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WHEN IS TWO A CROWD?
THE IMPACT OF FEDERAL ACTION ON
STATE ENVIRONMENTAL REGULATION

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ABSTRACT

This article seeks to identify the ways in which federal actions can influence state regulatory choices in the context of environmental policy. The federal government may directly influence state policy choices by preempting state policies or by inducing state cooperation through the use of various incentives and penalties for state action. The federal government may indirectly, and perhaps unintentionally, influence state policy choices as well. Federal policies may encourage greater state regulation by reducing the costs of initiating regulatory action or by placing issues on state policy agendas. Federal regulation may also discourage or even “crowd-out” state-level regulatory action by reducing the net benefits of state-level initiatives. The potential for federal regulation to have both positive and negative indirect effects on state regulatory choices suggests that increases in federal regulation can alternatively enhance or reduce state regulatory activity and may, in some instances, even result in a net reduction of regulatory protection for environmental resources. Such potential effects are largely ignored in environmental policy discussions, and warrant subsequent empirical study. While this paper focuses on environmental regulation, the overall framework should be applicable to other regulatory contexts.

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INTRODUCTION

Up until the 1970s, environmental protection largely consisted of a patchwork of state laws, local ordinances and common law nuisance protections.¹ State and local governments had begun to adopt various environmental measures in the 1960s. Nonetheless, there was a general perception that state and local governments were unable or unwilling to address most environmental concerns.² Congress responded with an array of environmental statutes that reoriented the federal-state relationship in environmental law.³ The federal government assumed the dominant role in national policy-making. States continue their environmental protection efforts, but they are largely overshadowed by the federal government.⁴

In recent years scholars have begun to reexamine the federal-state balance in environmental law.⁵ New scholarship has

¹ See Robert V. Percival, *Environmental Federalism: Historical Roots and Contemporary Models*, 54 MD. L. REV. 1141 (1995).

² See generally Jonathan H. Adler, *The Fable of Federal Environmental Regulation: Reconsidering the Federal Role in Environmental Protection*, 55 CASE WEST. RES. L. REV. 93 (2004).

³ These statutes include the Clean Air Act (1970), the Clean Water Act (1972), the Endangered Species Act (1973), the Safe Drinking Water Act (1974), the Federal Insecticide, Fungicide, and Rodenticide Act (1975), the Resource Conservation and Recovery Act (1976), and the Toxic Substances Control Act (1976). The National Environmental Policy Act, enacted in 1969, was also an important environmental statute, but it did not have as much of an impact on the federal-state balance in environmental law.

⁴ See John P. Dwyer, *The Role of State Law in an Era of Federal Preemption: Lessons from Environmental Regulation*, 60 L. & CONTEMP. PROB. 203, 205 (1997) (the role of states “is increasingly restricted to those areas not yet subject to extensive federal regulation . . . and to the implementation and enforcement of permits issued pursuant to federal standards and procedures”).

⁵ See, e.g., James L. Huffman, *Making Environmental Regulation mOre Adaptive Through Decentralization: The Case for Subsidiarity*, 52 U.KAN. L. REV. 1377 (2005); DAVID SCHOENBROD, *SAVING OUR ENVIRONMENT FROM WASHINGTON* (2005); Jonathan H. Adler, *Letting Fifty Flowers Bloom: Using Federalism to Spur Environmental Innovation*, in *THE JURISDYNAMICS OF*

challenged the necessity and effectiveness of much federal environmental regulation, while others have defended the preeminent role of federal environmental law. There remains substantial disagreement on the extent to which states can be trusted to adopt welfare-enhancing environmental safeguards.⁶

ENVIRONMENTAL PROTECTION: CHANGE AND THE PRAGMATIC VOICE IN ENVIRONMENTAL LAW 263-64 (Jim Chen ed., 2004); Bradley C. Karkkainen, *Collaborative Ecosystem Governance: Scale, Complexity, and Dynamism*, 21 VA. ENVTL. L.J. 189, 206 (2002); Wallace E. Oates, *A Reconsideration of Environmental Federalism*, in RECENT ADVANCES IN ENVIRONMENTAL ECONOMICS 22 (John A. List & Aart de Zeeuw eds., 2002); PIETRO S. NIVOLA & JON A. SHIELDS, MANAGING GREEN MANDATES: LOCAL RIGORS OF U.S. ENVIRONMENTAL REGULATION (AEI-Brookings Joint Center for Regulatory Studies, 2001); Paul S. Weiland, *Federal and State Preemption of Environmental Law: A Critical Analysis*, 24 HARV. ENVTL. L. REV. 237, 258-59 (2000); DANIEL A. FARBER, ECO-PRAGMATISM: MAKING SENSIBLE ENVIRONMENTAL DECISIONS IN AN UNCERTAIN WORLD 179-83 (1999); Richard Revesz, *Federalism and Environmental Regulation: A Normative Critique*, in THE NEW FEDERALISM: CAN THE STATES BE TRUSTED? 105 (John Ferejohn & Barry R. Weingast, eds. 1997); Richard L. Revesz, *The Race to the Bottom and Federal Environmental Regulation: A Response to Critics*, 82 MINN. L. REV. 535, 536-37 (1997); Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570 (1996); HENRY BUTLER & JONATHAN R. MACEY, USING FEDERALISM TO IMPROVE ENVIRONMENTAL POLICY (1996); Percival, *supra* note 1; Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the ‘Race to the Bottom’ Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992). Even analysts that are highly skeptical of the benefits of granting states greater control over environmental policy decisions acknowledge that some measure of decentralization is warranted. *See, e.g.*, Esty; Rena I. Steinzor, *EPA and Its Sisters at 30: Devolution, Revolution, or Reform?*, 31 ENVTL. L. REP. 11086 (2001).

⁶ For critiques of decentralization, see, e.g., Kirsten Engel and Susan Rose-Ackerman, *Environmental Federalism in the United States: The Risks of Devolution*, in REGULATORY COMPETITION AND ECONOMIC INTEGRATION: COMPARATIVE PERSPECTIVES 137 (Daniel C. Esty & Damien Geradin eds., 2001); Rena I. Steinzor, *Devolution and the Public Health*, 24 HARV. ENVTL. L. REV. 351 (2000); Kirsten H. Engel, *State Environmental Standard-Setting: Is There a “Race” and Is It “to the Bottom”?*, 48 HASTINGS L.J. 271 (1997); Peter P. Swire, *The Race to Laxity and the Race to Undesirability: Explaining Failures in Competition Among Jurisdictions in Environmental Law*, 14 YALE J. ON REG. 67 (1996).

Some scholars fear that states would adopt suboptimally lax environmental protections absent a sufficient federal regulatory “floor.”⁷ This concern exists even where environmental problems lack the sort of extraterritorial impacts that are likely to produce insufficient environmental protection at the state and local level.⁸

Despite the extensive scholarly literature assessing the proper role of federalism in environmental law, there has been relatively little analysis of why states adopt given environmental policies.⁹ There is even less consideration of how federal regulatory choices influence state environmental policy, and how a change in federal policy could influence states’ willingness to adopt more environmental protections of their own. This article seeks to address this gap by describing some of the factors that are likely to influence state environmental policy decisions and delineating how federal environmental policies can affect state policy choices. Specifically, this article seeks to further the understanding of how federal regulation influences the scope and effectiveness of state regulations.

⁷ It is important to note that a suboptimal regulatory regime could either over-regulate or under-regulate. In the environmental literature, however, there is a greater concern that states will *under*-regulate absent active federal participation in environmental protection.

⁸ For example, some commentators fear that interjurisdictional competition for economic investment will produce a “race to the bottom” that leads to systematic underprotection of environmental values. *See, e.g.*, CLIFFORD RECTHSCHAFFEN & DAVID L. MARKELL, *REINVENTING ENVIRONMENTAL ENFORCEMENT & THE STATE/FEDERAL RELATIONSHIP* 22–25 (2003) (the race-to-the-bottom theory is the “central underpinning” of federal environmental regulation); WILLIAM A. FISCHER, *THE HOME VOTER HYPOTHESIS* 162 (2001) (noting “a widespread belief that competition among jurisdictions poses a danger of a mutually destructive ‘race to the bottom.’”); Esty, *supra* note 5, at 628 (“Fears of a welfare-reducing race to the bottom represent one of the central underpinnings of federal environmental regulation in the United States”); Swire, *supra* note 6; Engel, *supra* note 6.

⁹ *See* PAUL TESKE, *REGULATION IN THE STATES* 8 (2004) (“state regulation is far less well understood than federal regulation, though it is no less important”). In this regard, the Teske volume is an important addition to the literature.

Some of the factors that influence state regulatory decisions are readily apparent, such as wealth, knowledge and interest-group pressure. The influences of federal regulation on state regulatory choices, particularly insofar as such influences are felt indirectly, may be less obvious. Nonetheless, it should be evident that federal policy decisions should have *some* effect on state policy choices concerning the existence, scope, and contours of state regulatory programs. These effects can occur whether intended or not. In some instances, federal action may even preclude or discourage welfare-enhancing initiatives at the state and local level.

This article suggests a framework for categorizing and analyzing how federal policy decisions can influence state regulatory choices. The federal influence can be both “positive” – resulting in greater levels of state regulation – or “negative.” Federal influence can also be direct or indirect. Direct influences include federal preemption and the creation of various incentives and penalties for state action or inaction, including conditional preemption and conditional spending. Indirect influences may be less obvious, but are no less important. Federal action – or perhaps even federal inaction – can encourage greater state regulation by reducing the costs of initiating regulatory action or by altering state policy agendas. At the same time, federal regulation may discourage states from adopting or maintaining more protective environmental rules or even “crowd-out” state-level regulatory action by reducing the net benefits of state-level initiatives.

Building on prior research and analysis of federalism in environmental law and policy,¹⁰ this article further seeks to

¹⁰ See Jonathan H. Adler, *Jurisdictional Mismatch in Environmental Federalism*, 14 N.Y.U. ENVTL. L.J. 130 (2005); Jonathan H. Adler, *Judicial Federalism and the Future of Federal Environmental Regulation*, 90 IOWA L. REV. 377 (2005); Adler, *supra* note 2; Adler, *supra* note 5; Jonathan H. Adler, *The Ducks Stop Here? The Environmental Challenge to Federalism*, 9 SUP. CT. ECON. REV. 205, 226 (2001); Jonathan H. Adler, *Wetlands, Waterfowl, and the Menace of Mr. Wilson: Commerce Clause Jurisprudence and the Limits of Federal Wetland Regulation*, 29 ENV. L. 1 (1999); Jonathan H. Adler, Comment, *The Green Aspects of Printz: The Revival of Federalism and Its Implications for Environmental Law*, 6 GEO. MASON. L. REV. 573 (1998).

reexamine some of the conventional assumptions that underpin many discussions of the proper federal-state balance in environmental policy. Among other things, this article suggests that insufficient attention to the effects of federal action on state policy choices can reduce the scope and effectiveness of environmental protection efforts. For example, if federal regulatory action has the potential to discourage or “crowd out” state regulatory efforts, the adoption of a federal regulatory “floor” may actually *lower* instead of raise the aggregate level of environmental protection in a given jurisdiction.¹¹

Part I provides a brief overview of the development of environmental regulation at the state and local level and identifies some of the factors that influence state-level environmental regulatory decisions. These factors help explain why governments at any level choose to adopt environmental regulations and why different states, left to their own devices, will adopt different environmental policies. These factors vary over time as well. A given state that is unlikely to adopt specific environmental measures at one point may be more likely to adopt the same, or even more extensive, measures at a later date. This “environmental transition” provides the context for understanding how federal regulatory decisions can impact state regulatory decisions over time. Identifying those economic and political factors which are likely to influence state policy choices is also necessary in order to isolate and evaluate the extent to which federal policies affect state decisions.

Part II provides an introductory matrix and brief overview of how federal regulatory decisions can *directly* influence state regulatory decisions. This part explains that federal directives commanding state regulatory action are constitutionally prohibited, but federal prohibitions on state regulatory action are not. Further,

¹¹ Cf. Paul S. Weiland, *Federal and State Preemption of Environmental Law: A Critical Analysis*, 24 HARV. ENVTL. L. REV. 237, 242 (2000) (federal “minimum standard may raise the bar by establishing a baseline of protection” and “foreclose the possibility of a race to the bottom or race to laxity”); Steinzor *supra* note 6.

the federal government retains substantial power to induce state regulatory action through the provision of various penalties and incentives, including the conditional use of preemption and the use of conditional spending.

Part III turns to the indirect effects of federal regulation on state regulatory choices. This part explains how federal regulatory action may increase the amount of state-level environmental regulation, even in the absence of direct federal incentives. Federal action may alter the policy agenda at the state level by highlighting or otherwise increasing public awareness of environmental concerns at the state level. It can also alter the interest group demand for state-level regulation or facilitate the adoption of state-level regulation by reducing the costs of enacting or implementing state regulatory initiatives. In this sense, federal action can serve as a complement to state regulations.

Part III also contemplates the potential for federal regulations to have the opposite indirect effect. Specifically, this section explains how federal regulatory action has the potential to discourage more protective state rules as well as to “crowd out” state regulatory efforts insofar as federal regulations serve as a substitute for state-level environmental protections. This part describes those conditions under which federal regulation could result in less overall environmental regulation in a given state than had the federal government never regulated at all. Specifically, where the federal government creates a regulatory floor before the adoption of state-level regulation, it becomes less likely that a given state will adopt regulations of its own in the future. This can be true *even if* at a later date, due to a state’s own environmental transition, the amount of environmental regulation demanded in a state is greater than that provided by the federal government. As a result, the adoption of a federal regulatory floor that increases aggregate levels of environmental protection in the short run may, in the long run, result in less environmental protection in a given state. Insofar as one assumes that increased levels of environmental regulation will, on the margin, increase net welfare, non-preemptive federal environmental regulations could still

produce net welfare reductions over time.¹² This could be true even if one assumes that a given federal regulation is, when viewed in isolation, cost-beneficial, as well as if one ignores potential qualitative differences between states and the federal government that may produce more optimal regulation at the state level.

In order to simplify the analysis, the bulk of this article discusses the effects of federal action on state policy choices in quantitative terms, such as whether federal action produces more or less of a given type of state regulation. Part IV explains how this oversimplifies the analysis in two respects. First, while it is common to suggest that more environmental regulation is better than less regulation, it is not always clear that greater levels of environmental regulation are always welfare enhancing. The optimal level of environmental regulation in a given context may be greater than current levels, but it may also be less. Second, environmental regulation can vary in both *quantitative* and *qualitative* ways, and the latter variations among competing environmental policies may be more important to the attainment of optimal levels of environmental protection than any quantitative regulatory target. Accounting for qualitative differences in environmental policy measures may unduly complicate the analysis, but they should not be ignored.

