

Strategies and  
Techniques for Teaching  
Environmental Law

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# Strategies and Techniques for Teaching Environmental Law

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Aspen Publishing  
Attn: Order Department  
PO Box 990  
Frederick, MD 21705

Printed in the United States of America.

1 2 3 4 5 6 7 8 9 0

ISBN 978-1-4548-4787-8

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*To my parents, husband, and children—model teachers  
and learners, each in their own way.*





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## I. The Big Picture

Environmental Law is a fantastic course to teach. The possibilities are endless for what you might do with it. That's probably one reason you're so excited to teach it! This book suggests some possibilities for teaching what is typically referred to as "the Environmental Law survey course." Whether you actually teach it as a survey course—a course that briefly presents the primary themes of a larger field—is up to you, but many Environmental Law professors use this term to describe the first course in Environmental Law—however they teach it. They call it a survey because, typically, it provides an introduction to, or an overview of, the primary environmental law issues. It usually introduces the major federal environmental statutes. The assumption is that this course provides introductions to those statutes, or the big picture, and that later courses, if any, will provide more in-depth instruction in the specific environmental law disciplines, such as water, air, or waste.

My big goal in teaching the Environmental Law survey course, though, is to teach students how to navigate the complex political and legal landscape in which environmental law operates. This means my students will not actually get an introduction to every major federal environment-related statute, but I hope they'll come out understanding what counts as an environmental legal issue and how our political/legal system confronts those issues. There are several options for choosing how to do this. I hope this book will walk you through them and make your choices easier.

My primary goal for the survey course, is that students will come to understand the "environmental law system"—perhaps this foreshadows how I'll ultimately suggest that you teach the course. But there are many choices, each of which has some merit, and the path you choose is up to you. The reference to the "environmental law system" is my way of suggesting that the course may best be taught not by marching through the individual environmental statutes, or even through the various types of pollution and the laws that attempt to control them. Rather, I prefer that the course be about the development and application of the legal system we apply to environmental concerns. My hope is to teach students how to find, interpret, and apply, the many

sources of environmental law—a creature of the administrative and regulatory state, often interpreted by common law judges. I hope I can also give students some historical and policy-based context in which to understand “the environmental law system.” For example, most environmental law-related courses necessarily incorporate politics, economics, and sustainability, and more.

It’s never been my goal that my Environmental Law students remember exactly what the statutes say. They’ll never learn, for example, the whole Clean Air Act or the whole Clean Water Act, or the whole of any major environmental law. Instead, I hope they’ll understand the basic structure of the legal system in which these laws operate and be able to apply what they’ve learned to the many other areas of environmental law that function similarly. The added benefit is that many other administrative and regulatory areas of law operate similarly, so what students learn in the study of an environmental law system should be readily transferable to those other areas of law.

## **II. A Course Road Map: Defining the Topics, Choosing Course Objectives and Implementing Your Choice**

### **A. WHAT IS ENVIRONMENTAL LAW?**

When Environmental Law was first offered as a law school course, it was fairly undefined—as was early environmental law practice. Early environmental lawyers generally picked up environmental law as an offshoot of a real estate practice and focused on the basic common law torts—nuisance, negligence, and trespass. At the time, professors in this new subject struggled with what should be included in the course. In 1978, Professor Arnold Reitze said that “an area of the law that barely existed a decade ago is gradually being shaped into a subject in which a rough consensus as to its ‘metes and bounds’ has evolved.” By 1983, Professor Joel Mintz wrote that the discipline had a more or less settled core surrounding the federal statutes—the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Toxic Substances Control Act, and the National Environmental Policy Act. He wrote that the core of environmental law includes these statutes and the federal regulations and judicial opinions that



implement and interpret them. He acknowledged, of course, that other areas of law work closely in and around these areas—land use law, energy law, natural resources law, public lands law, occupational health and safety law—not to mention administrative law, civil procedure, torts, contracts, criminal law, constitutional law, and more! And beyond all of these areas of law, there is science, front and center, and even a lot of engineering.

Should the course be about air pollution, water pollution, and waste disposal? Should it address wildlife, public lands, mining, oil and gas, oceans? Should it include coverage of access to water (water rights)? Or just water pollution? Should its scope extend beyond our national borders to address environmental problems internationally? Pollution doesn't respect international boundaries, of course. Should the course extend to outer space? (Not kidding here—there's a lot of space debris out there!)

The course has evolved quite a bit over the years and Environmental Law professors have defined themselves and their specialties more specifically. Whereas some survey courses in Environmental Law attempted to cover a little of everything, most professors and law schools have spun off into separate courses the subjects of wildlife, oil and gas, public lands, international environmental law, and more. For law schools with sufficient resources, most offer separate courses on, at minimum, Natural Resources Law and International Environmental Law. These separations have helped limit and define the basic Environmental Law course. Some schools are able to break down the subject into even more separate topics by offering advanced courses on air, water, hazardous waste and toxic substances, oil and gas, environmental justice, environmental ethics, climate change, biodiversity, sustainability, and much, much, more.

This book focuses on Environmental Law as an introductory or survey course. It presumes that the Environmental Law course will be either a first course in environmental law topics, or the only course on environmental law topics a student may encounter during law school. It presumes the course will be foundational—that is, attempting to lay the groundwork of the discipline for students who may continue on to more specific environmental law topics. It assumes that the course will be fundamental—attempting to provide sufficient knowledge of the discipline and the system of law such that a student could, in the

future, identify potential environmental legal problems and locate and analyze the applicable law, even without benefit of advanced courses.

## B. COURSE OBJECTIVES AND THEIR IMPLICATIONS

Environmental law has been called carcinogenic because it is constantly growing, dividing, multiplying, and would take over the entire law school curriculum if ever allowed to do so. Really, it could! Think about it. You could use the substance of environmental law to teach Torts (think trespass, nuisance, hazardous materials, personal and environmental injury, remedies), Administrative Law (environmental law could be the perfect substantive base for an Administrative Law course), Legislation (yup), Regulation (clearly), Judicial Interpretation (environmental law cases could illustrate all of the textual and substantive canons and more), Civil Procedure (it's all there in the cases—from local, to state, to federal), Criminal Law (environmental crimes). Everything. We environmental law fans have to admit, though, that our colleagues will never allow us to do this—and OK, it might even be a bit irresponsible. We also must admit that because our colleagues won't grant us the entire law school curriculum in which to teach our beloved subject, we have to make some serious choices.

There are several viable and well-respected approaches to teaching Environmental Law. What you want your students to take away, of course, will dictate not only your objectives, but also the approach or “angle” to the course that you choose. For example, some Environmental Law courses focus on policy. Some focus on litigation, usually from the perspective of protecting the environment. Some are practice-oriented, while others are more theoretical. So, start by thinking about what you want students to take away from your course. Do you want them to be able to tackle an environmental regulatory problem? Or do you want them to be thinking deeply about environmental policy? Do you want to focus on decision-making? On economics? If so, do you want students to be thinking about who makes policy and where it comes from, or the implications of the policies that are made?

Next, think about how you want to achieve your goal. To me, this is a huge question—almost a dramatic fork in the road. Do

you want your students reading the decisions of appellate judges to learn what the major federal environmental statutes say and mean? Or do you want them starting with the statutes themselves? What about the applicable regulations? Do you want the students to think about how and why the EPA or another agency created those regulations and how the agency uses them in implementing statutes? Do you want to focus on the courts or on the laws created by Congress and implemented by the EPA—instead using cases to illustrate the place of judicial interpretation in the environmental law system?

I suppose that's the key question. Do you want to use the opinions of appellate judges to teach what the statutes say and do, or do you want to use those to show the role of the courts in interpreting statutes? I've usually chosen the latter. I prefer that students identify a problem to which the statute applies, read the statute and any applicable regulations, then see how lawyers, agencies, and perhaps the courts, resolve it. Other professors prefer the former—having their students learn about what the statutes say by reading what appellate judges say about them.

## 1. Common threads in an environmental law course

### *a. Policy-making and prioritization*

All law is about policy. It's about deciding whether and how to keep people safe, or about protecting an economic or other interest of a person, group, country, state, tribe, or corporation. It's about encouraging or discouraging behaviors. It's about trade-offs. Environmental law is no different in that regard. Students likely will be at least vaguely aware of this, but may have difficulty articulating this principle.

You may well find your class sharply divided politically—just like the country. Whatever your personal political persuasion, this is a great opportunity for respectfully exploring policy setting and priorities. You can ask students to express their opinions, to defend their positions, or even to argue against their own previously stated points. They can be asked to research their initial positions to support them factually—and to challenge and critically evaluate their sources of factual information. Alternatively, you could ask them to research the position opposed to their own and to present and defend it.

Here's a quick example of how to do this. The National Park Service was experiencing a problem with plastic water bottles in many of the U.S. national parks. Discarded plastic water bottles were overflowing the parks' recycling and trash containers, polluting streams and forests, and causing harm to the animals and ecosystems within the parks. The parks were spending more and more of their increasingly limited resources dealing with discarded plastic water bottles.

Some of the parks responded by ending sales of plastic water bottles by parks' concessionaires. They installed numerous, conveniently located water bottle-filling stations so visitors could refill, free of charge, their own refillable water bottles, thus avoiding the plastic disposable bottles. The parks did not prevent people from bringing their own disposable bottled water into the parks, nor did they cease selling other beverages in disposable plastic bottles. They just stopped selling bottled water at their concession locations.

Predictably, the bottled water industry was up in arms about this. The International Bottled Water Association—the industry's lobbying organization that represents at least 200 brands of water packaged in plastic disposable containers—worked to convince Congress to pass legislation that would prohibit the parks from ceasing bottled water sales.

Does this set of circumstances present an environmental law issue? If so, what is it? Does it present an economic issue? A political one? Can we distinguish among these? What behavior is the parks' action attempting to influence? Is the National Park Service's action an acceptable method of influencing this behavior? Who should make policy regarding the behaviors of park guests? Congress? The park administration? The bottled water industry? Who influences the ultimate policy? How does and how should the law respond, if it should respond at all?

There are countless factual examples like this that you and your students could use to dive into policy issues. Look at the newspapers (does anyone read those anymore?), or magazines like *The Economist*, *The Atlantic*, or *National Review*. Lots of news media sources will present examples of up-to-the-minute policy issues involving arguably environmental issues.

To take this a little further, it's fun to ask the students to read the news and identify a couple of these problems, then ask the

class to attempt to prioritize them. Which of the environmental issues they identified and analyzed are most important, most dangerous, easiest to fix, hardest to fix? If there is a limited pot of money to work on these problems—and there is always a limited pot of money—where should one start? Against what set of criteria should we be evaluating environmental problems in order to prioritize them? How and who should decide? I'll address prioritization of environmental issues later, in the section on my first week of class, below at page 67.

### *b. Economics*

Some Environmental Law professors focus their courses largely around the economics involved in environmental decision-making and environmental regulation. This makes good sense. Regulation is not free. In fact, the federal government requires that regulations be evaluated on the basis of cost before the regulations can go into effect.

Students should also be exposed to the concept of cost-benefit analysis and the idea that pollution has both economic costs (internalized and externalized), and social costs, which are difficult to quantify. For example, it's hard to measure the external costs—both social and economic—imposed by wastewater dischargers polluting a river. The pollution could affect drinking water, commercial fishing, recreation and tourism, and more. Operators of the negatively affected businesses (fishing, recreation, tourism, etc.) will suffer the costs inflicted on them by the polluting industries. Pollution also has negative health effects that aren't readily measured and quantified or easily included as a cost of polluting. For example, if a child has asthma because of exposure to airborne pollutants, the child's parents pay for that in higher costs for health care and other resulting needs. Or, perhaps, we all pay for it through increased health insurance premiums imposed by our health insurance carriers because the health insurers' costs are increased by the negative health effects of the child's exposure to pollution.

All regulations have costs, of course. Regulation can sometimes cost the regulated community enormous sums. It can also pay great dividends in terms of environmental protection (or safety, or health, or whatever it is designed to achieve). A company

may have to install protective equipment or change their practices in ways that may detract from their bottom line. Sometimes, of course, the costs are short run costs that will result in long run gains. But oftentimes, the regulated community does not see it that way. They see only short term losses and blame the regulators and/or the legislators who passed the statutes that demanded regulation. Sometimes, certainly, they're just plain costs.

A critical point for us to make in our classes is that the regulated community doesn't actually pay all of the costs associated with their productive, yet polluting, enterprises. For students who have studied economics, they'll already understand the concept of externalities, which should always be a factor in assessing the actual costs of environmental harms. For others, the concept of the tragedy of the commons can help explain it.

In the popular classroom exercise based on Garrett Hardin's classic 1968 *SCIENCE* article, because the cattle grazing area is commons land mock student cattle herders don't have to bear the cost of feeding their cattle. That cost is externalized, meaning it is borne by others—the public—rather than the herders themselves. Because of this externalized cost, coupled with basic human greed, the student herders increase the size of their herds and overgraze the commons land, causing its deterioration. Likewise, even if a manufacturer complies with restrictions placed on it through a wastewater discharge permit, it is not paying the full cost of its privilege of discharging wastewater to public waterways. Which costs is the discharger avoiding? Even in compliance with a permit the discharger is polluting that water. Taxpayers ultimately must pay to treat the discharged wastewater or suffer the harms of damaged water. There is no clear dollar cost to the manufacturer for the taxpayer-paid treatment, and if there was an identified and assessed cost, the manufacturer certainly would pass it on to consumers, raising the price of whatever was being made (or possibly resulting in less of it being sold). Unaccounted for costs will vary by circumstance. So, bottom-line—not all costs are accounted for and assigned to the polluter.

There is obviously much more you could do with this. As I said, some professors build their entire Environmental Law courses around the themes of economics. At the most basic level, students should understand that although regulation is not free, neither is pollution.

If you start your course (as I do) with an early discussion/role-playing demonstration of the classic tragedy of the commons “three herds of cattle” scenario, described above, you can get students to think back to that experience and apply it to many other areas of environmental law. At page 67, below, I describe how I do this in my own course.

### *c. Climate*

Of course, probably the most important potential theme these days is our changing climate. You could certainly build your Environmental Law course around the air, water, waste issues associated with a changing climate, and/or the resulting human impact issues. Michael Robinson-Dorn’s 2007 article in the *Washington Law Review* suggests how and why you might choose to do this, and there are surely additional resources to support this approach today. Robinson-Dorn notes, critically, that climate change is both the present and the future of environmental law. He argues that by teaching Environmental Law with a focus on climate change, we can help train the next generation of problem solvers. Many would argue that climate change is everything – it’s what matters most at this time. We need to train *this* generation of problem solvers.

Robinson-Dorn refers, early in his article, to an email conversation on the environmental law professors listserve in which Professor John Bonine said “Can we really afford to be bystanders? We are in a full-blown emergency now. I expect to have shuffled off this planet before things get really bad, but not my children, and not their children.” Bonine added, “[regarding] the role of law professors, what are we doing to prepare our future lawyers?” Robinson-Dorn’s article responds to Bonine’s questions and sets forth the “whats, whys, and hows” of teaching Environmental Law in a climate change context. Robinson-Dorn, a clinical professor, focusses not so much on the substance of what we should teach regarding climate change, but the skills future lawyers will need to achieve climate change-related goals. He writes of passion, creativity, knowledge and reasoning, and interdisciplinary knowledge and breadth of mind.

Robinson-Dorn suggests using cross-disciplinary seminars and deep dives into problems. He favors experiential learning, such as role-playing exercises, and the use of case studies and simulations.

#### *d. Environmental Justice*

You could construct your Environmental Law course around the human impacts of environmental harms, particularly the impacts of environmental harms on low-income and minority communities. In 1993, Professor Richard Lazarus wrote about environmental justice and the teaching of Environmental Law in his article in the *West Virginia Law Review*. More and more, law schools are offering courses or seminars dedicated to environmental justice. These draw students who have taken Environmental Law and as well students who are interested in issues of diversity, equity, racism, even if they have not taken a basic Environmental Law course. But you don't need to limit yourself to a specialized course or seminar. Lazarus, and Professor and Activist Luke Cole, suggested using environmental justice as a theme for your course and not, as they say, just having an "environmental justice day".

