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## Building Legal and Institutional Frameworks for Sustainability

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# BUILDING LEGAL AND INSTITUTIONAL FRAMEWORKS FOR SUSTAINABILITY\*

BARRY B. BOYER\*\*

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Information and analysis constitute only one route among several to social problem solving. . . [A] great deal of the world's problem solving is and ought to be accomplished through various forms of social interaction that substitute action for thought, understanding, or analysis. Information and analysis are not a universal or categorical prescription for problem solving.

— Charles E. Lindblom and David K. Cohen<sup>1</sup>

The organizer should know and accept that the right reason is only introduced as a moral rationalization after the right end has been achieved, although it may have been achieved for the wrong reason—therefore he should search for and use the wrong reasons to achieve the right goals. He should be able, with skill and calculation, to use irrationality in his attempts to progress toward a rational world.

— Saul D. Alinsky<sup>2</sup>

## I. INTRODUCTION

Those who are interested in the concept of sustainable development, and in the ecosystem approach as a means of achieving sustainability, often begin from the premise that our current pattern of economic growth is irrational. Sooner or later, it is argued, a system based on the pursuit of endless growth in resource consumption must come crashing down as it encounters the limits of a finite natural world. It seems to follow from this initial insight that our fundamental task is to design and implement a more rational system of economic activity. If we can put in place policies, institutions, and laws calculated to make our systems of production and consumption more consistent with ecological processes, then our current rush toward the biological brink may be slowed or even halted.

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1. CHARLES E. LINDBLOM & DAVID K. COHEN, *USABLE KNOWLEDGE: SOCIAL SCIENCE AND SOCIAL PROBLEM SOLVING* 10 (1979).

2. SAUL D. ALINSKY, *RULES FOR RADICALS* 76 (1971).

From this perspective, the key to survival is "learning our way out."<sup>3</sup> Learning may be broadly defined, as it is in Milbrath's work,<sup>4</sup> but still the dominant impression is of the rational pursuit of better paradigms, models, and data sets. The Brundtland Commission's ground-breaking report on sustainable development, *Our Common Future*,<sup>5</sup> also assumes that rational-technocratic improvements will point the way to a sustainable future. The report concludes that we need to seek institutional and legal change through improvements in "assessing global risks," "making informed choices," and "dealing with the effects."<sup>6</sup> Like much of the contemporary discourse in economics, law, and policy analysis, the sustainable development literature assumes that because most human activity is determined by rational pursuit of self-interest, all social and political change must be sought through rational analysis and manipulation of incentive structures. Without contesting either the irrationality of many aspects of the current economy or the power of analytical rationality, it is worth emphasizing that an exclusive focus on the rational aspects of sustainable development provides a very narrow perspective. This truncated vision can unduly constrain thinking about ways to move toward a more sustainable society.

The limitations of an exclusively rational framework can be illustrated by briefly reviewing alternative perspectives on an analogous shift in economic organization: the transition from a sustainable to an unsustainable pattern of resource use when native peoples in North America began to participate in the market economy through the colonial fur trade.

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3. See LESTER W. MILBRATH, *ENVISIONING A SUITABLE SOCIETY: LEARNING OUR WAY OUT* (1989).

4. For example, Milbrath makes clear that learning new values is at least as important as factual learning, and that social learning should include practice along with theory, and citizen participation along with expert study. *Id.* at 100-01, 103-04, 112-13. He also notes that there are many strategies for seeking social change, each of which may imply a slightly different focus for social learning. *Id.* at 362-80.

5. WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, *OUR COMMON FUTURE* (1987).

6. *Id.* at 20-21.

## II. SUSTAINABILITY AND RATIONALITY

A. *From Sustainable Systems to Endless-Growth: Native North Americans and the Tragedy of the Commons*

From the economic perspective, the fur trade of the seventeenth and eighteenth centuries was a classic example of comparative advantage. England, France, and other European trading nations offered superior goods, based on improved manufacturing technologies in metalworking and weaving. The native peoples had access to abundant supplies of furs and hides that were highly valued by the European clothing industry. As the pace of trade increased, however, the Indians encountered the tragedy of the commons. Beavers and other fur-bearing mammals were hunted beyond their capacity to reproduce, the harvest declined, and hunters found themselves investing more and more effort for a dwindling return. Eventually, some of the tribes devised the classic technique for internalizing this externality: they created property rights in what had previously been an unregulated commons.<sup>7</sup>

However, historical and anthropological research paints a different and more disturbing portrait of the native peoples' first encounters with a market economy. In place of this superficially consensual model of trade based on comparative advantage, social research highlights the many forms of coercion that compelled the native peoples to enter the market economy.<sup>8</sup> The colonial powers' strategy of playing one tribe against another created an "arms race" in which the natives had to secure weapons as a means of survival. Even with this incentive, and with European traders resorting to anti-competitive practices like price-fixing to increase the Indians' hunting incentives, natives did not produce sufficient pelts to satisfy the European market demand.<sup>9</sup> Liquor helped to fill the gap and increase the native hunters' diligence. In significant respects, alcohol was an ideal trade good, similar to heroin or crack cocaine today: its addictive properties made the natives eager

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7. Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 357 (1967).

8. One example was the need to secure firearms and ammunition as essential tools for gaining access to the remaining hunting grounds. Native peoples who failed to trade for modern weapons were often displaced or annihilated by those who had successfully entered the market economy. See, e.g., FRANCIS JENNINGS, *THE AMBIGUOUS IROQUOIS EMPIRE* 80-83 (1984) [hereinafter *IROQUOIS EMPIRE*].

9. THOMAS E. NORTON, *THE FUR TRADE IN COLONIAL NEW YORK, 1686-1776* 70-71 (1974).

but incompetent market participants.<sup>10</sup> Later, as tribes were forced to sell off their ancestral lands through force and stratagem, they were often compelled to depend on the market economy as their only alternative for survival.

