

# FREE MARKET VERSUS POLITICAL ENVIRONMENTALISM

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In the West it is often said, "Whiskey is for drinkin' and water is for fightin'." These words ring loud and clear when environmental and other demands compete with agricultural needs for water. Fortunately, market-based solutions represent an alternative to this prescription and a possible solution to broader problems of water resource allocation.

A recent incident on Montana's Ruby River illustrates part of the difficulty with present approaches to water resource management. By May of 1987, minimal snowpack, little spring rain, and a heavy demand for irrigation had reduced a 1.5 mile section of the Ruby to a trickle. Hundreds of trout were stranded in overheated pools.<sup>1</sup> Sadly, as fish were dying in the Ruby River, six inches of water was standing in nearby fields, where it was of little or no use. This water could have kept the Ruby flowing and the fish alive if it had been transferred from irrigation to instream flows. Montana's Department of Natural Resources and Conservation and the irrigators eventually agreed to get water flowing again in the Ruby. Unfortunately, the effort was too little and too late to save many of the trout.

Because of the urgency of the situation, legal action would have been largely futile. An alternative would have been to lease from the irrigators some of the water that they were diverting from the river. It would have been relatively easy and inexpensive for a private conservation group like Trout Unlimited to lease the water from irrigators and transfer it to instream flows. Indeed, the amount of water needed to keep the fish alive could have been rented for less than \$4,000.<sup>2</sup> With an annual budget of several million dollars, Trout Unlimited could have purchased the water if it had been permitted to do

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1. Eric Wiltse, *Irrigation Spells Death for Hundreds of Ruby River Trout*, BOZEMAN DAILY CHRON., May 12, 1987, at 3.

2. Terry L. Anderson & Donald R. Leal, *A Private Fix for Leaky Trout Streams*, FLY FISHERMAN, June 1988, at 28-31.

so.<sup>3</sup> Herein lies the problem. At the time of the incident, legitimate use of the water required diversion. Under western water law, private parties were not permitted to use water for in-stream purposes, except for hydroelectric power generation.<sup>4</sup> Today, the good news is that water marketing is becoming increasingly acceptable in the West. In 1989, conservation groups sought legislation in Montana that would allow water to be purchased or leased from appropriators on a "willing buyer, willing seller" basis. While the groups failed to convince legislators to allow private parties to engage in such transactions, new legislation does allow the Department of Fish, Wildlife, and Parks to experiment with water leasing to enhance in-stream flows. Colorado, Utah, and Arizona permit private and public entities to acquire existing consumptive rights to augment instream flows.<sup>5</sup>

The market for federal water is also expanding, although much remains to be done.<sup>6</sup> The U.S. Department of Interior in 1987 adopted a policy in support of voluntary transfers of reclamation water, including water markets.<sup>7</sup> Without the typical restrictions on end-use and location, the markets for federal water will ensure correct water prices, thereby promoting greater efficiency and conservation.<sup>8</sup>

Support for water marketing has increased substantially over the last decade, with some of the strongest support coming from environmental groups like the Environmental Defense Fund (EDF). EDF's economist Zach Willey and others have endorsed water markets as a key step in reforming water policy.<sup>9</sup> Even Sandra Postel of Worldwatch Institute, a group not noted for its support of free market environmentalism, has suggested that water markets offer a "promising remedy."<sup>10</sup>

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3. *Id.*

4. See Terry L. Anderson & Ronald N. Johnson, *The Problem of Instream Flows*, 24 *ECON. INQUIRY* 535 (1986).

5. Terry L. Anderson, *Water Rights and the Market for Water: The Western USA Experience* 21-22 (June 4, 1991) (unpublished manuscript on file with Political Economy Research Center, Bozeman, Montana).

6. Zach Willey, Statement before the Joint Select Committee on Water Resource Policy, Washington State Legislature 6-7 (September 11, 1990) (transcript available from the Environmental Defense Fund, Oakland, California).

7. RICHARD WAHL, *MARKETS FOR FEDERAL WATER: SUBSIDIES, PROPERTY RIGHTS, AND THE BUREAU OF RECLAMATION* 120-129 (1989).

8. *Id.*

9. See Zach Willey, *supra* note 6, at 6-7.

10. Sandra Postel, *Water, Water Everywhere, But Not For Long*, *WASHINGTON POST*, November 6, 1989, at 23 (National Weekly Edition).

