

SOME PRELIMINARY THOUGHTS ON CONTRASTS AND
CONVERGENCE IN ENVIRONMENTAL AND NATURAL RESOURCES LAW
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I am fascinated by the ways in which the geographical differences between the two sides of the United States are perceived and expressed. One of the more interesting is the difference in view about environmental and natural resources law. In the east, few people, including law professors and environmental lawyers, differentiate between the two. It is all environmental law. In the west, by contrast, the two are regarded as quite distinct bodies of law.

Neither perception is truly accurate. Both natural resources and environmental law are aspects of a spectrum of law that is concerned with the impacts of human activities on the environment and the living beings within it. There are, however, distinct contrasts between the purposes, sources of authority, and methodologies of environmental and natural resources law. They reflect differing ideologies and values, in large measure because of the difference in the eras in which they were enacted and their social and legal goals.¹ There are also important, and growing, points of convergence between the two, particularly as the principles of ecology are integrated into the mechanisms of pollution control. It is useful to examine both contrasts and convergence to assess the strengths and limitations of our current environmental legal regimes and to determine appropriate principles for the construction of future institutions.

¹ For an interesting summary of the stages in the history of environmental and natural resources law, *see* RICHARD O. BROOKS, ROSS JONES & ROSS VIRGINIA, *LAW AND ECOLOGY: THE RISE OF THE ECOSYSTEM REGIME* 26 (2002).

I. CONTRASTS

A. Purposes

1. Natural Resources Law--Natural resources law in the United States is a good bit older than environmental law. It began early in our history as Congress endeavored to use the vast resources of the public domain to respond to the relentless demand of a growing populace for land and economic opportunity.²

The focus of natural resources law is twofold: resource exploitation and resource conservation. Resource exploitation law regulates private access to, and use of, commodity natural resources such as timber, oil and gas, and minerals. It relies on various strategies to do this: governmental transfer of land; leasing of particular resources; and allocation of usufructuary rights. This aspect of natural resource law is heavily concerned with *in-situ* environmental impacts. The regulatory schemes fulfill the government's interest in maximizing the economic value of natural resources.³

Resource conservation law aims to control and ameliorate the adverse impacts of natural resource exploitation on other natural resources such as wildlife and habitat, water quality and quantity, and land. Since society's conception of what natural resources merit protection have changed over time, the list now includes recreational opportunities and non-tangible resources such as aesthetic beauty, scenic values, and wildness. Resource conservation law is motivated by such philosophical ideas as the importance of saving Nature both for its own sake and to uplift the human spirit.⁴

²For a brief overview of the history of federal natural resources law, see Karin P. Sheldon, *How Did We Get Here? Looking to History to Understand Conflicts in Public Land Governance Today*, 23 PUB. LAND & RES. L. REV. 1, 6-11 (2002) for a brief overview of the history of federal natural resources law.

³James L. Huffman, *The Inevitability of Private Rights in Public Lands*, 65 U. COLO. L. REV. 244, 276 (1994).

⁴James L. Huffman, *The Past and Future of Environmental Law*, 30 ENVTL. L. 23, 24 (2000).

2. Environmental Law--Environmental law is the new kid on the block. It arrived in a blitz of federal legislation in the late 1960s and early 1970s and represents a rapid and dramatic shift in national policy about the appropriate uses of the environment.⁵

The focus of environmental law is principally the control of pollution to protect human health.⁶ Environmental law was a response to the idea that the environment was a dumping ground for the undesirable waste products of industrial activities. Through a variety of mechanisms, environmental law limits the private use of public resources, especially common resources such as air and water.⁷

Environmental law recognizes that some pollution problems are widespread. Discharges to air and water are carried far from their source. Sometimes this dispersion is a deliberate strategy to dilute the pollution rather than deposit it in a concentrated way in a small area. Significant aspects of the framework of environmental law were created when pollution impacts ceased to be local and manageable by land use controls and zoning. Public officials and courts, as well as the populace itself, understood that the scope of the damage to air, water, and land exceeded the authorities and resources of municipalities and even states. In *Boomer v. Atlantic Cement Co.*, for example, the Court of Appeals of New York noted the need for a national response to the growing problem of air pollution.⁸

B. Roots

⁵ Karin P. Sheldon, *Eight Lessons in Search of the Future: Observations on the Occasion of the Silver Anniversary of the Virginia Environmental Law Review*, 25 VA. ENVTL. L. J. 37, 39 (2007); RICHARD J. LAZARUS, *THE MAKING OF ENVIRONMENTAL LAW* (2004). See Chapter 5 for a concise and useful summary of the environmental statutes of the 1970s.