While these incentives forced the Indians to adapt to the market economy, behaving like a European market participant was alien to the pre-contact Indian cultures and the transition was both difficult and destructive for them. In native cultures that "stressed sharing instead of investment,"<sup>11</sup> profit-taking and capital accumulation might have been antisocial acts. In extreme cases, the Indian who acted as a rational profit-maximizer could have been regarded as a lunatic, and a threat to his society.<sup>12</sup> Participation in the fur trade may also have been facilitated by (and may have contributed to) the disintegration of the native peoples' spiritual beliefs, premised as they were on animistic norms of mutual respect and support between the human and nonhuman parts of nature.<sup>13</sup>

In short, the history of the fur trade reinforces the insight of economic anthropology that "economic behavior [can]not be extracted or disentangled from the rest of social life. [It is] better understood as part of the larger whole."<sup>14</sup> If economic activity is deeply "embedded" in the beliefs, practices, and assumptions of our culture, then any attempt to move in the direction of sustainability should incorporate theories about how cultures change and what techniques can be used to facilitate desired changes. The legal system is one important arena for studying

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10. *Id.* at 67-69.

11. IROQUOIS EMPIRE, *supra* note 8, at 69.

12. FARLEY MOWAT, PEOPLE OF THE DEER 82-97 (1952).

13. See CALVIN MARTIN, KEEPERS OF THE GAME: INDIAN-ANIMAL RELATIONSHIPS AND THE FUR TRADE (1978). Martin develops the hypothesis that disease epidemics, which the Indians attributed to the spiritual guardians of hunted animals like the beaver, were taken by the Indians as evidence that the animals had declared war on humans. Thus, it became legitimate for the Indians to retaliate by hunting animals without restriction, disregarding the normal rituals and taboos that served to limit the number of animals taken in the hunt. *Id.* at 129-30, 146. Martin's hypothesis, it should be noted, is widely disputed. See IROQUOIS EMPIRE, *supra* note 8; ELISABETH TOOKER, NATIVE NORTH AMERICAN SPIRITUALITY OF THE EASTERN WOODLANDS 9-10 (1979) INDIANS, ANIMALS, AND THE FUR TRADE: A CRITIQUE OF KEEPERS OF THE GAME (Separd Krech, III ed., 1981). In any event, it seems clear that most of the eastern tribes involved in the fur trade had religious beliefs in the pre-contact period that attributed human-like attributes to many aspects of nature, including objects like stones that Europeans regarded as inanimate.

14. Stephen B. Brush, *Economics and Cultures*, 247 SCIENCE 1349 (1990) (reviewing STUART PLATTNER, ECONOMIC ANTHROPOLOGY (1989)).

the process of change, because in North American societies the legal system constitutes and embodies fundamental norms governing human use of the natural world. As we face the difficult transition from an economy based upon unlimited growth to one that seeks sustainable development, our legal system strains to redefine itself in fundamental ways.

B. *Returning to Sustainable Development: Legal Conditions*

As the fur trade example indicates, economic and cultural change can sometimes be imposed by overwhelming external forces. However, such change is disruptive and painful for the societies involved. In the case of the transition from an endless-growth economy to a sustainable system, the most likely external force compelling change would be large-scale, irreversible ecological collapse.

Any significant modification of natural systems, such as major changes in climatic conditions or amounts of ultraviolet radiation reaching the earth's surface, would surely reverberate through the affected human societies, forcibly restructuring not only the material conditions of life but also political conditions, legal regimes, and ideologies and beliefs. One alternative to this bleak prospect is anticipatory cultural and political change, which could be more gradual and less disruptive of existing social institutions. As Errol Meidinger points out,<sup>15</sup> cultures are detailed and complex, often embodying conflicting visions of good or appropriate behavior. At any time, the dominant themes of a culture may be subject to challenge by alternative visions. Those visions may be motivated by conceptions of the good society, or they may be motivated by self-interest. Ultimately, however, interests are defined and constituted by the group, in what is fundamentally a political process.<sup>16</sup> According to Meidinger, "the most creative political activity often is aimed at opening up possibilities of new types of collective action . . . [c]onflicting principles and difference can therefore be seen as an engine of social change."<sup>17</sup>

Before that engine can run, however, it needs an appropriate infrastructure, just as an automobile needs roads, fuel, liability insurers, traffic laws, and other background conditions which enable it to operate effectively. In the same manner, a minimally adequate supporting structure needs to be put in place before an alternative cultural ideal

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15. Errol Meidinger, *Regulatory Culture*, 9 LAW & POLICY 355, 361 (1987).

16. *Id.*

17. *Id.*

such as sustainable development may be widely articulated, debated, accepted, and implemented.

### III. POLLUTION AND THE ROLE OF LAW

#### A. *Legitimizing Pollution Through Pollution Control Law*

Law can play both instrumental and expressive roles in mediating difficult social issues like the proper relationship between human economic activity and the natural world. Instrumentally, laws like those governing the release of pollutants into the Great Lakes constitute a set of authoritative instructions issued by politically legitimate institutions. Behavior that exceeds those instructions is either punishable as a violation, or voidable as *ultra vires*. Law in this instrumental sense is important to the search for ecosystem protection and sustainable development, as it sets boundaries both on economic activity and on government regulation of that activity.

While this function of law as an instrument for carrying out social policy usually receives the most attention, law's expressive functions can be equally important in determining the direction and magnitude of social change. To the narrative school of legal jurisprudence, "law is a compendium of stories about how we use and abuse rules to manage our social relations and resolve both our differences and commonality."<sup>18</sup> Because law embodies the normative judgments of the community, the legal narratives associated with cases, statutes, and regulatory decisions "serve as instructive moral parables, presented to most people as stark, melodramatic media distillations."<sup>19</sup> In short, law is an important arena within which the cultural conflict over visions of the good (and the minimally acceptable) society are worked out. In this respect, law can be studied to learn how dominant values are articulated and defended, and how competing alternative visions are neutralized or consigned to the margins of discourse.<sup>20</sup>

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18. James R. Elkins, *From the Symposium Editor*, 40 J. LEGAL EDUC. 1, 2 (1990).

19. Alan Freeman, *Antidiscrimination Law: The View from 1989*, 64 TUL. L. REV. 1407, 1409 (1990) [hereinafter Freeman, *Antidiscrimination Law*].

