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Environmental Law

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Preface to the Second Series

The first series of the International Library of Essays in Law and Legal Theory has established itself as a major research resource with fifty-eight volumes of the most significant theoretical essays in contemporary legal studies. Each volume contains essays of central theoretical importance in its subject area and the series as a whole makes available an extensive range of valuable material of considerable interest to those involved in research, teaching and the study of law.

The rapid growth of theoretically interesting scholarly work in law has created a demand for a second series which includes more recent publications of note and earlier essays to which renewed attention is being given. It also affords the opportunity to extend the areas of law covered in the first series.

The new series follows the successful pattern of reproducing entire essays with the original page numbers as an aid to comprehensive research and accurate referencing. Editors have selected not only the most influential essays but also those which they consider to be of greatest continuing importance. The objective of the second series is to enlarge the scope of the library, include significant recent work and reflect a variety of editorial perspectives.

Each volume is edited by an expert in the specific area who makes the selection on the basis of the quality, influence and significance of the essays, taking care to include essays which are not readily available. Each volume contains a substantial introduction explaining the context and significance of the essays selected.

I am most grateful for the care which volume editors have taken in carrying out the complex task of selecting and presenting essays which meet the exacting criteria set for the series.

TOM CAMPBELL
Series Editor
Centre for Applied Philosophy and Public Ethics
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Introduction

The late 1960s and early 1970s marked the dawn of a new era of environmental consciousness and governance throughout the industrialized world. In an era of unprecedented economic affluence within the developed nations, their electorates became increasingly concerned that environmental degradation caused by industrial pollution, the proliferation of automobiles and unbridled resource extraction threatened the overall quality of life. These nations adopted a wave of environmental statutes and created a host of new institutions to combat these threats.

Within the United States, the Clean Air Act Amendments of 1970, followed by comparable laws to protect water and land resources, called for the rapid development and implementation of a national, comprehensive systems of regulatory controls. These regimes relied predominantly upon a technology-based strategy under which government regulators determine the best available technology (BAT) for pollution control in each industry. The choice of 'command and control' regulation as the dominant strategy reflected both political expediency and severe informational and technical constraints. Although some economists proposed the use of effluent charges, such an approach raised formidable design, monitoring, and enforcement challenges, risked substantial economic disruption, and lacked the support of environmental organizations and industry (Oates, 2000). It was thought that BAT regulation could be deployed relatively quickly without shutting down major industrial facilities.

Nonetheless, regulators faced daunting challenges implementing comprehensive regulatory programmes within Congress's ambitious deadlines. Shortcomings of the command and control strategy became apparent from the outset (Ackerman and Stewart, 1985). Regulatory officials lacked the detailed, current and accurate information necessary to select BAT standards for hundreds of industrial sectors; this delayed the standard-setting process and resulted in vulnerable regulations. Moreover, industry groups challenged hundreds of these standards, consuming significant resources and further delaying implementation (LaPierre, 1977). Because of the discretion inherent in standard-setting, BAT standards were prone to political manipulation at both the legislative and agency levels (Ackerman and Hassler, 1981). Once adopted, nationally uniform BAT controls ignored geographic and other variations among plants, imposing compliance costs substantially above what could have been achieved through a least-cost regulatory strategy (Crandall, 1983). Although variance provisions afforded some flexibility, they were administratively complex, unpredictable and prone to abuse. BAT standards also held older, heavily polluting sources to lower standards than newer sources, thereby delaying retirement of dirty facilities (Huber, 1983). BAT dulled the incentive for industry to innovate better technology because the reward for such creativity was higher regulatory cost (Stewart, 1981). It also failed to prioritize among pollution control targets (Ackerman and Stewart, 1985).

The BAT strategy achieved significant progress in controlling the most widespread air pollutants and point sources of water pollution (Portney and Stavins, 2000; Wagner, 2000; Shapiro and McGarity, 1991; Latin, 1985), but was not sufficient to meet many of Congress's ambitious regulatory deadlines. Under the Clean Air Act Amendments of 1970, failure to achieve statutory deadlines triggered a moratorium on construction of new sources and major

modifications of existing sources in non-attainment areas. In order to accommodate economic growth while fostering progress towards cleaner air, Congress authorized the Environmental Protection Agency (EPA) to experiment with emission trading. The 1977 Amendments to the Clean Air Act allowed construction of new and modified sources in non-attainment areas so long as the installations employed the most effective abatement technology available and offset the increased emissions with reductions elsewhere (Liroff, 1986; Menell and Stewart, 1994). The EPA further experimented with tradeable credits in its phase-out of lead additives in petrol during the 1980s. In 1990, Congress designed the main features of its acid deposition control regime around a tradeable emission strategy.