Demonstrating the theoretical possibility that federal regulation may “crowd out” state-level environmental protection, does not establish that such crowding out has, or will, occur in any specific regulatory context. With this caveat in mind, Part V reconsiders the history of environmental protection at the state and federal level with a particular focus on wetland regulation. The history of state and federal regulation in this area is consistent with

¹² It should be noted that increases in the stringency of environmental regulation will not necessarily produce net increases in social welfare. Insofar as the costs of increased environmental regulation, economic and otherwise, are greater than the benefits, increased regulation will reduce social welfare. However, insofar as one assumes that existing environmental regulations are under-protective, the potential for federal regulations to discourage greater protection at the state level should be of some concern. *See also infra* Part IV.

the crowding out hypothesis and other aspects of this analysis. It does not by itself, however, demonstrate that such crowding out has occurred. Rather, it underscores the need for greater attention to the effect federal policy decisions have on state policy choices and also suggests the need for further empirical examination of this issue.¹³

I. THE DEMAND FOR ENVIRONMENTAL REGULATION

The demand for environmental regulation is not static. Instead it changes over time. As a general matter, demand for environmental protection has increased along with increases in wealth and scientific knowledge. It is also influenced by many other factors that may fluctuate over time and from place to place. As Professor Farber summarized, “the passage of environmental laws is attributable to strong public demand, coupled with exploitation of that demand by ideological and credit-seeking politicians.”¹⁴ The relevant question is what determines the level of public demand for environmental protection, as well as the strength and involvement of other policy actors. Understanding the factors that influence the demand for environmental is necessary to analyze the effect federal regulations may have on state regulatory choices.

A. *The Environmental Transition*

There was not always a significant demand for environmental regulation. While this nation has a long and proud conservation history, dating back at least until the creation of hunting-oriented conservation groups in the late 1800s, many of

¹³ Identifying and quantifying the extent of any such crowding out and other indirect effects of non-preemptive federal regulation on state regulatory activities in the environmental and other regulatory contexts is a subject for subsequent empirical investigation, and lies beyond the scope of this paper.

¹⁴ Daniel A. Farber, *Politics and Procedure in Environmental Law*, 8 J.L. ECON. & ORG. 59, 61 (1992).

the environmental matters subject to regulation today were not seen as significant public concerns. Even as various environmental problems began to emerge, they were not initially seen as significant policy concerns. Some environmental problems were regarded as the inevitable, if not wholly desirable, consequence of economic progress and industrial growth.¹⁵ In other cases, society was simply unaware of the magnitude of certain environmental harms. In still other instances, official policy sought to encourage environmental modifications and land-use changes that current policy now seeks to reverse.¹⁶

The state of environmental knowledge was relatively poor. Environmental resources were devalued, and some environmental offenses were even believed to be positive goods. Wetlands were viewed as breeding grounds for mosquitoes that spread disease; the important ecological functions wetlands provide were underappreciated, if even understood at all.¹⁷ Predators and pest species were targets for extermination, with little consideration of the role various species play in health ecosystems.¹⁸ In the 19580s, government agencies sprayed DDT and other pesticides indiscriminately, even over the objections of local landowners, with little cognizance of the potential consequences for non-target

¹⁵ See, e.g., WILLIAM DONAHUE ELLIS, *THE CUYAHOGA 157* (1966) (noting that some viewed the prismatic colors of pollution on the Cuyahoga River as “the sweetest colors a river ever had”). External factors also effected the level of concern about waste management and other environmental practices. See, e.g., CRAIG E. COLTEN & PETER N. SKINNER, *THE ROAD TO LOVE CANAL: MANAGING INDUSTRIAL WASTE BEFORE EPA139-41* (1996) (wartime imperatives reduced concern for industrial waste management during World War II).

¹⁶ For examples of how federal policy has encouraged environmental harm, see generally *GOVERNMENT VS. ENVIRONMENT* (Donald R. Leal & Roger E. Meiners eds. 2002).

¹⁷ See David E. Gerard, *Federal Flood Policies: 150 Years of Environmental Mischief*, in *GOVERNMENT VS. ENVIRONMENT supra* note 16, at 59–77; PAUL SCODARI, *MEASURING THE BENEFITS OF FEDERAL WETLANDS PROGRAMS 16* (1997).

¹⁸ See J. Bishop Grewell, *War on Wildlife*, in *GOVERNMENT VS. ENVIRONMENT, supra* note 16, at 97-121.

species.¹⁹ At one time, many thought smoke and coal dust had “antiseptic” qualities and could stem the spread of tuberculosis.²⁰ In the first part of the Twentieth Century, environmental protection as it is understood today was not a prominent public concern, particularly in comparison to economic development, technological progress, and addressing other social ills. Insofar as environmental protection registered on the public agenda, it was focused on sanitation and drinking water, not recreational or aesthetic values.

As the nation awakened to environmental concerns, regulations and other protective measures were put in place. State by state, city by city, the nation began to go through what can be termed an “environmental transition.”²¹ Places that once placed little value on environmental protection now sought the adoption of stringent regulatory measures. Increased environmental concern, combined with other factors, led to the adoption of a new generation of local, state, and eventually federal environmental controls. The first regulatory measures were local ordinances designed to control smoke²² – one of the first modern environmental problems to be recognized as such. Later measures addressed other air pollution concerns, water pollution, and eventually other environmental problems.²³

This increase in demand for environmental protection can best be understood as resulting from an “environmental transition,” during which a given community or jurisdiction develops a demand for a given type of environmental protection. This

¹⁹ See Roger E. Meiners & Andrew P. Morriss, *Silent Springs and Silent Villages: Pesticides and the Trampling of Property Rights*, in GOVERNMENT VS. ENVIRONMENT, *supra* note 16., at 15-37.

²⁰ INDUR M. GOKLANY, CLEARING THE AIR: THE REAL STORY OF THE WAR ON AIR POLLUTION 11 (1999).

²¹ GOKLANY, *supra* note 20, at 5, 87-109.

²² See Arthur C. Stern, *History of Air Pollution Legislation in the United States*, 32 J. AIR POLLUTION CONTROL ASS'N 44, 44 (1982).

²³ See Adler, *supra* note 2, at 98-100; Richard L. Revesz, *Federalism and Environmental Regulation: A Public Choice Analysis*, 115 HARV. L. REV. 553, 577 (2001).

transition is driven, in large part, by increases in economic well-being. As higher-order priorities are addressed, and quality of life improves, societies begin to devote more resources to previously neglected concerns. As populations become wealthier, both their willingness and ability to pay for environmental protection increase dramatically.²⁴ At the same time, increases in development tend to coincide with increases in technological capabilities and the accumulation of scientific and other knowledge which may reveal heretofore unknown aspects of environmental problems, further heightening the desire for change.²⁵ It is also likely that the increase in development itself, insofar as it results in increased pollution and other environmental harms, further serves to increase the priority of environmental protection. A given level of pollution initially may be viewed as an acceptable trade-off for increased prosperity and industrialization. Yet over time, as prosperity and pollution both increase, priorities change eventually leading to a reduction in pollution levels. The theory of an environmental transition can explain the Environmental Kuznets Curve documented in an extensive economic literature, in which pollution levels initially increase but then eventually decline as societal wealth increases over time.²⁶

²⁴ GOKLANY, *supra* note 20, at 5 (“the wealthier the society, the more it can afford to research, develop, and install the technologies necessary for a cleaner environment.”).

²⁵ GOKLANY, *supra* note 20, at 89.

²⁶ See Bruce Yandle, Maya Vijayaraghavan & Madhusudan Bhattarai, *The Environmental Kuznets Curve: A Primer*, PERC RESEARCH STUDY 02-01 (May 2002); see also Richard L. Stroup, ECO-NOMICS: WHAT EVERYONE SHOULD KNOW ABOUT ECONOMICS AND THE ENVIRONMENT 13-14 (2003) (summarizing research finding that willingness-to-pay for environmental protection increases with income); Jason Scott Johnston, *On the Market for Ecosystem Control*, 21 VA. ENVTL. L.J. 129, 146 (2002) (“There is abundant evidence that the demand for outdoor recreation and environmental amenities increases with national income.”); Richard L. Stroup & Roger E. Meiners, *Introduction: The Toxic Liability Problem: Why Is It Too Large?*, in CUTTING GREEN TAPE: TOXIC POLLUTANTS, ENVIRONMENTAL REGULATION AND THE LAW 15 (Richard L. Stroup & Roger E. Meiners eds., 2000) (“Willingness to pay for environmental measures . . . is highly elastic with respect to income.”); Kenneth E. McConnell,

For any given environmental problem, the environmental transition begins with a “period of perception” – a period “during which a substance . . . gains sufficient notoriety to be perceived as a . . . pollutant by the public and, perhaps more importantly, by policymakers.”²⁷ Unless a given environmental problem is recognized as such, there is no reason to expect any institution, public or private, to do much about it. This period of perception is itself facilitated by both changes in social priorities as well as increases in scientific and technical knowledge. While societal affluence and technological capacity are almost certainly interdependent, they both seem to be important elements of the environmental transition.²⁸ In most cases, however, the period of perception will precede the adoption of policies to address a given environmental concern. For many environmental problems, the period of perception began in states and local communities before it occurred at the federal level. As a result, many state and local governments adopted relevant environmental measures before the federal government.

The concept of the environmental transition is important in evaluating state regulatory policy as the transition occurs for different environmental problems at different places and at different times. Certain states will go through a period of perception for particular concerns at different times, due to a wide range of factors, some of which are discussed below. When a state goes through the environmental transition for a particular concern is important for evaluating the influence of federal policy on state

Income and the Demand for Environmental Quality, 2 ENVTL. & DEV. ECON. 383, 385-86 (1997) (reporting on empirical evidence of an environmental Kuznets curve); Matthew E. Kahn & John G. Matusaka, *Demand for Environmental Goods: Evidence from Voting Patterns on California Initiatives*, 40 J.L. & ECON. 137 (1997) (noting that most environmental goods are normal goods for which demand rises with income); Patrick Low, *Trade and the Environment: What Worries the Developing Countries?*, 23 ENVTL. L. 705, 706 (1993) (noting that “the demand for improved environmental quality tends to rise with income.”).

²⁷ GOKLANY, *supra* note 20, at 3.

²⁸ See GOKLANY, *supra* note 20, at 89.

regulatory choices. Where a state's environmental transition precedes federal regulation, the effect of federal action on state policy choices may well be different than when a state goes through the transition after federal regulations are already in place.²⁹

B. Determinants of State Regulation

The rate at which different states adopted environmental protections varied greatly. Some went through their environmental transitions with regard to particular environmental concerns well before others. Some of this pattern of state and local activity may be explained by the increase in economic prosperity, and a resulting increase in the demand for environmental protection. As already noted, it is generally accepted that as people become wealthier, their willingness to pay for environmental protection increases, resulting in an eventual decline in at least some measures of pollution.³⁰ Yet wealth and per capita income are not sufficient in themselves to explain the patterns of state regulation. The variation in state environmental priorities is greater than differences in economic factors alone would indicate. Numerous other factors also play a role.

As a state's population grows, many environmental impacts will increase. The pressure to develop previously undeveloped land will rise; there will be more vehicles on the road; demand for energy production will increase, and so on. Therefore, population growth (and other measures of development) could well correlate with a demand for increased environmental protection.³¹ The

²⁹ In addition, as discussed *infra* Part III, the adoption of federal regulations may themselves influence when a state goes through the environmental transition for a given environmental concern.

³⁰ See *infra* notes ___ and accompanying text.

³¹ This increase in the demand for environmental protection should also be driven, in part, by the increased marginal value of undeveloped land or resources as the supply dwindles. For example, holding all else equal, the marginal value of each acre of undeveloped land in a sparsely populated and largely

amount of land available for development or environmental preservation should have a significant impact on the demand for at least some sorts of environmental protection.

The economic and ecological benefits provided by various environmental resources – “the wealth of nature” – could also contribute to the demand for environmental protection, whether or not they are priced and incorporated into economic markets. Wetlands, for example, provide many ecosystem functions, including water filtration, species habitat, and flood control.³² Insofar as these services have value in a state’s economy, the state government should be more likely to protect wetlands so as to maintain that value. Thus, for example, there may be greater support for coastal protections in a state with industries that rely upon coastal resources, such as fishing or tourism.³³ In a similar fashion, states that receive substantial revenue from hunting and fishing licenses, bird-watching, and the sale of outdoor recreation-related goods and services may support greater land and habitat conservation measures, at least insofar as the benefits of such measures can be captured within the state.

In one sense, efforts to protect a state’s “wealth of nature” will be due to local knowledge about the benefits of local environmental amenities. Environmental knowledge, like economic knowledge, is decentralized.³⁴ Specific knowledge

undeveloped state should be less than the value of an acre in a highly developed state.

³² See generally OFFICE OF TECH. ASSESSMENT, *WETLANDS: THEIR USE AND REGULATION* 37-60 (1984).

³³ Likewise, a state in which coastal tourism industries predominate is likely to have different priorities within the realm of coastal protection than a state in which fishing or other coastal-related industries are more dominant.

³⁴ See, e.g., John Dwyer, *The Practice of Federalism under the Clean Air Act*, 54 MD. L. REV. 1183, 1218 (1995) (noting that “the knowledge necessary to administer any air pollution control program . . . can be found only at the local level.”). This observation is based on the insights of Nobel Laureate economist F.A. Hayek, who observed “[t]he knowledge of the circumstances of which we must make use never exists in concentrated or integrated form but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess.” F. A. Hayek, *The Use of Knowledge in*

about local ecological conditions – threats, problems, and solutions – is more likely to be found at the local level than in a centralized regulatory bureaucracy.³⁵ Due to the decentralized nature of knowledge, one might expect that environmental protections would be adopted first in those areas where local knowledge about the need for such protection is the greatest. A state in which there is substantial knowledge about the ecological benefits of wetlands – and the costs and extent of wetland losses – may be more likely to regulate than a state in which such knowledge is relatively lacking. This knowledge could be measured by economic data that measure the value of wetlands to a state’s economy.

Even apart from wealth and economic effects, environmental causes are clearly more popular in some states than in others. For whatever reason, the political culture of some states is more hospitable to the adoption of environmental regulations than others. While this may correlate with other variables, such as income, wealth, education, and the like, there is evidence that state environmental policies are in part a function of the environmental attitudes of state citizens.³⁶

State environmental policy preferences can be measured in various ways. For instance, the League of Conservation Voters, a prominent national environmental organization, publishes an annual vote rating for members of the U.S. Senate and the U.S. House of Representatives. LCV ratings appear to correlate with

Society, 35 AMER. ECON. REV. 519, 519-20 (1945). For more on the “knowledge problem” in environmental policy, see Jonathan H. Adler, *Letting Fifty Flowers Bloom: Using Federalism to Spur Environmental Innovation*, in THE JURISDYNAMICS OF ENVIRONMENTAL PROTECTION: CHANGE AND THE PRAGMATIC VOICE IN ENVIRONMENTAL LAW 265-66 (Jim Chen ed., 2004).

³⁵ HENRY N. BUTLER & JONATHAN R. MACEY, USING FEDERALISM TO IMPROVE ENVIRONMENTAL POLICY 27 (1996) (“Federal regulators never have been and never will be able to acquire and assimilate the enormous amount of information necessary to make optimal regulatory judgments that reflect the technical requirements of particular locations and pollution sources.”).

³⁶ See TESKE, *supra* note 9, at 169 (citing Matthew Potosky, *Clean Air Federalism: Do States Race to the Bottom?*, 61 PUBLIC ADMIN. REV. 335 (2001)).

political preference for environmental regulatory policies.³⁷ These ratings vary from state to state, and do not appear to be explained solely by economic factors.³⁸ Another measure of support for state support for environmental measures more generally could be membership or contributions to state-level environmental organizations.³⁹

There are several other independent political variables that could influence the likelihood that a given state will adopt measures to protect wetlands. Some state governments may be more “activist” or “professional” than others. It is possible that states with larger state governments, measured by budget or personnel, would be more likely to adopt environmental regulations than states with smaller, less active governments.

