

Using Federal Environmental Regulations To Bargain for Private Land Use Control

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Our federal government currently pursues environmental protection largely through regulations that require others to comply with detailed standards or prescribed patterns of conduct. This approach conflicts too fundamentally with the autonomy interests of landowners, and of the state and local governments that regulate land use already, to allow federally-imposed limits on private land use. Yet environmental improvement will increasingly require land use limits. To achieve them, regulation should be replaced with “bargaining entitlements”—assets of limited value that the federal government could use to negotiate with other parties for necessary restrictions. Indeed, agencies are already converting their regulatory powers into such entitlements. By using bargaining entitlements, the federal government would act more as an equal participant in negotiations than as a unilateral issuer of “top down” commands. That change in approach could reconcile the conflicting interests of landowners, state and local governments, and environmentalists more effectively than regulation. It could provide more effective environmental protection; it could improve both respect for property rights and the constitutional defensibility of federal land-use control efforts; and it could encourage the development of regional land-use plans, which will be needed to reconcile environmental protection with other social interests.

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Introduction

Thirty years of federal environmental regulation in this country have resulted in substantial reductions in all forms of industrial pollution. As industrial pollution declines, pollution from land use automatically ascends in relative importance. Run-off from developed land already accounts for more than half of the United States’ water pollution. And as overall pollution levels recede, preserving wildlife habitat will rise in the environmental priority scale. Private land use controls will be necessary to address these increasingly important issues.¹

Our current environmental laws either do not address private land use or address it in general and unfocused terms. Although the Clean Water Act² promises to clean up the nation’s waters, its command is ultimately symbolic, since the statute fails to grant the federal government the land-use control power it would need to achieve this end. Our habitat preservation statutes—the “Section 404” provisions for preserving wetlands³ and the Endangered Species Act (“ESA”)⁴—do impose real

1 This Article does not address environmental controls on federally owned land. The plenary constitutional power of the federal government to impose such controls, however, is universally conceded. See RICHARD A. EPSTEIN, TAKINGS: PRIVATE PROPERTY AND THE POWER OF EMINENT DOMAIN 147-48 (1985) (arguing that the Supreme Court correctly held that the cancellation of grazing rights on federal land did not require takings compensation). Nonetheless, even full exercise of the federal government’s plenary legal power over public land could not assure environmental protection. Although the federal government owns about thirty percent of the national land area, its holdings are concentrated in Alaska and eleven Western States (California, Washington, Oregon, Nevada, Idaho, Montana, Wyoming, Colorado, Utah, Arizona, and New Mexico). The federal government owns only four percent of the land in the country outside those twelve states. BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, PUBLIC LAND STATISTICS 5 tbl.3 (1993). More than half of the species protected by the Endangered Species Act have at least eighty-one percent of their habitat on private land. See DAVID S. WILCOVE ET AL., REBUILDING THE ARK: TOWARD A MORE EFFECTIVE ENDANGERED SPECIES ACT FOR PRIVATE LAND 3 (1996), quoted in Hope M. Babcock, *Should Lucas v. South Carolina Council Protect Where the Wild Things Are?*, 85 IOWA L. REV. 849, 858 n.30 (2000). Accordingly, to the extent environmental protection requires land use controls at all, controls on private as well as public land would be needed.

2 Federal Water Pollution Control Act Amendments of 1972 (“Clean Water Act”), 33 U.S.C. §§ 1251-1387 (2000).

3 Clean Water Act § 404.

4 Endangered Species Act of 1973, 16 U.S.C. §§ 1531-44 (2002).

land-use constraints. They do so, however, by applying an inchoate procedural burden to all areas under their authority, without selecting any specific lands for actual preservation. That approach is both ineffective and inefficient, since it can neither guarantee protection for the most sensitive places, nor avoid placing regulatory burdens on parcels less vital to wildlife preservation.

These statutes embody the command-and-control regulatory approach traditionally used for environmental protection. Congress prescribes in detail both the goals to be achieved and, often, the means to achieve them, while administrative agencies supply any missing means by issuing and enforcing rules that tell the regulated entities how to comply. Although command and control has been heavily criticized for its failure to accommodate the interests and capabilities of those it regulates, it has controlled industrial pollution reasonably well. In contrast, federal command and control has proved almost totally unable to address the environmental problems caused by private land use. That failing, in turn, has led to an artificial neglect of these problems.⁵

This Article contends that such problems of governance could be overcome, and environmentally protective land-use control could be promoted, by replacing our current top-down procedures of law creation with the bargaining entitlements approach used in the private world. Our legal system does not typically accommodate the conflicting preferences of its private participants by requiring one of them to issue commands to others in the manner of a regulatory agency. Instead, it equips each participant with entitlements of value to others, and then allows them to bargain from that prescribed starting point toward mutually satisfactory agreements.

Allowing regulatory agencies to trade obligations imposed under the Clean Water Act, Section 404, or the ESA for alternative measures offered by the regulated entities would allow regulators, the regulated, and regulatory beneficiaries to negotiate the exchange of ineffective or unacceptable regulatory demands for land-use plans that restricted development of some areas and allowed development of others. In that manner, federal land-use commands designed to be imposed from the outside on states and private persons would be converted into bargaining assets and traded for agreements under state property and land-use planning laws.

This new approach would improve both environmental protection and public acceptance of environmental controls, could reform environmental

⁵ William Ruckelshaus has compared the tendency of our environmental protection system to focus on problems that regulation can address, such as pollution from major industrial sources, to a drunk who has lost his keys in a dark alley and searches for them under a lamppost because the light is better there. William D. Ruckelshaus, *Stopping the Pendulum*, ENVTL. F., Nov.-Dec. 1995, at 27.

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statutes by clarifying the relationship between their asserted goals and the means authorized to pursue them, and could improve the constitutional defensibility of federal efforts to protect the environment.

If bargaining entitlements possess these advantages, we should already be seeing efforts to employ them. In fact, the Clean Water Act, Section 404, and the ESA are all now evolving toward a bargaining entitlements approach. Increasingly, controls on industrial point sources of water pollution can be traded for controls on non-point pollution from land use. Similarly, the obligation not to fill wetlands without a permit can increasingly be satisfied by creating or preserving other wetlands elsewhere, while the obligation not to take endangered species can be met by providing alternative benefits to the species in a habitat conservation plan (HCP). In each case, the original regulatory obligation becomes a stimulus for alternative performance, rather than being fulfilled as written.

Greater use of bargaining entitlements might raise concerns that agencies structured to construct and issue commands to others in the classic administrative manner would prove incompetent to negotiate as equals for good value in entitlement trades. Conversely, a bargaining approach might lead an agency to assert its regulatory claims more vigorously than before, since the ability to trade that claim for some new relief would have increased the value to the agency of asserting it. Even a legally vulnerable claim could have trading value, since trading out of the obligation might be more advantageous to the regulated party than litigating a challenge to final adjudication. These dangers, however, would be reduced by the greater transparency and wider range of actors that a scaled-up compliance approach would bring to the regulatory process. They would naturally diminish further as trading became more widespread, and could be reduced still more by readily available reforms.

To illustrate these points, this Article first describes the differences between our current regulatory system and a bargaining entitlements approach and outlines how entitlement bargaining would work in practice.

The Article then turns to land use in particular. It explains why some types of environmental protection require regional land-use control. Next, it details how our current regulatory system either fails to address land use or addresses it by imposing ad hoc burdens without considering any overall plan. The Article describes how the inherent problems of land-use control interact with the weaknesses of our national regulatory system to make federal land-use control by traditional regulatory methods impossible.

The Article then analyzes in systematic detail both the advantages and potential disadvantages of bargaining entitlements. It concludes by exploring the possible future use of bargaining entitlements beyond the fields in which it has currently developed.

I. Traditional Regulation and Bargaining Entitlements

A. *The Nature of Traditional Regulation*

The environmental protection “revolution” of the last thirty years has relied largely on regulations at the federal level, issued under statutes that direct businesses to apply the “best technology” to diminish air and water releases from factories,⁶ to detoxify or immobilize hazardous waste,⁷ to produce less polluting automobiles,⁸ to reformulate gasoline,⁹ to restore land after surface coal mining,¹⁰ and to stop producing environmentally damaging pesticides and other chemicals.¹¹

The responsible administrative agency generally will possess the exclusive power to determine regulatory details, subject only to judicial review to determine whether the resulting rules were “arbitrary or capricious.”¹² Though the law requires an opportunity for public comment on the agency’s proposals, the agency has no legal obligation to give special weight to the comments of those most affected. If the agency ignores any comment, and can find a moderately plausible reason for doing so, the courts will usually sustain the agency’s decision.¹³

Regulations often must be extremely detailed. Yet an agency’s limited information-processing capacity restricts its ability to issue rules that reflect individual firms’ costs and capabilities, while its power to command results reduces its incentive to account for individual circumstances. The resulting coarse-cut, relatively inflexible, and top-down specification of the means of compliance has been criticized as economically inefficient because it ignores differences in control costs among sources and provides limited incentives for sources to apply their unique knowledge to devise more potent forms of pollution control.¹⁴

6 See Clean Water Act §§ 301, 304; Clean Air Act §§ 111-12, 42 U.S.C. §§ 7411-12 (2000).

7 See Solid Waste Disposal Act § 3004, 42 U.S.C. § 6924 (2000).

8 See Clean Air Act § 202.

9 See Clean Air Act § 211.

10 See Surface Mining Control and Reclamation Act of 1977 § 515, 30 U.S.C. § 1265 (2000).

11 See Federal Insecticide, Fungicide, and Rodenticide Act of 1947 § 3, 7 U.S.C. § 136(a) (2003); Toxic Substances Control Act of 1976 § 6, 15 U.S.C. § 2605 (2000).

12 5 U.S.C. § 706 (2000); see also 5 U.S.C. § 553(b) (2000); *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375 (D.C. Cir. 1973).

13 The D.C. Circuit has stated:

The substantial-evidence standard [for judicial review of agency rules] has never been taken to mean that an agency rulemaking is a democratic process by which the majority of commenters prevail by sheer weight of numbers. . . . The number and length of comments, without more, is not germane to a court’s substantial-evidence inquiry.

Natural Res. Def. Council v. EPA, 822 F.2d 104, 122 n.17 (D.C. Cir. 1987).

14 Government is rarely in a good position to know what sorts of innovations

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Traditional regulation also shortchanges the broader, non-economic autonomy interests of regulated entities by imposing compliance obligations that are more confining than is needed to achieve the statutory ends.¹⁵ Finally, reliance on detailed statutes that give rise to equally detailed regulations leads to confusion between (or a conflation of) ends and means, which in turn hinders reform efforts and prevents realistic assessment of statutory success or failure.¹⁶

B. *Bargaining Entitlements as an Alternative*

1. The Nature of Bargaining Entitlements

The top-down approach of federal regulation departs markedly from the way in which non-governmental entities in our society adjust their relationships. Private persons generally are not required to command each other to observe the rules of some new social arrangement. Instead, the legal system equips them with entitlements of varying strength to influence the actions of others and then relies largely on private bargaining to generate any subsequent changes.¹⁷

Privately-held entitlements are almost always alienable, in part to allow bargaining.¹⁸ The holder usually can give away his power to enforce the originally specified entitlement terms, or trade it for some alternative,

are likely to be forthcoming; industry will have a huge comparative advantage here. Perversely, requiring adoption of the BAT [best available technology] eliminates the incentive to innovate at all, and indeed creates disincentives for innovation by imposing an economic punishment on innovators. Under the BAT approach, polluting industries have no financial interest in the development of better pollution control technology that imposes higher production costs.

CASS SUNSTEIN, *FREE MARKETS AND SOCIAL JUSTICE* 281-82 (1997).

¹⁵ See Richard B. Stewart, *Controlling Environmental Risk Through Economic Incentives*, 13 *COLUM. J. ENVTL. L.* 153, 154 (1988) (“Our current environmental regulatory system . . . unduly limits private initiative and choice. The centralized command system is simply unacceptable as a long-term environmental protection strategy for a large and diverse nation committed to the market and decentralized ordering.”).

¹⁶ This argument originated with Professors Ackerman and Stewart, who argued that our current best technology system “conflates means and ends, preventing the intelligent assessment of either.” Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 *STAN. L. REV.* 1333, 1340 (1985).

¹⁷ Calabresi and Melamed frame the issue as follows:

The state not only has to decide whom to entitle, but it must also simultaneously make a series of equally difficult second order decisions. These decisions go to the manner in which entitlements are protected and to whether an individual is allowed to sell or trade the entitlement. . . . [These] latter decisions . . . shape the subsequent relationship between the winner and the loser.

Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules and Inalienability: One View of the Cathedral*, 85 *HARV. L. REV.* 1089, 1089-90, 1092 (1972).

¹⁸ In the private sphere, inalienable entitlements that the holder must assert in their original form are largely restricted to bars on alienating fundamental personal rights, such as the prohibition against selling oneself into slavery, designed to protect a “nonmarket” sphere of human activity. See Margaret Jane Radin, *Market-Inalienability*, 100 *HARV. L. REV.* 1849 (1987).

preferable performance. A landowner can grant a neighbor the right to walk across her property in return for the right to walk across the neighbor's property. In contrast, regulatory agencies generally hold their enforcement powers as inalienable entitlements, which they must enforce in accordance with their original terms.¹⁹ This may be the most fundamental distinction between government and privately-held entitlements.

Academic analysis has focused on categorizing the types of entitlements held by independent and autonomous decision makers. Academic analysis distinguishes sharply between entitlements that confer full power to decide the entitlement disposition and entitlements that can be overridden by the actions of others. If the entitlement is a property right, its holder has an unconditional claim to direct others to act in accordance with the entitlement's terms. For example, a landowner generally has an absolute right to evict trespassers and to refuse their offer to purchase a right of passage. If the entitlement is a liability right, others can be free of it by paying a fixed sum, regardless of the entitlement holder's preferences. For example, a polluter may be allowed to purchase the right to pollute by paying damages, despite the entitlement holder's objections.²⁰

These distinctions do not fit government actors well. Even if regulatory entitlements were made alienable, they would still be hard to classify as either property rights or liability rights. The non-delegation doctrine requires all agency regulatory actions to conform to legislatively established standards that confine agency freedom of decision in the interest of public accountability.²¹ Accordingly, that doctrine forbids government agencies from possessing the unconfined power to say yes or no to an exchange offer, which is the essence of a property entitlement. Conversely, the very purpose of a bargaining entitlements approach is to involve the agency in particularizing alternative performance requirements through negotiations. It would be self-defeating, even if it were possible, to turn the trading program into a liability obligation by defining in advance, so as to exclude agency discretion, the types of private offers that the agency would be compelled to accept. Instead, the guiding legislation would establish neither an absolute right to reject private offers nor an absolute duty to accept them, but rather would set general standards for the agency to particularize in individual decisions. Such an entitlement would display elements of both property and liability rights without clearly being

19 See Carol M. Rose, *The Shadow of the Cathedral*, 106 YALE L.J. 2175, 2192 (1997) ("In the [standard Calabresi and Melamed matrix of entitlements] classification, command-and-control rules seem to fit most easily as 'inalienability' rules.")

20 See, e.g., *Boomer v. Atl. Cement Co.*, 257 N.E.2d 870 (N.Y. 1970).

21 See *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 472-76 (2001).

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one or the other.

Once made alienable, government entitlements will always collapse to a midpoint reflecting both property and liability elements. The fundamental distinction among types of entitlements held by the government therefore lies not so much between property and liability rules as between alienable and inalienable claims.

2. Entitlement Bargaining in Practice

Traditional regulation gives a regulatory agency both the right and the duty to command socially desired results directly. Entitlement bargaining, in contrast, allows the government to accept some newer and better performance that it could not command directly. It is designed to encourage the regulated entity to make such offers.

Under this approach, a factory would not necessarily reduce its own discharges to comply with water pollution laws. Instead, it might pay others to reduce run-off from land development. Similarly, a developer seeking to develop a wetland would not necessarily have to convince the government that statutory standards allowed that wetland's destruction. Instead, it could get a permit by creating or preserving wetlands elsewhere.

The ability to make such offers would grant more freedom to the regulated entity and require more creativity than lobbying an agency through public comment on a proposed regulation. In particular, it would motivate the formation of coalitions of regulated entities and state and local government agencies to allow the design of more attractive land use planning offers.

Such offers would invite bargaining between offerors and an agency, particularly since the standards for accepting or rejecting offers would be broader than the standards for issuing a regulation, thus conferring more discretion on the agency. These negotiations could serve as both a political forum and a marketplace. They would allow the participants to attempt to convince each other of the benefits of their favored land use approach, perhaps narrowing the gaps between opposing positions and making final agreement easier. To the extent that gaps still remained, creation of a negotiating framework would make it easier to contribute other, non-regulatory resources—for example, public land and money—toward bridging outstanding differences.

A successful negotiated outcome would not reflect the judgment of any one party, though all would have to find it acceptable. Instead, it would reflect the relative strength of the bargaining entitlements with which each side began, the attractiveness of the offer, the relative skill of the parties, and the merits of the case. The importance of these factors would shift over time, as repeat players like the government learned how

to bargain better, and could change further through legislative action. For example, Congress could equip an agency with additional entitlements, such as the ability to grant or withhold certain funds, in order to increase that agency's bargaining power.

Several of the quality-control procedures applied to traditional regulation, such as public notice of proposed bargains, the right to comment on bargains, and limited judicial review, could also apply to entitlement bargaining. However, the incentives for and institutional demands on each participant would fundamentally differ between bargaining and regulation and could lead to different results.

Regulatory programs without land use implications could certainly use bargaining entitlements.²² This Article focuses solely on land use because bargaining entitlements hold special promise for synthesizing the sharply conflicting interests that characterize land use control into better and more generally acceptable solutions than top-down regulation has produced.

II. The Environmental Case for Land Use Control

A. *Water Quality Improvement and Land Use Control*

In environmental discussions, "water pollution" is often shorthand not just for the amount of foreign matter that a water body contains, but also for the impairment of its ability to perform such other "green" functions as supporting wildlife or providing water-based recreation. That ability is affected by flow patterns and temperature, as well as by foreign matter.²³

Land use is now the leading cause of water pollution in this country under either definition. At least half of the foreign matter in water does not come from factories or sewage treatment plants but instead from the physical alteration of land in the course of its economic development.²⁴ In urban and suburban areas, that pollution is due largely to increases in impervious surfaces such as roads, rooftops, and parking lots. Rain runs off those areas quickly rather than percolating into the ground as it would in areas that retained their natural vegetation. That run-off carries with it

²² For a further discussion, see William F. Pedersen, *Contracting with the Regulated for Better Regulations*, 53 ADMIN. L. REV. 1067 (2001).

²³ The Clean Water Act itself reflects this distinction between the two definitions of "pollution." The statute defines "pollutant" as a physical material (or heat), and regulates any discharge of such "pollutants" from a "point source" into water. 33 U.S.C. §§ 1311(a), 1362(6)-(16) (2000). It defines "pollution" far more broadly as "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water," 33 U.S.C. § 1362(19) (2000), and regulates it far less comprehensively.

²⁴ According to the EPA's 1998 Water Quality Inventory, the top three sources of pollution to rivers, streams, lakes, ponds, and reservoirs arise from land use changes. EPA, 1998 WATER QUALITY INVENTORY 62, 88 (2000).

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contaminants like oil, brake dust, and precipitated air pollutants that urban life has deposited on impervious surfaces. When these more rapid and concentrated flows run over bare land, they scour up the soil and carry it into the water.²⁵ Water pollution in an area therefore tends to increase in direct proportion to the increase in impervious surfaces.²⁶

In rural areas, removing the original vegetation can lead to massive erosion. Water flows more rapidly off plowed fields or logged areas than unaltered terrain and takes soil with it. In addition, the intensive use of fertilizer and pesticides contaminates the resulting run-off. Soil, fertilizer, and pesticides run-off from farms has become the largest single source of water pollution in the country.²⁷

In both urban and rural areas, accelerated run-off also leads to physical changes in flow patterns. In areas that retain their natural cover, the groundwater absorbs most rainfall before it reaches a stream. When that natural cover is removed, rain reaches the stream far more directly, leading to higher peak flows and lower minimum flows. The higher peak flows scour the streambed and change its shape, decreasing its ability to support life.²⁸ Logically, the increased rapid flows should also reduce the rate at which rainfall recharges depleted groundwater levels.²⁹ They also increase the probability and extent of flooding. Both the addition of

25 See Thomas R. Schueler, *The Importance of Imperviousness*, in *THE PRACTICE OF WATERSHED PROTECTION* 7, 8 (Thomas R. Schueler & Heather K. Holland eds., 2000); see also *Basic Concepts in Watershed Planning*, in *THE PRACTICE OF WATERSHED PROTECTION*, *supra*, at 145, 150 fig.7, 152 fig.9 (graphing the quantitative relationship between amount of impervious cover and phosphorous and nitrogen pollution loads). This relationship holds true for lakes, ponds, and estuaries, as well as streams. See *id.* at 151-52 (“Research points to the strong influence of impervious cover on coastal/estuarine systems such as shellfish beds and wetlands. Interestingly, each study [of the three cited] found degradation thresholds when impervious cover exceeded 10%.”(citations omitted)).