## I. "BLISS POINT" ECONOMICS

Despite the growing acceptance of water markets, some environmental officials have failed to embrace the idea. A recent statement by South Africa's Department of Water Affairs (DWA) is one example of this reluctance:

With the increasing scarcity of water, the hierarchy of priorities for allocation must be further refined by means of appropriate benefit-cost and other economic studies. Within the requirements of contributing to the quality of life, the allocation of water must be based on the economic interests and the social demands of the country as a whole. The optimal utilization of resources, balanced growth and the minimal disruption of the economy are the most important criteria in this regard. . . . The DWA does, however, endeavour to provide for all rightful and reasonable demands within a particular catchment area before considering exports to other areas. The fairness of demands within catchment areas will, however, always be weighed against national requirements.<sup>11</sup>

This analytic approach is rooted in "scientific management," an economic paradigm that stresses marginal analysis by dispassionate "experts," who measure the benefits and costs of alternative allocations with the goal of maximizing social welfare.<sup>12</sup> The paradigm does not consider parties' intentions or the costs of information. Instead, it assumes that benefits and costs are known, and that the process of decisionmaking is simple, if one uses the appropriate model to reach the desired "bliss point" for society.

This same paradigm emphasizes the potential for market failure. In the dominant economics textbook used during the 1960s and the 1970s, Paul Samuelson states:

Wherever there are externalities, a strong case can be made for supplanting complete individualism by some kind of group action. . . . The reader can think of countless . . . externalities where economics would suggest some kind of limitations on individual freedom in the interest of all.<sup>13</sup>

The emphasis on externalities "contains an implicit bias toward 'intervention solutions' for externalities in the form of taxes,

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11. DEPARTMENT OF WATER AFFAIRS, MANAGEMENT OF THE WATER RESOURCES OF THE REPUBLIC OF SOUTH AFRICA 2.8 (1986).

12. See ALAN RANDALL, RESOURCE ECONOMICS 36 (1981).

13. PAUL A. SAMUELSON, ECONOMICS 450 (11th ed. 1980).

subsidies, regulations, and prohibitions" because it suggests "that externalities necessitate 'corrective' government action."<sup>14</sup>

This emphasis on corrective action often explicitly assumes that governmental decisions will maximize social welfare. In a resource economics textbook, Hartwick and Olewiler write: "[T]he government' is a separate agent acting in the social interest when activity by individuals fails to bring about a social optimum. . . . [W]e discuss some limits of this approach, but it permits us to abstract from the details of the political process."<sup>15</sup> By abstracting from the details of the political process, however, they ignore the incentives inherent in that process. Because politicians and bureaucrats are rewarded for responding to political pressure groups, there is no guarantee that the values of unorganized interests will be taken into account. Daniel Bromley claims that governmental agencies are

politically responsible to the citizenry through . . . elections and ministerial direction. However imperfectly this may work, the presumption must be that the wishes of the full citizenry are more properly catered to than would be the case if all environmental protection were left to the ability to pay by a few members of society given to philanthropy.<sup>16</sup>

Compare, however, the factors that influence the relationship between policymakers and bureaucrats with those that influence the relationship between policymakers and voters. First, with most issues, voters face relatively high information costs, creating the phenomenon of "rational ignorance." Second, the only exceptions to this general rule are issues that directly concern the voter. For example, the average urban dweller will likely know more about mass transit issues than agricultural matters. Third, those who are directly affected by policies often find it in their interest to spend time and money trying to influence decisionmaking in the political arena. Thus, because the costs of policies are often diffused and the benefits concentrated, special interest groups (that is, people whose interests are directly affected by a policy) will be well-organized

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14. John Burton, *Epilogue* to STEVEN N.S. CHEUNG, *THE MYTH OF SOCIAL COSTS* 76 (1978).

