

# **FREE MARKET ENVIRONMENTAL BIBLIOGRAPHY**

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**Competitive Enterprise Institute**

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## FOREWORD

There is broad agreement that environmental protection is a worthwhile endeavor. There is far less agreement about how best to go about it. In recent years there has been a dramatic increase in criticisms of conventional environmental policies and the underlying assumptions upon which they are based.

The Environmental Studies Program at the Competitive Enterprise Institute promotes free market environmentalism (FME) as an alternative paradigm for environmental protection. This approach rejects the conventional “government-knows-best” approach to environmental issues, and focuses on how institutional arrangements empower – or inhibit – private actors to address environmental concerns. Supporters of FME believe that the same institutions which have generated wealth and ensured individual liberty – property rights, market exchange, rule of law — are the best hope for ensuring environmental quality, now and in the future.

As part of the Institute’s effort to promote free market environmental policies, CEI periodically publishes *The Free Market Environmental Bibliography* to assist those interested in researching environmental issues, or simply learning more about FME. This book is hardly exhaustive, but it does demonstrate the wealth of writing and research applying free market principles to environmental concerns. The selections range from academic articles and treatises to policy papers and magazine stories. Many do not espouse a pure free market line, but all suggest the importance of market arrangements and/or critique the failings of political management.

The *FME Bibliography* is divided into twelve broad sections, and citations are listed either as books or articles and studies. Each section begins with introductory remarks which identify key readings and the insights they provide. Excerpts from selected works are also included to give the reader an additional flavor of what some items have in store for them.

The *FME Bibliography* has been a collaborative effort, and many people are due thanks, including everyone on CEI’s environmental staff and CEI’s outgoing Publications Director, J.J. Green. In addition, credit is due to all those who compiled materials for previous editions, including Sterling Burnett, James Sheehan, John Nurick, James Heetderks, Kent Jeffreys and Kelly Glenn.

Although this is the fourth edition of the *Free Market Environmental Bibliography*, we still consider this book a work in progress. No doubt we have still neglected to include pertinent articles, and we apologize in advance for omitting relevant works. As the rate of free market environmental scholarship accelerates, there should be hundreds more citations to include when it is time to do the next edition. Therefore we ask readers to send comments and suggestions for future editions to CEI at 1001 Connecticut Ave NW, Suite 1250, Washington, DC 20036. You can even e-mail them to [jadler@cei.org](mailto:jadler@cei.org). Thank you, and good reading.

Jonathan H. Adler  
Director of Environmental Studies  
September 1996







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## FREE-MARKET ENVIRONMENTAL THEORY

Free-market environmentalism (FME) suggests that those institutions upon which free and prosperous societies are built – private property, voluntary exchange, freedom of contract, rule of law – will best provide for the protection and advancement of ecological values. As such, FME represents a radical departure from the status quo in environmental policy, even though it is largely based upon the application of contemporary political economy, and is largely indebted to the work of Nobel Laureate economists F.A. Hayek, Ronald H. Coase, James Buchanan, and Milton Friedman.

Contemporary environmental policies are typically based on the premise that only government action is capable of improving environmental quality. It is presumed that environmental problems are the result of “market failures” that produce “externalities.” In other words, the market “fails” to address environmental impacts that are “external” to exchanges in the marketplace, and therefore government action is required to regulate those economic activities and transactions that have environmental impacts. Because all activities, from purchasing clothing to driving a car to turning on a light bulb, can have environmental impacts, the conventional environmental policy paradigm creates a justification for the regulation of all economic activity. Economic central planning may be discredited, but the “market failure” thesis justifies environmental central planning, a far more complex endeavor that is prone to produce even more disastrous results.

FME, on the other hand, rejects the “market failure” model. “Rather than viewing the world in terms of market failure, we should view the problem of externalities as a *failure to permit markets* and create markets where they do not yet — or no longer — exist,” argues Fred L. Smith, Jr. (1992). This point is reinforced by the essays in the Cowen volume, nearly all of which bear, directly or indirectly, on environmental questions.

Much of FME owes an intellectual debt to the ecologist Garrett Hardin and his seminal 1968 discussion of the “tragedy of the commons” which befalls unowned or open-access resources. Private ownership provides one means of avoiding the problem which Hardin described, for an owner can control access to the resource and prevent deterioration and overuse. This insight forms the basis of FME as presented in Anderson and Leal’s *Free Market Environmentalism*, probably the best single-volume overview of the free market environmental vision, and expanded upon in Yandle and Meinert (1993), Bailey (1995), and the various articles by both R.J. Smith and Fred Smith. FME’s application to specific resources is explored in the later sections of this Bibliography.

While environmental activists often disparage private ownership, the record of private owners in conserving resources is far superior to that of government agencies. This point is reinforced by Baden and Stroup (1981) and Yandle (1989), as well as many of the selections in the Land Management section of this Bibliography. Indeed, FME developed out of the New Resource Economics, an effort to explain the poor record of government agencies in effectively managing natural resources and public lands that focused on how institutional arrangements, such as ownership, affect incentives and environmental outcomes. This evolution is described by Anderson (1982) and Copeland (1990).

Transitional questions – how to begin the transition to free market environmental policies – are touched on by Scarlett (1996) and Smith (1992), and a “middle way” approach to environmental policy is put forward by Stavins. The ethical components of FME are addressed by Heyne, and the essay by Sagoff is perhaps the most serious critique of FME published to date.





## BOOKS

Anderson, Fredrick R., Allen V. Kneese, Philip D. Reed, *Environmental Improvement Through Economic Incentives* (Baltimore: Johns Hopkins University Press, 1977).

**Anderson, Terry L., and Donald R. Leal, *Free Market Environmentalism*, San Francisco: Pacific Research Institute for Public Policy and Westview Press, 1991.**

“In contrast to regulatory solutions to environmental problems that require heroic assumptions about omniscient and benevolent experts wielding the coercive powers of government, free market environmentalism decentralizes power and harnesses self-interest through market incentives. Market processes with consumer and producer sovereignty have a demonstrated record for improving the quantity and quality of goods and services produced.

Expanding these processes to include natural resources and environmental amenities offers the only possibility for improving environmental quality, raising living standards, and perhaps most important, expanding individual liberty.” (pp. 171-172)

Ashworth, William, *The Economy of Nature* (Boston: Houghton Mifflin, 1995).

Baden, John, *Earth Day Reconsidered* (Washington, D. C.: Heritage Foundation, 1980).

Baden, John, ed., *Environmental Gore: A Constructive Response to Earth in the Balance* (San Francisco: Pacific Research Institute, 1994).

**Baden, John, and Richard Stroup, *Bureacracy vs. the Environment: The Environmental Costs of Bureaucratic Government* (Ann Arbor: University of Michigan Press, 1981).**

“Specifically, we are increasingly convinced that both the environmental and the economic costs of bureaucratic management of natural resources are excessively and unnecessarily high. These social costs are generated by perverse institutional structures that give authority to those who do not bear responsibility for the consequences of their actions. The primary social value of this collection will be its contribution toward explicating the costs, especially the environmental costs, of bureaucrats holding authority that is buffered from responsibility.” (p. 1)

Bailey, Ronald, ed., *The True State of the Planet* (New York: The Free Press, 1995).

Bandow, Doug, *Protecting the Environment: A Free Market Strategy* (Washington, D. C.: The Heritage Foundation, 1986).

**Bast, Joseph L., Peter J. Hill, and Richard C. Rue, *Eco-Sanity: A Common-Sense Guide to Environmentalism* (Madison Books, 1994).**

“Prosperity is good for the environment. The fear that prosperity leads to environmental destruction saturates the literature of the environmental movement. But prosperity has made it possible for us to invest in parks and wildlife preserves, clean our air and water, and treat or store our wastes. The same process that fuels our economic growth — growing efficiency in our use of natural resources — also leads to less waste and pollution. The record here in the U.S., as well as in countries around the world, is perfectly clear on this point: Prosperity is not only compatible with a clean environment, it is environmental protection’s necessary precondition.” (p. 230)

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- Cheung, Steven N. S., *The Myth of Social Cost: A Critique of Welfare Economics and the Implications for Public Policy* (London: Institute for Economic Affairs, 1978).

Coase, Ronald H., *The Firm, the Market, and the Law* (Chicago: University of Chicago Press, 1987).


"It is easy to show that the mere existence of 'externalities' does not, of itself, provide any reason for governmental intervention. Indeed, the fact that there are transaction costs and that they are large implies that many effects of people's actions will not be covered by market transactions., Consequently, 'externalities' will be ubiquitous. The fact that governmental intervention also has its costs makes it very likely that most 'externalities' should be allowed to continue if the value of production is to be maximized. This conclusion is strengthened if we assume that the government is not like Pigou's ideal but is more like his normal public authority — ignorant, subject to pressure, and corrupt. The ubiquitous nature of 'externalities' suggests to me that there is a *prima facie* case against intervention, and the studies on the effects of regulation which have been made in recent years in the United States, ranging from agriculture to zoning, which indicate that regulation has commonly made matters worse, lend support to this view." (p. 26)

Competitive Enterprise Institute, *Readings in Free Market Environmentalism*, Selected Readings (Washington, DC: Competitive Enterprise Institute, 1991).