The first volume of this series, edited by Michael Blumm a decade ago (Blumm, 1992), captured the formative debates over the means of regulating the environment, the struggles to implement command and control regulation and early reform proposals. The past decade has witnessed a tremendous expansion of the range of institutions and instruments governing environmental quality. Although the BAT/command and control strategy remains the dominant mode of regulation, it has been recast, augmented and, in some circumstances, supplanted by a variety of alternative approaches – including contract-based regulation, economic incentive instruments, the use of property rights, extended liability regimes, and information policies. Economic incentive and other approaches have become accepted tools of environmental protection in a growing range of areas. The debate over environmental governance has shifted from the appropriateness of market-based alternatives to a more pragmatic inquiry into how to deploy the panoply of regulatory tools and methodologies within a complex set of institutional and political constraints.

This edition of the Environmental Law Series surveys the newly expanded landscape of environmental governance institutions and instruments. Part I examines the use of market-based regulatory systems, ranging from the use of tradeable emission rights in air to a host of other incentive-based instruments that have been deployed in other media. Part II explores calls for exclusive reliance upon private property rights to address environmental degradation and protect natural resources. Part III looks at a third variation on market-oriented institutions: the use of negotiation to set environmental standards and contractual regulatory approaches. Part IV considers liability-based regimes for deterring and remedying environmental contamination and compensating victims of environmental harm. Part V surveys a wide range of regulatory tools based on information disclosure. Part VI explores self-governance institutions, ranging from industry-developed environmental management systems to formal and informal regimes for the protection of common property resources. Finally, Part VII examines normative and positive perspectives on the choice of institutions and instruments governing the environment.

This introduction to the volume surveys the vast literature on environmental governance institutions and instruments, while the volume itself comprises a collection of essays that provide frameworks for understanding particular institutional models and comparative institutional analysis.

Before turning to the overview and synthesis, a brief comment about the scope of the term 'institution' is in order. Scholars across a range of disciplines use this term in a variety of ways. In its most tangible form, an institution is a decision-making body, such as the US Environmental Protection Agency, the United Nations or the World Trade Organization. At a more general level, some scholars refer to much more general concepts, such as the institution of 'federalism'.

Drawing upon the comparative institutional literature, I have chosen to approach the field of environmental law at an intermediate level of abstraction in which 'institutions' connote governance structures, as distinct from particular decision-making bodies and more amorphous concepts such as 'federalism'. Thus, information collection and dissemination, contract-based decision-making, and self-governance can be thought of as governance institutions within which ranges of both decision-making bodies and instruments can be understood.

Environmental Governance Institutions

The limitations of the first generation of environmental regulation drove the evolution of environmental law in several directions. First, the administrative challenge and growing regulatory cost of environmental regulation led the Executive Branch to institute administrative oversight of the process and the use of cost–benefit analysis, where permissible, to guide regulation (DeMuth and Ginsburg, 1986; McGarity, 1991).

A second manifestation of the tension between achieving Congress's ambitious environmental goals and the limitations, rigidities and constraints of command and control regulation has been relatively pervasive non-compliance, selective enforcement, creative interpretation of regulatory authority and extension of compliance deadlines (Melnick, 1984; Dwyer, 1990). Farber (1999) usefully collects these various adjustments to environmental regulation under the rubric 'slippage' (see also Stewart, 2001, pp. 54–60.) Slippage has become an inexorable aspect of the evolution of environmental law, enabling legislators to set aspirational goals in the face of uncertainty about environmental harm, compliance costs, technology and economic consequences. Nonetheless, it exacts a toll in terms of cynicism, enforcement credibility and achievement of regulatory objectives, while affording the regulatory system time and flexibility to adapt.

A related, and more encouraging, manifestation of the limitations of command and control regulation has been the development of new regulatory tools and institutions that seek to enhance, complement and, in some cases, supplant the traditional regulatory framework. During the past 25 years, the palette of environmental regulatory approaches has greatly expanded, as has experience with both traditional and these new tools. To some extent, these developments reflect the greater knowledge base, improved monitoring and other technologies on which to devise regulatory strategies, but they also reflect deeper understanding of the complex social dynamics underlying environmental problems. The rather simplistic vision underlying the first generation of environmental regulation – that the government need only set and enforce scientifically and objectively determined standards – has been supplanted by a recognition that environmental governance must engage, educate, motivate and enlist many constituencies and actors – consumers, major corporations, small business owners, government bodies, ecologists, advocacy organizations, regulators, legislators, technologists, scientists, community organizations and the public at large – in an endogenous and dynamic process of regulation.