From the outset, Lazarus is very clear that environmental justice is not just about the siting of polluting facilities, although that's certainly part of the problem. He argues that inequitable siting is a symptom of a system of environmental injustice. A critical piece of this is environmental enforcement. As Professor Lazarus stated, by the time a facility is sited, there has already been considerable environmental injustice. There is also likely to be injustice to follow, through inequitable environmental enforcement.

Another potential point for discussion of environmental justice is in environmental priority setting. I recommend a robust treatment of how we identify and prioritize environmental issues. Equitable distribution of environmental risk should play an important role in that discussion.

You could identify and address the environmental inequities inherent in our major environmental statutes. They don't, as Lazarus says, take pollution to zero and they assume equitable enforcement. Both of these statutory truths can effect low income and minority communities disproportionately. You can explore this idea with your students throughout the course.

I have incorporated some discussion of environmental justice into my Environmental Law course using a case study of a light rail extension that might run through a low-income community. This gives us the opportunity to discuss systemic racism in the legal system and in decision-making processes. We can talk about the potential for environmental justice analysis under the



National Environmental Policy Act and the extent to which that does or does not adequately approach the problems of disproportionate adverse environmental harm on low-income and minority communities.

Lots of organizations have created environmental justice-focused curricula and materials. The Sierra Club has a database of materials. At the University of New Mexico School of Law, Professor Cliff Villa has created a website to promote the teaching of environmental justice. There are now several books available for use in Environmental Justice courses, some of which could probably be used in an Environmental Law survey course, either as the main text, or as a supplemental text.

#### *e. Politics*

From climate change deniers to tree huggers, environmental law is fraught with divisive politics. Politics is, therefore, an essential component of an Environmental Law course. You can't escape it, so you might as well face it head on. One way to do this is to identify the environment-related conflict in a particular project (such as a proposed wind turbine farm, or natural gas pipeline project). Identify the sources of the conflict, the laws that govern the situation, and the barriers that make it difficult to resolve the problem to everyone's satisfaction. Who are the stakeholders? Who holds the money? The power? The information? The political access? How might it play out? How did it play out? Why?

The same problem discussed at page 6, above, pertaining to a potential ban on the sale of plastic water bottles in some of the national parks concessions could be addressed with a view to politics. Below, in the section on incorporating current events into the classroom at page 69, I'll suggest some other ways you might incorporate political analysis into the course.

#### *f. Federal/state interaction—cooperative federalism*

One major factor on which professors sometimes focus in an Environmental Law course is the concept of federal/state interaction, or cooperative federalism, because it is central to environmental law theory and practice. Many Environmental Law professors focus on the federal statutes. Those laws are the big kahunas. They were the genesis of modern environmental law

and they provide a consistent framework that students will face regardless where they ultimately practice law. But, if you talk with environmental law practitioners—and I make a point to do that regularly—most of their practice is much more state and local-focused. To be sure, they're all very well versed in the federal statutes. But in their day to day practice they tend to focus on state-based issues and the state-level versions of the federal laws, to the extent that such laws exist in their state. Below, I'll suggest an approach to the Environmental Law course that focuses on the federal statutes. You could easily adapt almost any of the federal statutes to show students how an issue would play out in the state arena—and you'd be doing the students a great service by doing so at least once in the course.

## 2. Some sample approaches

### *a. The march through the statutes*

One obvious way to approach Environmental Law is simply to march through the federal environmental law statutes or the various types of pollution. Water pollution via the Clean Water Act, air pollution through the Clean Air Act, waste disposal through the Resource Conservation and Recovery Act, cleanup of seriously contaminated land through the Comprehensive Environmental Response, Compensation, and Liability Act. You could add other acts and other environmental problems through their associated acts. Pesticides through the Federal Insecticide, Fungicide, and Rodenticide Act. Toxics via the Toxic Substances Control Act. You get the picture.

It's organized, for sure. It may be a bit unexciting, but you can spice it up by incorporating some of the concepts and teaching approaches addressed and illustrated below. You'll still have to decide what themes to use and what you want your students to take away from the process. You'll still have to decide whether and how to incorporate the opinions of appellate judges and some contextualizing facts.

### *b. Mintz' five salient characteristics*

Professor Joel Mintz wrote a great article in the *Journal of Legal Education*, in 1983, called *Teaching Environmental Law*.

Yes, that was a while ago, but the basic principles he set forth still hold true today. He described what he called “the five salient characteristics” of environmental law. I believe they’re still salient today and they provide an excellent framework for thinking about how to approach the course.

Mintz notes, first, that the contemporary body of law is made up of long, complicated statutes that are implemented by agencies through detailed rule makings and interpreted by courts. This remains true and it is both the beauty and the beast of environmental law. The complexity makes it difficult to teach, but its implementation by administrative agencies makes it similar to many other areas of administrative law and therefore attractively transferable in terms of what students learn about administrative practice.

Second, he notes that the development of substantive environmental law has been fast. That was certainly true at the time he wrote it. It is less true now, although one might look at the development of the shale oil and gas industry and see the speedy development of regulations in that area. When environmental law happens, it can happen fast.

Third, Mintz notes that “because of their complexity and recent vintage, many environmental statutes are open-textured.” By this, he means that the statutes leave a great deal of room for agency interpretation. The statutes set out the policy and leave the details to the agencies. We could talk all day about why this is true. Lack of expertise in Congress? Congress passing the buck and the difficult and politically fraught choices to the agency? Whether for good or ill, however, it’s true that the environmental statutes have spawned copious regulation.

Fourth, environmental statutes have yielded lots of lawsuits. Mintz notes correctly that this is not surprising, due to the amount of space Congress left open to agency and judicial interpretation. The problem is that in addition to being numerous, these lawsuits are “complicated and protracted.” Fifth and finally, economics plays an enormous role in environmental decision-making at the policy-level and it is at the heart of many of these lawsuits.

With his five salient characteristics in mind, Mintz notes that “one of the great challenges of legal education in the field of environmental law is to convey the essence of this complex, fast-changing, open-textured, controversial, and scientifically

sophisticated body of law and policy, in an intellectual framework which makes clear both its close relationship to cognate bodies of law and its ties to questions of economic policy.” Too true.

### *c. Salzman’s 5 Ps*

Professor Jim Salzman, in his 2013 DUKE ENVIRONMENTAL LAW AND POLICY FORUM article *Teaching Policy Instrument Choice in Environmental Law: The Five-P’s*, acknowledges that teaching Environmental Law and Policy is hard—among other reasons, he says, because tough choices lie at the heart of it. For starters, there is a problem of priority setting. He asks, “Should we reduce emissions of greenhouse gases?” “Should we protect a local population of endangered plants?” “Should we limit the catch in a fishery that seems in danger of collapsing?” He notes the difficulties inherent in setting environmental priorities and in determining things like emissions levels or catch limits, and writes that finding answers requires consideration of scientific, economic, legal, and political issues—and the associated trade-offs that occur when attempting to balance them—a complicated set of considerations.

Even if we could agree on a set of priorities, settling on a path towards achieving those priorities is another complicated task. The path towards achieving identified priorities might involve markets, regulation, or education. Salzman has written about how best to attack these problems in an Environmental Law classroom. He argues that there are really only five policy instruments at play here, and he uses them in the teaching approach he calls “The Five Ps.” The Ps are Prescriptive Regulation, Property Rights, Penalties, Payments, and Persuasion. (You’ve got to love the alliteration!) Salzman writes that understanding environmental law means understanding the uses, advantages and disadvantages of these Ps.

In his short article, Salzman provides an example of the Five P’s approach using the ubiquitous tragedy of the commons problem. I highly recommend it. As I’ve mentioned above, I use a basic tragedy of the commons classroom demonstration near the beginning of every Environmental Law course I teach.

### *d. Evolution of the discipline*

Some courses begin with environmental law before the advent of the federal environmental law statutes. They begin by describing

the common law roots of the discipline in trespass and nuisance. This helps students see the advantages and pitfalls of relying on common law torts to handle environmental problems. It allows them to see how, and more importantly why, a regulatory system emerged. It also helps them to understand the roles of courts (less well-suited to create controls like emissions standards due to lack of expertise, no time to serve as inspector and enforcer of standards) as opposed to the roles of agencies (developed expertise, limited authority, ability to enforce and oversee).

Case books that approach the course this way often start with *Madison v. Ducktown Sulphur* and/or *Georgia v. Tennessee Copper Co.* These cases concern copper smelters at the Georgia/Tennessee border before the age of regulation. The aggrieved surrounding landowners whose persons and property were damaged by the various forms of toxicity emitted by the copper smelters had no opportunity for legal redress but to sue in tort. There were no federal or state environmental statutes at the time. In the state-court version of the case (*Madison v. Ducktown Sulphur*), the elected state-court judges declined to find a nuisance for fear it would harm (or perhaps anger) the enterprises important to the local economy (and perhaps the judges' careers?) In the federal court case (*Georgia v. Tennessee*), the appointed federal judge found a nuisance and attempted to control the pollution using partial injunctions that feel like precursors to environmental regulation.

These cases provide an opportunity to discuss the differences between state and federal courts. Also, in assigning partial injunctions, the federal judge appeared to be issuing proto-regulations to require the smelters to control emissions. This prompts discussion of why the courts may or may not be an appropriate institution to impose emission controls or other seemingly regulatory actions. It leads nicely to the rest of the course on the development of statutes and regulations. For further discussion of these cases, see page 33.

#### *e. A cross-disciplinary approach*

As we prepare students for law practice, whether in environmental law or another discipline, you might see a lot of value in teaching them to ask questions, to be unafraid to learn, and to seek information from those who have it. Certainly in environmental

law, and likely in most other legal disciplines, it is hugely important to communicate effectively with people educated in non-legal disciplines. For environmental lawyers, although it's not necessary to be a scientist, or even to have a background in science, it's critical to be unafraid to speak to scientists and engineers. We need to understand what they have to offer. To do that, we—meaning professors, students, lawyers—must be aware of what we don't know. We have to own that. Then we have to find the people who can help us learn what we need to learn. To yield the results we need, we have to be able to talk with them.

To facilitate the teaching of these lessons, one method is to create an interdisciplinary classroom. Many universities have graduate programs in non-law disciplines related to the environment, such as—masters programs in environmental studies, environmental science, environmental engineering, environmental planning, environmental finance, etc. If you can, get those graduate students into the class with law students and create problems with substantive aspects that allow them to display their individual expertise. There is a lot they can learn from one another.

Students can learn to listen to the language of other disciplines and to speak to be understood by practitioners of those disciplines. They can learn the value of identifying what they don't know and of finding the people who do know. They can gain respect for the knowledge and abilities of peers in other areas of study.

Below, I describe some of my own cross-disciplinary classroom experiences.

I like to include in my Environmental Law classroom some graduate students from environment-related graduate programs across our university. We are fortunate to have graduate-level programs in environmental science, environmental engineering, and environmental policy—all with the option of a dual degree in law. Our Environmental Law course is an option in the core course requirements for graduate students in all of these environment-focused masters programs, and many of the masters students choose it. So, there we are, all together in one classroom—the future lawyers, scientists, engineers, and policy-makers.

The challenge (and the ultimate benefit) is getting them to talk with each other and to understand the value, skills, and knowledge base each brings to the proverbial table. There are many ways to illustrate this, but I like to focus on real-world problems in which

lawyers face science-related issues and need the assistance of people trained in chemistry, biology, physics, or engineering. Some of these non-law graduate students are intimidated by the law students at the start of the semester when we're using cases to talk about the common law roots of environmental law. But when it comes time to dive into a question of science, it's their turn to shine. I especially enjoy this moment. The law students see the depth and value of the science students' knowledge and expertise and they learn how to harness it.

To take advantage of the presence of environmental science, environmental policy, and environmental engineering students in my Environmental Law classroom, I try to create problems or examples that give them an opportunity to show what they know. In doing so, it helps show the law students the value of experts in other disciplines, and the limitations of lawyers' expertise.

Here's a scenario I often present to the students. It's based on something I remember from my early years of law practice. I was a relatively new lawyer sent to interview an engineer at a major airline about the company's oil-water separator. The client was discharging wastewater to the publicly-owned treatment work (POTW) at the nearby airport. The POTW, under the Clean Water Act, has a permit to discharge treated water into San Francisco Bay. The water collected by the POTW comes from many sources in and around the airport. Each of the sources is an "indirect discharger" and has to clean up its own wastewater to prescribed standards before it can send that wastewater to the POTW for further treatment and discharge into the bay. The pollutant levels to which the indirect dischargers must clean their dirty water are called their pretreatment standards.

The POTW's discharge limitations were soon to become more stringent. These are limitations are set forth in the POTW's National Pollution Discharge Elimination System (NPDES) Permit under which it is allowed to discharge collected and treated wastewater into waters of the United States. So, the POTW needed, in turn, to impose more stringent pretreatment standards on the wastewater it received from the airline—our client, an indirect discharger. The airline would need to do a better job of cleaning its wastewater before sending it to the POTW for treatment and discharge.

If that's not complicated enough, it was actually a little more complicated. At nearly the same time, the local air quality

management district—the local regulatory authority—changed the rules applicable to volatile organic compound (VOC) emissions, and the airline found itself in violation of those new rules with respect to its oil-water separator.

So, the airline already needed to replace the tanks in its oil-water separator—the equipment the airline uses to clean its wastewater to a standard acceptable for the POTW—in order to meet the POTW's new pretreatment standards. The airline had already ordered new oil-water separator equipment, including new tanks, to meet the POTW's new pretreatment standards. The new tanks, which were designed and constructed to meet the new wastewater pretreatment standards, would also have caps that would enable the airline to meet the newly imposed VOC emission standards—but the new tanks could not be built and installed in time to comply with the new VOC standards by the time those standards were to become effective.

Should the airline have to spend a lot of money to install caps on the old oil-water separator tanks to comply with the new VOC rules, only to discard them a few months later when the new tanks—both VOC and pretreatment standard compliant—are installed? That seems wasteful, but it's the only way for the airline to operate in compliance with both sets of regulations. Or, should the airline be allowed to operate in technical violation of the new VOC rules for a limited period of time?

I use this scenario to introduce my students to several concepts. First and foremost, students learn the value and skills of experts in disciplines different from their own. To begin, we talk about the engineering problem. This allows the class's engineers and scientists to explain the functioning of an oil-water separator to the law students. They can discuss how it works and the kinds of pollutants it removes from the wastewater. This helps the whole class understand that the functioning of the oil-water separator makes it possible for the airline's wastewater to achieve the POTW's pretreatment standards. By being able to communicate this, the engineers and scientists are instantly valuable to the young lawyers. Additionally, it's good practice for the engineers and scientists to be in a position where they have to communicate and explain something to lawyers.

The law students see that lawyers don't know everything—and also that they really aren't expected to know everything. The law



students can see the value of knowing when to ask questions and how to think about who might know the answers. They learn to ask those questions and to communicate with the engineers and scientists. They learn not to be afraid of the science involved in environmental law, but to seek out experts to get the help they need to understand it and to use it. It's a great lesson in cross-disciplinary communication.

This fact scenario also provides an opportunity to talk about variances—when and why should they be sought and granted? For how long should a permittee be allowed to operate in violation? What circumstances warrant a variance? Should they be granted based on time? Concentration or amount of pollution? Politics? Economics? Convenience?

Of course, not all law schools have access to graduate students in engineering, science, or policy. In that case, upper level undergraduate chemistry majors or environmental engineering professionals might make worthy alternatives for individual projects.

