

Balancing Management Goals for Ecological Systems on a Sustainable Basis: An Analysis of the Pacific Northwest Timber Dispute

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Introduction: Goals for Management of Ecological Systems

By law, U.S. agencies with jurisdiction over public lands and protected areas must balance ecological interests with other management goals: economic activities, infrastructure for human support, recreation, and aesthetics. For an agency to realize long-term success in balancing these competing goals, management decisions must avoid destabilizing the ecological system.

There are two major obstacles to sustainable management of ecological systems so as to achieve a balance among multiple goals. They are: (1) balancing environmental and economic interests, and (2) adopting a clear, scientifically sound definition of the term "sustainability" which reflects the balance between competing environmental and economic interests.

Balancing environmental and economic interests

Historically, environmental interests (management and protection) and economic interests (productivity and growth) have been considered inherently incompatible. The traditional conflict is based on the presumption that favoring either goal, by necessity, is detrimental to the competing alternative. Under this view, management decisions have often satisfied economic interests. There are exceptions, however, such as establishment of the National Park System, which was based partly on the growing concern that wilderness areas were rapidly disappearing.

The natural environment is important for many reasons that are inseparable from economic interests. Economic activity represents, at least in part, our need to use natural resources in order to survive. Natural systems provide us with "the soil we plow, the air we breathe, [and] the water we draw." For example, root action on rocks helps create soil, and plants and animals regulate atmospheric gases that affect respiration, temperature, and precipitation (Wilson 1992). Also, plants and animals found in natural ecosystems have direct economic value as sources of medicines,

foods, natural pesticides, and a range of industrial products (Plotkin 1988). Moreover, cross-breeding of crop plants with wild relatives may protect commercial plant varieties from diseases, or increase their nutritional content. The resultant economic benefits are often great (Plotkin 1988).

Using resources faster than the rate at which they can be replenished will diminish or eliminate the future supply. The world cannot be completely divided into zones in which only environmental or economic interests prevail. Although there are ecological systems that should be preserved and protected in a pristine state, many can successfully support economic activities. It is important that we learn to balance interests by adopting a management approach that will satisfy both on a sustainable basis.

The difficulty in defining "sustainability"

Scientists, interest groups, politicians, and others who have recognized the importance of both economic and environmental integrity have promoted the use of natural resources on a sustainable basis (Lubchenco et al. 1991). However, management on a sustainable basis is difficult because, while there appears to be an emerging theoretical understanding of sustainability, we lack the scientific knowledge to apply fully the concept in practice (Lubchenco et al. 1991). Furthermore, the political process has failed to produce an adequate definition of "sustainability" in the law.

Limited scientific knowledge

Science has not progressed to the point where the "health" of ecological systems can be completely analyzed,

Recognition, understanding, and control of ecological problems will, in the long term, require many disciplines cooperating in the application of knowledge and joint research, with a focus on sustainable management (Haskell et al. 1992; Lubchenco et al. 1991).

Scientific and economic definitions of sustainability

There is no clear, scientific consensus on a definition of the term "sustainability." Various definitions can be found in the literature. Ecological sustainability "implies the system's ability to maintain its structure (organization) and function (vigor) over time in the face of external stress (resilience)" (Costanza 1992). Others "emphasize sustainability of narrowly defined 'economic' productivity over time" (Haskell et al. 1992). A scientific trend, however, is to define the concept of sustainability in terms of a balance between environmental and economic interests. Perhaps one of the better working definitions of combined ecological and economic sustainability is that it is a "relationship between dynamic human economic systems and larger, dynamic, but normally slower-changing ecological systems such that human life can continue indefinitely ... [and] in which the effects of human activities remain within bounds so as not to destroy the health and integrity of self-organizing systems that provide the environmental context for these activities" (Norton 1992).

Complexities inherent in implementing sustainable management

The political process has not yielded a consensus definition of "sustainability" which is reflected in

the law. There are numerous social, political, legal, economic, and scientific influences which compete to shape governmental policy regarding the use of natural resources (Schaeffer and Cox 1992).

Current economic systems create incentives to maximize personal welfare by exploiting natural resources for short-term gain. Such incentives may ultimately lead to exhaustion of natural resources (Hardin 1968). Many people would acknowledge the need to preserve natural resources sufficient to sustain human populations indefinitely. The problem is in asking any particular party to reduce its rate of utilization. The short-term consequences of doing so may include reduced profit, loss of jobs, reduced consumption, and, in some instances, reduced quality of the standard of living. This is particularly troublesome if a single group, corporation, or industry believes it is being singled out to bear a disproportionate burden.

Legal definition of sustainability

No clear definitions of ecological or economic sustainability are reflected in current federal law. There are few federal statutes that require sustainable land management. The Multiple-Use Sustained-Yield Act of 1960 (MUSYA) addresses "sustainability" in a limited context, that of "sustained yield." Sustained yield is "the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources on the national forests without impairment of the productivity of the land" (16 U.S. Code 531(b)). MUSYA has been largely unenforced by the courts except in connection

with other statutes, and federal agencies responsible for management of public lands have typically enjoyed a great deal of discretion under MUSYA. Nevertheless, there is a trend suggesting closer scrutiny of agency actions requiring compliance with multiple-use, sustained-yield objectives (Bobertz and Fischman 1993).