20. See, e.g., Robert W. Gordon, *New Developments in Legal Theory*, in THE POLITICS OF LAW: A PROGRESSIVE CRITIQUE 281-93 (David Kairys ed., 1982):

If what is important about law is that it functions to "legitimate" the existing order, one starts to ask *how* it does that ... [one of the important things to study is] all the ways in which the system seems at first glance basically uncontroversial, neutral, acceptable. This is



A foreign visitor studying the efforts of Canada and the United States to control pollution in the Great Lakes might well be puzzled by the disparity between effort and outcome. During the past two decades, there has been massive amount of lawmaking and policy implementation designed to reverse the environmental degradation of the Great Lakes. The Great Lakes Water Quality Agreement has been amended twice since 1972, each time becoming more elaborate and detailed in its prescriptions. Statutes, regulations, case law, and administrative decisions relating to pollution discharges in the region have proliferated at a seemingly geometric rate; a host of commissions, offices, bureaus, and advisory committees have been spawned to implement them. Despite this bustle of activity, however, authoritative bodies like the Government of Canada<sup>21</sup> and the International Joint Commission<sup>22</sup> continue to warn that Great Lakes pollution is a threat both to human health and to the integrity of the ecosystem.

The environmental community has responded to this discrepancy between effort and outcome by advocating changes in the structure of applicable laws. As indicated by the 1991 Joint Report of the National Wildlife Federation and the Canadian Institute for Environmental Law and Policy,<sup>23</sup> the principal environmental advocates in the Great Lakes basin seek legal changes such as reversing the burden of proof on dischargers of certain classes of chemicals,<sup>24</sup> providing more careful consideration of cross-media effects,<sup>25</sup> moving from permits based on

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Antonio Gramsci's notion of "hegemony," *i.e.*, that the most effective kind of domination takes place when both the dominant and dominated classes believe that the existing order, with perhaps some marginal changes, is satisfactory, or at least represents the most that anyone could expect, because things pretty much have to be the way they are.

*Id.* at 286.

21. GOVERNMENT OF CANADA, TOXIC CHEMICALS IN THE GREAT LAKES AND ASSOCIATED EFFECTS (1991).

22. INTERNATIONAL JOINT COMMISSION, FIFTH BIENNIAL REPORT UNDER THE GREAT LAKES WATER QUALITY AGREEMENT OF 1978 TO THE GOVERNMENTS OF THE UNITED STATES AND CANADA AND THE STATE AND PROVINCIAL GOVERNMENTS OF THE GREAT LAKES BASIN, PARTS I AND II (1990).

23. NATIONAL WILDLIFE FEDERATION AND THE CANADIAN INSTITUTE FOR ENVIRONMENTAL LAW AND POLICY, A PRESCRIPTION FOR HEALTHY GREAT LAKES: A REPORT OF THE PROGRAM FOR ZERO DISCHARGE (1991).

24. *Id.* at 9.

25. *Id.* at 25. Environmental regulation has evolved in the U.S. and Canada through separate statutes, programs, and implementing offices for each "medium" of pollution, such as water discharges, air emissions, and toxic waste dumps.

concentrations to those based on mass loadings,<sup>26</sup> and phasing out or banning especially dangerous chemicals.<sup>27</sup>

Experience provides some grounds for skepticism that these reforms, if enacted, would accomplish the desired results. Zero discharge of persistent toxic chemicals and universal achievement of fishable, swimmable waters have been goals of the U.S. Clean Water Act<sup>28</sup> since 1972. Authority to ban or require pre-market testing of dangerous chemicals has been in place nearly as long, but only a handful of substances have been regulated under the American Toxic Substances Control Act.<sup>29</sup> Thus, statutory regulation of harmful substances has developed far ahead of the political will for enforcement. In this field of pollution control, there is a need for a workable theory explaining the relationship between the law on the books and the law's inaction.

One useful approach is suggested by Alan Freeman's work on race discrimination law. Freeman postulates that American race discrimination law is designed to avoid confronting the realities of institutional racism because it adopts a perpetrator perspective rather than a victim perspective.<sup>30</sup> The perpetrator perspective assumes that a social problem like racism can be solved by identifying and punishing a few individual bad behaviors that take place against a background of generally acceptable conduct.<sup>31</sup> Those who are not identified as perpetrators based on their individual fault are by definition innocent bystanders, absolved of stigma or the need to change.<sup>32</sup> If there are no bad actors for the legal system to sanction, then any problems that the victim is experiencing must be his or her own fault.<sup>33</sup> This narrow definition of the problem to be solved serves as a shield against more

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Coordination across these separate media programs is variable, but generally regarded as inadequate.

26. *Id.* at 26-27.

27. *Id.* at 21-23.

28. Clean Water Act of 1972, Pub. L. No. 100-4, 101 Stat. 76 (codified at 33 U.S.C. § 1251 (1988)).

29. Toxic Substances Control Act of 1986, Pub. L. No. 99-519, 100 Stat. 2989 (codified at 15 U.S.C. § 2601 (1988)).

30. Alan Freeman, *Legitimizing Racial Discrimination Through Anti-Discrimination Law: A Critical Review of Supreme Court Doctrine*, 62 MINN. L. REV. 1049 (1978) [hereinafter Freeman, *Racial Discrimination*]; Freeman, *Antidiscrimination Law supra* note 19.

31. Freeman, *Racial Discrimination, supra* note 30, at 1053.

32. *Id.* at 1055.

33. *Id.* at 1054.

fundamental reforms, as demands for change can then be met with the assertion either that there is no problem, or that solutions should be sought through tougher enforcement of existing perpetrator-oriented laws.<sup>34</sup>

A similar point was made by Murray Edelman<sup>35</sup> when he noted that providing purely symbolic reassurance is an important function of regulatory statutes and their administration:

Some of the most widely publicized administrative activities can most confidently be expected to convey a sense of well-being to the onlooker because they suggest vigorous activity while in fact signifying inactivity or protection of the "regulated."

....