³⁷ See TESKE, *supra* note 9, at 191.

³⁸ See Richard J. Lazarus, *A Different Kind of “Republican Moment” in Environmental Law*, in *THE JURISDYNAMICS OF ENVIRONMENTAL PROTECTION: CHANGE AND THE PRAGMATIC VOICE IN ENVIRONMENTAL LAW* 369, 374-380 (Jim Chen ed., 2003). There are some potential problems with the use of LCV vote ratings to measure the environmental nature of a given state’s politics. First, some would argue that the LCV vote ratings are politicized, if not somewhat partisan. In this critique, the LCV vote ratings do not measure whether a given politician is “pro-environment” so much as whether he or she votes in line with Washington, D.C.-based environmental organizations and that such organizations have institutional or political interests which may conflict with some environmental goals.

Inssofar as such groups do not maintain a monopoly on what policy positions are “pro-environment,” a politician could receive a lower vote rating despite his or her attentiveness to environmental concerns. At the same time, because environmental issues may differ at the state and federal level, a “pro-environment” vote rating in Congress may not correlate with attentiveness to environmental concerns in a given state. It may be that in a given state, environmental issues addressed by state and local governments are more important to voters than environmental issues typically addressed by the federal government, or vice versa. It is not altogether clear that state concern for local environmental problems would necessarily translate into support for politicians that are supportive of measures to address national, or even international, environmental problems. Nonetheless, LCV ratings are almost certainly measuring a factor that influences state regulatory choices, even if only the political influence of mainstream environmental interest groups.

³⁹ See TESKE, *supra* note 9 at 186.

Among other things, this could reflect the political culture of the state, as some states will be more receptive to government regulation of any sort than others. In the political science literature, measures of the “professionalism” of state government often correlate with the willingness to adopt regulatory measures.⁴⁰ Some states may also be more ideologically predisposed to support the creation of regulatory programs. Therefore which party controls the statehouse or various policy positions could also affect state regulatory policy choices.⁴¹

State regulatory choices are also influenced by the actions of other states. The “race to the bottom” theory posits that states will be discouraged from adopting the optimal level of environmental protections due to interjurisdictional competition with other states.⁴² The theory is that states seeking to encourage economic investment and industrial development will be locked into a “race” to lower existing environmental standards (or fail to adopt optimal measures) in an effort to attract investment, and that any resulting economic gains will fail to offset the welfare losses from suboptimally lax environmental regulations.⁴³ Though possible, empirical evidence demonstrating a race to the bottom in

⁴⁰ See TESKE, *supra* note 9, at 187-88; Chris Mooney, *Measuring U.S. State Legislative Professionalism: An evaluation of Five Indices*, 26 STATE & LOCAL GOV'T REV. 70 (1994).

⁴¹ See TESKE, *supra* note 9, at 181-82 (finding correlation between party control of legislature and state regulatory activity).

⁴² See Richard B. Stewart, *Pyramids of Sacrifice?: Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1212 (1977); see also CLIFFORD RECTHSCHAFFEN & DAVID L. MARKELL, REINVENTING ENVIRONMENTAL ENFORCEMENT & THE STATE/FEDERAL RELATIONSHIP 22–25 (2003) (the race-to-the-bottom theory is the “central underpinning” of federal environmental regulation); WILLIAM A. FISCHER, THE HOME VOTER HYPOTHESIS 162 (2001) (noting “a widespread belief that competition among jurisdictions poses a danger of a mutually destructive ‘race to the bottom.’”).

⁴³ See *id.*; see also Engel *supra* note 6; Swire *supra* note 6; Esty, *supra* note 5, at 628.

environmental policy is generally lacking.⁴⁴ There is evidence that state policy makers consider the impact of environmental regulations on their states' economic competitiveness.⁴⁵ Nonetheless, most empirical studies have failed to find any evidence that such pressures result in a systematic lowering of state-level environmental measures.⁴⁶

Whether or not there is a “race to the bottom” in environmental policy, the existence of interjurisdictional spillovers may discourage states from adopting some environmental protections.⁴⁷ Where states are able to extraterritorialize the environmental effects of their own industrial growth, they will be less likely to adopt environmental controls. An upwind state may adopt air pollution control measures to protect its own citizens – who vote and pay taxes within the state – but is highly unlikely to adopt environmental measures designed to protect citizens of downwind jurisdictions. At the same time, the downwind jurisdiction may be less likely to adopt environmental measures if such measures will be relatively unable to control environmental problems that are largely due to activities in upwind jurisdictions.

States can also be encouraged to adopt greater levels of environmental protection by the actions of their neighbors. Insofar as one state is successful at addressing a given environmental problem in a cost-effective manner, other states become more

⁴⁴ See, e.g., Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the ‘Race to the Bottom’ Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992); see also Adler, *Jurisdictional Mismatch*, *supra* note 10, at 151-154.

⁴⁵ Engel, *supra* note 6.

⁴⁶ Several economic studies have failed to find empirical evidence of any race to the bottom in environmental policy. See, e.g., Daniel L. Millimet & John A. List, *A Natural Experiment on the ‘Race to the Bottom’ Hypothesis: Testing for Stochastic Dominance in Temporal Pollution Trends*, 65 OXFORD BULL. OF ECON. & STAT. 395 (2003); Daniel L. Millimet, *Assessing the Empirical Impact of Environmental Federalism*, 43 J. OF REGIONAL SCI. 711 (2003); John A. List & Shelby Gerking, *Regulatory Federalism and Environmental Protection in the United States*, 40 J. OF REGIONAL SCI. 453 (2000); see also Oates, *supra* note 5, at 11-17.

⁴⁷ See Adler, *Jurisdictional Mismatch*, *supra* note 10.

likely to follow suit as they learn from competing jurisdictions. This hypothesis has some empirical support in studies showing that state decisions to adopt specific regulatory measures are influenced by the decision of neighboring jurisdictions to adopt similar measures.⁴⁸ These studies find stronger evidence for this positive “contagion” effect than for a negative “race to the bottom.”⁴⁹

Just as state policy makers can be influenced by policy decisions and environmental conditions in other states, state policy makers can be influenced by the federal government. Federal regulatory decisions undoubtedly affect state environmental policy choices. At the extreme, some commentators suggest that state regulatory choices are heavily influenced, if not effectively dictated by, federal policy.⁵⁰ Well short of this extreme, it is possible that the federal government still exercises a substantial influence on state regulatory decision-making, intentionally or not. Whereas some federal policies directly seek to influence or preclude certain state policies, others may influence the relative costs and benefits of state policies, thereby encouraging or discouraging state regulatory action. Unlike many of the other factors driving environmental policy decisions at the state level, these effects have been relatively unexplored.

II. DIRECT FEDERAL INFLUENCE ON STATE POLICY CHOICES

⁴⁸ See Oates, *supra* note 5, at 15 (“States appear to be ‘pulled’ to higher levels of abatement spending by more stringent measures in neighboring states, but relatively lax regulations nearby appear to have no effect on such expenditures”); TESKE, *supra* note 9, at 180-81 (finding states are more likely to increase, rather than decrease, air quality regulation in response to actions taken in neighboring states, and concluding that “the race to the bottom is not a factor here”); *id.* at 191-92 (finding same pattern in groundwater regulation).

⁴⁹ *Id.*

⁵⁰ See, e.g., John P. Dwyer, *The Role of State Law in an Era of Preemption: Lessons from Environmental Regulation*, 60 L. & CONTEMP. PROB. 203, 203 (1997) (“For the most part, states are not genuinely autonomous regulators; they exercise regulatory authority only by congressional grace.”).

Federal policy decisions can have both direct and indirect effects on state regulatory choices. Their effects may also be either positive or negative, both in terms of the quantity and quality of state regulation. The potential of both positive and negative effects weakens a common presumption that federal environmental measures will be welfare-enhancing. It is possible that in some states the aggregate level of environmental protection could be lower than it would otherwise be due to the existence of federal regulations that discourage state environmental protection measures.

The most direct way for the federal government to influence state environmental policy decisions would be to dictate state policies from Washington, D.C. While this approach was considered by the U.S. Environmental Protection Agency,⁵¹ and mulled over by academics,⁵² it is clearly unconstitutional under current Supreme Court precedent. State governments remain “sovereign” under the doctrine of “dual sovereignty,”⁵³ and therefore cannot be commandeered by the federal government. Whether to ensure sufficient disposal capacity for low-level radioactive waste⁵⁴ or remedy lead contamination in drinking water,⁵⁵ the federal government cannot require state governments to adopt desired policy measures. Articulated by the Supreme

⁵¹ See, e.g., *Brown v. EPA*, 521 F.2d 827 (9th Cir. 1975), *vacated*, 431 U.S. 99 (1977); *Maryland v. EPA*, 530 F.2d 215 (4th Cir. 1975), *vacated sub nom. EPA v. Brown*, 431 U.S. 99 (1977); *District of Columbia v. Train*, 521 F.2d 971 (D.C. Cir. 1975), *vacated sub nom. EPA v. Brown*, 431 U.S. 99 (1977). This litigation is summarized in Adler, *Judicial Federalism*, *supra* note 10, at 423.

⁵² See, e.g., Richard Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 *YALE L.J.* 1196 (1976-77).

⁵³ *Gregory v. Ashcroft*, 501 U.S. 452, 457 (1991).

⁵⁴ *New York v. United States*, 505 U.S. 144 (1992) (holding portions of the Low-Level Radioactive Waste Policy Act Amendments unconstitutionally commandeer state governments).

⁵⁵ *Association of Community Organizations for Reform Now (ACORN) v. Edwards*, 81 F.3d 1387 (5th Cir. 1996) (invalidating portions of the Lead Contamination Control Act).

Court in clear and unequivocal terms, this anti-commandeering principle admits no exceptions.⁵⁶

Despite the prohibition on federal commandeering of state governments, the federal government retains substantial ability to influence state policy-making. The powers enumerated in Article I of the Constitution provide abundant means of encouraging state and local governments to act in accordance with federal preferences. If the federal government seeks to prevent states from regulating in a given field, it may preclude states from acting. Such preemption should, in principle, be authorized by Congress, though federal agency actions can also have preclusive effect. Under the Supremacy Clause, the federal government has the largely unchallenged authority to preempt contrary state laws through the exercise of Congress’s enumerated powers. Preemption is used to reduce the amount of state regulatory activity.⁵⁷

⁵⁶ See *Printz*, 521 U.S. at 935 (“no case-by-case weighing of the burdens or benefits is necessary; such commands are fundamentally incompatible with our constitutional system of dual sovereignty”). There is language in *Printz* that suggests purely ministerial requirements *might* be exempt from the anti-commandeering rule, but the federal courts have not, as yet, found an attempted commandeering that was sufficiently immaterial to warrant an exception. This may be due, in part, to the fact that relatively few statutes, environmental or otherwise, commandeer state governments. There are a few such statutes in the environmental context, but these statutes have never been challenged in court. As these statutes impose minimal requirements on state governments, and the relevant programs are already in place, it is unlikely that these statutes will be challenged in the future. See Adler, *Judicial Federalism*, *supra* note 10 at 423 - 430.

Where federal courts have excused commandeering of state agencies in the environmental context, it has been by denying that commandeering is taking place. The court’s order in *Strahan v. Coxe* arguably commandeered state officials under the federal Endangered Species Act, yet the First Circuit denied this was the case. See *Strahan v. Coxe*, 127 F.3d 155 (1st Cir. 1997); Adler, *Judicial Federalism*, *supra* note 10, at 429-30

⁵⁷ “Regulatory activity” here should be understood to include legislation and agency regulations, as well as judicial decrees that have a forward-looking regulatory effect, including tort judgments that create de facto standards for product safety or professional conduct.

If the federal government seeks to encourage greater regulatory activity by state governments, it may offer various inducements. These inducements may be positive (carrots) or negative (sticks). The most straightforward way to encourage state activity is to offer financial support for state programs that meet federal requirements or to otherwise confer benefits on compliant state governments. In some cases more punitive measures may be required, such as the threat to preempt regulatory activity by noncompliant states or reduce funding from unrelated programs. In practice, the federal government often resorts to some combination of these measures to encourage the desired level of state regulation. The ways in which federal policy may influence state regulatory decisions directly are illustrated in Figure 1a and discussed in greater detail below.

Figure 1a
Federal Influence on State Regulatory Activity

	<u>Direct</u>	<u>Indirect</u>
More State Regulation ("positive")	Commandeering Inducement	
Less State Regulation ("negative")	Preemption	

A. *Preemption*

Where Congress adopts a law pursuant to its enumerated powers, it preempts conflicting state laws. Federal preemption comes in two forms, express and implied. Express preemption is straightforward. Where Congress, or a federal agency, explicitly preempts state laws on a given subject, states are barred from adopting and enforcing their own regulations.⁵⁸ Yet Congress need

⁵⁸ See *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Development Comm'n*, 461 U.S. 190 (1983) ("It is well established that within

not be so explicit for courts to find preemption. Preemption may be implied either “where the scheme of federal regulation is so persuasive as to make reasonable the inference that Congress left no room for the states to supplement it,”⁵⁹ so-called “field preemption,” or where state and federal law conflict or compliance with state law would obstruct, if not preclude, compliance with federal law, so-called “conflict preemption.”⁶⁰

Although courts may find federal preemption where Congress has not made its intent to preempt state law explicit, such judgments are not to be made lightly.⁶¹ Generally, there is a presumption against finding preemption.⁶² Explicit statutory language easily overcomes this presumption, as does a clear conflict between state and federal law. If federal law is supreme, it will not yield to conflicting state enactments. In other cases, the presumption will be overcome where there are indicia of Congressional intent suggesting that the federal government did not intend to allow state interference in a given area or field. In such cases, and when preemption is inferred from federal agency

Constitutional limits Congress may preempt state authority by so stating in express terms.”).

⁵⁹ *Gade v. Nat’l Solid Waste Mgmt. Ass’n*, 505 U.S. 88, 98 (1992).

⁶⁰ *Id.*

⁶¹ See Richard H. Fallon, *The “Conservative” Paths of the Rehnquist court’s Federalism Decisions*, 69 U. CHI. L. REV. 429 (2002); Michael S. Greve & Jonathan Klick, *Preemption in the Rehnquist Court: A Preliminary Empirical Assessment*, __ SUP. CT. ECON. REV. __ (forthcoming).