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***American Journal of Agricultural Economics* 64, December 1982, pp. 928-934.**

"In this paper I have attempted to draw together the essential ingredients of neoclassical, property rights, public choice, and Austrian economics to construct a new, systematic approach to natural resource economics. When old paradigms no longer adequately explain the world, it is necessary to seek alternatives. It should be emphasized that New Resource Economics recognizes the possibility of market failure. The existence of market failure, however, does not necessarily call for a nonmarket alternative. . . . [T]he relevant comparison is between imperfect market solutions and imperfect bureaucratic solutions . . . this compares real-world alternatives rather than unattainable ideals." (pp. 933-934)

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"Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in the commons brings ruin to all." (p. 1244)

**Heyne, Paul, "Economics, Ethics, and Ecology," in *Taking the Environment Seriously*, Bruce Yandle and Roger E. Meinert, eds. (Lanham, MD: Rowman & Littlefield, 1993).**

"When we take the *whole* environment seriously, we will acknowledge that our primary moral obligations are to respect the persons, the liberties, and the rights of those among whom we live. After all, these are the people upon whose cooperation we must ultimately rely, whether it is to 'make a living,' to 'save the earth,' or to see the realization of any other of our larger aspirations." (p. 47)

Higgs, Robert, "Of Smokestacks and Rhinos," *Liberty* 3:5, May 1990, pp. 57-58.

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**Huffman, James, "Protecting the Environment from Orthodox Environmentalism," 15 *Harvard Journal of Public Policy* 2, Spring 1992.**

"The idea of free market environmentalism is particularly distressing for orthodox environmentalists, because for them it is environmentally correct to believe that markets and the wealth they produce are the source of many, if not most, environmental problems. They believe this is true despite the environmental destruction wrought by the centrally-managed economies of eastern Europe, and in spite of the environmental mismanagement of this country's public lands by government agencies that spend a significant share of their resources defending against lawsuits that various public, that is to say 'environmentally correct,' interest groups, have filed. The idea that private actors will voluntarily undertake environmentally beneficial actions for profit is simply not part of accepted orthodox environmental thinking and morality." (pp. 349-350)



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"Environmental goods present special challenges because of the characteristics of these goods. But meeting those challenges has been unnecessarily difficult. For too long environmental policy has been shaped by people who demanded that environmental values trump all other considerations and who assumed that a regulatory elite possessed all necessary knowledge. Rather than figuring out how to perfect or create institutions that would allow a market for environmental goods to develop and flourish, they have been bent on opposing and destroying markets. They have seen markets not as processes for addressing values and conveying knowledge but as symbols of base commercialism and greed. This moralistic approach is finally fading. We can now begin to examine what sorts of institutions different environmental goods require — to explore a new environmental vision." (p. 22)


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**Smith, Fred L., Jr., "Markets and the Environment: A Critical Reappraisal," *Contemporary Economic Policy*, January 1995.**

"Political solutions to environmental problems inevitably respond to political rather than ecological concerns. Only when the two coincide are the programs successful. That rarely happens. Because environmental issues rouse passionate responses, politicians respond to emotion, not scientific evidence. In this environment, establishing rational priorities has not been easy." (p. 65)

Smith, Fred L., Jr., "Pernicious Theory of Win/Win Environmentalism," *Environment and Sustainable Development — Making It Happen*, 1995 GEMI conference report.

**Smith, Fred L., Jr., "Reappraising Humanity's Challenges, Humanity's Opportunities," in Ronald Bailey, ed., *The True State of the Planet* (New York: The Free Press, 1995).**

"Our challenge is to design institutions suitable for humanity as it is — not as we would have it be. Resource management is a challenge of extending to natural and environmental resources the same protections now afforded more conventional resources. Far too many critical environmental resources — the oceans, the airshed, much of the world's flora and fauna, almost all its groundwater, and in much of the world, even forestry and mineral resources — are still managed as common property resources. Even partial private property and exchange arrangements can mitigate the disasters forecast by Hardin. The problems discussed in this book and the fact that environmental expectations have risen rapidly in the developed world suggest that improved institutional arrangements are overdue." (p. 389)

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"Private ownership of the means of production has another advantage: it reduces the likelihood of environmental pollution. When air or water pollution damages a privately owned asset, the owner whose wealth is threatened has a strong incentive to see the threat abated, in court if necessary. The polluter, whose wealth is also at stake via liability exposure is more likely to take effective action than is a civil servant in charge of a similar government asset. Government decisionmakers simply are not held accountable for broader social goals in the way that a private owner is by liability rules and potential profits. Of course mistakes can be made by anyone, including private parties. But the decisionmaker whose private wealth is on the line just naturally tends to be more circumspect." (pp. 273-274)


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## PROPERTY RIGHTS

"At the heart of free market environmentalism is a system of well-specified property rights to natural resources," explain Terry Anderson and Donald Leal, authors of *Free Market Environmentalism*. This is because property rights are at the heart of any market system. Property rights are the basis of non-coercive exchange and those private orderings which occur in the marketplace.

Property rights must be definable, defensible and divestible. This means that they must be clearly delineated, they must be protected by an enforceable rule of law, and the owner of property must be able to transfer that ownership to someone else. The ownership of private property creates powerful incentives for the stewardship of natural resources, as the owner reaps the benefits – and bears the costs – of management decisions.

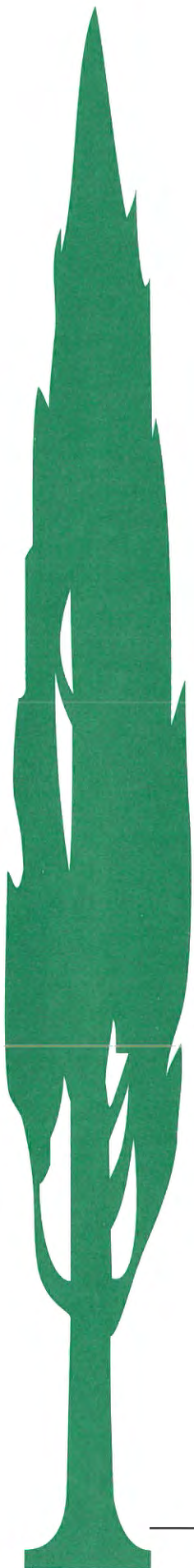
Conversely, when resources are unowned, they tend to be less well managed. This is because individuals who have access to the common resource have every incentive to use as much they can as soon as they can, lest they forfeit benefits to others. In an open-access commons, it is in no one's interest to forego using the resource, as there is no ready means to capture the benefits of conservation activity. The end result is often ecological ruin. This phenomenon is known as the "tragedy of the commons" and was first popularized by the ecologist Garrett Hardin (although others as far back as Aristotle have pointed to the problems of communal ownership).

Given the incentives that common ownership creates, it is no wonder that the vast majority of environmental problems occur in the great unowned commons of the world. Private ownership, on the other hand, creates wholly different incentives, and is far more compatible with sound environmental stewardship. The ownership of property encourages the owner to care for that property; if the value of that property is reduced, it is the owner that bears the cost — both in terms of dollars and lost opportunities. Not all property owners will follow the incentives, but, in the aggregate, most property owners will. As Hardin himself noted (despite his support for command-and-control regulations), "The tragedy of the commons as a food basket is averted by private property, or something formally like it."

Of course, private stewardship does not require that one always act in pursuit of profit. The principle of private ownership enables conservation groups and other landowners to purchase and protect vital habitat and empowers stewards to take those actions that are necessary to conserve vital resources. The institution of private property ownership enables each private landowner to protect environmental resources without the need for recourse to the political process. For these reasons, Robert Smith, Brubaker, and Baden, among others, stress the importance of establishing property rights to encourage conservation.

Many environmental problems occur where property rights have not been well defined, or have been absent. In these instances, property institutions often evolve to address the costs of non-ownership. This process is discussed in the works of Anderson and Hill (1975), and Demsetz (1966, 1967).

At present there is a fierce debate over the responsibility of the federal government to compensate landowners for the impacts of federal land-use controls. Epstein makes the seminal case for compensation when government regulations deprive landowners of the reasonable use of their land. A less utilitarian approach to this same issue is contained in Paul. The issues surrounding the regulatory takings debate are developed in the Yandle volume, as well as in Pollot and Fischel, the latter of which is less sympathetic to the position set forth by Epstein. The relation of property rights issues to government ownership of land is discussed in Nelson (1994). Property rights in the context of zoning are discussed by Siegan and Nelson (1977), both of which question the conventional regulatory approach to land-use.