15. JOHN M. HARTWICK & NANCY D. OLEWILER, *THE ECONOMICS OF NATURAL RESOURCE USE* 18 (1986).

16. DANIEL W. BROMLEY, *PROPERTY RIGHTS AND THE ENVIRONMENT: NATURAL RESOURCE POLICY IN TRANSITION* 55 (1988).

and highly influential in the political arena. Those who have only an indirect or perhaps no interest at stake will remain largely indifferent. This rational indifference and the special interest groups combine to undermine the presumption that in the political arena the full citizenry are more properly catered to by intervention than by market-based incentives.

Government decisionmakers do not necessarily have access to the full information required to maximize society's welfare. As F.A. Hayek has pointed out,

[T]he economic problem of society is . . . not merely a problem of how to allocate "given" resources—if "given" is taken to mean given to a single mind which deliberately solves the problem set by these "data." It is rather a problem of how to secure the best use of resources known to any of the members of society, for ends whose relative importance only those individuals know. Or, to put it briefly, it is a problem of the utilization of knowledge not given to anyone in its totality.<sup>17</sup>

Assessing the government's "corrective ability" requires only that we examine the record of bureaucratic control of land and water resources in this country. Millions of acres that the U.S. Forest Service manages are denuded of trees at tremendous expense to the environment and to the taxpayer. In Alaska's Tongass National Forest, for example, the federal government spends 98 cents for every 2 cents worth of timber harvested.<sup>18</sup> Another example is water policy. The Bureau of Reclamation built huge dams, flooding vast tracts of land, and delivered the water to farms growing mostly subsidized products. Prices charged for the water seldom cover even the incremental cost of delivering the water, let alone the capital or environmental costs associated with the project. As a result, farmers demand more and more water to produce surplus crops.<sup>19</sup>

Government is not infallible. It is clear, as Castle writes, that "[m]arket 'failure' in some abstract sense does not mean that a nonmarket [sic] alternative will not also fail in the same or in some other abstract sense."<sup>20</sup>

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17. F.A. Hayek, *The Use of Knowledge in Society*, 35 AMER. ECON. REV. 519-520 (1945).

18. U.S. FOREST SERVICE, REGION 10 STATEMENT OF OBLIGATIONS (1984); U.S. FOREST SERVICE, TIMBER SALE PROGRAM ANNUAL REPORT 8-9 (1989).

19. WAHL, *supra* note 7, at 47-67 (1989).

20. Emery N. Castle, *The Market Mechanism, Externalities, and Land Economics*, 47 J. FARM ECON. 542, 552 (1965).

## II. FREE MARKET ENVIRONMENTALISM

Free market environmentalism considers the potential for market solutions and the problems with political ones. Anthony Fisher summarizes the change in emphasis:

We have already abandoned the assumption of a complete set of competitive markets. . . . But if we now similarly abandon the notion of a perfect planner, it is not clear, in my judgement, that the government will do any better. Apart from the question of the planner's motivation to behave in the way assumed in our models, to allocate resource [sic] efficiently, there is the question of his ability to do so.<sup>21</sup>

Free market environmentalism challenges both the government planner's motivation and his ability. The approach recognizes two facts. First, *incentives affect all human behavior*. Professional managers, no matter how well-intended, respond to the incentives they face. This holds as true for bureaucrats as it does for profit-maximizing owners of firms. We readily accept the argument that business operators would dump wastes into the airways if they did not have to pay for the costs of their action. We often fail, however, to recognize the same elements at work in the political sector. If a politician is not personally accountable for allowing oil development on federal lands or for permitting an agency to dump hazardous wastes into the environment, then we can expect too much development and too much dumping. Moreover, when the beneficiaries of these activities do not have to pay the full costs, they will demand more of each from their political representatives.

Second, *information costs are positive*. In a world of scarcity, private and public decisionmakers must obtain information on the relative values of resource uses. When one use competes with another, tradeoffs are inevitable. Unfortunately, these tradeoffs are complicated when decisionmakers lack value information. In the absence of markets, a resource manager must rely on his own personal valuation of the tradeoffs or on information provided by special interest groups. In either case, there is little reason to believe that these values will necessarily reflect the social good.

