Cases and Places: A Field-Based Approach to Teaching Natural Resource and Environmental Law

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I. Introduction

Many students in environmental law courses are pursuing an environmental career because they enjoy nature, have a history of outdoor recreation, or feel a connection to the natural world.[1] Other students in these courses have more of an arm's-length relationship with the environment, caring about environmental protection without immersing themselves in nature. And still others have no more than a glancing interest in environmental law, but the course meets a requirement and seems to offer something that might be good to know. But most law schools welcome these diverse students with diverse needs to the field of environmental law with a relatively standard survey course covering the major federal environmental laws, characterized by Professor Sax almost thirty years ago as "an encounter with statutes of numbing complexity and detail."[2] The statutes have not gotten less complex, detailed, or mind-numbing over the last thirty years.[3]

For students who stay on the environmental path, this survey course may be followed by more specialized courses on particular environmental statutes.

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1. James M. Wakefield, *Attitudes, Ideals and the Practice of Environmental Law*, 10 UCLA J. Envtl. L. & Pol'y 169, 178 (1991) ("Both students and attorneys chose 'personal satisfaction' as their primary reason for entering the field."); *see also* J. Joy James, Robert D. Bixler & Carin E. Vadala, *From Play in Nature, to Recreation then Vocation: A Developmental Model for Natural History-Oriented Environmental Professionals*, 20 Children Youth & Env't 231, 249 (2010).

2. Joseph L. Sax, *Environmental Law in the Law Schools: What We Teach and How We Feel About It*, 19 Envtl. L. Rep. 251, 252 (1989).

3. *See* J.B. Ruhl & James Salzman, *Mozart and the Red Queen: The Problem of Regulatory Accretion in the Administrative State*, 91 Geo. L.J. 757, 762 (2003).

Introducing environmental law students to the field by leading them on an interminable slog through the statutes risks driving off those with a less intense interest or stultifying the very personality traits that led them into the environmental field in the first place.[4] While these students certainly need a broad introduction to the field, we must balance this approach with courses that both better address the needs of environmental law students and do a better job attracting and retaining students new to the field.[5]

Field-based environmental law courses offer one way to address this problem. In the inaugural 1948 issue of the Journal of Legal Education, Professor Clyde Martz highlighted the effectiveness of this approach in an article describing his Natural Resources Law class.[6] In spite of this auspicious beginning in formal law schools, "university-based outdoor education . . . has been slow to develop in a law school environment."[7] Our recent survey of environmental law professors, through the University of Oregon Environmental Law Professors' group e-mail list, found roughly a dozen schools offering field-based environmental and natural resource law courses. To qualify as a field-based course for the purposes of this article, the course must offer more than one or two single day trips; field courses center on an extended outdoor experience. Courses surveyed during this effort visit a tremendous variety of locations, from Detroit's urban gardens to the Montana wilderness, and from Cambodia to Rwanda to Canada. Trip lengths range from as little as a few days to as long as two and a half weeks.

The courses focus on topics from sustainable development to indigenous issues to biodiversity. But only about five percent of the 205 ABA-approved law schools offer field-based environmental law courses.[8] At their best, these courses address many of the shortcomings of a traditional approach to environmental law by improving student learning, providing students with context for the real-world impacts of environmental law, providing an interdisciplinary approach to legal education, improving student well-being, and meeting affective student learning outcomes (i.e., helping them to care about environmental law). This article highlights one such course and provides

4. *See* Estair Van Wagner, *"Seeing the Place Makes It Real": Place-Based Teaching in the Environmental and Planning Law Classroom*, 34 Envtl. & Plan. L. J. 522, 523 (2017).

5. Although we lack recent data on this point, most work to date has also found these classes fail to prepare law students for the actual practice of environmental law. *See, e.g.*, Heidi Gorovitz Robertson, *Methods for Teaching Environmental Law: Some Thoughts on Providing Access to the Environmental Law System*, 23 Colum. J. Envtl. L. 237, 239 (1998) ("A survey both of law students interested in environmental law and environmental lawyers showed that students and lawyers felt ill-prepared upon leaving law school to practice environmental law.").

6. Clyde O. Martz, *The Study of Natural Resource Law*, 1 J. Legal Educ. 588, 589 (1948) ("Because the materials with which they deal are unique and rather unfamiliar to them, we have found it to advantage to take the students on two field trips.").

7. John Borrows, *Outsider Education: Indigenous Law and Land-Based Learning*, 33 Windsor Y.B. Access Just. 1, 3 (2016).

8. Survey of Environmental Law professors via the University of Oregon group e-mail list.

a brief overview of the benefits of these courses more generally to encourage broader adoption field experiences as a tool for teaching environmental and natural resources law.

II. California Environmental Cases and Places

We begin our class with a full-day meeting that covers both trip logistics and a substantive introduction to the course. The logistics discussion covers the structure of the course, the ins and outs of camping with a large group of people, food preferences and requirements, gear lists, and all the minutiae that go into making a large-group camping trip successful. This often requires some reassurance of students who may not be experienced campers. We also have students complete medical forms that request information about allergies, food issues, and other medical matters that may require accommodation. Getting this information early allows us to develop alternative trip plans, menus, and the like that will allow all students to participate in the course.[9]

The substantive discussion seeks to achieve two objectives: an introduction to the environmental science that students need for an immersive experience on the field trip, and an introduction to the relevant environmental law narratives for the trip. We structure the class to tell two or three distinct environmental law stories over the course of the trip. For example, we generally focus on the development of California water law and build a story around the evolution of water law to match the geology, geography, and social needs of the state. We also generally develop a narrative around public lands, as we spend significant portions of the trip camping on and visiting public lands of all kinds.[10]

During the first meeting, students also choose a case that will serve as the focus of both a writing assignment and a presentation to the class during the trip. The students pick from a pre-circulated list of important environmental and natural resource decisions that relate to locations more or less along our planned trip route; more complex or important decisions may have two student presenters. We select the list of decisions based on the trip route, the importance of the decision, and how well the decision fits into the trip's broader narrative. After the students select their decisions, we finalize a trip plan and produce a mile-by-mile field guide, with information (climate, geology, history, culture) and maps of the locations we plan to visit. The students prepare short papers summarizing their decision, highlighting the characteristics of the decision's geographical location that contributed to the underlying dispute in the decision, and putting the decision into the broader context of environmental law. We include these papers in the field guide and rush the field guides off to the printers to be printed and bound in time for the trip.