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“Our experiences over a quarter century have taught us the value that ordinary citizens place on their land, water, and other resources and their natural roles as environmental stewards. Individuals and communities who depend on resources understand their workings and know their limits. Since they would have to live with changes, their self-interest motivates them to protect their resources. But they need tools with which to do so. We have come to understand that their traditional tools — property rights, be they individual or communal — are the most effective.” (p. 18)

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“The erosion of the antinuisance account of the police power has invited broader government regulation of environmental matters. It should be evident that some environmental regulation falls within the police power. Air and water pollution and the discharge of toxic substances all give rise to the violation of private rights, which the state is empowered to prevent. Nonetheless, the simple invocation of an environmental stake is not sufficient to justify government action under the police power; everything turns on what the state does.” (p. 121)

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"Between 1860 and 1900, changing land values and changing costs caused individuals and groups to devote more resources to definition and enforcement activity in order to capture potential rents to land. As a result of these activities, the institutions governing land ownership on the Great Plains moved successively toward exclusivity. Measures were enacted which attempted to control grazing on the public domain and efforts were made to lease from the government unclaimed communal property. During the 1870s and 1880s many acres were privately claimed under the homestead, preemption, and desert land laws. And finally, land was granted outright to the trans-continental railroads who in turn transferred much of it into private hands." (p. 172)

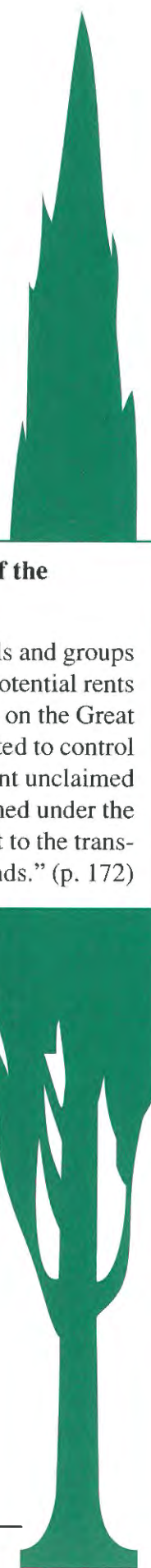
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"It is important to note that property rights convey the right to benefit or harm oneself or others. Harming a competitor by producing superior products may be permitted, while shooting him may not. A man may be permitted to benefit himself by shooting an intruder but be prohibited from selling below a price floor. It is clear, then, that property rights specify how persons may be benefited and harmed, and therefore, who must pay whom to modify the actions taken by persons." (p. 347)

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"The pervasive notion that society can avoid the costs of public action if government can avoid compensating for property affected is simple self-deception. The costs of government action will be borne by someone. The compensation requirement, like a rule of liability, simply determines who that someone is. . ." (p. 173 n9)

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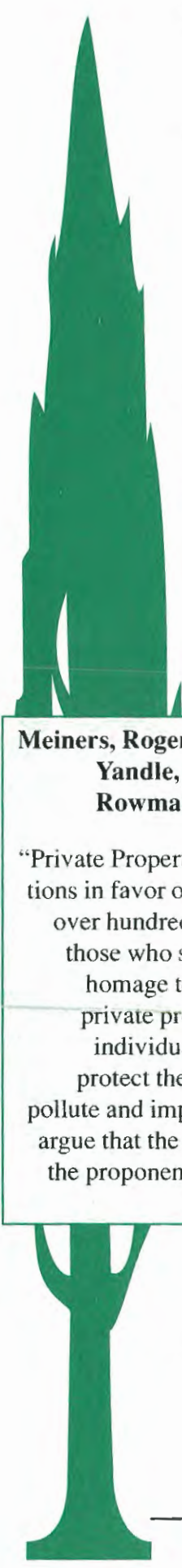
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"Private Property Rights in America, usually in the form of fee simple title, provide strong presumptions in favor of property use and control by the legally recognized owner. This system has evolved over hundreds of years and is closely tied to our economic prosperity and personal liberty. While those who support restrictions on private property through environmental regulation usually pay homage to the notion of private property, it is routinely asserted that governmental controls on private property are needed to protect public health and the health of the environment, because individual abuses of property produce environmental destruction that others in society cannot protect themselves from. That is, if not constrained by regulators, private property owners will pollute and impose costs on others in society. Most proponents of command-and-control regulation argue that the common law of property fails to protect the environment adequately. In many cases, the proponents of regulation are ignorant of how common law worked to deal with environmental issues." (p. 273)

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"By its very nature a common property resource is owned by everyone and owned by no one. Since everyone uses it there is overuse, waste, and extinction. No one has an incentive to maintain or preserve it. The only way any of the users can capture any value, economic or otherwise, is to exploit the resource as rapidly as possible before someone else does. But private ownership allows the owner to capture the full capital value of the resource, and self-interest and economic incentive drive the owner to maintain its long-term capital value. The owner of the resource wants to enjoy the benefits of the resource today, tomorrow, and ten years from now, and therefore he will attempt to manage it on a sustained-yield basis." (p. 13)

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## LAND MANAGEMENT

American environmentalism grew out of the conservation movement, which focused on the protection of land and natural resources for future use and enjoyment. Land management continues to be the focus of many environmental debates. The first to call themselves free market environmentalists also focused on land management questions. These pioneers began with efforts to explain the poor record of government agencies in effectively managing natural resources and public lands, known as the New Resource Economics (NRE). NRE sought to focus on how institutional arrangements, such as ownership, affect incentives and environmental outcomes, as discussed by Anderson (1982) and Copeland (1990).

NRE scholars concluded that public sector ownership, particularly at the national level, has failed both economically and ecologically. Government land management has failed not because government employees are immoral or incompetent, but rather because the incentives faced by government agencies are very different than those faced by private actors, irrespective of whether or not they are seeking a profit. In the public sector there is no bottom line, economic or otherwise. Moreover, public officials are without sufficient information to plan complex systems and incorporate disparate values.

The fate of Yellowstone National Park provides a useful case study of these problems, as the essays in Baden and Leal (1990) demonstrate. Chase's *Playing God in Yellowstone* is a landmark critique of federal land management, and how environmental ideologies have affected it. Another view on park mismanagement can be found in Hess and O'Toole (1995) and Hess (1992). Nelson (1995) also suggests that government failure is due, at least in part, to its adherence to the progressive era doctrine that "scientific management" should guide natural resource decision making.

Stroup and Baden (1983) and Anderson (1994) provide a survey of various land and resource management issues, with an emphasis on public lands. Libecap (1983) considers federal rangeland policy and grazing, while Morris looks overseas at the issue of desertification. The next section of this bibliography focuses specifically on forest management in both the public and private sector.

Most free market environmentalists suggest that public lands will suffer from poor management until they are transferred into the private sector. This approach is advocated by Anderson and Leal (1989), and Hanke (1985). Various approaches to privatization are proposed in Hess (1992), Stroup (1984), and Vernon Smith (1982).

Baden (1985) suggests giving federal lands to environmental organizations, many of which have a long history of private conservation on their own lands, a phenomenon detailed in R. J. Smith (1986). Stroup (1982) suggests the creation of wilderness endowment boards would also improve the management of federal lands.

Another proposal, put forward by Nelson (1996), is to transfer lands to the states in the hope this will lead to greater experimentation. Leal (1995) and Lowry (1996) show that state land management often compares favorably with that of the federal government. Proposals to transfer lands to the states and/or private sector were floated in the early 1980s with little success. Baden and Stroup (1982) and Nelson (1984, 1989) seek to explain why this was.





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“When we seek the cause of almost any problem in Greater Yellowstone, we find destructive ecological practices coupled with economic inefficiencies. There are striking opportunities for reform. Changes in the system to link good environmental management with economic growth would generate substantial environmental and economic benefits.” (p. 9)

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“And so with a curious reverse logic, the failure of Park Service policy became the rationale for Yellowstone's expansion. If we refused to intervene to save wildlife, animals could survive only if we ‘protected the ecosystem,’ and if a species or the range was in trouble, this problem was a further argument to extend the habitat. The more ecosystems management failed in the park, the poorer the habitat and more threatened the fauna, the stronger the argument in favor of extending control of surrounding lands.” (p. 368)

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“It is clear that the problems of the federal estate are similar to those of more distant places. Diversity is endangered, and its restoration is crucial. What is needed to heal overgrazed lands and to enrich western landscapes is a market of landscape visions — an atmosphere of political and environmental tolerance in which individuals and groups are free to pursue their dreams and ambitions without the benefit of political force or the largesse of federal subsidy. In such an environment, the diversity that comes with many minds and as many visions will be unleashed, innovative ideas can be pursued, and new approaches and strategies for the use, conservation, and preservation of wild and tamed lands can be tried and tested.” (p. 223)



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“The history of the public lands is filled with laws that had lofty purposes and achieved dismal results. . . . One important lesson is that a single ‘solution’ designed at the national level is not likely to succeed. There is a strong case . . . for institutional arrangements that allow much greater room for state and local flexibility and experimentation. The people most directly affected by public land management, the local governments and the private users, must have a much greater ability to devise their own practical ways to manage and to protect the lands.” (pp. 3-4)

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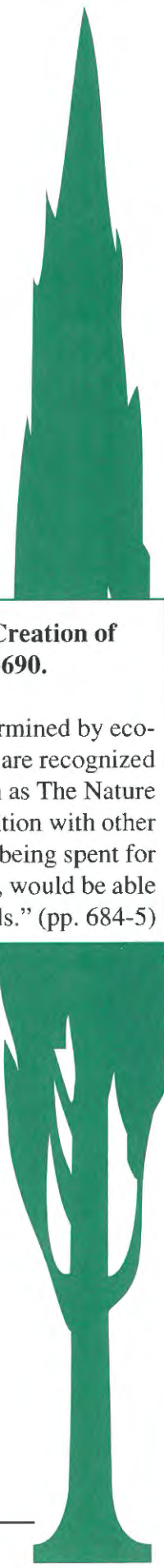
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## FORESTS

At the close of the 19th century, America's early conservationists feared the onset of a timber famine. President Theodore Roosevelt observed: "If the present rate of forest destruction is allowed to continue, with nothing to offset it, a timber famine in the future is inevitable." Gifford Pinchot, the father of the United States Forest Service, was another pessimist: "The United States has already crossed the verge of a timber famine so severe that its blighting effects will be felt by every household in the land."