## C. TEACHING TECHNIQUES

In this section, I describe traditional and non-traditional methods for teaching Environmental Law courses. I describe the Llandellian case method used by most law professors in most law school courses, but I recommend at least considering some other approaches for teaching environmental law. In particular, I offer methods using pre-written fact patterns (confusingly, these are also called “cases”) and problem-based approaches.

### 1. The case method

As I've said, most law professors love the case method, the origin of which lies in the 1890s with former Harvard Law School Dean Christopher Columbus Langdell. Briefly, the case method refers to studying the published opinions of appellate judges and using them to discern the evolution, derivation, and meaning of the law itself, as well as for internalizing methods for creating, challenging, interpreting, and applying it. The case method educates (indoctrinates?) students through the careful analysis of appellate opinions in a thought process that is central to the legal profession. This means, as I've discussed above, that professors

use the decisions of appellate judges to show students not only what the law is, but also how it has developed. The appellate opinions show students how judges interpret statutory law and, because of the concept of precedent, the opinions can inform us about how judges might interpret similar statutes or similar sets of facts. Some Environmental Law professors use the case method to teach Environmental Law. You probably studied Environmental Law this way, as I did.

This method is important, and it makes good sense for certain subjects, like Torts, in the first year—I mostly still use it when I teach Property. You can teach Environmental Law using the case method, if you'd like. Lots of people do. But I suggest at least considering some other possibilities.

## 2. The case against the case method

Unlike most of the law courses your students will have experienced, Environmental Law does not, nor do I believe it should, focus on the common law. Sure, some Environmental Law students will have taken Administrative Law or a course on Legislation and the Regulatory State, but most will not have had those courses. As much as your colleagues may tell you that their courses are not primarily focused on common law, many of those courses are still taught as if they *were* common law courses. For example, because a criminal law course may rely on the criminal statutes to define crimes and a contracts course may address the UCC, the profs in those might understandably argue that they're not common law courses. They'd be right, but in all likelihood, the professors use cases—the decisions of appellate judges—to further define and interpret the statutes. I would argue, therefore, that they are really taught as if they are common law courses.

Some students have had real code-based courses, like Tax or Bankruptcy, but even those seem somehow less chaotic than Environmental Law. In Tax, there's THE Internal Revenue Code. In Bankruptcy, there are a few chapters of a bankruptcy code. Sure, they're complicated and they've led to reams of regulations, guidance, and interpretation, but Environmental Law has so many, very different statutes. Shall I list just a few of them? The Clean Air Act is a doozy, and it alone probably rivals the tax code for complexity. The Clean Water Act—it's better than the air act,

but still, multi-faceted. Shall I go on? RCRA, CERCLA, EPCRA, TSCA. I haven't even mentioned the state versions of these laws, or their accompanying regulations. I could mention NEPA, but it's comparatively common law-ish and students seem to find it a bit less disquieting.

By the time they get to Environmental Law, students feel like they know how to do law school. They've made it through the first year. They can brief a case. They can (or should be able to) compare client facts to case law facts and draw conclusions. They can outline their courses. They can write issue-spotting/analysis exam answers.

So, students tend to feel like a fish out of water when they begin an Environmental Law course, almost regardless what courses they've had beforehand. They need us to provide some context for what they're learning.

I find that it helps to ease them in gently. (See below, beginning at page 66, for a discussion of my first week of class.) For now, as alluded to earlier, suffice to say that I provide an introduction to what counts as an environmental issue. We debate how (and why) to protect people and the environment from the harms of pollution. We read some cases—to learn how environmental issues were handled prior to the enactment of the major environmental laws (through nuisance and trespass) and to see the many reasons this is an incomplete and ineffective regulatory regime (courts lack the time and expertise to use their power of injunctions to control emissions, judicial decision are case specific, they are neither pro-active nor retroactive, etc.). We then talk about statutory and regulatory supplements to, and substitutions for, the common law.

### 3. Problem-based approaches

If you decide to move away from the Llandellian case method for teaching your Environmental Law course, there are several problem-based approaches you might consider.

#### *a. Stanford's case studies*

Stanford Law School's Environmental and Natural Resources Law Program has created a collection of case studies describing the factual circumstances of real-life events. Professors use them

to help students identify and analyze the legal, social, business, ethical, and scientific issues presented. As written, the case studies place the student in the position of, for example, an “attorney counseling a biotechnology company facing hazardous waste issues, or a federal official seeking to develop an effective fishery management plan. . . .” Using a complex set of real-world facts, students can gain skills in, according to Stanford’s description, “factual investigation, legal research, counseling, persuasive oral communication, and recognition and resolution of ethical dilemmas, to name a few.” Topics you might cover using Stanford’s case studies include: air quality, CEQA, CERCLA, endangered species, environmental justice, forestry, land use, hazardous waste, pesticides, RCRA, solid waste, and much more. Of course, no case study will cover all aspects of any discrete topic, but these case studies provide a world of possibilities around which you could build a course that suits your priorities.

As well as including real-world facts, the case materials include simulations, with information on potential roles for students, supporting materials, and teaching notes.

Many professors of Environmental Law praise these case studies, not just for the comprehensive factual scenarios and legal problems they provide, but as an invaluable alternative to appellate opinion-based pedagogy. According to Professor Salzman, “Stanford is on the cutting edge of what I believe will become the norm of law school teaching in the next decade. In contrast to the traditional appellate cases that form the basis of almost all environmental casebooks, your case studies provide much more context, detail, and real-life complexity that our students will confront as they become practicing lawyers. They require the students to really work through the primary materials as they find for themselves how difficult it can be for the regulated community to achieve full compliance.” Professor J.B. Ruhl says “these are fabulous teaching tools. They provide a welcome alternative to appellate cases, as they include the full factual context leading to relevant legal, rather than the distilled factual summary an edited (or even an unedited) judicial opinion provides. Although the study of law through judicial opinions is an important pedagogical tool given that lawyers must learn to succeed in that forum, lawyers generally must also learn to wade through large factual contexts to weed out the relevant from the irrelevant.

Also, lawyers must learn to operate with the human dimension—politics, inept client employees, irate citizens, etc. The Stanford case studies strike me as an extremely viable pedagogical tool for adding that dimension of legal training to the law school classroom.” Ruhl further explains “. . . I expect that through the use of traditional casebook instruction, punctuated at appropriate intervals with in-depth exploration of the Stanford case studies, an Environmental Law instructor will be able to present a more realistic and challenging picture of environmental law, policy, and practice. An especially ambitious instructor may even find that a very successful course could be built entirely around the Stanford case studies. I say ambitious because the size of some law school classes may make exclusive use of the case studies difficult, and there is some limitation as to how much doctrinal ground one can cover through in-depth case studies.”

It appears that Professors Salzman and Ruhl, and many others, agree with me that there are good alternatives to focusing on appellate opinions in your teaching of environmental law. Both professors provide further information on how they’ve incorporated the Stanford case studies into their courses on the website of Stanford’s Environmental Law and Natural Resources Policy Program.

Although there is no charge to use Stanford’s materials, to do so, you must submit a written description of your course and answer some questions listed on Stanford’s website.

### *b Home-grown problems or case studies*

By setting the bulk of the course in the context of a few large fact-based case studies, I try to make my Environmental Law course interesting, relevant, and practical. This helps keep the students engaged and enables them to see the real-world applicability of what they’re learning.

Although I’ve said that I don’t prefer Environmental Law survey courses organized entirely around the statutes, I do use the statutes to provide some structure for the course. I teach and work with the statutes, *as they arise and apply to the given facts*. This means that I don’t attempt to teach every major federal environmental statute, or even the totality of any single one of them. Instead, I organize the bulk of the course around the

many environmental legal issues that arise in a series of lengthy case studies. I usually use three case studies, the POTW/airline maintenance facility problem I discussed above at page 15, in the context of interdisciplinary teaching, and two additional examples described below. I wrote these by adapting issues I saw in my own environmental law practice. Each scenario presents a different set of potential environmental legal issues. To be honest, I created these home-grown case studies long before the Stanford case studies became available. Although Stanford's case studies are far more numerous and vastly more comprehensive, I have not yet managed to convert my course to them—though one day I might well do that. Because my case studies are adaptations of problems I encountered in my own law practice, I know them well and find it easy to manipulate them and update them. The legal problems that arise in the case studies dictate the topics we study, and, in particular, which parts of a given statute we address.

Before students see any of the factual scenarios we'll work with, I ask them what types of facilities or industries they think about when they think about environmental challenges. This seems like an easy question to them. They always come up with steel mills and countless varieties of factories (we do live in Cleveland, after all). They usually mention power plants. Nowadays they mention oil and gas wells and "fracking."

They never, ever, mention farms.

So, we start with a farm that raises chickens for eggs. I ask what they think of when I say the word farm—and I display a photo of an idyllic red barn atop a grassy hillside sparsely populated by happily grazing cows. Oftentimes, they can't even imagine why a farm might present environmental legal issues at all—though by this time, some students have caught on. Although small farms are not free from environmental legal issues—my fact scenario stars a large industrial egg production facility. "Farms" like this are often in the news because of piles of manure, infestations of flies, and smelly rotting heaps of chicken carcasses. Every state has farms and every law school will have students who are aware of some issues they present. This sort of problem could work in law schools in any state.

Our subject is a massive industrial egg production facility. We put on our imaginary work boots and tromp around the imaginary facility with our imaginary clipboards. I provide about

15 pages of written facts. As we talk about the facts we jot down notes about potential environmental legal issues we “see” presented at the farm. Throughout the semester, we’ll look back at those notes and make lists of factual questions we’d need the client to answer in order to perform a legal analysis. We then organize the potential issues into categories according to the federal and/or state statutes that may apply to them—and here’s where I start focusing on environmental media (air, water, waste) and the statutes. One point of this exercise is to identify the many potential environmental legal problems presented in a fairly simple set of facts. We keep track of potential issues concerning air, water, and waste.

As we “walk” around the egg production facility, students should notice an abundance of chicken manure produced by the facility’s one million birds. (I’ve long lamented that I can show them words, graphs, photographs, and videos, but I still cannot show them smells!) They often, quite presciently, ask where all that manure goes when it ultimately leaves the three enormous chicken houses. When they look closely at the facts they see that there is a single, vast, pressed soil, manure-drying pad on the facility. After we draw a map of the facility, they express concern about potential manure run-off into the stream that runs through the property. Some students might ask what happens to the older hens once they cease to be sufficiently productive (the answer is that many of those hens will make an appearance in fast food nuggets, canned soups, or frozen entrees.) They should see electrical lines with transformer boxes (perhaps containing PCBs?) and wonder whether that’s OK in the vicinity of food production. They should identify potential problems at a vehicle maintenance shed and its gas pumps with underground fuel storage tanks and used battery storage. In addition, they should see a large pile of approximately 100 empty looking 55-gallon storage drums heaped behind one of the chicken houses and wonder what used to be in them and whether they should be there.

These are just a few of the potential environmental compliance questions students might uncover in this case study. After we do the work of discovering and categorizing legal issues, we begin to analyze them. The first question, regarding the disposal of chicken manure, provides a great opportunity to do some statutory and regulatory analysis. The presence of underground fuel

storage tanks allows us to dive into the interaction between state and federal law.

So, rather than organizing around the statutes, *per se*, we're organizing around identified environmental legal problems and using those problems to give context to the statutes—allowing the statutes (and their regulations) to help us answer the identified environmental legal issues.

The chicken ranch scenario allows us to delve into some potential problems that draw us to air, water, and waste issues. But there is much more to an introductory or survey course in Environmental Law.

I use an entirely different set of facts to address environmental policy and risk analysis. This second case study involves a potential rapid transit extension project. It is based on an assignment I worked on early in my law practice—the extension of the Bay Area Rapid Transit (BART) system to San Francisco Airport. I've changed the facts and set it in on the east side of Cleveland, but you could create or adapt a similar project for your own hometown. In Cleveland, we have a Rapid Transit Administration with a limited system of mostly above ground trains. The “Rapid” train line ends at the inner ring suburbs and there is, periodically, talk of extending it further east or further south.

Extending the Rapid system east would bring it further out into the mostly white and affluent suburbs. This might be convenient for white business people to get to their offices in downtown Cleveland. Extending it south would bring it to mostly poorer, more African-American suburbs. If it extended still further south, it would pass through those poorer African-American communities and end up in the whiter, more affluent, exurbs.

There are pros and cons to extending the Rapid system in either direction. We identify and discuss those pros and cons. It involves issues that students can see and understand, and it hits close to home. Pros—better access for many people to downtown Cleveland, ability to bring unemployed inner city residents to jobs in the suburbs, and get people out of cars. Cons—easier access by rail that encourages urban sprawl, racist fear of giving poorer urban residents easy access to the suburbs, cost and disruption of construction, difficult access to necessary land.

This case study provides context for us to talk about agency decision-making and the National Environmental Policy Act (NEPA).



It is important for students to get a look at NEPA because it applies in so many areas where many students (and also many lawyers) don't expect it.

Any major transit extension would require a federal agency to make some decisions. The decisions might concern, for example, federal permits or grants of federal funds. Before a federal agency makes a major decision that could adversely affect the environment NEPA requires that the agency conduct some measure of environmental review. Once we've identified the federal agency decisions that might apply, we study NEPA and some of the case law interpreting it, and we try to apply what we've learned to the transit problem. Although Ohio doesn't have a "little NEPA" law, 15 states do. If you're teaching in one of those states, a problem like this could present an opportunity to discuss the role of the state agency.

Just as the chicken ranch facts allow us to look at multiple issues and statutes, the Rapid Transit facts also present opportunities beyond NEPA. For example, I often use it to discuss issues of environmental justice. Should the tracks be extended to the affluent whiter suburbs, or the poorer Blacker ones? Who decides this sort of thing? On what bases are those decisions made? What can the government (or anyone else) do to eliminate both the obvious, and the less obvious, racism in both the process and the results?

The Rapid Transit project can be written to present Endangered Species Act lessons, too. Are there listed species in any of the areas through which the new tracks might run? To study this problem, students can learn to read the statute as well as the regulations. They can think about how the ESA is used—is it used to protect species? Is it sometimes used, instead, to delay, or derail projects? Is that an acceptable use of a statute?

I've done several variations of this Rapid Transit fact scenario and sometimes I can find a real, live, ESA-listed species in the area I chose. If not, no problem, you can make one up. I once used the imaginary Warrensville Water Rat.

#### 4. Incorporating current events

You can use local-interest fact scenarios, real or imagined, to give life and practical experience to students' understanding of environmental statutes, federal and state, and the accompanying

regulations. Below is another potential fact scenario that might work well for my students. I haven't written it yet, and I haven't really thought it through, but it may be a good example of how my thought process works for creating a fact scenario.

There is a group in Cleveland (Lake Erie Energy Development Corporation—LEEDCo) working on a wind energy pilot project for Lake Erie. Some people love it, and others hate it. Why? As a class, we could do some research, talk through the facts and try to evaluate the pros and the cons. We could also talk about what it would take to get the wind energy project off the ground. It certainly would require many permits from many different agencies—at probably every level of government. (Two highly experienced environmental practitioners taught an interdisciplinary course at our law school based on this project and it seems to have gone quite well.)

Look around you. Are there existing potential environmental legal issues already out there for you to use to make your students' education come to life? If not, write your own. It's great to use real problems, but if they aren't immediately apparent, or if they need some tweaking to meet your educational goals, tweak away. As I mentioned above, in one of my case studies I had to add an imaginary species in need of protection. There wasn't a real one in the area at issue and I wanted to work in the Endangered Species Act. It's OK to manipulate and change facts to suit your goals. Just be clear with the students about what's real and what's not, and why you changed things.

## 5. Research workshops

Research workshops can get students out of the classroom and into something approaching real-world law practice. For this, you can use a real problem or a made up one. You can also make good use of the often-underappreciated research talent available in your law library by asking the reference librarians to do an environmental law research tutorial or overview for your class.