9. See discussion, *infra* notes 89-94.

10. Nothing drives home the difference between a national forest and a national park like seeing a clear-cut in the morning and an old-growth forest in the afternoon.

The field guides also include activities for the students to complete in the field and information on student responsibilities during the trip, leave-no-trace camping ethics, and safety. Students complete health and safety questionnaires that we keep on hand for use in emergency situations. We use satellite communicators in the field to ensure access to emergency services in areas that do not have cell phone service, and the instructors hold wilderness first-aid certifications. We plan to include automated external defibrillators beginning in fall 2019 as an added safety measure.

We rent vehicles to carry all the students, other drivers, and gear. This includes the communal kitchen gear the students will use to make all the meals over the course of the trip. We load up the morning of the trip and head out to the first field location. We follow the same general pattern at all the locations: We introduce the students to the place we're visiting and give them a brief explanation of the geologic history of the area so they can begin to understand why the landscape looks the way it does. Then we provide some environmental context for the area, discussing the history of human inhabitation and natural resource use in the area. This two-part science discussion sets the stage for the case presentation. One or two students who selected the decision related to a controversy involving the location present an overview of the dispute at issue in the decision and then try to situate that dispute within the scientific context we have provided. The students conclude with a summary of the decision and an explanation of its significance in California environmental law. We complete the site visit by explaining how the case fits into the broader context of one (or more) of the trip's legal narratives. These narratives are key to helping the students make sense of the wealth of information they encounter over the course of the trip.[11] By relating these stories to a series of physical places, students can build their own narrative about the development of environmental and natural resource law in California. "[T]he central place of telling stories in outdoor locations as a means of recording and transmitting law is never far from the surface."[12]

An example may help to illustrate the process. Last fall we visited the Malakoff Diggins State Historic Park, site of the world's largest hydraulic gold mine.[13] We began the site visit with twenty to thirty minutes of lecture and discussion about the geologic processes that put gold into the Sierra Nevada and then distributed it throughout the area's river basins. We then discussed the discovery of gold in California and its early mining history and explained how the miners moved on to hydraulic mining when the easy-to-find gold ran out.[14] At that point, the students who selected the early California

11. Patricia E. Salkin & John R. Nolon, *Practically Grounded: Convergence of Land Use Law Pedagogy and Best Practices*, 60 J. Legal Educ. 519, 543-44 (2011) (noting that "the role of narrative in the law has been garnering increasing attention across the academy").

12. Borrows, *supra* note 7, at 5.

13. *History of Malakoff Diggins*, Malakoff Diggins, http://malakoffdiggins.org/history-of-malakoff-diggins/ (last visited June 13, 2018).

14. Hydraulic mining involves using giant water cannons to blast gold and all the associated

water law decisions took over, introducing the class to early California water rights law. They explained both California's riparian water law tradition and why that tradition couldn't accommodate the water uses mining required, and then presented on two of the early decisions that created appropriative water rights,[15] which centered on enabling hydraulic mining on public lands. The students finished their presentation by explaining the state of California water law in the years after their decisions, to prepare the class for the next presentations.

After the students finished, we asked questions and guided the discussion to drive home the water rights challenges faced by Californians in the 1850s and help the students understand how these challenges began to form California's water law system. Finally, we gave the students a few minutes to wander through the historic site at Malakoff Diggins, to explore the hydraulic mine itself, and to investigate the hydraulic mining water cannons left in the mine. The students were shocked by the volume of earth the miners moved in their search for gold and impressed by their ability to adapt the legal system to fit their needs. Later stops added other essential aspects of water law, like integration of various kinds of water rights, groundwater management, and instream flow protection under the public trust doctrine.

The field experiences continue over the course of four days, adding layers to the students' understanding. Each evening, different student groups prepare a communal meal, and we all sit around the campfire. We return to campus on the evening of the fourth day, and the students disembark and head off for much-needed showers.

After the trip, students have several weeks to write twenty-page final papers that build on the short papers they developed for the field guides. These longer papers develop many of the themes from the shorter papers in more detail, with the added benefit of the other students' research and the field experiences themselves. Finally, after the students submit their papers, we have a last debrief for students to discuss the experience, complete course evaluations, and share photographs and videos.

We evaluate students based on their short paper, their long paper, and their field notebooks. Although we could evaluate the students on the presentations they make during the field trip, we've decided that the added pressure of receiving grades might take away from the students' experience in the field, and peer pressure and a fear of embarrassment has been sufficient to ensure high-quality presentations from all participants.

rock out of old river sediments. The technique allowed miners to move huge amounts of rock and soil but created serious problems when the sediments settled downstream. *Id.*

15. Riparian rights rely on ownership of land next to a water body, and traditional riparian rights do not allow long-term storage of water or transportation outside the watershed of origin. As miners did not own the land they were mining, they needed to store the water, and often used water outside the watershed of origin. They developed appropriative rights, wherein creation of the right depends on the beneficial use of the water.