In their view, leaving forests subject to economic forces would lead to absolute ruin. It was for this reason that the United States Forest Service was created in 1905. A part of the Department of Agriculture, the Forest Service's original statutory mission was to provide industrial timber for the American economy.

A century later, Roosevelt and Pinchot would be in for a shock. The "timber famine" that they believed was imminent has been forestalled indefinitely and America's forests are healthier than at any other time in this century. As the work of Clawson and Sedjo amply demonstrates, forest trends, in the U.S. at least, are fairly positive. Both provide specific examinations of the changes that led to the expansion of American forests over the past seven decades.

Forests provide a good comparison between public and private land management. As Sedjo indicates, private ownership of forest land has had a generally positive impact. Comparisons of federally-managed forests with state and private managers are found in Leal and Deacon and Johnson, respectively. A good illustrative example of some of the innovation on private land is discussed in Killian.

It is the lack of secure private rights, in combination with extensive governmental subsidies, that are responsible for the negative forest trends in many parts of the world. On the whole, tropical forests have not fared nearly so well as their temperate counterparts, and lack of ownership is partly to blame. Sedjo (1995) compares trends, and their causes, around the world.

Whereas private forests are increasingly well-managed, there is a broad consensus that the U.S. Forest Service is both grossly inefficient and environmentally-harmful. Federal timber lands are both less productive, more costly to operate, and responsible for more environmental degradation than those forests owned privately or by state agencies. The classic critique of the Forest Service's gross mismanagement is found in O'Toole's *Reforming the Forest Service*, as well as in O'Toole's many essays on the subject, as well as the work of Baden.

It is also worth noting that the work of Nelson and Libecap has questioned some of the underlying assumptions that led to the "timber famine" allegations in the first place. Libecap, in particular, questions whether 19th century clearing patterns were caused by the market's failure to account for long-term timber supply. Government ownership and management of forests, Nelson suggests, was based upon a progressive ideal that is outmoded, and largely ineffective.







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“Traditional environmental assessments of national forest controversies are based on a fundamental misdiagnosis of the problem. Correcting this misdiagnosis leads to a new view of the Forest Service: Not bad people intent on environmental destruction and economic waste, but ordinary people motivated by incentives, like everyone else. Below-cost timber sales, overgrazing, road construction in potential wilderness areas, and neglect of important recreation values, as well as fabrication of data in forest plans or reforestation reports, all result from the agency's desire to maximize its budget. Changing the legal prescriptions under which the agency must operate will merely lead to more double-talk and clever accounting systems. Reform of the National Forest Service must come by changing the incentives that motivate national forest managers.” (p. 233)

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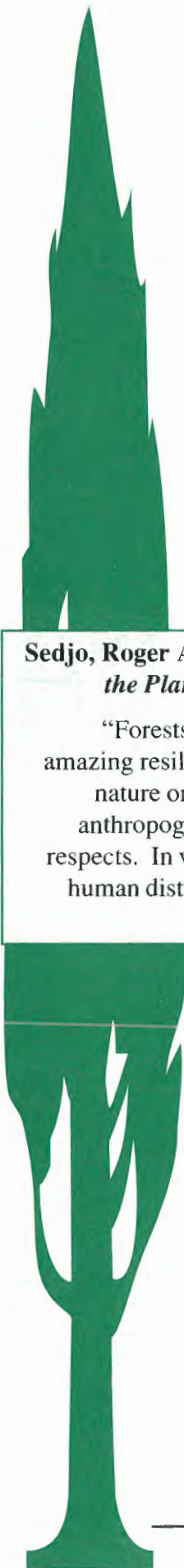
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## FISHERIES

The oceans provide one of the richest environments for the tragedy of the commons, replete with examples of species driven near extinction. On land this problem has often been addressed by the evolution of either common or private property rights to resources which encourage stewardship and reward conservation. But in the oceans, technological and institutional barriers have prevented their development. Common and private property rights can and do function in the marine environment, but more often than not they have been precluded by government intervention.

Regulation has generally failed to stem depletion, and an introduction to the economics of the fisheries is essential to understanding why. The best examples are the early works of H. Scott Gordon, Anthony Scott, and Francis Christy. After the work of these early pioneers, authors such as Richard Agnello and Lawrence Donnelley began to address private property rights solutions specifically, and now a number of writers are applying free market principles to the oceans.

Even regulators are beginning to understand the importance of incentives in the management of fishery resources. They are realizing that traditional restrictions on fishing gear and effort failed because they made fishing more difficult and expensive, but did not discourage fishermen from depleting resources. One recent, market-inspired innovation is the Individual Transferable Quota (ITQ), a government enforced right to a certain percentage of a catch. ITQs have been very successful in places like New Zealand but have encountered staunch opposition in the United States, in part because while they are a step in the right direction and an important recognition of market solutions, they retain many of the negatives of other regulatory approaches. Rodney Hide and Peter Ackroyd's work provide an excellent review of these problems and of the New Zealand experience.

One of the first premises for regulation of the fisheries was that private solutions to overfishing were simply not feasible, but a growing number of social scientists, among them James Acheson, Elinor Ostrom and John Cordell, are debunking that myth by chronicling successful common property regimes.

Pure private property solutions are harder to find, except in the case of aquaculture, where ownership is clear and the benefits from increasing production and ensuring the health and stability of populations have led to a boom in aquaculture production.

The successes of common property regimes and aquaculture indicate that given the opportunity to evolve, private property rights could radically improve marine resource management. Terry Anderson and Donald Leal, Steven Edwards, Kent Jeffreys, and Michael De Alessi explore these possibilities in detail and come to the same conclusion.





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## WILDLIFE MANAGEMENT

Kings, Queens, feudal lords and dictators used to determine who if anyone could exploit which resources, at what price, for whose benefit and to what extent. That system of centralized command and control over wildlife remains in most parts of the world, but it is weakening. While countless species have been extirpated from the face of the earth under government "protection," no species whose members were both privately owned and commercially valued has ever gone extinct.

Indeed, rather than a death warrant, putting a price tag on wildlife can guarantee its survival. So long as the rights of use and exclusion are well-defined, secure and enforced — and wildlife markets are sufficiently free — an abundance of diverse wildlife will be supplied if it is demanded. Species that share habitat with commercially valuable wildlife will benefit as a result of the habitat-protecting umbrella effect. Without secure proprietorship, however, commercially utilized species are as likely to be extinguished as conserved.

As with any other endeavor, incentives matter when it comes to conserving wildlife. For wildlife conservation to be successful, the incentives must be positive or neutral. In the U.S., unfortunately, those incentives are largely negative. Under the U.S. Endangered Species Act (ESA), for example, landowners are regularly penalized (with draconian land-use regulations, extortionate demands, red tape, high court costs, punitive tax codes, etc.) for having endangered species on their property. As a result, few landowners want to have threatened or endangered species habitat anywhere on or near their land — and many are taking affirmative actions to ensure the absence of such habitat.

Because it threatens landowners, the ESA threatens wildlife, too. Much has been written about the ESA's failure, the best of which is referenced in this section of the FME bibliography. Among those books and articles on the ESA, the most useful references are those by: Gidari, Lambert and Srnith, Mann and Plummer, Stroup, Sugg and the various authors of *Different Drummer's* 1996 issue on the subject.

The best general references on incentives, the importance of institutions, and FME philosophy are: Anderson and Hill, Chisholm and Moran, Demsetz, Schmidtz, Simmons and Kreuter, R.J. Smith, Sugg, and 't Sas-Rolfes. Some of the most important work on wildlife conservation is being done in Southern Africa. Among those who focus on African wildlife are: Adams and McShane, Bonner, Brian and Child, Cumming, R.B. Martin, Murphree, Sugg and Kreuter, and 't Sas-Rolfes. Several of the authors referenced in this bibliography — e.g., Child, Cumming, Naylor, R.B. Martin, Mungall and Sheffield, Reiger, R.J. Smith, Sugg, and Tudge — tell success stories or suggest alternatives to the command and control approach.

Adams and McShane, Chase, Edwards, Freeman and Kreuter, R. B. Martin, Mann and Plummer, Robinson and Redford, and Sugg and Kreuter shed light on the interface between science, ethics and values. Anderson, Bonner, Budiansky, Dary, Kirby, Lund, Sugg and Kreuter, and Tober chronicle some important history of wildlife law and relationships.

Not all of the references for this section are thoroughly supportive of FME, and some are downright antagonistic. Such authors as Barbier, Beasom, Budiansky, Edwards, Mann and Plummer, McNeely, Robinson and Redford, Stein, Whitmore and Sayer, among others, are included because they provide helpful bricks in building the case for FME, undermine conventional myths, or otherwise offer data or analysis worth considering.