About halfway through the semester, I give my students a research problem. Sometimes it's a real problem I've heard about from colleagues in the local environmental bar, sometimes I just make it up out of whole cloth. Either way, prior to the workshop, I've worked out the problem in advance and vetted it with

our law librarians. On research workshop day, the students and I spend the class period in the library, but you could choose to have the students do it on their own time. The law librarians present a short overview of environmental law research tools, gently focused on the research problem I provided to them in advance. Students work in small teams and research the problem. I like to use a problem that forces students to read statutory provisions, a regulation, and perhaps a federal register notice, or some form of agency guidance. Students keep a research log to indicate the sources they located and what they learned from each source. They then draft an outline of the answer to the question. I don't ask them to write a long memo or paper, just an outline to show me what they've learned and how they'd organize and present it. I grade the research logs and outlines and I count the scores towards the final course grade. If the class is interdisciplinary, which mine usually is, I make sure research teams include at least one law student and at least one student from another college—science, engineering, or environmental policy. I discuss more about the research workshops I use in my course at page 71, below.

#### 6. Adapting the course for students who have had Legislation/Regulation/Administrative Law

Some law schools are fortunate to have all of their first-year students well-exposed to the legislative and executive branches of our legal system. Whether your students have had this exposure prior to arriving to your class will inform and influence how you teach it.

In 2012, we altered the 1L curriculum to add a mandatory 4-credit course called Legislation and the Regulatory State, affectionately known as Leg/Reg. Although we were among the early adopters of this idea, we were not the first and we are by no means alone. I believe (and hope) it's a growing trend. In the past, 1L students were so deeply immersed in the judicial branch that it was hard for the legislative and executive branches to gain traction. Before we added Leg/Reg, students learned, right out of the gate, to see the legislative and executive branches as afterthoughts in a judicial-branch dominated world. As most of us know, that's just not reality. Many (perhaps most!) of our students will work closely with legislation and regulation in the future. They will

apply it, lobby for and against it, create it, and interpret it. They need to understand where it comes from and its enormous role in the functioning of the legal system.

Prior to our inclusion of the Leg/Reg course in the 1L curriculum, I taught Environmental Law essentially as a course on legislation and regulation, using environmental law as the substantive base of the course. I had to teach students foundational ideas—that Congress makes laws (here the federal environmental statutes) and executive branch agencies implement them (here EPA). From the rest of the 1L curriculum, they already know that the courts will interpret laws. Beyond the middle school version of this concept, which most law students have well in hand, law students need to understand that agency implementation of statutes involves a heavy dose of interpretation of those statutes (long before courts begin their more celebrated role of statutory interpretation.) Students need to be thinking about the limitations of regulatory authority and the sources of regulatory power. Much of this, and much more, is now covered in their Leg/Reg course.

The result of having Environmental Law students who have had the 1L Leg/Reg course is that I no longer have to teach Environmental Law as if it is their introduction to legislation and regulation. I can delve deeper into environmental legal issues. I can review the legislative and regulatory fundamentals, without having to teach them from scratch. My Environmental Law students come from Leg/Reg courses taught not only by me, but also by several of my colleagues. Predictably, we do not all see the Leg/Reg course the same way. Like me, some focus on legislative and regulatory processes and lawyers' roles within them. Others, however, focus deeply on the canons of statutory construction and the theories of judicial interpretation. The students who came from the heavily canons and theories-based sections do not have the same level of understanding of the working of agencies or the function, value, and uses of rulemaking documents. (I do teach the canons and theories in Leg/Reg, but I present them more as predictive tools for agencies to employ as they struggle with how to handle their delegated tasks.) Still, for all of upper level students, regardless of which Leg/Reg course they were in, I can safely assume some baseline knowledge and, I hope, at least minimal familiarity with the rulemaking process. Because they've had Leg/Reg, many of my Environmental Law students already know the

difference between a proposed rule in a federal register notice and a regulation that appears in the code of federal regulations. In the past, that was almost never true.

So, what to do with this opportunity to teach Environmental Law at a higher level? (Because of the addition of the Leg/Reg course, this opportunity to begin courses at a higher level is available not just for Environmental Law, but for upper level courses in many administrative law-based disciplines—Tax, Health Law, Employment Law, and more.) I use the opportunity to spend more time on state law. I try to take the example of the federal environmental regulatory system and compare and apply it to the Ohio system. We use many Ohio examples and spend substantial time navigating and using the information provided on the Ohio agencies' websites. I now give students numerous opportunities to work in groups to solve case study based environmental legal problems, as they would when practicing environmental law in Ohio.

#### D. THE IRREDUCIBLE CONTENT OF THE COURSE

There are a few things your students should learn from an Environmental Law course, regardless the approach you choose to employ. Having taken Environmental Law, employers will expect your students to have some familiarity with these topics. The core topics most professors will feel compelled to cover, and with which students will be expected to have some familiarity include: the common law roots of environmental law, standing, and a working familiarity with at least one and preferably a few of the major federal statutes. In my view, students should also get some exposure to state environmental law, and they should have the opportunity to gain some facility with the operation of the administrative law world in which environmental law operates.

##### 1. Common law roots

After the introductory material on what counts as an environmental issue, prioritization of those issues, and the tragedy of the commons (see more on these topics below, at page 66, in the section about my first week of class), I like students to think about how we go about controlling behavior to protect human beings and the environment. I also like them to struggle a bit with why we do it.

Eventually, we get to a place where we can mostly agree. After they've seen, through our exercise on the tragedy of the commons, that people make bad decisions even when they know the result will be bad, we move on to discuss altering or controlling behavior in ways other than (or in addition to) education.

*a. Nuisance and trespass (and strict liability and negligence)*

The common law torts are a great place to start in on the substantive material of the course. Before the adoption of the federal statutes, common law tort claims were all we really had for addressing environmental ills. The various casebooks provide several options for illustrating this, but they all emphasize that the common law worked effectively in some ways, but was limited as a sole means of controlling behavior or protecting people's health or the environment.

I don't think you need to cover all of the common law torts that formed the roots of environmental law. The important point is to show students that they are the common law precursors to modern, legislation and regulation-based environmental law and to illustrate their limitations as a sole source of remedy or control.

As mentioned earlier, at page 15, one set of cases I like are *Madison v. Ducktown* and *Georgia v. Tennessee Copper Company*. They address the same set of essential facts—which makes comparisons easy—but they enable us to make several important points about the evolution of environmental law and regulation, and about state and federal courts. The cases concern a copper smelter in Tennessee. To do its job, the company burns copper on a big smelting pile. The fumes are toxic, they kill much of the surrounding vegetation (which is trapped by its geography in a valley), and they make people sick. The company also provides many jobs and a hefty tax base. There weren't any regulations to control how the copper smelter smelted its copper. There was no law at all prohibiting its mode of operation. In fact, its smelting operation was state of the art at the time.

Students can visualize the problems here, so we talk about potential solutions in the absence of legislation or regulation. What are they? Education? Should we just tell the copper company that the smelly smelter is damaging crops and people? Do

you think they'll stop smelting copper just because it smells and is irritating and damaging to others? Nope. Students can reference the tragedy of the commons exercise to see that that's not the case. Why would they stop smelting? The smelter is making money and providing jobs and paying taxes. And the smelter is not suffering from any of the consequences of the smelly, damaging smoke. Here, reference externalized costs.

Because there were no environmental statutes or regulations, the farmers whose crops were damaged had no choice but to sue the smelter using common law nuisance. The smelter's burning of the copper, although in violation of no law or regulation, significantly interfered with their use and enjoyment of their properties—their agricultural and residential lands. It basically destroyed all the crops! The landowners should win here, right? Nope again.

Why not? The copper smelter was big business in the area and the locally elected state court judges knew it. Hmmm, did the copper company contribute to their reelection campaigns?

Working with essentially the same facts, a federal court in *Georgia v. Tennessee Copper Company* reached the opposite result. There, the sovereign state of Georgia sought to protect its citizens by alleging a nuisance and seeking an injunction to stop the noxious smoke flowing in from the Tennessee smelter. The federal court found a nuisance and then attempted to control it by granting very specific partial injunctions which look a lot like court imposed emission controls. I like to call them proto-regulations. We talk about whether they are sustainable as a pollution control measure and whether the court is the appropriate branch of government to be determining and enforcing environmental control.

The partial injunctions the federal court issued are fascinating by their very nature. The federal court imposed partial injunctions that included specific controls of the timing and amounts of allowable toxic emissions. This feels like emission limitations—controls we now see in legislative and regulatory contexts. It presents a terrific opportunity to dig into the appropriate roles of courts and the potential value of agencies. Should courts be issuing emission limitations? Why? Why not? If not, what would be a better way to achieve the court's intended result? Courts are not experts in emissions and they have neither the time nor desire to become the enforcers of limitations. Agencies, supposedly populated by experts, are assigned the task of implementing and enforcing

statutes. But at the time the courts were deciding these cases, the statutes didn't exist! Are we better off with agencies and the resulting regulations, or with court-imposed emission limitations?

These cases also provide an example and context to discuss the differences between federal and state courts (locally elected judges versus lifetime appointed judges, economic and political issues associated with that difference, local interest and concern, etc.).

Bottom line—in the state court version of the case (*Madison v. Ducktown Sulphur*), the elected state-court judges declined to find a nuisance for fear it would harm (or perhaps anger) the enterprises important to the local economy (and perhaps the judges' careers?). In the federal court version (*Georgia v. Tennessee Copper Company*), the court focused on the needs of a sovereign neighboring state to protect its citizens, and it used partial injunctions to fashion a set of judicially imposed regulations to control plant operations.

Lots of the Environmental Law case books also use *Boomer v. Atlantic Cement* to address some of the limitations on the exclusive use of tort law to control environmental behavior. *Boomer* involved a cement factory that spewed smoke and dust onto neighboring lands. The court agreed that there was nuisance there, but although it assigned damages, it declined to award an injunction to stop the polluting behavior. The plant was too valuable and to force its closure it would be too costly. This case provides for a good discussion of the law and economics approach to legal analysis. It also illustrates the problem that even when a tort remedy is helpful, it is fact specific and reactive—it responds to a specific harm, so it doesn't help others escape later injury by a similar harm.

### *b. Limitations of common law as a sole means of control*

Discussions of nuisance and other tort law pave the way for students to think about why the common law approaches, to which we were limited in the days prior to the federal statutes, were not sufficient for our societal needs. Were we able to keep ourselves and our environments as healthy and/or as clean as we, as a society, desired? Clearly not. Not in *Boomer*. Not in *Madison v. Ducktown*. Not in many other common law cases. Why not?



As mentioned above, common law tort law responds to problems that have occurred between a minimum of two specific parties. Other than the precedent it creates in a given judicial district, it doesn't bind the behavior of other parties, and it doesn't prevent the problem from occurring again. So, a tort claim might be able to stop a specific instance of pollution via a court-issued injunction, or by assigning damages so high that the polluter chooses to stop the polluting activity. But common law tort doesn't prevent pollution from happening in the first place, by the parties to a particular action, or by others. It doesn't prohibit action or permit it within certain standards, etc.

Common law tort actions provide solutions to the parties in a particular case, but other parties are not bound by it. A particular polluting facility might stop polluting as a result of a lawsuit against it, but another plant could pollute and continue to pollute until *that* plant is sued. This does not solve the pollution problem and it an uneven playing field for polluters.

Tort and nuisance law often provide discretionary results, that is, the tortfeasor/pollutant could choose to pay the damages assigned by the court and then continue to pollute. The polluter also could violate an injunction and incur a resulting penalty because it makes financial sense to do that. Non-compliance is an option.

Additionally, tort cases lend themselves to disuniformity. Tort and nuisance cases are decided by lots of different judges in jurisdictions across the country. Although they're bound by precedent in their own jurisdictions, no set of facts is identical to another set of facts, and results may vary widely. The polluting community has no idea what rules apply to their conduct in a given jurisdiction. It may create an uneven, and therefore unfair, playing field—meaning a given set of rules applies to one plant, and another set of rules applies to another plant. Costs will vary.

There are many more problems with the idea of common law as our sole regulatory regime. Your students will enjoy identifying them. They'll also see there are problems with regulation. It doesn't solve all of the problems of a common law scheme. See if you can help them identify the inadequacies of a common law-only scheme and determine which of those concerns are eliminated or alleviated by the addition of a regulatory scheme. Does regulation add any problems? Of course! (It adds costs for the

regulated community, costs for the public/government/regulators, potential for over-regulation, and more.)

## 2. The major federal environmental statutes

After identifying environmental problems, struggling with the tragedy of the commons and prioritization of environmental issues, and probing the limits of common law, students should be ready to see how efforts to protect human health and the environment evolved towards statutes and regulations. I don't think it's necessary to delve into all of these statutes, but I do think it's important to examine closely at least one of them, and perhaps even a few of them. As I've mentioned, I usually do this through factual case studies, which I describe more deeply both above and below. Basically, I have students identify and describe a problem—for example—"there is a lot of chicken manure collected and disposed of on-site." We discuss what specific environmental legal problems that might present, then we dive into the statutes and regulations to try to determine whether there is a violation of law. I usually have students read a short overview summary of the statute and I spend one day going over the basics. Beyond that, we work with a statute only as it applies to our facts.

### *a. RCRA*

As you've surely seen by now, I like to use factual scenarios that will raise very specific environmental legal problems under the federal statutes. I begin with my chicken ranch case study, first described at page 23, that includes issues pertaining to the Resources Conservation and Recovery Act (RCRA). There are three main reasons for this. First, RCRA builds nicely on the common law we've just addressed as the roots of our current environmental law system. Among others, it builds on common law strict liability, nuisance, trespass, and negligence. Second, RCRA is great for illustrating the concept of federal/state interaction, for example, the way RCRA Subtitle C is sometimes administered federally and sometimes at the states, whereas Subtitle D directs the states to take the lead in solid waste management. This provides a first illustration of what could become a recurring theme—the feds setting minimum standards or goals, but handing some responsibility and decision-making authority to the states. Third, RCRA's definition

of solid waste provides a world of opportunities for instruction. It provides an opportunity for discussing statutory interpretation (see, e.g. *American Mining Congress v EPA*, (1987), for administrative law (look at the organic statutory language, the regulations derived from it, the notices of proposed and final rules that preceded the ultimate regulations, and court cases interpreting them), and for compliance counseling (providing client advice with respect to analysis and management of industrial by-products). RCRA is also great for talking about policy. What did Congress want out of the statute? Did they get it? Below, I'll address each of these benefits of using RCRA in your course.

RCRA builds on common law tort law. The cleanup portions of RCRA, which admittedly is a waste management statute not a clean-up statute are based on the concept of strict liability (and for that matter, CERCLA's are, too). The government does not have to prove fault before assigning responsibility for hazardous waste cleanup and its costs. It just has to show that the defendant put the hazardous waste in the given location and that the waste is actually or potentially dangerous to human health. So, one important difference between common law actions to address harms caused by exposure to hazardous waste and actions based on RCRA (or CERCLA) is which party bears the burden of proof. Under common law, the injured party has to prove both harm and causation. Under the statutes, the alleged polluter has to prove they didn't cause the harm. My how the tables have turned!

Bottom-line, though, RCRA provides a good vehicle to talk about the evolution of environmental law from common law to statute-based law.

Next, let's discuss RCRA as an example of federal/state interaction. RCRA's main three sections are the solid waste program in Subtitle D, the hazardous waste program in Subtitle C, and the underground storage tank program in Subtitle I. Subtitle D essentially sets minimum standards for solid waste facilities then RCRA requires the states to take it from there.

RCRA provides a good chance to discuss the value of allowing states to make waste management-related decisions close to home—better information, more politically palatable, etc. We talk about the difference between setting the standards and deciding how best to reach those standards. There can be many paths to the same result. In many cases, the federal government doesn't

mind how the state achieves the applicable standard. The feds just require that the state reach that standard in whatever way the state decides is doable and politically and/or economically preferable.

