

Post-Sovereign Environmental Governance

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Much recent scholarship in international environmental policy falls into two camps. One group, the “vertical institutionalists,” emphasizes the role of international rules, norms, and regimes in constraining state sovereignty.¹ Another group, the “horizontal diffusionists,” argues that policy innovation occurs chiefly at the level of the nation state and is diffused horizontally through mimesis, benchmarking, and networking among similarly situated, primarily national-level decision-makers (see also Biermann and Dingwerth, this volume).² Both approaches, however, share a common underlying orientation: each takes state sovereignty as a bedrock principle. Sovereign states are presumed to be the natural locus of decision-making, although their behavior may be influenced horizontally by inter-sovereign best practice standards, or constrained vertically by supra-sovereign rules and norms. The common point of departure, and the central preoccupation of each camp, is the role of the state.³

The state-centric flavor of this scholarship may reflect deeply rooted disciplinary traditions and predispositions. After all, much of the analysis is done by international relations scholars whose discipline is historically defined by a state-centric inter-*national* inquiry: how do sovereign nations behave toward each other, and why? Within that framework, such factors as international rules and norms or transnational networks may emerge as explanatory variables, but at its core, the inquiry concerns the behavior of states. Similarly, for legal scholars schooled in classical public international law the core question is how do inter-*national* legal rules emerge, and to what extent do they constrain or influence sovereign states? Thus, even Chayes and Chayes with their “managerial” theory of international legal regime-formation examined these developments primarily through the conceptual lens of state compliance, framing their inquiry as “Why do sovereign states comply with international legal norms?”⁴

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1. Keohane 1986; Young 1997; Aceves 1997; and Nichols 1998.

2. Risse-Kappen 1995; and Slaughter 1997 and 2000.

3. VanDeveer 1997.

4. Chayes and Chayes 1995.

Some recent scholarship has begun to question this state-centric orientation. Analyses of multi-level governance in the European Union⁵ and works identifying a broader shift “from government to governance” in an era of globalization and rapidly advancing information capabilities⁶ emphasize the rising influence of supranational, sub-national, and nonstate actors in a world increasingly characterized by multi-polar and multiple tier decision-making. Nonetheless, much of this recent “governance” literature remains centrally preoccupied with the role of the state within these broader institutional constellations. Its aim appears to be to generate richer and more accurate explanatory accounts of state behavior than those offered by purely state-centric approaches, by carefully examining the factors that influence and constrain state behavior in the complex, multi-party institutional environments in which they now operate. Fairbrass and Jordan, for example, analyze the changing nature of UK environmental policy under the institutional constraints imposed by EU membership, pressures emanating from the emergence of transnational and domestic environmental organizations, and self-imposed limitations on central authority arising from policies to promote devolution to sub-national levels of government.⁷ Reflecting a view widely held among writers in this vein, Jon Pierre argues that “[t]he role of the state in governance is perhaps the most important issue in governance research.”⁸ Other strands of this literature focus on the role of multi-party “policy networks”⁹ and “advocacy coalitions,”¹⁰ but once again, primarily with the goal to explain how these complex multi-party environments influence state behavior. Thus, while at one level acknowledging polycentricity and disavowing purely state-centric theoretical approaches, much of the “governance” scholarship retains a strongly state-focused orientation of its own.

At the other extreme, some writers argue that the forces of globalization, aided and impelled by new communications technologies and production strategies, may lead to the demise of the nation state as we know it. Appadurai, for example, opines, “the very epoch of the nation state is near its end,”¹¹ while Sassen writes that “the major dynamics at work in the global economy carry the capacity to undo the particular form of the intersection of territory and sovereignty embedded in the modern state and the modern state system.”¹²

A few scholars steer a middle course between state-centrism and apocalyptic predictions of the impending demise of the state. Rosenau and Durfee, for example, suggest that we are now witnessing a bifurcation of authority in which “the state-centric world is no longer predominant” but instead must learn to co-exist alongside a “complex multi-centric world of diverse actors . . . replete with

5. See, for example, Hooghe and Marks 2003.

6. See, for example, Rosenau and Czempel 1992; and Rhodes 1997.

7. Fairbrass 2003; and Fairbrass and Jordan 2002.

8. Pierre 2000, 242.

9. See, for example, Marsh 1998; and Rhodes and Marsh 1992.

10. Sabatier and Jenkins-Smith 1993.

11. Appadurai 1996, 19.

12. Sassen 1998, 92.

structures, processes, and decision rules of its own."¹³ In their view, the old familiar world of sovereign states and the new "post-internationalist" multicentric world operate at times independently of each other, at times in open rivalry, and sometimes as cooperative partners in constructing new emergent structures of order.¹⁴ They characterize this situation as one of "turbulence," complexity, multiple causation, and dynamic change,¹⁵ but their analysis is framed in very general terms, offering few specifics as to the patterns and principles that define these new emergent structures.

This essay picks up where Rosenau and others leave off. It examines as one aspect of the emergent structure a mode of hybrid problem-solving governance in which sovereign states and nonstate parties actively collaborate, roughly as equal partners, to address certain kinds of highly complex problems that appear to be beyond the capacity of sovereign states alone to solve. Although states remain powerful and pivotally important actors in the global arena and within their own territorial jurisdictions, sovereign states themselves have come to recognize that some environmental problems lie beyond the limits of ordinary state competence, too complex to be resolved through straightforward exercises of state sovereignty or conventional inter-sovereign agreements. Consequently, states are joining with nonstate actors in ambitious experiments seeking to address problems of this character through multi-party collaborative governance arrangements that pool, recombine, and coordinate the deployment of the varied resources and competencies of multiple actors. Participants in these collaborative efforts include organs of sovereign states, sub-national governments, multilateral institutions, intergovernmental and nongovernmental organizations, business interests, and the independent scientific community.¹⁶

The emphasis in these problem-solving institutional collaborations is neither on influencing the exercise of sovereign authority per se, nor on achieving inter-sovereign horizontal diffusion of successful regulatory models—though either of these at times may be seen as a useful element in a larger, multifaceted problem-solving strategy. Instead, the new governance arrangements represent a nascent polycentric substitute for more familiar forms of sovereign authority, operating within a limited subject-matter sphere and at a spatial scale whose boundaries are defined by the nature and scale of the problem to be addressed. Collaborative problem-solving is thus an exercise in "task-specific" rather than "general-purpose" governance, to borrow Hooghe and Marks's terminology.¹⁷ Unlike Hooghe and Marks's task-specific "Type II governance," however, these problem-solving collaborations are typically constituted neither as formal governmental jurisdictions with clear, explicit, legally delineated rights, powers, and duties, nor as formal intergovernmental organizations. Instead, they oper-

13. Rosenau and Durfee 2000, 57.

14. Rosenau and Durfee 2000, 57.

15. Rosenau and Durfee 2000, 50–51.

16. VanDeveer 1997.

17. Hooghe and Marks 2003.

ate through broad, open-ended, and often informal yet surprisingly durable commitments by diverse sets of actors to address complex problems jointly by means of ongoing multi-party collaboration, pragmatic problem-solving deliberation, and concerted action.