The most obvious kinds of dissemination of symbolic satisfactions are to be found in administrative dicta accompanying decisions and orders, in press releases, and in annual reports. It is not uncommon to give the rhetoric to one side and the decision to the other.<sup>36</sup>

Edelman's brief catalog suggests that there may be common patterns of behavior or bureaucratic tactics for avoiding major change within a regulatory domain. The implementation of the U.S. Clean Water Act is a useful area for exploring and elaborating Edelman's approach, because it provides a rich inventory of methods for disregarding or marginalizing the ecosystem approach, and for deflecting challenges to the premises of economic growth.

#### B. *Watering Down the Clean Water Act: Marginalization of the Ecosystem Approach*

When the U.S. Clean Water Act<sup>37</sup> took on its present shape in 1972, the law contained several provisions that were even stronger than the current versions of the Great Lakes Water Quality Agreement. Like the Agreement, the Clean Water Act called for zero discharge.<sup>38</sup> In two

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34. *Id.* at 1056.

35. MURRAY EDELMAN, *THE SYMBOLIC USES OF POLITICS* (1964).

36. *Id.* at 38-39.

37. 33 U.S.C. § 1251, *supra* note 28.

38. 33 U.S.C. § 1251(a)(1).

respects, however, it was significantly more stringent: zero discharge was not limited to persistent toxic chemicals, but rather applied to all pollutants;<sup>39</sup> and a definite timetable was specified for achieving zero discharge, including interim goals and timetables.<sup>40</sup>

The Clean Water Act also adopted an ecosystem approach, stating that the law's objective was "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."<sup>41</sup> In addition to a new national discharge permit system, the Act specifically provided authority for pollution prevention initiatives in the Great Lakes basin;<sup>42</sup> gave the federal government a mandate for a multi-jurisdictional, cross-media demonstration program to develop remedial actions for restoring beneficial uses of Lake Erie;<sup>43</sup> and authorized the federal government to contract for the assessment and remediation of contaminated sediments.<sup>44</sup> According to the Act:

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39. *Id.* § 1251(a)(1)-(2).

40. Under 33 U.S.C. § 1251(a)(1), discharge of pollutants into the navigable waters (which was eventually interpreted to mean all significant surface waters) was to cease by 1985. As an interim goal, fishable and swimmable waters were to be achieved by July 1, 1983 "wherever attainable." *Id.* § 1251(a)(2). The zero discharge point was hammered home even more specifically for toxic chemicals, where the relevant provision emphasized that "it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." *Id.* § 1251(a)(3).

41. 33 U.S.C. § 1251(a)(1).

42. The Administrator of the Environmental Protection Agency was authorized to make 75% matching grants to state or other public agencies for demonstration projects relating to "removal of pollutants and prevention of any polluting matter from entering into the Great Lakes in the future." *Id.* § 1255(a); see *id.* § 1255(c) (general authority to make grants for research and development projects relating to "prevention of water pollution by industry").

43. The Army Corps of Engineers was to be the lead agency in developing a program "for the rehabilitation and environmental repair of Lake Erie." 33 U.S.C. § 1258(d)(1). The program was to be developed "in cooperation with the Environmental Protection Agency, other interested departments, agencies, and instrumentalities of the Federal Government, and the States and their political subdivisions." *Id.* § 1258(d)(2). The Act also had a general directive that public participation in the development of any program "shall be provided for, encouraged, and assisted" by the Administrator [of EPA] and the States. *Id.* § 1251(e). The rehabilitation program for Lake Erie "should include measures to control point sources of pollution, area sources of pollution, including . . . urban runoff and rural runoff, and in place sources of pollution, including bottom loads, sludge banks, and polluted harbor dredgings." *Id.* § 1258(d)(2).

44. 33 U.S.C. § 1268(c)(3).

The Administrator is directed to identify the location of in-place pollutants with emphasis on toxic pollutants in harbors and navigable waterways, and is authorized, acting through the Secretary of the Army, to make contracts for the removal and appropriate disposal of such materials from critical port and harbor areas.<sup>45</sup>

Fifteen million dollars were authorized for this contaminated sediment remediation. In these respects, the 1972 law seems entirely consistent with the demands being made today by Great Lakes environmental organizations like the National Wildlife Federation and Great Lakes United.

If these policies and programs have been incorporated into federal statutes for twenty years, why do they remain unfulfilled promises? The short answer is that insiders in the field of pollution control did not support stringent requirements like the zero discharge goal, and did not believe that Congress really meant them to be implemented as written. To EPA's top administrators, the mandate to achieve zero discharge on a short timetable was a "revolutionary change" made in response to swings in public opinion without any careful investigation of the consequences.<sup>46</sup> EPA Administrator Ruckelshaus emphasized his belief that setting unrealistic statutory standards would undermine respect for the government,<sup>47</sup> and zero discharge was regarded as hopelessly unrealistic.<sup>48</sup> Thus, even though the Congress passed zero discharge with only minor qualifying amendments, this portion of the Act was branded from the start as purely symbolic legislation.

Marginalization of the Act's ecosystem objective of restoring and maintaining "the chemical, physical, and biological integrity of the Nation's waters"<sup>49</sup> followed a slightly different path. In this instance, the ambiguity of the concept of "integrity," which was not defined in the Act, proved fatal to implementation. By 1975, agency water program administrators had established a simple syllogism to resolve the integrity problem: (a) if "integrity" had any meaning, it referred to the pristine quality of water that existed before European settlement of North America; (b) Congress could not seriously have meant for the agency to implement requirements that would assure pristine waters,

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45. 33 U.S.C. § 1265.

46. JOHN QUARLES, *CLEANING UP AMERICA: AN INSIDER'S VIEW OF THE ENVIRONMENTAL PROTECTION AGENCY* 149 (1976).

47. *Id.* at 154.

48. *Id.* at 163.

49. 33 U.S.C. § 1251(a).

because that would be either physically impossible or prohibitively expensive in the context of a modern economy; (c) therefore, "integrity" can be reinterpreted to mean whatever quality of water will result from implementing the operational programs of the Act in a reasonable manner.<sup>50</sup> Framing the decision in this way--as a choice between an impossible dream and a comfortable status quo--EPA not surprisingly opted for the latter.