⁶² See *Wisc. Public Intervenor v. Mortier*, 501 U.S. 597, 605 (1991) (“When considering preemption, ‘we start with the assumption that the historic police powers of the States were not to be superseded by the Federal Act unless that was the clear and manifest purpose of Congress.’” (quoting *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947))). Although this is the stated presumption, it is not clear how powerfully this presumption is applied in practice. See Caleb Nelson, *Preemption*, 86 VA. L. REV. 225 (2000); Thomas W. Merrill, *Preemption in Environmental Law: Formalism, Federalism Theory, and Default Rules*, available at http://federalismproject.org/preemption/papers/Merrill_Preemption_in_Environmental_Law.pdf.

action, Congressional intent is “the ultimate touchstone” of preemption analysis.⁶³

Preemption operates to prevent state regulatory activity. The net effect of federal preemption is for there to be less regulation than there would have been otherwise.⁶⁴ Federal laws precluding state regulation of automobile or oil tanker design mean that manufacturers need only comply with one regulatory standard. Federal regulations in such cases serve as a regulatory “floor” and a regulatory “ceiling” at the same time. In other cases, preemption may serve to ensure that there is no regulation of a given type or governing particular subject matter, as where federal law precludes states from adopting particular rules, but the federal government does not adopt rules of its own.⁶⁵ Where implied preemption is found, this will typically preclude any state or local regulation whatsoever.⁶⁶ Where Congress explicitly preempts state regulation, however, the scope of the preemption usually will be limited to the extent provided for in the statutory text.

⁶³ *Medtronic v. Lohr*, 518 U.S. 470, 485 (1996); *see also CSX Transp. V. Easterwood*, 507 U.S. 658, 664 (1993) (courts should “focus on the plain wording of the clause, which necessarily contains the best evidence of Congress’ preemptive intent”).

⁶⁴ In some cases the purpose of federal preemption is to replace one type of regulation with another. This still results in less regulation than if the federal regulation was adopted *in addition to* the state regulation. The effects of preemption across states may not be uniform, however. A federal statute that imposes a federal standard when only a handful of states have regulated will increase regulation in some jurisdictions at the same time that it reduces regulation by preempting preexisting rules elsewhere.

⁶⁵ The most obvious example, albeit a case of constitutional rather than statutory preemption, occurs under the “dormant commerce clause.” States are precluded from adopting measures that discriminate against out-of-state trade not because it is assumed that such regulations will be adopted by Congress. Rather, there is a constitutional presumption against the adoption of such rules by *any* level of government, though Congress does retain the authority to adopt laws limiting the flow of interstate commerce or even delegating authority to the states to adopt such measures themselves. This division of authority “creates obstacles to states’ enacting laws that are more protective of the environment.” RICHARD J. LAZARUS, *THE MAKING OF ENVIRONMENTAL LAW* 38 (2004).

⁶⁶ *See Weiland, supra* note 11 at 258 -59.

Given that preemption operates to reduce aggregate regulatory burdens,⁶⁷ it should be no surprise that federal preemption of state environmental regulatory standards is often sought by business interests seeking to establish regulatory uniformity, a “ceiling” on regulatory stringency, or both.⁶⁸ Federal preemption of state automotive emission regulations, for example, resulted from lobbying by U.S. automakers fearing the potential for different emissions standards to be adopted in different states – and believing that federal standards would be less stringent than those developed in the states.⁶⁹ This is not to say that there are not sometimes economic justifications for preempting variable state standards with a single federal standard, only to note that this pressure for federalization often comes from industry rather than from environmentalist interests.

The mere adoption of a federal regulatory standard that operates as a regulatory “floor” does not necessarily preempt state regulation as a legal matter (though it may well have that practical effect). For example, a federal regulation imposing emission limitations on an industrial facility will not necessarily preempt a less stringent or differently structured state regulation governing emissions from the same facility. As a practical matter, regulated facilities will focus on compliance with the more stringent federal

⁶⁷ See TESKE, *supra* note 9, at 15 (noting federal preemption has often been “designed to facilitate greater total *deregulation*” (emphasis in original)).

⁶⁸ See Weiland, *supra* note 11, at 242 (“By creating a ceiling, environmental laws may allow the private sector to operate within a predictable and uniform environment”). Similar arguments have been used to support federal preemption of state regulations and tort suits in other areas as well. See, e.g., Caroline E. Mayer, *Rules Would Limit Lawsuits*, WASH. POST, Feb. 16, 2006 at D01 (preemption by Consumer Product Safety Commission); Gary Young, *FDA Strategy Would Preempt Tort Suits*, NAT’L L.J., Mar. 1, 2004 (preemption by food & Drug Administration).

⁶⁹ See E. Donald Elliott et al., *Toward a Theory of Statutory Evolution: The Federalization of Environmental Law*, 1 J.L. ECON. & ORG. 313 (1985). For other examples of this phenomenon, see ENVIRONMENTAL POLITICS: PUBLIC COSTS, PRIVATE REWARDS (Michael S. Greve & Fred L. Smith, Jr. eds. 1992); POLITICAL ENVIRONMENTALISM: GOING BEHIND THE GREEN CURTAIN (Terry L. Anderson, ed. 2000).

standard and may ignore the duplicative state requirement (or vice-versa). Nonetheless, the existence of the federal standard would not necessarily absolve the regulated facility from simultaneous compliance with the state’s regulation, particularly insofar as the state regulation imposes independent reporting or enforcement provisions or uses an alternative means of determining compliance.⁷⁰ There is no conflict as it is possible to comply with both rules; by meeting the more stringent regulation a facility would also comply with the less stringent regulation. If permits are required from both federal and state agencies for facility operation, then both permits are required even if compliance with one should make compliance with the other a foregone conclusion, unless the less stringent standards are explicitly or otherwise preempted by the federal regulation.⁷¹

Preemption is common in environmental law, particularly concerning the regulation of products that are manufactured for sale in interstate commerce.⁷² For example, section 209(b) of the Clean Air Act prohibits states from adopting “any standard relating to the control of emissions from new motor vehicles.”⁷³ The Energy Policy Conservation Act preempts any state regulation of

⁷⁰ Levels of stringency are not the only way in which federal and state standards could differ. For example, it would be possible for the federal government to impose a technology standard on a given facility while the state government could impose an explicit emission limit, or vice-versa.

⁷¹ See, e.g., 42 U.S.C. § 7416 (preempting state enforcement of emission standards less stringent than existing federal standards).

⁷² Ann Carlson, *Federalism, Preemption and Greenhouse Gas Emissions*, 37 U.C. DAVIS L. REV. 281, 306 (2003) (“environmental regulation – in which both the states and the federal government play an active role – frequently raises preemption questions”).

⁷³ 42 U.S.C. § 7543(a). There are exceptions to this rule. The EPA may waive preemption of emission standards adopted by California, subject to certain conditions. 42 U.S.C. § 7543(b). Where the EPA has approved a waiver for California, other states may adopt the California rule. In all cases, however, the other 49 states may not adopt a “third” standard. The Clean Air Act contains similar provisions governing standards for gasoline. 42 U.S.C. § 211(c)(4).

automotive fuel economy.⁷⁴ Other preemption provisions can be found in the Federal Insecticide, Fungicide, and Rodenticide Act,⁷⁵ and the Toxic Substances Control Act,⁷⁶ among other statutes. In *United States v. Locke*, the Supreme Court found Washington State’s laws governing the prevention of spills from oil tankers to be preempted by relevant federal laws.⁷⁷ Federal environmental laws have also been found to preempt the federal common law of interstate nuisance.⁷⁸

B. Inducement

Whereas the federal government has broad authority to preclude state regulation, its power to induce state regulation is more proscribed. State sovereignty precludes the federal government from dictating state regulatory initiatives. Such “commandeering” of legislative or executive functions violates the residual sovereignty of state governments and is not a “necessary and proper” exercise of federal power.⁷⁹ This constitutional prohibition hardly leaves the federal government without substantial ability to prompt state regulatory efforts. As the Supreme Court noted in *New York v. United States*, there are “a variety of methods, short of outright coercion, by which Congress may urge a State to adopt a legislative program consistent with

⁷⁴ 49 U.S.C. § 32919(a). Unlike with emission standards, there is no conditional exemption for California.

⁷⁵ 7 U.S.C. § 136v(b). There has been a significant amount of litigation about the scope of preemption under this provision, in part because FIFRA also contains a savings clause at 7 U.S.C. § 136v(a). See generally Alexandra B. Klass, *Pesticides, Children’s Health Policy, and Common Law Tort Claims*, 7 MINN. J. L. SCIENCE & TECH. 89 (2005).

⁷⁶ 15 U.S.C. § 2617.

⁷⁷ 529 U.S. 89 (2000) (finding preemption under the Port and Waterways Safety Act of 1972).

⁷⁸ See *City of Milwaukee v. Illinois*, 451 U.S. 304 (1981). See also Robert Percival, *The Clean Water Act and the Demise of the Federal Common Law of Interstate Nuisance*, 55 ALA. L. REV. 717 (2004).

⁷⁹ See *Printz v. United States*, 521 U.S. 898 (1997).

federal interests.”⁸⁰ Congress can encourage “cooperative” regulatory efforts by offering states financial and other resources to implement regulatory programs in conformity with federal requirements. Where such rewards are insufficient, Congress may impose various penalties on noncompliant states, threatening to cut off funds unrelated to the regulatory program at issue or to preempt state regulatory programs that do not meet federal dictates.

The federal government’s power to induce state cooperation is on display throughout the environmental portions of the U.S. Code. While current federal environmental laws grant expansive regulatory authority to federal agencies, most environmental statutes are implemented through a “cooperative federalism” model.⁸¹ The federal government outlines the contours of a given regulatory program, and states are encouraged to implement the program in accordance with federal regulations with a combination of carrots and sticks.⁸² The carrots include funding for state regulatory programs. The sticks include the threat of federal preemption – specifically, if states refuse to regulate as the federal government demands, the federal government may regulate in their place – and, in some instances, the loss of federal funding not directly related to the implementation of environmental regulations. Provided the relevant standards are met, states are free to tailor the details of

⁸⁰ *New York v. United States*, 505 U.S. 144, 167 (1992).

⁸¹ *New York*, 505 U.S. at 167 (1992) (“where Congress has the authority to regulate private activity under the Commerce Clause, we have recognized Congress’ power to offer States the choice of regulating that activity according to federal standards or having state law pre-empted by federal regulation. . . . This arrangement . . . has been termed cooperative federalism.” (internal citations and quotations omitted)). Statutes that employ the cooperative federalism model include the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, portions of the Safe Drinking Water Act, and the Surface Mining Control and Reclamation Act.

⁸² See John Dwyer, *The Practice of Federalism under the Clean Air Act*, 54 MD. L. REV. 1183, 1184 (1995). See also DENISE SCHEBERLE, *FEDERALISM AND ENVIRONMENTAL POLICY: TRUST AND THE POLITICS OF IMPLEMENTATION* (1997).

their individual programs to accommodate local conditions and concerns.⁸³

The strongest inducements for state cooperation are probably found in the Clean Air Act.⁸⁴ Under the CAA, the Environmental Protection Agency (EPA) sets National Ambient Air Quality Standards (NAAQS) for criteria air pollutants, such as ozone (“smog”) and particulate matter (“soot”). States with metropolitan areas that fail to attain NAAQS are required to draft State Implementation Plans (SIPs), including a wide-range of federally mandated pollution control measures, which states then submit to the EPA for its approval.⁸⁵ Failure to submit an adequate SIP by the appropriate deadlines can result in the imposition of one or more federal sanctions, including the loss of federal highway funds, increased offset requirements for new development, and the imposition of a Federal Implementation Plan (FIP) that the EPA will enforce.⁸⁶ In addition, local transportation projects cannot receive federal funding unless they conform to an EPA-approved SIP.⁸⁷

Federal inducement does not guarantee that states will adopt measures that satisfy federal policy makers. It does, however, adjust the relative costs and benefits (economic and

⁸³ Adam Babich, *Our Federalism, Our Hazardous Waste, and Our Good Fortune*, 54 MD. L. REV. 1516, 1534 (1995) (“The essence of cooperative federalism is that states take primary responsibility for implementing federal standards, while retaining the freedom to apply their own, more stringent standards.”). A notable exception is the case of product standards. As a general matter, federal product standards, such as vehicle emission standards, tend to preempt more stringent state standards. *See, e.g.*, 42 U.S.C. § 7543(a) (preemption of state automobile emission standards); 42 U.S.C. § 7545(c)(4)(A) (preemption of state fuel standards).

⁸⁴ 42 U.S.C. §§ 7401-7661f.

⁸⁵ 42 U.S.C. § 7410.

⁸⁶ 42 U.S.C. § 7509. It should be noted that the imposition of such sanctions is not solely, or even primarily, within the EPA’s discretion, as individual citizens and activist groups may force the EPA’s hands through citizen suits seeking to enforce the express requirements of the CAA and regulations promulgated pursuant to it. *See* 42 U.S.C. § 7604.

⁸⁷ 42 U.S.C. § 7506.

otherwise) of regulatory choices. If states decide that the costs of following federal preferences are greater than the value of the incentives offered (or if the costs are greater than bearing the punitive sanction threatened), they may not follow federal wishes. Indeed, in the 1970s when the EPA claimed the authority to commandeer state officials directly, some government officials still balked.⁸⁸ States retain the ability to reject federal requirements under the Act, yet some would argue that this combination of inducements virtually assures state cooperation.⁸⁹

III. INDIRECT FEDERAL INFLUENCE ON STATE POLICY CHOICES

Federal policies that directly influence state regulatory decisions are only half of the picture. Just as the federal action may encourage or discourage state regulatory action directly, federal action may indirectly, or even incidentally, encourage or discourage state regulatory action. Federal policies will facilitate greater state regulation where such actions reduce the costs of state implementation, such as by subsidizing necessary research, or where federal policies increase the demand for given regulatory policies at the state level so as to alter or “set” state policy agendas. Federal policies will discourage state regulatory action where they “signal” that state regulatory action is excessive or unnecessary or where they reduce the marginal benefits of adopting state regulatory programs – benefits either to the general welfare, those interest groups demanding state regulatory activity, or to the policymakers responsible for adopting the relevant policies.⁹⁰

⁸⁸ See Stewart, *supra* note 42, at 1204 (“State and local officials refused to enforce many of the [EPA]’s unpopular controls.”); see also *supra* note ____, and cases cited therein.

⁸⁹ This author has argued elsewhere that, while the CAA’s inducement scheme is effective, it is may be unconstitutional. See Adler, *Judicial Federalism*, *supra* note 10, at 447-52.

⁹⁰ It should be noted that the hypotheses presented in this section are not dependent upon any particular theory about what sorts of interests ultimately drive the policymaking process. The hypotheses are equally compatible with public interest and public choice theories of policy formation.

Such “crowding out” is most likely to occur where federal regulations serve as a substitute for state regulations, though there may be other factors that have a similar effect. Adding in these indirect influences – facilitation, agenda setting, signaling, and crowding out – produces a more complete matrix of the ways in which federal policies influence state regulatory choices (see Figure 1b below).

Figure 1b
Federal Influence on State Regulatory Activity

	<u>Direct</u>	<u>Indirect</u>
More State Regulation (“positive”)	Commandeering Inducement	Agenda Setting Facilitation
Less State Regulation (“negative”)	Preemption	Signaling Crowding Out

A. Positive Indirect Effects

Federal regulation and other policy measures may indirectly *encourage* or facilitate state environmental regulation. Without offering any direct inducements, the federal government may encourage state policy makers to adopt environmental regulations that they would not otherwise enact by affecting the costs and benefits of state regulatory measures, or by increasing the demand for given policies at the state level.