In recognition of the complexity of the problems that collaborative governance seeks to address, decision-making is typically characterized by a self-consciously “experimentalist” problem-solving approach, emphasizing continuous generation of new information which leads in turn to continuous adjustment, refinement, and reconfiguration of both goals and policy measures, as well as the underlying institutional arrangements themselves, in light of new learning and changing conditions.¹⁸ Authority to address problems of environmental protection and natural resource management traditionally regarded as within the exclusive province of state sovereignty is thus, *de facto*, reassigned to hybrid, polycentric, problem-solving institutional constellations. I call this phenomenon “post-sovereign governance.”

Post-Sovereign Governance: Defining Characteristics

Post-sovereign governance exhibits three distinguishing characteristics: it is *non-exclusive*, *non-hierarchical*, and *post-territorial*.

First, post-sovereign governance may be characterized as *non-exclusive* to signal its departure from the conventional state-centric understanding that sovereign states hold exclusive authority over environmental and natural resource policies within their territorial jurisdictions. It follows as a corollary of this conventional understanding that international environmental policy can be made only by the agreement of sovereign states to exercise their exclusive domestic authority in specified ways. Post-sovereign governance, in contrast, is effectively exercised by multi-party collaborations in which decision-making and policy implementation are understood to be the joint responsibility of both state and nonstate actors acting in concert. Participants typically include all state and nonstate parties who believe they have a sufficient stake in the outcome to justify the necessary investment of time and other scarce institutional resources, and the perceived legitimacy of the institutional arrangement rests in large measure upon its open and participatory character. Sovereign states are by no means excluded from these multi-party collaborations; indeed, states remain highly influential and arguably essential parties precisely because they contribute unique financial, technical, administrative, and legal capacities to the joint effort, and thus may be recognized as “first among equals.” However, as nonstate actors also come to assume increasingly prominent roles as co-authors and co-implementers of environmental policy within the framework of institutional collaboration, sovereign states’ longstanding claims to exclusive competence to determine domestic environmental and natural resource policies are

18. Dorf and Sabel 1998; and Sabel et al. 2000.

undermined. The role of the state, in short, is redefined and downsized to that of co-participant in the formation and execution of environmental policy, strikingly different from the model of exclusive sovereign lawmaking to which we have long been accustomed.¹⁹

A closely related characteristic of post-sovereign governance is its *non-hierarchical* flavor. Conventional conceptions of sovereignty presume an authoritative lawgiver, the sovereign state, whose hierarchically imposed commands are binding on all parties subject to its jurisdiction, while at the international level decisions are taken by sovereign states acting unilaterally or through formal or informal modes of inter-sovereign cooperation. Post-sovereign governance, in contrast, does not rely exclusively, or even primarily, on such traditional modalities of hierarchical authority. Post-sovereign environmental governance arrangements are founded upon ongoing, open-ended commitments by multiple parties to “do whatever it takes” individually and jointly to restore ecological integrity in particular locales. To achieve progress toward this ambitious, complex, multifaceted, and ever-evolving goal, it is necessary to secure the ongoing coordination and integration of responses among multiple parties. Because what is required can never be fully specified in advance, however, neither fixed, binding rules emanating from the topmost levels of hierarchical governmental structures nor conventional inter-sovereign cooperative agreements or rules of obligation are adequate to the task. As an alternative, key actors are invited to join in the governance process, based on rough equality among participants.

Decisions are typically made by substantial consensus, although a strict unanimity requirement is generally avoided so that no party holds a veto. Influence in these arrangements is wielded primarily through voice and the threat of exit rather than formal voting procedures or hierarchical command structures, although inequalities in expertise and capacities mean that some participants may be more influential than others. Through this process a broad range of resources and discretionary authorities held by a variety of state and nonstate parties are brought to bear on the problem, and coordination is achieved by the commitment of each to act in accordance with an agreed, though always evolving plan devised and periodically revised by the participants themselves. Conventional inter-sovereign legal agreements and hierarchically binding legal rules may continue to play some role in establishing overarching institutional frameworks and implementing major substantive commitments, but such conventional legal tools are simply elements in a much richer mixed strategy and are neither the driving force nor the defining characteristic of these governance arrangements. The general flavor of both decision-making and implementation is instead one of collaboration and polyarchy among rough equals, employing a variety of policy implementation tools such as voluntary commitments and quasi-contractual cooperative agreements that may have little formal legal significance, but nonetheless may have important

19. Rosenau and Durfee 2000.

practical effects in channeling and coordinating the behavior of both states and nonstate parties.

Finally, post-sovereign governance arrangements are *post-territorial*. The governance effort is problem-driven, and its spatial and conceptual boundaries are defined not by reference to fixed, territorially delimited jurisdictional lines, but by reference to shared understandings of the nature, scale, and causes of the problem to be addressed. The scale and scope of the effort thus depend in part upon current scientific knowledge, but they also reflect a social dimension as the governance partners must consider whether any proposed redefinition of spatial scale, mission, or institutional arrangements is likely to advance or hinder overall prospects for success. Since these scientific and social understandings are subject to uncertainties and can change over time, the definition of the problem space—and therefore the spatial scale and functional scope of the governance effort—are always contestable, and evolve with changing information. We can thus say that the spatial boundaries, subject matter, and institutional configurations of post-sovereign governance are always provisional and malleable, not fixed. Spatial boundaries in particular will often transcend conventional political-territorial boundaries at both national and sub-national levels, and cooperation extends beyond intergovernmentalism deep into the civil society of an emerging transboundary polity. This stands in sharp contrast to the model of fixed, territorially delimited, exclusive jurisdictional boundaries upon which the Westphalian system of sovereign states, and public international law as conventionally understood, are founded.