Student reception for the course has been very positive. The course consistently has a long waitlist, and many first-year students express a strong desire to take the course as soon as they are eligible. The student evaluations averaged 4.82 on the law school's 5-point scale over the past two years, and the student narrative responses have highlighted the significance of the course in the students' education. Excerpts from student reflections on the trip are interspersed throughout the discussion of the benefits of field courses below.

III. Improving Student Learning

Classes organized around field experiences can improve student learning and knowledge retention. Though much of the research in this area has focused on younger students, a solid foundation of college student studies shows that older students reap these same benefits. Active participation on field trips increased homework scores on subsequent assignments in a college environmental science class, particularly for nonscience majors.[16] Among younger students, active participation in field trips improved cognitive learning and retention,[17] with participants showing better understanding of the material immediately after the trip and better retention of the material over a three-month period.[18] In a college environmental science curriculum, over two-thirds of the students identified fieldwork as the most effective part of their environmental education.[19] The authors of that study argued that "[t]o promote the long-term retention of information, to motivate students toward further learning, and to allow students to apply information in new settings, it is important to provide field trips and other varied learning environments."[20] In a study of 400 high school students, environment-based education improved student motivation and critical thinking.[21] A broad review of place-based teaching found the practice "significantly improves scores on standardized achievement tests in language arts, mathematics, science, and social studies."[22] Subsequent homework assignments highlighting key themes from field experiences can enhance the learning impacts of the trips.[23]

16. Taryn L. Bauerle & Travis D. Park, *Experiential Learning Enhances Student Knowledge Retention in the Plant Sciences*, 22 HortTechnology 715, 717 (2012).

17. Doug Knapp, *Memorable Experiences of a Science Field Trip*, 100 Sch. Sci. & Mathematics 65, 65 (2010s).

18. *Id.*

19. Marion Dresner et al., *Improving Higher-Order Thinking and Knowledge Retention in Environmental Science Teaching*, 64 BioScience 40, 44 (2013).

20. *Id.* at 45.

21. *See generally* Julie Athman Ernst & Martha Monroe, *The Effects of Environment-Based Education on Students' Critical Thinking Skills and Disposition Toward Critical Thinking*, 10 Envtl. Educ. Res. 507 (2004); Julie Athman Ernst & Martha Monroe, *The Effects of Environment-Based Education on Students' Achievement Motivation*, 9 J. Interpretation Res. 9 (2004).

22. Steven Semken & Carol Butler Freeman, *Sense of Place in the Practice and Assessment of Place-Based Science Teaching*, 92 Sci. Educ. 1042, 1048 (2008).

23. D. Anderson, K.B. Lucas, I.S. Ginns, & L.D. Dierking, *Development of Knowledge about Electricity*

Despite these findings, data on the learning benefits of field approaches in law schools are virtually nonexistent, but anecdotal data suggest the approach offers similar benefits for our students.[24] Just as science students better retain scientific information when they understand how it applies to the real world, law students should be able to better retain information when they can see the impacts of the law in the world around them.

A review of the literature suggests several reasons for this enhanced learning and retention, but two are particularly poignant. First, pedagogical research suggests that learning accompanied by "emotional or sensory reactions including surprise and awe" can dramatically improve learning outcomes.[25] Discussing these courses with other professors revealed a consistent theme of student awe and excitement. Instructors for field courses often mention epiphanies,[26] deep learning,[27] and many firsts for students, like seeing animals in the wild or experiencing the stars on a truly dark night.[28] These reactions are invariably a part of the field experience: "The striking power of the wild is that wonder in the face of it requires no act of will, but forces itself upon us—as an expression of the nonhuman world experienced through the lens of our cultural history . . . proof that ours is not the only presence in the universe."[29] These kinds of experiences increase student motivation, interest, and engagement, resulting in better acquisition and retention of new knowledge.[30]

Second, as many legal commentators have explained, our laws reflect our geography and evolve to meet societal needs based on that geography.[31] In many ways, then, the land forms the law. The law, in turn, forms that land by governing people's interaction with it. Other commentators have denoted this concept with terms like "lawscape"[32] or descriptors like "mutually

and Magnetism During a Visit to a Science Museum and Related Post-Visit Activities, 84 Sci. Educ. 658-79 (2000).

24. *See generally* Deborah Curran, *Putting Place in Law: Field School Explorations of Indigenous and Colonial Legal Geographies* 11 (2018) (unpublished manuscript); Daniel J. Rohlf & David S. Dobkin, *Legal Ecology: Ecosystem Function and the Law*, 19 Conservation Biology 1344, 1347 (2005).

25. Bauerle & Park, *supra* note 16, at 717.

26. Rohlf & Dobkin, *supra* note 24, at 1345.

27. Borrows, *supra* note 7, at 9.

28. Yael Wyner & Amy Berkov, *The Impact of an Extended Outdoor Residential Workshop on Urban Students' Learning and Appreciation of Biodiversity*, 5 Cities and the Env't (CATE) 12, 19 (2012).

29. William Cronon, *The Trouble with Wilderness; Or, Getting Back to the Wrong Nature*, *in* Uncommon Ground: Rethinking the Human Place in Nature 69 (William Cronon ed., 1995).

30. Bauerle & Park, *supra* note 16, at 716; Borrows, *supra* note 7, at 5.

31. *See, e.g.*, Joseph W. Dellapenna, *United States: The Allocation of Surface Waters*, *in* The Evolution of the Law and Politics of Water 189 (Joseph W. Dellapenna & Joyeeta Gupta eds., 2009) (showing that state water law "evolves in response to differing patterns of hydro-geological availability of water and of demand for water").