C. *The Methodology of Marginalization: Three Aspects of Regulatory Reasonableness*

Freed of the potentially radical implications of zero discharge and an ecosystem approach, EPA and the states were able to proceed with "reasonable" implementation in ways that are consistent with Freeman's concept of a perpetrator perspective. Three aspects of regulatory reasonableness deserve mention.

1. *Consideration of Economic Factors.* The first, and perhaps the most important aspect of regulatory reasonableness, is the role of economic considerations in decisionmaking. Under the Clean Water Act, no interpretive gamesmanship was required, as the law had clearly injected economic factors into the decisional calculus at several levels. The Act's primary line of defense against pollution, permit limits based on the best available technology economically achievable,<sup>51</sup> explicitly directed the agency to take the cost of controls into account. When technological limitations still left significant sources of pollution in a waterway, the back-up system of water quality limits came into effect. Water quality decisions gave weight to economic factors at two levels of decisionmaking. First, states could consider abatement costs and impacts on industry when they classified each waterway for its "best use." Second, when the state pollution control agencies later wrote legally enforceable standards for each use-class of waterways, they could rely on economic factors to modify or weaken the scientifically-based water quality criteria issued by EPA. These use classifications and water quality standards would then determine the discharge limits written into individual permits.

Although weighing economic costs against environmental gains is not unusual in environmental regulation, it should be emphasized that this type of cost-benefit analysis implies a perpetrator perspective. High

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50. Barry B. Boyer, *Ecosystem, Legal System, and the Great Lakes Water Quality Agreement*, 41 Buff. L. Rev. (forthcoming Summer 1993).

51. 33 U.S.C. § 1314(b)(1)(B).

abatement cost becomes an acceptable justification for continuing to pollute, and the class of punishable perpetrators is limited to those who could reduce their discharges at low cost, but have failed to do so. Moreover, because cost considerations are often made within an atmosphere of unconfined discretion at the state level, regulated firms can play states against one another, driving the acceptable levels of pollution down to a lowest common denominator. As Thomas Jorling has pointed out, the inclusion of economic factors in the water quality system gives it a strong bias toward the status quo: "Applying benefit and cost analysis assures that our society will not change; for, by definition, any change which would cause a significant alteration in any pattern of [economic activity in] the existing society . . . is an unacceptable cost."<sup>52</sup> More generally, if a shift from unsustainable to sustainable forms of economic activity is necessary, a cost-benefit approach will not provide much impetus for change, because it cuts off exploration of most alternatives to the current system.

2. *Restriction of Benefits.* A second way in which a "reasonable" approach to water quality regulation limits the liability of polluters is through restricting the acknowledged benefits of pollution control to human consumptive uses. New York's stream classification system, for example, recognizes only four protectable human uses of waterways: drinking water, body contact recreation, fish propagation, and fish survival.<sup>53</sup> Pollution which does not undermine any of these consumptive uses does not, by definition, impair water quality, and therefore those who discharge such pollution are wholly innocent. By contrast, the use impairments listed in the Great Lakes Water Quality Agreement broaden the definition of "use" to include non-game plants and animals (phytoplankton, zooplankton, benthos, algae, and wildlife).<sup>54</sup> They also incorporate suitable habitat, along with freedom from tumors, deformities, and reproductive problems for fish and wildlife.<sup>55</sup> A water quality system based on the Agreement's concept of protectable uses would probably legitimize far less pollution than the water quality systems used by most states.

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52. Thomas Jorling, *Incorporating Ecological Interpretation into Basic Statutes*, in OFFICE OF WATER AND HAZARDOUS MATERIALS, U.S. ENVIRONMENTAL PROTECTION AGENCY, *THE INTEGRITY OF WATER* 9, 13 (1975).

53. N.Y. COMP. CODES R. & REGS. tit. 6, § 701 (1991).

54. 1987 Protocol Amending the Great Lakes Water Quality Agreement of 1978, Nov. 18, 1987, U.S.-Can., Hein's No. KAV 255, Annex 2, sect. 1(c)(xii).

55. *Id.*

3. *Selective Reliance on History.* A third aspect of "reasonable interpretation" has emerged in the treatment of human consumptive uses: selective reliance on history. Here, periods of heavier pollution are given as a baseline for determining threshold levels of contaminants. In this way, pre- and post-industrial periods can be downgraded, or ignored. Thus, since many of the Great Lakes region's public drinking water systems have moved their intakes far offshore to find relatively unpolluted water and have installed chlorination equipment to kill sewage bacteria, there is no "need" to use harbors, nearshore areas, or the mouths of tributary streams for drinking water. These may remain classified for lower uses.

Similarly, if a state like New York refuses to classify a stream like the Buffalo River as "swimmable" unless somebody proposes to open a bathing beach on the river, it will not have to concern itself with the troublesome questions of reclassification. When the river was heavily polluted during the industrial period, municipalities invested in alternatives like public swimming pools and beaches in cleaner, more remote areas. If local children persist in exposing themselves to pathogens by swimming in a river not classified for that use, then any resulting disease is their own fault. In other words, the sewer authority is not a perpetrator when its sewers overflow and dump excrement into the river.

#### D. *Marginalization through Interpretation of Scientific Data*

Even when regulatory decisionmaking purports to be purely scientific or technical, political choices can be made to exclude, marginalize, or ignore certain factors. Under the Clean Water Act, the Environmental Protection Agency's formulation of water quality criteria, which guides the states in writing legally enforceable standards, is ostensibly a purely scientific enterprise. The statute directs the agency to issue and revise criteria "accurately reflecting the latest scientific knowledge . . . on . . . all identifiable effects on health and welfare . . . [and] on the effects of pollutants on biological community diversity, productivity, and stability."<sup>56</sup> In devising its methodology for developing criteria,<sup>57</sup> EPA justified many of its choices as dictated by

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56. 33 U.S.C. § 1314(a)-(a)(1).