Nonstate actors have long influenced sovereign law- and policy-making processes at both the domestic and international levels through consultation, advice, and lobbying, of course. In the new governance arrangements, however, the role of nonstate actors is a more direct and robust one. Decision-making—governance itself—occurs in and through non-hierarchical collaborations among states and nonstate actors working side-by-side as co-participants, co-authors, and co-executors of policy.

Nor should these governance arrangements be understood merely as external horizontal or vertical constraints on state sovereignty. Instead, they imply a partial disaggregation or “unbundling” and reassignment of powers traditionally thought to be among sovereignty’s most essential attributes.²⁰ Specifically, the state’s power to regulate for environmental protection and conservation of natural resources within its territorial jurisdiction is reassigned to a new hybrid institutional form where it is recombined and merged with the powers, resources, and competencies of other actors, creating a new governance structure capable of acting at the appropriate eco-geographical scale, and with an enhanced capacity to meet the complex and ever-evolving demands of ecosystem management. Characteristically, these collaborative institutional arrangements are themselves open, polycentric, and continuously evolving.²¹

20. Slaughter 1997; and Sassen 1996.

21. Regier 1999.

The elements of the post-sovereign model can be seen in governance arrangements for the North American Great Lakes, a vital ecological resource that straddles the border between the United States and Canada. Nor are such arrangements confined to the international arena. Similar multi-party collaborative governance arrangements are emerging within nation states to address similarly complex ecosystem management problems occurring wholly within the state's territory, resulting in a partial redefinition of sovereignty even within the state's own borders. An advanced example from the United States is the Chesapeake Bay Program, which closely resembles the arrangements emerging in the Great Lakes region, and has long served as a prototype for innovations occurring elsewhere.

Reconceptualizing Environmental Regulation

These developments are driven in large part by a growing recognition of the complexity, pervasiveness, and mutual interdependence of environmental problems, which is reshaping environmental regulation and natural resource management both within the nation state and internationally. The United States, for example, is rapidly shifting from a conventional sovereignty-based regulatory model based on hierarchical, piecemeal, command-style rules, toward a model based on locally or regionally tailored, broadly integrative, collaborative, and experimental polyarchic governance arrangements.²²

The model of environmental regulation that emerged from the 1960s onward may be characterized as rule-based and rule-bound.²³ It sought to solve environmental problems by imposing and enforcing fixed uniform rules, binding commands of the state to which all subject to its sovereignty must conform. This approach assumes that an expert decision-maker—the regulatory agency, an arm of the state—would identify the key environmental problems, gather expert information, prescribe effective solutions with sufficient specificity to translate into legally binding commands, and enforce those rules, backed by the coercive power of the state. This model approaches complex problems by fragmentation, carving the larger puzzle into smaller pieces that can be isolated and controlled through categorical commands.

Conventional rulemaking tends to focus regulatory effort on those aspects of environmental protection most susceptible to control by piecemeal rules, emphasizing pollution outputs over ecological conditions, pollution control over pollution prevention, technology-based rather than environmental quality-based regulation, large sources over small ones, and medium-by-medium and pollutant-by-pollutant rules over integrated approaches.²⁴ It also tends toward fixed, highly prescriptive rules rather than flexible standards or adjustable goals and objectives. These characteristics of environmental regulation, cap-

22. Dorf and Sabel 1998; and Sabel et al. 2000.

23. Tarlock 2000; and Karkkainen 2002.

24. Graham 1999; Farber 2000; and Stewart 2001.

tured in the term “command-and-control,” are widely recognized and the subject of much critical commentary.

The limitations of this approach have been widely documented. Despite great strides in controlling pollution from the largest and most visible sources, environmental quality remains suspect.²⁵ Piecemeal regulatory programs impose redundant costs on administrators and regulated entities alike, while allowing critical problems to fall between the cracks.²⁶ The rules themselves, crafted under necessarily fragmentary and incomplete information, are often costly, ineffective, rigid, underinclusive, overinclusive, or at cross purposes with other rules.²⁷ Most critically, piecemeal regulation tends to ignore synergies and ecological interdependencies, so that even as progress is made with respect to isolated, narrowly defined problems subject to regulatory controls, ecosystems continue to be fragmented and degraded.²⁸

Recently, however, a new regulatory approach has begun to emerge, one that aims at “place-based” integrated management of watersheds, estuaries, enclosed or semi-enclosed seas, old-growth forests, and other critically threatened ecosystems. Ecosystems exhibit unique local characteristics and require context-sensitive management. Scientists and leading policy-makers have also come to appreciate that ecosystems are complex dynamic systems composed of multiple, mutually interdependent components and processes. These processes are often poorly understood due to gaps in scientific understanding, non-linear threshold effects, and high degrees of inherent stochasticity.²⁹ In the words of one leading ecologist, “Ecosystems turn out to be not only more complex than we think—they are more complex than we *can* think.”³⁰ Given the complex interdependencies of ecosystem components and processes, they must be managed as systems, employing an integrated, holistic, ecosystem-specific approach.³¹

Complexity in ecosystem processes also demands that managers eschew reliance on fixed categorical rules. Advocates of an ecosystem-oriented approach instead urge the adoption of flexible policy-making approaches based on principles of continuous experimentation and dynamic adjustment in response to subsequent scientific advances, new information, changing conditions, and the observed effects of past management efforts.³² Within this framework, every policy decision is understood as necessarily provisional. In short, an experimentalist “rolling rule” approach is emerging, one that seeks continuous monitoring of ecosystem conditions and stressors, generation of new learning, and adjustment of policy in response to new information and environmental

25. US EPA 1994.

26. Rondinelli 2001; and Stewart 2001.

27. Farber 1994.

28. US EPA 1994.

29. Gunderson 1999.

30. Noss et al. 1997.

31. Christensen et al. 1996; Holling et al. 1998; Gunderson 1999; and US Forest Service Committee of Scientists 1999.

32. Ibid.

change.³³ These features are captured in the phrase “adaptive management,” which has gained widespread currency among the scientists and policy-makers most attuned to an ecosystems-oriented paradigm.³⁴

In addition to flexible and adaptive decision-making, however, the new approach also carries important institutional implications. Governance structures must be matched to the eco-geographical scale of the resource, typically a scale that does not map well onto conventional, territorially delimited political and jurisdictional boundaries.³⁵ In some cases, the nation state will map across numerous and diverse ecosystems, and must be subdivided into smaller functional units. In other cases, the nation state will embrace only a fraction of the ecosystem, making transboundary cooperation imperative. Subnational political units—states and municipalities in the US context—are also typically either too large or too small, or delimited by arbitrary territorial boundaries that fragment ecological complexes. At a minimum, then, a high degree of transboundary coordination is typically required to manage ecosystems at the appropriate eco-geographical scale.