26 Schueler, *supra* note 25, at 8; see also *id.* at 7 (“[T]he total run-off volume for a one-acre parking lot . . . is about 16 times that produced by an undeveloped meadow.”).

27 According to the EPA’s 1998 *Water Quality Inventory*, agriculture is the leading cause of water quality impairment in streams and rivers. It is three times as important as the next most important factor and affected twenty percent of the total stream miles surveyed. 1998 WATER QUALITY INVENTORY, *supra* note 24, at 62. Agriculture is also the leading cause of water quality impairment in lakes. It is twice as important as the next most important cause and affects fourteen percent of the total lake areas surveyed. *Id.* at 88. In both cases, hydrological modification was the second most important cause of impairment; and urban run-off, the third. Only in estuaries were water quality problems due primarily to non-agricultural factors—specifically, municipal treatment plants and urban run-off. *Id.* at 108.

28 Schueler, *supra* note 25, at 8. For a discussion of similar effects from agriculture, particularly uncontrolled cattle grazing, see OFFICE OF WATER, EPA, NATIONAL MANAGEMENT MEASURES TO CONTROL NON-POINT SOURCE POLLUTION FROM AGRICULTURE 2-24 to 2-27, 4-140 to 4-141 (2003), available at <http://www.epa.gov/owow/nps/agmm/agmm.zip> [hereinafter NATIONAL MANAGEMENT MEASURES].

29 See Schueler, *supra* note 25, at 8 (“Because infiltration is reduced in impervious areas, one would expect groundwater recharge to be proportionately reduced. . . . Actual data, however, that demonstrate this effect is rare.”); see also *Dry Weather Flows in Urban Streams*, in *THE PRACTICE OF WATERSHED PROTECTION*, *supra* note 25, at 50 (stating that “a cause-and-effect relationship has yet to be directly observed” between increases in impervious cover and decreases in dry weather flows in streams, and giving reasons for the relative absence of data).

impervious surface and the removal of trees lead to increases in stream temperature.³⁰ Such non-point water pollution causes major environmental damage off the mouth of the Mississippi and in interstate estuaries like the Chesapeake Bay.³¹

Comprehensive restrictions on land use might be needed to reduce non-point source pollution in a watershed or to prevent its increase. While technological treatment of effluents from factories or sewage treatment plants can reduce pollutants by over ninety percent, urban or farm run-off is much harder to control by such “end-of-the-pipe” methods. Capturing such run-off in a ditch or pipe can be impracticably expensive. If the run-off could be captured, it would often be too high-volume for effective use of treatment technology.

Relatively local changes in planning and construction methods can partly control run-off from new development,³² despite the lack of technological treatment methods. Such changes generally, however, reduce only moderately the pollution associated with a given amount of impervious surface.³³ The use of ponds, buffer zones, or reformed farming methods to reduce agricultural run-off also seems to produce only moderate reductions.³⁴ Accordingly, many studies indicate that a

30 See Schueler, *supra* note 25, at 9 (“Impervious surfaces both absorb and reflect heat. During the summer months, impervious areas can have local air and ground temperatures that are 10 to 12 degrees warmer than the fields and forest that they replace Water temperature in headwater streams is strongly influenced by local air temperatures.”). Similarly, the loss of stream-side trees leads to water temperature increases in both urban and rural areas. See NATIONAL MANAGEMENT MEASURES, *supra* note 28, at 2-24 to 2-27 (noting that the removal of vegetation can alter water temperatures and increase fluctuations in water temperature).

31 Oliver A. Houck, *TMDLs IV: The Final Frontier*, 29 ENVTL. L. REP. 10,469, 10,469-70 (1999) (“In recent decades, in almost direct correlation with the application of commercial fertilizers upstream, the Gulf [of Mexico] has slowly but massively begun to die.” (citations omitted)); see also EPA, FINAL WATER QUALITY TRADING POLICY 1 (Jan. 13, 2003), available at <http://www.epa.gov/owow/watershed/trading/tradingpolicy.html> (“Nutrient and sediment loading from agriculture and storm water are significant contributors to water quality problems such as hypoxia in the Gulf of Mexico and decreased fish populations in Chesapeake Bay.”).

32 These include the installation in the landscape of small artificial basins or ponds that capture and hold the run-off until it percolates into groundwater, preserving buffer zones of undisturbed forest or wetland along the edges of water bodies to soak up the run-off (and its pollution) before it reaches the waterway, or limiting the amount of impervious surface growth associated with any particular degree of development—for example, by requiring “clustered” housing development that reduces the need for connecting roads. See THE PRACTICE OF WATERSHED PROTECTION, *supra* note 25, at 225-305.

33 A detailed survey of all existing studies of physical control of urban run-off found limited ability to remove such important pollutants as phosphorus (30-60% median removal performance), nitrogen (15-35%), oxygen-demanding material (20-40%), metals (50-80%), and bacteria (55-75% based on incomplete data, with 95% or better removal generally needed to meet water quality standards). Removal of suspended sediment, often dirt in run-off, was somewhat better at 60-85%, but still far from adequate to offset the effects of impervious surface growth. CTR. FOR WATERSHED PROT., NATIONAL POLLUTANT REMOVAL PERFORMANCE DATABASE FOR STORMWATER TREATMENT PRACTICES 25-26 (2d ed. 2000) [hereinafter NATIONAL POLLUTANT REMOVAL].

34 The EPA has summarized the somewhat fragmentary data. See NATIONAL MANAGEMENT MEASURES, *supra* note 28. Representative surveys found that reductions in fertilizer application of 39-67% (the maximum recommended) led to corresponding reductions of 8-32% in nitrogen in surface

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watershed with more than ten to fifteen percent impervious surface cover, or extensive agricultural development, will see water quality and aquatic biodiversity deteriorate despite the use of run-off and buffer zone controls.³⁵

B. *Wildlife Protection and Land Use Control*

Animals and plants cannot survive without their natural habitat.³⁶ In some cases, preserving that habitat may be consistent with a range of other uses of the land—as when rabbits live in suburban back yards. Elsewhere, however, preservation of the necessary habitat may rule out other uses. Studies in conservation biology suggest that, although many species are tolerant of human presence, the preservation of the full range of species that existed before modern industrial civilization depends on the preservation of large tracts of land in an undeveloped form.³⁷

water. *Id.* at 4-62. Different studies found that individual best management practices (“BMPs”) could reduce pesticide flow into water anywhere from an average of 21% to an average of 92%, depending on the study, *id.* at 4-81; that different combinations of BMPs could reduce sediment losses from fields by 35-85%, nitrogen loss by 10-70%, and phosphorus loss by 30-75%, *id.* at 4-103; and that managed grazing could reduce fecal coliform levels in surface water by 40%, levels that are still twice as high as those for ungrazed land, *id.* at 4-148.

Of course, one might apply more than one of these BMPs to the same land. However, the effectiveness of such a combination can be expected to be less than a simple mathematical combination of the effectiveness of the separate approaches would predict. *See id.* at 5-213. Similarly, the Soil and Water Conservation Society found that if buffers to absorb pollution were installed on all the stream-side cropland for which they are appropriate, “[t]he actual sediment reduction on the treated acres could approach 60 percent”—a low number by industrial pollution control standards. SOIL & WATER CONSERVATION SOC’Y, REALIZING THE PROMISE OF CONSERVATION BUFFER TECHNOLOGY 12 (2001).

³⁵ These studies are summarized in Schueler, *supra* note 25, at 12 tbl.2.

³⁶ *See* NAT’L CTR. FOR ECOLOGICAL ANALYSIS & SYNTHESIS, AM. INST. OF BIOLOGICAL SCIS., USING SCIENCE IN HABITAT CONSERVATION PLANS 20 fig.2 (2000) [hereinafter USING SCIENCE] (showing that habitat loss poses a major threat to eighty percent of the endangered species covered by habitat conservation plans, over twice as large as the next biggest threats, habitat degradation and habitat fragmentation).

³⁷ Almost invariably, for any given habitat type, the larger the area of land examined, the larger the number of species that will be found there. Edward Connor & Earl McCoy, *Species Area Relationships*, in 5 ENCYCLOPEDIA OF BIODIVERSITY 397 (Simon Levin ed., 2001). Smaller areas support smaller overall populations, which are more vulnerable to reduction below sustainable levels by random fluctuations in size. Some animals—in particular, large predators—require large ranges of undeveloped land for hunting or foraging. Others, like many forest birds, depend on the inability of many predators to penetrate the forest and will suffer if the forest is fragmented so as to provide predator access. Still other species have specialized habitat needs such as a specialized diet, either throughout their life or at particular times in their life cycle. For such species, simply preserving enough of that specialized habitat to serve in normal times may be insufficient since it leaves the species with no alternatives if that restricted portion becomes unsuitable due to weather, fire, or other factors. The special habitat must be preserved in enough different places to provide reasonable assurance that some of it will be available at all times. If a species vanishes for any of these reasons, other species that depend on it will vanish too. Interview with Craig Pease, Professor of Science and Law, Vermont Law School (Oct. 16, 2002). For a general discussion with examples, see E.O. WILSON, THE DIVERSITY OF LIFE 220-49 (1992).

Yet even the “large area” rule is not uniform—for example, preservation of wetland dependent

C. *Types of Land and Their Environmental Characteristics*

In modern industrial America, many watersheds already exceed ten to fifteen percent impervious cover, and others will inevitably exceed it. Many wildlife habitats have been developed, while others will be developed in the future. The achievement or preservation of areas of high water quality or abundant wildlife may therefore depend on leaving some of the remaining pristine areas relatively undeveloped.³⁸

The environmental benefits of preservation will be highly sensitive to *which* areas are preserved. For water, the absorptive capacity of undeveloped land will vary with its location and with the type of soil and vegetation.³⁹ Similarly, land's value for wildlife habitat will vary with its nature—for example, wetlands often support a uniquely wide range of species⁴⁰—or with the rarity of the species that live there, as when old growth forest supports the spotted owl. Undeveloped land can provide additional environmental and social benefits beyond pollution control and wildlife habitat, such as flood protection, groundwater recharge, and recreational space. Those benefits for any given acreage will also vary

species may be better served by preserving many small wetlands than a few large ones. The National Academy of Sciences has stated that “small isolated wetlands play a crucial role in the biodiversity of other wetland-dependent fauna, such as amphibians,” and are more effective per unit of size than large wetlands in removing pollutants. NAT'L RESEARCH COUNCIL, NAT'L ACAD. OF SCIS., COMPENSATING FOR WETLANDS LOSSES UNDER THE CLEAN WATER ACT 36-37 (2002) [hereinafter COMPENSATING FOR WETLANDS LOSSES].

38 Paradoxically, the best way to minimize the creation of additional impervious area at the regional scale is to concentrate it into high density clusters or centers. The corresponding impervious cover in these clusters is expected to be very high (25% to 100%), making it virtually impossible to maintain predevelopment stream quality. A watershed manager must then confront the fact that to save one stream's quality it may be necessary to degrade another.

Schueler, *supra* note 25, at 14.

39 Although not all wetlands provide all functions, *wetland functions* can include water-quality improvement; water retention, which helps to ameliorate flood peaks and desynchronizes high flows in streams and rivers; groundwater recharge; shoreline stabilization; and provision of a unique environment, part aquatic and part terrestrial, that supports a diversity of plants and animals, including a majority of the nation's rare and endangered species.

COMPENSATING FOR WETLANDS LOSSES, *supra* note 37, at 12. These functions will each be performed by different wetlands to different degrees, according to their nature and location. The National Research Council identifies failure to account for location as one of the leading causes of failure of efforts to replace lost wetlands. *See id.* at 6.

40 It has been estimated that two-thirds of commercially important fishes require estuaries or salt marshes as nurseries or spawning grounds. . . . Wetland species comprise a disproportionately large number of endangered species. As of 1991, the U.S. Fish and Wildlife Service had listed 595 plant and animal species as endangered or threatened. Of this number 256 (43%) are wetland-dependent, while wetlands provide essential habitat to 60% of all threatened and 40% of all endangered species.

James F. Berry, *Ecological Principles of Wetland Ecosystems*, in WETLANDS 18, 56-57 (Mark S. Dennison & James F. Berry eds., 1993).

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with location, vegetation, and soil type.⁴¹

III. Federal Environmental Regulation and Land Use

For the reasons just given, progress in water pollution control and wildlife protection will require land use restrictions. Since pristine water and wildlife habitat can be achieved, at best, only in certain areas, any rational policy will apply such controls more strictly in some places than in others. Within the controlled areas, optimal environmental results might require leaving certain ecologically vital lands undeveloped.

The framers of our environmental laws found two ways to ignore these difficult questions of control and priority. The Clean Water Act—the charter of federal water pollution control efforts—promises the environmental benefits of pristine water everywhere and then systematically denies the federal government any power to impose the land use controls needed to achieve them. Section 404 of the Clean Water Act and the Endangered Species Act do impose real burdens on land use. However, both statutes avoid any reference to issues that imposing these burdens necessarily raises, such as regional land use priorities, federalism, or property rights. Indeed, Section 404 does not even discuss the benefits to be expected from restricting wetlands development. The ESA does state a clear goal: protecting all listed species both against extinction and against the taking of individual members. But it is equally barren of references to other, countervailing factors and therefore gives little guidance on how to accommodate conflicts between these unmentioned factors and complete species protection.

A. *The Clean Water Act*

The Clean Water Act expressly established a national goal of achieving water quality throughout the United States adequate to protect “fish, shellfish and wildlife” by 1983.⁴² In choosing the means to pursue these ends, however, Congress focused the statute on requiring uniform controls on point sources like factories and sewage treatment plants regardless of water quality impact. It imposed no controls on non-point run-off from land use. This statutory avoidance of land use controls began in 1965⁴³ and has, if anything, increased over time. Yet Congress and the

41 Similarly, the increase in flooding danger caused by the growth of impervious surface and the cutting down of natural vegetation can be reduced, either by simple technological solutions like dams and levees, or by preserving buffer zones along the stream to absorb flooding. Both alternatives can effectively reduce flood damage, but the first approach has no collateral environmental benefits, while the collateral environmental benefits of the second approach could be substantial.

42 See Clean Water Act § 101(a)(2), 33 U.S.C. § 1251 (2000).

43 In 1965 Congress for the first time debated a federal power to set water quality standards.

EPA have simultaneously forbidden water-pollution regulators from dealing realistically with the consequences of that avoidance.

1. The Clean Water Act and Land Use Control

The Clean Water Act defines a point source subject to regulation as “any discernible, confined and discrete conveyance” from which pollution might enter the water.⁴⁴ Read naturally, this language would often cover run-off from irrigation, farming, forestry, or construction. Since 1965, however, Congress has rejected any water-pollution restrictions that might require land use controls, and the EPA has followed that lead. In 1977, Congress declared that return flows from irrigated agriculture are not point sources, even though the statutory definition of point source expressly names ditches and even though irrigation return flows accounted for more than half the pollution in some western watersheds.⁴⁵ Congress later extended this exclusion to run-off from all other agricultural operations and, in qualified form, to run-off from mining and oil and gas production.⁴⁶ In 1987, Congress authorized the EPA to exempt discharges from municipal storm sewers—which collect wet weather run-off from city streets—from the obligation to meet water quality standards, an obligation imposed on all other point source discharges, including industrial storm sewers.⁴⁷ Unwillingness to confront land use control was once again a factor. Though municipal sewers are indisputably point sources subject to Clean Water Act regulation, the flows they collect originate as run-off

The House rejected that authority, stating that:

[I]t would place in the hands of a single Federal official the power to establish zoning measures over—to control the use of—land within watershed areas in all parts of the United States. Such power over local affairs has never been vested in a Federal official, and we are opposed to doing it now.

H.R. REP. NO. 89-215, at 9 (1965), *reprinted in* 1965 U.S.C.C.A.N. 3313, 3322-23. The Senate adopted this authority, but only after including multiple reassurances of its lack of hard and fast meaning. *See* S. REP. NO. 89-10, at 9-10 (1965) (noting that standards will not be used to “lock in” existing high quality water uses and will not be enforced against sources absent a separate determination that the resulting limits would be practicable). The final bill retained a limited water quality standards authority, but imposed procedures that made these standards difficult to set and enforce. H.R. REP. NO. 89-1022, at 4-7, 9-13 (1965).

In 1972, Congress rejected central reliance on the water quality approach, with its inevitable land use implications, in favor of a program of “best technology” controls on industrial sources. *See* William F. Pedersen, *Turning the Tide on Water Quality*, 15 *ECOLOGY* L.Q. 69, 75-76 (1988).

⁴⁴ Clean Water Act § 502(14).

⁴⁵ Clean Water Act Amendments of 1977, Pub. L. No. 95-217, § 33(b) (codified as amended at 33 U.S.C. § 1362(14) (2000)); *see also* Pedersen, *supra* note 43, at 90.

⁴⁶ *See* Clean Water Act Amendments of 1987, Pub. L. No. 100-4; *see also* Pedersen, *supra* note 43, at 91 n.111-12.

⁴⁷ Section 402(p)(3) of the Clean Water Act requires discharges from industrial storm sewers to meet “all applicable provisions” of the Clean Water Act provisions that govern point sources, including water quality standards. At the same time, it requires *municipal* storm sewer discharges only to apply “controls to reduce the discharge of pollutants to the maximum extent practicable.”

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from broad land areas, while industrial storm sewers typically collect from more restricted regions. Reducing the discharge from municipal sewers could require widespread land use controls.⁴⁸ The EPA has granted the storm sewer exemption and regulates such discharges not according to their effect on water quality, but according to an ambiguously defined “best efforts” policy that specifically does not require land use controls.⁴⁹

Finally, in the face of massive resistance, the EPA in 2000 abandoned a regulatory proposal to classify farm and forestry operations as point sources in all areas where they contributed to water quality problems and fell within a natural statutory reading of point source.⁵⁰

Proponents of regulatory exemptions for irrigation return flows, storm sewers, farms, and forestry operations argued, with some justification, that since control technology cannot effectively reduce pollution from land use, land use pollution is an inappropriate target for the uniform application of control technology around which Congress reconstructed the Clean Water Act in 1972.⁵¹ The question whether control of such pollution is necessary to achieve clean water is less relevant to the statutory architecture and was not addressed. In effect, the statutory reliance on technology was used to justify ignoring land use and water quality questions, even though these

48 The strictly legal case for the validity of tight storm sewer effluent limits would be very strong, even if land use controls would be required to meet them. State and local governments generally build and own the roads and parking lots that account for much of the impervious surface that in turn leads to increased water pollution. Through road construction, zoning codes, and other land use policies, they create the framework that makes much additional impervious surface construction possible.

Local governments also build storm sewers to capture the storm flows created by the growth of impervious surfaces and channel them for more controlled release. The sewer pipe itself is the immediate source of the pollution discharge, whatever the ultimate origin may be. Both the Clean Water Act and pollution control laws in general regulate such immediate sources. *See* 55 Fed. Reg. 47,990, 47,990-91 (Nov. 16, 1990). The municipality can therefore legitimately be regarded as both the immediate source, through the discharge pipe, and the effective cause, through its own property and land use policies and practices, of storm sewer pollution. Against this background, arguments that tight storm sewer controls invade local planning autonomy could be countered with the claim that they were no different in principle from regulating releases from municipal incinerators and landfills. *See, e.g., New York v. United States*, 504 U.S. 144, 160 (1992) (stating that no constitutional issues are raised by subjecting the states to “generally applicable” regulatory statutes); *see also Pennsylvania v. EPA*, 500 F.2d 246, 261 (4th Cir. 1974) (upholding the EPA’s application of a similar logic to the control of emissions from vehicles on highways). The EPA’s most recent regulations for controlling storm sewer discharges use a simpler version of this argument to justify imposing control requirements on sewers operated by local governments. *See* 64 Fed. Reg. 68,722, 68,765-866 (Dec. 8, 1999).

Two federal circuits have recently upheld the EPA’s authority to require municipal storm sewer dischargers to regulate the conduct of their users. *See City of Abilene v. EPA*, 325 F.3d 657, 661-65 (5th Cir. 2003); *Environmental Defense Center, Inc. v. EPA*, 319 F.3d 399, 411-19 (9th Cir. 2003) (accepting the EPA’s argument).

49 *See* 64 Fed. Reg. 68,722 (Dec. 8, 1999).

50 *See* 65 Fed. Reg. 43,586, 43,646-52 (July 13, 2000).