With markets for commodities and amenities, prices provide the necessary information for making tradeoffs. Consider the

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21. ANTHONY C. FISHER, RESOURCE AND ENVIRONMENTAL ECONOMICS 54 (1981).

influence a market for recreational and environmental amenities has had on International Paper (IP), one of the nation's largest private timber landowners. When leasing recreational opportunities on its land, IP has systematically improved wildlife habitats. IP's fee hunting and fee recreation programs yield approximately twenty-five percent of the operating profits in the mid-South region, with timber making up the rest. Populations of white-tailed deer, turkeys, rabbits, bobwhite quail, and mourning dove benefit from controlled burns that stimulate forage and from protected riparian zones that preserve cover and food. According to IP's wildlife managers, profits from these programs induced company executives to listen to proposals for improving habitats at the expense of timber production.<sup>22</sup> In contrast, political managers in the Forest Service, who "give away" recreational activities on federal lands, lack this price information and have less incentive to react to changing values.

Free market environmentalism stresses the importance of well-specified property rights as the proper mechanism to provide the incentive for entrepreneurs acting on specific time and space information. Before a landowner can sell access to those interested in recreation or an easement to a land trust, there must be clearly defined and enforceable property rights to the resources. With such rights, imaginative entrepreneurs can capture the value of environmental amenities. For example, a stream owner who can devise ways of charging fishermen can internalize the benefits and costs of improving fishing quality. Similarly, a subdivider who puts covenants on deeds to preserve open space, improve views, and harmonize development with the environment, establishes property rights to these values and captures value in higher asset-prices.

### III. FROM THE IMAGINABLE TO THE IMAGINATIVE

Skeptics are quick to point out that harmonizing wildlife needs with timber harvesting or livestock grazing is an easy solution and that free market environmentalism fails to provide solutions to the tougher problems. For example, although wild-

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22. Telephone interview with Tom Bourland, Wildlife Biologist, International Paper Company (Sept. 23, 1989); *see also* PRESIDENT'S COUNCIL ON ENVTL. QUALITY, ENVIRONMENTAL QUALITY: 15TH ANNUAL REPORT OF THE COUNCIL ON ENVIRONMENTAL QUALITY 426 (1984).

life migrate across boundaries, landowners can at least benefit by improved management; in the open ocean, however, there are no boundaries and no ways to fence in fish. The result is over-fishing like that which occurs in the North Sea.<sup>23</sup>

The free market environmentalist approach to this problem would establish property rights through individual transferable quotas (ITQs). ITQs give each fisherman a right to a proportion of the catch, thereby eliminating the incentive to over-fish the resource. The market establishes a price for the quota and more efficient fishermen buy quotas from those who are less efficient. The ITQ system has been successfully applied in Australia and New Zealand. Six months after ITQs were applied to Australia's bluefin tuna fishery, fleet capacity dropped by sixty percent, the value of quotas doubled, and the average size of the catch rose as operators with access to larger fish bought out operators with access to smaller fish.<sup>24</sup> Similarly, two years after ITQs were applied to New Zealand's abalone fishery, the value of quotas increased nearly six-fold and abalone numbers increased with the aid of a new breeding program which fishermen financed.<sup>25</sup>

Free market environmentalism can also solve pollution problems through common law tort remedies if property rights are established and polluters can be identified. In England, an association of anglers and clubs has monitored pollution since the 1960s. Angler's Cooperative Association officials point out that the organization was protecting the environment twenty years before the general public became concerned and pressured the government to act:

The A.C.A. has had an extraordinary record of success. It has fought hundreds of pollution cases (not all of which have gone to court) and only lost one minor one on a legal technicality. The damages it has secured on behalf of members, and member clubs, runs [sic] into hundreds of thousands of

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23. There, British fishermen's income has fallen by six percent in real terms since 1980 and stocks of cod and haddock have fallen by one-half and two-thirds, respectively. *A Sustainable Stock of Fishermen*, *ECONOMIST*, January 19, 1991, at 17-18.

24. William L. Robinson, *Individual Transferable Quotas in the Australian Southern Bluefin Tuna Fishery*, in *FISHERY ACCESS CONTROL PROGRAMS: WORLDWIDE PROCEEDINGS OF THE WORKSHOP IN MANAGEMENT OPTIONS FOR THE NORTH PACIFIC LONGLINE FISHERS 186-205* (Alaska Sea Grant Report No. 86-4, 1986).

