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Transboundary Ecosystem Governance: Beyond Sovereignty?

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This Article begins with a bald and intentionally provocative claim: as we look ahead to the challenging and complex environmental problems that remain, conventional State-centric regulatory rules will turn out to be a less important part of the environmental management tool kit than is commonly supposed by legal scholars, environmental nongovernmental organizations (NGOs), and many others. This applies both in the domestic environmental policy arena as well as in the realm of complex transboundary environmental problems, including that of transboundary watershed management, the central topic of this Article.

What is meant by that?

It is conventionally assumed that management of domestic natural resources and environmental problems is the prerogative of the sovereign State, which holds exclusive competence to impose binding rules on its subjects.[1] It is also assumed that transboundary environmental management is conducted principally, and of necessity, through international legal instruments consisting of mutually binding rules of obligation owed by sovereign States to other sovereign States.[2]

Thus, in both the domestic and international arenas, sovereign States are presumed to be the central, or even the exclusive, authors of environmental policy. Moreover, in both arenas it is assumed that policy will be expressed and carried out mainly through fixed, legally binding rules that regulate the behavior of both States and non-State Parties. Yet there is growing recognition in scientific and policy circles that for purposes of addressing complex environmental problems generally, and for purposes of managing complex and dynamic ecosystems in particular, this conventional State-centric, fixed-rule regulatory approach is a poor fit.[3]

Concerted, conscious efforts to manage large-scale environmental problems through regulatory law are a relatively recent phenomenon, for the most part going back only 30 to 40 years or so. To be sure, some important precursors to contemporary environmental law can be found in domestic and international conservation efforts focusing on specific natural resources, and in tort (or tort-like) doctrines in the common law and, to a limited extent, customary international law.[4] In the United States, the big push for comprehensive environmental protection came in the "environmental decade" of the 1970s, when the most important federal environmental statutes such as the Clean Air Act and Clean Water Act were adopted.[5] At the international level, the 1972 Stockholm Conference is generally regarded as the watershed event that ushered in the modern era of international environmental law, developed progressively through a series of subject-specific, legally binding intersovereign agreements.[6]

These legal efforts, both domestic and international, have tended to proceed piecemeal, through promulgation of regulatory-type rules aimed at particular, narrowly defined environmental problems.[7] The central notion was that, with the aid of sound science and technocratic expertise, government experts could identify and isolate the most important environmental threats and effectively ameliorate them by crafting and enforcing binding rules aimed at curbing the behaviors giving rise to the problems.[8]

This approach reflects a familiar idea of what law is: an authoritative law-giver makes a binding rule to which all subject to its sovereign authority are bound. This view of law is grounded in 19th century legal positivism, and more specifically John Austin's "command theory" of law.[9] How-

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1. *See* Patricia Birnie & Alan Boyle, International Law and the Environment (Oxford Univ. Press 2d ed. 2002).
2. *See id; see also* Edith Brown Weiss, *The Rise or the Fall of International Law?*, 69 Fordham L. Rev. 345 (2000).
3. *See* C.S. Holling & Gary K. Meffe, *Command and Control, and the Pathology of Natural Resource Management*, 10 Conservation Biology 328 (1995); *see also* A. Dan Tarlock, *Slouching Toward Eden: The Eco-Pragmatic Challenges of Ecosystem Revival*, *in* The Jurisdynamics of Environmental Protection: Change and the Pragmatic Voice in Environmental Law 145 (Envtl. L. Inst. 2003).
4. *See* Robert B. Percival et al., Environmental Regulation: Law, Science, and Policy (Aspen Publishers 4th ed. 2003); *see also* David Hunter et al., International Environmental Law and Policy (The Foundation Press, Inc. 2d ed. 2002).
5. Cary Coglianese, *Social Movements, Law, and Society: The Institutionalization of the Environmental Movement*, 150 U. Pa. L. Rev. 85 (2001).
6. *See* Birnie & Boyle, *supra* note 1; *see* Hunter et al. *supra* note 4; *see* Michael J. Kelly, *Overcoming Obstacles to the Effective Implementation of International Environmental Agreements*, 9 Geo. Int'l Envtl. L. Rev. 447 (1997).
7. *See* Richard B. Stewart, *A New Generation of Environmental Regulation?*, 21 Cap. U. L. Rev. 21 (2001); *see also* Keith Pezzoli, *Environmental Management Systems (EMSs) and Regulatory Innovation*, 36 Cal. W. L. Rev. 336 (2000); *see also* Daniel J. Fiorino, *Toward a New System of Environmental Regulation: The Case for an Industry Sector Approach*, 26 Envtl. L. 457 (1996).
8. *See* Bradley C. Karkkainen et al., *After Backyard Environmentalism: Toward a Performance-Based Regime of Environmental Regulation*, 44 Am. Behav. Sci. 692 (2000).
9. Brian Bix, *John Austin*, *at* http://plato.stanford.edu/entries/austin-john/ (last visited May 18, 2004).