32. Kirsten Anker, *Law As . . . Forest: Eco-Logic, Stories and Spirits in Indigenous Jurisprudence*, 21 L. Text Culture 191, 192 (2017).

constitutive."[33] This relationship is particularly apparent in indigenous legal traditions, where law is firmly bound to the landscape. Just as in indigenous cultures, "[t]here can be a significant mnemonic function in learning the law in context."[34] Students learning environmental or natural resource law benefit by seeing the places where legal doctrines developed. Students learning in these places engage all of their senses, learning across myriad learning modes, which improves knowledge acquisition and recall.[35]

In reflecting on the California Environmental Cases and Places trip, students commented on the improved learning they experienced in the field. One student explained:

> Having no previous experience with environmental law, I thought that it was going to be hard to grasp all of the concepts. I feel more confident in my basic understanding of environmental law. Having grown up in the outdoors, I have now found more of an interest in environmental law. I only wish I had taken it sooner. Being able to follow the laws through a timeline and see where the issues took place was awesome![36]

Others noted how the context helped them deeply understand the terms and concepts they had previously encountered in a water law context. "I learned A LOT about the different kinds of water rights. I had heard all of the terms before but didn't REALLY know what they meant. I also learned how interconnected water law is across the state and how every use affects everyone in some way."

IV. Providing Context for Environmental Decisions

"Law should be studied by directly experiencing and analyzing law's interactions with the physical world."[37] While many environmental law students may have been avid hikers or campers or outdoors people, some nevertheless lack environmental experience, or at least sufficient environmental experiences to develop a sense of place. And more experienced outdoors people studying environmental law may not make time during law school to learn about the

33. *Id.*

34. Borrows, *supra* note 7, at 7; *see also* Anker, *supra* note 32, at 200 ("[T]he land is a mnemonic for the law, and walking through it physically or mentally calls up ancestral songs in which law and lawful behavior is narrated.").

35. Matthew R. Auer, *Sensory Perception, Rationalism and Outdoor Environmental Education*, 17 Int'l Res. Geographical & Envtl. Educ. 6 (2008); Emilia Fägerstam & Jonas Blom, *Learning Biology and Mathematics Outdoors: Effects and Attitudes in a Swedish High School Context*, 13 J. Adventure Educ. & Outdoor Learning 56, 70 (2012).

36. Some student quotations have been edited for grammar. Student permission granted for all quotations, on file with author.

37. Borrows, *supra* note 7, at 54.

environment nearby, particularly if they are not from the area. "[P]eople are becoming progressively more disconnected from most of the planet's non-human life."[38] Children learn less about their local environments in schools and spend less time discovering nature on their own.[39] As a result, many students lack an "ecological literacy," that is, "common ecological understandings and knowledge of specific places."[40] A well-developed literature of place-based education stresses the role that field experiences can have in combating this growing problem.[41] In place-based education, "explicit attention to the intersection of human and nonhuman elements of place re-connects students to place as a personal and specific entity central to the learning process, identity, and relationship formation, thus providing the emotional connection necessary to extend these feelings to other places."[42]

Many environmental disputes inherently include stark moral judgments, but the complex decision-making processes inherent in environmental law can obfuscate these choices behind regulatory machinations and scientific jargon.[43] In many ways, environmental law pedagogy inherently encourages this approach to environmental disputes,[44] focused as it must be on the statutory and regulatory structure governing environmental decisions. But this "acontextual" approach to environmental law inherently relies on "abstraction and simplification of personal and societal issues [and] fails at the task of connecting these conclusions with the rich complexity of actual situations that involve full-dimensional people, let alone the job of thinking through the social consequences or ethical aspects of the conclusions."[45] By helping students reconnect to specific physical places, field courses help students understand the impacts of environmental decision-making in a way that book learning cannot.[46] A strong sense of place can help lawyers better understand

38. Wyner & Berkov, *supra* note 28, at 1.

39. *Id.*

40. Joshua Hunter, *A Pedagogy of Emplacement: Experiential Storytelling and Sense of Place Education in Park Interpretive Programs* (May 2012) (unpublished Ph.D. dissertation, Indiana University), on file with author.

41. Semken & Freeman, *supra* note 22, at 1042-43.

42. Lissy Goralnik et al., *Place-Based Care Ethics: A Field Philosophy Pedagogy*, 19 Can. J. of Envtl. Educ. 180, 183 (2015).

43. *See, e.g.*, Holly Doremus, *Listing Decisions Under the Endangered Species Act: Why Better Science Isn't Always Better Policy*, 75 Wash. U. L. Q. 1029, 1038-39 (1997) (noting that "politicians who describe policy choices as scientific are often more interested in cloaking their favored policies with the prestige of science than in choosing policies which accurately reflect scientific knowledge.").

44. Van Wagner, *supra* note 4, at 523 ("Environmental law instruction may bear some responsibility for this disconnect and the degradation that has followed.").

45. Curran, *supra* note 24, at 5.

46. Lia Stelljes & Susan Allen-Gil, *A Student's Perspective: The Benefits of Non-Traditional Methods of Environmental Education on Environmental Policy*, *in* Addressing Global Environmental Security through Innovative Educational Curricula 115, 117 (Susan Allen-Gil et al. eds., 2009)

their clients' concerns and improves their value-based arguments in court.[47] Absent this kind of understanding, environmental lawyers risk focusing on the legal minutiae without understanding a client's broader aims.

Experiencing environmental disputes in context also builds the skills environmental lawyers will require in practice. Site visits are an important part of environmental law,[48] and environmental lawyers should be able to conduct themselves safely and competently in the field. Students who are estranged from nature are often uncomfortable in the field, to the point that their ability to work in the field may be compromised.[49] This "environmental socialization is a vital part of helping student into environmental careers."[50] Bringing students back into the field and helping them be comfortable and confident in that context is an important part of a field-based environmental law class.

If, as advocated by the 2007 CLEA Best Practices report, law schools must prepare future lawyers to practice law "effectively and responsibly in the contexts they are likely to encounter as new lawyers,"[51] then environmental law students need the skills they can only gain from field-based courses.