51 To support the deletion of irrigation return flows from the definition of point source, the relevant Senate Committee said that “effluent limits based on technological methods may not be appropriate for control of [irrigation] return flows.” S. REP. NO. 95-370, at 35 (1965).

presented the most environmentally important issues.⁵²

2. Water Quality Standards and Land Use Controls

Despite the Clean Water Act's denial of federal power to mandate land use controls, EPA policy requires states to pretend that they can always maintain water quality at 1975 levels, regardless of the degree of land use control that would require. The statute directs states to establish permissible pollution levels or "water quality standards," subject to approval by the EPA, for all waters within the state's boundaries.⁵³ The EPA's regulations forbid any state's standards to allow a reduction in water quality from the highest level reached since 1975.⁵⁴

But a decline in water quality since 1975 might have resulted from an increase in impervious surfaces caused by suburban development, or from more extensive or intensive farming. Accordingly, strict protection of water quality could require comprehensive controls on local land use starting from 1975—controls that the statute gives the EPA no power to require. The EPA's rules therefore rest on an unenforceable assumption when they direct states to establish and maintain water quality standards as if the negative effects of land use changes between 1975 and the present did not exist, and as if no pollution-increasing land use changes would occur in the future.

The Clean Water Act has also long required states to adopt comprehensive plans to achieve water quality goals.⁵⁵ Those plans must

52 Judge Leventhal observed long ago, in rejecting the EPA's attempt to exclude certain categories of point sources from Clean Water Act permit requirements, that "[a]n exemption tends to become indefinite: the problem drops out of sight, into a pool of inertia, unlikely to be recalled in the absence of crisis or a strong political protagonist." *Natural Res. Def. Council v. Costle*, 568 F.2d 1369, 1382 (D.C. Cir. 1977). The Clean Water Act's self-perpetuating avoidance of land use control issues bears out the wisdom of that statement.

53 Clean Water Act § 303(a)(2)-(3).

54 The EPA's water quality regulation, 40 C.F.R. § 131 (2002), requires states to define "uses" for each of their waters, such as supporting a cold water fishery, a warm water fishery, or agricultural use. *See* § 131.2. It defines an "existing use" as any use that a water body would have supported at any time on or after November 28, 1975, § 131.3(e), and then forbids any state to designate in its water quality standards any use for any water body less demanding than an existing use, § 131.10. The regulation thus creates a one-way ratchet whereby any use attained in the last twenty-seven years becomes the regulatory minimum standard. The EPA based this policy on the purposes clause of the Clean Water Act, which articulates a "national goal" to "restore and maintain" the quality of the nation's waters. *See* Clean Water Act § 101(a).

55 The Clean Water Act contains several overlapping exhortations to this effect. *See* Robert W. Adler, *Integrated Approaches to Water Pollution: Lessons from the Clean Air Act*, 23 HARV. ENVTL. L. REV. 203 (1999). Section 303 sets out the most ambitious of these provisions. It requires states to identify those water bodies for which otherwise prescribed controls will be insufficient to achieve water quality standards, to calculate the Total Maximum Daily Load (TMDL) of pollution consistent with achieving these standards, and to allocate it among the sources of that load. Section 303 also requires the EPA to promulgate TMDLs and allocations where a state declines to prepare an adequate plan.

Section 303 does not prescribe any deadlines for state action and thus went unimplemented for

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include non-point source controls where needed to achieve this end.⁵⁶ However, the statute denies the EPA power to enforce such plans against non-point sources.⁵⁷

The EPA, spurred by citizen suits, has enforced these planning requirements far more vigorously in recent years. But the EPA's lack of power either to implement such plans itself, or to impose costs on states that do not implement them, restricts the federal government to the limited tools of moral suasion and adverse publicity to bring about the plans' implementation.⁵⁸

B. Wetlands Preservation

The only Clean Water Act provision that directly addresses land use—Section 404—requires a federal permit for any discharge of fill material into “navigable waters.”⁵⁹ Since such waters are defined broadly,⁶⁰ this permit obligation extends to discharges into many wetlands

many years. Beginning in the late 1980s and continuing to the present day, a series of court opinions set the program in motion, holding that so many years of state non-implementation amounted to a constructive refusal to implement, which in turn required the EPA to prepare the plans instead. *See, e.g.,* Ala. Ctr. for the Env't v. Browner, 20 F.3d 981 (9th Cir. 1994); *Scott v. City of Hammond*, 741 F.2d 992 (7th Cir. 1984); *Sierra Club v. Hankinson*, 939 F. Supp. 872 (N.D. Ga. 1996); *see also* Oliver A. Houck, *TMDLS, Are We There Yet?: The Long Road to Water Quality-Based Regulation Under the Clean Water Act*, 27 ENVTL. L. REP. 10,391 (1997).

⁵⁶ Section 303 does not expressly require that TMDLs include non-point sources, but the EPA has consistently read it to include them and the only decided case upholds that interpretation. *See Pronsolino v. Nastri*, 291 F.3d 1123 (9th Cir. 2002).

⁵⁷ *See* Adler, *supra* note 55, at 228; Houck, *supra* note 55, at 10,399 (“[T]here are no federal controls over non-point sources under the Clean Water Act.”). Without the ultimate backstop of federal power to enforce TMDLs against individual polluters, the federal “mandate” will provide little incentive to states to adopt stricter controls than they would have adopted in its absence.

⁵⁸ Those limited tools, however, could conceivably have a real effect. The establishment of TMDLs will draw public attention to the problems they address and create at least a notional regulatory framework to address them by establishing and allocating to sources and source types the specific pollution reductions needed to achieve water quality goals. The planning exercise would therefore change the information presented in the public dialogue even if it did not have binding legal effect. Experience with other information disclosure programs has shown their power to change the conduct of those subject to the disclosure. *See generally* William F. Pedersen, *Regulation and Information Disclosure: Parallel Universes and Beyond*, 25 HARV. ENVTL. L. REV. 152 (2001).

⁵⁹ Clean Water Act § 404(a). The courts have disapproved of the use of Section 404 to forbid the draining of wetlands, holding that by no reasonable interpretation can a bar on filling a wetland be construed to cover draining. *See, e.g., Nat'l Mining Ass'n v. U.S. Army Corps of Eng'rs*, 145 F.3d 1399 (D.C. Cir. 1998).

⁶⁰ “Waters of the United States,” under the regulatory definitions, includes not just waters actually used in interstate commerce, but also all other waters with any conceivable link to interstate commerce. 33 C.F.R. § 328.3(a)(3) (2003) (as applied to the Army Corps of Engineers); *see also* 40 C.F.R. § 230.3(s)(3) (2003) (as applied to the EPA). This regulation has been held to exceed federal authority under the Commerce Clause. *United States v. Wilson*, 133 F.3d 251, 255-57 (4th Cir. 1997). There is little doubt, however, that the Corps and the EPA could promulgate a valid regulation that extended regulatory authority to many waters that would never meet a common law test of navigability.

as well as into liquid water.⁶¹

However, the statute contains no standards for permit issuance.⁶² The implementing regulations likewise do not reference other land use plans, lower levels of government, or property rights, much less any need to reconcile federal decisions with these factors. They make clear that no overall plan specifying which wetlands shall be preserved and which can be developed will guide permit decisions. Only projects that would violate water quality standards or harm endangered species are absolutely barred.⁶³ The applicable regulations also establish a rebuttable presumption that developments in wetlands be approved only if they are “water dependent,” unless there is no feasible alternative.⁶⁴

Both the requirement for an individual permit and the water-dependent condition focus on the use of individual tracts of land. However, whether control of an individual tract is needed to protect water quality or endangered species often will depend on the degree and type of development allowed for all other parcels in the area. The case-by-case approach of Section 404 cannot effectively address such regional planning problems.

In theory, therefore, any wetland is potentially subject to filling depending on the outcome of a case-by-case comparison of the ecological damage of filling with the harm to the applicant from permit denial. Indeed, the decision on a given project in a given wetland might differ at different times depending on whether alternative sites had been developed or were still available.⁶⁵ Under this balancing test, the amount of wetlands preservation, and the location of the preserved wetlands, tend to become a function of the demand for wetlands development. No wetland, regardless of its environmental value, ever receives permanent protection under Section 404, since a new application will always require a new balancing. Moreover, the Section 404 balancing test assumes both that some development permits will always be granted—since otherwise the balance would have no meaning—and that the development issue can always be revisited for any particular wetland, since a permanent bar on development would probably be a taking. This test, standing alone, would therefore tend to allow the eventual development of all wetlands through continued

61 The Supreme Court ruled in *Solid Waste Agency v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001), that Congress did not intend Section 404 jurisdiction to reach isolated ponds with no connection to traditionally navigable waters. Since the Section 404 agencies have not amended their regulations in response, the precise impact of this decision is still unclear.

62 See Richard B. Stewart, *A New Generation of Environmental Regulation?*, 29 CAP. U. L. REV. 21, 75 (2001) (“Section 404 of the CWA makes an exceptionally open-ended delegation of regulatory authority. . . . The statute contains no standards at all for the exercise of this authority . . .”).

63 40 C.F.R. § 230.10(b)(1), (3).

64 See § 230.10(a)(3).

65 See *Bersani v. Robichaud*, 850 F.2d 36, 47-50 (2d Cir. 1988) (Pratt, J., dissenting).

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approval of some fraction of development applications.

In reality, two opposing factors complicate this analysis. On the one hand, the permit requirement and the water-dependent test combine to create an anticommons in which the expense of getting permission to develop a wetland itself preserves wetlands without any affirmative decision to preserve them.⁶⁶ On the other hand, political opposition to regulatory burdens has removed from many wetlands such limited protections as Section 404 provides. The Army Corps of Engineers, which administers Section 404, has moved to diminish the permit burden on wetlands owners by issuing “general permits” that grant automatic permission to dredge or fill to anyone who falls within the permits’ description.⁶⁷

When confined to a single parcel, a case-by-case approach also leads to “split the baby” outcomes, in which some of the parcel is developed, and some preserved, since to deny all development permission might trigger a successful takings claim.⁶⁸

Effective environmental protection through land use control would require discrimination in permissible uses over a broad area. Section 404’s ad hoc balancing tends to conflict both with use discrimination and state planning regimes. Courts reviewing decisions under state or local zoning laws have sometimes required them to be made in accordance with a “comprehensive plan” and have rejected as unacceptably arbitrary spot zoning, decisions that depart from such a plan or are made without one.⁶⁹ From that perspective, review under Section 404 is also spot zoning, since the federal government undertakes its review in a manner deliberately inconsistent with any applicable general state land use plan.

⁶⁶ See generally Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621 (1998). Professor Heller has remarked that “[a]s few as two regulatory bodies [with overlapping jurisdiction] may create [an anticommons] when they resist coordination.” Michael A. Heller, *The Boundaries of Private Property*, 108 YALE L.J. 1163, 1187 n.122 (1999) [hereinafter *Boundaries of Private Property*].

⁶⁷ See 67 Fed. Reg. 2020 (Jan. 15, 2002) (reissuing nationwide permits by the Army Corps of Engineers).

⁶⁸ Professor Thompson discusses how the habitat conservation plan approach would allow the government to move from an ESA implementation approach, based on preserving from development fractions of the land of every subject landowner, to a biologically superior approach based on preserving a single large undisturbed parcel by forbidding all development on selected parcels. Without the ability to rely on a habitat conservation plan, the government would pick the ESA implementation approach to minimize the risk of having to pay compensation. Habitat conservation plans make the second approach available by effectively inducing those subject to ESA requirements to pay to acquire the land. Barton H. Thompson, Jr., *The Endangered Species Act: A Case Study in Takings & Incentives*, 49 STAN. L. REV. 305, 338-39 (1997).

⁶⁹ See, e.g., *Guerriero v. Galasso*, 136 A.2d 497, 500 (Conn. 1957). Spot zoning can be created both by more lenient treatment of development in a small area, as compared to the surrounding community, and by less favorable treatment. See *Palisades Props. v. Brunetti*, 207 A.2d 522, 533 (N.J. 1965); ROBERT C. ELLICKSON & A. DAN TARLOCK, *LAND-USE CONTROLS: CASES AND MATERIALS* 103 (1981).

Other state land-use planning regimes operated more through a case-by-case weighing of the equities.⁷⁰ Section 404 conflicts with them as well by imposing on planning an additional federal decision maker along with extra process costs.

C. *The Endangered Species Act*

The ESA prohibits the taking of any animal that belongs to a species listed by the federal government as endangered.⁷¹ The implementing regulations define “take” to include certain types of land use changes.⁷² Their ambiguous language, which the Supreme Court has upheld against a facial challenge,⁷³ could theoretically prevent all development of land on which endangered species breed, feed, or shelter. Such drastic restrictions, however, would lead both to successful takings claims and to political opposition.⁷⁴ For these reasons, until the recent rise of bargaining entitlement approaches, the ESA was enforced almost exclusively against large private or governmental landowners.⁷⁵ Those few cases in which the government attempted to use its ESA powers for community land use planning resulted in embarrassing and instructive political defeat.⁷⁶

Congress applied the ESA’s commands equally to every landowner whose actions might take an endangered species. Yet, unless protecting the

⁷⁰ See JESSE DUKEMINIER & JAMES E. KRIER, *PROPERTY* 995-1004 (4th ed. 1998).

⁷¹ Endangered Species Act of 1973, 16 U.S.C. § 9(a) (2002).

⁷² The term “take” includes “significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.” 50 C.F.R. § 17.3 (2003). This language goes considerably beyond the statutory definition itself, which reads: “The term ‘take’ means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Endangered Species Act § 3(19).

⁷³ *Babbitt v. Sweet Home Chapter of Comms. for a Great Or.*, 515 U.S. 687 (1995).

⁷⁴ The statute also requires agencies that list endangered species to designate “critical habitat” for those species “to the maximum extent prudent and determinable.” Endangered Species Act § 4(a)(3). Critical habitat determinations are governed by a cost-benefit test unless the agencies determine that a cost-benefit determination “would result in the extinction of the species concerned.” § 4(b)(2). Unlike the takings bar, designation of critical habitat has no direct impact on private landowners; it serves only to require any federal agency that acts in a manner that might affect critical habitat to consult with the relevant wildlife agency about the impact. For these reasons, the ESA agencies have long downplayed the critical habitat provisions of the ESA in favor of relying on the more straightforward takings bar. See Federico Cheever, *Critical Habitat, in THE ENDANGERED SPECIES ACT: LAW, POLICY AND PERSPECTIVES* 47, 54, 64 (Donald C. Baur & William R. Irvin eds., 2002).

⁷⁵ See Mark Sagoff, *Muddle or Muddle Through? Takings Jurisprudence Meets the Endangered Species Act*, 38 WM. & MARY L. REV. 825, 855 (1997) (citing a GAO report stating that between 1985 and 1993 over ten times as many Americans (100) were killed by lightning as were prosecuted for violating ESA provisions (8)).

⁷⁶ The most notable of these examples involved the attempt to control residential construction in Austin, Texas to protect the habitat of the golden-cheeked warbler, which provoked almost universal bipartisan political backlash leading the Interior Department to promise not to designate private land as critical habitat for endangered species. See CHARLES C. MANN & MARK L. PLUMMER, *NOAH’S CHOICE: THE FUTURE OF ENDANGERED SPECIES* 190-211 (1995).

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species requires barring all land development throughout its range, a more limited set of restrictions could adequately achieve the statutory purposes. Moreover, as with wetlands protection, the degree of restriction required for one piece of land will probably be affected by the pattern of restrictions imposed on all the others. A statute that articulates a broad and inchoate burden on all land use alike cannot address such problems.

D. *A Common Thread: Avoiding Conflict in Land Use Preferences*

Despite the substantive differences in the programs just described, all three have been shaped to avoid (or to allow agencies to avoid) any wholesale conflict between program requirements and the autonomy interests of state regulators and private property owners. But since any attempt to protect the environment by private land use control will lead to that conflict, the result is either ineffective programs or conflict shifted to the level of individual decisions, or both.

By pretending that the nation's water pollution problems could be solved without land use control, the Clean Water Act allowed legislators and regulators to ignore both the need to designate specific land areas that would achieve highest-quality water versus those that would not, and the need to accommodate state, local, and private land use preferences in making that choice.

Section 404's universal ad hoc approach avoids direct conflicts with state, local, or private land use planning. The price of that avoidance is an incoherent program that suppresses basic questions about which wetlands should be preserved and where, just as the Clean Water Act suppresses questions about how and where top quality water should be achieved.

Finally, the ESA's absolute takings bar subjects private landowners to the prospect of ESA restrictions that will never be imposed, denies endangered species the protections that a more explicit and enforceable dedication of land to their interests might provide, and avoids critical questions concerning how much private land to dedicate to species protection and how to dedicate it.⁷⁷

In short, all three statutes qualify as examples of what Professor Dwyer calls "symbolic environmental legislation."⁷⁸ Such legislation

⁷⁷ Moreover, the imposition of a potential development ban on lands where endangered species are present gives landowners an incentive to make sure that the species never becomes established there, either by illegally killing any members that do become established, or by developing the land before any of the species arrive. See Barton H. Thompson, Jr., *People or Prairie Chickens: The Uncertain Search for Optimal Biodiversity*, 51 STAN. L. REV. 1127, 1153-54 (1999). The implementing agencies have developed "tradable entitlement" approaches to address this problem as well. See *infra* text accompanying notes 121-122 (describing "safe harbor" and "candidate conservation agreement" policies).

⁷⁸ John P. Dwyer, *The Pathology of Symbolic Legislation*, 17 ECOLOGY L.Q. 233 (1990).

declares ambitious ends to be achieved without providing the means to realistically achieve them. In so doing, this legislation avoids politically-charged conflicts with other important social interests that full achievement of its declared ends would require.⁷⁹

Since protection of state autonomy and private property rank among the core values of our society, confronting and accommodating conflicts between those interests and environmental protection will be needed to establish land use controls. Our current environmental programs simply hinder such efforts by pretending that environmental protection can be achieved without addressing land use conflicts.

IV. Federal Land Use Versus Industrial Pollution Controls

Traditional regulatory tools have worked far better to control industrial pollution than to address land use because land use planning, unlike industrial pollution control, generally requires case-by-case accommodation of sharply conflicting interests. Since federal government regulation is particularly bad at resolving such problems, land use control challenges it at a weak point.

A. *Traditional Top-Down Regulation's Success: Industrial Pollution Control*

1. Non-Rival Commands

Economists call two separate goals “rival” when achieving one means giving up the other.⁸⁰ Reducing pollution from products and factories generally is not rival to continued industrial activity. Technological innovation, over time, can reduce almost to insignificance the conflict between production and pollution.⁸¹ For that reason, despite its substantial expense, compliance with the past generation of environmental rules has not required any fundamental choices among social values or significant changes in consumption patterns or life style.⁸² Factories of all types

⁷⁹ *Id.* at 250 (“Symbolic legislation does not suppress the conflicts that arise in designing and implementing a regulatory scheme; instead, it transfers those conflicts to agencies, and at times to courts, for resolution.”).

⁸⁰ Two claims to eat the same hamburger are rival, since only one claimant can eat it. Two claims to receive the same television signal are not rival because the signal can accommodate any number of receivers within its range. *See, e.g.*, TODD SANDLER, COLLECTIVE ACTION 6 (1992).

⁸¹ Since 1970, aggregate emissions of the six principal air pollutants have been cut 48%. During that same time, the U.S. gross domestic product increased 164%, energy consumption increased 42%, and vehicle miles traveled increased 155%. *See* EPA, LATEST FINDINGS ON NATIONAL AIR QUALITY: 2002 STATUS AND TRENDS 1 (EPA 454/K-03-001) (Aug. 2003), available at <http://www.epa.gov/airtrends/index.html>.

⁸² In 1990, the EPA estimated the percentage of GNP devoted to environmental protection at 2.1% in 1990, rising to 2.7% in 1997. EPA, ENVIRONMENTAL INVESTMENTS: THE COST OF A CLEAN

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continue to function while polluting less, and automobiles, gasoline, pesticides, and new chemicals have remained available—only in more environmentally friendly forms. The limited impact of such non-rival decisions makes the inefficiencies of traditional regulation and its inattention to the interests of the regulated entity easier to accept.

2. Fungible Commands

The limited information-processing capacity of traditional regulation often leads it to apply the same requirements to many broad categories of activities, for example, to all power plants, all new automobiles, or all gasoline. Accordingly, such rules work best when environmental problems are fungible, so that the same solution can be applied to many separate instances of what is largely the same problem. Many of the areas addressed by past generations of environmental regulation fit this model reasonably well. Other problems that did not fit the model were redefined to fit it. This at least allowed the regulatory system to function and issue its commands.⁸³

3. Regulatory Reform

Regulatory reform advocates often claim that market-based approaches to environmental protection can overcome the inefficiencies and intrusiveness of command and control. However, such approaches, like command and control, require relatively non-rival problems with fungible solutions if they are to work.