57. Water Quality Criteria Documents; Availability, 45 Fed. Reg. 79,318, 79,341-79 (1980) [hereinafter Criteria Documents]. The application of those criteria methodologies to the Great Lakes is currently being re-examined as part of the Agency's Great Lakes Water Quality Initiative, and through this process EPA's position on these methodological issues may change. Also, comparing EPA's 1980



scientific judgment. However, many of those choices are fundamentally opposed to positions taken by other scientific bodies studying water quality in the Great Lakes basin.

One of the most fundamental choices in developing water quality criteria is how to deal with limited data. EPA chose to require a large amount of data for criteria formulation. For example, to assess freshwater acute toxicity, laboratory data must be available for at least eight different families of organisms, including salmonid and non-salmonid fish, planktonic and benthic crustaceans, benthic insects, and benthic detritivores.<sup>58</sup> In addition, laboratory data should be available to generate acute/chronic ratios for at least three species of animals, and there should also be at least one test with freshwater plants. Other data may also be required in special cases, and any data that are questionable or not available in hard copy should be discarded. If not enough data are available, no criterion should be developed. EPA's treatment of these data requirements contrasts with the discussion of human health standards in the 1989 Report of the International Joint Commission's Science Advisory Board.<sup>59</sup> The Board noted that requiring proof of harm before a chemical pollutant could be banned or regulated "is dysfunctional and unscientific."<sup>60</sup> According to the Board, "[s]cience does not operate on the basis of 'proof.' It progresses by establishing 'null' hypotheses and disproving them."<sup>61</sup> Thus, a more "scientific" formulation of the question might be: how much evidence do we have to overlook in order to conclude that this substance is safe? The Board made clear that putting a high burden of proof on agencies to prove that each chemical is harmful would unduly shield polluters and expose humans and animals to harm because "[o]ne by one 'proof' of harm can never keep pace with the rates of introduction

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criteria approach to other scientific bodies' later statements--in some instances, as much as ten years later--might be faulted for criticizing with the benefit of hindsight. However, that should not undermine the validity of the point made in text: if the scientific consensus on important methodological issues can shift so radically in a decade, this suggests that the relevant methodology is neither immutable nor indisputable. In other words, seemingly scientific methodological norms may result from a process of social construction reflecting value choices, unprovable assumptions, and various forms of political interaction.

58. *Id.* at 79, 341-79.

59. SCIENCE ADVISORY BOARD, INTERNATIONAL JOINT COMMISSION, 1989 REPORT 66-67 (1989) [hereinafter 1989 REPORT].

60. *Id.*

61. *Id.*

of new chemicals.<sup>62</sup> Choice of a victim or a perpetrator perspective does not, therefore, seem to be dictated solely by scientific method.

Another example of invoking scientific method to cloak value choices is the criteria methodology's treatment of health risks to women and children. When assessing human health risks from exposure to environmental contaminants, EPA noted that it was basing its estimations of harm on a hypothetical 155-lb. man who ate one-quarter ounce of fish and shellfish per day, and consumed two liters of water. "Criteria based on these assumptions," EPA concluded, "are estimated to be protective of an adult male who experiences average exposure conditions."<sup>63</sup> In response to a commentator who argued that this approach might not be adequately protective of children, EPA replied that criteria modifications to protect children should be made "only if specific data are available. This is a highly judgmental decision, which must be made in an individual case."<sup>64</sup>

Other bodies that have looked at the scientific evidence of risks to children from environmental pollution have reached rather different conclusions. Three Canadian agencies recently stated:

It is clear that there are people who are at greater risk than average because they are more heavily exposed (e.g., nursing infants and those who eat large amounts of contaminated fish) or are more susceptible (e.g., the developing fetus, newborns, the elderly, and those who are in poor health).<sup>65</sup>

When these groups are added to women and girls of childbearing age—who would be at risk of harming their babies—the exceptions probably swallow the rule. The "average" 155-lb. adult male has thus become a minority, one that is especially resistant to health risks from environmental contaminants. Similarly, the International Joint Commission recently noted that when available data on fish, birds, reptiles, and small mammals are considered along with human research, the Commission must conclude that there is a threat to the health of our children emanating from exposure to persistent toxic substances, even at very low ambient levels.<sup>66</sup>

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62. *Id.*

63. Criteria Documents, *supra* note 57, at 79,323-24.

64. *Id.* at 79,372.

65. GOVERNMENT OF CANADA, TOXIC CHEMICALS IN THE GREAT LAKES AND ASSOCIATED EFFECTS: SYNOPSIS 41 (1991).

66. 1989 REPORT, *supra* note 59, at 69.

The EPA, by contrast, had already freed itself of the need to consider data about toxic pollutants' threats to birds, reptiles, and small mammals, because no "specific wildlife criteria methodology" was available.<sup>67</sup> The agency asserted that until the appropriate scientific methodology was developed, criteria based on human health data would serve to protect wildlife.<sup>68</sup> Other examples could be extracted from the criteria methodology and similar documents implementing the Clean Water Act.

Implementation of complex regulatory statutes such as the Clean Water Act entails a large number of decisions which can incorporate either a victim perspective (ecosystem sustainability), or a perpetrator perspective (protect unlimited growth). Depending upon which perspective is adopted, the regulatory arena can become either a forum for examining the prospects for alternative futures or a bastion of the status quo.<sup>69</sup> What determines which role the law will play?

#### IV. LAW'S ROLE IN BUILDING CONSTITUENCIES FOR THE ECOSYSTEM

As the discussion of economic considerations indicates, the form of the law is crucial. Any law that creates a system of regulatory decisionmaking which gives heavy weight to existing economic activity cannot provide many occasions for exploring alternative economic futures. Thus, the right kind of law at a minimum should not define the possibility of significant change as legally irrelevant or impermissible.

Beyond this, procedures may be at least as important as substance. By establishing the field of play and the rules of the game for future encounters of conflicting ideas, the chances of meaningful cultural change can be maximized. Efforts to root out ambiguity and indeterminacy in programs of environmental and economic regulation are ultimately futile and probably counterproductive. As Murray Edelman points out, "[f]or lawyers and their organized clients, [ambiguity] is the most useful attribute of legal language. To those directly involved, the meaning of law constantly and observably changes with variations in group influence."<sup>70</sup>

The question becomes which actors and which constituencies become involved in the attempt to resolve the ambiguities. Law affects

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67. Criteria Documents, *supra* note 57, at 79,369.