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“The ethical standards which support the argument for animal rights do not apply in Africa. Some people in the animal rights movement argue that it is only a matter of time before African culture ‘evolves’ to a point where Africans will accept the value of strict preservationism. Not only does this attitude endorse the imperialist assumption that Western culture is more advanced, it also implies that the West has a moral duty to intervene until Africans recognize the folly of their ways. Imperialism takes many forms, perhaps none more insidious than when it comes in the guise of an ethical concern for animals.” (p. 167)

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"[P]rivate landowners may have grown accustomed to providing food and shelter for America's wildlife over the years.... Yet it is a very different thing when people can be incarcerated for *not* providing that habitat. While "all justice and fairness" might require that landowners be compensated for providing habitat for the public's wildlife, a market for...that wildlife would avoid imposing externalities on non-users . . . . The ESA not only outlaws such a market, but it also prohibits the landowner from putting his property to uses for which markets exist. In short, the ESA takes private property without compensating the landowner." (p.16)

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## WATER POLICY

Water is one of the most renewable of all earth's natural resources. It can be used and reused almost indefinitely as evaporation removes any impurities acquired from human or natural sources. On the other hand, water scarcity is ubiquitous. Water is one of the least predictable of resources as it tends to move from one location and from one state (solid, liquid, gas) to another. Thus, water is commonly characterized as a fugitive resource. Its very nature presents the largest challenge in management, control and allocation of water, and contributes to persistent water scarcity in much of the world today.

The bulk of free market environmental analysis of water has focused on using property rights to manage and allocate surface water, particularly in the arid West. From the free market standpoint, water rights should be tradeable between any willing buyer and seller, for any potential use. This is a significant change from the status quo, though not one without precedent. Historically, Western water management relied on the doctrine of prior appropriation, and has been influenced by massive federal subsidies. The prior appropriation doctrine entails a use-it-or-lose-it incentive structure, which in turn produced enormous waste and inefficiency in water allocation, and has discouraged environmental uses. While the use of water for irrigation has always been accepted, the use of water to maintain instream flows and protect spawning grounds for fish, is suspect without the creation of truly marketable rights in water.

Terry Anderson and Rodney Smith, in particular, stand out for their contributions to the subject. Anderson's edited volume, *Water Rights: Scarce Resource Allocation, Bureaucracy and the Environment* is one of the most comprehensive works on the subject.

The management and use of groundwater is also an important environmental concern. Yet due to its less transient nature, groundwater has fewer obstacles to management and allocation. Fractor and Saleem focus on this issue. Gardener has also examined the benefits of water markets for agricultural uses.

The environmental benefits of marketable property rights in water are generally well-accepted. Water markets are promoted by analysts across the political spectrum. The solutions of Willey, an economist at the Environmental Defense Fund, are not that different from those of Jeffreys and other commentators on the right.





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“As long as collective action dominates water allocation, one interest group's gain will be another's loss, and pie slicing will be the name of the game. By relying on markets, however, the game can be changed to encourage pie enlarging. As water consumers and producers search for mutually beneficial trades, cooperation will replace conflict. Traders in a water market will have an incentive to work together to find mutually advantageous solutions. The issue is whether future water policy will maintain the status quo or move toward a market solution.” (pp. 111-12)

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"In a country that has relied increasingly upon government to resolve the problems of resource allocation and wealth distribution, it is not surprising that both those seeking to divert more water and those seeking to curtail diversions would look to the government for assistance. Both sides have experienced success, in the sense that both the state and federal governments have constructed or subsidized often massive water development projects, setting aside specified flows of water to be left in the streams and rivers. In the midst of this rush to compete in the politics of water management, an occasional voice has suggested that there might be a better way." (p. 250)

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"The case of water illustrates the problems of creating, and even of maintaining, markets for environmental resources. During the past two decades, fledgling water markets have arisen in some western regions, but further development is problematic, and trading within existing frameworks has growing transactions costs. The situation with water quality is extreme. No water emissions markets exist yet; many pollution sources are not even certified by a permit or other emissions rights systems; quantitative and geographic boundaries on markets have not been defined; and governing statutes have not addressed the market alternative. Thus, water markets, in spite of obvious arbitrage and value-added prospects, have developed haltingly or not at all. A closer look at some pertinent aspects of recent water policies should help to explain how market barriers have evolved." (pp. 394-5)

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## POLLUTION

Pollution control is an essential component of environmental protection. It is also essential for the protection of private property rights. One of government's essential functions is to seek to prevent the imposition of harmful substances upon unconsenting persons and their properties; and, failing that, punishing those who transgress against others in this manner. This is the aim of controlling pollution – controlling the unwanted imposition of wastes or toxins by one party on another.

Free market environmentalists stress that there is a meaningful distinction between government exercises of the police power to protect individuals, their properties, and the public at large from a threat posed by the actions of an individual landowner, and government fiat that otherwise control the use of private property. A major criticism of existing pollution control programs is that they seek to control emissions and waste streams, in and of themselves, rather than focusing on cases where actual harms, or the threat of significant harm, clearly exist.

Pollution, properly defined, is a "trespass" or "nuisance" under the principles of common law. The use of common law to control pollution is discussed in Brubaker, Bate, Meiners and Yandle (1992). These authors draw on examples from the United States, Canada and the United Kingdom, where Bate notes that the Anglers Co-operative Association has used common law to protect fishing rights from pollution for decades.

Rothbard provides a theoretical examination of how common law principles, and the idea of homesteading, might be applied to air pollution. Jones and Adler, Yandle, et al. (1996), Adler (1992, 1993, 1994), and Kwong discuss some of the reforms that might be enacted in the meantime.

Many are skeptical that property rights can adequately control pollution in air and watersheds, and understandably so. Pollution does not readily observe property boundaries, and non-point source pollution can be incredibly difficult to monitor, let alone control. To address the difficulties of controlling certain types of air and water pollution with property institutions, many economists have recommended the creation of tradable emission rights. Under these systems, factories and other emitters purchase or otherwise obtain emission quotas that can be used or traded to other potential emitters. The resulting market, it is argued, will generate at least the same level of emission reductions as other methods, at significantly less cost, as firms for which emission control is expensive will purchase emission rights from firms that can reduce emissions at a lower cost. Tradable emission rights and similar approaches are set forward in Dales, Tietenberg, Yandle (1991) and several of the Hahn essays. Water applications of the same concept are found in Maloney and Yandle, David, et al., and Yandle.

Not all are enamored with the tradable rights approach. Hahn (1989) and Johnston (1994) discuss some of the implementation problems such systems have had. Smith (1992) and McGee and Block are more critical, pointing out that tradable emission right schemes are the ecological equivalent of "market socialism," as government agencies set the environmental ends, and only utilize markets to determine the most efficient means.

Some of the difficulties that lead to tradable emission rights may yet be resolved by technological developments. Moreover, as Goklany and Berstam demonstrate, economic development within the market system generates efficiencies that drive down pollution. In socialist economies, however, this trend rarely materializes. The accumulation of wealth also increases the demand for environmental quality. These factors contribute to the reduction in pollution over time.





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“Long-term economic growth is impossible without technological progress. The latter cannot but eventually reduce resource use and environmental discharges. Paradoxically, then, long-term economic growth is impossible without environmental improvements. The Invisible Hand stretches out over two centuries and takes care of this beneficent outcome.” (p. 41)

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“Air and water in this country, and in most other countries, have been treated as unrestricted common property; so long as they are so treated air and water pollution will increase and the physical condition of our air and water assets will continue to deteriorate. . . . It is time, I believe, that we took air and water out of the category of unrestricted common property, and began to establish some specific rules about their use or, to put it another way, to establish something more sophisticated in the way of property rights to their use than the rule that ‘anything goes.’” (pp. 64-5)

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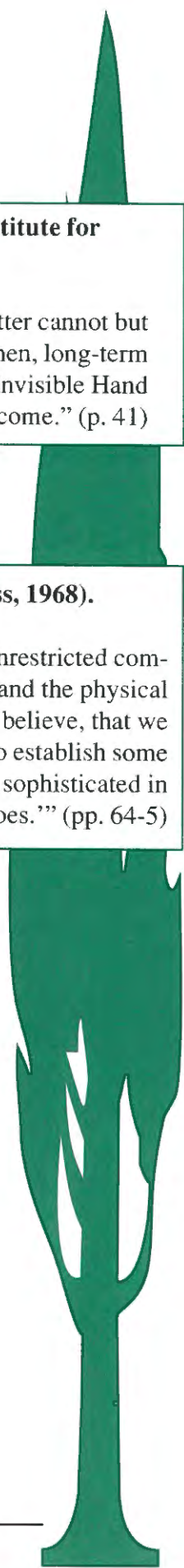
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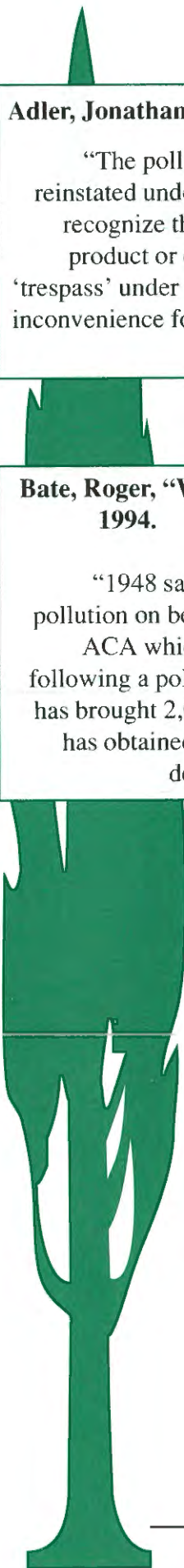
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"The polluter pays principle is valid, but it needs to be better understood and, ultimately, to be reinstated under institutional arrangements that make it effective and fair. To begin with, one must recognize that emissions per se are not pollution. Pollution is the imposition of a harmful waste product or emission onto the person or property of another without that person's consent; it is a 'trespass' under the principles of common law. If the trespass is so minor that it creates no impact or inconvenience for the property owner, it will normally be tolerated. Otherwise, it will likely result in legal action of some kind." (p. 167)