ever, more recent jurisprudential theories, such as H.L.A. Hart's theory of law as a system of "primary" and "secondary" rules and Ronald Dworkin's theory that law includes not only rules but also principles, substantially embrace this view of the centrality of sovereign authority.[10]

In domestic environmental policy, direct application of this State-centric, command-oriented approach typically leads to "command-and-control" regulation. Such a system entails commands by the State to its subjects to undertake certain measures, or more typically to refrain from taking certain kinds of actions that are judged to be environmentally detrimental.[11]

In the international arena, this approach leads to treaty arrangements in which sovereign States undertake mutual, legally binding contractual obligations to exercise their sovereign authority to control specified kinds of environmentally harmful action, for example, to ban or restrict production and consumption of specified ozone-depleting substances within areas subject to their territorial jurisdiction, or to regulate international trafficking in listed endangered species by following specified procedures to monitor and control exports and imports at their borders.[12]

As appealingly familiar as this conventional, rule-based regulatory approach may be, it has several important limitations. These include, most prominently, scale mismatches and capacity mismatches.

Scale Mismatches

The first limitation is the familiar problem of scale mismatches. As Eyal Benvenisti argues in his recent book *Sharing Transboundary Resources*, political boundaries are typically badly mismatched with the scale of the resource to be managed.[13] In the case of transboundary watersheds, for example, sovereign States are too small to fit the full hydrogeographical scale of what is, ecologically and hydrologically, a single, indivisible resource; indeed, this dimension of the scale mismatch is what gives the problem its transboundary character. As a consequence, both the problem and the solution lie in important part beyond the territorial reach of any sovereign State.[14] This, of course, gives rise to the need for transboundary cooperation.

Less often noticed, however, is that sovereign States may be too large to fit the geographical scale of the ecological problem. For example, management of even a very large watershed such as the North American Great Lakes, which have more than 17,000 kilometers (km) of shoreline, drain a basin of 766,000 square km, and are home to some 33 million people,[15] tends to be seen as a problem of regional (subnational) rather than truly national concern by the federal governments of Canada and the United States, and is consequently afforded a relatively low status in each nation's list of diplomatic priorities. In addition, each nation's Great Lakes policy is subject to influence or capture by an array of domestic political constituencies both within and outside the Great Lakes Basin. Canadian and U.S. federal governments consequently have suboptimal incentives to be fully attentive to the problems of the Great Lakes ecosystem.[16]

This sort of mismatch problem extends to "domestic" ecosystems as well. Most ecological problems are poorly matched to conventional territorially defined political boundaries. Even the greatest of U.S. watersheds—the Chesapeake Bay and the Colorado, Columbia, and Mississippi Rivers—are regional rather than truly national in scale, yet they transcend the boundaries of subnational political subdivision such as states, counties, and municipalities.[17]

The problem of scale mismatches, although perhaps obvious, is hardly trivial.[18] It points to a crucial question: how can we best match the capacities and incentives of governance institutions to the scale of the resource to be managed? To ask that question is implicitly to acknowledge that conventional political jurisdictions—sovereign States and their standard political subdivisions—may have both inadequate incentives and inadequate capacities to attend to important categories of environmental problems.

Capacity Mismatches

More fundamentally, ecosystem management is bedeviled by a broader set of capacity mismatches. Quite simply, we face a crisis in the capacity of sovereign States to address complex environmental problems through the familiar tools of fixed-rule regulatory approaches, or in transboundary contexts through fixed-rule agreements among sovereign States.