Under the *cap and trade* approach to pollution control, the government prohibits any pollution release not covered by an allowance. The number of allowances issued cannot exceed a “cap,” while allowances are freely transferable. The overall cap on allowances limits overall releases to a predetermined figure. Making the allowances transferable gives them a market-determined price. Firms whose control costs are higher than the allowance price will buy allowances to cover their emissions, while firms whose costs are lower will sell their allowances and install controls. Thus the overall control burden falls automatically on the lowest-cost controller. This approach also blunts regulatory intrusion into private autonomy by allowing those to whom regulation is least palatable

ENVIRONMENT, A SUMMARY, 2-2 to 2-3 (Alan Carlin ed., 1990). A more recent analysis concluded that this was still a defensible order-of-magnitude estimate. NAT'L CTR. FOR ENVTL. ECON., EPA, WHAT DO WE SPEND ON ENVIRONMENTAL PROTECTION, *available at* <http://yosemite.epa.gov/EE/epa/white.nsf/bd3a5276c012f0e685256c2c00570970/d631aad37b771751852567a9004b9aef?OpenDocument> (last visited Dec. 17, 2003).

83 See *supra* text accompanying notes 44-52.

to avoid regulation by purchasing allowances instead.⁸⁴

Such approaches can work only if regulated entities can incorporate the expense of allowances or pollution control into their operations as a cost. That, however, assumes that the limits being imposed are not rival to the underlying business activities that require and pay for the allowances and controls that implement the limits.

The very freedom of choice that cap and trade programs grant regulated entities can generate many different patterns of regulated activity, depending on which covered entities choose to rely on allowances and keep emissions high and which choose to rely on pollution controls. Accordingly, market-based approaches will provide an assured level of environmental protection only to the extent that the environmental benefits from the different possible patterns of allowance usage are roughly fungible, for example, if a reduction in air pollution will be of equal value regardless of the source at which it takes place.⁸⁵

B. *Land Use Control and Traditional Regulatory Approaches*

1. Rival Commands

Land use control is far more inherently rival than traditional process and product regulation. Technical advances are more likely to create an automobile that combines mobility with no pollution than to create a housing development or a shopping center that also serves as a wildlife sanctuary, or that preserves intact the current state of a neighboring stream. The potential impact of land preservation requirements on the autonomy of a landowner who might lose the ability to control his property is clear. But the potential impact on the autonomy of state and local governments that might lose their ability to plan property use within their borders could be equally substantial.

Moreover, the claims of landowners and state and local governments to have their interests considered when such rival choices contradict their preferences are more deeply rooted in our legal and political system than the autonomy claims of industrial operations.⁸⁶ These autonomy interests

⁸⁴ Since firms that find ways to reduce their control costs will also reduce their allowance purchase costs (or increase their allowance sale income), the market approach will also encourage innovation in control approaches.

⁸⁵ Market-based trading systems “*must* assume fungibility—that the things exchanged are sufficiently similar in ways important to the goals of environmental protection—otherwise there would be no assurance that trading ensured environmental protection.” James Salzman & J.B. Ruhl, *Currencies and the Commodification of Environmental Law*, 53 STAN. L. REV. 607, 611 (2000) (emphasis in original).

⁸⁶ The Supreme Court has recognized that control of land use is an inherently local responsibility which the federal government has only debatable constitutional power to address. *See Solid Waste Agency v. U.S. Army Corps of Eng'rs*, 531 U.S. 159 (2001). The Supreme Court has

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enjoy both strong political support and at least some constitutional protection and thus are hard to overcome through legislative or regulatory action.⁸⁷

The need to choose among rival land uses will increase disproportionately as environmental goals become more ambitious. While preservation of rabbits or common songbirds in a suburb might require no controls beyond ordinary zoning, preservation of pristine water quality in a river or of habitat for a full range of “natural” wildlife species could rule out most other uses of large areas and is therefore rival to them.

2. Fungible Commands

Controls on land will rarely be fungible. Different tracts of land will have widely different values as pollution buffers, wetlands, or species habitats. Even more fundamentally, problems of environmental land use control tend to be polycentric in that restrictions imposed on any one parcel to achieve some goal will reciprocally influence the restrictions needed on all the other parcels.⁸⁸ Accordingly, it may often be impossible to assess the environmental value of restrictions on a given tract without considering the environmental restrictions imposed on others.

These factors make environmental protection through land use control poorly suited to market-based regulatory approaches. A simple allowance approach allowing *X* acres, and only *X* acres, to be developed in a given area would probably result in a somewhat random distribution of developed and undeveloped parcels, just as an allowance approach for pollution control can yield a geographically disparate distribution of emissions reductions.⁸⁹ Yet the judgment that each acre preserved from

likewise opined that state limits on the use of real property are more likely to trigger takings liability than limits of the same stringency on personal property use. *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1027-28 (1992).

87 For opposition to federal land use controls from property owners, see Salzman & Ruhl, *supra* note 85, at 678 (“It is no secret that endangered species and wetlands [regulations] have long served as lightning rods for property rights groups. . . . [E]very congressional session witnesses new proposals to weaken the habitat protections of the ESA and CWA. This combination of public attack and political threat has led to real, pounding pressure on the agencies.”); *see also* Carol M. Rose, *Takings, Federalism, Norms*, 105 YALE L.J. 1121, 1129 (1996) (reviewing WILLIAM A. FISCHER, *REGULATORY TAKINGS: LAW, ECONOMICS, & POLITICS* (1995)) (“After years of complaints by farmers, miners, real estate developers, and timber interests, Congress is now besieged with proposals to alter wetlands and endangered-species protections, and to curtail sharply the constraints that those measures have imposed on landowners.”). The siege of proposals has abated since these words were written in 1996, but the pressures that created them have not diminished.

88 A polycentric problem is one in which the resolution of a given issue—such as whether and how much to allow development of Tract *A*—cannot be answered without knowing the answer to other, parallel problems—whether and how much Tracts *B*, *C*, and *D* will be developed. *See* Lon L. Fuller, *The Forms and Limits of Adjudication*, 92 HARV. L. REV. 353, 394-405 (1978).

89 Indeed, the pattern might be even more random. While the plants in an industry may all have roughly similar pollution control cost curves, the factors that lead to the development of one parcel of land and the preservation of another are likely to be more heterogeneous. Salzman and Ruhl,

development is of equal value regardless of location is far less defensible than such a judgment regarding pollution. Accounting for the differing environmental values of land in different locations risks making a trading system impossibly intricate because of the need for highly complex formulas to determine the environmental value of the land in question.⁹⁰

Even apart from complexity, the very idea of a valuation formula for individual parcels of land may conflict with the polycentric nature of land use decisions. In many cases, control by individual landowners of their own discharges may be inferior to a collective approach in which undeveloped buffer zones, free from farming or impervious surface, absorb the run-off from more developed areas, or in which pollution from intensive development of broad areas is offset by keeping other areas undeveloped. Similarly, large, unbroken areas might have far greater ecological value as wetlands or endangered species habitat than individual parcels. No simple system of allowance requirements could predictably generate such a land use pattern, while the cost of devising a complex trading system could easily exceed the cost of establishing a pattern by direct action.⁹¹

The problems do not end there. Other competing community desires—for example, desires for residential land, recreational areas, or business locations—also present polycentric problems. The decision whether to allow a particular use in one place will influence the decision

after describing the lack of complete fungibility in pollutant emissions, add that “[i]n programs that trade habitat, the problem of nonfungibility becomes even more accentuated because the parcels have unique landscape characteristics.” Salzman & Ruhl, *supra* note 85, at 694.

90 The proposals that have been made for market-based approaches to environmental land use control make this point through their sheer complexity. According to Salzman and Ruhl, “in the wetlands context one could imagine a currency that captured acreage, provision of key services (biophysical capacity for nutrient filtration, floodwater retention, nursery habitat), and delivery of services (size of local population affected).” *Id.* at 635. Similarly, a proposal for a market-based approach to habitat conservation envisions assigning a habitat value to each parcel of land at issue “using a predetermined formula based on habitat quality characteristics such as topographic diversity, watershed integrity, and the presence of indicator species or invasive alien species.” David Sohn & Madeline Cohen, *From Smokestacks to Species: Extending the Tradable Permit Approach from Air Pollution to Habitat Conservation*, 15 STAN. ENVTL. L.J. 405, 413 (1996) (summarizing Todd G. Olsen et al., *The Habitat Transaction Method: A Proposal for Creating Tradable Credits in Endangered Species Habitat*, in BUILDING ECONOMIC INCENTIVES 31 (Wendy E. Hudson ed., 1994)). This approach would “take[] into account inherent habitat quality, patch sizes, connectivity and fragmentation of habitat[,] . . . exposure of habitat to unprotected edges, and the general roundness of the habitat configuration.” *Id.* at 413 n.32 (quoting Olsen et al., *supra*, at 31). Given the number and complexity of the variables, and the way the “polycentric” nature of the problem at issue will cause them to change value for each acre with the use assumed for each neighboring acre, the cost of creating and using such a currency could well outweigh any benefits from its use.

91 In addition to these factors, the difficulty of measuring the performance of environmental land use restrictions would itself be a fatal obstacle to federal implementation of land use controls. In the water pollution context, the work necessary to measure the discharges from all the land owners covered by a non-point source control program and then to assess the regulatory consequence of those discharges would be so expensive, so intrusive, and so duplicative of state zoning and other land use control efforts as to make its performance at the federal level impractical.

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whether to allow it somewhere else. Any final land use pattern would be the integral of all these polycentric calculations, and any market-based approach that attempted to accommodate all these separate factors would need to be far more intricate than one that considered environmental factors alone.

A different market-based approach could solve these fungibility problems but would exacerbate the conflict between rival uses. Using such an approach, the government would expressly limit development in certain areas while simultaneously issuing transferable development rights (TDRs) to all landowners in some broader region. Any new development would need to be covered by more TDRs than were allocated to the owner of the land on which it would be built.⁹² The owners of tightly restricted land could then recoup some (perhaps all) of their losses by selling their TDRs to the sponsors of such development projects.⁹³ The TDR approach allows the government to designate land to be protected and provides at least partial compensation to the owners of that land. But since the federal government would be making these decisions, it would invade state autonomy more than our present system, since it would require federal prescription of detailed land use patterns to give the TDRs value.

C. “*Optimum Jurisdiction*”: *An Incomplete Solution*

Rival choices become most problematic when they are imposed on a group through the political power of another group. For that reason, economically-oriented analysts seeking to guard against outside exploitation of local communities argue that government services:

[S]hould be provided by the smallest jurisdiction that encompasses the geographical expanse of the benefits and costs associated with the service. In this way, all the benefits and costs are internalized [within the jurisdiction], and, at the same time, we can take full advantage of tailoring service levels to the particular tastes and other circumstances that characterize the individual jurisdictions.⁹⁴

⁹² Cf. John J. Costonis, “Fair” Compensation and the Accommodation Power: Antidotes for the Taking Impasse in Land Use Controversies, 75 COLUM. L. REV. 1021 (1975). See generally DUKEMINIER & KRIER, *supra* note 70, at 1165-67.

⁹³ The Supreme Court has suggested that issuance of TDRs to a developer can make a government action not a taking even though they do not fully compensate for the diminution in value caused by the regulation. See Penn. Cent. Transp. Co. v. New York City, 438 U.S. 104, 137 (1978). But see *id.* at 140-42 (Rehnquist, J., dissenting); *Suitim v. Lake Tahoe Reg’l Planning Auth.*, 520 U.S. 725, 747 (1997) (Scalia, J., dissenting).

⁹⁴ Wallace E. Oates, *On Environmental Federalism*, 83 VA. L. REV. 1321, 1323 (1997) (citation omitted). Indeed, such a conclusion follows almost as a logical deduction from the assumptions that governments exist to satisfy such preferences of their citizens as can only be met by collective action, and that governments act reasonably effectively toward that goal. See also Bradley C.

This approach, it is argued, protects residents of a smaller region within a broader geographic area from the imposition of special regulatory burdens by the majority. Following this logic, one might argue—as some Supreme Court opinions suggest—that land use is an inherently local problem and that the problems outlined above stem from federal interference with local control.⁹⁵ Though such reasoning undermines any case for exclusive federal land use control, it does not show that exclusive local control would be appropriate.

Land use in a given jurisdiction may create water pollution or diminish supplies of water or wildlife far beyond the jurisdiction's boundaries. It may also have environmentally damaging effects forbidden by federal law within the jurisdiction itself.⁹⁶ Yet any external imposition of controls to prevent those harms would be rival to other potential community land use choices.

In such circumstances, an overly narrow decision-making boundary may lead to decisions that do not fully reflect the interests of downstream residents or persons outside the jurisdiction, thus creating externalities. Expanding the boundary to include all those beneficiaries may create a majority for more protection that exploits the outvoted minority in the vicinity of the resource to be protected.⁹⁷ In such circumstances both the interests of those who would bear the costs and the interests of those who would enjoy the benefits are valid. “Optimum jurisdiction” logic by itself provides no principled way to make a decision between the two interests. To an important extent, the claims of each jurisdiction to exercise the same power are rival just as different potential uses of the same land are rival.

D. *The Problem of “Demoralization Cost”*

An analysis borrowed from takings law describes why federal regulatory land use restrictions meet resistance and points to a possible solution.

Under the leading view of takings law, suggested by Professor Michelman, compensation requirements are imposed to mitigate the distress inflicted on property owners when government action invades their justified expectations of using their property freely.⁹⁸ Therefore, the

Karkkainen, *Biodiversity and Land*, 83 CORNELL L. REV. 1, 75-76 (1997).

⁹⁵ See *infra* note 145.

⁹⁶ The federal courts of appeals have repeatedly upheld federal requirements to preserve water quality and protect endangered species within the borders of a single state. See, e.g., *Nebraska v. EPA*, 331 F.3d 995 (D.C. Cir. 2003); *Rancho Viejo, LLC v. Norton*, 323 F.3d 1062 (D.C. Cir. 2003); *GDF Realty Investments v. Norton*, 326 F.3d 622 (5th Cir. 2003).

⁹⁷ Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570, 587-90 (1996).

⁹⁸ Frank I. Michelman, *Property, Utility and Fairness: Comments on the Ethical Foundations of “Just Compensation” Law*, 80 HARV. L. REV. 1165 (1967). Michelman argues that

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higher the “demoralization costs” of a land use regulation, the more likely it should be to trigger takings requirements. Similarly, federal land use control efforts can generate demoralization costs for affected landowners, for local governments, and for electorates whose regulatory land use power would be overridden. These demoralization costs need not create a constitutional infirmity to defeat regulation; the political resistance they motivate will often be quite enough.⁹⁹

By definition, demoralization costs are determined by (1) the extent of the restriction imposed on the freedom of the regulated party and (2) the degree to which the regulated party does not consent to that restriction.¹⁰⁰ Criminal law restricts our freedom of action, but since its restrictions are generally accepted, its constraints are not demoralizing. Because land use regulation tends to rule out alternative uses of the property at issue, and because federal land use regulation would invade expectations that both local governments and landowners believe should be protected, the demoralization costs of federal land use regulation are generally high.

The Michelman analysis also suggests that demoralization costs could be reduced by an approach to achieving environmental goals that (1) reduces the cost of achieving such goals to those affected and (2) reduces the invasion of the autonomy of the affected landowners and local communities by giving them an effective voice in designing the restrictions. As discussed above, however, our current regulatory approach can neither select the least-cost approach to regulation nor give those with strong rival interests an adequate voice in shaping the rules. The balance of this Article discusses how bargaining entitlements are beginning to address these problems, and how they could be employed more systematically in the future.

compensation should be due whenever a government act invades reasonable landowner expectations so much that the resulting demoralization costs exceed the transaction costs of providing compensation.

⁹⁹ See *supra* note 87.

¹⁰⁰ Michelman’s article did not clearly identify the basis on which demoralization costs rest. To fill that gap, many commentators have noted as fact, and urged as desirable, that only those restrictions on land use that violate community values should constitute a compensable taking. See, e.g., Robert C. Ellickson, *Alternatives to Zoning: Covenants, Nuisance Rules, and Fines as Land Use Controls*, 40 U. CHI. L. REV. 681, 729 (1973); Robert C. Ellickson, *Suburban Growth Controls: An Economic and Legal Analysis*, 86 YALE L.J. 385, 418-24 (1977). That approach implies that the types of government acts that constitute a taking might well change with changing community values. Fischel, in endorsing this approach, notes how evolving values have changed our social approach to pollution control and might change our approach to land use as well:

Three generations ago, Pigou suggested that firms that reduced pollution should be paid subsidies. . . . This implied that clean air was a social benefit for which compensation should be made, rather than a social cost on which taxes should be imposed. The ecological revolution is surely one in which standards of what is normal behavior have changed.

FISCHEL, *supra* note 87, at 354.

V. Bargaining Entitlements Today

The federal agencies responsible for water pollution control, wetlands preservation, and endangered species protection¹⁰¹ have already begun reshaping their regulatory tools into bargaining entitlements.¹⁰²

A. *Water Pollution Control*

The Clean Water Act, as shown above, exempts from mandatory regulation the non-point sources that account for over half of all water pollution. At the same time, it requires point sources to install best-technology controls without regard to water quality need or impact.

A recent EPA policy allows regulated point sources some freedom to meet their control obligations, not by directly reducing their own pollution discharges but by procuring the reduction of discharges from non-point sources instead.¹⁰³ Whenever non-point source controls can achieve a given level of water quality more cheaply than point source controls, an exchange of control obligations can lead both to reduced overall pollution control cost and improved water quality.

These non-point source controls can consist of land use restrictions imposed by covenant or contract.¹⁰⁴ Accordingly, a trade between point and non-point sources can transform the federal obligation to install

101 Although the EPA alone administers the Clean Water Act, the Army Corps of Engineers and the EPA share responsibility for implementing Section 404. *See* Clean Water Act § 404(a)-(d), (j). The ESA is administered by the National Marine Fisheries Service in the Department of Commerce for all marine animals except sea otters and sea turtles on land, and by the Fish and Wildlife Service in the Interior Department for all other animals. *See* Donald C. Baur & William R. Irvin, *Introduction to THE ENDANGERED SPECIES ACT: LAW, POLICY AND PERSPECTIVES*, *supra* note 74, at xi.

102 A fourth example could have been added as well. The Safe Drinking Water Act requires all drinking water systems to achieve prescribed levels of freedom from contamination by bacteria and other micro-organisms. Economic development of a watershed increases the levels of these organisms in surface water. Accordingly, the implementing EPA regulations give communities the choice of achieving these levels either through end-of-the-pipe treatment technology, or by preserving their reservoirs' watershed from development. Since controlling development is often less expensive than installing the technology, a number of communities—most notably New York City—have elected to comply through land use restrictions. New York City decided that it would be wiser:

[T]o invest \$1-1.5 billion in restoring and protecting the Catskill watershed . . . than to construct a \$4-8 billion filtration plant that also would have raised difficult siting problems. New York City plans to spend over a quarter million dollars purchasing and preserving 335,000 acres of land as a buffer from pollution and, incidentally, as habitat for a diverse assortment of species.

Thompson, *supra* note 77, at 1174 (citations omitted). Other metropolitan areas are adopting similar programs. *See* Barton H. Thompson, Jr., *Markets for Nature*, 25 WM. & MARY ENVTL. L. & POL'Y REV. 261, 298-300 (2000).

103 *See* 68 Fed. Reg. 1,608 (Jan. 13, 2003) (announcing the EPA's Final Policy on Water Quality Trading); EPA DRAFT FRAMEWORK FOR WATERSHED-BASED TRADING (EPA 800-R-96-001) (May 1996), available at <http://www.epa.gov/owow/watershed/trading/tradetbl.html> [hereinafter EPA DRAFT FRAMEWORK].

104 EPA DRAFT FRAMEWORK, *supra* note 103, at 7-15.

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effluent controls on a factory into an easement or contract, paid for by the factory, that restricts the use of private land. The EPA predicts that the ability to trade will lead to a regional- and community-based approach to selecting the areas whose use will be restricted,¹⁰⁵ and that trading will also encourage selection of areas whose preservation will have collateral environmental benefits such as flood control or the preservation of wildlife habitat.¹⁰⁶

B. *Wetlands Preservation*

Under the current case-by-case approach to wetlands protection, no wetland receives permanent protection. Instead, each request to fill a wetland leads to a separate permit proceeding. An alternative approach, *wetlands mitigation*, turns the obligation to get a permit before any wetland is developed into permanent protection of selected wetlands.¹⁰⁷ Applicants seeking to fill a wetland receive their permit if they create new wetlands in a designated restoration area or arrange permanent protection for existing wetlands particularly threatened by development.¹⁰⁸ The

¹⁰⁵ The EPA has suggested that:

Trading brings watershed stakeholders—regulated sources, nonregulated sources, regulatory agencies, other interested organizations, and the general public—together and engages them in a partnership to solve water quality problems. . . .