1. Agenda Setting

One way in which federal action may indirectly encourage greater state regulation is taking actions that effect the state-level policy agenda. Specifically, federal action may elevate the salience of particular issues to state policymakers, thereby increasing the demand for regulation or other policy action in a

given state.⁹¹ In this fashion, federal policymakers may engage in “agenda setting” that influences state regulatory policy choices.

Actions by all three branches can have an agenda setting effect. For example, a study by an executive agency or congressional committee may identify a particular health concern may prompt local action to reduce the threat. National debate over a given issue, such as whether to create or reform a new entitlement, may prompt states to act where the federal government does not. Similarly, a judicial decision either requiring the federal government to act, or perhaps finding that the federal government lacks the power to address a given concern, may raise the profile of a given issue and increase the demand for action at the state level.

An area in which federal agenda setting can be observed is indoor air pollution. Indoor air pollution is a serious environmental problem. Indeed, by some accounts, indoor air pollution is greater health concern than outdoor air pollution in all but the most heavily polluted cities.⁹² Yet indoor air pollution is not the sort of problem particularly suited to federal regulation. Insofar as indoor air pollution is a function of building design and local conditions, and does not involve spillovers across property – let alone jurisdictional – boundaries, it is the sort of issue that state and local governments should be able to address.⁹³ State and local governments are in a better position to address indoor air pollution through building codes, real estate transaction disclosure requirements, workplace exposure regulations, and the like. Thus it should be no surprise that there are few federal regulations governing indoor air.

⁹¹ William W. Buzbee, *recognizing the Regulatory Commons: A Theory of Regulatory Gaps*, 89 IOWA L. REV. 1, 55 (2003) (“increased activity and publicity about an issue can over time change stakeholder perceptions and possibly preferences”).

⁹² See GOKLANY, *supra* note 20, at 43 (“indoor air quality, particularly in the home, is a far better indicator of the impact of air pollution on public health” than is outdoor air quality).

⁹³ For a discussion of where federal intervention is, and is not, justified to address environmental concerns, see Adler, *Jurisdictional Mismatch*, *supra* note 10, at 139-157.

This is not to say that the federal government is inactive, however. The EPA has programs to address indoor air pollution, but these programs are, for the most part, designed to increase awareness and understanding about indoor air concerns.⁹⁴ The EPA puts out information, including scientific reports, about radon levels, environmental tobacco smoke, and other indoor air concerns.⁹⁵ These reports both increase the salience of indoor air pollution for state and local policy makers, and therefore may increase the demand for state and local regulatory measures. When the EPA put out a study claiming secondhand smoke is a carcinogen, it did not prompt federal regulation.⁹⁶ Yet numerous local governments cited this study as a basis for local ordinances controlling secondhand smoke.

Certain federal actions, and the lack thereof, have also increased the salience of climate change as an environmental policy concern. Various federal agencies have sponsored research and published reports on the potential impact of anthropogenic emissions of carbon dioxide and other greenhouse gases on climate change.⁹⁷ Such actions, combined with the efforts of international

⁹⁴ See U.S. Environmental Protection Agency, “Air – Indoor Air Quality,” available at <http://www.epa.gov/iaq/>.

⁹⁵ For example, the EPA distributes various publications, posters and other materials on the risks posed by secondhand smoke. See U.S. Environmental Protection Agency, “Indoor Air Quality – Smokefree Homes Program,” available at <http://www.epa.gov/smokefree/publications.html>.

⁹⁶ See U.S. ENVIRONMENTAL PROTECTION AGENCY, RESPIRATORY HEALTH EFFECTS OF PASSIVE SMOKING: LUNG CANCER AND OTHER DISORDERS (1992), available at <http://cfpub2.epa.gov/ncea/cfm/recorddisplay.cfm?deid=2835>. While quite influential, this study has been subject to criticism and challenged in court. See *Flue-Cured Tobacco Coop. Stabilization Corp. v. U.S. EPA*, 4 F. Supp.2d 435, (M.D.N.C. 1998), *vacated on other grounds*, 313 F.3d 852 (4th Cir. 2002).

⁹⁷ See, e.g., NATIONAL ACADEMY OF SCIENCES COMMITTEE ON THE SCIENCE OF CLIMATE CHANGE, CLIMATE CHANGE SCIENCE: AN ANALYSIS OF SOME KEY QUESTIONS (2001); U.S. GLOBAL CHANGE RESEARCH PROGRAM, CLIMATE CHANGE IMPACTS ON THE UNITED STATES: THE POTENTIAL CONSEQUENCES OF CLIMATE VARIABILITY AND CHANGE (2000). See also U.S. Environmental Protection Agency, “Global Warming,” available at

organizations and environmental NGOs, have increased the profile of “global warming.” At the same time, the federal government has not adopted any regulatory policies to control emissions of carbon dioxide and other gases linked to climate change. To the contrary, both Congress and the Executive have, at times, explicitly refused to adopt such measures.⁹⁸

This combination of enhancing climate change’s profile on the public policy agenda and failing to act created an opportunity for states. Over the past decade, numerous states have adopted measures to address climate change concerns.⁹⁹ Most of these measures are exceedingly modest, and few involve direct regulatory controls, but they are more aggressive than those adopted by the federal government. California, however, has sought to adopt prescriptive regulatory controls. In July 2002, California adopted legislation requiring the California Air

<http://yosemite.epa.gov/oar/globalwarming.nsf/content/index.html>; U.S. Department of Energy, “Climate Change,” available at <http://www.energy.gov/environment/climatechange.htm>.

⁹⁸ Congress considered, and rejected, a proposal to control greenhouse gas emissions during the debate over the legislation that would eventually become the 1990 Clean Air Act Amendments. During the Clinton Administration, several environmental organizations petitioned the EPA, claiming the agency was nonetheless required to regulate greenhouse gases under the Clean Air Act. At the time, the EPA declared it had the authority to adopt such regulations, yet it did not take any steps to do so. Subsequently, under the Bush Administration, the EPA revised its legal opinion, concluding that the Clean Air Act did not confer regulatory jurisdiction over greenhouse gas emissions. At the same time, the bush Administration opposed legislative proposals to regulate greenhouse gas emissions. At the time of this writing, litigation efforts to force the EPA to regulate greenhouse gases have been unsuccessful. See *Massachusetts v. EPA*, ___ F.3d ___ (D.C. Cir. 2005).

⁹⁹ See TESKE, *supra* note 9, at 17 (noting several states adopted carbon dioxide standards, while others oppose ratification of the Kyoto Protocol); see also BARRY G. RABE, GREENHOUSE AND STATEHOUSE: THE EVOLVING STATE ROLE IN CLIMATE CHANGE ix (2002) (“The trend is unmistakably towards more states taking an active role in climate change.”); Ann E. Carlson, *Federalism, Preemption, and Greenhouse Gas Emissions*, 37 U.C. DAVIS L. REV. 281, 282 (2003)(noting many states “have quietly begun to fill the void in leadership that some believe exists at the national level”).

Resources Board to “develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles.”¹⁰⁰ These regulations were subsequently finalized in 2004. Even though the federal government has not sought to regulate greenhouse gases, federal actions have almost certainly increased the demand for climate policies at the state level.

2. Facilitation

A second way that federal action may indirectly encourage greater state environmental regulation is by reducing the costs of developing or implementing environmental regulation. Federally funded scientific research, data collection, and information disclosure requirements may reduce the fixed costs of developing, implementing, and enforcing state regulatory programs.

While much of the information required for effective environmental protection is local in nature, much of the relevant scientific knowledge will apply nationwide.¹⁰¹ The weather conditions and topographical features that influence ozone formation will vary from place-to-place, but the underlying chemical reactions will not. Federal research into the relative effectiveness of controls on various ozone precursors can reduce the cost, and increase the effectiveness, of state-level air quality regulation. Were each state required to conduct its own environmental scientific research, there could be much duplication and inefficiency.¹⁰² In addition, there are likely to be scale

¹⁰⁰ A.B. 1493, codified in CAL. HEALTH & SAFETY CODE § 43018.5(a) (2003).

¹⁰¹ NATIONAL RESEARCH COUNCIL, *CONFRONTING THE NATION’S WATER PROBLEMS: THE ROLE OF RESEARCH* 68 (2004) (a federal role “is appropriate in those research areas where the benefits of such research are widely dispersed and do not accrue only to those who fund the research”).

¹⁰² *See Esty, supra* note 5, at 614-15 (“Absent centralized functions, independent state regulators will either duplicate each other’s analytic work or engage in time-consuming and complex negotiations to establish an efficient division of technical labor.”). Of course it is possible that “competition” could improve

economies in the resources and technical expertise required for some forms of scientific research that reinforces the potential for federal efforts to facilitate state-level regulation.

Federal information reporting requirements may also facilitate state regulatory measures. Under the federal Toxics Release Inventory (TRI), for example, industrial firms are required to collect and release information about the amount of toxic “releases” from each facility. The resulting reports provide voluminous information on the nature and extent of industrial chemical use and disposal, and provide figures that serve as a proxy for the extent of industrial pollution. This information undoubtedly serves to increase the demand for regulation of “toxic releases.” At the same time, requiring the collection and publication of this information may reduce the costs of adopting supplemental state regulatory measures. By requiring the creation, collection, and dissemination of extensive data about industrial facilities, federal law may be providing state policymakers with some of the information necessary to craft state-level responses to the same concerns. Moreover, insofar as state policymakers can rely upon industry reports required under federal law, this may reduce the monitoring costs to ensure compliance with related state rules. Even modest federal actions may facilitate significant state-level interventions.

B. Negative Indirect Effects

Just as federal action may indirectly encourage greater state regulatory activity, federal action may *discourage* state regulatory action. This can occur in at least two ways. First, the adoption of a federal regulatory standard may “signal” that more stringent state regulations are unnecessary. In effect, the federal standard may be seen as evidence that a given level of regulatory protection is sufficient to safeguard relevant public interests, and more stringent

scientific research insofar as different entities pursue different research methodologies to address emerging environmental problems.

measures are unnecessary. As a result, the adoption of federal regulation may induce state policymakers to lower comparable state protections. In addition, the adoption of a federal regulation may “crowd out” state regulatory measures by reducing the net benefits provided by additional state measures. As a result, the existence of federal regulation may discourage the adoption of additional state-level regulatory protections in the future.

The potential for federal regulatory measures to reduce the level of state regulatory activity is significant because it challenges the prevailing assumption that the adoption of a federal regulatory standard raises, or at least maintains, the aggregate level of protection nationwide.¹⁰³ Many environmental analysts, for example, suggest that the federal government should adopt a regulatory “floor,” but allow states to implement federal standards and adopt more stringent measures of their own. The general belief is that this will maximize the extent of environmental protection.¹⁰⁴ Yet if the adoption of federal regulatory standard can induce states to adopt less protective environmental measures than they would otherwise have adopted, the net benefits of a federal floor will be less than traditionally assumed, as in some states it will result in a *net reduction* in the aggregate level of environmental protection. Indeed, it is possible that the net result, over time, of a federal regulatory floor could be the maintenance of lower levels of environmental protection than would otherwise have been adopted. Even if such effects are unlikely, federal policymakers should consider these possibilities when assessing the likely costs and benefits of federal action.

¹⁰³ Where federal regulation is preemptive, it may also provide a “ceiling” as well.

¹⁰⁴ See Barry G. Rabe, Mikael Roman, & Arthur N. Dobelis, *State Competition as a Source Driving Climate Change Mitigation*, 14 N.Y.U. ENVTL L.J. 1, 7 (2005) (noting the notion of federal policy as a ‘floor’ protecting certain ‘fundamental values’ still has vitality” in environmental policy debates). It is also assumed that more environmental regulation is more optimal than less regulation. Yet, as a theoretical matter, over-regulation can be just as welfare-reducing as under-regulation. See *infra* ____.

1. Signaling

Just as federal attention to a given environmental concern may increase the demand for state-level action, the adoption of a given federal standard may send a signal that discourages the adoption or maintenance of more protective state regulations. Specifically, the adoption of a given regulatory standard by a federal agency sends a “signal” that the relevant standard is worthwhile.¹⁰⁵ Among other reasons for this effect is that federal policymakers, particularly federal agencies, are presumed to have substantial technical expertise. Thus, their actions may convince state policy makers (or their constituents) that additional safeguards are “unnecessary” or that the benefits of more stringent regulatory protections are not worth their costs. The magnitude of this effect is likely to correspond with the magnitude of the difference between the relevant federal and state standards. In this way, federal standards can discourage state policymakers from adopting and maintaining more stringent measures of their own, even where such measures could be justified. As a practical matter, the federal “floor” may become a “ceiling” as well.

This effect is not merely hypothetical. There are numerous examples of state legislation designed to prevent state environmental agencies from adopting regulatory standards that are more stringent than federal rules.¹⁰⁶ Between 1987-1995,

¹⁰⁵ See McNollgast (Mathew D. McCubbins, Roger G. Noll & Barry R. Weingast), *Legislative Intent: The Use of Positive Political Theory in Statutory Interpretation*, 57 LAW & CONTEMP. PROBS. 3, 25 (1994) (noting “an action is informative if it is taken by an informed person who pays a fee, expends effort, or foregoes some valuable alternative activity in order to take the action”). On signaling generally, see JEFFREY S. BANKS, *SIGNALING GAMES IN POLITICAL SCIENCE* (1991).

¹⁰⁶ See Jerome M. Organ, *Limitations on State Agency Authority to Adopt Environmental Standards More Stringent than Federal Standards: Policy Considerations and Interpretive Problems*, 54 MD. L. REV. 1373, 1376-86 (1995); see also Arnold W. Rietze, Jr., *Federalism and the Inspection and Maintenance Program under the Clean Air Act*, 27 PAC. L.J. 1461, 1465 (1996)

nearly 20 states adopted at least one statute limiting the ability of state agencies to adopt regulatory controls more stringent than relevant federal standards.¹⁰⁷ Some states focus on a given environmental concern, while others have general prohibitions against the adoption of any environmental rules more stringent than applicable federal standards.¹⁰⁸ New Mexico and Colorado, for example, have statutes prohibiting the promulgation of air pollution controls more stringent than required by federal law.¹⁰⁹ Virginia law bars state regulatory authorities from requiring greater amounts of water treatment than mandated under the federal Clean Water Act.¹¹⁰ Others state have general prohibitions against agency promulgation of environmental rules more stringent than federal law.¹¹¹

The existence of statutes barring state regulatory agencies from adopting more stringent regulations may be evidence of a greater hostility to environmental protection in some state legislatures than in Washington, D.C. Yet such laws may also be a rational response to the signal created by the adoption of a federal standard at a given level, particularly insofar as state policymakers conclude that their federal counterparts have greater expertise about and understanding of relevant environmental concerns. Information is costly, and the knowledge and expertise necessary to determine whether a given level of protection may tax the resources of state governments. Therefore, deferring to federal policy judgments by responding to the signal of a federal standard may enable state policymakers to economize on information and policy development costs.¹¹²

(noting “movement among state legislature to prohibit more stringent state standards”).

¹⁰⁷ Organ, *supra* note 106, at 1376 n.13.

¹⁰⁸ *Id.* at 1377.

¹⁰⁹ See N.M. STATE ANN. § 74-2-5 (Michie 2000); COLO. REV. STAT. § 25-7-114.2 (2004).

¹¹⁰ See VA CODE ANN. § 62.1-44.15:1 (Michie 2001).