⁶ Huffman, *The Past and Future of Environmental Law*, *supra* note 4 at 25.

⁷ LAZARUS, *supra* note 5 at 178.

⁸ 257 N.E.2d 870 (N.Y. 1970).

The publication of *Silent Spring* or the celebration of the first Earth Day are often touted as spontaneous combustion events that thrust environmental law onto the national scene, but both natural resources and environmental law have deep historical roots. Both grew from seeds of English and European property law and tort law that were nurtured in American colonial soil, excused by the Supreme Court to secure the establishment of the federal government⁹ and fertilized by Congress in the policies of resource disposition that supported the conquest and settlement of the country.¹⁰

1. Natural Resources Law--Natural resources law is substantially federal, reflecting the fact that much of the nation's land base, and the resources contained within it, are owned and managed by the federal government, rather than states and private individuals.¹¹

A central feature of the resource exploitation side of natural resources law is the Rule of Capture—not the *ferrae naturae* of Roman times or the beleaguered fox of *Pierson v. Post*—but governmental allocation of private rights in public resources.¹² Early in our history, land itself was given through the Homestead Acts and grants to states, railroads, veterans, and others.¹³ Even when Congress decided to retain title, the policy of our early natural resources laws, so aptly dubbed by Charles Wilkinson as “the

⁹ Johnson v. M'Intosh, 21 U.S. 543 (1823) legitimized the taking of property, *i.e.* land, from Native Americans by the Doctrine of Discovery. Justice Marshall acknowledged the existence of aboriginal use and occupancy rights, but held these rights could be (and were) extinguished by claims of fee simple title by European conquerors.

¹⁰ CHARLES F. WILKINSON, CROSSING THE NEXT MERIDIAN (1992); Sheldon, How Did We Get Here?, *supra* note 2 at 6.

¹¹ Karin P. Sheldon, *Upstream of Peril: The Role of Federal Lands in Addressing the Extinction Crisis*, 24 PACE ENVTL. L. REV. 1, 10 (2007).

¹² Michael C. Blumm & Lucas Ritchie, The Pioneer Spirit and the Public Trust: The American Rule of Capture and State Ownership of Wildlife, 35 ENVTL. L. 673,675, 677 (2005).

¹³ Sheldon, *How Did We Get Here?*, *supra* note 2 at 6-11.

Lords of Yesterday,”¹⁴ was to facilitate the transfer of natural resources into private hands: hard rock minerals under the Mining Law of 1872, oil and gas under the Mineral Leasing Act, timber and forage under the Forest Service Organic Act and the Multiple Use, Sustained Yield Act.¹⁵

Public reaction to the uncontrolled loss of spectacular places and valuable natural resources prompted Congress to enact the conservation laws of the late 1800s and early 1900s, initially to reserve forests and parks and assist the states in maintaining wildlife populations, and later to impose management regimes on federal lands available for resource extraction.¹⁶

The primary authority for federal natural resources law is Article IV, Section 8 of the Constitution, the “Property Clause,” which gives Congress the “Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States.” The Property Clause provides Congress, as the sovereign and proprietor of the nation’s lands, the authority to manage them as it sees fit. Congress may dispose of lands and resources, or it may set them aside for purposes such as national parks, forests, wildlife protection, and wilderness.

The courts have consistently upheld Congress’ exercise of its Property Clause authority. In *Kleppe v. New Mexico*, the Supreme Court ruled that “the power over the public land thus entrusted to Congress [by the Property Clause] is without limitations.”¹⁷

2. Environmental Law--Environmental law is rooted in common law property and tort principles, particularly the doctrine of nuisance.¹⁸ Even before the advent of

¹⁴ WILKINSON, *supra* note 9 at 3-27.

¹⁵ James Huffman, *The Inevitability of Private Rights in Public Lands*, *supra* note 3.

¹⁶ Sheldon, *How Did We get Here?*, *supra* note 2 at 15; DYAN ZASLOWSKY & THE WILDERNESS SOCIETY, *THESE AMERICAN LANDS: PARKS, WILDERNESS, AND THE PUBLIC LANDS* (1986).