Trades draw on the expertise and local knowledge of stakeholders to ensure that trading projects have their support. A trading option can serve as a consensus-building exercise, leading to more cooperative, comprehensive solutions. Such solutions can provide benefits that might not have been captured in a traditional regulatory approach, such as increased identification and control of cumulative effects (e.g., habitat degradation).

Id. at 2-10 to 2-11.

¹⁰⁶ The EPA's *Final Water Quality Trading Policy*, *supra* note 31, at 3, expressly states that the EPA supports trading approaches that "[c]ombine[] ecological services to achieve multiple environmental and economic benefits, such as wetland restoration or the implementation of management practices that improve water quality and habitat."

However, the conflated nature of Clean Water Act obligations has discouraged the full development of this approach. As detailed above, the statute requires each discharger to meet a given level of control regardless of water quality need. Consequently, the EPA's Water Quality Trading Policy forbids exchanges that would increase point source discharges above the technology-based effluent limits, even if reductions of greater water quality benefit were offered elsewhere. *Id.* at 6. In addition, the EPA's bar on any downgrading of water quality standards below 1975 levels forbids any offer of such downgrading in return for adoption of all the measures—including land use controls—needed to preserve water quality elsewhere against future development. Both restrictions are inconsistent with the need to discriminate by region to achieve effective water quality protection.

¹⁰⁷ See 33 C.F.R. § 320.4(r) (2003) (Army Corps of Engineers); 40 C.F.R. § 230.1(d) (2003) (EPA). The Corps of Engineers regulations also allow permit applicants to simply pay money in lieu of compensating their environmental damage in kind where an in-kind offset would be too difficult. See 65 Fed. Reg. 66,914 (Nov. 7, 2000); 60 Fed. Reg. 58,605, 58,613 (Nov. 28, 1995). In such a case, the conversion of the permit requirement into a bargaining entitlement is even clearer than in the case of wetlands banking. For a description and criticism of this practice, see Royal C. Gardner, *Money for Nothing? The Rise of Wetland Fee Mitigation*, 19 VA. ENVTL. L.J. 1 (2000).

¹⁰⁸ 60 Fed. Reg. 58,605 (Nov. 28, 1995). The policy expresses a preference for creation of

implementing agencies have made clear that the new or protected wetlands must be fully sheltered against development under state property law.¹⁰⁹

Originally, mitigation was restricted to actions elsewhere on the property covered by the permit. Increasingly, however, agencies have accepted mitigation outside the property as well.¹¹⁰ The ability to select the wetlands to be preserved or restored from a broader area increases the potential environmental benefits of wetlands mitigation.¹¹¹ Such off-site mitigation also allows wetlands entrepreneurs to create new wetlands prospectively and put them in a “bank.” Developers can then acquire banked wetlands to offset their own wetlands destruction. The implementing agencies expect the growth of wetlands banks both to help create and preserve large tracts of wetlands in ecologically valuable areas and to reduce administrative costs.¹¹² Though experience with many created wetlands has been disappointing, it may be possible to correct these problems without abandoning the banking approach.¹¹³

new offsetting wetlands as the proper mitigation course, with preservation of existing wetlands authorized only if they are ecologically important and “are under demonstrable threat of loss or substantial degradation due to human activities that might not otherwise be expected to be restricted.” 60 Fed. Reg. at 58,609.

Such an approach will lead to a net loss of wetlands by sometimes permitting their uncompensated destruction. But it could still be a rational regulatory move if the permitting authority knew that it would be unable to deny all Section 404 applications. In that case, the mitigation rule would at least assure that for every acre of wetland destroyed, one or more compensating acres (depending on the required offset ratio) would be permanently removed from commercial availability and protected by a property rule.

109 See 60 Fed. Reg. at 58,612 (“The wetlands . . . in a mitigation bank should be protected in perpetuity with appropriate real estate arrangements (e.g., conservation easements, transfer of title to Federal or State resource agency or non-profit conservation organization).”).

110 See J.B. Ruhl & R. Juge Gregg, *Integrating Ecosystem Services into Environmental Law: A Case Study of Wetlands Mitigation Banking*, 20 STAN. ENVTL. L.J. 365, 369-72 (2001).

111 The National Research Council, comparing on-site mitigation of the impacts of permits to fill wetlands with mitigation not geographically restricted, has stated that:

On-site compensation is typically constrained by hydrological conditions that are likely to have been or are being modified by the developments requiring mitigation. . . . Proper placement within the landscape of compensatory wetlands to establish hydrological equivalence is necessary for wetland sustainability. . . . Thus, opportunities for in-kind compensation need to be sought within a larger landscape context.

COMPENSATING FOR WETLANDS LOSSES, *supra* note 37, at 4; see also Virginia C. Veltman, *Banking on the Future of Wetlands Using Federal Law*, 89 NW. U. L. REV. 654, 673 (1995) (stating that, as opposed to on-site mitigation, “offsite mitigation provides a greater selection of hydrologically and ecologically favorable locations, thus increasing the opportunity for a well-functioning replacement” (citations omitted)).

112 The policy states that wetlands mitigation banking “typically involves the consolidation of small, fragmented wetland mitigation projects into one large contiguous site.” See 60 Fed. Reg. at 58,606. The wetlands bank can even include upland areas “to the degree that such features increase the overall ecological functioning of the bank.” 60 Fed. Reg. at 58,609.

The policy adds that, “[b]y consolidating compensation requirements, banks can more effectively replace lost wetland functions within a watershed, as well as provide economies of scale relating to the planning, implementation, monitoring and management of mitigation projects.” 60 Fed. Reg. at 58,606.

113 See *infra* Section VI.B.

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Both the opportunity to mitigate and its more recent off-site expansion increasingly convert the permit obligation into a bargaining entitlement. Rather than directly limiting the damaging impacts of wetlands development, regulators exact a compensating price for wetlands destruction. Indeed, the widely articulated goal of “no net loss” of wetlands¹¹⁴ would make no sense without the mitigation requirement, since the existence of the Section 404 permit program assumes that some fraction of permits applied for will be granted. Without a mitigation requirement, some form of wetlands loss would therefore be inevitable.

C. *Endangered Species Protection*

In 1982, Congress amended the ESA to allow its administrators to moderate the absolute bar on takings by allowing the “incidental take” of endangered species by applicants who submitted a mitigation plan to minimize the impact of their activities on the species in question, as long as they could find that the impact after mitigation “will not appreciably reduce the likelihood of the survival . . . of the species in the wild.”¹¹⁵

The incidental take provision of the ESA encourages designers of projects that might take endangered species to undertake additional compensating actions that make the total impact incidental.¹¹⁶ In the past ten years, the implementing agencies have developed that logic into three separate programs, only loosely reflected in the statutory language, that use the statutory takings bar as a bargaining entitlement tradable for actions that the government could not otherwise command.

114 The agencies that administer the Section 404 program adopted a “no net loss of the Nation’s wetlands” policy in 1990, and tied it expressly to the mitigation requirement. 55 Fed. Reg. 9210 (Mar. 12, 1990); *see also* COMPENSATING FOR WETLANDS LOSS, *supra* note 37, at 71.

115 Endangered Species Act of 1973 § 10(a)(2)(B)(iv).

116 Indeed, that was the original motivation for the provision. It was enacted to allow the Interior Department to accept a plan worked out by local governments, developers, and landowners in California to allow new construction in part of the habitat of two endangered butterflies as long as other parts of the habitat were fully protected. *See* H.R. REP. NO. 97-835, at 31-32 (1982). One commentator (a career environmentalist) has described its significance as follows, in language that in effect also outlines the potential benefits of tradable entitlements:

In practice, neither the takings prohibition nor the [broad regulatory] definition of “harm” had any apparent effect on the activities of private landowners before 1982. Even if private landowners were aware that they had any responsibilities under the ESA, they didn’t approach the agency for permission that they knew it had no authority to give, and the agency simply wasn’t about to provoke a conflict over private land use in which its position could only have been that the law flatly prohibits certain uses, without exception.

Thus, the 1982 amendments to the Act did the opposite of what they appeared to do. On the surface, they appeared to weaken the Act by creating a new exception to its nearly absolute prohibition against taking. In reality, they gave the [government] its first practical means of influencing what private landowners did on their land.

Michael S. Bean, *The Endangered Species Act and Private Land: Four Lessons Learned From the Past Quarter Century*, 28 ENVTL. L. REP. 10,701, 10,708 (1998).

The most developed of these three programs allows a project to go forward as long as the affected landowner undertakes enough offsetting mitigation through a *Habitat Conservation Plan* (HCP) to reduce any resulting take to incidental levels. The implementing agencies have formally adopted a “*No Surprises*” policy, committing not to seek any additional mitigation from a landowner with an approved plan without paying for it.¹¹⁷ Under that approach, the approval of a mitigation plan re-establishes, for the term of the plan, the landowner’s property rights as they existed before enactment of the ESA. To date, the Interior Department has approved over 400 HCPs covering more than thirty-eight million acres.¹¹⁸

Many HCPs have resulted from cooperative efforts among large landowners, developers, the federal government, and state and local governments. The enlistment of government power has made possible the development of locally-based, sophisticated approaches that impose development restrictions in varying degrees on private, state, and federal lands, and that provide financial support for plan development to supplement incentives provided by the bargaining entitlement itself.¹¹⁹ The Interior Department claims that this approach has improved environmental protection and distributed compliance costs more justly.¹²⁰

117 Habitat Conservation Plan Assurances (“No Surprises”) Rule, 63 Fed. Reg. 8859 (Feb. 23, 1998).

118 U.S. Fish & Wildlife Serv., *Endangered Species Habitat Conservation Program*, available at <http://endangered.fws.gov/hcp/index.html> (last visited Nov. 26, 2003).

119 As of 2000, 14% of the area covered by HCPs was covered by plans developed exclusively by private entities, 18% by HCPs developed exclusively by public entities, and 67% by “multiple jurisdiction” plans. USING SCIENCE, *supra* note 36, at 14. According to Professor Thompson,

Although local development mitigation fees have been the predominant means of financing habitat preservation in regional HCPs, the federal and state governments have agreed to contribute approximately 60 percent of the cost of the Coachella Valley HCP, 50 percent of the cost of the proposed San Diego County HCP, and significant portions of the expense of other regional HCPs.

Thompson, *supra* note 78, at 320.

120 [L]arge-scale, regional HCPs can significantly reduce the burden of the ESA on small landowners by providing efficient mechanisms for compliance, distributing the economic and logistical impacts of endangered species conservation among the community, and bringing a broad range of landowner activities under the HCPs’ legal protection. In addition, these large-scale HCPs allow for ecosystem planning, which can provide benefits to more species than small-scale HCPs. Large-scale HCPs provide the [ESA agencies] with a better opportunity for analyzing the cumulative effect of their projects, which is more efficient than the piecemeal approach that could result if each landowner developed his/her own HCP.

63 Fed. Reg. at 8865.

The record appears to bear out the claim that HCPs generate protection for broad areas, widespread community involvement, and innovative approaches. At the end of 1999, 16 HCPs, each covering a minimum of 100,000 acres, together covered a total of at least five million acres. *See* 65 Fed. Reg. 35,242, 35,248 tbl.1 (June 1, 2000). Some of these plans cover entire urbanizing areas and finance habitat conservation through impact fees on new development or the in-kind contribution of habitat by developers as an offset to their projects. *See* Karen L. Donovan, *HCPs—Important Tools for*

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The ESA agencies have also adopted a *safe harbor* policy, under which landowners who voluntarily undertake measures on their land that benefit endangered species can undo these measures without triggering ESA obligations, even if a take of an endangered species will result.¹²¹ Without this policy, such voluntary measures could increase the regulatory burden on the land by attracting more endangered animals, which would then enjoy ESA protection. A conceptually similar *candidate conservation agreement* policy allows owners of land harboring a species that might be listed as endangered in the future to implement a set of measures currently deemed adequate to protect that species against the threat of extinction. In return, the government will agree not to require any additional protective measures if the species should actually be listed.¹²²

In all three of these cases, the government trades a limit on its regulatory entitlement to enforce the take provisions of the ESA for measures that it could not readily have commanded directly.

VI. The Benefits of Regulatory Entitlement Bargaining

A. *Reduced Demoralization Costs and Improved Environmental Protection*

Allowing regulatory entitlement bargaining permits the regulated entity to offer, and the government to accept, types of compliance not contemplated by the original regulation. That, in turn, can reduce in four different ways the demoralization costs that make federal land use controls difficult.

First, entitlement bargaining allows regulated parties to suggest different ways to achieve the regulatory objectives. By definition, any acceptable suggestion will be more attractive both to the regulated entity and to the agency than compliance with the established approach.¹²³

Second, such offers might commit regulated entities to something that an agency had no power to command, but that the agency valued more

Conserving Species, in THE ENDANGERED SPECIES ACT: LAW, POLICY AND PERSPECTIVES, *supra* note 74, at 319, 323-26 (describing the Washington Department of Natural Resources, Riverside, Orange County, Sacramento Valley, Plum Creek, and Cedar River HCPs); Patrick W. Ryan et al., *ESA Compliance Options: Section 10 and Other Tools*, in THE ENDANGERED SPECIES ACT: LAW, POLICY AND PERSPECTIVES, *supra* note 74, at 297, 309-10 (describing HCPs for Riverside, San Diego, Kern, and Orange Counties in California, and for Clark County, Nevada).

¹²¹ Announcement of Final Safe Harbor Policy, 64 Fed. Reg. 32,717 (July 17, 1999).

¹²² Announcement of Final Policy for Candidate Conservation Agreements with Assurance, 64 Fed. Reg. 32,726 (June 17, 1999).

¹²³ Most concretely, bargaining entitlements would substantially reduce the cost of regulatory compliance. The EPA has estimated that flexible approaches to achieving water quality standards could save \$900 million annually compared to the least flexible approach. FINAL WATER QUALITY TRADING POLICY, *supra* note 31, at 1-2.

than compliance with the original regulatory obligation. Once the government had become aware of this alternative, it would have to bargain for it. The entitlements approach thereby confers on the regulated party a limited ability to say no to the regulators. That, in turn, can reduce demoralization costs caused by the “comply or be a violator” nature of traditional regulation.

Third, entitlement bargaining motivates each entitlement holder to persuade other parties that its favored trade promotes their interests as well. Where the parties are collective entities—for example, a federal regulatory agency or a local government—this dialogue can include appeals by each party to the constituents of the other. To the extent that such efforts succeeded, they would narrow the gap between the positions of the parties and thus reduce the demoralization costs to each party of accepting the other’s position.¹²⁴ Much current regulatory reform literature celebrates the virtues of using consensus and negotiation to develop regulatory commands without giving comparable attention to improving the incentives to reach agreement.¹²⁵ Use of bargaining entitlements could supply that missing piece.

Fourth, these mechanisms give the regulated entities a greater voice in shaping obligations to which they must conform. That greater voice can itself reduce demoralization costs, even when the regulated entity’s specific suggestions are not accepted.

B. *Increased Regional and Local Involvement*

In addition to changing the direct relationship between the regulator and regulated as just described, bargaining entitlements would reduce demoralization costs by expanding the framework for regulatory decisions.

Land use planning issues are regional by definition, since problems that are insoluble in the context of a single tract may be resolved by dedicating different parts of a broad area to different uses. A bargaining entitlements approach therefore motivates those pursuing trades to develop regional approaches in order to make federal regulators a more attractive offer. Since land use planning is overwhelmingly a state or local function, these traders would have to enlist the relevant state and local governments in developing such offers. The chance to help constituents and to reduce their own federal burdens would motivate those governments to

¹²⁴ According to one observer, pressure from “property owners themselves, who saw the quality of their own lives crumbling before the congestion and pressure of continuing, unchecked development,” provided one reason for the success of the regional HCP developed in southern California to conserve the California gnatcatcher and other species. Oliver A. Houck, *On the Law of Biodiversity and Ecosystem Management*, 81 MINN. L. REV. 869, 964-65 (1997).

¹²⁵ See, e.g., Jody Freeman, *Collaborative Governance in the Administrative State*, 45 UCLA L. REV. 1, 22-27, 40-49, 69-72 (1997).

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cooperate.¹²⁶ This scaling up of compliance efforts could convert case-by-case federal controls into state land use planning regimes. By integrating otherwise conflicting sets of rights and values into a single plan, such scaled-up compliance efforts could reduce or eliminate the need for reconciliation through individual proceedings. A regulatory system that resolved conflicts generically would burden regulated parties less than one that resolved them on an individual basis. Moreover, that generic resolution would arise out of local political processes in which regulated entities would have a significant voice, increasing acceptance of the regulations.

Federal regulation of private land cannot mandate ambitious levels of water quality or wildlife habitat protection if that would require barring most or all development in specifically defined areas. It tends instead to impose the same moderate requirements everywhere regardless of ecological effectiveness.¹²⁷ A scaled-up approach could cure this deficiency and focus nature protection efforts where they would be most significant. It could induce local governments or very large private landowners to dedicate land they own to nature protection, or to purchase land for that purpose. It could allow the imposition of impact fees on development to finance land purchases¹²⁸ and provide a forum for contributing third-party resources toward a mutually acceptable result. The scaled-up approach could also create a vehicle for paying those whose freedom to deal with their property was affected by the plan, even if the restrictions would not trigger constitutional takings requirements.¹²⁹

Local government involvement would also reduce the demoralization costs of the regulatory program. To the extent that local governments previously owned the land now dedicated to natural uses, the burden on private landowners would be reduced. Even if the government commanded such a dedication by rule, the local origins of that command would make it

126 At least where the ESA was concerned, governments might take part in these plans, not just out of desire to please their constituents, but also to resolve their own liabilities. See *Strahan v. Cox*, 127 F.3d 155 (1st Cir. 1997); *Palila v. Hawaii Dep't of Land & Natural Res.*, 471 F. Supp. 985 (D. Haw. 1979), *aff'd*, 639 F.2d 495 (1981).

127 See *supra* note 70.

128 The scaled-up HCPs adopted in recent years already use many of these tools. See *supra* notes 116-120 and accompanying text.

129 Several commentators have suggested such payment of non-required compensation. In particular, Heller and Krier argue that compensation to a fund or government body that can stand as a surrogate for those affected might be appropriate in cases where the transaction costs of compensating those affected individually exceed their demoralization costs, so that no compensation would be due under the Michelman formula. See Michael A. Heller & James E. Krier, *Deterrence and Distribution in the Law of Takings*, 112 HARV. L. REV. 997, 1000, 1009-15 (1999). Such "general distribution" would discourage government actions when costs exceeded their benefits by making the government pay for the actions and would provide a measure of indirect compensation to those affected. See Michelman, *supra* note 98, at 1252-54, for a similar suggestion. Entitlements trading would call forth intergovernmental negotiations and provide a natural venue for negotiating and making such transfer payments.

more legitimate, and hence less demoralizing, than federal imposition of similar requirements.

C. *Improved Ability to Achieve Real, Rather Than Symbolic, Statutory Objectives*

Legislatures enact symbolic legislation in response to political incentives. Since any attempt to reform such legislation might be resisted for the same reasons that led to its enactment, Professor Dwyer has argued that implementing agencies should take the lead in moving such statutes toward reality.¹³⁰ However, Dwyer suggests no mechanisms for agencies to accomplish this result.¹³¹ Bargaining entitlements would offer agencies a new and powerful method of making such corrections.

Symbolic environmental statutes articulate broad goals without establishing means adequate to attain them. Entitlement bargaining reverses that process. By making the regulatory obligation tradable, it focuses attention on the neglected relationship between ends and means and, in particular, on the extent of the ends that the authorized means would support. Each offer for an entitlement trade would embody a claim that the offered trade would achieve statutory ends more effectively than the legislatively mandated means. Responding to such offers would force the agency to set forth its view of the nature of the statutory ends and the adequacy of the statutory means, thus clarifying the policy choices at issue.¹³²

There are at least two types of symbolic statutes. One type, which the Clean Water Act exemplifies, grants the agency powers that it can use in practice but that are insufficient to achieve the statutory ends. Trades under such a statute would likely suggest alternatives to the statutory means. For example, the agency could approve substitution of land use controls for controls on factory discharges. Such trades would suggest the desirability of revising the statute to emphasize land use control more, and control of industrial discharges less.

In another case, exemplified by the ESA, the statutory means look effective on paper to achieve their ends but ignore too many countervailing factors to be achieved in practice.¹³³ Here, trades would probably call for

130 See Dwyer, *supra* note 78, at 246-47, 311-12. Dwyer claims that agencies proceed with an integrity of policy choice and respect for facts exceeding what can be expected of legislatures and with a sensitivity to legislative intent and political feasibility exceeding what can be expected of courts.

131 Dwyer, despite his endorsement of agency initiative to fix symbolic statutes, offers no mechanism other than lenient judicial review for allowing agencies to make these adjustments. *See id.* at 311-13.