68. *Id.*

69. See generally MILNER S. BALL, LYING DOWN TOGETHER: LAW, METAPHOR, AND THEOLOGY (1985).

70. EDELMAN, *supra* note 35, at 141.

this process of constituency interaction both substantively and procedurally. Substantive law often defines the terms of the debate by indicating which issues and outcomes merit serious consideration, while procedural law creates the forums and opportunities for dialogue. Recent activities among the nongovernmental organizations and other stakeholders involved in Great Lakes environmental issues indicate that there are significant obstacles to building broad-based constituencies for sustainability, and that law could play a significant role in helping to overcome them.

A. *The Problem of Public Apathy.*

In the mid-1980s, when William Ashworth drove around the Great Lakes basin in preparation for writing his bitter environmental history, *The Late, Great Lakes*, he was most depressed by the lack of citizen commitment and involvement:

It is this apathy—this, more than any single cause—which is at the root of the Lakes' current crisis. It is apathy that causes people to look the other way as the waters are filled with garbage; it is apathy that allows shorelines to be eaten away for industrial development, and harbor floors to become poisoned deserts, and wetlands to be turned into toxic waste dumps.

....

The worst thing about all this apathy, though—the worst thing, and the most frightening—is not the problems it inevitably leads to for the Lakes. It is the way the people of the Great Lakes region accept those problems so docilely.<sup>71</sup>

A few years later, when the International Joint Commission opened its biennial meeting for the first time to accept comments from members of the public, it received an overwhelming outpouring of citizen reaction. More than a hundred citizens, ranging from Boy Scouts to biologists, called on the Commission and the governments of the basin to take more vigorous action to protect the Great Lakes. Greenpeace provided a keynote speaker, and a pageant featured people wearing animal masks to represent the biota of the Great Lakes

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71. WILLIAM ASHWORTH, *THE LATE GREAT LAKES: AN ENVIRONMENTAL HISTORY* 245 (1986).

ecosystem. Further, a coalition of environmental organizations gave the Commission and the national governments a public report card, with grades of "D" and "F" for their performance in protecting the lakes.<sup>72</sup> Behind the theatrics of the IJC meetings lay a massive structure of citizen participation in several basin-wide coalitions, dozens of remedial action planning committees, and hundreds of local and regional environmental and conservation organizations.

Ashworth had overlooked a basic truth known to community organizers like Saul Alinsky: "If people feel they don't have the power to change a bad situation, then they do not think about it."<sup>73</sup> The surface apathy that Ashworth observed in his travels hid a considerable amount of latent discontent. This public concern was mobilized and made highly visible through several processes. First, groups like Great Lakes United, Pollution Probe, Greenpeace, and the National Wildlife Federation played the role of catalyst, providing support to help local groups organize themselves and become involved in Great Lakes issues. Another important factor was the availability of forums for advocacy and self-education in the citizen advisory committees created to assist in the development of remedial action plans for polluted areas of concern. Finally, a sufficient number of political leaders in both countries expressed interest in cleaning up the Great Lakes to give hope that significant improvements might be within reach.

### B. *Three Obstacles to Constituency-Building*

Despite an increasing coalescence of public support, it is unclear whether this initial surge of public interest and involvement will mature into the kind of established constituency that can effectively push for change in a wide variety of forums, ranging from the mass culture to specialized arenas like the regulatory process. Apart from the problem of generating adequate resources, which is a chronic disability of most organizations that seek to provide collective goods like ecosystem preservation or a sustainable economy, there are three basic obstacles that the environmental constituencies will need to overcome in order to avoid being relegated to the margins.

1. *The Expertise Dilemma.* Technical expertise is a valuable source of power in the administrative state, and those who lack access to relevant expertise can often be safely ignored by dominant insti-

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72. Bruce Kershner, *Citizens Give Loud & Clear Message to the IJC*, in THE GREAT LAKES UNITED (Great Lakes United, Buffalo, N.Y.), Fall 1989.

73. ALINSKY, *supra* note 2, at 105.

tutions. Speaking the language and knowing the local customs is often a prerequisite to gaining admission to "regulatory communities" and other settings where cultural norms are constituted and defended.<sup>74</sup> To find, much less to understand or critique, an important decisionmaking document like the EPA's description of its methodology for developing water quality criteria requires some expertise.

Such expertise generally is not beyond the grasp of the average person. In many neighborhood environmental conflicts, ordinary citizens have demonstrated the capacity to cut through jargon and the mysteries of method to successfully confront experts on their own ground. However, this kind of self-education usually requires an enormous investment of time and energy, as well as some access to support and assistance from friendly experts. Issues like ecosystem preservation and sustainability lack the motivating power of an immediate threat to personal health or property. As a result, few non-experts may be willing to make the necessary commitment to understanding and challenging expert values and methods.

There is also a more fundamental ambivalence about expertise among environmental organizations, as reflected in the growing split between "professional" and "grassroots" environmental groups. The grassroots groups frequently view the professional environmentalists who have already gained access to the regulatory communities as ineffective pawns of the dominant system. Instead of trying to gain access to existing domains of technical expertise, grassroots organizations thus seek to confront or politically neutralize them.

In addition to these tactical and strategic differences, groups advocating ecosystem preservation and sustainability may also have a conceptual problem in accepting the legitimacy of the existing domains of technical expertise. In varying degrees, an ecosystem approach implies a mode of holistic thinking and a value of accommodation to nature that is antithetical to the reductionist, dominating approach of the prevailing scientific and technical culture.<sup>75</sup> Thus, it may be difficult for representatives of groups that are challenging the basic paradigms of these expert communities<sup>76</sup> to gain acceptance in them--or even to want it.

The Great Lakes basin is an interesting arena for examining possible resolutions of the expertise dilemma for several reasons. First,

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74. Meidinger, *supra* note 15.

75. See, e.g., DONALD WORSTER, *NATURE'S ECONOMY: A HISTORY OF ECOLOGICAL IDEAS* (1977); CAROLYN MERCHANT, *THE DEATH OF NATURE* (1980).