Broadly, we can say that environmental regulation for most of the last 30 years has been rule-based, and more often than not prohibitory in character.[19] That should come as no surprise, for prohibitory regulation is what States know how to do best as a matter of domestic policy.[20] And it also turns out to be what States know best is how to agree to do it at an international level. Recently, however, both scientists and policymakers have begun to appreciate some of the limitations of that rule-based approach for environmental problem solving.

First, conventional regulatory rules tend to be negative rather than affirmative in character. It is generally easier to specify, monitor, and enforce rules prohibiting harmful actions than to mandate affirmative duties to undertake environmentally beneficial actions. But often the most environmentally beneficial actions require creativity and initiative on the part of the actor. Pollution prevention and habitat restoration, for example, work best when the polluter or land manager is positively motivated to discover and implement

10. Dennis Patterson, *Fashionable Nonsense*, 81 Tex. L. Rev. 841 (2003).

11. *See* Fiorino, *supra* note 7.

12. *See* David A. Wirth, *The Uneasy Interface Between Domestic and International Environmental Law*, 9 Am. U. J. Int'l L. & Pol'y 171 (1993).

13. Eyal Benvenisti, Sharing Transboundary Resources: International Law and Optimal Resource Use (Cambridge Univ. Press 2002).

14. *See id.*

15. U.S. Environmental Protection Agency (EPA) & Environment Canada, Great Lakes Factsheet No. 1: Physical Features and Population, Great Lakes Atlas (3d 1995).

16. Benvenisti, *supra* note 13.

17. *See* Robert W. Adler, *Addressing Barriers to Watershed Protection*, 25 Envtl. L. 973 (1995).

18. *See* Daniel C. Esty, *Toward Optimal Environmental Governance*, 74 N.Y.U. L. Rev. 1495 (1999).

19. *See* Richard B. Stewart, *United States Environmental Regulation: A Failing Paradigm*, 15 J.L. & Com. 585 (1996).

20. *See* Stewart, *supra* note 7.

innovative techniques.[21] It is virtually impossible to mandate that kind of creativity, invention, and goodwill through regulatory rules.

Second, regulatory rules tend to be piecemeal and fragmentary rather than broadly integrative.[22] The standard approach to regulatory standard setting proceeds reductively, breaking complex environmental problems into smaller, putatively manageable components and attacking them *seriatim*. In this scheme, relatively little attention is paid to synergies among environmental stressors, or the complex ecological interrelationships between and among various components.[23]

Third, the rule-based approach tends to be rigid and inflexible, slow to incorporate and adjust to new learning. As a result, it tends to freeze in place old learning, tried-and-true technologies, and familiar regulatory techniques.[24]

Fourth, regulation generally proceeds by lumping problems into broad categories, and then seeking categorical solutions or "one-size-fits-all" rules.[25] As a result, regulation tends toward rough approximation across a range of facially similar situations, none of which it fits perfectly. Rules, in short, are not context-sensitive.

Finally, standard regulatory approaches do not account well for ecological complexity.[26] Ecosystems, the ecologists tell us, consist of complex webs of mutual causal interdependence among physical and biological components, processes, and stressors.[27] They are dynamic, not static, and do not necessarily tend toward stable equilibria, exhibiting important nonlinear threshold effects.[28] They are also characterized by inherent stochasticity and high levels of scientific uncertainty.[29] The presumption of the conventional rule-based approach was that if we study the problem long enough and hard enough, we will come to understand it well enough to craft an optimal rule, or at least a satisfactory one. But as leading ecologists now assert, ecosystems turn out to be "not only . . . more complex than we think, but more complex than we can think,"[30] with the result that it is impossible to have enough information to be certain that we are doing the right thing.

In short, the conventional piecemeal, top-down, prescriptive regulatory approach—the favored tool of sovereign States—appears badly mismatched to the complex demands of contemporary ecological understandings. In response, a growing interest in integrated and adaptive ecosystem management is evident in both scientific and policy circles.[31] This approach seeks to manage particular ecosystems in an integrated way, using a place-based strategy that tailors management measures to context-specific needs and conditions, while seeking to coordinate management of entire suites of interrelated resources and environmental stressors.[32] For example, advocates of ecosystem management argue that fisheries cannot be effectively managed solely by regulating fishing effort or catch levels.[33] It is also important to consider fishing's effects on higher and lower trophic levels (predator and prey species), as well as its impact on the physical environment and habitats of nontarget species. In addition, fisheries management must take into account a range of environmental stressors including pollution, habitat alteration, and fluctuating populations of nontarget species that play critical roles in determining populations of the target species itself. As a corollary of this place-based approach, management measures and regulatory requirements will necessarily vary from place to place, and will require high degrees of interagency, intergovernmental, and public-private coordination and collaboration.