132 For a detailed discussion of this point, see Pedersen, *supra* note 22, at 1091-99 (2001).

133 Dwyer's original example of a symbolic statute was of this nature. It focused on the EPA's failure to implement the Clean Air Act provisions requiring the elimination, with an "ample margin of safety," of any public health risk from hazardous air pollutants, a requirement that proved

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substituting more limited and concrete means for these paper commands, and thus suggest the desirability of moving the statute in the same direction.

Both types of trades could move the regulatory system toward greater integration of its goals with other social values, and greater realism in its specification of the means to achieve those goals. This would replace our current conflation of ends and means with an approach that distinguished between them clearly and focused attention on the adequacy of the authorized means to achieve their ends.

D. *Increased Constitutional Defensibility of Environmental Protection Measures*

Recent Supreme Court decisions have tightened the constitutional restrictions on Congress' power to legislate under the Commerce Clause, particularly when addressing topics of traditionally local concern. Furthermore, land use regulation is always vulnerable to invalidation by a takings challenge. A bargaining entitlements approach could do much to reconcile the land use controls needed for environmental progress with federalism concerns and could make a smaller, but still significant, contribution to resolving takings controversies.

1. Federalism and the Commerce Clause

Congressional power to regulate commerce consists of powers to regulate the channels and instrumentalities of interstate commerce, things in interstate commerce, and intrastate activities that affect interstate commerce.¹³⁴ The Supreme Court has long recognized Congress' essentially unrestricted power to regulate channels, instrumentalities, and things in commerce.¹³⁵ For over fifty years ending in 1995, congressional power to regulate intrastate activities affecting interstate commerce seemed equally unrestricted.¹³⁶

Since then, however, the *Lopez*¹³⁷ and *Morrison*¹³⁸ cases have stated that the commerce power is limited to addressing actions that significantly

impossible to implement as written because it could have forced the shutdown of many industries. *See* Dwyer, *supra* note 78, at 236-50.

¹³⁴ *See* United States v. Lopez, 514 U.S. 549, 558-59 (1995).

¹³⁵ *See, e.g.,* Caminetti v. United States, 242 U.S. 470 (1917); The Shreveport Rate Cases, 234 U.S. 342 (1914); S. Ry. Co. v. United States, 222 U.S. 20 (1911).

¹³⁶ The high water mark, and the governing precedent, was *Wickard v. Filburn*, 317 U.S. 111 (1942), in which the court upheld regulation under the Commerce Clause of the cultivation of wheat on a farm for consumption by the farm's residents.

¹³⁷ 514 U.S. at 549.

¹³⁸ United States v. Morrison, 529 U.S. 598 (2000).

affect interstate commerce;¹³⁹ that the link between the acts being regulated and interstate commerce cannot be too attenuated;¹⁴⁰ that, in making these judgments, the impacts of individually insignificant but collectively important acts can be aggregated for analytical purposes only if they are economic in nature;¹⁴¹ and that a special showing is needed to justify federal regulation of “areas . . . where States historically have been sovereign.”¹⁴² The Court has suggested that even where some federal regulation of a traditionally local activity might be proper, the Constitution would still forbid regulation that invades “each and every aspect” of that activity.¹⁴³ These varying formulations signal a new judicial willingness to consider impact on state autonomy in determining the constitutional validity of Commerce Clause legislation. Indeed, the Court’s new emphasis on a link to interstate commerce may be best explained as another method of preserving state autonomy.¹⁴⁴

The use of bargaining entitlements would reduce the impact on state autonomy needed to achieve any given end. By leaving states with wider discretion to select the means to achieve that end than direct regulation would allow, bargaining entitlements would minimize the invasion of areas in which states have traditionally been sovereign and would avoid occupying “each and every aspect” of the fields it regulated. Since the Supreme Court clearly regards a state’s power to control land use as an

139 *Lopez*, 514 U.S. at 560.

140 *See id.* at 567 (“To uphold the Government’s contentions here, we would have to pile inference upon inference in a manner that would bid fair to convert congressional authority under the Commerce Clause to a general police power of the sort retained by the States.”).

141 *See Morrison*, 529 U.S. at 613 (“While we need not adopt a categorical rule against aggregating the effects of any noneconomic activity in order to decide these cases, thus far in our Nation’s history our cases have upheld Commerce Clause regulation of intrastate activity only where that activity is economic in nature.”); *Lopez*, 514 U.S. at 565-66 (“We do not doubt that Congress has authority under the Commerce Clause to regulate numerous *commercial* activities that substantially affect interstate commerce.” (emphasis added)).

142 *Lopez*, 514 U.S. at 564.

143 *Id.* at 565-66.

144 According to Justice Souter, this is true for the distinction on which the Court relied in both *Lopez* and *Morrison* between “economic” activity that can be freely regulated and “noneconomic” activity that cannot be as freely regulated:

[T]he formalistic economic/noneconomic distinction . . . is useful in serving a conception of federalism. It is the instrument by which assertions of national power are to be limited in favor of preserving a supposedly discernible, proper sphere of state autonomy to legislate or refrain from legislating as the individual States see fit.

Morrison, 529 U.S. at 644-45 (Souter, J., dissenting).

Other cases suggest in a similar vein that in determining the validity even of legislation that falls within the outer boundaries of the Commerce Clause, the courts should also consider its impact on state autonomy. *See New York v. United States*, 505 U.S. 144, 177 (1992). Similarly, the *Lopez* Court expressly endorsed the proposition that Congress may not “use a relatively *trivial* impact on commerce as an excuse for *broad general* regulation of state or private activities.” *Lopez*, 514 U.S. at 558 (quoting with approval *Maryland v. Wirtz*, 392 U.S. 183, 197 n.27 (1968)) (emphasis added).

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essential part of its constitutionally protected autonomy,¹⁴⁵ such impact reduction should improve the constitutional defensibility of federal land use control measures.

That conclusion is buttressed by the formal similarity of bargaining entitlements to conditional federal spending, a means of pursuing federal ends that the Supreme Court has upheld in cases where it would have forbidden direct regulation of states. Cases rejecting Congress' authority to commandeer directly the powers of state and local governments expressly endorse Congress' power to achieve the same purposes by imposing conditions on federal grants or by establishing a federally administered regulatory system that the states can displace by agreeing to do precisely the same thing themselves.¹⁴⁶ The difference, according to these cases, lies in the lesser burden on a state's autonomy in the latter case, since the state retains the formal power to refuse to do what the federal government wants.¹⁴⁷

The distinction these cases draw between requiring a state to do something and providing the state with an inducement to do it tracks the difference between traditional top-down regulation and bargaining

145 The Supreme Court underlined the strength of these concerns in *Solid Waste Agency v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001). In that case, a 5-4 majority used a distinctly tendentious statutory analysis to conclude that Congress denied the Army Corps of Engineers authority to regulate the dredging or filling of wetlands not connected to traditionally navigable waters, rather than confront what it saw as the "significant constitutional and federalism questions" that would be raised by such a "significant impingement of the States' traditional and primary power over land and water use." *Id.* at 174; see also Karkkainen, *supra* note 95, at 7 ("Because the externalized effects of land-use decisions were once thought to be principally, if not exclusively, local in nature, federal intrusion into land use matters was generally regarded as unwise and contrary to the spirit of our federalist structure, if not flatly proscribed by the Constitution.").

146 "Cooperative federalism" and conditional federal grants have been upheld in a series of Supreme Court opinions, all of which stress the importance of the formal power to refuse. See, e.g., *Hodel v. Va. Surface Mining & Reclamation Ass'n*, 452 U.S. 264, 288 (1981); *Oklahoma v. U.S. Civil Serv. Comm'n*, 330 U.S. 127, 143-44 (1947) (stating that Oklahoma retains "the simple expedient of not yielding to what she urges is federal coercion"); *Massachusetts v. Mellon*, 262 U.S. 447, 480 (1923) ("[T]he powers of the State are not invaded, since the statute imposes no obligation but simply extends an option which the State is free to accept or reject."); cf. *South Dakota v. Dole*, 483 U.S. 203, 211 (1987). In *Dole*, the Court added that this power was not unlimited, since "[i]n some circumstances, the financial inducement offered by Congress might be so coercive as to pass the point at which 'pressure turns into compulsion.'" *Dole*, 483 U.S. at 211.

Such conditional spending and cooperative federalism approaches fit seamlessly into an entitlements trading analysis, in that they increase the freedom of action of both federal and state governments by changing the means used to pursue an end. Those approaches greatly expand the real power of the federal government to act by allowing it to make use of a state's implementing mechanisms rather than undertake the economically and politically difficult task of creating a purely federal approach. Yet at the same time, these approaches are almost certain to be far less demoralizing to the state than direct commands. Indeed, if they were not less demoralizing, they would almost by definition be as hard to impose as rules providing for direct federal implementation. For an analysis concluding that state implementation is preferable to federal because it is less demoralizing and suggesting that states do decline to implement truly unpopular federal programs if given the choice, see 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 (1998).

147 *New York v. United States*, 505 U.S. 144, 168 (1992).

entitlements.

2. Takings

Under the Supreme Court's regulatory takings jurisprudence, only those rules that either cause a physical invasion of property or deprive a property of virtually all commercial value automatically constitute a compensable taking.¹⁴⁸ Conversely, measures to control harms like pollution that originate on the property and affect others will probably *never* constitute a compensable taking.¹⁴⁹

Other cases, however, involve regulation of land to maintain its ability to provide such environmental services as absorbing pollution caused by other lands,¹⁵⁰ or providing wildlife habitat, without destroying all commercial value. Such cases fall in a middle area in which the presence of a taking must be determined by an individualized factual inquiry that addresses both the importance of the public interest being served and the extent of the burden on the plaintiff. That burden, in turn, is measured by damage to the plaintiff's investment-backed expectations as determined by a detailed examination of the circumstances, including the regulations applicable at the time the property was acquired.¹⁵¹ Moreover,

148 See *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1015 (1992).

149 See *Heller & Krier*, *supra* note 129, at 1010 (stating that the idea that "diminution in property value caused by nuisance control measures" requires no compensation is a "per se rule in the law of takings," at least for common law nuisances). Pollution is a classic common law nuisance. Indeed, Professor Richard Epstein, the country's leading property rights advocate, believes both that most government regulation should require compensation under the takings clause and that regulation to control the physical invasion of one property by pollution from another never requires compensation. See EPSTEIN, *supra* note 1, at 229 ("[T]he original common law rules specified the correct normative result. . . . [Under them,] every invasion, however minute, of the protected space is an actionable wrong remediable both by damages and injunction."). Epstein would apply this principle to invasions other than conventional pollution. See *id.* at 50-51 (stating that invasion includes noise, vibration, and smoke from aircraft operations); see also *id.* at 119-21.

Epstein also recognizes a similar absolute right against damage to resources with shared common law usage rights. He discusses in detail and endorses the nineteenth century cases holding that a change in the natural flow of a stream constitutes a trespass on the rights of downstream property owners. See, e.g., *id.* at 70 (advocating "[u]sing the natural conditions of the water as the basis of entitlement," so that "no individual may change the flow in ways that prevent others from using or gaining access to the waters in question"); *id.* at 71 (private actions that change the height of natural stream flow are "actionable wrongs remediable with damages and injunctions" at common law).

150 See *Dolan v. City of Tigard*, 512 U.S. 374, 392-94 (1994), in which the Court accepted the legitimacy of requiring the plaintiff to dedicate enough of her property for flood control to offset the extra flooding impact of the new impervious surface she planned to create but suggested that any requirement to dedicate more property would be a compensable taking. *Dolan* involved the adjudicative imposition of conditions on a single parcel. The Court also found that this required more record support than would have been required for the legislative imposition of similar conditions on many parcels through zoning. *Dolan*, 512 U.S. at 385.

151 See *Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Planning Agency*, 535 U.S. 302, 322 (2002) ("Our regulatory takings jurisprudence . . . is characterized by 'essentially ad hoc, factual inquiries' . . . designed to allow 'careful examination and weighing of all the relevant circumstances.'" (citations omitted)). That ad hoc factual inquiry involves the application of equally ad hoc legal

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under the governing Supreme Court precedents, a landowner cannot even bring a takings claim without first complying with all state land use planning requirements—including any variance procedures—so as to determine the exact property restrictions that will apply.¹⁵² These procedural requirements alone will defeat many takings claims. Transmuting regulatory commands into bargaining entitlements would allow landowners to bargain with the government over alternative performance rather than be bound by the government's initial command. That burden reduction should itself improve the constitutional defensibility of the program at issue.

E. *Re-established Property Rights*

Entitlement bargaining would also vindicate constitutional values by providing a mechanism to re-establish, over time, the property rights on which environmental land use control measures are said to intrude.

Section 404 and the ESA impose inchoate responsibilities on all affected land and add the federal government to the authorities already involved in land use planning. Both steps diffuse the responsibility for deciding what use to make of regulated land and tend to create an anti-commons that diminishes the social advantages we expect from private property.¹⁵³ Yet environmental values do not receive stable protection, since they are protected only to the extent that the anti-commons hampers other uses.

Bargaining entitlements would allow both parties to move toward a regime that dedicated some of the burdened property more fully to environmental protection and removed restrictions from the rest. Under our current regulatory approach, new objections to development of a wetland or endangered species habitat can be raised at any time until the property is actually developed. By contrast, such claims can only be made once for land covered by restrictions that extinguish a bargaining entitlement, since once the bargain is approved the government's right to

standards. The law is unclear on the extent of the diminution in property value that constitutes a taking, on what types of regulation are most and least likely to trigger takings requirements, and on when procedural delays in granting development permission do or do not trigger compensation requirements. Although in 2002 the Supreme Court clarified another perpetually disputed issue, holding 5-4 that the percentage diminution in value on which a takings claim is based must be calculated with reference to the parcel as a whole, not simply the portion affected by the rule, the narrowness of the margin suggests that this resolution may not be permanent. *See id.* at 327, 332, 355-56 (Thomas, J., dissenting); *see also* Heller & Krier, *supra* note 130, at 1023-24. Note also the additional colorful summaries of inconsistencies in "takings" law collected by Heller in *Boundaries of Private Property*, *supra* note 66, at 1202 n.185.

¹⁵² For the factors used to determine ripeness for judicial review, see R. Shawn Gunnarson, *Just Compensation and the Endangered Species Act*, in *THE ENDANGERED SPECIES ACT: LAW, POLICY AND PERSPECTIVES*, *supra* note 74, at 459, 465.

¹⁵³ *See supra* note 66 and accompanying text.

raise repeated new objections vanishes.¹⁵⁴ Widespread entitlement trading, by extinguishing the underlying obligation wholesale, would probably lead to widespread regulatory acknowledgment of the freedom of landowner choice that wetlands and endangered species regulations are said to have abridged. A landowner who banks wetlands to pay for developing other properties, or devises an acceptable HCP, frees his ownership rights in his remaining land from inchoate wetlands and ESA obligations in return for a specific and defined donation. The result is a case-by-case repeal of the land-use aspects of Section 404 and the ESA, not by political action, but by a market exchange that frees some parcels of regulatory burdens in return for subjecting others to more protection than the statute alone could provide.

The scaling up process described earlier would make this natural tendency even more effective. It would logically end in a regional land use plan under which regulatory obligations under the wetlands and endangered species statutes would cease to apply in return for the establishment of a set of permanently protected areas. Any future attempt to expand those areas would trigger compensation rights. In other words, the repeal of the wetlands and endangered species statutes by market exchange would enlarge from a case-by-case to a regional level.

VII. Potential Dangers of Bargaining Entitlement Programs

Despite their promise, bargaining entitlement programs could hamper achievement of the very statutory purposes they are meant to promote and increase the burdens on the regulated entities that they are meant to relieve. These dangers are probably limited and could be reduced further by effective program design.

A. *Potential Damage to Statutory Purposes*

1. Would the Agency Be Out-Bargained?

Agencies that implement traditional regulatory statutes specialize in issuing and enforcing legally binding commands. An agency's authority to impose its will often provides the background for any bargaining. Use of

¹⁵⁴ According to one review of HCPs:

[T]he landowners who received "No Surprises" assurances maintain, and some academic commentators agree, that their deals with the government are designed to prevent them from being taken advantage of by committing land to preservation that they might otherwise have developed and then, having made such costly concessions, being forced by "greedy" activist regulators to give up more (and later still more).

David Dana & Susan P. Koniak, *Bargaining in the Shadow of Democracy*, 148 U. PA. L. REV. 473, 513 (1999).

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bargaining entitlements would present agencies with a new challenge of negotiating for results they had no power to command directly. A number of studies have underlined how often agencies playing this game settle for less than they should have.¹⁵⁵

In assessing those failures we should distinguish between *technical errors*—failure to insist on data or approval conditions that allow meaningful assessment of the value of the trade—and *negotiating errors*—failure to drive a tight bargain within an acceptable evaluation framework. Technical errors appear common in entitlement trades to date. Since accurate assessment of the environmental values of a given parcel will often be difficult and costly, developers have incentives to suggest oversimplified ways of quantifying these values that make trades easy, for example, by reducing the data and analytical support required for trades or omitting monitoring to determine their success.¹⁵⁶ Many of the problems identified with trades stem from agency acquiescence to such

155 A National Academy of Sciences study found the following defects in agreements with the Army Corps of Engineers to create new wetlands to compensate for those destroyed by development:

The attainment of no net loss of wetlands through . . . mitigation requires that performance requirements for individual compensation sites be clearly stated and that the stated requirements will be met by the parties responsible for the mitigation. . . . [I]n many cases, even though permit conditions may have been satisfied, required compensation actions were poorly designed or carelessly implemented. . . .

At some sites, compliance criteria were being met, but the hydrological variability that is a defining feature of a wetland had not been established. . . . Compliance criteria sometimes specified plant species that the site conditions could not support. . . . Monitoring is seldom required for more than 5 years, and the description of ecosystem functioning in many monitoring reports is superficial. Legal and financial mechanisms for assuring long-term protection of sites are often absent.

COMPENSATING FOR WETLANDS LOSS, *supra* note 37, at 6. Similarly, in a detailed study of forty-three HCPs, the American Institute of Biological Sciences found that:

For only 22 of the 43 plans was there a clearly outlined monitoring program. Of those 22 well-designed monitoring programs, only 7 took the next step of indicating how the monitoring could be used to evaluate the HCP's success.

. . . [I]n only one-third of the species assessments was there enough information to evaluate what proportion of the population would be affected by a proposed "take." If we do not know whether one-half or one-hundredth of a species' total population is being affected by an action, it is hard to make scientifically justified decisions.

USING SCIENCE, *supra* note 36, at 4. The National Center for Ecological Analysis and Synthesis found that many HCP weaknesses were due to a basic lack of data. Although the absence of data can be compensated for to some extent by a precautionary approach to HCP design that errs on the side of protection, the survey found that such an approach was, if anything, *less* likely to be pursued where data were inadequate than where they were adequate. *See id.* at 41.

156 [T]he cost of creating habitat currencies is either very cheap—an acre is an acre—or, if we demand reliable measures of environmental and social service values, very expensive. . . . Developers have an incentive to use the least expensive currency the government will allow. . . . [T]he net result has been Gresham's law in practice—simple currencies have driven out complex ones.

Salzman & Ruhl, *supra* note 85, at 59.

oversimplification. Since neither the minimum analytical requirements for a valid trade nor the minimum content requirements for a valid permit should vary much from trade to trade, minimum standards for acceptable trading decisions and permits could be established by rule and removed from the bargaining context.¹⁵⁷

Once technical errors had been addressed, several factors should limit the extent of negotiating errors. Any negotiation automatically disadvantages the party that wants to change the status quo, since the other party can stop that change by simply not responding. Since entitlement bargains are designed to start with offers from the regulated entity, the burden of inaction will generally fall on that entity. Moreover, the government will often be a single decision-maker dealing with many petitioning parties. That could create a prisoner's dilemma in which each non-government party would be motivated to reach an advantageous deal with the government on its own, rather than coordinate its opposition with all the other parties.¹⁵⁸

Requirements borrowed from traditional rulemaking procedures could provide additional assurance against bad bargains. These include requirements to present proposed trades to the public for comment or to

157 The National Research Council has recommended this approach to correcting the problems it identified with wetlands restoration agreements. It recommended replacing "[d]ependence on subjective, best professional judgment in assessing wetlands function" with "science-based, rapid assessment procedures" based on a new and detailed manual providing guidance to staff on how to make such assessments, COMPENSATING FOR WETLANDS LOSS, *supra* note 37, at 7-8, and providing detailed standards for all permits to meet, *id.* at 167. Many of the defects the Council identified, such as use of inappropriate vegetation types or failure to require minimally adequate monitoring would seem remediable by such reforms.

Similarly, the National Center for Ecological Analysis and Synthesis recommends that all HCPs with "potentially large impacts" include a summary of all the available data on covered species and adopt a more quantitative approach to setting goals and measuring their achievement. *See* USING SCIENCE, *supra* note 36, at 47. These requirements, too, could be readily established by regulation to guide HCP establishment.