Our students echoed these sentiments. One observed, "To study law is useless as long as lawyers do not understand what is really at stake. I learned more about California history during these four days than what I could have learned sitting in a dorm during a semester." Another noted, "Even though I have already visited a lot of these places, I have so much more insight from the presentations and considering my new education focus of water and the environment. I saw everything differently, with a new lens. This trip is great if you want to be able to tie textbook knowledge with physical experience."

V. Increasing Interdisciplinary Skills

Addressing most disputes in environmental and natural resources law requires interdisciplinary skills, and law schools are increasingly trying to

(observing that "'personal' knowledge and the non-traditional educational approaches required to nurture it are crucial for making the most beneficial and comprehensive environmental policy decisions.").

47. Van Wagner, *supra* note 4, at 526 ("A contextual and relational understanding of the issues and what is at stake for the parties makes for better lawyering.").

48. *See, e.g.*, Yale Law School Career Development Office, *Environmental Law 2017-2018*, at 5, 10, 41 (2018), https://law.yale.edu/system/files/area/department/cdo/document/cdo_environmental_law_public.pdf.

49. Jacob C. Brenner et al., *Addressing Estrangement from Nature with a Night Class in the Forest*, 1 Case Stud. in the Env't 1 (2017) (noting that students estranged from nature often exhibit fear of the outdoors and "extremely risk-averse behavior toward the natural world," among other issues.).

50. Joy et al., *supra* note 2, at 233-34.

51. Roy Stuckey et al., *Best Practices for Legal Education: A Vision and a Road Map*, Clinical Legal Educ. Ass'n 39 (2007), http://www.cleaweb.org/Resources/Documents/best_practices-full.pdf.

provide future lawyers with an interdisciplinary background.[52] How can one design a plan for ecosystem management or write an endangered species listing petition without an interdisciplinary skill set?[53] Water lawyers need a basic understanding of hydrology, engineering, ecology, and geology, to name but a few relevant fields. A good water lawyer should know what ten cubic feet of water flow per second looks like when it is flowing in a creek and should understand what that amount of water would mean for a farmer or a city. "Conservation challenges in the twenty-first century, when viewed closely, nearly always reveal a detailed weave of interdisciplinary threads."[54]

Field courses are particularly well-suited to giving students an interdisciplinary introduction to environmental issues. Many field courses involve multiple instructors with both scientific and legal backgrounds, giving students firsthand access to scientific experts to help them understand what they're seeing. For example, Professor Daniel Rohlf wrote about the field course he co-teaches with ecologist David Dobkin at the Oregon's Malheur National Wildlife Refuge.[55] The course itself involves students from both law and public policy programs, and the professors highlight the role that having instructors from two different disciplines plays in giving the students a solid science foundation.[56] Many of the courses highlighted on the Oregon Environmental Law listserv similarly employed multiple instructors or outside speakers to ground the conversations in a strong science framework. Students in these courses also gain practical interdisciplinary skills like map-reading or basic natural history skills like plant or animal identification. These skills may be useful both in communicating with experts and in understanding their work. Field courses can offer the well-rounded introduction to interdisciplinary learning that is essential for successful environmental lawyers.

The course also develops more general skills of use to any law student. For example, most of the twenty-six predictors for successful lawyering identified by Professors Shultz and Zedeck are addressed through a field course.[57] The most relevant "effectiveness factors" from their list include creativity/innovation; practical judgment; providing advice and counsel and building relationships with clients; fact-finding; speaking; listening; organizing and managing own work; stress management; passion and engagement; self-development; and ability to see the world through the eyes of others. Similarly, researchers Gerkman and Cornett's groundbreaking work to "[i]dentify the foundations

52. Robertson, *supra* note 5, at 256 (noting that "law schools [are] reaching outside the law school and experimenting with using environmental law in interdisciplinary education."); *see also* Borrows, *supra* note 7, at 10; Salkin & Nolon, *supra* note 11, at 519.

53. Rohlf & Dobkin, *supra* note 24, at 1344.

54. *Id.*

55. *Id.*

56. *Id.* at 1346.

57. Marjorie Maguire Shultz & Sheldon Zedeck, Identification, Development and Validation of Predictors for Successful Lawyering 26-27 (2008).

entry-level lawyers need to launch successful careers in the legal profession" highlights several needs that often go unmet in a traditional curriculum.[58] Their study highlighted characteristics and professional competencies that employers found more important than legal skills, including professionalism, honoring commitments, passion and ambition, and paying attention to detail. Field courses are well-suited to address many of these needs. These outcomes benefit all students, not just those who continue in environmental law.

Many of our students were concerned about learning or relearning science:

> Going into this class I was concerned that I wouldn't understand the material since I haven't taken a science-related course since my first year of college. That said, it was incredibly helpful to be able to connect the difficult material in the book to a real-life example of that science in motion. As someone with minimal science/environmental background, I hope I learned a lot during this trip.

Others noted the practical skills they gained, from how to erect a tent or build a fire to how to manage a large-group campsite. "I learned about how to manage a camp of such a big group of people—it was interesting to see thirty-three people cook and create dinners and meals together." Finally, many students reflected on the interpersonal dynamics and communication skills developed through the experience. "Such great attitudes, so helpful, a lot of teamwork, patience, and great conversation."

VI. Improving Student Well-Being

Law students face significant mental health challenges during law school. These challenges multiply even during the first few months of school, and reductions in student well-being last through the entire law school experience.[59] Although some schools have instituted mental health education to address these problems,[60] we must do more. Although not a panacea, getting students out into nature can help alleviate some mental health struggles.