¹⁷ 426 U. S. 529, 539 (1976).

environmental law, the doctrine provided courts with principles to decide a number of serious environmental disputes over uncontrolled interstate air pollution from copper smelters, discharges of sewage into the Great Lakes, and ocean dumping of garbage.¹⁹

Because the federal government does not possess the general police power of a state to abate nuisance, Congress relies on the Commerce Clause as the constitutional basis for most federal environmental statutes.²⁰ The Commerce Clause is a more problematic foundation for environmental law than the Property Clause. Its use represents an expansive interpretation of the authority to regulate economic activities substantially impacting interstate commerce.²¹ Federal regulation of interstate pollution of air and water from industrial activities is straightforward enough. But questions have been raised about federal regulation of endangered species that live in one limited area and are not, in and of themselves, the subject of any interstate commercial activities.²²

At the state level, environmental law most frequently takes form of land use control based on the sovereign authority of the state to protect the public health and safety of citizens and provide for general welfare.²³ This authority is delegated to municipalities, as creatures of state, to enact zoning and land use plans, ordinances, and

¹⁸ See AMERICAN LAW INSTITUTE, RESTATEMENT (SECOND) OF TORTS §§ 821B, 821D, LAZARUS, *supra* note 5 at 179.

¹⁹ Robert V. Percival, *Environmental Law in the 21st Century*, 25 VA. ENVTL. L. J. 1, 44 (2007); *The Clean Water Act and the Demise of the Federal Common Law of Interstate Nuisance*, 55 ALA. L. REV. 717 (2004).

²⁰ LAZARUS, *supra* note 5 at 179.

²¹ *Id.*

²² See, e.g., John C. Nagle, *The Commerce Clause Meets the Delhi Sands Flower Loving Fly*, 97 MICH. L. REV. 174 (1998).

²³ John R. Nolan, *Historical Overview of the American Land Use System: A Diagnostic Approach to Evaluating Governmental Land Use Control*, 23 PACE ENVTL. L. REV. 821, 827 (2006).

controls. The constitutionality of zoning was upheld by the Supreme Court in *Village of Euclid v. Ambler Realty*.²⁴

The public trust doctrine is an additional basis for environmental protection at the state level. Water and wildlife are regarded as trust resources, protected by states on behalf of the public. Even now, federal wildlife law defers to the states' traditional role in managing wildlife populations, even though federal wildlife law otherwise frequently pre-empts state wildlife law.²⁵

C. Methodologies and Mechanisms

The contrasting goals of environmental and natural resources law are achieved through quite different mechanisms and methodologies. One striking difference between the two is the detail and specificity of the statutory schemes, and the degree of discretion given to the agencies charged with implementation.

1. Natural Resources Law--The early natural resources laws tended to be brief and general. Indeed, the first reservations of forests and parks did not include any provisions for administration of the areas,²⁶ and the Mining Law of 1872 makes federal lands and resources free and open for exploration and purchase with no oversight and control by land managing agencies.²⁷ When Congress did authorize management of lands and resources, it set forth policy goals and an overall framework, and then left it to

²⁴ 272 US 365 (1926).

²⁵ Blumm, *supra* note 12 at 701, 709, 713; Allan Kanner, *The Public Trust Doctrine, Parens Patriae, and the Attorney General as Guardian of State Natural Resources*, 16 DUKE ENVTL. & POL'Y FORUM 57, 60 (2005); Charles F. Wilkinson, *The Headwaters of the Public Trust: Some Thoughts on Source and Scope*, 19 ENVTL. L. 425 (1989).

²⁶ Sheldon, *How Did We Get Here?*, *supra* note 2 at 14.

²⁷ 30 U.S.C. §§ 21-42 (1872).

administrative agencies, such as the Department of the Interior and the Forest Service, to determine the details of day to day regulation of resource use and extraction.²⁸

In the mid-1970s, Congress overhauled the management regimes for National Forest and Bureau of Land Management (BLM) lands, and added a greater degree of specificity to the agencies' responsibilities. The National Forest Management Act (NFMA)²⁹ and the Federal Land Policy and Management Act (FLPMA)³⁰ list all the resources to be managed by the Forest Service and the Bureau of Land Management. The lists include commodities, such as timber and forage, and non-commodity resources, such as wildlife and recreation.³¹ Congress confirmed multiple use-sustained yield as the management standard³² and directed the agencies to determine the best mix of resource uses through land and resource management plans.³³ But the agencies were charged with promulgation of the regulations necessary to implement the statutory mandates.