158 As a single unified entity, the state may be able to make offers to widely dispersed individuals who find themselves faced with a prisoner's dilemma game. Each person acting alone may think it is in his interest to waive some constitutional right, even though a group, if it could act collectively, would reach the opposite conclusion.

RICHARD A. EPSTEIN, BARGAINING WITH THE STATE 79 (1993).

This is clearest in the case of safe harbor agreements. A landowner who improves her land and attracts more species under a safe harbor agreement will probably also attract those animals to neighboring lands. That in turn will increase the ESA burden on neighboring landowners. This will, as the safe harbor policy itself suggests, increase the pressure on neighboring landowners to reach such agreements on their own. 64 Fed. Reg. 32,717, 32,725-26 (June 17, 1999). Similarly, a landowner who reaches a no surprises or candidate conservation agreement that proves inadequate to conserve the species at issue can in effect transfer to other landowners the extra burden of the tighter conservation measures now shown necessary. *See* Habitat Conservation Plan ("No Surprises") Rule, 63 Fed. Reg. 8859, 8867 (Feb. 23, 1998) (stating that if additional conservation measures are needed for a species covered by a "no surprises" HCP, those measures "would be the responsibility of the Federal government, other government agencies, or other non-Federal landowners who had not yet developed an HCP" (emphasis added)).

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allow outside expert bodies to review them either prospectively or retrospectively.¹⁵⁹ Public involvement combined with the symbolic command in the background would encourage tight bargaining by reminding an agency of the political force behind the statutes which give the agency legitimacy.¹⁶⁰

Finally, even trades that accept less than the other side would have offered need not be bad public policy. If the original commands are fundamentally off target, a second-rate trade could be superior to first-rate enforcement of the statute as written. A trade of discharge controls on a factory for controls on non-point discharges from land use might be environmentally and socially beneficial even if the factory would have offered far more to close the deal than the government actually extracted in the bargain. Whenever private land use control is necessary to achieve federal environmental goals, the gap between what our current statutes promise and what they can provide will create opportunities for such beneficial underperformance.¹⁶¹

Such considerations might not fully allay concerns about an agency's ability to bargain effectively. But since almost all other institutions in our society operate by bargaining,¹⁶² there seems to be no inherent reason why agencies could not learn to operate in this manner. Rather, the relevant question would be how to increase the government's bargaining ability, should the potential gains from bargaining be large enough to justify that effort. This Article contends that the gains from bargaining could be substantial and would justify a significant reform effort.¹⁶³

2. Would Trading Be Legitimate?

Trading would grant the agency discretion to determine when and how legislative directives should be modified in return for an alternative

¹⁵⁹ The National Center for Ecological Analysis and Synthesis has recommended the establishment of such an expert body for HCPs. See USING SCIENCE, *supra* note 36, at 47.

¹⁶⁰ See Dwyer, *supra* note 78, at 236, 283-84, 287-88; Louis L. Jaffe, *The Illusion of the Ideal Administration*, 86 HARV. L. REV. 1183, 1188 (1973).

¹⁶¹ One more potential pitfall deserves mention. It will often cost the government more to negotiate individual entitlements trades than to enforce the underlying regulatory obligation. If the government had a duty to address every trading offer on the merits, regulated parties could make a trading offer simply to hamper enforcement. However, if the government had the right to refuse to negotiate, as it does when it brings a lawsuit, this danger would not arise.

¹⁶² Indeed, local land use decisions are so strongly characterized by bargaining as to have defeated many attempts to require them to be made through formal legal procedures. See generally Carol M. Rose, *Planning and Dealing: Piecemeal Land Controls as a Problem of Local Legitimacy*, 71 CAL. L. REV. 837, 867-82 (1983) (arguing that when federal interests are at stake, the mechanism to achieve them should accept and work with these deeply rooted practices rather than trying to override them).

¹⁶³ For a preliminary discussion of some of these possible changes, see also Pedersen, *supra* note 22, at 1072, 1076 n.14, 1103.

that it concluded would more fully achieve the statutory purpose. Such trading can be attacked as requiring basic value judgments by the agency that lie beyond its competence. Such claims apply only weakly to a statute like the Clean Water Act, where Congress has clearly defined water quality goals but has authorized inadequate means to achieve them.¹⁶⁴ No inconsistency with the original congressional value judgment would result from allowing the implementing agency to substitute for these inadequate means others that would attain the end more effectively.

The objection has more force when applied to a statute like the ESA that provides formally adequate means of achieving its goals, though they cannot be implemented in the real world. An agency that trades the symbolic promise of full species protection for more limited and concrete restrictions on particular land invites opposition from supporters of the symbolic command. These supporters might argue that such a categorical goal, once established by the legislature, should not be revised by any subordinate entity.¹⁶⁵

However, the power to engage in trades would itself be conferred by the legislature. A legislature that assigned to an agency the power to clarify the symbolic over-promising that legislatures themselves find so difficult to correct would act just as legitimately as a legislature that established such excessive obligations in the first place. Moreover, unachievable symbolic commands can undermine both integrity in government and the actual achievement of their asserted goal.¹⁶⁶ Accordingly, concrete, partial attainment of such commands may do more to “redirect society by reallocating resources and legitimating certain

164 See *supra* text accompanying notes 44-52.

165 See Pedersen, *supra* note 22, at 1131-33. According to Professor Thompson:

In the eyes of proponents, legislative prescriptions of “symbolic” standards that are presently unachievable serve a number of valuable functions, including the stimulation of new, cost-effective means of achieving higher environmental results, the making of important moral statements about the relationship of man to his natural environment, and the societal development of heightened environmental preferences and norms.

Thompson, *supra* note 77, at 1154-55 (footnotes omitted).

166 Symbolic legislation hinders rational discussion of the issues at stake, as Professor Dwyer has argued:

Symbolic legislation hobbles the regulatory process by polarizing public discussion in agency proceedings and legislative hearings. Environmental groups take the legislation’s promise of a risk-free environment at face value and tend to refuse to compromise the “rights” inherent in such promises. Industry fears that regulators will implement the statute literally and, consequently, vigorously opposes the regulatory process at every stage. By making promises that cannot be kept, and by leaving no middle ground for accommodation, the legislature makes it more difficult to reach a political compromise (either in the agency or the legislature) that would produce a functional regulatory program.

Dwyer, *supra* note 78, at 234. Symbolic legislation also creates great pressure on the agency to accommodate sub rosa the factors that the legislature failed to address. See *id.* at 252-57. And then “[w]hen decisionmaking is driven underground, rationality and genuine public participation are sacrificed and public confidence in government is eroded.” *Id.* at 277.

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values”¹⁶⁷ than the diligent preservation of symbols restricted to a statute book.

Statutory beneficiaries might also claim that departures from the strict and literal statutory language could be legitimate only if all interested parties participated equally in the negotiations and reached a consensus supporting the change.¹⁶⁸ That approach would give all participating parties a bargaining entitlement of equal strength, since each of them could derail the consensus.

However, past efforts at federal land use control have been blocked or stunted at least in part by regulation’s inability to minimize the demoralization costs resulting from its invasion of deeply rooted social interests such as landowner control and local autonomy. Entitlement bargaining would help minimize such costs precisely because it gives greater voice to the regulated entity. In other words, granting a preferential voice may be appropriate to reflect the particular strength of the interests to which it was granted—a strength that could prevent any action at all if not accommodated.

B. *Potential Exploitation of Regulated Parties*

Making regulatory obligations tradable could decrease the immediate costs of regulation by allowing regulated parties a wider range of compliance choices. Over time, though, allowing trades could encourage a regulatory agency to tighten those obligations, not to achieve the statutory purposes directly but to encourage offers of alternative performance that the government would be unable to command. In this manner, trading could become a vehicle for extending federal power into regions that it could not have reached previously, albeit by less demoralizing methods than those of traditional regulation.¹⁶⁹ For example, the federal government might avoid takings requirements by imposing tight water pollution control measures on factories to induce them to establish pollution-reducing buffer zones along streams, thus providing public land services that the federal government might otherwise have been required to purchase.¹⁷⁰

¹⁶⁷ Dwyer, *supra* note 78, at 249.

¹⁶⁸ Although public participation in agency decisions serves as quality control against mistakes as well as a legitimating factor, quality control participation almost never rises above the notice and comment rights described earlier. Accordingly, any consensus requirement would have to rest on legitimacy arguments alone.

¹⁶⁹ For a similar discussion of exploitation value, see Pedersen, *supra* note 22, at 1109-10, 1132-34.

¹⁷⁰ Indeed, the ability to trade might encourage this pattern of action even when federalism or serious takings concerns are not present. The courts generally review pollution controls on industry more leniently than land use controls. The ability to trade industrial point source controls for land use controls paid for by those point sources could therefore perversely encourage the establishment of

This concern should not arise to the extent that the relatively non-discretionary application of previously established requirements provides the bargaining entitlement. Since such requirements would have been adopted before trades were allowed, the chance to trade would not have motivated their adoption. Since the legitimacy of most such requirements has been established beyond serious question, the serious question becomes how to implement them effectively and at low cost. Allowing trades clearly moves in this direction, since parties to a successful trade must all regard it as an improvement on the current system, while failed negotiations simply leave the current system unaltered.

More troubling questions arise from trading regulatory obligations that are established or become binding after the date on which the bargaining program was established. For that reason, trading may be particularly suited to reforming “mature” regulatory programs whose basic implementing regulations have long since been established. Federal regulations that address land use, like other types of land use regulations, tend to be poorly defined until they are applied in a particular case.¹⁷¹ Accordingly, the two main types of controls in this category will be new regulations, issued after the bargaining date, that do not affect land use directly, but which can be used to trade for it, and general land use control regulations that are given concrete application after that date in the hope of eliciting a counter-offer.

1. Controlling Exploitation Through New Rules

The temptation to set exploitative rules that do not affect land use could be reduced by requirements that each individual rule cost-effectively serve some environmental end. For example, a new discharge-control rule might be required to produce enough water quality benefit to justify its cost if applied directly as written, without regard to the benefits that its trading value might produce. To establish such a requirement, Congress could codify the requirement to apply a cost-benefit test to each new rule, as required by Executive Order for the last thirty years, making such a test part of the required substantive support for regulatory decisions.¹⁷² Rules

tighter, more costly point source controls of limited environmental benefit that would be traded for land use controls but which would not be subject to the strict judicial review that applies to land use controls applied directly. Requiring *all* regulations that might be traded for land use controls to pass a cost-benefit test would eliminate this arbitrage opportunity.

¹⁷¹ See EPSTEIN, *supra* note 1, at 264 (“[M]ost systems of land use control are not normally self-executing. Instead, they set out in very general terms the desired ends. . . . Thereafter the operation of the system depends upon discrete applications.”).

¹⁷² See, e.g., Exec. Order No. 11,821, 39 Fed. Reg. 41,501 (1974) (requiring certain legislation, identified through a cost-effect analysis, to be subjected to an inflationary impact evaluation); Exec. Order No. 12,044, 43 Fed. Reg. 12,661 (1978) (requiring agencies to report the economic consequences of proposed regulations and their alternatives); Exec. Order No. 12,291, 46

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adopted purely for their exploitation value would, almost by definition, lack the direct regulatory benefits necessary to pass through such a screen.¹⁷³

By focusing attention on the larger purposes of the control effort, use of bargaining entitlements would increasingly discourage efforts to adopt new rules for their exploitation value. In the water pollution context, the new trading approach would put more emphasis on water quality, broadly defined, as the overall goal for all control efforts, since water quality impact would be used to compare trades.¹⁷⁴ That emphasis would itself undermine support for point source controls with large costs but small water quality benefits. As both regulators and regulated entities gained experience with the process, the drawbacks of simply tightening controls on easy-to-regulate point sources, without addressing land use, would become increasingly apparent, further discouraging the adoption of unjustified point source controls.

2. Controlling Exploitation by Federal Land Use Controls

Whenever the federal government accepts banked wetlands in satisfaction of a Section 404 permit obligation or approves a habitat conservation plan containing long-term land use restrictions, it converts a regulatory obligation into a property interest dedicated to undeveloped use as a nature preserve. That dedication is a paradigm case of a “using” that would likely trigger compensation requirements if the government required it through a direct legal command.¹⁷⁵ One might well argue that a policy that grants relief from regulatory obligations in return for a donation of property interests tacitly admits that acquisition of property interests was always the real motive. In that view, the regulation would be an attempt to evade takings obligations, analogous to a forbidden downzoning of property that a government wants to acquire.¹⁷⁶ The use of bargaining

Fed. Reg. 13,193 (1981) (requiring that “[r]egulatory action shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society”); Exec. Order No. 12,866, 54 Fed. Reg. 51,735 (1993) (requiring agencies to “assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating”). President George W. Bush has continued the Clinton order.

¹⁷³ Bargaining and trading would still take place, however, whenever a regulated entity could offer trades that achieved social benefits even more efficiently than the baseline regulation that passed these tests.

¹⁷⁴ The Clean Water Act goals of “fishable, swimmable” water supporting a “balanced indigenous population” of wildlife qualifies as such a broad definition, since achieving it depends on the flow characteristics of streams and the amount of water in them, not just on pollution levels. Clean Water Act § 303.

¹⁷⁵ See Jed Rubenfeld, *Usings*, 102 YALE L.J. 1077, 1114-15, 1157 (1993) (advocating compensation whenever “some productive attribute or capacity of private property is exploited for state-dictated service”).

¹⁷⁶ For discussion of downzoning, see *Kissinger v. City of Los Angeles*, 327 P.2d 10 (Cal.

entitlements can be viewed in this perspective as increasing the original damage to property rights instead of reducing it. Although bargaining entitlements reduce demoralization costs by giving the landowner a wider range of compliance means, they may also allow the assertion of claims that would have been unsustainable under a purely regulatory approach. An agency that would not have dared to refuse permission to develop a wetland or an endangered species habitat, for fear of triggering an adverse political reaction or a successful takings challenge, might be bolder if the target could satisfy the agency's claim with a modest donation of property that would probably cost less than litigating the issue. Using bargaining entitlements might therefore lead to a net increase in the amount of land dedicated to federally prescribed environmental uses without the payment of compensation.¹⁷⁷

Exploitation dangers cannot be reduced in this context, as they could for water pollution control, by requiring all regulations to pass a cost-benefit test before they can be traded. Obtaining the free use of land can be highly beneficial. The issue instead is the uncompensated intrusion on landowner and community autonomy. Yet, the ability to threaten that intrusion is the foundation for the government's bargaining entitlement.

However, the argument that trading entitlements for land use control improperly avoids paying compensation loses much of its force once we view the tradable entitlements not as clearly valid substantive claims but as the *procedural* rights to assert regulatory claims and to defend against them. An agency that drops such procedural claims in return for substantive relief acts no differently than an agency that settles a lawsuit. Settling a lawsuit is a type of entitlement bargaining in which the plaintiff trades her entitlement to pursue the lawsuit, and the chance of ultimate victory, for some agreed-upon relief. Use of settlements has been challenged on the ground that:

Settlements are especially likely to reflect the inequalities of power and resources that the parties bring to the bargaining table; they may well affect parties who were not and could not have been part of the

Dist. Ct. App. 1958); *City of Miami v. Silver*, 257 So.2d 563 (Fla. Dist. Ct. App. 1972); *Grand Trunk W. Ry. v. City of Detroit*, 40 N.W.2d 195 (Mich. 1949); *Riggs v. Long Beach Township*, 538 A.2d 808, 815 (N.J. 1988).

¹⁷⁷ The literature on HCPs regularly refers to the coercive elements of habitat conservation planning. See, e.g., Karkkainen, *supra* note 95, at 60 ("Clearly, the ESA's ban on adverse habitat modification gives the government a powerful club to hold over the heads of would-be developers and local officials, in order to induce their participation in 'voluntary' biodiversity conservation planning efforts."); Salzman & Ruhl, *supra* note 85, at 678 ("To a great extent, [habitat conservation plans] serve as *political steam valves*, dissipating public attacks and blunting pointed legislation and litigation." (citations omitted)); see also *id.* at 677 n.206 ("[The authority of the Fish and Wildlife Service] to prohibit development of habitat under the ESA is far from certain in most circumstances, but the agency has used that uncertainty to lead many developers to seek HCP permits in lieu of testing the bounds of the [Fish and Wildlife Service] power in court.").

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negotiation; they may leave the courts without an adequate foundation for subsequent interventions; and, finally, they provide no authoritative declaration of rights.¹⁷⁸

Such objections closely mirror those leveled against agencies using bargaining entitlements, which are said to favor regulated entities that possess more bargaining resources than the government, affect the interests of unrepresented third party beneficiaries of the regulatory program, and dilute the statements of legal principle embodied in the statute.¹⁷⁹ Despite these objections, settlement of lawsuits remains all but universally accepted. The applicable federal court rules strongly endorse settlement without regard to the nature of the controversy,¹⁸⁰ and the vast majority of cases filed settle.¹⁸¹

Moreover, several of the objections to settlements apply with much less force to entitlement bargains. The claim that compromise prevents clarification of the law seems ironic when applied to bargaining over issues of permissible land use control that have remained opaque through many years of controversy. Similarly, the claim that settlement undermines judicial power by reducing the judge's role to a formality does not apply to entitlement trades accepted by the same agency charged with enforcing the underlying statute. Procedures for entitlement trading could easily give third parties the same notice and comment rights that they would have enjoyed if the agency had regulated directly. Finally, a developed settlement procedure should not increase the substantive legal advantages of either side.¹⁸² Since any party can refuse to settle and return to the original procedures, settlement should reflect the outcome the parties expect those original procedures to produce.¹⁸³

It might be rational for the government to bring or threaten a regulatory enforcement action for exploitation purposes despite the existence of strong legal defenses if the expected costs of settling by compromise would be less than the expected cost of a successful

178 Owen M. Fiss, *Justice Chicago Style*, 1987 U. CHI. LEGAL F. 1, 2.

179 See generally Dana & Koniak, *supra* note 154, at 473.

180 See FED. R. EVID. 408; FED. R. CIV. P. 16(c). Defenders of this approach argue that settling reflects the basic operating rules of a legal system built on free choice. Settlement by definition leaves the parties better off and saves the social resources that litigation would consume. To the (debated) extent that litigation may have value to society, that is no reason to compel the parties to the litigation to pay for it. See Frank H. Easterbrook, *Justice and Contract in Consent Judgments*, 1987 U. CHI. LEGAL F. 19.

181 See Janet Cooper Alexander, *Do the Merits Matter? A Study of Settlements in Securities Class Actions*, 43 STAN. L. REV. 497, 498 (1991); Marc Galantner & Mia Cahill, "Most Cases Settle": *Judicial Promotion and Regulation of Settlements*, 46 STAN. L. REV. 1339, 1339-40 (1994).

182 This assumes that the government cannot be drawn into settlement negotiations against its will. See *supra* note 161.

183 See Easterbrook, *supra* note 180, at 28-29.

defense.¹⁸⁴ The expected cost of a successful defense, in turn, would be determined by (1) the costs of making that defense adjusted for the chances of winning and (2) the costs of losing adjusted for the chances of losing. The government could be discouraged from bringing weak cases for their exploitation value by adjusting these factors.

The most obvious adjustments would reduce the costs of litigating takings claims. These could take the form either of procedural reforms to reduce litigation costs or of fee-shifting provisions to allow those who successfully challenged regulatory burdens to recover their litigation costs from the government.¹⁸⁵

Finally, these detailed legal points overlook the two strongest arguments for entitlement bargaining even in the fundamentally disputed area of takings law: First, entitlement bargaining can be expected to re-establish property rights more successfully than any other approach; and second, the process of entitlement bargaining itself would tend to restrain the assertion of weak regulatory claims for their negotiation value.

The scaled-up negotiation of a trading plan would in itself reduce the government's ability to escalate demands for negotiating purposes. A negotiation with broad participation would be more public and transparent than a regulatory claim against an individual landowner and would bring in a wider variety of political forces on the side of the regulated party. In particular, it would highlight any inconsistency between federal claims and state and local land use plans. That would increase the ability of the regulated entity to recognize and resist excessive demands.

VIII. Future Development of the Bargaining Entitlement Approach

I have described how bargaining entitlements have worked in practice, outlined their advantages, and suggested how to overcome their weaknesses. I now suggest how to expand their future use, both within their current field of employment and in new areas.

A. *Broader Use of Bargaining Entitlements in Their Current Context*

Entitlement bargaining can integrate a wide range of regulatory benefits and obligations, affecting a large number of actors, into a single, defined set of land use controls. The opportunities for mutually beneficial trades will increase as the coverage of regulatory commands, affected

¹⁸⁴ Cf. Lucian Arye Bebchuk, *Suing Solely To Extract a Settlement Offer*, 17 J. LEGAL STUD. 437 (1988).

¹⁸⁵ The Equal Access to Justice Act already provides for such fee-shifting in certain agency proceedings. See 5 U.S.C. § 504 (2002). Even after fee-shifting rules were fully implemented, both the remaining procedural burdens and the chances of losing on the merits would continue to provide settlement incentives for both sides.

