and the impacts of using colonial nomenclature).

23. DAVID H. GETCHES ET AL., *CASES AND MATERIALS ON FEDERAL INDIAN LAW* 171 (6th ed. 2011).

24. *Id.* at 172.

25. MAINON A. SCHWARTZ, CONG. RSCH. SERV., R47414, *THE 574 FEDERALLY RECOGNIZED INDIAN TRIBES IN THE UNITED STATES* 1 (2024); *What Is a Federal Indian Reservation?*, BUREAU OF INDIAN AFFAIRS (Aug. 19, 2017), <https://www.bia.gov/faqs/what-federal-indian-reservation>.

26. SCHWARTZ, *supra* note 23.

The panelists, Professors Vanessa Racehorse,²⁷ Heather Tanana,²⁸ Nadine Padilla,²⁹ and Gerald Torres,³⁰ provided a compelling picture of the overlapping nature of Federal Indian Law and environmental law. They focused on key areas of intersection such as water or environmental justice law, and key Supreme Court decisions with far-reaching implications for both disciplines. As legal scholars dedicated to Tribal sovereignty, the panelists demonstrated their passion for both subjects, practicing and teaching for years, and even decades, at this important intersection. They are leading the way for others to finally follow suit.

IV. TEACHING INTEGRITY OF CLIMATE SOLUTIONS

Even when we can agree on the need for climate action, we often find ourselves at loggerheads over what the solution or solutions should be. If all the good solutions to climate change disappeared in the inaction of the 1980s and 1990s, that leaves us with a set of less-than-optimal solutions that all have significant weaknesses.³¹ We have been debating solutions to climate change since before the Kyoto Agreement,³² and we will continue to debate how to make the journey to net-zero or zero emissions.³³

In a group sharing session, attendees shared their experiences teaching climate change in a variety of ways, settings, and methods. One strand of agreement is that every area of the law has a climate angle whether it is the regulation of securities disclosures, flood insurance policies, social science and policy development, or carbon sequestration.³⁴ The topics for inclusion in law school curricula are not limited, nor are the opportunities for developing novel teaching methods. Attendees shared how they engaged students in clinical work with clients impacted by climate change, used policy simulators to discuss how different actions might create synergistic

27. Visiting Associate Professor of Law, University of Colorado Law School.

28. Visiting Professor, University of California, Irvine School of Law.

29. Assistant Professor, University of New Mexico School of Law.

30. Professor of Environmental Justice, Yale School of the Environment and Yale Law School.

31. Jeffrey Pierre & Scott Neuman, *How Decades of Disinformation About Fossil Fuels Halted U.S. Climate Policy*, NPR (Oct. 27, 2021), <https://www.npr.org/2021/10/27/1047583610/once-again-the-u-s-has-failed-to-take-sweeping-climate-action-heres-why>.

32. Lindsay Maizland, *Global Climate Agreements: Successes and Failures*, COUNCIL ON FOREIGN RELATIONS (Dec. 5, 2023), <https://www.cfr.org/backgrounder/paris-global-climate-change-agreements>.

33. *Id.*

34. Indeed, United States Special Presidential Envoy for Climate John Kerry famously observed to the American Bar Association in a 2021 speech: "You are all climate lawyers now." Karen Sloan, *'You Are All Climate Lawyers Now,' John Kerry Tells ABA*, REUTERS (Aug. 5, 2021), <https://reuters.com/legal/litigation/you-are-all-climate-lawyers-now-john-kerry-tells-aba-2021-08-05/>.

benefits,³⁵ simulated global climate change negotiations, and created climate-specific modules for traditional law classes. In every situation, the value of being open to discussion and debate was emphasized as a key learning tool.

The use of debate as a teaching tool was highlighted in a debate over the use of geoengineering to bring CO₂ emissions back to 350 ppm. Professors Pat Parenteau³⁶ and Wil Burns³⁷ debated whether the United States should oppose geoengineering of the Earth's climate systems to mitigate the impacts of climate change.³⁸ The debate highlighted the value of teaching science, social sciences, and advocacy to lawyers. The journey to net-zero has no singular solution, but many pathways that should be explored, dissected, and discussed.

V. TEACHING THE FULL ENVIRONMENTAL LAW TOOLKIT

Throughout the conference, the recurring theme was the evolution of the environmental lawyer's toolkit. In the 50 years since many of the seminal environmental statutes were passed, environmental legal curricula are turning towards teaching more diverse doctrines and skillsets to train the next generation of advocates, from quantitative literacy to intersectional legal frameworks—such as Federal Indian Law. In the face of the acceleration of climate change and environmental degradation, the rapid shifting of the environmental legal landscape, and the intersectional nature of environmental legal issues, the speakers, panelists, and conferees emphasized that environmental law educators must rise to the challenge of implementing a dynamic, holistic, resilient, and forward-thinking approach to environmental legal education.

35. *The En-Roads Climate Solutions Simulator*, CLIMATE INTERACTIVE, <https://www.climateinteractive.org/en-roads/> (last visited Dec. 19, 2024).

36. Professor Emeritus, Senior Fellow for Climate Policy, Vermont Law and Graduate School.

37. Co-director of the Institute for Carbon Removal Law and Policy at American University; Visiting Professor of Environmental Policy and Culture, Northwestern University.

38. See *infra* Jennifer Rushlow et al., *Hacking the Planet: Is Geo-Engineering a Salvation or a Curse?*, 49 VT. L. REV. 230 (2024).