25. RODNEY P. HIDE & PETER ACKROYD, *DEPOLITICISING FISHERIES MANAGEMENT: CHATHAM ISLANDS' PAUA (ABALONE) AS A CASE STUDY 42, 44* (March 1990) (unpublished report for R.D. Beattie, Ltd., Kaikoura, New Zealand).

pounds.<sup>26</sup>

The British experience suggests that pollution could be reduced if private fishing rights were established in the United States. Liability rules would evolve so that owners of fishing rights could bring suit against an upstream polluter whose effluent damaged their fishing resource.<sup>27</sup>

The challenge to the property rights approach occurs when the polluter cannot be identified and damages cannot be assessed. For example, with acid rain, it is clear that sulfur dioxide is the cause, but the actual damage caused by a specific polluter will vary with air currents, moisture, and other climatic conditions. A free market environmentalist solution would require "branding" the pollutants so it would be clear who is causing what damage.

New technology offers the potential for such branding by introducing tracers into the smoke stacks of suspected polluters. This technology was applied in the Winter Haze Intensive Tracer Experiment in Canyonlands National Park, Utah. The park commonly experiences a haze-causing pollutant that some suspected originated from a coal-fired generating plant several hundred miles away. To identify the source, chemical tracers that mimicked the pollutant were introduced into the stack of the plant and a battery of air monitoring stations was set up around the park. The experiment concluded that the plant was contributing to the haze.<sup>28</sup>

The possibility of using tracers has enormous potential for tracking a variety of effluents and media. Tracers can identify users of pesticides and fertilizers, growing contributors to non-point sources of pollution. Tracers can also brand chemicals

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26. Esmond Drury, *John Eastwood and the A.C.A.*, ANGLERS' COOPERATIVE ASS'N REV., Summer 1984, at 12, 13.

27. See, e.g., A. MITCHELL POLINSKY, AN INTRODUCTION TO LAW AND ECONOMICS 89-94 (1983). With well-specified rights, owners have an incentive to discover innovative ways to detect and monitor pollution. In Britain, the water company for Bournemouth has enlisted the services of twenty West African elephant fish, *Gnathonemus petersii*, to monitor water pollution. The four-inch creature emits an easily tracked electrical discharge, the rate of which depends on the pollution level of the water. A contented fish puts out 300 to 500 pulses a minute, but if it becomes distressed by the presence of pollutants, the rate shoots up to more than 1,000 pulses a minute. Sensors in the water supply pick up the pulse rate and pass them on to a computer. If more than half of the fish suddenly increase their pulse rate, an alarm is sounded and scientists step in to assay the water. See, *A Fishy Kind of Pollution Detector*, 249 SCIENCE 983 (1990).

28. Mark Crawford, *Scientists Battle Over Grand Canyon Pollution*, 247 SCIENCE 911-912 (1990).

that contaminate groundwater basins. Just as the government requires registration and monitoring of pets to minimize nuisances, the government can require the branding and monitoring of emissions.<sup>29</sup>

Technology has played a key in the evolution of free market environmentalism solutions. Technology provided the means to change dramatically the face of the American West. In the 1870s, homesteaders and ranchers began using barbed wire to define property rights to their land. Previously, the lack of trees and other materials made it very costly to establish property rights. Barbed wire, however, lowered the cost of fencing the western range dramatically.<sup>30</sup>

#### IV. FROM THEORY TO PRACTICE: ENDANGERED SPECIES

The opening vignette on Montana's Ruby River introduced the free market environmentalism approach as an alternative to political conflicts over water. Similar potential exists in the resource-rich Pacific Northwest, where two major controversies have been brewing over efforts to save several declining species.