Scientists and policymakers have come to realize, however, that integrated management of complex and dynamic ecosystems is an undertaking fraught with multiple layers of uncertainty.[34] Even the most technically, legally, and administratively capable States find that they lack the competence to specify rules to carry out the task. The problems are simply too complex, too dynamic, and scientific understanding too limited.

The upshot is that conventional fixed-rule approaches—commands by sovereign to subject, or rules of mutual legal obligation owed by sovereign States to other States—turn out to be an extremely blunt, limited, and inflexible tool, poorly matched to the subtle, complex, and ever-changing demands of ecological management. States can no longer rely on management by fixed rules not merely because they can never know what the right rules are, but because, given the complex and dynamic character of the problem, there are no timeless rules to be found.[35]

Collaborative Ecosystem Governance

In response to this crisis of State competence, a new style of governance is emerging in both domestic and transboundary contexts.[36] In this approach, State, subnational, and non-

21. *See* Dennis A. Rondinelli, *A New Generation of Environmental Policy: Government-Business Collaboration in Environmental Management*, 31 ELR 10891 (Aug. 2001); *see* Reed F. Noss et al., The Science of Conservation Planning: Habitat Conservation Under the Endangered Species Act (Island Press 1997).

22. *See* Fiorino, *supra* note 7; *see also* Noss et al., *supra* note 21.

23. *See* Holling & Meffe, *supra* note 3.

24. *See* Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 Stan. L. Rev. 1333 (1985).

25. Stewart, *supra* note 7.

26. *See* Holling & Meffe, *supra* note 3; *see also* Simon A. Levin, *Toward a Science of Ecological Management*, 3 Conservation Ecology 6 (1999).

27. *See* Levin, *supra* note 26; *see also* C.S. Holling et al., *Science, Sustainability, and Resource Management*, *in* Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience 342 (Fikret Berkes et al. eds, Cambridge Univ. Press 1998).

28. *See* Holling et al., *supra* note 27; *see also* Tarlock, *supra* note 3.

29. *See* Noss et al., *supra* note 21.

30. *Id.* at 76.

31. *See* Charles F. Wilkinson, *A Case Study in the Intersection of Law and Science: The 1999 Report of the Committee of Scientists*, 42 Ariz. L. Rev. 307 (2000); *see also* Ronald D. Brunner & Tim W. Clark, *A Practice-Based Approach to Ecosystem Management*, 11 Conservation Biology 48 (1997); *see also* Holling & Meffe, *supra* note 3; *see also* Carl J. Walters & Ray Hilborn, *Ecological Optimization and Adaptive Management*, 9 Ann. Rev. Ecology & Systematics 157 (1978).

32. *See* William C. Clark, *A Transition Toward Sustainability*, 27 Ecology L.Q. 1021 (2000).

33. Robin Kundis Craig, *Taking the Long View of Ocean Ecosystems: Historical Science, Marine Restoration, and the Oceans Act of 2000*, 29 Ecology L.Q. 649 (2002).

34. *See* Holling & Meffe, *supra* note 3.

35. *See* George Frampton, *Ecosystem Management in the Clinton Administration*, 7 Duke Envtl. L. & Pol'y F. 39 (1996); *see also* Holling & Meffe, *supra* note 3.

36. *See* Bradley C. Karkkainen, *Post-Sovereign Environmental Governance: The Collaborative Problem-Solving Model*, *in* Proceedings

State actors actively collaborate to fashion provisional solutions, and jointly devise adaptive learning and management strategies that allow them to adjust management measures and regulatory requirements in light of new learning and changing environmental conditions.[37]

While sovereign States remain important actors in these hybrid governance arrangements, their role is radically redefined. Adaptive ecosystem management tends to require high degrees of interagency, intergovernmental, and public-private collaboration, pooling the information, expertise, and institutional capabilities of a variety of State and non-State actors.[38] A central component of these institutional arrangements is a joint commitment to ongoing programs of research and monitoring to better understand the ecosystem and to improve the scientific models upon which decisionmaking is based.[39]