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persons, and land areas increases, provided that such broader scope does not make bargaining too cumbersome. For that express reason, the Interior Department has identified the future of HCPs—probably the most developed form of entitlement bargaining—as the integration of all the ESA’s requirements over broad areas.

The Clean Water Act would be particularly well-adapted to a similarly broad approach. Despite the statute’s declared intent to clean up the nation’s waters, it may be impossible even in principle for the federal government to define for a state a minimum level of water quality related social benefits that would have regulatory meaning. The EPA simply has no legitimate or workable way to balance, for a given state, the benefits of land use controls against the autonomy interests of local governments and the rights and preferences of local property owners. This balance would have to consider not just the social benefits of clean surface water, but also any associated benefits in such forms as cleaner ground water, increased flood protection, preservation of wetlands, preservation of natural flow regimes and the biodiversity that depends on them, wildlife protection, and the protection of natural beauty. The EPA has even less power to determine whether any one watershed should be preserved in a more pristine form than another.

Entitlement bargaining could resolve this dilemma by allowing states themselves to make these trading choices, using the currently-available set of federally mandated controls as a starting point. These mandates affect economic activity within states,¹⁸⁶ restrict the autonomy of their citizens, impose direct costs on state governments to the extent that states run the programs, and forbid certain state policy choices. States might well be willing to offer the EPA some other set of water pollution controls to replace the currently authorized programs in return for a reduction in these existing burdens. A state might be willing, for example, to loosen controls on point source dischargers in industrial areas in return for a commitment to limit development in certain rural areas to the extent necessary to keep the streams in those areas unimpaired.

The EPA, for its part, should have no objection to such a trade if equal or greater water quality benefits would result, and if the bargain were enforceable. It should be easy to determine, in particular cases, whether this generic standard of “equal or greater clean water benefits” had been met. If necessary, the decision-making standards could be further specified by statute. For example, an alternative program might be required to provide an increase of *X* percent over compliance with the

¹⁸⁶ According to the EPA, the annualized costs of Clean Water Act compliance in 1997 were \$5 billion for privately owned point sources and \$9 billion for public point sources. OFFICE OF POL’Y, ECON., AND INNOVATION, EPA, A RETROSPECTIVE ASSESSMENT OF THE COSTS OF THE CLEAN WATER ACT: 1972 TO 1997, at ES-5 (2000).

prescribed approach in the percentage of state waters meeting water quality standards, or supporting a “balanced, indigenous population” of fish and wildlife.¹⁸⁷

Such trading rights would encourage the development of new control approaches, reduce demoralization costs, and tend to substitute land use controls with collateral public benefits for end-of-the-pipe controls with no benefits beyond pollution reduction. Any land use controls imposed to protect water quality would reflect local decisions, rather than a detailed federal mandate, thus encouraging a variety of local approaches to a common problem—one of the key virtues of federalism. These alternative approaches might also raise takings issues that the original approach did not raise if, for example, a state decided to concentrate its efforts on keeping certain watersheds undeveloped while allowing development elsewhere. But such takings issues would reflect state policy choices and would not be imposed by the federal government. Accordingly, the affected state would decide, through its own legal and political systems, when compensation was worth paying.¹⁸⁸

That decentralized approach would clarify the complex set of issues involved in water pollution control more effectively than our current symbolic mandates. Trading ineffective regulation of point-source discharges for more beneficial controls on land use would both illustrate and remedy the inability of regulation to produce the water quality benefits that such regulation promises. Allowing states to choose the water bodies in which pristine water quality would be protected would further illustrate the inability of the Clean Water Act—or any control approach—to produce pristine water everywhere and thus bring a dose of realism to the policy debate.

There is no need to stop with the Clean Water Act. By similar logic, states, or geographical areas within states, could integrate *all* the commands of the Clean Water Act, Section 404, and the ESA into a single

187 See Pedersen, *supra* note 43, at 99-100, for a similar suggestion.

188 In fact, fixing the right to decide the permissible bounds of property regulation firmly at the state level might favor redefining property rights in a “green” direction for structural reasons. Takings claims tend to fail to the extent that the regulation at issue can be viewed as spreading burdens and benefits evenly throughout the community, thus producing such an “average reciprocity of advantage” as to make efforts at more precise compensation not worth the effort. *Pa. Coal Co. v. Mahon*, 260 U.S. 393, 415 (1922) (Holmes, J.). A decision by a smaller community that the costs of relatively uniform land restrictions within its boundaries are justified by the community benefits will be inherently more likely to be justified by average reciprocity of advantage than imposition of the same burdens on the same community by a larger polity, including voters who will not share the cost of meeting it.

In addition, as noted earlier, see *supra* note 100, the right to compensation is often triggered by regulatory burdens that exceed community standards for uncompensated regulation. Since it is easier to change standards in a small community than in a large one, or at least easier to see that the change has taken place, this line of analysis also indicates that if takings rules are to be changed at all, the change must take place at the state and local level.

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plan as long as equal or greater environmental benefits would result. That would focus preservation efforts even more strongly on lands that provided multiple environmental benefits, such as wetlands that also served as water filters and endangered species habitat.

B. *New Arenas for Bargaining Entitlements: The Example of Interstate Water Pollution Control*

Arguably, federal action is not needed to protect the inhabitants of a state from pollution arising within its boundaries, since the state itself already has full power to control it. States, however, have no such power to control pollution that enters their territory from other states.

Before the states joined the federal union, they enjoyed a right of self-protection against environmental pollution by their neighbors as sovereign nations under public international law. After the federal union was formed, the national government became the custodian of this right, which was transformed into a right to bring suit under federal common law against their neighbors for cross-boundary pollution.¹⁸⁹ The Supreme Court has held, however, that the 1972 Clean Water Act preempted the states' ability to sue upstream states for legal relief against pollution.¹⁹⁰ The Act placed the responsibility for regulating interstate pollution in the hands of the EPA, and thereby repealed the states' common law authority to seek abatement of upstream pollution. The Act left states with a vaguely stated right to petition the EPA for action.¹⁹¹ Consequently, a state that had

¹⁸⁹ The original right of self-help was replaced by the remedy of relief through original litigation in the Supreme Court. *See, e.g., Georgia v. Tenn. Copper Co.*, 206 U.S. 230, 237 (1907) (Holmes, J.); *Missouri v. Illinois*, 180 U.S. 208, 241 (1901). Before 1972, the Supreme Court repeatedly exercised its jurisdiction to hear water pollution cases of this nature. *See, e.g., New York v. New Jersey*, 256 U.S. 296 (1921).

Pollution that flows from one state to another is also a thing in interstate commerce, subject to federal regulatory power even under the reasoning of *Lopez* and *Morrison*. The Supreme Court found in *Sporhase v. Nebraska ex rel. Douglas*, 458 U.S. 941, 953-54 (1982), that the "multistate character" of the groundwater in the Ogallala aquifer "confirms the view that there is a significant federal interest in conservation . . . of this diminishing resource." Lower courts have applied this logic to hold that "there is no doubt that surface waters, especially those that border on or traverse through more than one state, are an integral part of interstate commerce." *United States v. NL Indus., Inc.*, 936 F. Supp. 545, 558 (S.D. Ill. 1996); *cf. Int'l Paper Co. v. Ouellette*, 479 U.S. 481 (1987) (holding that the Clean Water Act preempted Vermont's nuisance law as applied to a New York point source polluter). Both lines of argument support a comprehensive federal power to control interstate pollution.

The logic of these arguments is not confined to pollution control. A state that takes more than "its share" of migratory fish or birds, either by capture or by destroying their habitat, can properly be restricted from thus violating what can be conceptualized either as an interest of other states or as a national interest. *See Missouri v. Holland*, 252 U.S. 416, 435 (1920); William Funk, *The Court, the Clean Water Act, and the Constitution: SWANCC and Beyond*, 31 ENVTL. L. REP. 10,741, 10,766 (2001).

¹⁹⁰ *See City of Milwaukee v. Illinois*, 451 U.S. 304, 317-19 (1981).

¹⁹¹ *See Thomas W. Merrill, Golden Rules for Transboundary Pollution*, 46 DUKE L.J. 931, 932 (1997) ("Notwithstanding the broad general trend toward centralized regulatory authority in environmental law, and the widespread invocation of transboundary pollution as a justification for that

established tight water quality standards and regulations to achieve them might lack any effective remedy for violations caused by out-of-state discharges.¹⁹²

Since extensive land use control would be required to prevent one state from exporting water pollution to another, Congress' failure to address this issue can be seen as an extension of its failure to address land use in other contexts.¹⁹³ Here as elsewhere, direct federal control of private land use would override too many locally-centered, rival interests to be legitimate or feasible. An alternative approach could require a state or local government to impose the controls. Although the federal government might have the constitutional power to issue a legal command to one state to stop polluting another state by a certain amount,¹⁹⁴ it might be more practical to condition receipt of federal benefits on a state's taking such action.¹⁹⁵

Both approaches would resemble bargaining entitlements by allowing a state to select the means to achieve the statutory ends. A conditioned

trend, little meaningful regulation of transboundary pollution actually exists.”). For more detailed descriptions of water pollution specifically, see *Arkansas v. Oklahoma*, 503 U.S. 91 (1992); Merrill, *supra*, at 956-57.

192 Requiring a state to regulate polluters within its boundaries tightly enough to achieve environmental standards in another state could lead to abuses. Professor Revesz would control such abuses by applying a standard drawn from dormant Commerce Clause cases, which allow state laws that bear equally on in-state and out-of-state interests and strike down those that impose a special burden on out-of-staters. Specifically, Revesz argues that states should be allowed to place the costs-per-unit of avoided in-state environmental damage on out-of-staters in the same amount that it asks its own citizens to bear. Richard L. Revesz, *Federalism and Interstate Environmental Externalities*, 144 U. PA. L. REV. 2341, 2376-85 (1996). Merrill articulates a very similar principle, calling it, not inaptly, the Golden Rule. Merrill, *supra* note 191, at 936, 1008-17.

The formally neutral “equal burdens in-state and out” standard, which seems analytically compelling as a starting point, is not as simple as it looks. Without violating this principle, a state could choose to regulate areas where the damage primarily came from out-of-state and leave relatively unregulated any areas where the damage came from local sources. For example, a state at the mouth of a river might adopt strong water pollution standards that would bear heavily on upriver jurisdictions, while simultaneously adopting relatively lenient wetlands protection laws. As Professor Revesz points out, in dormant Commerce Clause cases the courts have granted states great discretion in making balancing judgments of this nature. See Revesz, *supra*, at 2408; see also *Minnesota v. Clover Leaf Creamery, Co.*, 449 U.S. 456 (1981) (upholding a Minnesota ban on plastic milk containers even though cardboard containers, the most likely substitute, were made from pulpwood, an important Minnesota product).

193 The contrasting history of the interstate pollution provisions of the Clean Water Act and the Clean Air Act provides some confirmation of the role of land use. While the interstate pollution provisions of the Clean Water Act have been a virtual dead letter as discussed *supra* note 189, the interstate pollution provisions of the Clean Air Act—which do not require the imposition of land use controls to achieve their goals—have supported a lively program of regulation and litigation. See, e.g., *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000) (upholding comprehensive EPA regulation of interstate pollution); *Air Pollution Control Dist. v. EPA*, 739 F.2d 1071 (6th Cir. 1984).

194 According to one commentator, the Supreme Court found in *Missouri v. Illinois*, 180 U.S. 208 (1901), that “Illinois, the source state, would be legally responsible if pollution emanating from its territory was found to cause an actionable public nuisance in Missouri” and reaffirmed that finding in *Illinois v. City of Milwaukee*, 451 U.S. 304 (1981). Merrill, *supra* note 191, at 941 & n.37.

195 See *supra* note 146 and accompanying text.

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spending approach, enforced through limited burdens that give the state some practical ability to decline compliance, would also resemble entitlement bargaining. Although both approaches would substantially reduce the defects of a top-down approach, neither would correct them completely. Both approaches would require the federal government to define in advance, by legislation or top-down regulation, such operating parameters as the amount of interstate pollution to be allowed and the consequences if the reduction were not achieved. That would present the state with a binary and non-negotiable choice—either reduce pollution by the contemplated amount, thus discharging the control burden, or fall short of that burden and accept the specified consequences. To discharge such a burden, the state would have to restrict the autonomy of affected landowners by using its land use control powers in ways the state had not itself chosen. The imposition of such a burden through a top-down approach would therefore encounter many of the same obstacles to federal land use regulation discussed earlier.

Those obstacles might be overcome in part by using bargaining entitlements to help set regulatory goals and parameters. Under such an approach, a state would qualify for entitlement relief when it had developed a satisfactory plan to abate interstate pollution.

A similar approach has been used to reconcile the interests of different levels of government linked together in an overall system of divided authority. This approach grants one level of government the power to make a decision and another an absolute or qualified power to veto it.¹⁹⁶ The right to veto confers an entitlement on its holder that can be used to bargain over the shape of the decision. That approach could be readily adapted to the interstate pollution context by allowing, for example, the

¹⁹⁶ See Clayton P. Gillette, *The Exercise of Trumps by Decentralized Governments*, 83 VA. L. REV. 1347 (1997). Gillette locates the need for such a reconciling mechanism in the fact that “the ideal boundaries for achieving any one governmental function will only by fortuity coincide with the ideal boundaries for achieving any of the others,” which suggests the formation of different governments for different functions. *Id.* at 1349. Establishing a new government for each function with a different boundary is clearly impossible. Equipping the “weaker” level of government with a veto over the acts of the stronger (or requiring unanimous consent to certain acts) can protect the weaker jurisdiction against encroachment, even with jurisdictional boundaries that might otherwise lead to exploitation.

Such vetoes by both the state and federal governments over the actions of the other are an established feature of environmental law. Section 401 of the Clean Water Act allows states to veto any federal project that might interfere with the attainment of state water quality standards. Clean Water Act § 401; see *PUD No. 1 v. Washington, Dep’t of Ecology*, 511 U.S. 700 (1994). Conversely, both the Clean Air Act and the Clean Water Act allow the EPA to veto state-issued permits. Clean Water Act § 402(d)(2); Clean Air Act § 505(b). It is the thesis of this Article that in the field of land use control, states are the “stronger” government, so that any veto or other entitlement should be held by others and directed at the state’s actions. Although both Gillette and the statutory precedents speak in terms of vetoes, there is no logical reason why protection for the “weaker” government should take only that form. Any right of one government to impose a burden on another can serve as a bargaining entitlement.

federal government (or a downstream state) to veto certain land use decisions in an upstream state or to withhold certain federal moneys until a satisfactory plan had been developed. Once this veto framework had been established, it could provide a framework for multi-party bargaining, debates, and deployment of additional types of entitlement as described earlier.¹⁹⁷

Conditions on federal spending might also be used to encourage states to adopt land use restrictions for other purposes, including the preservation of water quality, wetlands, and wildlife within their own boundaries. Commentators concerned that more aggressive use of spending conditions could undermine constitutional protections on state autonomy have suggested that such conditions be permitted only if Congress could also have used Commerce Clause regulation to pursue the same course of action.¹⁹⁸ Justice O'Connor has suggested in a similar vein that conditions be restricted to expenditures related to the goal of the condition.¹⁹⁹ That is, highway funds could be conditioned on enacting seatbelt laws, but not on voting reform.

Spending conditions to achieve environmental protection could readily pass both these tests. Courts, with few exceptions, have directly upheld even command-and-control environmental regulatory programs against constitutional challenge. And federal spending programs that affect land use, like highway and dam construction subsidies, waterway dredging programs, and agricultural price supports, exceed \$60 billion a year.²⁰⁰ Requiring these funds to be spent in an environmentally protective manner would involve no conceivable violation of principle. On the contrary, it would broaden the benefits of the entitlements approach by converting major federal spending programs as well as regulatory obligations into incentives for comprehensive, locally motivated, and environmentally protective land use plans.

197 Defining each state's initial entitlement rights against pollution from others would be an inescapably federal function. This Article does not discuss who should hold the entitlements once they have been established; that is, who should be allowed to enforce and trade them. Butler and Macey argue that in simple two-party situations (such as an upstream state and a downstream state) there is no reason not to make the downstream state the holder of the entitlement. *See* Butler & Macey, *supra* note 15, at 37-40, 53-54. More complicated situations arise where more than two states along a river are both upstream and downstream to others or where various states contribute to the pollution of a common resource like the Chesapeake Bay. Here, difficulties of multi-party bargaining may suggest assigning the entitlement to the federal government or at least giving it a decision-making role along with other entitlement holders.

198 *See, e.g.*, Lynn A. Baker, *Conditional Federal Spending After Lopez*, 95 COLUM. L. REV. 1911, 1916, 1954 (1995).

199 *See* *South Dakota v. Dole*, 483 U.S. 203, 212-18 (1987) (O'Connor, J., dissenting).

200 To pick one very crude measure, in 2001 the federal government spent \$35.4 billion on "ground transportation," \$22.8 billion on "farm income stabilization," and \$5.4 billion on "water resources," totaling \$63.6 billion. U.S. CENSUS BUREAU, STATISTICAL ABSTRACT OF THE UNITED STATES: 2002, at 307 tbl.453. This was four times the combined budgets of the EPA (\$7.5 billion) and the Interior Department (\$8.2 billion). *Id.* at 106 tbl.452.

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IX. Conclusion

The current structure of federal environmental law has proved unable to address private land use coherently, despite the presence of a strong environmental case for such controls and no clear lack of constitutional power to impose them. This inadequacy stems largely from the rigid categories of our regulatory system. Such categories assume, for example, that the government alone must make regulatory decisions, so that shared decisions made by contract are less legitimate. Similarly, objections to a government decision are assumed to be either valid or invalid, and incurring the process costs of deciding that issue is assumed to be better than resolving it by compromise. Regulatory measures are assumed either to attain the statutory ends or to fail them, so that it is better to strive for complete achievement than to accept a more limited result and seek a balance by other means. The day-to-day practice of our regulatory system often deviates from this matrix, but its tacit acceptance as a model restricts our ability to achieve public results in areas where the government lacks power to achieve its ends by unilateral commands.

This Article has outlined an alternative approach under which the government, like most other legal entities, would bargain for the results it desired. To avoid simple-minded reliance on dialogue alone, the government would be equipped with “entitlements”—the ability to burden or benefit other parties to the discussion—to create a motive to agree on a compromise. This approach could often avoid the political and legal resistance that has gridlocked federal efforts to issue direct legal commands in disputed areas. Over time, it could also change the functioning of the government itself, removing the isolation from the rest of society that our current regulatory approach helps to create and engaging government agents more directly in dealings with the citizens they serve.

In all three types of bargaining entitlements discussed, the original regulatory obligation would become valued, not so much for its power to require the originally contemplated performance, as for its trading value to obtain land use controls.²⁰¹ Trading would diminish the symbolic nature of the underlying statute by integrating it more closely with other social

201 The ESA’s no surprises policy makes this explicit, stating that: [M]uch of the habitat of listed species is in non-Federal lands. . . . Yet, while thousands of acres of species habitat were disappearing each year, only a handful of [habitat conservation plans] had been sought and approved [since they were first authorized]. The No Surprises policy was designed to rechannel this uncontrolled ongoing habitat loss . . . by offering regulatory certainty to non-Federal landowners in exchange for a long-term commitment to species conservation.

Habitat Conservation Plan Assurances (“No Surprises”) Rule, 63 Fed. Reg. 8859, 8861 (Feb. 23, 1998).

values and forces. The Clean Water Act's promise of clean water nationwide, or the ESA's promise of universal endangered species protection, would become more qualified—and more realistic—as they were traded for other types of relief. Trading would also tend to transmute regulatory burdens into traditional bounded property rights that specified the use to be made of the land, burdened it for long periods (or in perpetuity), and could not be changed without payment to the owner.²⁰²

Entitlement bargaining could clarify for nature preservation advocates the costs of our “baseline” statutory approach in terms of other values on their agenda and could, conversely, focus the attention of the communities involved on the benefits of preserving undeveloped land. The success that bargaining efforts have already achieved suggests that efforts to bridge the gap between parties' interests would be well rewarded.

202 The trading policies all expressly address these points. As noted above, *see* Section V.B, wetlands banking requires protection of the banked lands under state property law. The safe harbor policy requires that the conservation assurances that the landowner provides must “run with the enrolled lands” but apparently do not bind a new landowner unless he consents. *See* 64 Fed. Reg. 32,717, 32,724 (June 17, 1999). The candidate conservation agreement policy similarly provides for notice to any new landowner with an opportunity to reaffirm the agreement. 64 Fed. Reg. 32,726, 32,736 (June 17, 1999). These assurances only last for the lifetime of the agreement in question. However, many habitat conservation plans have lifetimes of thirty to fifty years or even longer. Donovan, *supra* note 120, at 334.