If you choose it, this can be the first discussion of a theme of cooperative federalism in your course. It will arise again in several of the federal statutes, notably the Clean Air Act's State Implementation Plan requirements, and the Clean Water Act's Water Quality Standards.

Another reason for choosing to teach RCRA is that its definition of solid waste provides an excellent platform from which to teach administrative law analysis. Even for students who studied legislation and regulation in their first year, it's a great practical review of what they should have learned.

I tend to start with my tried and true egg production facility scenario, first described above at page 23. It's fun for me and also for the students, in part, because chicken manure is disgusting. It seems that no matter how old they are students still love things that are gross. The facts show that manure from three million chickens (yes, three MILLION chickens) is collected and mixed with feathers, bleach, and food grade mineral oil, and spread on an enormous compressed earth pad to dry in the sun. This practice also kills fly larvae. (Again, ewwww!) The dried manure is later used by neighboring farms as organic fertilizer. (On our food?!?!?)

First, we discover why it matters to categorize the chicken manure mixture as either a solid waste or a hazardous waste. What would a hazardous waste classification mean for the facility?! Expense, complication, permits. If the manure mixture was hazardous, and the facility ends up classified as a transportation, storage, or disposal facility (a TSDF), it will have to: maintain records about the wastes; comply with reporting, monitoring, and inspection requirements; complete a manifest; treat, store, and dispose of hazardous waste according to the EPA's regulations; comply with location, design, and construction requirements for facility; generate contingency plans; comply with financial responsibility requirements; get a RCRA permit; and potentially incur liability for corrective actions. (I show them this by giving them a peek at the regulations even before we've looked at the statutory language from which those regulations derive. We'll get back to that soon.)

Yikes. Students discover that that's a lot of extra requirements with which the facility would have to comply. Perhaps,

the students decide, the facility should try hard not to fall into the TSDF category unless it intends to be there—that is, unless it means to be in the business of hazardous waste treatment, storage, or disposal. I take some time to talk about the treatment, storage, and disposal definitions and requirements to illustrate the importance of a facility not ending up, inadvertently, within RCRA’s definitions of treat, store, or dispose.

We then reverse engineer a bit. How might this manure mixture end up classified as a hazardous waste? This is where we really start to dig into the statute. We look at the statutory definition of hazardous waste which states that to be a hazardous waste the material must first fall within the definition of a solid waste, and so off we go to the definition of solid waste.

The definition of solid waste doesn’t answer the question of the manure mixture’s status. This provides the opportunity to show students where to look next. We look at the regulatory definitions in the Code of Federal Regulations (CFR). What do they say? Do they help? A little. Where can we look to better understand what EPA meant when it wrote these regulatory definitions? This brings us nicely to the realm of federal register notices. Do they help? Sure. But do they answer the question? Not quite. Next stop, guidance documents. These actually vary by EPA region, so we get on the web and find some guidance documents that might apply and actually answer the question.

RCRA’s definition of solid waste provides for an excellent and wild trip through the structure of environmental law (and also, of course, other areas of administrative law and regulation). It illustrates that we start with the statute then we look to the regulation. When that’s not clear, we try to learn more about the context of the regulation and EPA’s understanding of it by looking at the documents in the federal register that led to its issuance—to see what the agency was “thinking” when it made a given rule.

This helps students see how statutes provide direction to the agency—sometimes clear direction and sometimes less clear. It shows students that the agencies have to interpret statutes in order to implement them, and that that’s a messy, complicated, process. It gives us some insight into that process because we can see the various stages of the agency’s proposals, public comments, the agency’s responses, and how the agency ultimately reacted—by what it said in the final regulation.

### *b. Clean Air Act*

The Clean Air Act is a beast. I steadfastly maintain that no one understands it—not even the lawyers who practice in it every day of their career! When I was in law practice, I worked with some of the people involved in drafting the Clean Air Act, and they readily agreed with that bold and discouraging statement. Still, we soldier on. The CAA was the first major federal statute in which Congress enacted national regulatory schemes—many of which it later incorporated into other federal statutes—the Clean Water Act, the aforementioned RCRA, and more.

Air is a good topic within which to return to the tragedy of the commons. Like the herders grazing their cattle on public commons at no cost, air polluters emit pollutants to the ambient air at essentially no cost. The incentive, even in the face of knowledge, is not to control the pollution. If they can pollute for free and the costs are shifted to others, or externalized, greed can rule the day.

Also, dirty air wafts across state (and national, and international) borders, so state regulation alone would not be sufficient for managing it. (Of course, that's also why national regulation is not sufficient.) Regulation of air pollution, largely from industrial sources (stationary sources) and cars and trucks (mobile sources), has been difficult politically. States didn't want to regulate too stringently for fear that industry would abandon them, taking its financial benefit to less stringent neighbors. State legislators didn't want to regulate cars and trucks too stringently for fear of upsetting constituents—and the powerful lobbying groups supporting the auto industry. These tensions make air pollution control a perfect topic for addressing federal/state compromises and divisions of authority.

The CAA provides an opportunity to show students a great example of cooperative federalism—the State Implementation Plan (SIP) process. To get to the point where we can discuss SIPs, we have to discuss the regulatory scheme that requires states to create and update them. One cool thing for students to see here is that Congress didn't specify which of the abundant varieties of air pollutants the newly created EPA should attempt to control. Instead, Congress required EPA to identify the pollutants that “may reasonably be anticipated to endanger public health or welfare.” EPA ultimately determined that sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide, ozone, particulates,

and lead, would be the so-called criteria pollutants. Congress mandated that after EPA identified the criteria pollutants, it must set standards for their presence in the ambient air—the National Ambient Air Quality Standards (NAAQS) for criteria pollutants. For each of the criteria pollutants, Congress required EPA to set a primary standard—the maximum amount of that pollutant allowed in the ambient air—this standard is supposed to be protective of public health, and a secondary, more stringent, standard that is protective of public welfare—injury to crops, trees, buildings, etc.

But once EPA identified the criteria pollutants and set the primary and secondary standards for them, how would they be enforced? Congress gave that responsibility to the states. Each state was required to submit two SIPs for each of the criteria pollutants—one for the primary standard and another for the secondary standard. The SIPs, as reflected in their name, are plans for how the state would achieve compliance with the various NAAQS, which had been created at the federal level.

The cool thing—and this is the great example of cooperative federalism at work—is that the statute allows states to do this in whatever way they please. The methods and targets of regulation states choose can reflect each state’s priorities and politics. The statute says states must submit plans that include enforceable emissions limitations and other pollution control measures, schedules for compliance with the applicable standard, procedures for monitoring air quality, enforcement measures, prohibitions of emissions that will lead to non-attainment of the given standard, and assurances that the state has the requisite legal authority, funding, and personnel to enforce the CAA. Other than that, the states set their own priorities. To ensure that the states are doing what they’re supposed to do, each SIP is subject to federal approval—and if not satisfactory, can be replaced by a federal implementation plan (FIP), which may not reflect the state’s priorities.

I teach in Ohio, so I like to acquaint my students with some of the Ohio SIPs, in particular, the part of the plan that requires certain counties to impose motor vehicle emissions checks (“e-check”) on residents with vehicles of a certain age. The “e-check” program is very familiar to students, many of whom believe it to be a state-imposed program—which it is, sort of. It’s good for them to see that the state-imposed program grew out of the state’s need

to submit to U.S. EPA a SIP for the criteria pollutants found in auto exhaust—carbon monoxide, ozone, particulates—and that in the state’s judgment “e-check” was a preferred way for Ohio to achieve compliance with the NAAQS for those pollutants.

To get to this point, you can have students do the research or, to save time, you can provide them with the sources of law. Having the students do the research gives them hands-on research experience, with federal and state law, and with statutes and regulations. Ask them to find the relevant statutory provisions in the CAA, and in the state laws that are required to implement the SIPs and regulatory requirements that led the state to impose “e-check” on some Ohio counties. This is another a good opportunity to include law librarians in your course. I usually ask one of our talented law librarians either to teach an environmental law research overview for my class, or to act as a guide or resource as the students try to do this research on their own.

The CAA includes further regulation of three categories of air pollutants—stationary sources (like factories, power plants, and other places with big smoke stacks), mobile sources (like cars and trucks), and indirect sources (places that attract mobile sources of air pollution—like shopping malls and highways).

The CAA does a lot of dividing of things into categories. It divides the country into attainment areas and non-attainment areas. What’s being attained or not attained? The NAAQS! If an area complies with the standard for a given criteria pollutant, it’s an attainment area. If not, you guessed it—non-attainment.

Does it matter whether an area is classified as attainment or non-attainment? Yup. That designation governs the type of permits that are required for new sources of air pollution. Again, the CAA divides the world into categories—this time it distinguishes new sources of pollution from existing sources of pollution. New sources are those that started discharging pollutants after the EPA had set a performance standard for that type of source. Existing sources are those that were already polluting when EPA set the standard for that type of source.

You can start with new sources or with existing sources. It doesn’t really matter. The point here is to show students a little more about the CAA’s dividing of everything into categories, and some of the implications for a polluting facility—perhaps a client’s facility—of falling into one or another of those categories.



I tend to start with the system for new sources, for no good reason. For a new source located in a non-attainment area (meaning non-attainment for the specific criteria pollutants it will be emitting) that source must meet the most stringent emissions standard out there. It's called LAER—lowest achievable emission rate. Why must it meet that standard? That area is not in compliance with the applicable ambient air standard, so we can't let much new pollution of a given type into the ambient air. But, if that new source, of the same criteria pollutant, happens to be located in an attainment area for that criteria pollutant, it's subject to a somewhat less stringent standard, called BACT—or Best Available Control Technology.

In addition to compliance with emissions standards, new sources need permits to operate. State agencies issue these permits under authority they receive from U.S. EPA under the CAA and as written in the applicable SIP. This is another example of federal state cooperation—or cooperative federalism. New sources also need to meet performance standards (called New Source Performance Standards) for whatever category of facility they are.

If an area where a new source will be located is an area that has succeeded in meeting the NAAQS for a given criteria pollutant—that is, it is an attainment area—new sources are required to meet standards that will prevent significant deterioration with respect to that pollutant. Makes sense, right? If you're meeting the standard, you don't want to bring in a stinky new source that will drag the area out of compliance. States can divide their attainment areas into three categories and allow increases in emissions according to the category. In Class 1 areas, the most pristine—like national parks, must not allow any significant deterioration. Class 2 areas may allow a reasonable degree of deterioration, and in Class 3 areas, new sources may discharge the pollutant provided the area remains an attainment area for the primary NAAQS.

So that's the tiny thumbnail sketch for new sources of air pollution. What about existing sources? In a non-attainment area, existing sources are subject to a less stringent pollution control standard called RACT—Reasonably Available Control Technology. Why apply a less stringent standard to existing sources? It probably seemed unfair to impose strict new standards upon them when

they'd been operating legally under the older standards. This is a great topic for a policy discussion. Clean air versus fairness? To reach the clean air standards more quickly, all sources, not just new sources, should be subject to the stringent standards. But some facilities were built legally under old standards. Is it fair to them to force them to spend lots of money to install pollution control technology in their facility?

If an existing facility is being updated anyway—called a modification of an existing source—it must do so in a way that meets some of the standards for new sources. Does this discourage updates? Or does it put everybody on a level playing field?

So far, we've been talking about criteria pollutants. It's really OK to stop there. Just teaching this section shows students cooperative federalism, administrative law and regulation, categorization under the CAA, and gives plenty of meat for policy discussions. For the CAA, my egg production facility facts suggest issues pertaining to particulate emissions from a grain silo and some potential VOC problems at a vehicle maintenance area—all within the criteria pollutants sections of the CAA. I'll refrain from digging into those here.

If you want to go further, you could address hazardous air pollutants and mobile sources. I don't do that because I feel that the important lessons of the CAA are most easily conveyed through a good look at the sections on criteria pollutants.

### *c. Clean Water Act*

#### *i. Background and basics*

As you likely well know, the Clean Water Act (CWA) has an interesting history. Unlike some of the other federal environmental statutes, it was not created anew out of whole cloth. Instead, it derived its two major initiatives from earlier federal efforts and from some state programs. It picked up where earlier federal laws had left off—for example, the Rivers and Harbors Act, which gave the Army Corps of Engineers responsibility for keeping navigable waterways clear, but not necessarily clean, and the Federal Water Pollution Control Act and its predecessors, which gave us the idea for effluent limitations, but had no enforcement mechanisms, essentially ceding that power to state programs. The state

programs assigned water quality standards to individual sections of waterways based on their uses, but the goal was to maintain the waters' suitability for the assigned use, not to improve its quality. All of these concepts have been incorporated into the statutes that make up the Clean Water Act. If you like to talk about the history and development of law, this is a good topic to delve into, and Weinberg and Reilly's *UNDERSTANDING ENVIRONMENTAL LAW* has a nice, succinct, review of it.

ii. Teaching the discharge prohibition and the National Pollutant Discharge Elimination System (NPDES) permit program

The Clean Water Act controls, among other things, the discharge of pollutants into waters of the United States. In fact, it prohibits such discharge in the absence of a permit. I teach this part of the CWA because it gives me an opportunity to work with the students on statutory definitions, on administrative/environmental law research (again), on federal/state interaction, and on questions of policy. I also often teach water quality standards—the other primary piece of the CWA—but I'll start with effluent discharges of pollutants. As always, we do this statutory work in the context of large case studies. For this, I use two different factual scenarios. First, again using the egg production facility, we consider the facility's spraying of wastewater over a nearby field, as mentioned above at page 25. The accompanying facts also include potential run-off concerns regarding a nearby stream. I also use the fact scenario concerning an airline maintenance facility's discharges to a POTW, described above at page 15. Within each set of facts, once we've identified some of the potential environmental legal issues, we move into the CWA. First, we talk about definitions, then about permitting, then a bit about water pollution that falls outside the definitions and therefore outside the permits. You can, of course, cover the relevant statutory issues using a traditional case method, supplementing the case by case discussion with questions designed to get students to see the federal/state interaction and the overarching policy questions. But as I've discussed earlier, I think that using case studies works better to demonstrate the interaction of those various aspects and shows the students real-world contexts in which these issues might arise.

To get into this section, it helps to do a deep dive into the definitions. I start by asking students to find the basic discharge prohibition and permit requirement in the CWA—the discharge of a pollutant, from a point source, into the navigable waters of the United States. This is fun and easy to pick apart. Ask the students to identify the sources of potential definitional confusion (which is basically all of it). What counts as a discharge? As a pollutant? As a point source? As a navigable water?

Students can then find the definitions of each of those terms, in turn, and see if those help. I like to use photos of potential discharges and point sources to show them that it's not so clear. Pipes are easy. Culverts? Ditches? Not too hard. But what about test tubes? Or your cupped human hands?

The definition says a “discharge” is “addition of any pollutant to navigable waters from any point source. . . .” This one isn't easy—the CWA doesn't even attempt to define addition. What if you take water out of a river, then use it and put it back? Is that an addition?

Are these examples “point sources”? Most are easy, but the cupped hands? The CWA says a “point source” is “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.” Hmm, is a test tube a container? Are your hands a conduit? The definition says “including but not limited to. . .” so it's meant to be inclusive, expansive. Discuss.

What about a “pollutant”? What counts? I like to give students an example to work with here—like water removed from a river by a factory, used to cool its operations, then returned to the river clean but hot. Is this a pollutant? Is something being “added” if it's the same something that was taken out? Before we look at the definitions to find the answer, we can talk about why clean, hot water might be a pollutant and why it might not. There's nothing dirty in it, but could it be harmful anyway? The fish and other aquatic life are acclimated to water of the original temperature. The definition of “pollutant” says it's anything introduced to the water that alters its physical, chemical, or biological integrity, and the statute goes on to include an extremely long list of examples. Does higher temperature change the physical,

chemical, or biological integrity of the water? Where do we measure? At the point of entry? In a mixing zone farther away? Lots of questions here. I like to have someone read the definition of “pollutant”—either a student, or myself—mostly because the list is so long and inclusive that it’s amusing. It’s also clearly non-exclusive, so you can try to think of things that aren’t listed, but would be included. It’s hard.