Beyond intergovernmental coordination, however, ecosystem management demands a broader reconfiguration of governance structures to achieve integrated management of the multiple resources and stressors that jointly comprise the ecological whole. Conventional regulatory structures are poorly matched to the scope of this management task. Competencies are fragmented among multiple, mission-specific agencies, and (especially in federal systems like the US) further dispersed over multiple tiers of government—federal, state, and local.³⁶ Other crucial resources—land, economic decision-making power, expertise—remain in the hands of various nonstate actors, including landowners, businesses, the scientific community, and not-for-profit NGOs.

In principle, of course, the state as sovereign could command or induce these nonstate actors to conform to a state-devised and state-directed plan to protect the ecological resource. Yet the complex and dynamic nature of ecosystems, coupled with the need to maintain a flexible, dynamic, continuous-learning approach, place it beyond the capacity of the state to develop such a plan *ex ante*. This crisis of state competence—an aspect of what Rosenau and Durfee call a “pervasive authority crisis” as state capacity to solve complex problems is increasingly called into question³⁷—impels states to enlist the cooperation of nonstate actors not merely in implementing a state-devised plan, but in lending their own expertise, resources, and competencies to a joint, open-ended, “post-sovereign” effort at collaborative problem-solving. State actors work side-by-side with nonstate actors, pooling their expertise, resources, and capacities in a shared enterprise of defining and assessing the ecological problem, proposing

33. Dorf and Sabel 1998; and Karkkainen et al. 2000.

34. Lee 1993; and Gunderson 1999.

35. Noss 1994.

36. Holling et al. 1998.

37. Rosenau and Durfee 2000, 54.

and evaluating provisional solutions, determining and executing management plans, monitoring outcomes, and assessing and revising plans as necessary over the ongoing life of the project.³⁸ Given the need for continuous learning, experimentation and “adaptive management,” that joint effort cannot simply be a once-off advisory exercise, in which the state consults nonstate parties and then devises a rule that becomes final and binding. What emerges, then, is a dynamic, experimentalist, collaborative exercise, amounting to co-governance of the ecosystem by the state and various nonstate partners whose participation is critical to project’s ultimate success.³⁹ In the process, conventional distinctions between state and nonstate, sovereign and subject, command and compliance, become blurred, and what emerges is that combination of characteristics I call post-sovereign governance.

Leading Cases

The Chesapeake Bay Program

Like many ecological systems, the Chesapeake Bay—North America’s largest estuary and long the repository of extraordinary scenic beauty and abundant fish and shellfish life—suffered severe declines in the 20th Century. In response, federal, state, and local governments together with local businesses, residents, and NGOs have pooled their efforts in an ambitious regional collaborative effort known as the Chesapeake Bay Program, widely regarded as the most extensive, mature, institutionally complex, and successful of the new ecosystem governance arrangements.⁴⁰

The Chesapeake Bay Program grew up in response to revealed limitations of standard models of environmental regulation. Although the Clean Water Act stringently regulates large stationary sources of water pollution, it does not effectively reach polluted runoff from diffuse, “non-point” sources such as farms and city streets. Nor does it effectively address the airborne pollutants that are now understood to contribute significantly to water quality problems in the Chesapeake Bay. These problems have been compounded by other ecological stressors, including destruction or degradation of coastal wetlands, riparian forest buffers, and submerged benthic habitat; as well as overharvesting of crucial living resources like the filter-feeding oysters that play a crucial role in maintaining water quality. Because all these problems interact in complex ways, the ecology of the Bay has never been fully understood, but it became clear early on that the fixed, uniform pollution control rules of the Clean Water Act were inadequate, without more, to address this complex of interrelated problems. The Chesapeake Bay Program’s principal accomplishment has been to devise a

38. Karkkainen et al. 2000.

39. Karkkainen et al. 2000.

40. Costanza and Greer 1995.

novel and continuously evolving set of institutional configurations that allow it to address these problems in an integrated manner, and to adjust policy responses to rapidly changing understandings of the nature of the ecological problem.⁴¹

The Chesapeake Bay Program has its roots in a broad citizen movement that demanded improvements to the Bay, leading to a major federally funded research program in the 1970s to determine the ecosystem's status and the causes of its decline. That study fell short of definitive answers, but it revealed a complex web of interrelated causes and symptoms across an ecologically defined region encompassing parts of several states.⁴² In response, the US Environmental Protection Agency (EPA), the chief executive officers of Maryland, Virginia, Pennsylvania, and the District of Columbia, and a tri-state intergovernmental legislative coordinating body known as the Chesapeake Bay Commission signed an initial Chesapeake Bay Agreement in 1983, committing themselves to work jointly "to improve and protect water quality and living resources of the Chesapeake Bay estuarine systems." The agreement established a core institutional framework, articulated a shared long-term vision of restored water quality and ecosystem health, and set in motion an iterative process of investigation and periodic reevaluation with the expectation that this approach would lead to improved understanding and progressively refined and articulated substantive commitments.

A second Chesapeake Bay Agreement in 1987 provided that monitoring of biological indicators of ecosystem health would serve as the foundation of future management efforts, generating specific, objective performance targets and metrics by which progress toward the generalized goal of ecosystem restoration would be gauged. The productivity, diversity, and abundance of the Bay's living resources were identified as "the best ultimate measures of the Chesapeake Bay's condition." The 1987 Agreement set ambitious performance objectives, including reduction of nutrient loadings by 40 percent. When further studies revealed that loadings in various tributaries had differential impacts on water quality, the parties revised their system-wide goals and codified them in a subsequent 1992 agreement to develop tributary-specific nutrient reduction targets, strategies, and implementation tools. The increasing intricacy and location-specific nature of these tasks led the program to devolve crucial management responsibilities to semi-autonomous, public-private "tributary teams" composed of government officials, scientific experts, agricultural and industry representatives, and citizen volunteers who become experts on the problems and solutions in their own tributaries, but whose tributary-specific efforts remain "nested" within the larger basin-wide framework and management plan.