The first dispute involves the Northern Spotted Owl, which was declared a threatened species under the Endangered Species Act of 1973<sup>31</sup> in June of 1990.<sup>32</sup> The controversy concerns the amount of federal timberland that would be removed from timber harvesting because of the Act. A government-sponsored plan to increase breeding owl pairs from 739 to 1,180 in the long term would remove from logging perhaps three million acres of timberland. If the plan were implemented, it is esti-

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29. Former EPA analyst Fred Smith suggests the possibilities:

Detection and monitoring schemes would evolve as environmental values mounted and it became appropriate to expend more on fencing. There are exotic technologies that might well play a fencing role even for resources as complex as airsheds. For example, lasimetrics, a technology which can already map atmospheric chemical concentrations from orbit, might in time provide a sophisticated means of tracking transnational pollution flows.

Fred L. Smith, Jr., Controlling the Global Threat to the Global Liberal Order 10 (November 1989) (unpublished manuscript, on file with the Competitive Enterprise Institute, Washington, D.C.).

30. See WALTER PRESCOTT WEBB, *THE GREAT PLAINS* 309 (1931).

31. Pub. L. No. 93-205, §§ 2-15, 17, 87 Stat. 884 (1973) (codified as amended in scattered sections of 16 U.S.C. (1988)).

32. Determination of Threatened Status for the Northern Spotted Owl, 55 Fed. Reg. 26,114 (1990) (codified in Endangered and Threatened Wildlife, 50 C.F.R. § 17.11 (1991)). See David Schaefer & Sylvia Nogaki, *Threatened Wildlife—Agency Makes It Official on Spotted Owl*, SEATTLE TIMES, June 22, 1990, at A1.

mated that 25,000 to 40,000 timber-related jobs would be lost.<sup>33</sup>

The second controversy surrounds the potential declaration of the sockeye salmon (and possibly other salmon species on the Columbia River) as endangered. Eight federal mainstem dams are located along the Columbia and Snake Rivers, where over ninety percent of the juvenile salmon are killed trying to migrate from their spawning grounds to the ocean. Salmon die when they are shredded or shocked as they are sucked into the giant turbines. They also fall victim to predators, high temperatures, and disease when they are trapped in the slack water behind the dams. According to salmon proponents, the solution is to increase river flows for several months during the spring, the period when juvenile salmon migrate to the sea.

Use of the Endangered Species Act to force a solution has sparked controversy. If sockeye and other salmon are declared endangered, their safety would be given highest priority relative to other uses of the Columbia Basin, such as hydroelectric power generation, shipping, and irrigation. Both hydroelectric power generation and shipping would be severely limited if water is released from the dams to increase river flows. Furthermore, these flows would not be available to fill reservoirs for later power production and irrigation.<sup>34</sup> The Bonneville Power Administration also estimates that rates for Northwestern power could rise by thirty percent or more. Columbia River barge operators predict the possible demise of their industry, and irrigators say farming in Washington and southern Idaho will be devastated if water for irrigation is confiscated.<sup>35</sup>

Why are the Northern Spotted Owl and Columbia River salmon in trouble? The answer is simple: No one owns them or their habitat; thus, no one has the incentive to protect them. In both cases, the federal government controls most of their habitats. The Forest Service and the Bureau of Land Management control the forests that the spotted owl inhabits, and the Bu-

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33. Robert Nelson, *Rethinking Federal Forest Management: A Response to the Designation of the Spotted Owl as a Threatened Species 8-9* (Political Economy Research Center Working Paper No. 90-34, Jan. 1991) (unpublished manuscript, on file at the Political Economy Research Center, Bozeman, Montana).

34. Pat Ford, *How the Basin's Salmon-Killing System Works*, HIGH COUNTRY NEWS, April 22, 1991, at 14-15.

35. Pat Ford, *We've Got An Economic Opportunity Here*, HIGH COUNTRY NEWS, April 22, 1991, at 15.

reau of Reclamation and the Army Corps of Engineers control the dams that kill the salmon.