Congress requested the advice of a Committee of Scientists to help fashion the NFMA. The Committee recommended the inclusion of a requirement to “maintain the diversity of plant and animal communities” within national forests.³⁴ This is the only explicit statutory provision in federal land law that addresses the protection of biological

²⁸ For example, in *U.S. v. Grimaud*, 220 U.S. 506 (1911) and *Light v. United States*, 220 U.S. 523 (1911), the Supreme Court upheld both the constitutionality of the Forest Service Organic Act and the authority of the Forest Service to make rules and regulations to implement it. The Court rejected the argument that Congress lacked the power to limit the uses of the public lands. It also reflected the claim that the Forest Service was engaged in unconstitutional acts of legislation when it promulgated regulations for use of forest reserves.

²⁹ 16 U.S.C. §§ 1600-1614 (1994).

³⁰ 43 U.S.C. §§ 1701-1784 (1994).

³¹ NFMA, 16 U.S.C. § 1604 (e) (1); FLPMA, 43 U.S.C. § 1701 (8).

³² NFMA, 16 U.S.C. § 1604 (e); FLPMA, 43 U.S.C. § 1701 (a) (7).

³³ NFMA, 16 U.S.C. § 1604, FLPMA, 43 U.S.C. § 1712. For a comprehensive review of planning and management under the National Forest Management Act, see Charles F. Wilkinson & H. Michael Anderson, *Land and Resources Planning in the National Forests*, 64 ORE. L. REV. 1 (1985). The National Park Service is also directed to plan for the uses and activities in the units of the National Park System. 16 U.S.C. § 1a-7 (b); Robert L. Fischman, *The Problem of Statutory Detail in National Park Establishment Legislation and Its Relationship to Pollution Control Law*, 74 DENV.U. L. REV. 779, 787-789 (1997).

³⁴ 16 U.S.C. § 1604 (g) (3) (B).

diversity.³⁵ It represents an acknowledgment of the importance of science to natural resource management, and is a harbinger of what will be necessary for future approaches to environmental protection.

2. Environmental Law--In contrast with most natural resources statutes, pollution control laws were detailed and complex from the outset, and became progressively more so. The penultimate example is probably the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),³⁶ a whopping 174 section law in which Congress prescribes in excruciating depth a program for the clean-up of toxic chemicals in the environment.³⁷

The pollution control statutes share a number of characteristics. They are either media-specific, that is, focused on a single aspect of the environment such as the air or water, or concerned with particular groups of toxic chemicals or wastes. The dominant approach to regulation is command and control, with permits as the principal tool for enforcement and compliance. Permits are technology based, and regulated entities must use “best practicable” or “best available” control technologies to accomplish pollution reduction.³⁸ Because the purpose of the pollution control statutes was principally to protect human health and safety, EPA initially based most of its standards on human

³⁵Oliver A. Houck, *On the Law of Biodiversity and Ecosystem Management*, 81 MINN. L. REV. 869, 885-91 (1997).

³⁶ 42 U.S.C. §§ 9601-9675 (1994).

³⁷ For fun, see William H. Rodgers, *A Superfund Trivia Test: A Comment on the Complexity of the Environmental Laws*, 22 ENVTL. L. 417 (1992).

³⁸ ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE & POLICY 108-111 (1996).

health effects, rather than biological diversity or ecosystem health.³⁹ Cancer risk was used as the proxy for almost all environmental harm.⁴⁰

The states are given a role as partners in the air and water pollution control efforts under a scheme of “cooperative federalism.” EPA enforces national performance criteria in accordance with the statute and the states determine water quality standards and implement the programs.⁴¹

Congress placed considerable limits in the pollution control laws on the administrative discretion of the Environmental Protection Agency, the agency charged with statutory implementation and enforcement. Rather than leave it up to EPA to decide when and how best to meet general statutory mandates, Congress identified priorities for action and imposed deadlines for the accomplishment of statutory goals. It listed the pollutants to be controlled, and specified how to do it. It set standards and criteria for industry performance, and timetables for preparation and review of plans. It coupled these requirements with criminal sanctions for failure to comply.⁴²

The Clean Water Act is a prime example of Congress’ approach to pollution control law. Professor William Andreen describes the emphasis on “enforcement and enforceability” that “permeated the design” of the Clean Water Act.⁴³ He relates Congress’ disenchantment with the “spotty and ineffectual” efforts of both the federal

³⁹ Fischman, *Biological Diversity and Environmental Protection: Authorities to Reduce Risk*, 22 ENVTL. L. 435, 443 (1992).