After our public reading of the lengthy definition, I ask again about clean, hot water. Usually, someone has noticed the inclusion of “heat” in the definition.

Now that we’ve determined that the addition of clean, hot water would count as the discharge of a pollutant—and assuming it’s from a pipe, it’s from a point source, we can talk about permitting.

I often also talk about non-point sources, too, though, before I get to permitting per se. In addition to the run-off at the egg production facility, I use the example of the transit line expansion, mentioned earlier at page 26—which includes a parking lot. Faced with these facts, students sometimes ask about filthy parking lot runoff that ends up in a nearby stream. (If they don’t ask, I do!) These discharges are hard to manage for several reasons. First, they’re everywhere. Second, the water doesn’t go directly into a waterway. It arrives there circuitously. Changes to the CWA and its accompanying regulations have broadened the applicability of the permit requirement to many non-point sources by defining entire facilities as point sources, or requiring types of facilities to group together under the auspices of a single permit. Municipal sewer systems of certain sizes are now required to obtain a permit.

Once you’ve identified what types of discharges require a permit, it’s good to talk about the permitting process, and even to look at some permits that have been issued in your area. Because most states have earned EPA authority to act as the permitting agency for NPDES permits, this gives us another opportunity to consider the role of states.

The National Pollutant Discharge Elimination System (NPDES) permit program is the main function of the CWA and the process required for obtaining/issuing an NPDES permit provides for an excellent illustration of an administrative process. To get a permit, one has to determine that a permit is required and apply for one. Because the permit, once issued, has the role of agency-made law,

there is a public process involved. Like any administrative rule-making process, the agency must provide notice to the public that the agency is considering issuing a specific permit—and what that permit will require of the permittee. There may be several drafts involved. The agency will hold a public hearing and will receive public comments on a draft prior to issuing a permit. This is another way for budding lawyers to see how they can participate in the permit process on behalf of their future clients. They see how they might influence the content or issuance of permits their clients are seeking to receive or to prevent.

I like to have students think about potential pollutant discharges in and around where they live. Most can come up with examples in their neighborhoods or at least in the city more broadly. I then ask them to find the relevant NPDES permits on Ohio EPA's website. They can see them in a list or on a map. They can read the permits. They are often amazed by how many there are, where the facilities are located, what they cover, and how easy they are to find. Students find it empowering to find this information on their own and to understand what it is and from whence it came.

### iii. Teaching water quality standards

If you think back to the history of the CWA, you'll recall that one of its sources was state efforts to select the uses for which a designated water body would be appropriate. The focus then was on whether the water body should be maintained as drinkable, or as fishable/swimmable, as industrial, etc. There was no real effort to upgrade the designated water uses or improve the associated water quality. That changed with the modern CWA, but it has still remained the states' job to identify the current and desired water quality standards for given segments of their waters. States establish their own water quality standards and must review them periodically. The goal now, imposed by the CWA, goes beyond mere maintenance for an original use and towards water quality improvement. The CWA requires that NPDES permits, whether issued federally or through a designated state agency, include requirements sufficient to ensure the water quality standards designated by the states are met. Weinberg and Reilly state this well in their *UNDERSTANDING ENVIRONMENTAL LAW*—“If the state's water quality standard for a water body cannot be reached solely by

effluent limitations established in a permit targeted at the particular process or pollutants, the water quality-based approach must be utilized . . . [T]he standard pollutants that threaten water quality must be reduced until the receiving body of water reaches the designated purity level.”

Once the state assigned a water quality standard (e.g., drinkable, fishable/swimmable) the state then had to assign water quality criteria. Water quality criteria describe the requirements for that water body in measurable concentration levels in physical, chemical, and biological terms. Here’s how that works. For fish to live in a body of water, there must be enough dissolved oxygen (DO) in that water. That is a measurable characteristic. If there is not enough dissolved oxygen, the designated water body would not be suitable for fishing. If that water body was a designated fishable/swimmable area, then insufficient DO would cause it to violate its designated water quality standard. The result is that the state would have to control the amount of DO in that water body by setting Total Maximum Daily Loads (TMDLs) for the pollutants and sources that are causing the water body to fail the water quality standard. The TMDL would be assigned for the particular pollutant entering that water body from any discharger, and the responsible agency can divide that load among permitted dischargers of that pollutant to that water body through the applicable NPDES permits.

You can easily find examples of water quality standards for water bodies in your area and use them to show students both the water quality standards themselves and the water quality criteria applicable to those water bodies. Students can then find NPDES permits for dischargers to that water body and determine how the TMDLs are allocated among them.

#### iv. Teaching effluent limitations

Water quality standards seek to maintain identified segments of water bodies for specifically designated uses. Effluent limitations are a different way, a technology-based way, of improving water quality. The CWA provides for both quality standards and effluent limitations as tools for improving water quality.

Instead of identifying the designated use of a water segment and the necessary physical characteristics for that use, effluent limitations assume that reducing the amount of a pollutant introduced

to the water body will improve its quality. Rather than focusing on the water body itself, effluent limitations are assigned according to the industrial process through which pollutants are created and discharged. The idea is that industry should use technology to reduce pollutants in its discharges and the degree to which that's possible depends on the technology capabilities of each industrial process. EPA evaluates industrial processes and determines what they are able to achieve in terms of reducing particular pollutants in their effluent discharges. That is, how much of the pollutant can they refrain from creating, before their wastewater leaves the facility? The amounts of pollutants they are allowed to discharge, the effluent limitations, are imposed on facilities through their NPDES permits. As technology improves, EPA tightens effluent limitations. The agency determines technology improvement by looking at what the best, or least polluting, members of the industrial class are able to achieve in terms of discharge reductions. All discharges within that industrial process, then, will be allowed to discharge pollutants based on what similar facilities were able to achieve. The idea is that this method keeps water quality improving while not forcing reductions beyond what the agency knows, from example, is already possible.

If the technology-based effluent limitations are not sufficient to allow the water body to meet its state-identified water use, the state may impose its own water quality standard. This sometimes happens when the agency identified an effluent limitation by looking at industry technology from across a different part of the country. That process does not focus on a given body of water.

So, a facility's NPDES permit ultimately will include both effluent limitations and water quality standards. Take a look at a few NPDES permits with your students.

#### v. Teaching publicly-owned treatment works (POTWs)

Although this is probably something you could leave out of a basic Environmental Law course, I include it mostly because it fits in well with one of my fact scenarios. As mentioned above at page 15, one case study deals with an airline maintenance facility facing changes in VOC emissions control requirements. This problem shows how regulatory programs can conflict with one another and why a variance—permission to operate in violation



of law—might be warranted in some circumstances. I discuss my POTW problem in more detail in the section on research workshops and interdisciplinary learning, above at page 15.

Students should understand that POTWs cleanse polluted water they receive from other sources—the indirect dischargers. Indirect discharges might come to the POTW from municipal sanitary or stormwater sewers, private companies, or other sources. The POTW is responsible for making sure the water it ultimately discharges into the navigable water complies with the requirements of its NPDES permit. After all, it's the one discharging pollutants, from a point source, into the waters of the U.S., so it needs an NPDES permit. The indirect dischargers are only doing that indirectly—through the POTW.

The POTW needs to be able to cleanse the wastewater it receives sufficiently to satisfy its NPDES permit requirements. To do that, the indirect dischargers have some responsibility, too. Indirect dischargers are subject to pretreatment standards—standards their wastewater discharge must meet before it even gets to the POTW.

Again, I ask students to find our local POTW, or one near their home. They can also find the indirect discharge requirements applicable to those whose wastewater that POTW receives, cleanses, and discharges under its NPDES permit. They appreciate seeing this in real life and close to home. Students feel emboldened by their ability to find and understand it, and they see a glimpse of the connected work of the state and federal governments.

#### *d. NEPA*

I always cover NEPA because I believe students should appreciate that federal agencies must, at least, study the potential adverse environmental impacts of their decisions prior to making those decisions. Teaching NEPA helps students see the important role of agency decision-making and the many points of potential influence for lawyers throughout that process. For example, lawyers can serve their clients by offering advice at the scoping stage of a potential project all the way through a potential lawsuit alleging inadequacy of an environmental impact statement (EIS).

My hope is that students will come away from this section of the course with a solid awareness of the most important provisions of NEPA—the action-forcing mandate that is the EIS requirement, and basic understanding of how the Council on Environmental Quality—notably housed within the White House, not EPA—has interpreted its provisions. Students should gain a working understanding of the circumstances under which an agency must complete an EIS and what the EIS must include. They should know that the EIS must include, at minimum, five key items: (i) the environmental impact of the proposed action, (ii) any adverse environmental effects of the project that cannot be avoided, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources the proposed action would require. They should understand the differences between an EIS and an environmental assessment (EA)—when each is required, what each should include, and the end result for the agency. That is, for an EIS, a decision on the federal action the project requires, and for the EA, a finding of no significant impact (FONSI), followed by a decision on the action. Students should understand the ways project opponents use NEPA, for example, suing the agency for inadequacy of the EIS, or for doing an EA/FONSI when it should have completed an EIS.

My case study on a proposed light rail transit extension project raises NEPA issues. I describe this case study above, at page 26. Students first see that a transit extension is a big, expensive project that would require both federal and state permits. We talk about what types of permits might be involved and which agencies would issue them. EPA? Department of Transportation? State agencies? Once we hone in on any federal actions and a potential lead agency, we talk about the responsibilities NEPA places on that agency to study the potential environmental effect the proposed project would have on its surroundings. At this point, we begin looking at the NEPA statute itself.

Of course, we begin with NEPA's prime directive—that a lead federal agency completes an environmental review of major federal actions that might significantly affect the human environment. This leads to a host of easily anticipated definitional questions. What's a major action? How significant is significant? What counts

as the human environment? Once we've identified these questions, we dive into both regulations and case law to help us address them with the transit extension facts in mind. We try to identify, for the light rail extension, whether the Department of Transportation, for example, would need to complete an environmental impact statement, the highest level of environmental review under NEPA. Or would it instead need only an environmental assessment to confirm that the project would have no significant impact on the environment—in which case the agency would issue a Finding of No Significant Impact—a FONSI.

NEPA is also a great way to talk about citizen action and public involvement in environmental law. If people don't like the idea of the transit extension, how might they stop it? Does NEPA present them with opportunities to challenge it? How so, and is that an appropriate use of the statute?

Students enjoy the break from the intense scrutiny of statutory and regulatory language that we saw when studying RCRA, the CWA, or the CAA. They're happy to get back to some case law for a bit and to see how it helps lawyers—both within and outside of the agencies—figure out the answers to the NEPA-related questions raised in our facts.

## E. WHAT YOU CAN LEAVE OUT OF YOUR COURSE

It really isn't possible to cover everything, so this section includes topics you could leave out of your Environmental Law course. Plus, some of us choose to incorporate skills training or work on professionalism. The inclusion of these other or additional priorities might limit the amount of substantive coverage you can manage. As I've said in several places, limiting coverage a bit is totally fine for Environmental Law courses. You can't possibly cover all of the statutes anyway. For students who want more substance, they'll have to take courses on the individual media. Also, as I've mentioned, I think it's more important that students understand the environmental law system, basic administrative law, federal/state interaction, etc.

Most Environmental Law courses are 3 credits, which should be enough time to achieve the goals set forth above (though, of course, most of us would love to have more time!) A few schools offer the course as a two-credit, upper-level seminar. That can

work, too, especially if students have already had a course in Legislation or Legislation and the Regulatory State.

Here are some topics I leave out of my 3-credit course and the reasons I've chosen to omit them.

## 1. CERCLA

Believe it or not, I tend not to teach CERCLA. I'm sure environmental litigators will find that tantamount to heresy. It's been, after all, their bread and butter since its inception. Many an environmental litigator has spent an entire career on a single Superfund site. I do know that an enormous amount of environmental legal work, particularly litigation, has centered on CERCLA litigation. I succeeded in avoiding it in law practice, and I believe you can responsibly teach this course while avoiding it as well. In this section, I'll give you some reasons why you might skip it, and also how you might address it if you choose.

### *a. Why no CERCLA*

To me, it's too litigation-focused, and I can get what I need in that area from the other statutes. CERCLA is all about identifying financial responsibility for cleanup of a contaminated site. So, lots of litigation is about just that—determining who is a responsible party. It's a search for deep pockets—or really any pockets—upon which to impose the statute's joint and several liability for the cleanup.

### *b. CERCLA if you choose (or dare!)*

On the other hand, if you're a CERCLA fan, or you have lots of experience working with it in law practice, you could probably build your entire course around CERCLA. It includes exposure to environmental law's roots in common law tort because of the strict liability scheme it imposes by statute. It also provides opportunities for statutory language analysis, for example, in distinguishing between contribution and cost recovery, for common law interpretation of what's included in those actions, and for whom they are available. It allows for policy discussions, for example, about clean-up priorities, about who should be held liable, and to what extent they ought to contribute to the cost of the remediation. It

allows students to discuss the processes through which CERCLA sites are selected and remediated. They might also discuss the standard to which sites should be cleaned—which allows a discussion of brownfield reuse and remediation.

Often, I spend a class period explaining how CERCLA works and why it has taken over the world of environmental litigation. Here are the basics.

CERCLA imposes joint and several liability on “potentially responsible parties” (PRPs) for the cleanup of hazardous waste sites—called “facilities.” Potentially responsible parties are defined in the statute to include generators, owners or operators of the facility, anyone who arranged for the disposal of hazardous waste at the facility, and anyone who transported the hazardous waste to the facility. If your client falls into one of these categories and is designated as a PRP, they can be held jointly and severally (meaning totally) responsible for the cost of cleaning up the site. The only defenses are acts of God or war, acts or omissions of a third party, and an innocent purchaser defense.

The statute provides abundant fodder for policy discussions regarding, for example, the definition of owner or operator, the liability and limits on liability for the federal and state governments, or the liability of past owners and successors in interest of former owners. In addition, there is much to work with on the exemptions from the definition of owner or operator. For example, owner or operator does not include a bank or other secured creditor which, “without participating in management” holds “indicia of ownership” in the facility primarily to protect its security interest. Why did Congress let them off the hook? Banks would never loan money to purchase questionable facilities if they could end up liable for the cleanup.

Once the years of litigation have identified the PRPs who are on the hook for payment, those PRPs have two options under CERCLA for recovering costs and sharing expenses—cost recovery and contribution. Congress added the right of contribution to CERCLA in 1986. It allows identified PRPs to sue (or be sued by) other PRPs seeking their contribution to the costs. The idea is that although every PRP is jointly and severally liable (for the whole cost) courts can allocate the costs among the PRPs through contribution actions, thus making the costs more equitably distributed. Courts are free to use a broad variety of factors to determine

equity. Factors might include: proof that the party's contribution to the contamination is distinguishable from that of other parties, the relative nature of the contamination, the party's category of involvement (generator, transporter, or disposer), the level of care the party exhibited in their handling of the hazardous waste, etc.

Not to be confused with contribution, CERCLA also provides the opportunity for federal and state governments, and others, to sue PRPs for cost recovery. Through cost recovery, they can recoup funds they expended to remove contaminants and remediate the contaminated site. Many types of costs are recoverable—the costs of a government executed cleanup, oversight of a private party cleanup, surveillance, health assessments. Although attorneys' fees are not recoverable for the litigation itself, they are recoverable for lots of other stuff, like investigation of the case to identify other PRPs.