Market-based Regulatory Approaches

Since the dawn of the modern environmental age, economists and a growing chorus of environmental law scholars have advocated the use of market-based regulatory instruments to

control various forms of environmental degradation (Crandall, 1983; Ackerman and Stewart, 1985; Hahn and Stavins, 1991; Menell and Stewart, 1994). By decentralizing the choice of compliance level to the marketplace, such approaches avoid some of the enormous information burdens associated with setting technology-based standards and generate strong incentives for reducing compliance costs. On the other hand, they raise other administrative and information challenges of their own.

Over the past two decades, we have gained valuable experience – both encouraging and sobering – in the design and implementation of market-based regulatory instruments. These experiments can usefully be divided into three areas:

1 the use of tradeable emission rights in the control of air pollution;
2 the expansion of environmental trading markets; and
3 the use of other economic incentive approaches in regulating the environment.

Tradeable Air Pollution Emission Rights

The EPA's emission trading programme In 1975 the EPA introduced an intra-firm emission trading programme which allowed firms that reduced emissions below required levels to earn credits that could be applied to excuse modified plants from meeting new source performance standards so long as total emissions at the plant did not increase. In 1976, the EPA introduced, and Congress subsequently blessed, the emissions offset policy, which allows firms in non-attainment areas to build or modify sources if they obtained sufficient offset credits. The Agency then expanded these programmes to allow the banking of credits and emission trading in regions subject to non-degradation limitations. The programme, as a whole, has generated significant costs savings (Hahn and Hester, 1989a; 1989b). Although there were instances in which plants obtained credits for scaling back production and plant shutdowns that would have occurred without the opportunity to offset pollution or bank credits (Liroff, 1986; Driesen, 1998), the overall programme did not significantly undermine progress in abating air pollution (Hahn and Hester, 1989a; 1989b). However, the utilization of the emission trading programme was hampered by the complexity of the rules for determining credits and the risk that regulatory change could reduce the value of credits (Hahn and Hester, 1989a; 1989b; Dudek and Palmisano, 1988).

Lead phase-down In response to mounting evidence of the adverse health effects of airborne lead, the EPA ordered a 90 per cent reduction in the lead content of petrol in the early 1980s. To ease the market adjustment to this phase-down, it authorized refiners to trade reduction credits and later authorized the banking of credits. This programme succeeded in achieving the phase-down on schedule and resulted in cost savings of approximately 20 per cent ($250 million per year) during the several years that the programme operated (Hahn and Hester, 1989b).

CFC phase-out The Montreal Protocol on Substances that Deplete the Ozone Layer, signed in 1987, called for the staged elimination of chlorofluorocarbons and related chemicals responsible for the depletion of stratospheric ozone. The EPA implemented this phase-out by imposing an escalating tax on the production and importation of target chemicals and allocating to each of the five domestic producers of CFCs tradeable permits based on their 1986 production

permits. These permits declined according to the Protocol schedule. These incentives enabled the United States to achieve the treaty targets at a substantially lower cost than a phase-out without credit trading.

Sulphur oxide allowances With the 1990 Amendments to the Clean Air Act, the United States embarked upon the most extensive experiment in market-based regulatory policy, employing tradeable emission rights to phase down emissions of sulphur oxides from electric utility power plants by more than half (relative to 1980 emission levels) by 2010. Burtraw and Swift (1996) and Schmalensee *et al.* (1998) provide mid-course assessments of the programme and find that the trading strategy resulted in substantial cost savings (approximately 30 per cent relative to a regime without trading), while achieving substantially greater reductions than would otherwise have occurred under a proportional reduction schedule. The flexibility of the trading regime lowered compliance costs directly by levelling the cost across plants, and indirectly by spurring a wide range of innovations – from improvements in rail transportation for low-sulphur coal to advances in fuel blending and scrubbing technologies. Based on data from the first four years of the allowance programme, Swift (2000) finds that trading has not resulted in an increased concentration of emissions in particular regions ('hot spots') and, in fact, may have cooled pre-existing hot spots. Furthermore, relative to traditional technology-based controls, the sulphur oxides tradeable allowance programme has achieved its goals without significant administrative or litigation costs.