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"1948 saw the foundation of the Anglers' Co-operative Association, a body designed to fight pollution on behalf of angling clubs in England and Wales. The clubs pay a membership fee to the ACA which indemnifies them against the legal costs of bringing an action under common law following a pollution incident. Since its formation the ACA has amassed over 17,500 members. It has brought 2,000 actions (some have been hallmark cases), of which only two have been lost, and has obtained hundreds of thousands of pounds in damages. Most importantly, the polluters they defeat often have injunctions placed on them to stop their polluting activities." (p. 14)

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"Affluence and the natural environment are intimately related but not in the way many believe. Although affluence may increase consumption of material goods, it does not inexorably increase environmental degradation, because at the same time it also increases the 'consumption' of environmental quality. Moreover, affluence and technology are highly symbolic: the institutional frameworks that foster one also foster the other. In fact, we see that generally richer is cleaner, middle income is dirtier, and sometimes, though not always, poorest is dirtiest. Anything that unduly retards economic growth in developing countries — including inefficient policies, no matter how well intentioned — will ultimately retard net environmental progress and imperil human lives." (p. 370)

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"The RECLAIM trading credits have been denied property rights status and that will (indeed, already has) put a damper on the trading of credits. Very little emission reduction will come as a result of installation of abatement equipment. Most will come from emission sources that depart from the Basin, taking with them incomes and jobs. . . . The crucial lesson that must be learned is that existing, tried-and-true market solutions, not government surrogates, are the only institutions that are likely to be effective in dealing with air pollution and other environmental problems." (p. 54)

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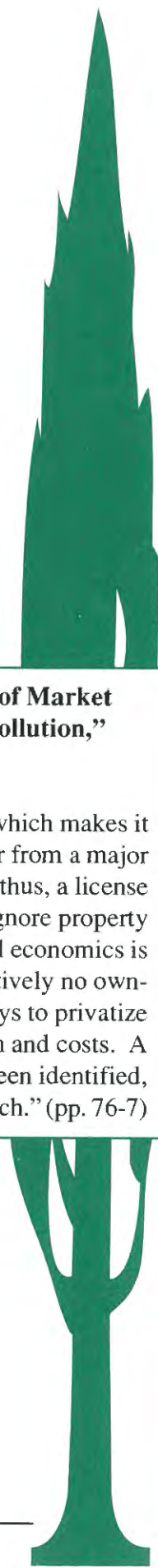
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**McGee, Robert W., and Walter E. Block, "Pollution Trading Permits as a Form of Market Socialism and the Search for a Real Market Solution to Environmental Pollution," *Fordham Environmental Law Journal* VI:1, Fall 1994.**

"Marketable trading permits result in a much more efficient allocation of resources, which makes it possible to have both less pollution and lower operating costs. However, they suffer from a major structural deficiency because trading permits are, in effect, a license to pollute, and thus, a license to violate property rights. A true market regime seeks to recognize rather than ignore property rights. The problem with recognizing property rights in this area of environmental economics is that air, water, roads, many forests, and so forth, are publicly owned, which is effectively no ownership. As a first step toward implementing a true market regime, we must find ways to privatize these 'commons' so that market forces will be able to operate to reduce pollution and costs. A great deal of research remains to be done in this area and now that the problem has been identified, there is a clear direction for that research." (pp. 76-7)

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"It is our guess, based on the development of product liability law, that the common law would provide more environmental protection for water and the rest of the environment than has the regulatory process, but we have never seen an environmental group call for a return to common law. Like markets, which evolve constantly to take advantage of new knowledge, technology, and desires of consumers, the common law is dynamic in its protection of individual rights. The environment is more likely to be protected by individuals seeking to protect their rights than when such matters are determined by obsolete technologically driven standards determined by legislators and regulators." (p. 95)

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**Rothbard, Murray N., "Law, Property Rights, and Air Pollution," *Cato Journal* 2:1, Spring 1982.**

"Air pollution is a private nuisance generated from one person's landed property onto another and is an invasion of the airspace appurtenant to land and, often, of the person of the landowner. Where there is no easement and air pollution is evident to the senses, pollution is a tort per se because it interferes with the possession and use of the property by its owner. But the invisible and insensible crossing of another's air boundary — say by radio waves or low-level radiation — cannot be considered aggression because it does not interfere with the owner's use or enjoyment of his person or property." (p. 98)

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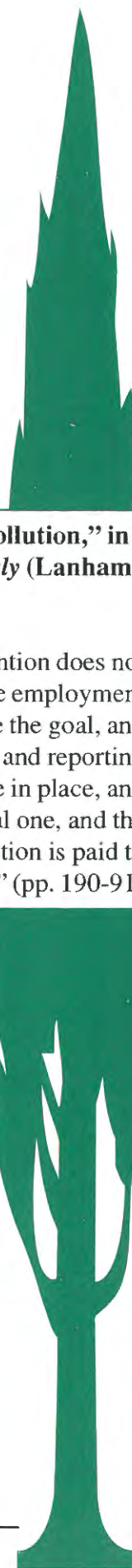
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**Yandle, Bruce, "Community Markets to Control Agricultural Nonpoint Source Pollution," in Bruce Yandle and Roger E. Meiners, eds., *Taking the Environment Seriously* (Lanham, MD: Rowman & Littlefield, 1993).**

"Improved water quality enhances life and brings economic benefits. Pollution prevention does not necessarily improve anything but the pocket books of machinery manufacturers and the employment of bureaucrats and regulators. Unfortunately, pollution prevention tends to become the goal, and water quality tends to be forgotten. Instead of monitoring the quality of streams and reporting regularly to concerned people, regulators monitor inputs, whether or not controls are in place, and how production is managed. Almost inevitably, the problem becomes a technical one, and the policy debate gets focused on which technology to use. All along, little attention is paid to environmental protection." (pp. 190-91)

Yandle, Bruce, Andy H. Barnett, and Mark Brandly, "Clean Air and Emerging Alternative Fuel Vehicles: A Time for Environmental Innovation Areas," *Future Insight* (Washington, D.C.: The Progress and Freedom Foundation, July 1996).





## SOLID WASTE, HAZARDOUS WASTE & RECYCLING

Is there really a solid waste crisis? Most free market environmentalists suggest not, and that insofar as there is a solid waste problem it is directly linked to the absence of markets in solid waste management services, not any market failure.

The need to recycle is stressed repeatedly in discussions of solid waste. Yet while recycling can be a useful exercise, it can also be a wasteful use of energy, time and money. As Scarlett stresses repeatedly, the benefits of recycling, environmental and otherwise, vary on a case-by-case and material-by-material basis. When recycling costs more than other options, this reflects the higher value of resource expenditures required to recycle. Dedicating these resources to recycling means that they cannot be used for other things, no matter how useful or important. If driven by the market, recycling will only occur where it is the most efficient use of resources. If driven by politics, recycling will be an expensive and wasteful policy. Boerner, Delong and Tierney are even more critical of the push for mandatory recycling. Several solid waste myths are punctured by Scarlett (1991), Wiseman, and Rathje.

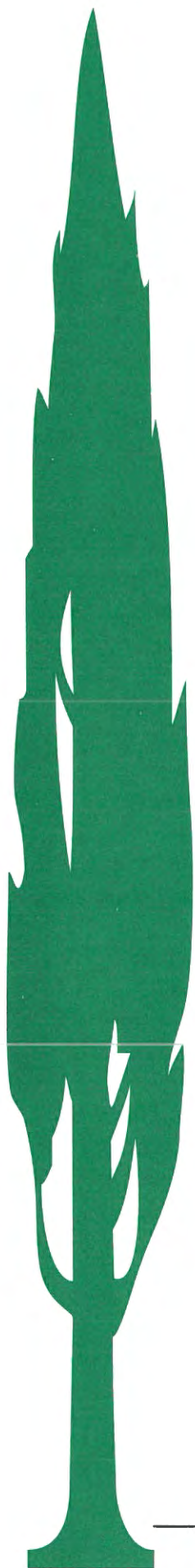
If there is dissatisfaction with current municipal waste disposal techniques, free market environmentalists would suggest that government planners, not market transactions, are to blame. Publicly-owned municipal solid waste monopolies are typically inefficient and unable to develop the efficient alternatives to conventional waste disposal practices. Postrel and Scarlett suggest moving toward "pay-as-you-throw" systems, while Logomasini discusses the dissolution of the government monopolies and the privatization of waste disposal services. Competing firms would vie for market share through attempts to deliver solid waste disposal at the lowest cost. Alternative policies, such as Germany's "Green Dot" program are critiqued from the market perspective by Boerner and Chilton, and Scarlett (1994).

Market principles also apply to the case of hazardous waste, though there are clearly more plausible justifications for government intervention. In particular, it is claimed that improper disposal of hazardous waste will pose an immediate threat to public health and safety. Ironically, as Adler notes, existing federal regulations inhibit market-driven recycling and reuse of hazardous materials.