The two cases do differ, however, in the extent of the subsidized destruction of the respective habitats. While federal timber programs run million-dollar deficits or more on many national forests, forests in the Pacific Northwest are money-makers. The thirteen national forests in Oregon and Washington affected by the spotted owl decision net more than \$500 million in timber revenues each year.<sup>36</sup> The government will lose \$150 million in revenues on these forests alone, where forest planners project a thirty percent harvest reduction.<sup>37</sup>

The economics of water development in the Columbia River basin are quite different. Here the rule of subsidized development applies to the 6.5 million acre-feet of water used annually for irrigation. The costs of development allocated to irrigation are \$745 million. Of this amount, irrigators pay \$136 million, while hydroelectric power consumers pay the rest. In addition to the power subsidy, irrigators receive an implicit interest subsidy: They have a ten-year grace period during which they do not have to repay their reclamation loans and they are not charged interest during the forty-year repayment period; this amounts to an interest subsidy of seventy-nine percent.<sup>38</sup> Water supplied for irrigation has made the "desert bloom like a rose," but only at a tremendous cost.

Free market environmentalism can correct these problems. Short of privatizing the national forests, timber leases could be put up for competitive bid with no requirement that timber be harvested; environmentalists could then bid with timber companies. Environmental groups could lease the most critical owl habitat and allow no logging there. On other tracts, they might allow some logging, thus partially offsetting lease costs, but require that logging be done with minimal impact on the owls. Because it owns its timberlands, International Paper has successfully minimized impacts on endangered species such as the

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36. U.S. FOREST SERVICE, *TIMBER SALE PROGRAM ANNUAL REPORT 115-16*, 162 (1989).

37. When all affected federal forests in Washington, Oregon, and California are taken into account, the loss could be as high as \$625 million per year. See Nelson, *supra* note 33.

38. Randal R. Rucker & Price V. Fishback, *The Federal Reclamation Program: An Analysis of Rent-Seeking Behavior*, in *WATER RIGHTS: SCARCE RESOURCE ALLOCATION, BUREAUCRACY, AND THE ENVIRONMENT* 45, 52-63 (Terry L. Anderson ed., 1983) (using a discount rate of 8%).

red-cockaded woodpecker, and the Audubon Society has demonstrated that oil development can occur on its private preserves without significant damage to bird habitat.<sup>39</sup>

Similarly, efforts to save the sockeye and other species of salmon in the Columbia River basin can be enhanced through water marketing. Environmentalists have embraced water marketing because it raises water prices and reduces water consumption. As the Ruby River example indicates, water leasing for instream purposes offers an innovative way of increasing stream flows to help migrating salmon. If environmental groups, commercial and sports fishermen, and the U.S. Fish and Wildlife Service could negotiate with power producers and irrigators for increased water flows, cooperation would replace conflict. This has happened elsewhere. On the Gunnison River in Colorado, the Nature Conservancy has obtained the rights to 20,000 acre-feet of water to maintain flows for the hump-backed chub, an endangered species with no commercial or sport value.<sup>40</sup> If those who care about the fate of the salmon could lease water for instream flows, they could directly invest their dollars where the salmon are threatened instead of spending time and money on costly lobbying efforts or litigation.

## V. CONCLUSION

Critics of free market environmentalism contend that it does not offer a solution to all environmental problems. They contend that although free market environmentalism may work for some recreational and environmental amenities produced from land, it is inconceivable that property rights can be used to solve problems such as ozone depletion or global warming.<sup>41</sup>

If free market environmentalism stimulates environmentalists to apply free market solutions to the easier problems, it can free political resources to work on the tougher problems that, at the moment, seem to be the domain of government. If free market environmentalist solutions spark the imagination of en-

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39. See PRESIDENT'S COUNCIL ON ENVTL. QUALITY, *supra* note 21, at 425; see also John Baden & Richard Stroup, *Saving the Wilderness*, REASON, July 1981, at 28-36.

40. Steven J. Shupe & John A. Folk-Williams, *Public Interest Perspective*, WATER MARKET UPDATE, March 1987, at 9-10.

41. *But see* ROBERT STAVINS ET AL., PROJECT 88: HARNESSING MARKET FORCES TO PROTECT OUR ENVIRONMENT 10-23 (1988) (recommending a tradeable permit system for phasing out potential ozone depleters, international emissions trading in greenhouse gases, and prevention of deforestation through debt-forest swaps).

vironmental entrepreneurs, technological progress toward fencing the atmosphere may be accelerated. The “free” in free market environmentalism refers to the individual liberty that only markets can provide; and without that human freedom, environmental quality will be of little consequence.