Many studies have documented stress reduction, mental health restoration, improved confidence and self-sufficiency, improved cognition, and increased positive affect for people spending time in nature.[61] Physiologically, forest

58. Alli Gerkman & Logan Cornett, *Foundations for Practice: The Whole Lawyer and the Character Quotient*, University of Denver (2016), http://iaals.du.edu/sites/default/files/documents/publications/foundations_for_practice_hiring_the_whole_lawyer.pdf.

59. Kennon M. Sheldon & Lawrence S. Krieger, *Does Legal Education Have Undermining Effects on Law Students? Evaluating Changes in Motivation, Values, and Well-Being*, 22 Behav. Sci. & L. 261, 273-74, 278 (2004).

60. *See, e.g.*, Ian Ayres et al., *Anxiety Psychoeducation for Law Students: A Pilot Program*, 67 J. Legal Educ. 118 (2017).

61. Eleonora Gullone, *The Biophilia Hypothesis and Life in the 21st Century: Increasing Mental Health*

walks resulted in "lower concentrations of cortisol, lower pulse rate, lower blood pressure, greater parasympathetic nerve activity, and lower sympathetic nerve activity than [did] city environments."[62] These responses are all associated with reduced levels of stress. The evidence is clear—simply being in nature improves emotional outlook. The changes, undoubtedly good for the students, also result in increased student retention[63] and student motivation.[64] As Professor Rohlf noted, "[W]e also see value from the class as a source of reinvigoration and inspiration. Law students interested in environmental law and policy sometimes find it difficult to retain their focus on this area given the academic rigors of law school coupled with long days in the library and at the computer."[65] Field courses break up the monotony and bring students back to life.

Field experiences also encourage more authentic interactions between students and faculty. As Professor Melissa Marlow argues, "If we are afraid to be ourselves in the classroom, office, or hallways, then we have missed the first and most crucial step in humanizing legal education."[66] Authentic interactions are vital to building strong relationships with students to help them overcome their personal challenges in law school. Although large class sizes and an avoidance of "non-lawyerly responses" to student concerns create barriers to authentic interactions,[67] when students and faculty are thrown together in an unfamiliar setting for days on end, things get real. It is hard to put on a false front on the fourth day of a trip when showers are a distant memory. Students prize these authentic interactions.

This was among the richest parts of the experience for our students. One student noted that she "got to meet a bunch of new friends and gained a really three-dimensional view of environmental and water law issues. Seeing and touching made it very real in a new way. It drove home the importance of the natural world and made me remember why on earth I went to law school in the first place!" Another observed, "It's really great to see professors who are passionate and want to share their passion with their student in an unusual and practical way. Those landscapes, teachers, and students, the nights singing around the fire . . . all of that will stay in my memory forever. There is no Wi-

or Increasing Pathology?, 1 J. Happiness Stud. 293, 302-03 (2000).

62. Bum Jin Park et al., *The Physiological Effects of Shinrin-Yoku (Taking in the Forest Atmosphere or Forest Bathing): Evidence from Field Experiments in 24 Forests across Japan*, 15 Envtl. Health & Prev. Med. 18, 18 (2010).

63. Semken & Freeman, *supra* note 22, at 1043.

64. Marc Behrendt & Teresa Franklin, *A Review of Research on School Field Trips and Their Value in Education*, 9 Int'l J. of Envtl. & Sci. Educ. 235, 236 (2014).

65. Rohlf & Dobkin, *supra* note 24, at 1347.

66. Melissa J. Marlow, *Does Kingsfield Live?: Teaching with Authenticity in Today's Law Schools*, 65 J. Legal Educ. 229, 229 (2015).

67. *Id.* at 232.

Fi in the forest, but I promise you will not find a better connection." Many students related their awe-provoking experiences with nature. "I was sitting on a chair at the camp, alone, far from the others, and I was looking at the wonderful sunset. I heard a noise next to me and saw something move, so I thought there was someone. But when I looked I realized that it was actually two deer just two meters away from me!" Finally, most students expressed their happiness at coming on the trip. "This trip was definitely a highlight of my law school so far, and I am so glad that I went." "I am so happy I went on this trip!!! It was such a wonderful break from 'real life,' and fun to step outside of a classroom for the first time in the last three years to do a different kind of learning."

VII. Meeting Affective Student Learning Outcomes

As others have argued, "[L]aw schools need to play a leading role in the national and global effort to achieve sustainability."[68] Helping students to care about environmental decision-making and to build their own environmental moral compass should be an important goal for environmental law programs. To achieve this goal, environmental courses must target affective learning outcomes.[69] As opposed to traditional cognitive learning outcomes, "[a]ffective outcomes include attitudes, emotions, identity, and values."[70] Examples of affective learning outcomes include increasing students' connection to the environment and to Earth; developing environmental values; helping students recognize their capacity for meaningful action; raising student interest in environmental careers; and building empathy for victims of environmental injustice.[71] Given the role that personal beliefs play in motivating environmental lawyers, building a strong set of beliefs is also important for a rewarding career in environmental law.[72] Renowned naturalist Aldo Leopold argued that an ethical relationship with the land requires "an intense consciousness of land."[73] "We can be ethical only in relation to something we can see, feel, understand, love, or otherwise have faith in."[74] In an era when students are increasingly divorced from the land, field courses can play an important role in both reconnecting students with their natural environment and helping students understand their place in that environment. "[P]hysical experience in

68. John C. Dernbach, *The Essential and Growing Role of Legal Education in Achieving Sustainability*, 60 J. Legal Educ. 489, 492 (2011); *see also* Van Wagner, *supra* note 4, at 523.

69. Brenner et al., *supra* note 49, at 1.

70. Steven Semken et al., *Place-Based Education in Geoscience: Theory, Research, Practice, and Assessment*, 65 J. Geoscience Educ. 542, 547 (2017).

71. *See, e.g.*, *id.* at 547.