76. See LESTER W. MILBRATH, *ENVIRONMENTALISTS: VANGUARD FOR A NEW SOCIETY* (1984).

within the region, there is a longstanding tradition of scientific inquiry compatible with the ecosystem approach and sustainability, along with an unusually large number of experts who are willing to assist environmental organizations.<sup>77</sup> Second, and perhaps as a result, the region has a diversity of advocacy groups committed to the ecosystem approach, each embodying varying degrees of technical orientation and sophistication. Finally, the process of remedial action planning provides an arena within which different constituencies are being brought together to work out the practical applications of the ecosystem approach. It would be valuable to learn how experts and laypeople are adjusting to each other in these advisory committees, and whether shared understandings and ongoing relationships are emerging from the remedial action plans.

2. *The Jurisdictional Maze.* A second generic obstacle to building stable constituencies for the ecosystem approach and sustainable development may be called the jurisdictional maze. From an ecosystem perspective, the geographic and bureaucratic boundaries defining the "turf" of various agencies with power to steer the course of development in the Great Lakes basin make no sense. Moreover, the sheer size and complexity of the governance structure is a barrier to constituency participation in two ways. First, it is often difficult to find out which agency, office, or combination thereof has responsibility for taking a desired action. Even if the relevant players can be identified, getting them to act in concert often requires a massive investment of time, energy, and advocacy resources. Indeed, a single holdout may in the end effectively veto a broad-based initiative. Second, jurisdictional complexity makes it difficult to organize ecosystem constituencies, because organizing efforts cannot be targeted at a single agency or level of government.

However, this diversity and inertia of the system can have some advantages in building constituencies for the ecosystem approach. If the transition to a more sustainable society will require evolution of different cultural norms, then having many forums in which to push for these different perceptions is a positive benefit: it is a way of preventing belief in sustainability from becoming a purely elite ideal, or a cult. From an organizer's perspective, it may also be beneficial to have a diversity of advocacy organizations and forums because this can maximize the opportunities to get people involved and to keep them active.

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77. See NATIONAL RESEARCH COUNCIL OF THE UNITED STATES AND THE ROYAL SOCIETY OF CANADA, THE GREAT LAKES WATER QUALITY AGREEMENT: AN EVOLVING INSTRUMENT FOR ECOSYSTEM MANAGEMENT (1985).

While jurisdictional overlaps can be frustrating and wasteful, they can also be socially valuable.<sup>78</sup> When parallel organizations are addressing the same problem, each may have a competitive spur to improve performance. This competition provides an opportunity for ecosystem constituencies to play one agency off against the other, to select the best practices and policies as a model, and to ask the less progressive agencies with similar responsibilities: "why aren't you doing what they're doing?" Moreover, once some momentum for change builds up, dispersed and overlapping authority provides some insurance against backsliding. One large, centralized, powerful agency or government may be easier to "capture," and thus be more vulnerable to erratic shifts in policy than a decentralized network of many small agencies.

3. *Definition of the Human Role in the Ecosystem.* The final obstacle to organizing constituencies for sustainable development is perhaps the most difficult of all—the conundrum of defining man's appropriate role in the ecosystem. Accepting the basic premises of the ecosystem approach, ecology does not provide an unambiguous answer to fundamental questions such as: what levels and forms of economic activity are consistent with the preservation of the ecosystem? What levels of population can be maintained within ecosystems like the Great Lakes basin? What forms of social organization will help to achieve these desired future states? Historically, the discipline of ecology has been invoked to support a wide range of social theory.<sup>79</sup> The North American conservation movement has never really resolved the question of man's appropriate role in the ecosystem. Instead, as Michael Cohen has observed, conservationists have tended to dichotomize the human role as a choice between being either a despoiler of nature or a tourist.<sup>80</sup> To organize viable constituencies for social change, a more positive vision is needed.

## V. CONCLUSION

How can the legal system become a constructive force, helping to reduce these barriers to effective dialogue among constituencies, rather than an obstacle to change? While the story is still in the early stages of unfolding, there are some hopeful signs in the Great Lakes region. In

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78. See JONATHAN B. BENDOR, *PARALLEL SYSTEMS: REDUNDANCY IN GOVERNMENT* (1985).

79. Worster, *supra* note 75.

80. See generally MICHAEL P. COHEN, *THE PATHLESS WAY: JOHN MUIR AND AMERICAN WILDERNESS* (1984).



some of the more successful Remedial Action Plans, the decisionmaking process has transcended the traditional bureaucratic approach in which experts decide among themselves and then try to defend their decision before a skeptical or hostile public. Instead, a more equal and cooperative process has evolved in which the specialized knowledge of the experts blends with the local knowledge of the citizenry to provide a richer, more complete understanding of the prospects for restoring a degraded ecosystem. Jurisdictional complexity and turf fights are still common, but as the early Remedial Action Plans move toward implementation there seem to be enough examples of coordinated effort to suggest that jurisdictional conflicts can eventually be sorted out.

One reason for these hopeful developments may be found in the Great Lakes Water Quality Agreement. The task of developing a Remedial Action Plan under the Agreement is so broad that no single person or organization can hope to have all the answers. Shared decisionmaking is virtually implicit in the tasks of defining "impaired uses" and "restoring beneficial uses" as specified in the Agreement. Further, the remedial actions needed for full restoration--or even for full diagnosis of the problems in many polluted areas--will often be so costly and demand such a wide array of actions that the need for cooperation will be obvious to all participants. Thus, although its status as binding domestic law may be questionable, the Great Lakes Water Quality Agreement creates an alternative decisionmaking model to the existing regulatory programs, and a source of authority that may be invoked by those who are dissatisfied with the status quo. Because this alternative model is not a highly detailed one, the Agreement creates a structured opportunity for constituencies to define, or redefine, their relationships and interests in a shared resource. If the legal system can build on these hopeful developments and evolve better doctrines and procedures to promote useful dialogue, then we may have the framework within which the societies and communities of the Great Lakes basin can address the final, and most difficult barrier: working out a common vision of what a sustainable, ecosystem-regarding society would be like.