Subsequent Executive Council directives added progressively more detailed commitments in such areas as basin-wide toxic reduction, habitat restora-

41. Sabel et al. 2000.

42. Costanza and Greer 1995.

tion, riparian forest buffers, wetlands protection, agricultural non-point source reduction, and removal of stream blockages to improve fish passage. The most recent basin-wide agreement, known as Chesapeake 2000, sets the most comprehensive recovery plan to date, with ambitious targets for the restoration of oyster beds, wetlands, riparian buffers, and submerged aquatic vegetation. It also calls for the development of multi-species management plans for the protection of sensitive species, and implementation of stream-specific watershed management plans and restoration goals. Finally, it calls for a 30 percent reduction in the rate of urban sprawl, and permanent preservation of 20 percent of the lands in the watershed from future development.

Complex institutional arrangements have evolved alongside these increasingly detailed programmatic commitments. At the center is an Executive Council, consisting of signatories to the framework agreement, which sets overall program goals and objectives. At the next tier is a permanent implementation committee comprising representatives of federal and state agencies, intergovernmental and nongovernmental organizations, and representatives of the independent scientific community, charged with developing and carrying out more fully elaborated restoration plans. These bodies carry out their mandates in close consultation with a Scientific and Technical Advisory Committee, a Citizens Advisory Committee, and a Local Government Advisory Committee. Much of the Implementation Committee's work is delegated to specialist subcommittees on monitoring, research, and habitat restoration, as well as the tributary-specific teams. The intergovernmental Chesapeake Bay Commission coordinates legislative responses in the three participating states. Coordinating all these efforts is a US EPA liaison office.

Together, these arrangements ensure that a variety of governmental and nongovernmental voices is both active participants in shaping overall program direction and partners in its implementation. Opportunities for direct participation by nongovernmental organizations, individual citizen activists, and independent scientists are abundant, especially with the emergence of a tributary strategy emphasizing the need for stream-specific goals and measures, which necessitates a heavy reliance on active citizen participation as co-authors and co-implementers of tributary-specific policy.⁴³ Nongovernmental parties are heavily represented throughout the basin-wide governance structure as well, as active participants in the specialist subcommittees, the Implementation Committee, and the citizen and scientific advisory committees. Although federal and state governments have been leading participants from the outset, the Chesapeake Bay Program does not operate as a formal unit of government, nor can it be characterized as simply an intergovernmental organization or coordinating mechanism (although inter-governmental coordination is certainly one of its multiple functions). Instead, it exhibits the broadly collaborative, public-private

43. Sabel et al. 2000.

hybrid decision-making structure that marks the “non-exclusive” character of post-sovereign governance.

The Chesapeake Bay Program also exhibits the “non-hierarchical” aspect of post-sovereign governance. The Executive Council acts from time to time through consensus adoption of basin-wide “agreements” which set overall program direction, but these have no formal legal status and are therefore neither legally binding on, nor enforceable against, the parties or any other person. More frequently, the Executive Council advances proposed policies through consensus adoption of more detailed joint executive decrees called “directives,” which similarly have no formal legal status, but are regarded as good faith moral commitments to use all available powers and authorities to carry out the stated aims. In most cases, these Executive Council decisions reflect peak-level ratification of program directions that have already emerged by rough consensus from a participatory, bottom-up process, in which proposals are advanced and vetted through the committee structure and through informal channels of communication among active program participants. At the level of implementation, the Chesapeake Bay Program has employed a grab bag of regulatory and non-regulatory techniques, building policy packages out of the coordinated responses of its component institutions. These sometimes include legislative acts or administrative rules adopted individually or in parallel by federal, state, or local units of government, binding throughout the region or in some of its parts. At other times, however, they involve largely procedural framework agreements within which subsequent objectives and implementation measures may be progressively specified. At still other points, they take the form of non-binding voluntary commitments, guidelines, technical or financial assistance packages, or simple pleas for voluntary cooperation, coupled with social pressure on non-cooperators.⁴⁴ Throughout, the boundaries between “law” and “not-law,” and between “public” and “private” decision-making, grow indistinct; what matters is what works, and that varies with the circumstance.⁴⁵

Finally, the Chesapeake Bay Program illustrates the “post-territorial” character of post-sovereign governance. At its inception, the program was understood principally as a water quality agreement, aimed at improving environmental conditions primarily, if not exclusively, by restoring water quality in the mainstem of the Chesapeake Bay. To do so it was necessary to enlist the cooperation of the principal political jurisdictions in the region—primarily the states of Maryland and Virginia, but also Pennsylvania which had jurisdiction over the Bay’s principal tributary—as well as the federal EPA which brought expertise, regulatory and administrative capability, and cash resources to the joint effort. Thus from the outset, the Chesapeake Bay Program involved a kind of regional pooling and coordination of the combined capabilities of multiple tiers of government, none of them matched precisely to the geographical scale or functional scope of the problem. With changing scientific understandings and insti-

44. Costanza and Greer 1995.

45. Sabel et al. 2000.

tutional imperatives over time, the Chesapeake Bay Program has undergone a number of important redefinitions of both the geographical scale and functional scope of its operations.

First, science suggested that an exclusive focus on pollution inputs directly into the Bay's mainstem was shortsighted; due to the importance of non-point source polluted runoff in its tributaries and the hydrological interconnectedness of the entire region, a basin-wide "watershed" approach would be essential. Closer examination then revealed that land development patterns, agricultural nutrient management practices, and the loss of native vegetation buffers were crucial determinants of non-point source pollution loadings, and the Chesapeake Bay Program began to concern itself as much with land management as with conventional water pollution control techniques. When further studies indicated that both the causes and ecological consequences of non-point source pollution varied by tributary, it prompted the articulation of an entire new tier of tributary-specific goals, management plans, and corresponding institutional arrangements. Recent studies have highlighted the critical role played by filter-feeding organisms, especially oysters, in maintaining and restoring water quality, as well as the unexpected significance of atmospheric deposition, and especially of medium- and long-range transport of air pollutants from sources outside the Chesapeake basin proper, in contributing to overall water quality in the Chesapeake Bay mainstem. These surprising discoveries are now prompting further reconsideration of both the scope of activities to be brought under Chesapeake Bay Program's purview, and the appropriate geographical scales at which to address the root causes of ecological decline.