72. Wakefield, *supra* note 1, at 178.

73. Aldo Leopold, A Sand County Almanac 223 (1st ed. 1949) (coining the term "land ethic").

74. *Id.* at 214.

the natural world enhances environmental learning by enabling connections to, and the development of, empathetic relationships with the natural world."[75] These empathetic relationships are vital for development of a strong environmental morality. Field courses allow students to develop their ability to care about the environment.

Many of our students expressed that the trip changed their relationship with nature. "Thanks to this trip, I discovered another aspect of my personality. I really love nature. I liked breathing the fresh and pure air. I liked hearing nothing (no cars, no noise) in the campground." "This was an incredible opportunity and trip I will remember for the rest of my life. I'll remember that I love this country and all the natural and amazing things nature has to offer. Humans are such a small part of it, but we feel so important. We are just one small link in the chain and the cycle." "On the way to the campsite I looked up from my outline to see a heavily harvested area with the retention of only a few patches of trees. I understand there are many arguments for the necessity of timber harvesting (small and large scale), but the arguments don't make the aftermath any easier to view." These comments reveal the students' growing empathy for natural habitats.

VIII. Where To from Here?

Based on the research for this article, we plan several changes in California Environmental Cases and Places to make it more effective. First, we will seek to incorporate practices to help students fully engage with the natural environment. Other instructors have used a "field-based homework routine," termed "sitspotting," where students sit alone for ten to thirty minutes to observe and record their observations.[76] This is a form of mindfulness exercise that can help students decrease stress and anxiety. "The development of mindfulness and other 'in-the-moment' skills [is an] important professional competenc[y]. [It] can be explicitly cultivated by teachers and students when outdoor legal educational experiences are effectively designed and implemented."[77]

Second, we will attempt to help students bring their enhanced sense of nature back home with them. Celebrating nature only in places far from built environments risks reinforcing a false human/nature dichotomy. "Wilderness gets us into trouble only if we imagine that this experience of wonder and otherness is limited to the remote corners of the planet, or that it somehow

75. Goralnik et al., *supra* note 42, at 180.

76. Brenner et al., *supra* note 49, at 1.

77. Borrows, *supra* note 7, at 8; *see also* Anthony S. Deringer, *Mindful Place-Based Education: Mapping the Literature*, 40 J. Experiential Educ. 333 (2017); Elizabeth Dickinson, *Displaced in Nature: The Cultural Production of (Non-)Place in Place-Based Forest Conservation Pedagogy*, 5 Envtl. Comm.: J. of Nature and Culture 300, 315 (2011).

depends on pristine landscapes we ourselves do not inhabit."[78] As Emma Marris noted in her recent book, nature is all around us, even in the city, waiting to be discovered.[79] Helping students see *this* nature benefits them significantly.

Third, we anticipate additional research on the impacts of this course on student participants. Ideally, we would like to utilize existing metrics to measure the students' connection to the natural world before and after the course, conduct a pre- and post-trip assessment of student well-being, and document cognitive learning outcomes for all students. Over the longer term, we would like to survey students one to three years after the course to determine what aspects of the field experience produce the most lasting impressions and what we might change to improve the student experience.

Finally, we will seek to incorporate more critical pedagogies in the course.[80] Field courses are particularly well-suited to highlighting issues of environmental justice and the sidelining of indigenous worldviews.[81] Addressing these issues is critical to a well-developed environmental law program.

IX. Challenges and Key Points

Although field courses are tremendously satisfying for both students and instructors, they do present challenges that classroom courses do not. A review of the literature revealed several common barriers: Instructors may feel unqualified to offer field courses;[82] "offerings are often pinioned by tight schedules and the host of academic, economic, and personal demands on a 21st-century [student's] time;"[83] "such activities require organization, planning, and student reflection to maximize the learning experience;"[84] field courses require "considerably more preparation, coordination, and logistical support than a typical classroom-based course;"[85] teachers may have to visit the venue before the trip;[86] some students may require emotional support to get comfortable in the field;[87] and "insurance and liability concerns may also be barriers to field trips in certain jurisdictions."[88]

78. Cronon, *supra* note 29, at 69-90.

79. Emma Marris, Rambunctious Garden: Saving Nature in a Post-Wild World (1st ed. 2011).

80. David A. Gruenewald, *The Best of Both Worlds: A Critical Pedagogy of Place*, 32 Educ. Researcher 3, 3 (2003).

81. Van Wagner, *supra* note 4, at 528.

82. Wyner & Berkov, *supra* note 28, at 1.

83. Semken & Freeman, *supra* note 22, at 1044.

84. Behrendt & Franklin, *supra* note 64, at 236.

85. Rohlf & Dobkin, *supra* note 24, at 1346.

86. Behrendt & Franklin, *supra* note 64, at 240.

87. *Id.*

88. Van Wagner, *supra* note 4, at 530.

We've experienced some of these challenges in our course. Taking a four-day trip in the middle of a law semester is a hurdle for some students, but this is not terribly different from a trip for moot court or mock trial, and our fellow faculty members have been very accommodating with the schedule. Early scheduling of the trip and coordination of midsemester assessments with the Associate Dean for Academic Affairs leads to successful meshing with other student obligations. Other law schools, offering longer trips up to two and a half weeks, often schedule the trips during an intersession period, over spring break, or as a summer course. Course and trip scheduling can be a balancing act between institutional concerns and conditions in field locations. We like to visit Death Valley in our class, which makes summer visits difficult. We run the trip on a Thursday through Sunday in late September or early October, when field conditions tend to be more forgiving and fall assessment for second- and third-year students is not yet in full swing. Early and frequent communication with the law school administration and with faculty colleagues is key to finding a workable time for the trip.