## 2. EPCRA

I leave out the Emergency Planning and Community Right-to-Know Act (EPCRA). It's actually an amendment to CERCLA, but is often thought of and treated as a separate law. EPCRA requires that entities that store hazardous substances disclose information about what they're storing, and that they have response plans in case of accidents related to the hazardous substances on their premises. They also have to provide public notice about the substances. The right-to-know or public notification piece of this law makes the emergency planning piece possible. With the information provided to the public, emergency responders can be better prepared to respond in the case of a spill or other release of the hazardous substances.

Because most responses in the case of a hazardous substance incident would occur at the local level, much of the planning associated with this law occurs there, at the local level. In fact, the law requires the creation of local emergency planning committees. You could ask students who should be on this committee. If they were creating it anew, you could ask who needs to be at the table, and then compare their responses to the statutory requirements. The statute requires inclusion of elected local officials, civil defense and emergency service representatives, environmental health and transportation personnel, and representatives from community

organizations. The owners and operators of facilities subject to EPCRA are also intended to be on the committee. The committee is responsible for emergency planning related to the stored hazardous substances, and for the selection of an emergency coordinator who is responsible for communication and decision-making.

The statute sets forth requirements for creation and approval of the emergency response plan that the committee must create. The plan must be approved by the state, which must make sure adequate resources are available so the plan could be implemented as needed. At minimum, the plan must: identify the facilities within the district that are subject to EPCRA; specify the plan of action for the facilities, emergency responders, and medical personnel; designate emergency coordinators; establish procedures to notify emergency responders and the public about any hazardous substance release; establish methods for determining the particulars of a release once it has occurred; identify and locate emergency equipment and responsible personnel; draft evacuation plans; and provide for necessary training.

To aid in the creation of emergency response plans and to provide information to the public, EPCRA requires that facilities use several forms of reporting. The first form of reporting is that those subject to the statute must submit their Material Safety Data Sheets (MSDSs) to local planning committees, state emergency response commissions, and local fire departments. Although the MSDSs are prepared because the Occupational Safety and Health Act requires them, their submission is an important part of EPCRA. Facilities also have to prepare and submit inventory forms noting the chemicals on-site, the quantities of those chemicals, and how the chemicals are stored. Facilities also have to submit toxic chemical release forms to EPA using readily available information about the chemicals they store.

One way to use EPCRA, if you do choose to teach it, is to focus on the citizen suit provisions. Although violations of EPCRA are also subject to federal enforcement—both civil and criminal, the statute provides for citizen action as well. I don't have a fact scenario to use for this, but you could easily write one and have students represent the chemical-storing facility, a local citizen, and perhaps a public entity, like a fire department or city. The statute allows them to sue the facility for failure to submit the necessary follow-up emergency notice or MSDS, or failure to submit one

of the other required forms. Citizens can also sue EPA and other officials and agencies to require them to comply with their obligation to provide a vehicle for the public to access information required to be disclosed under EPCRA. Local governments can sue facilities for failure to comply with several of the requirements for disclosure and notification.

### III. Preparing for the New Course

I hope you're off to a great start in preparing for the course just by taking the time to read this book. To make your life easier, I've suggested some additional resources that might help you.

#### A. INITIAL STEPS

##### 1. What to read to help you prepare

###### *a. Educating the Next Generation of Environmental Lawyers, by Madeline June Kass in the Summer 2010 issue of Natural Resources and Environment*

This article discusses efforts by Environmental Law professors to meet the Carnegie Report's challenge that we educate lawyers in civil professionalism, which is the intersection of professionalism and practical lawyering skills. The idea is to bridge the gap between analytical and professional knowledge. Some things Environmental Law professors can include are in class exercises, stand-alone skills exercises, clinical program involvement, and extra-curricular programs (like moot-court competitions). In terms of in-class exercises, this might mean case studies, practicums, simulations, and role-playing. It may mean asking students to write a legal memo based on real or hypothetical facts, negotiate a dispute by applying specified state laws, prepare a citizen suit 60-day intent to sue notice or a motion for rehearing, prepare agreements incorporating resolutions reached in mock negotiations, etc. The list goes on and on and you can find it in this article. The article includes lots of great ideas. It makes an important point about legal education, environmental lawyers, and actually all lawyers—they need to be able to find and analyze the law, and to act on what they've found.



*b. Environmental Law Practice: Problems and Exercises for Skills Development by Jerry Anderson and Dennis Hirsch*

This book is one of my favorites. It's not really one you need to read to prepare to teach a survey course, but I do recommend taking a close look at its method. It's divided into four sections, environmental compliance, litigation, enforcement, and policy. It teaches by placing students in the position of a lawyer carrying out assignments in these four areas. For example, in the first section, environmental compliance, it presents students with facts and questions posed by a client furniture manufacturer. They are then marched through the research process for solving the client's air compliance questions pertaining to a facility expansion she's planning. To do this, the book uses many original documents. It includes exact replicas of pieces of statutes, the Code of Federal Regulations (CFR), regulatory preambles, and agency guidance. Throughout the four major sections, the book gives students a deep look at some specific pieces of the Clean Air Act, Clean Water Act, CERCLA, RCRA, EPCRA, and citizen suits.

I have used this book in a couple of different courses over the years. When I first found it, I used it as a supplement for the seminar for my environmental law clinic students. Most recently, I used it as a supplement in my Environmental Law foundation class. Whether or not you use the book itself, it provides a terrific example of teaching methodology for Environmental Law.

*c. Understanding Environmental Law by Phillip Weinberg and Kevin A. Reilly*

The authors call this book "a concise, direct introduction to the burgeoning field of environment law." That's exactly what it is. It covers the basics and important features of each of the environmental statutes. It is easy to understand—hence its title—and it's very well organized. You can really get a sense of what each statute does, how it works, and why it matters. It presents some details—that is, it doesn't leave out important features of the law, but doesn't dwell on them. I sometimes use this book rather than a standard casebook, especially when I'm using my own fact-based case studies. In those instances, it helps provide students with the critical background and overview of the statute so we can jump

right into analyzing facts. I sometimes pair this with Anderson and Hirsch's ENVIRONMENTAL LAW PRACTICE book, discussed immediately above.

## 2. Choosing course materials/case books

### a. Case books

Casebooks present a thorny problem for the new Environmental Law prof. There are lots of great ones available, each with its own bent. Before you can tackle the question of which case book works best for you, you need to decide whether you'll use one at all. To begin that process, I recommend first thinking about your course focus and your teaching approach. You may decide to write your own case studies or use the case studies from Stanford. Either way, there are lots of resources available to you.

### b. Books that aren't case books

There are several books that are great for teaching, but aren't case books. For example, some books focus on very basic practice of environmental law—the role of the lawyer in environmental compliance, litigation, policy-making e.g., ENVIRONMENTAL LAW PRACTICE by Jerry Anderson and Dennis Hirsch, discussed at page 59 above. I've used this in an Environmental Law Practicum course where not all students had taken the survey course. I've also used it in the survey course to supplement either a case book or my own case studies.

There are also some books that provide a clear, complete yet brief overview of each of the major environmental law statutes e.g., MASTERING ENVIRONMENTAL LAW, by Joel A. Mintz and Tracy Hester, or UNDERSTANDING ENVIRONMENTAL LAW, by Phillip Weinberg and Kevin A. Reilly, discussed at page 59 above. These books can play an important supporting role in your course if you choose not to use a casebook. I usually use one of them in conjunction with my case studies. The benefits of these books include that students can get a quick look at what's important in the statute and they'll at least get a short introduction to the entire statute when I wouldn't otherwise be covering it (because I focus mostly of the parts of the statutes that apply to the case studies).

### *c. The Stanford case studies*

As mentioned above, at page 21, Stanford Law School's Environmental and Natural Resources Law and Policy Program hired an environmental law practitioner to develop a series of "situational" case studies for use in law teaching in 1997. The program has created case studies presenting problems in a variety of subject areas, including endangered species, environmental justice, forests, land use/takings/zoning, oceans/fisheries, toxics/waste, water allocation and quality, and more. In addition to the case study facts and issues, the program provides resources and simulation activities for use in the classroom. If I hadn't already written some of my own case studies, I'd probably use these.

### 3. Common pitfalls and challenges

One common pitfall that seems to occur when teaching this course is the same pitfall that occurs in environmental law practice—a tendency to get mired in the complexities of a statute or its regulations. But, that's a good thing! If you get somewhat mired in the statute, or even better, the regulations, you're really showing students what it means to practice environmental law. The hard part, then, is keeping the course fresh and exciting while still showing the students the reality of the practice area.

I like to use RCRA's definition of hazardous waste (and therefore also its definition of solid waste), as discussed above, as an entree for getting ourselves sufficiently swamped in details. As you might imagine, its effective. It allows me to walk students through the statutory definition, the proposed and final rules, and regulatory definitions, and several types of agency guidance documents. Of course, at the outset, they see that hazardous waste is a subset of solid waste—a very elementary reading of the statute. They then have to dive into the question of what counts as a solid waste. This leads us to the CFR, and to the federal register notices that provide background. Eventually, I show them a guidance document that answers the question specifically with respect to the chicken manure as a solid waste. They must then return to the question of hazard. In short, it gets us down and dirty with the stuff of environmental law.

To come up with a meaty definitional or regulatory problem, think about your own environmental law practice—or get friendly with the local environmental bar—which is always a good idea anyway. The case studies I use all grew out of my own practice experience, and you're welcome to adapt, update, and use them as you'd like.

## B. OPPORTUNITIES FOR INNOVATION

### 1. Transactional skills

New lawyers often first see environmental law legal issues arise in the course of some sort of transaction. Sometimes it comes up in a real estate transfer, sometimes in a corporate transaction. Because many of your students may not intend to be environmental lawyers per se, it's good to give them some skills they can apply when environmental issues arise in other areas of practice. In fact, the egg production case study, mentioned above, arose out of a corporate merger in which we were asked by the buyer to evaluate the environmental risk presented at the egg production facility it was considering purchasing.

I try to provide at least a mini-introduction to these ideas because it will serve a broader population of students than those intending to practice environmental law. Some schools have separate courses on environmental aspects of business transactions or environmental issues in real estate.

### 2. Oral presentations

Whenever we connect with the practicing bar, they say students could improve their speaking and oral presentation skills. Fair enough. Students often don't get a lot of practice at it, aside from moot court, a trial practice course, and suffering through cold calls in class.

You can use Environmental Law to provide an opportunity for students to practice oral presentation skills. I sometimes assign a presentation project in the middle of the course, or sometimes at the end in lieu of a final exam. Either way, there are many ways to use a presentation assignment. For example, you could have students do presentations on state versions of the federal laws you're studying. This would allow them to realize that the state laws

exist, find them, and explain whether and how they interact with the federal laws. You could have students present on an environmental law-related topic that's in the news. There is never a shortage of those! Ask them to provide a legal framework in which to understand the newsworthy problem. I recently asked students to reverse engineer some regulations that the Trump administration was unraveling. I asked them to explain the original rule, what statute authorized its creation, how the President can undo it, and what impact that reversal might have on the environment and on industry. I like students to work on these presentations in mixed groups of law students and students from the colleges of science, engineering, and urban affairs. I'll say more about group work below.

### 3. Team work

Lawyers work in teams all the time, but we do almost none of it in law school. I try to find one or more projects each semester that students can work on in groups. I've done this with research workshop assignments and with presentation assignments. Group work is tricky, though. Students worry about workload equity, schedule coordination, and fairness in grading—and these concerns are well justified. I've tried to handle these problems in various ways over the years. There are no perfect solutions, but my class seemed reasonably satisfied with how I did it this year.

I created the groups myself rather than letting students choose them. This way I could ensure a balance of law and non-law students and I could be sure the groups weren't terribly unequal in terms of talent and experience. By the time I get to the group work point of the semester this is actually quite easy to do. I also require each student to submit a confidential paragraph describing the group's work process and the relative level of effort of each of the group participants. This helps students feel heard and feel like grading is more fair—that is, it gives me the information I need to assign different grades to individual group members, if necessary.

### 4. The "real world"

Students always want to know what it's like to practice law in the disciplines they're studying. They yearn to do something real, to see something real, or hear someone real! It's worthwhile

to build relationships with local environmental lawyers for many reasons—one of which is to invite them to speak with your class! I try to show students a diversity of work environments. For example, over the years, I've invited lawyers, many of whom are my former students, from private practice, Ohio EPA, the Ohio Attorney General's Office, city government, the regional sewer district, local non-profits, and even the local zoo! It's a highlight of the semester for students to hear some of the ways what they're learning appears in the real world.

### 5. Ask the adjuncts and practitioners

I have long valued any time spent with local practitioners of environmental law. We are fortunate to have an active, vibrant, talented, experienced, and high-quality environmental bar. They've welcomed my involvement in and my presence at the local bar association's environmental law section events and they've been involved and engaged in the environmental law programs at our law school and at other local law schools. My law school does not currently have other environmental law professors on the full time faculty. As a result, my friends in the local environmental bar have been academic colleagues as well as fabulous resources on all things practice-related.

Before I began writing this book, I convened a roundtable with several of these friends and colleagues. If you're willing to serve lunch, much like faculty and students, they'll show up! Their thoughts and ideas appear throughout this book, but suffice to say that their focus was heavily on practice experience, research exposure, and writing. More specifically, they all agreed on the following.

1. Students need context. They need at least a sense of what the major statutes cover and they need to see it arise in context and applied to facts.
2. Procedure. If students haven't had a course on legislation and regulation, you'll need to do a mini-course on administrative procedure. You can do that as you're teaching other things, but they really need to understand the notice and comment rulemaking process, permitting, and administrative appeals.

3. Practice. Show students how to use the laws to get things done. Law is a tool. For what? To control behavior in the furtherance of a policy. How can students use it to advance the goals of their clients? Litigation and the adversarial process is not always the preferred method. In fact, overuse of these methods can ruin a lawyer's reputation with the very agencies with which s/he needs to work. The point is, relationships are important—almost as important as the statutes themselves!

## 6. Other resources

Sign up for the envlawprofs listserv where you'll find our environmental law colleagues from across the country. The listserv is active, created and run by Professor John Bonine at the University of Oregon. It is welcoming to new members. You'll always find people eager to offer support, advice, and information—on course content, cases, activism, scholarship, conferences, etc.

Also, there are blogs and websites that can help welcome you into the community of environmental law professors, for example, Environmental Law Prof Blog or Land Use Prof Blog. Just search for them on the web and sign up.

At the American Association of Law Schools' Annual Meeting every January, there are substantive, timely, programs and business meetings hosted by both the Environmental Law Section and the Natural Resources and Energy Law Section. The sections usually offer engaging, inclusive works in progress sessions where new and old(er) scholars can get feedback on their projects. These sections also combine to offer an informative and enjoyable off-site field trip—a great way to get to know colleagues from other schools. These scholars are good people to talk with about teaching.

The Rocky Mountain Mineral Law Foundation hosts the Natural Resources Law Teachers' Institute, a biennial conference for environmental and natural resources law faculty. For anyone in our field it's a must do. It includes informative substantive presentations on research and important topics of the day, lighting round works-in-progress sessions, and great field trips.

Finally, Vermont Law School hosts an annual Colloquium on Environmental Law Scholarship. Again, although the focus and purpose of this event is on what we write, wonderful teachers

of environmental law will be there and are happy to talk about teaching as well as scholarship. Vermont recently hosted a series of seminars on innovation in environmental law teaching. I highly recommend the colloquium as well as their other programs.

## **IV. Tips from My Classroom**

### **A. THE FIRST WEEK OF CLASS**

#### **1. Identifying environmental issues**

As I mentioned, students feel a bit lost at sea at the outset in Environmental Law. The course is statute and regulation-based, complicated, and widely varied in terms of the subject matter and the mechanics of the statutes. I like to ease them in gently.