Los Angeles Basin emission trading policies Due to an unfavourable combination of topographic, atmospheric, industrial and land use conditions, the Los Angeles Basin has lagged behind the rest of the nation in achieving ambient air quality standards. The severity of these problems spurred the South Coast Air Quality Management (SCAQMD) to employ a variety of market-based instruments. In order to achieve its goals, SCAQMD had to reach well beyond the class of large, highly regulated sources that had been the subject of prior trading programmes to mobile sources and many smaller sources, including consumer products such as paints, solvents and deodorants. It also had to deal with multiple pollutants – nitrogen oxides (NO_x), sulphur oxides (SO_x) and volatile organic compounds (VOCs) – and their complex interaction in producing smog.

The programme has three main elements:

1 *RECLAIM*. The principal component of the plan, known as the REgional CLean Air Incentives Market (RECLAIM), requires all facilities emitting more than four tons of either NO_x or SO_x to have one permit for each pound of pollutant (by type). Facilities receive permits in proportion to their historical levels, and the total number of permits allocated to each facility declines by 5–8 per cent per year (Drury *et al.*, 1999; Chinn, 1999; Johnson and Pekelney, 1996). The programme allows trading or permits, although it imposes some restrictions, based on prevailing wind patterns, on trading from facilities in the inland zone to the coastal zone.
2 *Mobile source emissions credits*. In order to accelerate the retirement of older, more polluting cars from the roads, SCAQMD allows sources to obtain credits by purchasing and destroying old cars. These credits, which are based on actuarial estimates of the pollution that would have otherwise emitted from these cars, can be traded on the RECLAIM market.

3 *Source credit emissions credits.* SCAQMD also allows credits to be earned by retrofitting small pollution sources, such as household and small furnaces, that would otherwise escape regulation with more efficient emission control technologies.

While these programmes have achieved some success in reducing pollution abatement costs (Lents, 2000), they have proven difficult to design and administer. From the initial planning stage, this trading regime has been plagued by political squabbles among stakeholders (Thompson, 2000), and the operation of the programme has revealed monitoring and enforcement gaps. Moreover, the trading of credits has exacerbated toxic hot spots in some poorer communities (Chinn, 1999; Drury *et al.*, 1999).

The RECLAIM experience reveals that market-based strategies face substantial design and implementation challenges in dealing with the real-world complexity associated with many air pollution problems. Although other regions have experimented with more modest approaches (see Farrell *et al.*,1999; Ayers, 2000), market-based emissions trading programmes still play a relatively modest role in the overall air pollution regulatory system. Beyond the rare circumstance of a single pollutant that does not produce hot spots emitted by numerous easily monitored, large sources with varying abatement costs, emission trading strategies cannot provide a perfect regulatory solution. Thus, the strengths and limitations of market-based instruments must be compared to traditional command and control techniques, as well as other regulatory options (Wagner, 2000; Cole and Grossman, 1999; Shapiro and McGarity, 1991; Latin, 1985). As Stavins observes:

> No particular form of government intervention, no individual policy instrument – market-based or conventional – is appropriate for all environmental problems. Which instrument is best in any given situation depends on a variety of characteristics of the environmental problem as well as the social, political, and economic context in which it is being regulated. (Stavins, 2000, p. 62)

Nonetheless, the prospects for further development and deployment of emissions trading programmes remain bright (Stavins, 2000; Kosobud and Zimmerman, 1997; Menell and Stewart, 1994; Stavins, 1991). Advances in monitoring technology, atmospheric modelling, data storage and retrieval, and Internet-based transactional mechanisms will open up new opportunities for emissions trading and other market-based instruments. Revesz and Nash (2001) demonstrate how atmospheric dispersion models can be combined with an Internet-based transactional mechanism to adjust trading markets so as to ameliorate hot spots. Similarly, transponder technologies can be used to adjust traffic flow and pollution levels in congested urban areas. As Demsetz (1967) has observed, property institutions tend to form and expand as the benefits of internalizing externalities rise and the costs of defining and enforcing property rights decline. Both of these conditions portend greater use of market-based and trading regimes in the future. In particular, advances in monitoring and transaction technologies will make market-based regimes feasible for a wider class of problems.