The Chesapeake Bay Program clearly illustrates that the trend toward partial disaggregation, recombination, and redefinition of core attributes of state sovereignty is not confined to the international arena. Instead, a distinctive problem-solving, polyarchic governance model is emerging in response to complex ecological problems that overwhelm the capacities of the sovereign state, conventionally understood, whether those problems occur within the state's territorial boundaries, or partially beyond them.

Developments in the Chesapeake Bay region should also be understood as having relevance to the international arena, however, in light of the theory of dual sovereignty that informs the peculiar brand of federalism found in the United States. Under international law, the US government is presumed sovereign over persons and natural resources within its territory. As a matter of US constitutional law, however, the (subnational) state governments are also considered sovereign or quasi-sovereign entities, and the federal government is understood to have limited, enumerated powers. In both theory and practice, some matters fall within the exclusive competence of the states, not merely at the sufferance of the federal government but as a matter of fundamental legal right. Other responsibilities are broadly shared, with the federal role paramount in the event of conflict. In still other areas, such as foreign affairs and the regulation of interstate commerce, the federal role is exclusive. Given this "dual sovereign" role of the states, the law of US inter-state relations has often been seen as

relevant precedent for international legal developments, just as international law has often served as the source of principles to adjudicate disputes among US states. The argument advanced here, then, is that the new hybrid governance arrangements in the Chesapeake Bay reflect a model of transboundary collaboration readily adaptable to the international arena. In this model, multiple sovereigns willingly surrender and recombine some crucial elements of their traditional sovereign powers, forging a new problem-solving hybrid arrangement that embraces other, nonstate actors as active and equal partners in the governance process on a non-exclusive and non-hierarchical basis, and at an ecologically defined scale that obliterates conventional territorially defined jurisdictional boundaries—an arrangement better suited to the complexities of ecosystem management than traditional exercises of sovereign prerogative.

The US-Canadian Great Lakes Program

Spanning a large portion of the US-Canadian border in the heavily industrialized heartlands of both nations, the North American Great Lakes comprise about 20 percent of the fresh surface water on the planet. Like the Chesapeake Bay Program, the North American approach to transboundary Great Lakes governance emerged out of recognition that, despite significant progress under conventional rule-based regulation toward reducing gross pollution inputs from industrial point sources and municipal wastewater systems, the ecosystems of the lakes remained under severe stress from a complex of interrelated causes, including excess nutrients, airborne toxic pollutants, contaminated sediments in rivers and harbors, declining fisheries, invasive species, wetlands loss, and alteration of natural stream flows from approximately 6,000 tributaries across the vast basin. What was required, then, was a reorientation toward integrated ecosystem management.⁴⁶ Although neither as mature nor as fully articulated as the Chesapeake Bay Program, the complex multiparty transboundary governance arrangements that have emerged in the Great Lakes region are nonetheless widely understood to represent the premier example of successful transboundary collaboration in joint management of a freshwater aquatic ecosystem.⁴⁷

As early as 1972, the United States and Canada negotiated a Great Lakes Water Quality Agreement setting overall basin-wide water quality goals, largely reflecting water pollution control measures already being put into place on both sides of the international boundary as the consequence of recently enacted national pollution control laws. Recognizing that conventional pollution control would not be adequate to restore ecosystem health, however, subsequent 1978 and 1987 iterations of the Great Lakes Water Quality Agreement explicitly embraced the more ambitious and elusive goal of integrated ecosystem management throughout the basin.⁴⁸

46. Christie 1995; Francis and Regier 1995; and Regier 1999.

47. Hunter et al. 2002.

48. Francis and Regier 1995.

Conventional theories of public international law presume that international environmental law-making is a two-step process, in which sovereign states first exercise their exclusive competence to negotiate binding international agreements among themselves, and then apply the negotiated standards internally through national legal and policy processes. The formal international agreements between the US and Canada concerning the Great Lakes, however, establish only relatively modest substantive obligations on the part of the federal parties; but they do endorse a broad vision of ecosystem restoration and establish a skeletal institutional framework within which more robust forms of transboundary collaboration have emerged. These collaborative efforts extend well beyond conventional sovereign-to-sovereign relations. Participants in the transboundary governance process include subnational governments, an array of intergovernmental and nongovernmental organizations, and the organs of civil society in both nations, jointly comprising an imposing web of regional transboundary cooperation and interpenetration that clearly exposes the fictive character of sovereign states' claims to exclusive authority to act in the transboundary arena. Among the most active participants in Great Lakes environmental policy-making are eight US states and two Canadian provinces, major ports and municipalities throughout the region, Native American (US) and First Nations (Canada) tribal governments, regional intergovernmental organizations, environmental NGOs, sport and fishing organizations, leading businesses and trade associations, and the independent scientific community.⁴⁹

Among the intergovernmental and nongovernmental organizations with the greatest transboundary presence are Great Lakes United, an influential transnational federation of environmental NGOs; the International Association for Great Lakes Research, a transnational scientific society that promotes and disseminates scientific research with a Great Lakes focus; the Council of Great Lakes Governors, an intergovernmental body that coordinates Great Lakes policy among the chief executive officers of the eight US states, as well as the premiers of two Canadian provinces who hold associate memberships; the Great Lakes Commission, an intergovernmental research, advocacy, and policy coordinating organization supported by the eight US states and two Canadian provinces in the Great Lakes basin; the International Association of Great Lakes-St. Lawrence Mayors, a transnational intergovernmental organization of municipal officials that seeks to coordinate Great Lakes-related policies at the municipal level; the Great Lakes Fishery Commission, a binational intergovernmental organization charged with coordinating management of fishery resources; and the International Joint Commission (IJC), a six-member independent binational commission established under the 1909 Boundary Waters Treaty to regulate lake levels and water diversions and to adjudicate international disputes over the Great Lakes and other transboundary water resources.⁵⁰

Although the IJC has no direct management authority over environmental

49. Francis and Regier 1995; Regier 1999.

50. Christie 1995; MacKenzie 1997; and Regier 1999.

quality issues in the Great Lakes basin, it is an influential voice in the ongoing policy discussion. It attempts to provide oversight and facilitate policy coordination, organizes high-visibility fora for public participation in discussion of Great Lakes issues, produces independent critical evaluations of management programs and progress toward agreed goals and objectives, and sponsors subsidiary scientific, technical, and advisory committees that are often important sources of information and effective participants in the overall governance process.