As a corollary, these hybrid governance arrangements tend to blur the usual distinctions between State and non-State, sovereign and subject. Non-State Parties, including environmental NGOs, independent scientists, industry groups, subnational governments, and ordinary citizens assume prominent roles as coauthors and co-implementers with State agencies of a set of policies that jointly comprise the management effort.[40]

Ecosystem governance efforts also tend to transcend familiar jurisdictional barriers. Regional co-management of the Baltic Sea, for example, has become a joint exercise in identification and remediation of the most important environmental stressors wherever they occur throughout the Baltic Sea Basin, without regard to territorial jurisdiction.[41] Ecosystem governance, in short, is effectively carried out at an appropriate regional scale tailored to that of the ecological resource to be managed, rather than being shoehorned into arbitrarily configured sovereign territorial boundaries.

But the challenges of ecosystem management extend beyond attention to ecological scale and the need for inclusive collaboration, or "stakeholder governance" as it is sometimes called.[42] As already seen, precisely because "we never have enough information,"[43] ecosystem management demands an "adaptive management" or "adaptive learning" approach that treats policy interventions as provisional, generates and expects new learning through ongoing science and continuous monitoring, and adjusts policies periodically in response to that new learning.[44]

Notice that this is a distinctly nonrule-based approach; or at any rate, it does not rely on fixed rules. Instead it employs a strategy of rolling policy interventions and adjustments.[45] While these may sometimes take the form of mandatory requirements, at other times they are undertaken through voluntary measures, memoranda of understanding, or other legally unenforceable good-faith commitments.[46] The general approach seems to be pragmatic commitment to do "whatever works" to achieve a generally stated goal or ecosystem restoration, while continuously refining and redefining the contents of that commitment as greater understanding and experience are gradually attained.[47] Here again, however, we see a blurring of the familiar sharp distinctions between "law" and "not-law," and between "plan" and "implementation" in a characteristically pragmatic mutual periodic readjustment of ends and means.[48]

Leading Models

This distinctive style of hybrid governance arrangements is clearly discernible in ecosystem management efforts in the Chesapeake Bay region in the United States, and the Baltic Sea region where a major transnational effort is underway to manage multiple environmental stressors on the marine ecosystem and its freshwater tributaries.

Each of these efforts has been held out as a model for others to emulate. The Chesapeake Bay Program is widely regarded as the premier model of aquatic ecosystem management, and especially of large-scale estuarine and watershed management.[49] The joint Canadian-U.S. Great Lakes ecosystem management effort is viewed as a leading model of successful transboundary watercourse management.[50] And the Baltic Sea regime has won widespread acclaim as an exemplary model of management of enclosed and semi-enclosed regional seas.[51] Increasingly, there are also institutional linkages among these three efforts, as each has come to recognize the others as important parallel efforts from which much can be learned through scientific and technical exchange and assistance programs.[52]

While the particular institutional arrangements vary depending upon local ecological and institutional background

of the 2001 Berlin Conference on Human Dimensions of Global Environmental Change, Global Environmental Change and the Nation State, PIK Report No. 80, at 206 (Potsdam Institute for Climate Change Research 2002).

37. Bradley C. Karkkainen, *Collaborative Ecosystem Governance: Scale, Complexity, and Dynamism*, 21 Va. Envtl. L.J. 189 (2002).

38. *See* Mark T. Imperial, *Institutional Analysis and Ecosystem-Based Management: The Institutional Analysis and Development Framework*, 24 Envtl. Mgmt. 449 (1999); *see also* Kai N. Lee, *Appraising Adaptive Management*, 3 Conservation Ecology 3 (1999).

39. *See* Karkkainen, *supra* note 37; *see also* Lee, *supra* note 38.

40. *See* Karkkainen et al., *supra* note 8.

41. Robert G. Darst, *Smokestack Diplomacy: Cooperation and Conflict in East-West Environmental Politics* (MIT Press 2001).

42. Tarlock, *supra* note 3.

43. Noss et al., *supra* note 21.

44. J.B. Ruhl, *Is The Endangered Species Act Eco-Pragmatic?*, 87 Minn. L. Rev. 885 (2003).

45. *See* Holling & Meffe, *supra* note 3.

46. *See* Charles Sabel et al., *Beyond Backyard Environmentalism*, *in* Beyond Backyard Environmentalism (Joshua Cohen & Joel Rogers eds., Beacon Press 2000).