A market-based strategy holds particular promise for combating global climate change (Weiner, 1999; Shogren and Toman, 2000). A trading regime offers tremendous savings as well as a mechanism for transferring clean technologies into the developing world. Since only the net quantity of greenhouse gas emissions (and sinks) affects the rate of climate change, the trading regime need not control for regional hot spot concentrations. In addition, the ability to index global warming effects of different gases enables a single fungible accounting unit to be

used (Stewart and Weiner, 1992). Nonetheless, the monitoring of greenhouse gases and sinks, as well as the enforcement of limits among many diverse nations, present daunting challenges.

The Expansion of Environmental Trading Markets

Drawing on the promise of market-based instruments, regulatory entrepreneurs have extended the tradeable emissions concept to a range of environmental contexts (Ayers, 2000), and the tradeable permit strategy has been adapted to wetlands mitigation (Schoenbaum and Stewart, 1999–2000; Gardner, 1996, 2000), effluent trading (US EPA, 2001; Ayers, 2000; Stavins, 2000; Stephenson *et al.*, 1999; Teitz, 1994), and habitat conservation (Sohn and Cohen, 1996; Bean and Dwyer, 2000).

The new frontier of environmental trading brings to the fore a fundamental issue inherent in any trading regime: the commensurability of 'goods' being exchanged. Is the loss of an acre of wetlands in one ecological region equivalent to the restoration of an acre of wetlands elsewhere? This problem arises in a more subtle way in the air pollution context – even though one pound of SO_2 is chemically equivalent to any other pound of SO_2, trading the emission of one pound of SO_2 at a particular time and in a particular locale for another pound of the same gas in another time and place could have very different environmental effects. Thus, the units and conditions of exchange play a central role in the design and efficacy of environmental trading markets, particularly as we move to ever more attenuated circumstances surrounding the 'goods' being exchanged.

In Chapter 1 of this volume Salzman and Ruhl provide a comprehensive framework for analysing the degree of fungibility in environmental trading markets. By analogizing foreign currency exchange rates to 'environmental currencies', they distinguish among the spatial, chemical and temporal dimensions of tradeable units and apply the concept of ecosystem services to develop a means for comparing the exchange of natural resources. Their study examines the development of wetland mitigation banking and shows that the trading markets that have developed thus far overlook biotic differences among the bundles of ecosystem services treated as fungible. Their framework highlights important trade-offs in analysing and designing environmental trading markets and sheds valuable light on addressing hot spots and ecosystem dynamics in the development of trading markets.

Other Economic Incentive Instruments

A wide range of other economic incentives approaches have been developed over the past two decades. Stavins (1991) catalogues a series of market-based proposals put forth in the early 1990s, many of which have taken root (Stavins, 2000).

Deposit-refund systems Deposit-refund systems were first developed in the early 1970s to combat beverage container litter (Bohm, 1981). Consumers pay an additional five or ten cents per can or bottle which is redeemable when they return the empty container. As concern about solid waste grew in the mid- to late 1980s, deposit-refund systems increasingly began to be seen as a means of promoting recycling. Because of the labour, transportation, storage and administrative costs of such systems, their overall effectiveness as a means of efficiently channelling solid waste is doubtful; other policies, such as free kerbside pick-up in conjunction

with disposal fees for mixed refuse, may be more efficient for many communities (Menell, 1990). Deposit-refund systems are better suited to reducing illegal disposal. Sigman (1995) shows that deposit-refund systems may be effective as a means of controlling some forms of hazardous waste, although their application in this context is quite limited (Macauley *et al.*, 1992; Hahn, 1988; Russell, 1988). Many states have adopted deposits ranging from five to ten dollars for lead acid automobile batteries in order to discourage their disposal in the household solid waste stream (Stavins, 2000).

Effluent taxes and user charges A.C. Pigou (1920) first proposed the use of emission and effluent taxes to internalize the external effects of pollution. France, Germany and the Netherlands impose effluent charges on water pollution, although the tax rates have been too low to deter pollution significantly (Howe, 1994; Opschoor and Vos, 1989). Many nations use fuel, highway and general energy taxes (Stavins, 2000). Although these policies have traditionally been oriented towards raising revenue rather than controlling pollution, scholars and policy-makers have become more interested in using tax instruments to combat global climate change. In the United States, feedstock and corporate taxes have also been used to fund hazardous waste and oil-spill clean-up. National and state recreational areas use entrance fees to maintain the parks. Over the past decade, many municipalities in the United States have adopted unit charges (typically volume-based fees) to reduce and pay for the cost of disposing solid waste (Fullerton and Kinnaman, 1996; Jenkins, 1993). Many communities combine these charges with the free removal of separated recoverable or compostable materials, thereby encouraging waste reduction and recycling (Menell, 1990; Fullerton and Kinnaman, 2002).