⁴⁰ Sheldon, *Eight Lessons*, *supra* note 5 at 41; Fischman, *Biological Diversity*, *supra* note 39 at 443; Alon Rosenthal, et al., *Legislating Acceptable Cancer Risk from Exposure to Toxic Chemicals*, 19 ECOL. L.Q. 269, 271; Robert W. Adler, *Addressing Barriers to Watershed Protection*, 25 ENVTL. L. 973, 984 (1995) (discussion of the benefits of biocriteria to facilitate the protection of aquatic ecosystem health.)

⁴¹ Robert L. Fischman, *Cooperative Federalism and Natural Resources Law*, 14 N.Y. U. ENVTL. L. J. 179, 183 (2005).

⁴² Robert L. Fischman, *The Problem of Statutory Detail*, *supra* note 33 at 792; Sidney A. Shapiro & Robert L. Glicksman, *Congress, the Supreme Court, and the Quiet Revolution in Administrative Law*, 1988 DUKE L.J. 819, 822.

⁴³ William L. Andreen, *Motivating Enforcement: Institutional Culture and the Clean Water Act*, 24 PACE ENVTL. L. REV. 67, 68 (2007).

government and the states to combat water pollution.⁴⁴ “Congress set out to cure the problem, not only by establishing an enforceable pollution control strategy, but also by strengthening the enforcement process itself.”⁴⁵ Congress also included citizen suit provisions authorizing members of the public to act as private attorneys general when agency enforcement was insufficient.

II. CONVERGENCE

A. Borrowing

Pollution control and natural resources law operated largely in parallel from the decades of the 1970s through 2000. Along the way there was some intersection, or “convergence” among pollution control programs and between environmental and natural resources regimes.⁴⁶ Agencies borrowed useful mechanisms and swapped tort and property principles to better control the exercise of private property rights.⁴⁷ For example, over time, the initially distinct regulatory programs of the Clean Air Act and the Clean Water Act were gradually blended together. The NPDES permit approach of the Clean Water Act was transplanted to the Clean Air Act to enhance the enforcement of clean air standards, especially for stationary sources.⁴⁸

B. End of the Balance of Nature

The most significant cause of convergence between pollution control and natural resources law is not the efficacy of particular regulatory mechanisms, but our increased scientific understanding of how the elements of the environment function. There has been

⁴⁴ *Id.*

⁴⁵ *Id.* at 68.

⁴⁶ LAZARUS, *supra* note 5 describes the convergence within environmental law at 171-178, and between environmental and natural resources law at 181-185.

⁴⁷ *Id.* at 171-178, 181.

⁴⁸ *Id.* at 175.

a dramatic shift in the paradigm that serves as the foundation for much of both environmental and natural resources law, the idea of a “balance of nature” that exists in the undisturbed natural world and can be restored and maintained through human management.⁴⁹ A significant lesson for both natural resources and environmental law from the field of ecology is that the paradigm is wrong.⁵⁰ Nature is not balanced. Ecosystems are dynamic, unpredictable, and subject to a multitude of influences.⁵¹

The paradigm shift has enormous implications for environmental and natural resources law and its implementation in the future. It will require a re-design, not only of our methods and mechanisms, but of our agencies to end the fragmentation created by political and legal boundaries and facilitate integrated, systemic approaches to resource management and protection.

For natural resources law, the principles of ecology dictate that sustainability must be the limit on resource use and exploitation. Exploitation of commodity resources must be within ecological limits.⁵²

For environmental law, the changes will be even greater. The media-specific approach to regulation made little sense, even in the late 1960s and early 1970s. There was some recognition by EPA of the need for holistic, cross media approaches to managing human activities, but the efforts were sporadic. The Great Lakes and Chesapeake Bay programs incorporated into the Clean Water Act are early examples of

⁴⁹ A. Dan Tarlock, *The Nonequilibrium Paradigm in Ecology and the Partial Unraveling of Environmental Law*, 27 LOY. L.A. L. REV. 1121, 1122 (1994).

⁵⁰ *Id.* at 1123.

⁵¹ Reed F. Noss, *Some Principles of Conservation Biology, As They Apply to Environmental Law*, 69 CHI.-KENT L. REV. 893, 893 (1994).

⁵² Tuomas Kuokkanen, *Integrating Environmental Protection and Exploitation of Natural Resources: Reflections on the Evolution of the Doctrine of Sustainable Development*, 22 ENERGY & NAT. RES. L. 341 (2004).

ambitious place-based ecosystem management schemes.⁵³ The National Estuary program grew out of EPA's efforts to design comprehensive management plans to protect the "ecological integrity of nationally significant estuaries."⁵⁴ Perhaps the most successful ecosystem-style approach is EPA's watershed management program which brings together water pollution, land use, and natural resources law principles to achieve water quality and quantity goals.⁵⁵ This model should serve as a guide to the design of future environmental law regimes.