Like the Chesapeake Bay Program, the Great Lakes initiative incorporates a “nested” structure, devising strategies and coordinating management efforts at multiple scales, from local harbors and tributary watersheds to the basin as a whole.⁵¹ At the peak level, and roughly corresponding to the Chesapeake Bay Program’s Executive Council, is a Binational Executive Committee comprising representatives of the United States and Canadian federal governments as well as state, provincial, and tribal agencies (US EPA 2000). Although the Binational Executive Committee has limited legal authority, it is formally charged with responsibility to coordinate implementation and evaluate progress under the Great Lakes Water Quality Agreement. In that capacity, it attempts to set the overall direction of Great Lakes policy, albeit sometimes in uneasy tension with the IJC with which it is in constant dialogue and mutual critique, and with other basin-wide intergovernmental and nongovernmental bodies like the Great Lakes Commission, the Council of Great Lakes Governors, and Great Lakes United, which sometimes offer rival viewpoints and alternative fora for policy discussion and coordination. The Binational Executive Committee has overseen the development of several important basin-wide management strategies, including a Binational Toxics Strategy offering a detailed plan, complete with numeric targets and timetables, for reducing and ultimately eliminating toxic pollution in the Great Lakes through coordinated policy responses and voluntary implementation measures. The Binational Toxics Strategy was developed through a broadly collaborative, consensual process that included participation by leading industry groups as well as nongovernmental groups and governmental entities.

The Binational Executive Committee, together with EPA’s Great Lakes National Program Office and its counterpart in Environment Canada, also sponsors a biennial basin-wide State of the Lakes Ecosystem Conference (SOLEC) where collaborative partners participate in joint review and reassessment of basin-wide progress, goals, plans, and implementation measures, with special attention given to evaluation, assessment, and refinement of core indicators of Great Lakes ecosystem health.

At intermediate geographic scales, each of the lakes now has its own comprehensive Lakewide Management Plan, outlining goals and actions required by both governmental and nongovernmental parties to restore the lakes to

51. Regier 1999; and US EPA 2000.

beneficial use consistent with overarching basin-wide ecosystem restoration goals. Lakewide Management Plans are developed and biennially revised through multi-party collaborative processes; broad public participation and frequent revisions are intended to ensure that a variety of perspectives are integrated into the planning process, and to allow for dynamic adjustment of policy plans to changing information and environmental conditions. Participants include lake-specific configurations of federal, state, local, and tribal agencies, intergovernmental and nongovernmental organizations, independent scientists, and individual citizen activists. The Lake Michigan Lakewide Management Plan, for example, is developed by an interagency Lake Michigan Coordinating Committee working in close consultation with a technical coordinating committee and the Lake Michigan Forum, a standing committee described by the US EPA as a “broad-based stakeholders group with members from tribes, industry, environmental groups, local governmental agencies, community organizations, academia, sport and fishing groups and representatives from each of the 10 Areas of Concern” in the Lake Michigan basin. Although nonbinding, the Lakewide Management Plans are drawn up to include highly specific assessments of environmental progress and conditions and detailed policy recommendations, and are intended to coordinate policy responses among the numerous public and private entities with responsibility for some aspect of the aquatic ecosystem. Over the years, Lakewide Management Plans have broadened the spatial scale and substantive scope of their purview, from an initial focus exclusively on water quality issues in the lakes themselves, to an expansive view of land management, aquatic and terrestrial habitat conservation, and non-point source pollution issues in tributary watersheds. Increasingly, with recent studies indicating that atmospheric deposition of airborne toxic pollutants comprises an unexpectedly large share of the pollutants found in fish and other aquatic life, Lakewide Management Plans are also turning their attention to the sources of air pollution, including some originating outside the basin.

At the most localized levels, Remedial Action Plans have been developed and are currently in varying stages of implementation for each of 43 local Areas of Concern, targeted as high priorities for remedial clean-up efforts. These are typically contaminated ports and estuaries containing high levels of toxic sediments. Remedial Action Plans vary widely in their structures, processes, and policy approaches, depending upon the nature of the local problem and the institutional alignment deemed most appropriate to its resolution. In general, however, state and provincial agencies have taken the lead in developing Remedial Action Plans, in most cases relying on high levels of local public participation and multi-party, public-private collaborative decision-making throughout the planning, implementation, and monitoring stages.⁵² Increasingly, efforts are also underway to manage the Great Lakes’ numerous tributary watersheds, in most cases through citizen-led public-private collaborations like those found in

52. MacKenzie 1997; Regier 1999; and Beierle and Konisky 1999.

the Chesapeake Bay region.⁵³ Tributary-specific strategies are an increasingly important component of the Lakewide Management Plan process as well.

Loosely tying together these sprawling, polycentric governance arrangements is a common core of information, data, and communications links provided in part by the Great Lakes program offices of the US EPA and Environment Canada, but also by the Great Lakes Information Network, a Great Lakes Commission-sponsored, public-private collaboration that uses the internet to pool the databases and information resources of dozens of governmental agencies and nongovernmental entities throughout the basin.⁵⁴

The Great Lakes management effort thus rests on deep, ongoing, transboundary collaboration among multiple state and nonstate parties committed to the co-management of a shared resource of critical importance on both sides of the international boundary. The institutional arrangements that jointly comprise the management effort extend well beyond the organs of the respective sovereign states to include subnational and nonstate actors, interacting through both formal and informal—and sometimes even nominally extra-constitutional—channels to effect governance in the void left by the state's incapacity to specify definitive binding rules to govern the ecosystem.⁵⁵ As in the Chesapeake Bay, these efforts have a rolling, experimentalist flavor, as the parties continuously reassess, refine, and revise goals, objectives, and management measures in light of lessons learned, newly emerging science, and changing social, political, economic, and environmental conditions.