¹¹¹ See, e.g., KY. REV. STAT. ANN. § 12A.120 (2003).

¹¹² See Organ, *supra* note 106, at 1390.

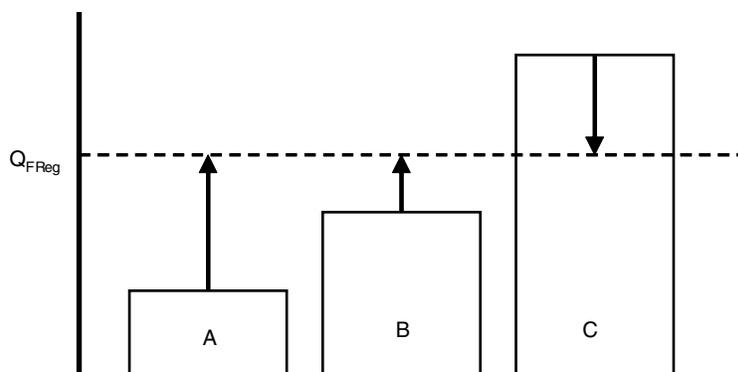
On the other hand, the localized nature of much environmental knowledge and expertise could suggest that signaling may systematically encourage less optimal state-level regulations to the extent federal standards fail to take local needs and variation into account.¹¹³ Some state laws may address this concern, however, as they allow state agencies to adopt more protective measures where local conditions warrant.¹¹⁴

There are several reasons why this signaling effect may be of concern. First, and perhaps most important, the existence of a signaling effect that reduces the level of state regulations below what they would otherwise will reduce the net benefits provided by federal regulations, as illustrated in Figure 2. When the federal government adopts a federal regulatory standard, this will increase the level of regulation in those states that have lower levels of regulation. It will also lower the level of regulation in any state that adopts laws barring the promulgation of regulations more stringent than the federal standard.

¹¹³ See *infra* notes 34-35 and accompanying text.

¹¹⁴ See Organ, *supra* note 106, at 1380 (noting some states bar “an agency from promulgating standards or regulations more stringent than federal law unless unique circumstances justify more stringent regulations”).

Figure 2



The net effect of such signaling is represented in Figure 2 above. States A and B have regulatory standards (Q_{AReg} and Q_{BReg} , respectively) less stringent than the federal standard (Q_{FReg}). State C, on the other hand, has a regulatory standard (Q_{CReg}) greater than the relevant federal standard. Adoption of the federal regulatory standard increases the aggregate level of regulation by a quantity equal to the sum of the difference between the federal standard and the lower state standards ($(Q_{FReg} - Q_{AReg}) + (Q_{FReg} - Q_{BReg})$). The *net* effect of the federal standard may be lower than this, however. If State C adopts a law prohibiting state standards that exceed relevant federal requirements, the aggregate level of regulation will be reduced by the amount to which State C's standard exceeded the federal standard ($Q_{CReg} - Q_{FReg}$). Thus, the net effect of the federal standard will be the extent to which the increase in regulation in States A and B exceeds the reduction in State C ($(Q_{FReg} - Q_{AReg}) + (Q_{FReg} - Q_{BReg}) - (Q_{CReg} - Q_{FReg})$). In the unlikely event that the reduction in regulation in State C *exceeds* the

increase in regulation in States A and B, the adoption of a federal standard could actually result in a *net reduction* in the aggregate level of regulation.

There are other reasons to be concerned about a signaling effect. Insofar as federal standards are not based upon accurate, up-to-date scientific assessments of environmental problems,¹¹⁵ and such information is not available to state and local policymakers, the federal regulation may have an even greater distorting effect on state priorities. Such laws may also serve to shift effective control over environmental priorities from the state to federal level.¹¹⁶ Of course, to the extent federal policymakers are likely to adopt quantitatively or qualitatively superior regulatory standards, the signaling effect may have a positive effect on regulatory policy. There could be additional welfare benefits from a signaling effect to the extent it reduces regulatory variability across states.¹¹⁷

The importance of signaling is not that it necessarily results in less optimal regulation. Rather, the primary importance of the signaling effect is that it is likely to reduce the net benefits provided by the adoption of a federal regulatory standard. Taking this indirect effect of federal regulation on state regulatory choices into account is likely to improve the quality of environmental policymaking.

2. Crowding Out

A second potential negative indirect effect of federal regulation on state regulatory choices is “crowding out.” This occurs because federal regulation may serve as a substitute for state-level regulation, and thereby reduce the benefits of adopting or maintaining state-level protections. Insofar as voters in a given

¹¹⁵ See Adler, *Jurisdictional Mismatch*, *supra* note 10, at ___ (noting inadequate understanding of environmental problems covered by various federal programs).

¹¹⁶ See Organ, *supra* note 106, at 1387.

¹¹⁷ See Adler, *Jurisdictional Mismatch*, *supra* note 10 at ___ (noting potential benefits from economies of scale generated by regulatory uniformity).

state demand a certain level of environmental protection, there is no reason to expect states to duplicate federal efforts insofar as a federal program is satisfying that demand, particularly if a state has not already created such a program. If the federal “floor” is greater than or equal to the level of environmental protection demanded by a state’s residents, there is no reason for a state to adopt environmental regulations of its own once the federal government has acted. Insofar as this effect occurs, it is separate from – perhaps even in addition to – the signaling effect described above.

The claim here is not simply that states regulate less than they would absent federal regulation – although this claim is almost certainly true. Rather, the claim here is that there may be some states that, absent the imposition of federal regulations, would adopt regulations *more protective* than the federal floor, but due to federal regulation, have not done so, and may not do so in the future either. If this hypothesis is correct, then it is possible that, at least in some states, the net effect of federal environmental regulations could be less environmental protection than would have been adopted had the federal government not intervened.

To see how this could occur, consider first that the demand for environmental regulation in any given jurisdiction will tend to increase over time as wealth, technical capability, scientific knowledge, and environmental impacts increase.¹¹⁸ In any given state (as in the nation as a whole), there is an initial period (“Period A”) during which the demand for a given type of environmental protection is relatively low. The costs of adopting environmental regulations in this period are greater than the benefits to be derived from adopting any such protections. These costs include the costs of developing, drafting, and passing legislation, the costs of creating a new policy program, drafting and implementing regulations, defending the regulations from any potential legal or administrative challenges, creating a means to monitor and enforce regulatory compliance, and so on, in addition to the opportunity

¹¹⁸ See *infra* Part I.A.

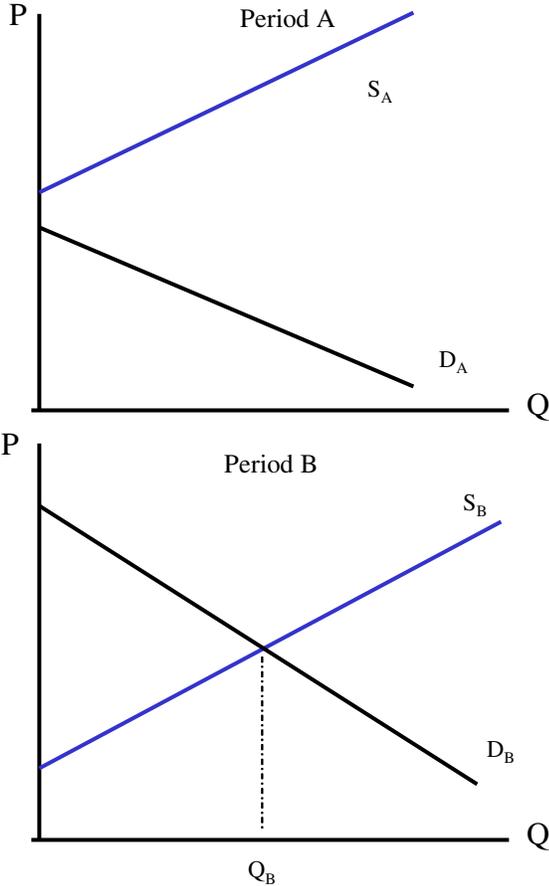
costs of devoting state resources and political capital to the cause of environmental protection as opposed to some other policy goal.

As discussed earlier, the demand for environmental protection has tended to increase over time along with increases in living standards.¹¹⁹ At the same time, increases in technical knowledge and administrative efficiency may also lower the costs of a given regulatory program. Eventually, a state will enter a second period (“Period B”) in which the benefits of a given environmental regulatory program are greater than the costs of initiating, implementing and operating such a program. Absent any federal interference, the hypothetical state will not adopt environmental regulations in Period A, but will adopt such regulations in Period B. (See Figure 3) This is the environmental transition discussed in Part I. In Period A, the demand for environmental protection is insufficient to justify the costs of implementing environmental protection measures. By Period B, however, the demand for environmental protection has risen due to increases in wealth and knowledge, among other factors. At the same time, increases in technical capacity and scientific understanding have reduced the cost of adopting environmental protections. As a result, in Period B a state will adopt Q_B amount of environmental protection.¹²⁰

¹¹⁹ *See infra* Part I.A.

¹²⁰ Environmental protections can be evaluated in both quantitative and qualitative terms. This initial discussion focuses exclusively on the quantity of environmental protection. The effect of qualitative differences in environmental protection are discussed below. *See infra* Part IV.

Figure 3



The timing of Period A and Period B will vary from state to state. This is clearly the case as different states have adopted different environmental regulatory measures at different times – some before the adoption of federal environmental regulation, some after, and some not at all. Looking at the history of various environmental concerns, such as air quality, water quality, or wetlands, it is clear that many states moved from Period A to

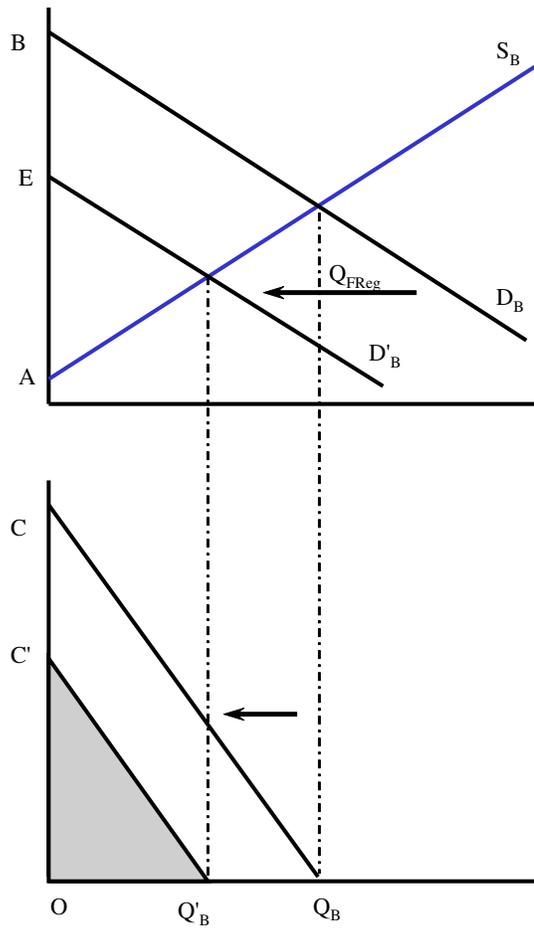
Period B for these environmental concerns at various times prior to the onset of federal regulations in the 1970s. In many other states, however, a federal regulatory floor was adopted *before* the onset of Period B.

For states that went through their environmental transition, prior to the enactment of federal environmental protection, whether the adoption of a federal regulatory floor increased the aggregate level of environmental protection in that state depended upon whether pre-existing state policies offered greater or lesser levels of protection than the relevant federal rules. For states in which the onset of Period B begins *after* the adoption of federal regulations, the enactment of a federal regulatory floor will, at the time of enactment, increase the aggregate level of environmental protection in that state. But this may not be the case over time. In states that develop desire a greater level of protection than that provided by the relevant federal regulations, it is not clear that the existence of the federal regulatory floor will result in an equal or greater level of protection than would be adopted were it not for the federal regulations. This is because federal regulation will, to some extent, act as a substitute for state regulation. As a result, the adoption of federal regulation has the potential to reduce the demand for state regulation and, in some instances, even result in less aggregate regulation in a given state than would have been adopted absent federal intervention. In short, federal regulation can crowd out state regulation.

The potential for such a crowding out effect is illustrated in Figure 4. The existence of federal regulation will reduce the demand for state regulation by an amount equal to the extent to which federal regulation is a substitute for state regulation of the same environmental concern (Q_{FReg}). This substitution effect will reduce the net benefit of adopting state-level environmental regulations from OCQ_B to $OC'Q'_B$. By reducing the net benefits of state-level environmental regulation in this manner, federal regulation has the potential to crowd out state-level environmental protections, even if the quantity of environmental protection demanded in the state is greater than that provided by the federal

government. In such cases, the aggregate level of environmental protection will be lower with federal regulation than it would be without it.

Figure 4



A key assumption in this analysis is that there are significant fixed costs to the adoption of environmental protections (or, for that matter, any regulatory program). In some states, the additional benefits of adopting more stringent regulations on top of

the federal requirements will more than offset the costs of adopting the new program. In these states the fixed costs of creating a program plus the operating costs are less than the expected marginal benefits from the additional margins of regulation. However, it seems likely that there are at least some states in which the aggregate net benefits of regulation at a level more protective than the federal standard are greater than the costs of such regulation absent federal regulation, but that the net benefits of additional regulation above and beyond the federal floor are less than the costs of adopting such additional regulations. In other words, if in a given state the net benefits of adopting state regulations alone (OCQ_B) are greater than the costs of adopting such regulations ($CReg$), but the net benefits of adopting such regulations given federal regulations are already in place ($OC'Q'_B$) are less than $CReg$, then the presence of a federal regulatory floor will produce a lower level of environmental protection than were that floor not to exist.¹²¹

In this latter situation, one would not expect the state to regulate, *even though* the amount of regulation demanded in the given state is greater than that provided by the federal government. While federal regulation creates a floor, raising the regulatory baseline, it does not reduce the fixed costs of policy change. (If anything, it may increase the opportunity costs for state policymakers who devote their political capital to the environmental resource at issue rather than another environmental concern in which the federal government is not active.) Federal regulation does, however, reduce the benefits of state regulation, and may do so significantly.

This theory is based on several premises and observations about the political economy of policymaking. First, environmental regulation, like most forms of regulation or other government action, experience diminishing marginal benefits and increasing marginal costs. That is, the marginal environmental gains from

¹²¹ Put in formulaic terms, for states in which $OCQ_B > CReg$ but $CReg > OC'Q'_B$, the presence of a federal regulatory floor will result in a lower level of environmental protection.

each additional increment of regulation will tend to be less than the gains from the preceding increment. Thus, when the federal government establishes a floor, it has likely displaced those state efforts that would be most cost-beneficial. (This has the effect of shifting the demand curve for state regulation to the left, reducing the net benefits of state regulation.)