I start the first class by helping students gain a sense of what “counts” as an environmental legal issue. Years ago, a group of economists and local leaders did a study in Northeast Ohio to determine what environmental issues were the most important to people in the area. The group, called the Regional Environmental Priorities Project, carried out focus groups around the region to determine regional environmental priorities. Not much came of the project itself, but the process it engaged in was instructive. I try to emulate it on a micro level on Day One of my Environmental Law course. Here’s how it works.

I ask students to brainstorm local and regional environmental issues. This gets them talking, and it gets them thinking about the region, its needs, and its problems. I accept most of their suggestions—but they usually come up with the usual suspects—clean air, drinkable water, safety from toxic chemicals. I ask them to think about their commute to school. Did they pass smokestacks? Did they see a pile of empty 55-gallon drums? Did they drive past the water treatment facility? Usually, I can move them beyond the basic air, water, and waste. There is a lot of room for their ideas and I keep track of what they’ve said.

To be sure we’ve covered everything, I look at the actual list of the regional environmental issues generated by the Regional Environmental Priorities Project and prompt the students to come up with the issues they missed—such as outmigration from the urban core, or noise. Once we’ve got a good list, I ask them to



think about how a community should begin to address the identified environmental problems. Can we tackle them all at once? Why not? If not, what do we do? Who should decide?

## 2. Setting environmental priorities

After we brainstorm environmental issues, I try to work the students around to the idea that maybe we should prioritize the environmental problems we identified. Why? Because if they were an agency tasked with environmental protection, they would have to determine what to tackle first. Should we attack the problems that are easiest and cheapest to solve—maybe the recycling of scrap tires? Or should we attack a problem that is extremely dangerous to public health but very hard to solve? This usually leads to a great discussion of the importance of criteria in the setting of priorities.

To establish priorities, we have to evaluate the issues against an established set of criteria. I often divide the students into small groups to do this. They have to agree on the criteria as well as how their issues stack up against their agreed upon criteria.

What might the criteria be? They think of things such as the environmental problem needs to be fixed because it presents life threatening health issues, or because the problem is easy to fix we should do it right away, or because it's difficult to fix we'd best get started. Some groups want to start with the most dangerous environmental problems. Some want to start with the problems that affect the largest numbers of people, or that affect people in the most negative ways, or that affect people least able to protect themselves. Others want to start with the easiest problems to solve. Some consider the political climate, or the cost of potential solutions. Once the groups identify their criteria, they apply the environmental problems to the selected criteria. I ask them to use their criteria to put the identified environmental problems into priority categories—high, medium, and low—and to identify the highest priority problem. There is always a lively debate when we come together to discuss the results.

## 3. Influencing environmental behavior — the tragedy of the commons

As discussed earlier, at page 8, above, the tragedy of the commons is another concept I present very early in the course, usually

within the first few classes. Once we've identified what counts as an environmental problem, and worked on prioritizing those problems, I like to demonstrate the difficulties we have in controlling human behavior, and the environmental harms we leave in our wake. To do this, we simply role-play Garrett Hardin's classic example of cattle herds grazing at no cost on a public common. I ask three students to take on a role as a herder. They are herders A, B, and C. They each begin with ten head of cattle. (I once had some Indian students in the classroom who were uncomfortable with the use of cows in the hypothetical, so we changed it to sheep!) The land is a public common, so herders graze their cattle on the land at no cost. Because it's free, Herder A adds a cow so she'll yield more marketable beef. I apply some easy round numbers to the weights of the cows and to the total yield of the commons herds. This is all readily available in Hardin's article. When Herder B sees that Herder A is making more money because Herder A's herd is one cow larger, Herder B adds a cow. After all, it doesn't cost Herder B anything to graze that additional cow on the common. All herders can see that the weight of each individual cow is going down. The cows are jostling for position on the common and the commons' overall productivity is being reduced. It's all very visible and predictable. When asked if he'd also like to add a cow, though, Herder C adds one, too. Having seen the others' profits rise, and even while understanding that the total yield of the commons is being reduced, Herder C still adds the additional cow, as does Herder A thereafter, and the cycle continues again.

Students see that humans make these decisions, not from a position of ignorance (they knew that the commons' yield was reducing overall) but from a motivation for individual financial gain—or greed.

This is a simple exercise, but one that students remember and enjoy, and it drives home the tragedy of the commons as one of the most important concepts in the course. We refer back to it in many contexts throughout the semester—with respect to air pollution, water pollution, and so much more. We can also refer back to it when we consider the role of states (that are competing with each other for economic growth), and the role of the United States in taking the lead internationally (where each country might be reluctant to give up economic advantage even in the

face of potential worldwide catastrophe). If you're looking for an overarching theme for your course, this could be good one.

## B. CASE STUDIES — THE BULK OF THE COURSE

Above, in section II, I've described how I use case studies, or long fact scenarios, to raise environmental legal issues to which we apply individual statutes. As I've described, one case study deals with environmental legal issues raised at an industrial egg production facility, and provides students with examples of issues pertaining to manure disposal, wastewater disposal, stormwater runoff, battery handling, underground storage tanks, particulate emissions from a grain silo, and more. Another case study presents environmental policy, endangered species, and environmental racism issues in a proposed rapid transit extension project. The third presents wastewater discharge and VOC emissions issues arising at an airport POTW.

With contextual references to these home-made case studies, my students engage in research workshops and hear guest speakers from the local environmental bar. In terms of themes, I work in cooperative federalism, economics, politics, and practice. Is that too many themes? Does that mean I don't have a theme? Perhaps—but it's worked well so far.

## C. INCORPORATING CURRENT EVENTS (AND MORE ON POLITICS)

In the discussion of the proposed ban on the sale of disposable plastic water bottles in national park concessions described above at page 6, I provided an example of how to work politics into your course Environmental Law. Here's another way to do that.

My students and I initially struggled to wrap our heads around the Trump administration's whirlwind of changes to the implementation and interpretation of Environmental Laws. To help us get a grip on what was happening, we embarked on a deconstruction project. With help from *The New York Times*, and Harvard and Columbia Law Schools, we identified a list of more than 90 environment-related actions being taken by the new administration. We focused on important actions taken by the Departments

of Interior and Energy, and by EPA. We divided the list amongst ourselves, then set about answering specific questions about each administrative action being targeted for revision, reversal, withdrawal, etc.

For each regulation or interpretation the administration sought to alter, we began with a basic question: what federal statute, if applicable, had authorized the original agency action that the administration was now working to change? What was the agency's rationale for enacting the regulation or interpretation in the first place? Who or what was helped by the original regulation or interpretation, and who would be served by the administration's proposed changes? What legal tools could the administration use to achieve its goal with respect to each action?

Was the action an attempt to alter a regulation? To withdraw it entirely? To sideline it? Would the administration have to use a new notice and comment rulemaking process? Could the rule be changed in another way? By executive or secretarial order? Was the Congressional Review Act used to eliminate it? Under what circumstances is that possible?

For the executive or secretarial orders of the new administration, we asked why the administration believed they were necessary. For each, what goal was the administration trying to achieve? What was the position of the legislature regarding that goal? (Can a legislature even *have* a single position?) What did the applicable statutes allow the administration to achieve? Why did the president use his executive order power?

Students presented what they'd learned on each of their selected agency actions through oral presentation of prepared Power Point presentations. The presentations took up several class periods, but we all felt it was worth the time. Students could take a deep dive on the agency actions to which they were assigned, but also were able to learn about the circumstances surrounding many of the others.

This was a great project. Students told me that it helped them get a much fuller understanding of the operation of administrative law and environmental law, and of the law and politics involved in rule creation and rule changes. They could see the politics involved in the creation of the original action—and in the implementation of policy changes that accompany new administrations.

#### D. RESEARCH WORKSHOPS — PRACTICE EXPERIENCE, COOPERATIVE FEDERALISM, AND INTERDISCIPLINARY TEAM WORK

As discussed above, at page 28, in addition to the cooperative federalism issues that arise in the case studies (or which you could easily illustrate through case law), I often use a research workshop to give students a practice-oriented problem that includes some lessons on cooperative federalism. For example, one problem I use involves a local family attempting to add riverbank stabilization behind their property. Their property is a 42-acre plot of rural land with a river running through it. The client wants to know whether they need any permits, and if so, from which local, state, or federal agencies. This problem requires students to look at the Clean Water Act and determine which parts are implemented by Ohio EPA—like a water quality certificate, and which parts are implemented by the U.S. Army Corps of Engineers, like a dredge and fill permit. They need to locate the appropriate Army Corps office and find a Nationwide Permit on riverbank stabilization. They also need to check on whether there are local authorities involved.

This problem allows students to see cooperative federalism in action, to attack a problem similar to something they might see in law practice, and to work together to solve it.

#### E. TECHNOLOGY

Environmental Law lends itself to some great uses of technology. In fact, it was the first course in which I experimented with any technology beyond the blackboard. Here's why. Environmental law is all over the web. EPA's website includes statutes, guidance documents, and dockets full of comments on proposed rules. In my day, we had to physically go to an EPA regional office and look at microfiche for some of this stuff! Now, you can use the EPA website during class to show students, immediately, the documents and sources of law you're discussing. When talking about comments on a proposed rule, I will often pull up the EPA database and show students the comments in real time. I also like to tell them about the days when I walked through the labyrinth of the old EPA building on Water Street to look at comments in the air docket.

There are other useful websites out there, too. One day we were talking about a chemical and a student asked what the health impacts would be of exposure to that chemical. During class, I was able to access a National Institutes of Health database that held the answer. (The other benefit of the student's question was that the class could see that I didn't know the answer, that was OK, and we could look it up. I hope that helps students see that you don't have to know everything about science to practice environmental law. You just have to be unafraid to learn about it.)

There are other ways to use technology, too. For example, Professor Robin Kundis Craig has created a fabulous set of PowerPoint presentations to accompany her casebook. In the years I used her book for my class, I adapted and used many of them. They include diagrams, photos, charts, graphs, and other tools to help bring the material to life. Her slides are terrific, but if you're using a different book, you could certainly make your own. The key to using PowerPoint effectively, though, is to use it to enhance material, not to provide material. It's super boring when people read from slides. You've seen lots of people do that and it's mind-numbing. Use PowerPoint slides to illustrate or illuminate the material. A photo, as they say, is worth a thousand words, as are charts, graphs, maps, Venn diagrams, and other visual aids.

## F. EXAMS

I've found it much more difficult to write exams for Environmental Law than for my 1L courses—Property and Legislation and the Regulatory State. I've gone back and forth on the question of whether to use in-class exams or take-home exams in Environmental Law. Because I don't like relying on appellate opinions to teach Environmental Law, the subject—at least the way I teach it—does not lend itself to the same type of issue-spotting exam that works so well in Property or Torts. I've done it, but I'm not crazy about it. The course seems well-suited to a take-home exam because students have the time and space to read through a file of facts, documents, statutes, and regulations. So, over the years, I've gravitated towards the take-home exam and I usually use two questions on any given exam.

First, I like questions that ask students to use facts, and to both find and analyze law. Because I usually have them learning

law by solving either real or hypothetical legal problems, that's exactly what I do for the exam. I always give them a set of facts. Sometimes I give them the law and sometimes I make them find it. They always have to write an analysis, including the answer to the problem.

Second, we talk a lot about policy in class, so I usually include a policy-based question. You can make up the situation or take it straight from the news. If you do this, students have to be clearish about what you're looking for. Are you looking for an analysis of political issues? Economic issues? The role of interest groups? Citizens? All of the above? Just be sure you've given the students some sort of message about what you want.

## G. PROJECT

Sometimes, either as an intermediate assessment, or in lieu of a final exam, I require a substantial project. Students like to dive into issues of their own choosing, rather than of my choosing. A project can give them that choice and the time and encouragement to dig into it. Asking students to select a project topic can also give you a reason to guide them to the newspapers, to environmentally focused websites, or to the Bloomberg/Bureau of National Affairs' (BNA) Environment Reporter or other environmental news aggregators. They can peruse these sources, get a sense of what's there, and choose what interests them. At the same time, they'll benefit from the introduction to these environment law-focused resources.

The project can come in any of several forms. Students can, for example, do a PowerPoint presentation, make a video, or build a website. If they do the video or website, I still require them to stand up and talk about it, and to answer questions about the topic. It's great practice for students to speak in public. Ask other students to comment on both the substance and style of the presentation. They'll all learn a lot.

## H. REMOTE LEARNING

Most of us are adjusting to remote, distance, on-line, virtual—whatever you'd like to call it—teaching. I don't pretend to be an

expert on this aspect of teaching Environmental Law, but I do have a few suggestions. Fortuitously, and for scheduling reasons only, I happened to teach the Environmental Law course as a hybrid course in the fall semester of 2019, a semester in advance of the Covid-19 crisis. So, I had a single semester head start on this enterprise. It's not much, but it helped.

My Environmental Law course is 3-credits, usually taught twice weekly. It is a core course for students in environment-related masters degree programs across the university. The twice-weekly schedule creates complications for graduate students in environmental policy and environmental engineering because their colleges schedule courses differently from the law school. To help deal with scheduling issues, I decided to try a different approach. I taught once weekly in person and the second weekly "class" was asynchronous. Students could do that second "class" anytime during the same week. This schedule adaptation helped the non-law graduate students take the course and it allowed the law students some much appreciated flexibility.

The once weekly in-person class provided an opportunity for personal contact and community building. For the second "class" each week, I provided asynchronous materials, activities, and assessments. This consisted mostly of readings and writing assignments with many of the assignments group projects. I intended the group projects to build working relationships among the law students and the many graduate students from other environment-related disciplines. Although this had worked well in years past, when all class sessions were live and in-person, it didn't work well for the asynchronous classes. Students divided group work in ways that deprived some of the group members of the intended benefits of the project. Individual group members finished with a poor sense of the overall project, and the remote nature of the task failed to build the intended cross-disciplinary connections. To be honest, the asynchronous portion of the course didn't go terribly well. It felt disjointed and impersonal and neither the students nor I were happy with it.

Luckily, I had an opportunity to do it better in the fall semester of 2020. Due to Covid-19 restrictions, I had to conduct the ostensibly in-person class day live (synchronously) via Zoom and the second "class" remained asynchronous. I had learned that the asynchronous portion needed to feel more personal. Rather than



assigning readings and related assignments, I created short introductory videos for each asynchronous class. I use these videos in a variety of ways. Sometimes I explain or present substantive material. Sometimes I describe and/or demonstrate assignments. Sometimes I use narrated PowerPoint presentations. I believe the students felt more connected to the assignments with my face and voice preceding them.

Regarding the group assignments, I reduced their number substantially—I had five the first hybrid go-round and that was too many. I used some of the asynchronous class session time for me to work with small groups on their projects via Zoom. This way, they saw my involvement and the involvement of their classmates. This helped a lot in getting the groups to get the most out of their assignments.

There is much more to say and learn about teaching from a distance, but I'll leave the rest to the experts in that field. Although it came too late for my fall 2019 hybrid course, I benefited enormously from some training webinars hosted by the AALS Section on Technology in the Classroom, in particular, a demonstration session by Professor April Dawson (North Carolina Central University). These sessions were recorded and may still be available for viewing via the AALS website.

## **V. Conclusion**

Teaching law students is an enormous privilege and an immense responsibility. Teaching Environmental Law, in particular, gives the professor an opportunity to help future lawyers understand some important lessons. First, contrary to the belief of many first-year law students, the legal system is not made up entirely of courts. It's not all judicial and it's not all adversarial.

The statutes Congress creates need implementation and that's the role of agencies. Lawyers can do a world of good by working in and around legislatures and agencies and with the people who staff them. Environmental lawyers can help shape legislation, the resulting regulations, and the agencies that implement them, if they understand how they work.

Environmental law, and all law really, is a complex mesh of politics, policy, and economic tensions. Students will do well to

pay close attention to each of those as they learn to navigate the world of law practice. Problem solving is hard in this context. It's hard even to prioritize problems, let alone solutions.

Still, it's worth it. And you get to be their guide. Enjoy the ride responsibly.