Subsidies to spur innovation and diffusion of conservation technologies At various times, governments have directly funded research on pollution abatement and provided tax credits and other benefits for energy conservation investments (for example, installation of solar devices).

Elimination of resource-depleting government subsidies Many government policies impair the environment. For example, in the United States, the federal government has traditionally sold natural resources at below the cost of making the resources available. In the case of timber on federal lands, this policy promotes excessive road-building into wilderness areas, loss of habitat and damage to watersheds. Scholars have long advocated eliminating these subsidies (Stavins, 1991; O'Toole, 1988).

Free Market Approaches

Under the banner 'free market environmentalism', an emerging cadre of policy analysts advocate exclusive reliance upon property rights and markets as the best institutional structure for governing the environment (Baden and Stroup, 1981; Anderson and Leal, 2001; Adler, 2001). They base this prescription on two principal tenets – one economic and the other philosophical. Free market environmentalists construct their economic case for the privatization of resources on a foundation of Austrian economics and public choice theory. Austrian economics emphasizes the superiority of decentralized market-based institutions for generating information and

coordinating resource allocation. The information needed to allocate resources efficiently depends on the special circumstances of time and place (Hayek, 1945). Drawing on public choice theory, free market environmentalists perceive government decisions to be the product of manipulation by private interests, poor incentives on the part of bureaucrats and woefully incomplete and inaccurate information about resource problems (Anderson, 2000). The philosophical tenet of free market environmentalism is libertarianism. Free market environmentalists see the promotion of liberty – the protection of private property and freedom of contract – as the foundation of a just society. In their view, centralized government planning threatens such liberty interests by limiting property rights and constraining contractual freedom.

Anderson and Leal (Chapter 2) advocate free market environmentalism on the basis of a series of case studies illustrating the misallocation of natural resources under the guise of governmental policy: the depletion of once fecund fisheries, the decimation of native grasslands through farm policies (principally subsidies), the promotion of destructive mining practices by giving away natural resources on public lands, the denuding of forests at public expense through the subsidization of road-building into forest areas that cannot be harvested in an economically sound way, and the diversion of scarce water resources to inefficient uses. In all of these cases, governmental policy caused or significantly contributed to the depletion and degradation of the environment, often by subsidizing destructive practices and failing to recognize the most highly valued use of the resource. Private property owners, by contrast, would seek to maximize the value of the resource – in some cases, developing the resource and, in others, leaving it undisturbed. Anderson and Leal argue that environmental entrepreneurs – such as the Nature Conservancy – would be able to band together to protect resources in their natural state. From these and other examples and conjectures about market responses, they conclude that all government efforts to manage natural resources and regulate industrial pollution, beyond privatizing resources and enforcing private property, contractual and tort rights, will inevitably cause more harm than good. Consequently, they advocate the privatization of all resources, including the air, water and wildlife.

While the assumptions underlying Anderson and Leal's analysis, their selective presentation of case studies and their conclusions can be successfully attacked (Krier, 1992; Menell, 1992; Symposium on Free Market Environmentalism, 1992), free market environmentalists have revealed serious shortcomings in the government management of natural resources. Government water policy, below-cost timber sales, allocation of mining rights, public rangeland prices, farm subsidies and other policies have squandered resources and subsidized overexploitation (Stavins, 1991; O'Toole, 1988). Furthermore, privatization offers potential advantages in tackling some of these shortcomings. However, Anderson and Leal focus little attention on the limitations of privatization – problems of enforcement, monitoring, and coordinated planning. More significantly, their analysis overlooks a wide range of policies lying between the extremes of pure private ownership and pure public management. By their selective presentation of case studies, Anderson and Leal have not justified comprehensive resort to the privatization of all resources. The analysis of environmental policy requires consideration of a broad range of institutional alternatives and contexts, of which privatization – partial or complete – is but one dimension of the institutional and policy domain.

In reviewing the literature on privatization of fishing rights, what has been referred to as the 'poster child' for free market environmentalism, Rieser (Chapter 3) identifies a host of considerations bearing on the design of an optimal policy. In some fisheries, privatization –