Second, the political process imposes substantial transaction costs on the creation of (or elimination of) new government programs, and these costs are relatively fixed such that they do not vary with the size of the program in question. The most obvious example of such transaction costs is the existence of so-called “vetogates” that determined minority interests can use to prevent the adoption of policies that enjoy majority support.¹²² The existence of these “vetogates”¹²³ means that many policy changes must have supermajority support before they are enacted – or at the very least require the expenditure of substantial amounts of political capital by their proponents (as a means of purchasing supermajority support).¹²⁴ The fragmentation of policy-making authority across branches of government adds to the difficulty of adopting new policies. The obstacles also may be particularly large in highly complex policy areas like environmental protection.¹²⁵

¹²² See McNollgast, *supra* note 105, at 11 (observing that because “attempts to pass new legislation typically must navigate through numerous veto gates . . . it is difficult and time-consuming to change most prior legislative bargains.”).

¹²³ William Eskridge defines a “vetogate” as “a place within a process where a statutory proposal can be vetoed or effectively killed.” William N. Eskridge Jr., *Norms, Empiricism, and Canons in Statutory Construction*, 66 U. CHI. L. REV. 671, 677n13 (1999).

¹²⁴ McNollgast, *supra* note 105, at 16 (noting “the basic structure of government establishes several checks on the ability of legislative majorities to enact their will”).

¹²⁵ LAZARUS, *supra* note 65, at 32 (noting the “strong structural bias within our existing lawmaking institutions in favor of government’s acting more slowly and incrementally”). While Lazarus comments are directed at the national government, this same structural bias can be seen in state governments as well.

Third, policymakers are, to some extent, utility maximizers such that, all else equal, they will invest in policies that provide the greatest benefits and lowest costs *to them*.¹²⁶ Insofar as state policymakers “share” responsibility for some environmental concerns with their federal counterparts, it may be difficult for them to secure the benefits of their efforts.¹²⁷ Relatedly, information about the relative activities of the federal and state governments and their relative merits is costly to the average voter where both the state and federal governments are active, so it may be difficult for policymakers to get credit for all of the policies they promote or implement.¹²⁸ This is one reason why some argue that cooperative federalism undermines accountability. When both

¹²⁶ The utility maximized by the policymaker need not be the policymaker’s “self-interest” but could also be the “public interest” that the policymaker seeks to serve. See Nathaniel O. Keohane, Richard L. Revesz, and Robert N. Stavins, *The Choice of Regulatory Instruments in Environmental Policy*, 22 HARV. ENVTL. L. REV. 313, 333 (1998) (observing legislator may derive utility from many different interests). Alternate assumptions do not alter the analysis. Indeed, as Jonathan Macey observes,

over a wide range of issues, the outcomes predicted by the public-interest model will be identical to those predicted by the interest-group model when the political-support-maximizing solution varies widely from jurisdiction to jurisdiction.

Jonathan R. Macey, *Federal Deference to Local Regulators and the Economic Theory of Regulation: Toward a Public-Choice Explanation of Federalism*, 76 VA. L. REV. 265, 284 (1990). See also Andrew P. Morriss, Bruce Yandle, & Andrew Dorchak, *Coosing How to Regulate*, 29 HARV. ENVTL. L. REV. 179, 214-223 (2005) (summarizing various theories of regulation); Daniel A. Farber, *Politics and Procedure in Environmental Law*, 8 J.L. ECON. & ORG. 59, 62-70 (1981) (same)

¹²⁷ See Buzbee, *supra* note 91 at 27 -28 (noting policymakers may view “regulatory opportunity as a commons resource much as fishers would view a shared ocean,” resulting in regulatory inattention).

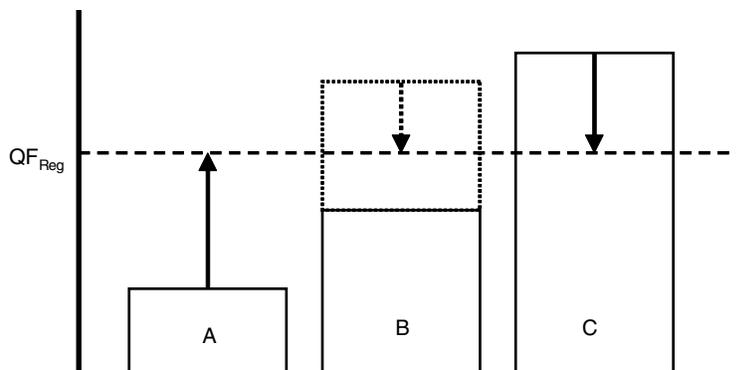
¹²⁸ See Macey, *supra* note 126, at 275 (noting division of authority between federal and state governments can enable Congress to “shift the blame for controversial enactments even more effectively . . . than by deferring to administrative agencies”); Buzbee, *supra* note 91, at 31 (“Where numerous regulators could be blamed for the ill, or sought out for relief, demanders of regulation encounter substantial informational and strategic hurdles confounding attribution decisions”).

the federal government and the states are involved, it is more difficult for a voter to know who to credit or blame for a given policy.¹²⁹ Because it is easier for a state policy maker to get credit for a policy when the state does not compete with the federal government in the provision of that policy goal, all else equal a state policy maker will prefer to legislate where the federal government is less active.

One implication of the crowding out effect is that it is possible that the adoption of a federal regulatory floor may result in lower levels of regulatory protection than had the federal government not entered the field. This potential is illustrated in Figure 5 below. As in Figure 2, which illustrated the signaling effect, States A and B initially have regulatory standards (Q_{AReg} and Q_{BReg} , respectively) less stringent than the federal standard (Q_{FReg}), while State C has a regulatory standard (Q_{CReg}) greater than the relevant federal standard. Here, however, the demand for environmental regulation in each state is not static. Rather, the demand for regulation in State B is increasing over time. Absent federal regulation, State B would eventually adopt a higher level of protection – a level of protection greater than that which would be adopted at the federal level. In this scenario, the adoption of a federal standard not only has the potential to signal to states to reduce their levels of protection. It may also discourage the adoption of ever greater levels of protection in those states that go through their environmental transition after the adoption of the federal standard. This potential opportunity cost of federal regulation is no less important than the more observable effects illustrated in Figure 2.

¹²⁹ See Michael S. Greve, *Against Cooperative Federalism*, 70 MISS. L. REV. 557 (2000); see also Roderick M. Hills, Jr., *The Political Economy of Cooperative Federalism: Why State Autonomy Makes Sense and “Dual Sovereignty” Doesn’t*, 96 MICH. L. REV. 813, 828 (1998) (noting “accountability” argument for anti-commandeering rule, insofar as it is accepted, applies with equal force to “cooperative federalism” arrangements).

Figure 5



When the crowding out effect is combined with the signaling effect discussed above, the likelihood that federal regulation could result in a net decline in the aggregate level of regulatory protection increases. As before, adoption of the federal regulatory standard increases the aggregate level of regulation by quantity equal to the sum of the difference between the federal standard and the lower state standards. The net benefits of the federal standard at any given point in time is this amount ($Q_{FReg} - Q_{AReg}$), less any reduction due to signaling ($Q_{CReg} - Q_{FReg}$), and the extent to which State B would have regulated absent federal action ($Q_{BReg} - Q_{FReg}$). Here the net effect of the federal standard will be the extent to which the increase in regulation in State A varies from the reduction in State C and regulation foregone in State B. Stated as a formula: $(Q_{FReg} - Q_{AReg}) - [(Q_{BReg} - Q_{FReg}) + (Q_{CReg} - Q_{FReg})]$.

Even if the adoption of federal regulation initially increased the aggregate level of regulatory protection, over time the level of

protection may be less than they would otherwise have been. Over time, as more states go through their environmental transitions, the magnitude of this crowding effect could increase, unless federal regulatory standards are able to keep pace. Given the slow rate at which existing federal regulatory programs are reviewed and expanded, however, this would seem to be a questionable assumption.

IV. QUALITATIVE VS. QUANTITATIVE PROTECTION

Up until this point, this paper has discussed environmental protection in a two-dimensional fashion, focusing on *quantitative* changes in regulatory protection. This vastly over simplifies the relevant analysis, as various regulatory programs will vary in both *quantitative* and *qualitative* terms.¹³⁰ Two programs that appear to adopt the same quantitative level of environmental protection, such as the same ambient standard or emission limit, and yet vary quite significantly in cost, effectiveness, equitableness, and other factors. Conversely, two programs that adopt superficially disparate goals may, in fact, offer qualitatively similar environmental protection. For these reasons, any complete analysis must acknowledge that environmental measures vary in both qualitative and quantitative ways.

There are several factors that may cause state-level environmental regulations to be more cost-effective, or otherwise qualitatively superior, than federal regulations of equivalent cost or scope.¹³¹ First, and perhaps most important, state policymakers and regulators may have access to knowledge of local problems

¹³⁰ See Nathaniel O. Keohane, Richard L. Revesz, and Robert N. Stavins, *The Choice of Regulatory Instruments in Environmental Policy*, 22 HARV. ENVTL. L. REV. 313, 313 (1998) (noting design of environmental policy requires determining both the desired level of environmental protection and what policy instruments should be used to achieve the specific environmental goal).

¹³¹ See generally TESKE, *supra* note 9, at 23 (summarizing potential advantages of state regulation).

and conditions.¹³² Consideration of such knowledge in the development and implementation of state regulatory programs may increase the protectiveness of existing programs without increasing their cost or scope. Second, and related, state policymakers, by virtue of the fact that they are closer both to the environmental problems they seek to address and the regulated community may be more responsive to local needs and concerns. Third, insofar as environmental problems vary from place to place, state policymakers may be able to focus state resources on environmental problems that exist in a given state. Federal standards, on the other hand, tend to impose broad one-size-fits-all requirements that, in actuality, often fit no state particularly well.¹³³ A regulatory requirement that makes perfect sense in one state may not provide much environmental protection in another. Fourth, the existence of a federal standard may inhibit the ability of (or incentive for) state policymakers to innovate or experiment with different approaches to meeting a given environmental goal.¹³⁴

There is empirical evidence that, at least in some areas, state regulation may do a better job of addressing local environmental concerns in a cost-effective manner. Several states clean up abandoned hazardous waste sites at lower cost and more rapidly than the federal Superfund program.¹³⁵ Similarly, federal

¹³² See *infra* notes 34-35 and accompanying text.

¹³³ See Dwyer, *supra* note 4, at 222 (“The sheer size of the nation and the dizzying variety of social and environmental conditions and political preferences leave little hope that the central government could efficiently or accurately custom tailor environmental laws for different regions.”).

¹³⁴ On state innovation generally, see ALEXANDER VOLOKH, ET AL., NAT’L ENVTL. POLICY INST. & REASON PUB. POLICY INST., RACE TO THE TOP: THE INNOVATIVE FACE OF STATE ENVIRONMENTAL MANAGEMENT (1998); see also Richard L. Revsez, *Federalism and Environmental Policy: A Public Choice Analysis*, 115 HARV. L. REV. 53, 636 (2001) (“[T]he states, not the federal government, produced the most innovation in pollution control legislation in the 1990s.”).

¹³⁵ See Richard L. Revsez, *Federalism and Environmental Policy: A Public Choice Analysis*, 115 HARV. L. REV. 53, 603 (2001) (noting state leadership in waste site clean up and brownfield redevelopment).

regulations may hinder the adoption of more effective pollution control or resource conservation strategies, and that state policymakers would be more sensitive to such concerns. The federal Clean Air Act requires many states to adopt suboptimal pollution control strategies when equally stringent – but differently targeted – measures would produce greater results.¹³⁶ In the wetlands context, states took the lead in evaluating wetland functions and incorporating the ecological value of particular wetlands into the regulatory process when there was no evidence similar considerations entered the federal permitting process.¹³⁷ In other words, at a given level of stringency, some states were beginning to incorporate ecological consideration so as to maximize the environmental value of regulations on wetland development when the federal government was doing no such thing.

States need not regulate “more” than the federal government to provide greater levels of environmental protection. Better regulation – that is environmental protection measures that are qualitatively different – may be sufficient in some instances to improve the level of environmental protection. Insofar as federal regulation encourages states to adopt a particular approach to environmental protection, or discourages states from adopting programs more suited to specific state conditions, it can reduce aggregate environmental protection. Just as the federal

¹³⁶ See Adler, *Judicial Federalism*, *supra* note 10, at 462-63.

¹³⁷ For instance, as of 1992 ten states were using wetland classification systems to evaluate function and value in the regulatory process. William E. Taylor & Dennis Magee, *Should All Wetlands Be Subject to the Same Regulation?* 7 NAT. RESOURCES & ENV'T. 32, 34 (1992). The development of these sorts of programs is important because “[a]bsent regulatory classification, there is a presumption that all wetlands are of equal significance with respect to functional value, and that no distinctions are necessary in the level of regulation or in designating mitigation requirements.” *Id.* at 32. On the other hand, a review of Corps permitting decisions found no evidence such considerations entered into the regulatory process. See Michael J. Mortimer, *Irregular Regulation Under Section 404 of the Clean Water Act: Is the Congress or the Army Corps of Engineers to Blame?* 13 J. ENV. L. & LITIG. 445 (1998).

government’s regulatory programs discourage more extensive state regulatory efforts, these programs may also discourage the adoption of qualitatively preferable state level programs that may differ more in kind than in their degree of stringency.

Much of the discussion has also operated under the assumption that a greater quantity or stringency of regulation is necessarily more optimal. While this assumption is common in the environmental literature, it is also an over-simplification. Over-regulation, in the form of excessively stringent or overly-enforced regulatory requirements, is just as possible as under-regulation. The most welfare enhancing regulatory regime is that which comes closest to the *optimal* level of environmental regulation, not necessarily that which produces the greatest level of regulation.

V. CASE STUDY: WETLANDS

The “cooperative federalism” model implemented in most federal environmental programs complicates the observation of indirect effects due to the existence of inducement measures to encourage state regulation. Wetlands regulation may be one context in which the indirect effects of federal regulation on state policy choices may be observed, however, and perhaps even empirically tested. Under Section 404 of the Clean Water Act, the federal government regulates the filling and modification of wetlands directly. States receive little inducement to regulate in the federal government’s stead.¹³⁸ Wetland regulation is one area in which the state regulatory choices are largely free from *direct* federal influence.¹³⁹ For this reason, it may be easier to isolate and assess the extent to which non-preemptive federal regulation is having the sorts of indirect effects on state regulatory decision-

¹³⁸ Only two states, Michigan and New Jersey, have delegated authority to administer wetlands regulations in lieu of the federal government.

¹³⁹ The primary exception is federal funding for state coastal zone management programs which may include regulations of coastal wetlands.

making discussed in Part III in the context of wetland regulation than in other areas.

Several states began to regulate the modification of wetlands well before the federal government. Massachusetts became the first state to enact wetland regulations in 1963 with the adoption of a statute requiring a state-issued permit for the dredging or filling of coastal wetlands.¹⁴⁰ This statute was based upon preexisting zoning requirements adopted by local governments in several coastal states.¹⁴¹ Two years later the Massachusetts legislature extended the statute to cover inland wetlands as well. Other states shortly followed suit, including Connecticut, Delaware, Georgia and Washington.¹⁴² By 1975, when federal regulation of wetlands began, every coastal state in the lower 48 states save Texas had adopted wetland regulations of some kind.¹⁴³

Congress enacted the CWA, formally known as the Federal Water Pollution Control Act, in 1972. The CWA prohibits the “discharge of any pollutant,” including rock, sand, or dredged material, into “navigable waters” of the United States without a federal permit.¹⁴⁴ “Navigable waters” are defined as “waters of the United States,”¹⁴⁵ which has been interpreted to include all navigable and nonnavigable waters, their tributaries, and wetlands the use of which could impact interstate commerce.¹⁴⁶ Section 404 authorizes the Army Corps of Engineers to issue permits “for the discharge of dredged or fill material into the navigable waters,”

¹⁴⁰ Alexandra D. Dawson, *Massachusetts' Experience in Regulating Wetlands*, in ASSOCIATION OF STATE WETLAND MANAGERS, WETLAND PROTECTION: STRENGTHENING THE ROLE OF THE STATES 255 (1985).