47. *See id.*

48. *Id.*

49. Chesapeake Bay Program, The State of the Chesapeake Bay: A Report to the Citizens of the Chesapeake Bay Region (2002); *see also* Robert Costanza & J. Greer, *The Chesapeake Bay and Its Watershed: A Model for Sustainable Ecosystem Management?*, *in* Barriers and Bridges to the Renewal of Ecosystems and Institutions (Lance H. Gunderson et al. eds., Columbia Univ. Press 1995).

50. Birnie & Boyle, *supra* note 1; *see also* Hunter et al., *supra* note 4.

51. United Nations Environment Program, Needs and Approaches to Improve Access to Environmental Information for Transboundary Decision-Making in the Baltic Sea Region (1997) (UNEP/DEIA/MR).

52. *See* Great Lakes National Program Office, U.S. EPA, The Great Lakes/Baltic Sea Partnership Program Record of Decision (1999); *see also* Donald F. Boesch, *Bay Has a Lot to Learn From European Efforts to Reduce Nutrients*, 10 Bay J. n.p. (2000).

conditions and possibilities, we can say broadly that these efforts exhibit the following set of core characteristics.

First, each has adopted an ecosystem focus. For example, the Chesapeake 2000 Agreement reaffirms the commitment of Chesapeake Bay Program partners to "protect and restore the Chesapeake Bay ecosystem" recognizing that "each action we take, like the elements of the Bay itself, is connected to all the others."[53] The 1987 Protocol Amending the Great Lakes Water Quality Agreement of 1978 states that "the purpose of the Parties is to restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes Basin Ecosystem."[54] Similarly, the 1992 Convention on the Protection of the Marine Environment of the Baltic Sea states in Article 3 its purpose to "promote the ecological restoration of the Baltic Sea Area and the preservation of its ecological balance."[55] In each case, the goal is to manage the ecosystem not merely as a collection of independent parts, but as an integrated whole.

This, in turn, implies integrated and coordinated management of a suite of ecological stressors and resources—fisheries, nontarget fish and wildlife, pollution, aquatic and riparian habitats, land use, nonpoint source pollution, and so on.[56]

While the language used to describe the process varies, each proceeds through an iterative and adaptive management approach, relying on continuous feedback from joint monitoring and ongoing programs of scientific investigation to continuously refine both the ecological models upon which policy is based, and ultimately the policies themselves, which are seen as inescapably provisional and experimental.[57]

Each has also adopted a broadly collaborative and participatory management style, involving hybrid governance arrangements involving interagency, intergovernmental, and public-private collaboration. For example, in the Great Lakes region, a binational collaborative process involving government, industry, and NGO participants led to the adoption of a 1997 Great Lakes Binational Toxics Strategy embracing both regulatory measures and voluntary initiatives to be periodically reassessed and revised in light of their effectiveness in achieving the goal of "virtual elimination of persistent toxic pollutants."[58]

And finally, each is constructed less out of well-defined rules of intersovereign obligation, than broad and open-ended commitments to do "whatever it takes" to improve ecosystem health.[59]

53. Chesapeake Bay Program, Chesapeake 2000 Agreement (2000).

54. 1987 Protocol Amending the Great Lakes Water Quality Agreement of 1978.

55. 1992 Convention on the Protection of the Marine Environment of the Baltic Sea.

56. *See* Chesapeake Bay Program, *supra* note 49; *see also* Great Lakes National Program Office, U.S. EPA, Great Lakes Ecosystem Report 2000 (2000).

57. *See* Donald F. Boesch, *Accomplishments and Challenges in the Chesapeake Bay Program*, *in* Proceedings of the Second Joint Meeting, Coastal Environmental Sciences and Technology Panel of the United States-Japan Cooperative Program in Natural Resources (Silver Spring, Md., Oct. 25-29, 2000).

58. U.S. EPA & Environment Canada, Great Lakes Binational Toxics Strategy 2002 Progress Report 1 (2002).

59. *See* Sabel et al., *supra* note 46.

"Post-Sovereign" Governance

These arrangements have been termed "post-sovereign" environmental governance.[60] This is done in part because it is a provocative phrase designed to stimulate discussion. But the phrase also captures something of the flavor of the institutional arrangements described here, which may be considered "post-sovereign" in three distinct senses.