Like the Chesapeake Bay Program, the Great Lakes governance effort exhibits the defining characteristics of post-sovereign governance. Governance is “non-exclusive,” insofar as nongovernmental parties play not merely advisory and lobbying roles but serve as active, legitimate co-participants and “full partners” in the design and implementation of policies. Governance is “non-hierarchical,” in that policy is neither made nor implemented exclusively through top-down mandatory command-style rules or inter-sovereign agreements, but instead embraces a variety of forms, many of them voluntary in nature. Finally, governance is “post-territorial” insofar as the spatial scale of the management effort, the scope of policy responses, and the institutional arrangements themselves are defined by reference to evolving understandings of the nature and causes of the problem and its appropriate solutions, rather than by fixed, conventional territorial-political boundaries. As in the Chesapeake Bay, the geographical scale and functional scope of the problem have been redefined from an initial focus on water pollution in the water column proper, to an expanded governance effort aimed at integrated management of a suite of ecological stressors and encompassing the entire basin, including upstream tributary watersheds and the downstream St. Lawrence River. At the same time, and also

53. Beierle and Konisky 1999.

54. Francis and Lerner 1997.

55. Regier 1999.

following the Chesapeake Bay example, the Great Lakes program has evolved to articulate additional tiers of management effort at more localized geographical scales, “nesting” lake-specific management plans, remedial action plans for locally contaminated “hotspots,” and tributary-specific watershed management efforts within the overarching basin-wide framework. Finally, like the Chesapeake Bay Program, the Great Lakes program has recently discovered the importance of airborne pollutants in contributing to overall water quality problems, prompting further reconsideration of the appropriate spatial scale and subject-matter definition of the governance effort.

Conclusion

These cases place two large eco-regions, jointly encompassing a significant fraction of North America’s vital ecological resources, under collaborative and experimentalist institutional arrangements of the type termed here “post-sovereign” governance. Does this model have larger implications for environmental management and global environmental governance?

At this point, a cautionary note may be warranted. Despite enthusiasm in some circles for the institutional innovations revealed here, others remain skeptical of the degree to which the Chesapeake Bay and Great Lakes programs can yet claim success in actually resolving complex environmental problems. Critics point out that despite years of management effort, the Chesapeake Bay remains badly polluted, and some of its most highly valued ecological resources, including native oyster populations, are still in a perilous state of decline. Although overall water quality in the Great Lakes has improved more dramatically, much of that improvement is attributable to conventional pollution control regulations; and while the Lakewide Management Plan and RAP collaborative planning processes have produced impressive plans, critics argue that implementation of those plans has been at best a mixed success, due in part to resource constraints but also arguably because of the non-binding nature of the planning process itself.⁵⁶ More generally, some question on theoretical grounds whether broadly collaborative approaches to environmental decision-making can really overcome the transaction costs and the tendency toward strategic self-interested bargaining and least-common-denominator solutions that are characteristic of other bargaining processes,⁵⁷ or whether non-hierarchical approaches that rely on voluntary commitments in lieu of legally enforceable commands will prove sufficiently robust to solve hard environmental problems under constraints of limited resources.⁵⁸

Despite these reservations, however, the Chesapeake Bay and Great Lakes programs have been widely hailed in policy circles as innovative and successful

56. US GAO 2003.

57. Coglianese 2001.

58. Steinzor 2000.

prototypes, which at a minimum have demonstrated a superior capacity to generate and respond to a rich and dynamically unfolding understanding of the complexities of the ecosystems they endeavor to manage. Even if they cannot yet be rated unqualified successes as measured by bottom-line results, the governance approach they embody appears to offer some distinct advantages over conventional regulatory approaches in its capacity to integrate multiple perspectives, to stimulate and capture new information, to generate coordinated and multifaceted policy responses, and to adjust both their own institutional contours and policies to changing understandings of the nature and causes of the problem. For that reason, it has been urged that these programs be studied and emulated by those seeking to manage other complex estuarine and freshwater aquatic ecosystems. This suggests that the influence of the model examined here might eventually extend well beyond these particular regions.

Policy-makers might consider whether other environmental problems might lend themselves to similar collaborative, problem-solving, post-sovereign governance arrangements operating at appropriate eco-regional scales. Arguably, post-sovereign governance need not be limited to the protection of aquatic ecosystems. It is frequently suggested, for example, that an ecosystem approach is the most appropriate strategy for conserving global biodiversity in general, although it is usually supposed that global international rules followed by national-level implementation would be required to achieve such an approach. Alternatively, however, the problem of biodiversity protection might be reconceived as necessitating a series of linked ecosystem-scale regional arrangements, employing the model of post-sovereign governance outlined here. Policy-makers might, for example, choose to subdivide the problem of biodiversity conservation into thematic categories like protection of tropical rainforests, temperate forests, boreal forests, grasslands, arid and semi-arid ecosystems, large estuaries, marine ecosystems, freshwater aquatic ecosystems, and so forth, and then look to experiment with, evaluate, and replicate the most successful governance models within each of those categories. Indeed, the biodiversity convention and its subsidiary bodies and affiliated nongovernmental and inter-governmental organizations are beginning to take some conceptual steps in that direction, although on-the-ground implementation lags.

Alternatively, policy-makers might take a more limited view of the Chesapeake Bay and Great Lakes models, and confine such efforts to problems of the marine environment and freshwater aquatic systems—to be sure, among the most critical and vexingly complex environmental problems remaining on the global environmental agenda. Rather than awaiting the emergence of global rules and norms concerning land-based marine pollution, for example, policy-makers might begin to address these problems through post-sovereign arrangements at eco-regional levels, seeking to bootstrap success in path-breaking regions like the Chesapeake Bay into a coordinated global network of regional efforts, revolving around a central capacity to monitor regional projects and to benchmark, evaluate, and diffuse best practices. In general, such regionally focused, on-the-ground problem-solving efforts have thus far taken a backseat on

the global environmental policy agenda to high-profile global issues and conventional international law approaches focusing on the negotiation of binding, multilateral, inter-sovereign rules of obligation.

The Chesapeake Bay and Great Lakes programs suggest that purely inter-sovereign approaches may ultimately have a somewhat less important role to play in solving complex transboundary environmental problems than is generally supposed. Neither purely inter-sovereign agreements nor standard exercises of sovereign authority on the domestic front have proven adequate, without more, to address the complexities of ecosystem management in the Chesapeake Bay and the Great Lakes. For that reason, states have gradually but unmistakably begun to surrender their claim to be the exclusive authors and implementers of environmental policy, and to re-conceive their role as that of co-author and co-implementer, with others, in an ongoing, open-ended experiment in multi-party decision-making that reflects the characteristics of “post-sovereign” governance described here.

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