Superfund is the federal hazardous waste clean-up law. It nationalizes what is essentially a local concern as few, if any, Superfund sites result in cross-border contamination. Nonetheless, billions have been spent under the Superfund program, the lion's share going to legal bills, consultants and paperwork costs. Porter compares the federal program with state initiatives and finds the former to be wanting. Stroup, DeLong, and Jeffreys stress that property rights and the enforcement of common law principles can adequately address waste site cleanup and remediation, and provide the proper incentives to prevent their recurrence. Zuesse also suggests that the environmental horror story that led to Superfund's passage was largely a myth.







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Adler, Jonathan H., "The Hazards of Regulating Hazardous Waste," *Regulation* 2, 1993.

Adler, Jonathan H., "Wasted Lights," *Regulation* 2, 1996.

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**Boerner, Christopher, and Kenneth Chilton, "False Economy: The Folly of Demand-Side Recycling," *Environment* 36:1, January/February 1994.**

"In the end, the Achilles heel of demand-side programs, whether German or American, is that they ignore one fundamental economic truth: Markets — even those for recycled products — work best when relatively free of government intervention. Society can derive many benefits from recycling, but only when it is pursued in an economically efficient manner. To determine whether recycling a particular material is a net gain or net loss to society, there is no better measure than the market prices for those resources." (p. 32)


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"Viewed calmly, with even minimal respect for the data, municipal solid waste (MSW) is a minor national housekeeping problem. The space crisis is as mythical as the unicorn, and other horrors depicted by the conventional wisdom are equally ephemeral. MSW represents the type of issue that a competent society should handle routinely, without noticeable stress. All that is required is sensible incentive structures and minor institutional adaptations. Unless MSW disposal is bungled beyond belief, MSW will constitute no threat to the environment or to human health." (pp. 1-2)

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Monsen, Anders, and Karen Ann Brown-Monsen, "Acid Rain, Carcinogens, and Global Warming," *Econ Update* 4:08, April 1990, p. 5.

**Porter, Dr. J. Winston, "Cleaning Up Superfund: The Case for State Environmental Leadership," *Policy Study* 195 (Los Angeles: Reason Foundation, September 1995).**

"State programs working to remediate local hazardous waste sites have proven to be highly effective in terms of both dollars and time expended. These results are attributable to the local nature of hazardous waste sites and the ability of state-level organizations to bring fresh, innovative, and flexible approaches to bear on finding effective solutions to problems at these sites. . .the amended Superfund statute should make it attractive for most states to operate their own cleanup programs under their own laws and regulations. With states as the major players in a new Superfund, much of the expense and complexity associated with the old Superfund could be avoided." (p. 9)

**Postrel, Virginia, and Lynn Scarlett, "The Truth About Trash," *Reason*, August/September 1991.**

"There is no market failure in solid waste. The economist will find no externalities in your garbage can, unless government subsidies put them there. But that doesn't mean there are no problems. . . Facing a solid-waste crisis, we have a choice. We can manage our garbage, getting rid of the barriers that keep people from seeing what their habits cost. Or we can assume omniscience and, thinking we know everything about the intricate connections between people and materials, we can try to manipulate both. If we choose the latter course, we will run into the old planner's problem. We just won't know enough to do the job. Garbage in, garbage out." (pp. 30-31)


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"To the extent that some costs are not now reflected in the prices that individuals pay for solid waste collection and disposal, these should be incorporated into pricing structures. But that is quite a different challenge than that of setting uniform recycling standards to apply under all circumstances — the approach pushed in the 1991 federal RCRA reauthorization discussions. The former approach is an attempt to impose conservation of landfill space as a public goal that should supersede other competing goals, such as energy or water conservation, product safety, product convenience, and so on." (p. 72)

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Shanahan, John, "How to Rescue Superfund: Bringing Common Sense to the Process," *Background* 1047 (Washington, D.C.: Heritage Foundation, July 31, 1995).

Shanahan, John, "Superfund Status Quo: Why the Reauthorization Bills Won't Fix Superfund's Fatal Flaws," *Issue Bulletin* 204 (Washington, D.C.: Heritage Foundation, October 3, 1994).

Skumatz, Lisa A., "Variable Rates for Municipal Solid Waste: Implementation Experience, Economics, and Legislation," *Policy Study* 160 (Los Angeles: Reason Foundation, June 1993).



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Smith, Robert J., "RCRA Lives, Alas," *Regulation*, Summer 1991.

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**Stroup, Richard, "Superfund: The Shortcut That Failed," PERC Policy Series 5, May 1996.**

"The Superfund 'shortcut' has proven to be a disastrous departure from the legal principles and traditions developed over the past several centuries. This trampling of legal traditions and rights has caused the extensive and costly problems that virtually all observers have noted. Solving these problems is not a matter of tinkering with Superfund rules or even just clarification by Congress of the goals of the program, although clarification will certainly be needed. Only with the restoration of checks and balances can the program's excesses be brought under control." (p. 17)

Stroup, Richard, and Sandra L. Goodman, "Rights vs. Regulation: How to Reform Superfund," (Bozeman, MT: Political Economy Research Center, September 1994).

Stroup, Richard, and Bradley Townsend, "EPA's New Superfund Rule: Making the Problem Worse," *Regulation* 3, 1993.

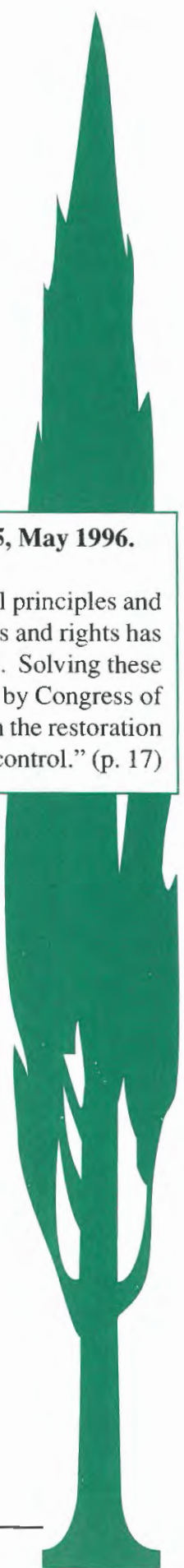
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## ENVIRONMENTAL RISKS

Risk is an ineluctable part of human existence; thus, managing risk is very important. Much of environmental policy seeks manage the potential risks posed by uncertain or unforeseen harms. Environmental officials are preoccupied with the risks of synthetic chemicals, industrial emissions, and environmental contamination. They seek to answer the question “Is it safe?” or at least, “Is it safe enough?”

Determining which risks are real and which are not is an essential component of environmental policy. Yet this is only a small component of risk management. Because risks are, by their very nature, uncertain – they express probabilities of harm, not certainties – the ultimate question in risk management is how should uncertainty be addressed. Moreover, as Smith (1992) points out, it is not clear that political approaches to risk management are preferable to private ones.

The general approach underlying much environmental policy can be summed up in the phrase “better safe than sorry.” This approach, based on the precautionary principle, assumes that uncertainty about present or future risks is itself a cause for regulatory intervention. Their dictum: presume chemicals and other potential contaminants are dangerous until they are proven safe. Free market environmentalists tend to be skeptical of this approach, for it ignores the complex nature of risk. For while risks certainly are created by technological innovation and industrial development, risks also arise from technological stagnation. Risks must be weighed against risks. Fire, for instance, is dangerous, but a world without fire would be more dangerous still. In a sense, the world is made safer by “unsafe” innovations.

The importance of examining the trade-offs inherent in risk management is stressed throughout the work of Aaron Wildavsky. It is also developed in Graham and Weiner, Brookes (1990), Glickman and Gough, and Tengs and Graham. One important insight underlying this approach is the notion that “wealthier is healthier.” Voluminous economic and epidemiological data shows that wealth accumulation correlates with declines in mortality. Cross, Mitchell and Keeney discuss the empirical findings, and Cross and Wildavsky (1988) provide the theoretical explanation as well.

When considering environmental risks it is important to recognize that cultural values greatly influence how risks are perceived and prioritized. The chances of being hit by lightning may be significantly greater than the risks of contracting cancer from pesticide residues on foods, but many people are still more concerned about the latter. Our values affect how we perceive risks. This is discussed in Adams, Douglas, Wildavsky and Douglas, and Smith (1995).

Finally, this section includes several books that seek to evaluate whether many of the environmental risks that drive environmental policy are significant threats to public health and safety. These books address toxic chemicals – Fumento, Efron, Gots – as well as global environmental concerns – Bailey, Bolch and Lyons. From a policy perspective, Landy, et al. and Breyer critique the Environmental Protection Agency’s poor record at risk assessment and prioritization, and Foster, et al. discusses how federal courts have treated questions of environmental risk.







## Books

**Adams, John, *Risk* (London: UCL Press Limited, 1995).**

“Wherever the evidence is inconclusive, the scientific vacuum is filled by the assertion of contradictory certitudes. For the foreseeable future scientific certainty is likely to be a rare commodity, and issues of health and safety — matters of life and death — will continue to be decided on the basis of scientific knowledge that is not conclusive. The conventional response to this unsatisfactory state of affairs is to assert the need for more science. More trustworthy scientific information will do no harm, but the prospect is remote of settling most current controversies within the time available to make decisions; where adherents to the precautionary principle perceive the possibility of serious harm, they press for action as a matter of urgency.” (p. 45)

**Bailey, Ronald, *Eco-Scam: The False Prophets of Ecological Apocalypse* (New York: St. Martin's Press, 1993).**

“Prophets proclaiming imminent catastrophe are nothing new in the history of Western culture. However, at no time in the past have predictions of global disaster achieved such wide currency and been given so much respectful attention by policy makers and the general public. The approach of inevitable doom has become the conventional wisdom of the late twentieth century.” (p. 2).