III. CONSTRUCTION

A. Gimme Shelter

1. A Tobacco Road Shack?

Environmental law has been described as "a Tobacco Road shack," because of its apparently haphazard collection of principles, approaches and methods.⁵⁶ Some legal academics decry the absence of a central rationale and the lack of coherence in environmental law questioning whether "there is a there there".⁵⁷ They apparently miss the fact that we have developed a set of useful tools in our more than 30 years of constructing natural resources and environmental law.⁵⁸

The pollution control side has contributed the *sic utere* principle that no one has the right to cause significant harm to others, the precautionary principle that it is better to

⁵³ See Clean Water Act, 33 U.S. C. §§ 1258, 1267-68 (2000); Brooks et al., *supra* note 1 at 261, 271-273; Jon Cannon, *Choices and Institutions in Watershed Management*, 25 WM. & MARY ENVTL. L. & POL'Y REV. 379 (2000).

⁵⁴ Fischman, *Biological Diversity*, *supra* note 39 at 499.

⁵⁵ See EPA, Wetlands, Oceans, & Watersheds, <http://www.epa.gov/owow> (last visited Nov. 30, 2006) for EPA's complete, one-stop shop on watershed protection.

⁵⁶ Ronald Outen, *Environmental Pollution Laws and the Architecture of Tobacco Road*, in NATIONAL RESEARCH COUNCIL, MULTIMEDIA APPROACHES TO POLLUTION CONTROL: SYMPOSIUM PROCEEDINGS 139 (1987).

⁵⁷ See, e.g., A. Dan Tarlock, *Is There a There There in Environmental Law?*, 19 J. LAND USE & ENVTL. L. 213 (2004).

⁵⁸ Robert V. Percival, *Environmental Law in the 21st Century*, *supra* note 19 at 1, 8.

be safe in the face of scientific uncertainty than sorry for unforeseen environmental damage, and the “polluter pays” principle which correctly allocates the cost of using public resources.

The natural resources side has contributed the mandate that federal agencies integrate environmental concerns into their decision making processes. It has also provided the “look before you leap” principle of assessing the full range of potential environmental consequences of, and all reasonable alternatives to agency action before it is taken, full disclosure of information about the impacts of agency action, and public participation in agency planning and decision making. Natural resources law has broadened the scope of concern in environmental law beyond human health to other components of the environment, and to ecosystem functions and services.

Both environmental and natural resources laws have equipped the public with access to the courts through citizen suit provisions and review of agency actions under the Administrative Procedure Act. The contribution of the judiciary to the development of environmental law can hardly be overstated.

2. A Double-Wide?

To replace the Tobacco Road shack, Jody Freeman and Daniel Farber propose to construct “modular” arrangements in environmental and natural resources law.⁵⁹ As they correctly state,

It seems increasingly indisputable, after decades of environmental regulation and management, that success with every environmental problem, including habitat conservation, air pollution control, water allocation, hazardous waste remediation, and wetlands restoration, requires not only a suite of complementary regulatory tools and the coordination of multiple levels of government, but also a wide

⁵⁹ Jody Freeman & Daniel Farber, *Modular Environmental Regulation*, 54 DUKE L.J. 795 (2005).

variety of informal implementation mechanisms and the ongoing participation of key stakeholders. This is a tall order, and it calls for a new way of thinking.⁶⁰

Freeman and Farber identify six central constituents of modularity: flexible coordination; government structures in which form follows function; agreement based decision-making; collaborative and adaptive processes that stimulate social learning; accountability through various informal controls; and broad stakeholder participation.⁶¹

All of these elements will contribute significantly to the construction project facing environmental and natural resources lawyers in the coming years. However, the appearance of the architecture—whether Tobacco Road shack or something more aesthetic—is far less important than the utility of the tools used to build it.

Faced with the magnitude of the threat of climate change, we must accelerate our efforts to coordinate the two areas of natural resources and environmental law. Now more than at any other time in history, both sets of law need to be flexible, adaptable, and usable by a variety of levels of government and the public. Both must be based in ecosystem science. Natural resources issues must be integrated with pollution control approaches so that the whole spectrum of environmental law is not just for human beings, but sustains all other living organisms and the natural processes of the planet.

⁶⁰ *Id.* at 798.

⁶¹ *Id.*