

## PERSPECTIVE

## An Asset Management Approach to Forest Stewardship (Part I)

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Land stewardship in the context of sustainable forest management implies more than just minimizing abuse. Stewardship implies an active husbanding of the land and its resources that is, not only to provide for the needs of the current generation, but also to leave these resources to future generations in as good or better condition than they were received.

Today, Americans are the beneficiaries of a forest legacy created by farsighted leaders of the Conservation Movement more than a century ago. The nation now has more forest area than at any time since the American Revolution. Yet we find that the value of these forest assets—in terms of timber quality, wildlife habitat, biodiversity and other measures—is declining in many instances. The notion of increasing net asset value of forest resources—building principal as it were—seems to have disappeared from the professional lexicon of forest management, even as we wax eloquent on terms like sustainable forestry and ecosystem management.

#### DEPRECIATING ASSETS: REINVESTMENT IN THE NATIONAL FORESTS

In recent Congressional testimony, Forest Service officials estimated that as much as 73 million acres of the National Forest System are at high risk for outbreaks of catastrophic wildfires, the kind that has already devastated hundreds of thousands of acres of National Forest this year in Colorado, Arizona, Oregon and elsewhere (USDA Forest Service, 2002).

This is the result of more than just

the unusually hot, dry conditions that have prevailed in much of the western United States in recent years. The Forest Service reports that much of this forest is dangerously crowded with dense stands of fire-prone tree species, a gradually unfolding problem made acute by the degree to which drought-stressed trees are succumbing to disease, insects, and other causes of mortality. An area more than 20 times the size of Connecticut is



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dense with tinder-dry fuel, just waiting for a spark.

There is plenty of blame going around, as the leaders in our nation point fingers and scramble to find the hundreds of millions of dollars needed to put out the fires, pay claims for private property damage, and take emergency measures to prevent catastrophic floods later on when these burned-out forests shed stormwater they are no longer capable of storing in their blackened soils. Some of these

fingers have pointed to the Sierra Club and other environmental activists for their opposition to timber harvesting on Federal lands, including forest health-related thinning of overstocked stands. With National Forest timber harvests already driven to lows not seen since World War II, it is argued that the Forest Service is being prevented from even doing the custodial management necessary to protect the forest resources themselves.

But this period immediately following World War II was significant for another reason. It was a period when Congress, eager to create jobs for their constituents and fuel the postwar housing boom, pressed the Forest Service to sharply increase the amount of timber being harvested from the National Forests. The Forest Service—always a “can do” organization—was just as eager to respond, but with a caveat.

Increasing the level of National Forest timber harvests, which eventually topped out at more than 12 billion board feet annually (enough to build about two million single family homes at the time), would necessitate similar increases in expenditures on reforestation and “timber stand improvement” (Hirt, 1994). Timber stand improvement consisted largely of thinning immature stands of regenerated forest to improve their growth rates and wood quality, but typically at a stage in which the trees removed are too small to be of any commercial value—a costly investment that would not pay off until several decades later. Never one to think

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that many election-cycles ahead, Congress balked. Give us the timber now, they instructed the Forest Service through their appropriations, and let's worry about reinvestment in the forests later.

Unfortunately, much later, as it turns out. During hearings leading up to the National Forest Management Act (NFMA) of 1976, Congress "discovered" the enormous backlog in reforestation following timber harvests on the National Forests. The Reforestation Trust Fund was created, with a requirement that the Forest Service report annually to Congress on its progress in working off the backlog (16 USC 1600, 1976). The budget deficit-conscious Office of Management and Budget subsequently concluded that, given the trust funds set aside for reforestation, the regular Forest Service budget line-item for "reforestation and timber stand improvement" could be essentially zeroed out in the President's Budget—an instant budget savings, considering that trust funds are "off budget" (Gorte and Corn, 1995).

But the trust funds were devoted strictly to reforestation, and did not include follow-up silvicultural activities, like timber stand improvement. Ironically, Congress' attempt to make up for decades of under-investment in reforestation simply compounded the other problem of decades of under-investment in silvicultural treatments, like thinning. What we see today on the National Forests—overstocked stands of low quality timber, highly susceptible to infestation and wild-fire—represents more than a half-century of deferred maintenance, for which Congress must share responsibility with the Forest Service.

This is not offered as an indictment for the dangerous and enormously wasteful situation on the National Forests today. Nor is it presented as another opportunity for hand-wringing over the short-sight-

edness of the nation's political leaders, when it comes to issues like sustainable natural resource management, that require a long-term perspective and commitment. Rather, it is offered only as a current example of how the prevailing concept of land stewardship in forestry, and the underlying economic framework that is used to make this concept operational in daily resource management decision making, somehow still manages to result in degraded forests so diminished in value from the last generation to the next as to run counter to the very idea of stewardship itself.

#### FOREST ECOSYSTEM MANAGEMENT: JUST A DIFFERENT MIX OF OUTPUTS?

The advent of the term "ecosystem management" in forestry prompted a spirited debate whether the purpose of forest management is to produce certain "outputs" demanded by society—such as timber, minerals, wildlife, or water—or to maintain certain forest conditions deemed valuable by society, such as those favorable for preserving biological diversity (Sedjo, 1996).

With reference to federal forests in the U.S., MacCleery and LeMaster (1999) state "the focus of multiple-use, sustained-yield [forest management] has tended to be on resource outputs or 'flows', whereas ecosystem management places relatively more emphasis on ecosystem 'states' and 'conditions.'" Sedjo notes "The objective of ecosystem management is viewed as not the output of the forest factory, but rather the condition of the forest factory itself. The various, multiple-use outputs of the forest, including the outputs that are mandated by Congress, become merely incidental, with little if any attention being given to the costs and tradeoffs required."

Devising a suitably rigorous, ana-

lytical underpinning for forest management decision-making in this context has been a challenge to the neoclassical economic paradigm (Daly, 2002). Johnson (1997) argues that because a healthy ecosystem is the goal of ecosystem management, little time is spent considering the benefits and costs of various actions. Thus, although trade-offs between preservation and logging, grazing and mining will continue to be made, the criteria delineating for whom and on what basis these trade-offs will occur are not identified.

Observing that "one cannot manage what one cannot measure," Sedjo (1996) argues that the difficulty of measuring progress toward the goals of ecosystem management makes it impossible to determine success toward those goals. Kirkland (1987) has argued that in the absence of meaningful measures, the achievement of the best balance becomes a matter of judgment. This begs the question of whose judgment should be used to determine the set of forest attributes that provide the ideal condition, and by whom this ideal condition should be determined.

The developing field of ecological economics offers new insights into the creation of economic models that factor in not only the value of current production, but also the degree to which the value of the underlying asset is accumulating or being depleted. Much of this work has focused at the level of national income accounting (Costanza, 1997).

Repetto (1989) demonstrated that data are adequate even in many developing countries to estimate adjustments for the depletion of some important forms of natural capital, and that the adjustments could be large relative to conventional gross measures of national product and investment. The adjusted net measures suggest that a substantial portion of many countries' economic growth is

simply the unsustainable “cashing in” of their natural wealth. Recent research has examined the application of this concept at the local level (Prugh, 2000), and has explored the concept in the context of forests in particular (Hartwick, 1993). Further information on how this can best be accomplished will be discussed in the next issue of *The Pinchot Letter*.

## NOTES

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