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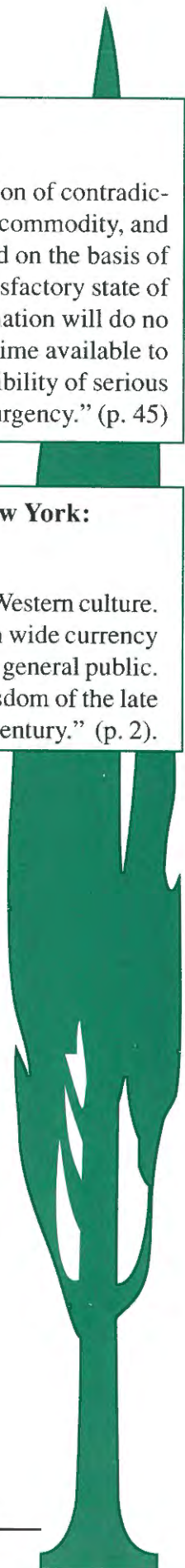
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- Macauley, Molly K., Michael D. Bowes, and Karen L. Palmer, *Using Economic Incentives to Regulate Toxic Substances* (Washington, D.C.: Resources for the Future, 1992).
- Milloy, Steven J., *Science-Based Risk Assessment: A Piece of the Superfund Puzzle* (Washington, D.C.: National Environmental Policy Institute, 1995).
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- Wildavsky, Aaron, *But Is It True? A Citizen's Guide to Environmental Health and Safety Issues* (Cambridge: Harvard University Press, 1995).



**Wildavsky, Aaron, *Searching for Safety* (New Brunswick: Transaction Books, 1988).**

"In sum, market competition works to increase wealth so society can respond resiliently to dangers as they manifest themselves. Competition fosters efficient use of resources, hence maximizing wealth and, indirectly, health. By increasing wealth, competition fosters resilience. Whether society should mainly seek to increase its ability to respond to unexpected dangers by increasing its resilience, or whether it should seek to anticipate dangers to prevent them from doing harm, is what the risk debate is about." (p. 75)

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"The idea that there is an epidemic of human cancer caused by synthetic industrial chemicals is false. Linear extrapolation from the near-toxic doses in rodents to low-level exposure in humans has led to grossly exaggerated mortality forecasts. Such extrapolations cannot be verified by epidemiology. Furthermore, relying on such extrapolations for synthetic chemicals while ignoring the enormous natural background leads to an imbalanced perception of hazard and allocation of resources. . . . Risks compete with risks: society must distinguish between significant and trivial risks. Regulating trivial risks or exposure to substances erroneously inferred to cause cancer at low doses can harm health by diverting resources from programs that could be effective in protecting the health of the public. . . . When money and resources are wasted on trivial problems, society's wealth and hence health is harmed." (p. 145)


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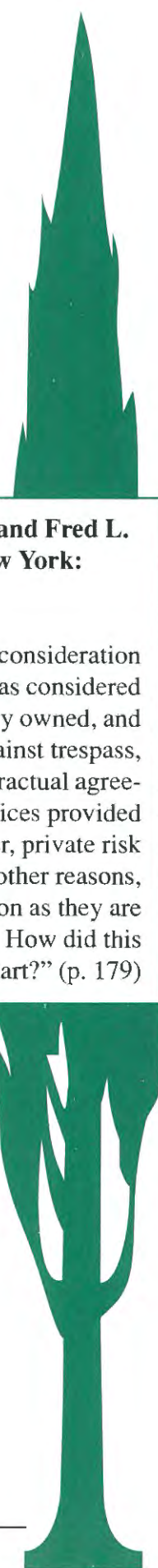
"The case for private environmental risk management deserves consideration. Reconsideration would be the more accurate term: Until not so very long ago, risk management was considered predominantly a private responsibility. Most significant resources at risk were privately owned, and their owners protected them — in the extreme case, through use of the courts — against trespass, theft, and other risks. Individuals negotiated on risk matters, typically through contractual agreements. Private parties paid to shift risks to private insurance firms; private rating services provided information about the nature and level of risk in countless fields. "Today, however, private risk management devices are frequently dismissed as impractical or as objectionable for other reasons, at least in the environmental context, and such dismissals are usually accepted as soon as they are voiced. America seems to have fallen in love with political risk management. How did this romance start?" (p. 179)


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## ENVIRONMENTAL EDUCATION

Children have a natural affinity for environmental issues. They are fascinated by the world around them. As a result, environmental matters are ubiquitous in classrooms and children's media. However many charge that the information presented to children is deeply flawed, and this should be troubling to all those who are concerned about environmental issues, whether or not they support free market approaches to environmental policy.

Critics hold that contemporary environmental education tends to:

1. Contain numerous and substantial factual inaccuracies or omissions about environmental issues;
2. Provide an inadequate grounding in the scientific and economic concepts necessary to understand environmental issues and potential policy responses;
3. Encourage pessimism and alarmist attitudes about environmental trends and conditions; and
4. Emphasize political advocacy and action on environmental issues at the expense of knowledge and understanding.

The end result is that much environmental education is really environmental *miseducation*.

The extent of factual and conceptual inaccuracies is documented at length in the Sanera and Shaw book. Earlier examinations can be found in Adler (1992, 1993). Several state studies have been conducted, including Sanera (1996).

The most compelling discussion of the third critique is provided by London. Some of these themes are developed in Poore, as well as Cardozo and Weilbacher.

Concerns about political advocacy in the classroom are detailed in Holt, Sanera and Jackstadt, and Kwong (1995). A historical perspective on the rise of activism in the classroom, and the involvement of activist groups in this process, is contained in Adler (1995).





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“The apocalyptic possibilities that characterize textbook portrayals of the global society are carefully chosen so that the negative features of the present are factored into future predictions. Positive developments and much of the progress synonymous with historical evolution are virtually ignored.” (p. 165)

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## ENVIRONMENTALISM, ECONOMICS & OTHER TOPICS

There are many items that bear on free-market environmental thinking that do not fit neatly into any of the previous sections. These include books and articles that discuss the historic development and ideological outlook of the contemporary environmental movement from a perspective that is sympathetic to free market approaches. There are also numerous selections that outline the basics of free market economics, public choice theory, regulatory policy, and the like. This section seeks to include such items, and others that may of interest to those interested in free market policies, environmental issues, or both. As such, it is a grab-bag of sorts, but we hope it is useful nonetheless.







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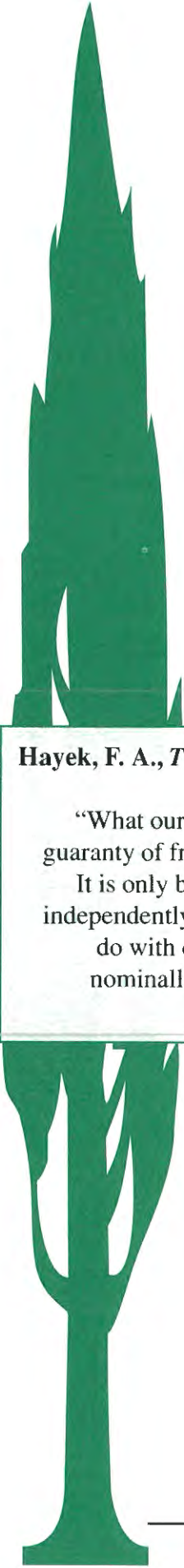
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It is only because the control of the means of production is divided among many people acting independently that nobody has complete power over us, that we as individuals can decide what to do with ourselves. If all the means of production were vested in a single hand, whether it be nominally that of ‘society’ as a whole or that of a dictator, whoever exercises this control has complete power over us.” (pp. 103-4)

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“This is the central assertion of this book: Almost every absolute change, and the absolute component of almost every economic and social change or trend, points in a positive direction, as long as we view the matter over a reasonably long period of time. That is, all aspects of material human welfare are improving in the aggregate. . . . Would I bet on it? For sure. I'll bet a week's or month's pay (my winnings go to fund research) that just about any trend pertaining to human welfare will improve rather than get worse. First come, first served. But be warned that in economics, unlike the weather, it is easier to forecast the long run than the short run.” (p. 7)

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"Considerable research in the public choice and Chicago traditions of economics has shown that regulation typically benefits not the public, but the very business entities subject to regulation. This insight points to another reason for imposing regulations, a reason that seems from less-noble *private* interest motivations: to protect firms from competition by raising competitor's costs or excluding them from the marketplace altogether. Like taxes, regulations involve the transfer of wealth from one party to another, and these transfers can be cloaked in public interest rhetoric. . . . Uncertainty about the extent of regulation is an important reason to consider a budget. But the fact that poorly controlled regulation often does more harm than good and can even derive from ill motives makes harnessing the regulatory state all the more urgent." (p. 4)

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"Environmentalists need not fear that expansion of trade will produce growth in pollution. To the extent that expanded trade is generating economic growth, environmental quality should also improve. This fundamental economic reality does not change simply because goods and services are crossing borders. The same free market institutions which generate economic gains also generate environmental gains. To the extent that protective tariffs and subsidies restrict and distort trade, they reduce income and, hence, the demand for environmental quality." (p. 7)

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