¹⁴¹ *Id.*

¹⁴² This history is recounted in Jonathan H. Adler, *Wetlands, Waterfowl, and the Menace of Mr. Wilson: Commerce Clause Jurisprudence and the Limits of Federal Wetland Regulation*, 29 ENV. L. 1, 47-54 (1999).

¹⁴³ JON A. KUSLER ET AL., STATE WETLAND REGULATIONS: STATUS OF PROGRAMS AND EMERGING TRENDS 1 (1994).

¹⁴⁴ 33 U.S.C. §1311(a).

¹⁴⁵ 33 U.S.C. §1362(7).

¹⁴⁶ 33 C.F.R. § 328.3(a).

subject to a veto by the Environmental Protection Agency (EPA).¹⁴⁷

The U.S. Army Corps of Engineers did not initially interpret the CWA to require Section 404 permits for the filling of wetlands.¹⁴⁸ Environmental groups disagreed with this interpretation and sued the Army Corps in federal court.¹⁴⁹ The United States District Court for the District of Columbia rejected the Corps' interpretation of the Act, holding that Congress, in passing the CWA, "asserted federal jurisdiction over the nation's waters to the maximum extent permissible under the Commerce Clause of the Constitution," including wetlands and other non-navigable waters.¹⁵⁰ While there seemed to be a substantial amount of state regulatory activity prior to the onset of federal wetland regulation, after the federal government began regulating wetlands in 1975, the rate at which non-regulating states adopted new wetland regulations appears to have slowed. States that had yet to adopt wetland protections by 1975 had yet to go through their environmental transition with regard to wetlands, it is possible that at least some of these states went through their transition some time after 1975, however. Were it not for the adoption of federal regulation, these states may have adopted wetland regulations in the intervening years. Such legislation could well have been discouraged or delayed – or "crowded out"¹⁵¹ – due to the presence of federal regulations.

Of note, all fourteen states in the continental U.S. with more than ten percent of their land area in wetlands according to the National Wetland Inventory adopted wetland protection measures prior to 1975.¹⁵¹ As one review of state wetland

¹⁴⁷ 33 U.S.C. §1344(a), (c).

¹⁴⁸ See 531 U.S. at 168 (citing Corps' 1974 regulation).

¹⁴⁹ The Environmental Protection Agency also disagreed with the Army Corps' initial statutory interpretation.

¹⁵⁰ NRDC v. Callaway, 392 F.Supp. 685 (D.D.C. 1975).

¹⁵¹ See JON A. KUSLER, ET AL., ASSOCIATION OF STATE WETLAND MANAGERS, STATE WETLAND REGULATION: STATUTE OF PROGRAMS AND TRENDS, at 5-8, tbl. 1. The states in question are Alabama, Delaware, Florida, Georgia,

regulations noted, “most of the states with the largest wetland acreages have adopted wetland regulatory efforts for all or a portion of their wetlands.”¹⁵² Although the adoption of such measures can entail significant costs, the states with the most wetlands clearly determined that the value of protecting wetlands was greater than the attendant costs of regulating them, interstate competitive pressures notwithstanding. This pattern is the exact opposite of what some scholars had predicted.¹⁵³ It is also significant that those states that regulated before the federal government tend to have more extensive regulatory protections than do those states that acted later.

A potential explanation for this history of state wetland regulation is that those states with the most wetlands were, by and large, the first states to go through the environmental transition with regard to wetlands. Under this hypothesis, states with a large percentage of their land area in wetlands were the first to recognize the tremendous ecological and economic benefits that wetlands can provide, including flood control, water filtration, species habitat, and the like. As these states went through the environmental transition, the demand for wetland protection increased until the benefits of adopting such measures was greater than the costs. The presence of federal regulation, however, reduced the value of state wetland regulations to the extent that federal regulation served as a substitute for state regulation. Because of the fixed costs involved with the adoption of a new wetland regulatory program, the net effect would be greater than just the substitution effect, so that states that went through the environmental transition with regard to wetlands after 1975 may not have adopted wetland regulations of their own, even if the state regulations would have been more protective than the federal rules. Where states did subsequently

Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, North Carolina, South Carolina, and Wisconsin.

¹⁵² *Id.* at 3.

¹⁵³ See Oliver A. Houck & Michael Rolland, *Federalism in Wetlands Regulation: A Consideration of Delegation of Clean Water Act Section 404 and Related Programs to the States*, 54 MD. L. REV. 1242, 1253 (1995)..

adopt wetland regulations, due to the crowding out effect the regulations may have been adopted significantly later than they would have absent the federal rules.

The history of wetland regulations may also provide evidence of how federal policy-making may encourage the adoption of environmental policies at the state level. While Massachusetts and some other states recognized the value of protecting their wetland resources before the federal government did, many other states adopted their first regulatory measures after the importance of wetland protection was recognized at the federal level.

Federal consideration and eventual passage of the Coastal Zone Management Act (CZMA)¹⁵⁴ may have influenced state policymakers as well, particularly in coastal states. A national discussion on the importance of protecting coastal resources could have increased the salience of coastal zone protection at the state level. The protection of wetlands is one of the specific policy goals explicitly referenced in the act.¹⁵⁵ Passage of the CZMA may have further encouraged state-level protection of coastal wetlands insofar as the CZMA authorizes federal funding of state coastal zone programs.

Contemporary developments in wetland protection at the federal and state level may provide further insight into the effect federal regulatory decisions have on state environmental policies. In 2001, in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC)*,¹⁵⁶ the Supreme Court narrowed the scope of the Clean Water Act (CWA). Specifically, the Court held that the CWA does not confer federal regulatory jurisdiction over isolated, intrastate waters, including isolated wetlands.¹⁵⁷ Initial reactions to the *SWANCC* holding predicted

¹⁵⁴ 16 U.S.C. §§ 1451-1465.

¹⁵⁵ 16 U.S.C. § 1452(2)(A).

¹⁵⁶ 531 U.S. 159 (2001).

¹⁵⁷ 531 U.S. at 173.

substantial negative effects on wetland protection efforts nationwide.¹⁵⁸

While the initial response to the *SWANCC* decision as alarm, the actual effect of the decision became muddied rather quickly.¹⁵⁹ A Joint Memorandum issued by the Army Corps and EPA in January 2003 prohibited the assertion of regulatory jurisdiction over isolated waters based upon the presence of migratory birds alone, but did not provide much additional guidance.¹⁶⁰ At the same time, the two agencies proposed to clarify the scope of regulatory jurisdiction under the CWA through a rulemaking.¹⁶¹ This effort was soon abandoned due to extensive criticism from environmentalist organizations.¹⁶² In the meantime,

¹⁵⁸ See, e.g., Lance D. Wood, *Do Not Be Misled: CWA Jurisdiction Extends to All Non-Navigable Tributaries of the Traditional Navigable Waters and to Their Adjacent Wetlands*, 34 ENVTL. L. REP. 10187, 10189, 10195 (2004) (noting “potentially disastrous” and “catastrophic” effects). Writing n dissent, Justice Stevens also predicted dire consequences from the Court’s decision to “needlessly weaken[] our principal safeguard against toxic water.” 531 U.S., at ___ (Stevens, J., dissenting).

¹⁵⁹ See, e.g., Lance D. Wood, *Do Not Be Misled: CWA Jurisdiction Extends to All Non-Navigable Tributaries of the Traditional Navigable Waters and to Their Adjacent Wetlands*, 34 ENVTL. L. REP. 10187, 10189, 10189 (2004) (noting *SWANCC* was “ambiguous” and courts have been “inconsistent” in their interpretations); Amended Statement of Patrick Parenteau, Professor of Law, Vermont Law School, before the House of Representatives Committee on Government Reform, Sept. 19, 2002 (“The decision has created substantial uncertainty regarding the geographic jurisdiction of the Clean Water Act.”); Position Paper on Clean Water Act Jurisdiction Determinations Pursuant to the Supreme Court’s January 9, 2001 Decision, *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, Associate of State Wetland Managers, Dec. 2001 (“The section 404 regulatory program has been in turmoil ever since the Supreme Court’s *SWANCC* decision.”).

¹⁶⁰ *Id.* at 1995, Appendix A.

¹⁶¹ Advance Notice of Proposed Rulemaking on the Clean Water Act Regulatory Definition of “Waters of the United States,” 68 Fed. Reg. 1991 (Jan. 15, 2003).

¹⁶² See Eric Pianin, *EPA Scraps Changes To Clean Water Act; Plans Would Have Reduced Protection*, WASH. POST, Dec. 17, 2003, at A20. One reason given by the Army Corps and EPA to forego the rule-making was that federal courts had narrowly interpreted *SWANCC*’s impact. Ironically, on the same day as the Army Corps/EPA announcement, the U.S. Court of Appeals for the Fifth

federal implementation of the holding has been inconsistent.¹⁶³ A study by the General Accounting Office found that Army Corps district offices’ jurisdictional determinations have varied significantly since *SWANCC*.¹⁶⁴ In the courts, there is already a circuit split on the scope of the holding.¹⁶⁵ Most circuits have adopted a fairly narrow reading of *SWANCC*, though the U.S. Court of Appeals for the Fifth Circuit has interpreted *SWANCC* to impose potentially significant limits on federal regulatory authority under the CWA.¹⁶⁶

As state policy makers are more likely to adopt new environmental measures where the net benefits from such actions are greatest – and they are most likely to receive credit for their efforts – the modest interpretation of *SWANCC*, as well as the continued uncertainty as to the scope of post-*SWANCC* federal regulatory authority, would discourage additional state action.¹⁶⁷ The benefits of additional state regulation, and the extent to which

Circuit held that such narrow interpretations of *SWANCC* were “unsustainable.” See Daniel Simmons, *Navigating SWANCC: An Examination of the U.S. Army Corps of Engineers’ Authority Under the Clean Water Act*, 43 ENVTL. L. REP. 10723, 10730 (2004) (citing *In re Needham*, 354 F.3d 340, 345 (5th Cir. 2003)).

¹⁶³ U.S. GENERAL ACCOUNTING OFFICE, *Waters and Wetlands: Corps of Engineers Needs to Evaluate Its District Office Practices in Determining Jurisdiction*, GAO-04-297, Feb. 2004, at 3 (“Corps districts differ in how they interpret and apply the federal regulations when determining what wetlands and other waters fall within the jurisdiction of the federal government”).

¹⁶⁴ *Id.* at 3 (“Corps districts differ in how they interpret and apply the federal regulations when determining what wetlands and other waters fall within the jurisdiction of the federal government”).

¹⁶⁵ At the time of this writing, there is a circuit split as to the extent of federal jurisdiction under the CWA post-*SWANCC*. See, e.g., *United States v. Deaton*, 332 F.3d 698 (4th Cir. 2003) (interpreting *SWANCC* narrowly); *United States v. Rapanos*, 339 F.3d 447 (6th Cir. 2003) (same); *United States v. Rueth Dev. Co.*, 335 F.3d 598 (7th Cir. 2003) (same); compare *In re Needham*, 354 F.3d 340 (5th Cir. 2003) (after *SWANCC* federal jurisdiction only extends to wetlands adjacent to navigable waters); *Rice v. Harken Exploration Co.*, 250 F.3d 264 (5th Cir. 2001) (same).

¹⁶⁶ See *Needham*, 354 F.3d; *Rice*, 250 F.3d.

¹⁶⁷ See Buzbee, *supra* note 9] at 14 (noting “uncertain regulatory turf creates both demand and supply-side incentives for regulatory inattention”).

state policy makers will be able to take credit for protecting isolated waters is uncertain, so the value of such measures will be discounted accordingly. It is also possible that the reluctance of states to adopt additional wetland protections reflects nothing more than a lack of demand for such protections in those states that have yet to adopt measures covering isolated wetlands. Nonetheless, shortly after *SWANCC*, many states considered, and some adopted, additional regulatory measures to fill the gaps potentially left by the decision.¹⁶⁸ Insofar as the Supreme Court resolves any lingering ambiguity about the scope of federal jurisdiction after *SWANCC* in currently pending cases, it will be important to see how states respond.

The history of wetlands regulation is far from conclusive. While it provides evidence that federal actions can both directly and indirectly encourage the adoption of state-level environmental measures, it does not prove that federal regulations crowded out state wetland protections. One can only surmise the details of such a counterfactual scenario.¹⁶⁹ The pattern of wetland regulation is nonetheless consistent with the crowding out theory. This narrative suggests the need for empirical examination into the

¹⁶⁸ According to Professor Michael Gerhardt:

at least 19 states have responded to the decision by either enacting or recommending the enactment of laws to fill the void left by the Court's decision. These states include, inter alia, California, Connecticut, Illinois, New Jersey, North Carolina, Ohio, Oregon, South Carolina, Virginia, and Wisconsin. These reactions are a clear illustration of environmental federalism in action.

Michael J. Gerhardt, *The Curious Flight of the Migratory Bird Rule*, 31 ENVTL. L. REP. 11079, 11085 (2001). The state of Ohio, for example, enacted an "emergency measure" to extend state regulations to isolated wetlands in July 2001, only a few months after the *SWANCC* decision. 2001 Ohio H.B. 231. See also, C. Victor Pyle III, *Isolated Wetlands Jurisprudence Post-SWANCC and Resulting Federal and State Attempts to Fill the Void*, 11 SOUTHEASTERN ENVTL. L.J. 91, 101-106 (2002) (summarizing initial state-level responses); Jan Goldman-Carter, *Isolated Wetland Legislation: Running the Rapids at the State Capitol*, NATL WETLANDS NEWSLETTER, May-June 2005, at 27 (same).

¹⁶⁹ See generally, Robert N. Strassfeld, *If . . . : Counterfactuals in the Law*, 60 GEO. WASH. L. REV. 339 (1992).

determinants of state wetland regulation that seeks to account for, and measure, the extent to which any crowding effect can be observed.

CONCLUSION

Both the federal and state governments have an integral role to play in environmental protection. If each is to play an optimal role, however, there must be greater consideration of how the various levels of government interact. In particular, there must be greater consideration of how federal regulatory decisions may enhance or undermine complementary efforts at the state level.

Even where federal regulation is absolutely necessary, it establishing the optimal level of environmental protection requires consideration of how such regulations will effect state-level policy making. In some cases, the adoption of a federal regulatory floor will enhance state efforts. In other cases, it will not. Indeed, in some instances, increased federal environmental efforts may produce less environmental protection. This finding is important because it challenges the prevailing yet heretofore unexamined assumption that the adoption of federal regulatory floors ensures a maintenance or increase in levels of environmental protection from that which would be observed absent federal involvement. The precise extent of federal influence on state regulatory policy requires further empirical examination. In the meantime, greater attention to these influences could further facilitate the development of more effective and protective environmental measures.