First, in place of exclusive sovereign authority, governance rests in the hands of multiparty collaborative governance institutions. Participation in the governance process extends well beyond sovereign States to include subnational levels of government, local communities, NGOs, the independent scientific community, and key economic actors.[61] Sovereign States are by no means excluded from the governance process. Indeed, in crucial respects they remain the institutional backbone of the new arrangements, because their participation, financial and technical support, and legal sufferance remain essential to the success of the new hybrid institutions now being spawned. But as non-State actors take on new roles as coauthors and co-implementers of environmental policy, sovereign States' long-standing claims to exclusive competence to negotiate transboundary agreements and to determine domestic environmental and natural resource policies are quietly undermined. While continuing to cloak their actions—the familiar language of State sovereignty, States have in practice abandoned the fiction that they are the only Parties at the table, and the only Parties that matter. Crucial public management decisions are being made, reviewed, and revised in hybrid multiparty settings. The role of the State, in short, is in process of being redefined and down-sized into something strikingly different from the familiar model of exclusively sovereign law making to which we have long been accustomed.

Second, these arrangements are "post-sovereign" insofar as transnational cooperation has come to extend well beyond the familiar sorts of mutually agreed intersovereign rules of obligation that lie at the heart of public international law as we conventionally know it. Rather than one-time-only negotiations to a set of fixed rules, the new transboundary ecosystem governance arrangements are built around ongoing, continuous, open-ended commitments to "do what it takes" to restore particular ecosystems. The goal is not merely to establish fixed rules of obligation binding at the top-most, State-to-State level, but rather to integrate and coordinate policy responses at multiple levels through complex networks that extend to sub-State and non-State actors, and deep into the civil society of an emerging transboundary polity that comes to define itself by its relation to the regional ecosystem. The goal, then, is that a broad range of discretionary authorities held by a variety of State and non-State Parties will be exercised in accordance with an agreed (though always provisional) plan, of which a similarly broad range of State and non-State actors are coauthors and co-implementers. Conventional intersovereign legal agreements do play some fairly modest roles in establishing overarching institutional frameworks and solemnizing major substantive commitments, but they are typically neither the driving force nor the defining feature of these complex transboundary collaborative arrangements.

60. Karkkainen, *supra* note 36.

61. Karkkainen et al., *supra* note 8.

Third, these arrangements are "post-sovereign" in the sense that at the level of implementation, the measures undertaken often go well beyond traditional exercises of State sovereignty through hierarchical imposition of rules binding on those subject to the State's jurisdiction. While some rules may be of this hierarchical and binding character, the decisionmaking and implementation processes are generally collaborative and polyarchic. Transboundary ecosystem management thus typically embraces a rich mix of non-hierarchical tools, such as voluntary, cooperative, and quasi-contractual commitments that may have little or no formal legal consequence but nonetheless may have significant practical effects in directing and constraining the behavior of both States and non-State Parties.

Conclusion

Rather than reflexively falling back on familiar concepts, assumptions, and regulatory approaches, this Article urges that we take a closer look at the world in which complex ecosystems are now being managed. New institutional arrangements are rapidly unfolding, arrangements that look startlingly different from the familiar paradigms of State sovereignty in which individual subjects are bound by rules issued by their sovereign, and sovereigns are bound to each other by mutually agreed rules of obligation. This emerging post-sovereign world is populated and governed not only by States, but also by hybrid institutional entities that now perform, sometimes on a transboundary basis, many of the governance functions traditionally claimed to be the exclusive prerogative of States. They do so using the unconventional tools and techniques of adaptive, integrated ecosystem management.

These sorts of institutional arrangements, admittedly, are not yet widespread, and even where they exist they remain fragile. It is premature (and perhaps simply inaccurate) to claim for them unqualified success, even by their own self-defined yardsticks. Each of the regional arrangements discussed here—the Chesapeake Bay, the North American Great Lakes, and the Baltic Sea—has thus far fallen short of the ambitious ecosystem restoration targets it has set for itself.

Yet it would be equally foolish to dismiss these efforts. They represent the leading edge in a wave of institutional innovation that, at a minimum, must be carefully monitored, evaluated, and analyzed for what it can teach us about how better to manage a complex and dynamic world. For the limitations of conventional, sovereignty-based approaches to environmental regulation have been exposed; and it is difficult to imagine ever turning back the clock.