The evolution of sustainable management of ecological systems: the Pacific Northwest timber dispute

The United States has been struggling with the need to balance environmental and economic interests for many years. The Pacific Northwest timber dispute is perhaps the most notable "hot spot" in the controversy between environmental and economic interests.

From 1985 to 1989, timber harvesting in the national forests in Washington and Oregon reached record highs of 4.5 to 5 billion board feet per year. As a result of intensive logging in the region, the northern spotted owl was listed as an "endangered species" under the authority of the Endangered Species Act (ESA). After litigation in which the U.S. Forest Service attempted to harvest timber without planning for spotted owl habitat, a federal district court enjoined the agency from selling timber from spotted owl habitat until it submitted a plan to ensure viable populations of the owl (*Seattle Audubon Society v. Evans*, 1991).

The timber industry lobbied for a plan that would minimize any detrimental effect on itself. Environmentalists were concerned about saving the last 10% of the old-growth forests remaining in Washington and Oregon.

The Forest Service, hampered by an Administration sympathetic to the timber industry (*Seattle Audubon Society v. Evans*, 1991), was unable to develop an acceptable plan (*Seattle Audubon Society v. Moseley*, 1992).

There were numerous legislative efforts targeted at resolving the dispute. Each represented an attempt to compromise, but none gained enough support to be passed (Environmental and Energy Study Institute Legislative Report 1992).

Preview of a change in national environmental policy

The controversy in the Pacific Northwest was a significant issue during the presidential election of 1992. The Clinton-Gore platform stated that the nation must "shatter the false choice between environmental protection and economic growth" (Clinton and Gore 1992). The campaign stated that their environmental policy was based significantly on this fundamental principle. After the election, the selection of Bruce Babbitt as secretary of the Department of the Interior, which is responsible for a most public lands and protected areas, signaled that the new Administration was serious in establishing this principle as a primary part of the national environmental policy. During Senate confirmation testimony, Babbitt set the tone for the resolution of environment-versus-economics disputes in general: he stated that the Department's highest priority would be to balance conflicts between economic development and environmental protection on a sustainable basis (Senate Confirmation Hearings, 19 January 1993).

Clinton's proposed resolution of the dispute

When President Clinton came into office, he responded by convening a "timber summit" in April 1993. He also created a Forest Ecosystem Management Assessment Team composed of scientists, economists, and sociologists to study the area and develop a series of possible solutions to the crisis aimed at protecting the ecosystem that supports the northern spotted owl while allowing for economic activity to continue.

The option submitted by Clinton to the federal district court centered on protecting owl habitat by protecting watersheds. The focus on watersheds also sought to protect salmon runs and the vital salmon industry in the region. The plan sets aside 80% of the remaining old-growth forests in reserves and reduced harvesting levels from the highs of the 1980s to about 1.2 billion board feet per year. The Administration anticipates a loss of about 6,000 timber jobs and proposes to provide \$1.2 billion to retrain workers as well as remove a federal subsidy on log exports (*Time Magazine* 1993).

Conclusion

The Pacific Northwest timber dispute, and the controversy over balancing environmental and economic interests in general, have influenced legislative efforts to reauthorize the ESA. During the 102nd Congress (1991-92), legislation was introduced which sought to factor economic considerations into the environmental protection structure of the ESA. One bill proposed an "economic impact analysis" before the implementation of ESA requirements, with protection

granted only when the benefits outweigh the economic costs (H.R. 4058, 1991). There has been much support for compensating groups for economic losses sustained as a result of impositions from ESA requirements (e.g., H.R. 4058).

This controversy has also influenced legislation covering the protection of wetlands. One legislative effort proposed an "ecological value" ranking system for wetlands. Under this system, wetlands could be classified as of "critical" value (and thus protected), of "significant" value (which would allow for some development), and of "limited" value (exempt from protection under the Clean Water Act) (H.R. 1330, 1991).

The approach represented by these bills, however, does not address the issue of balancing. They did not focus on using the environment in economically useful and ecologically sustainable ways. Rather, they focused on choosing between environmental and economic interests without specifically planning for combined sustainability. While these legislative efforts did not prevail, they are representative of the types of approaches which have been introduced and considered.

Attempting to balance environmental and economic interests has traditionally been viewed as a significant political risk in national politics in the United States. Yet there are some strong indications that there is growing support for balancing approach.

The election of the Clinton-Gore ticket and selection of Babbitt signal, to some degree, an acceptance of the balancing approach.

The Clinton Administration has taken a calculated political risk by quickly intervening in this dispute and proposing a solution to a difficult problem which had not been resolved by the disputants, nor by Congress. While the balancing approach does not satisfy all interests, it does strike a compromise which is intended to break the impasse. Most importantly, it is a solution aimed at providing long-term environmental and economic benefits.

The United States has the opportunity to enter a new era of environmental management and protection which focuses on achieving a balance between environmental and economic interests on a sustainable basis. The resolution of the Pacific Northwest timber dispute is indicative of the balancing approach which will be part of U.S. national environmental policy for the next several years. This approach should evolve as a workable, politically effective, economically productive method of accounting for competing interests. By beginning to break down the adversarial barriers traditionally associated with the environment-versus-economics debate, we may focus our time and resources toward developing a balance which will ensure long-term environmental and economic benefits.

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