As other commentators have noted,[89] we have found that preparing for our field course takes more work than preparing for a normal course, but the class ends fairly early in the semester, so it is a bit of a trade-off. Full-length courses paired with a long field trip should be accommodated by reducing the instructors' workload in other ways. Our university has also supported the field courses by supporting pre-class scouting trips to ensure that all of the planned stops on the trip are in suitable locations. This is more difficult for courses that visit locations with limited access, like the Grand Canyon or other permitted areas, so instructors must be flexible and adapt during the trip.

We've found students do a good job supporting one another during field experiences, and more experienced students tend to naturally step up and act as mentors to less experienced students. Nevertheless, instructors should monitor less experienced students to ensure they are having as positive an experience as possible. Managing group morale more broadly is also the responsibility of the instructors, and difficult weather conditions, flat tires, mechanical problems, etc., all pose challenges. Instructors should not underestimate the value of treating the group to milkshakes or unpacking unexpected treats during a rest stop.

Field courses that visit rugged or remote locations can present a perceived barrier to students with mobility challenges or other issues needing accommodation (hearing, sight, mental health conditions), but the geosciences have made great strides in making field courses accessible to all students.[90] The geoscience community's tremendous work in this area, which includes recommendations like careful selection of visit sites on the field trip, accommodations for hard of hearing and sight-impaired students, partnering

89. Rohlf & Dobkin, *supra* note 24, at 1346.

90. Christopher L. Atchison & Brett H. Gilley, *Geology for Everyone: Making the Field Accessible*, Earth Magazine (Aug. 16, 2015), https://www.earthmagazine.org/article/geology-everyone-making-field-accessible.

students to ensure that all students are supported on the trip, early and frequent communication with students requiring accommodations, outreach to the disability community on campus, and coordination of transportation for students requiring wheelchairs,[91] have resulted in a much more open and welcoming environment. Our trips have included students with service animals, and the state and federal parks we visit have been very welcoming. Our most recent trips have also included our Dean of Students, which ensures institutional support for students of varying abilities on the trips. Although some have suggested that virtual field trips may provide a workable alternative to traditional field experiences,[92] virtual field trips fail to give students a deep connection to the subject, lack the intense community-building and mentorship of a prolonged field trip, and generally do not offer the same transformative experience that students have in the field.[93] Geoscientists who have changed their courses to make them accessible to students of varying ability levels have generally reported "the revisions improved the course as a whole rather than compromising its academic merit."[94] Instructors should utilize the resources developed by the geoscience community to make sure trips can accommodate all interested students.[95]

Regarding insurance or liability concerns, we have found that communicating early and often with the university risk-management office alleviates most concerns and ensures adequate protection for the university and for faculty leading the trip. Liability for trip leaders and the institution vary significantly by state, so it is difficult to provide concrete advice applicable in all situations. For example, at our institution, liability concerns for students required to attend the field component as part of the course entail liability release requirements different from the ones for students taking an optional trip. Instructors should work with their institution's risk-management office. Because many undergraduate programs in the sciences offer them, field courses should not be an entirely new concept for university risk managers. Finally, knowing when to change an itinerary or cancel part or all of a trip because of unsafe conditions is a vital skill in trip leaders.

We have also determined several keys for successful field courses. As noted, early and frequent communication about the course with the administrative powers that be, both in the law school and the university, leads to better courses with fewer last-second problems. Interdisciplinary course development

91. *See generally id.*; Michele L. Cooke, Kai S. Anderson & Stephen E. Forrest, *Creating Accessible Introductory Geology Field Trips*, J. of Geoscience Ed. 4 (1997).

92. Richard J. Stumpf, John Douglass & Ronald I. Dorn, *Learning desert geomorphology virtually versus in the field*, J. of Geog. in Higher Ed. 387, 397 (2008).

93. *Id.*

94. Cooke et al., *supra* note 91, at 5.

95. *See, e.g.*, Mick Healey et al., Issues in Providing Learning Support for Disabled Students Undertaking Fieldwork and Related Activities (2001) and the materials from the International Association for Geoscience Diversity (IAGD), an organization that advocates for students and geoscientists with disabilities.

and, ideally, instruction lead to deeper and more diverse learning for students. Although our course is taught by Dr. Börk as the instructor of record, Dr. Burmeister is integral to the development of the course, providing geology materials and co-writing the field notebook. Further, having multiple instructors with a variety of legal perspectives on the trip enriches discussions with and among the students; this can be accomplished by asking other faculty members to volunteer as drivers for the course. More broadly, the course simply cannot succeed without a supportive cast within the law school and the rest of the university community. Our trip would be impossible without the many people who have bought into the field course concept.

Finally, instructors must encourage open and honest communication with students during the trip to ensure that students are safe and respected during the trip. To that end, we ask the students to tell us about any problems they encounter with other instructors during the trip, and we designate another person on the trip to receive any concerns about either of us on the trip. This is particularly important in the less controlled field environment. We also provide students with detailed gear lists and contact information for tent and sleeping gear rental facilities to ensure that they have the gear they need to be safe in the field, while also controlling costs. Finally, we tell the students from the first day that they should bring "a happy-happy-joy-joy attitude and a willingness to be chipper while tolerating potentially nasty field conditions and smelly neighbors!" In the end, we cannot entirely control conditions during field courses (a valuable lesson in and of itself), and we all, instructors and students alike, must be willing to roll with the punches and take what nature gives us to have a successful experience.

X. Conclusion

Field courses offer myriad benefits for both students and faculty. As other commentators have suggested, field courses are appropriate not just for environmental and natural resource courses, but also for property, land use, resource management, and planning courses.[96] Virtually any course with a strong tie to physical locations can benefit from field experiences, and, a broader adoption of the field-course approach will result in an improved law school experience.

96. Van Wagner, *supra* note 4, at 522.