PINCHOT INSTITUTE FOR CONSERVATION

The Evolution of American Forest Policy: An Appraisal of the Past Century and a View to the Next

by V. Alaric Sample

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Leadership in Forest Conservation Thought, Policy and Action

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The Evolution of American Forest Policy: An Appraisal of the Past Century and a View to the Next

V. Alaric Sample

Introduction

The story of American forest policy is a story of experimentation on a grand scale in new democratic models of land tenure and the balancing of individual and public rights; innovation in mechanisms of public governance; and the eventual achievement of long-term goals that continue to benefit each and every citizen of this nation--past, present, and future. It is a success story in that, after decades of steadily declining forest conditions, a dramatic policy response at the turn of the century, based on a broad public consensus for action, has helped bring about nearly a century of steadily improving forest conditions.

When measured against the set of objectives that has defined forestry during most of this century, American forest policy has achieved almost everything that was expected, if somewhat belatedly and with far more effort than anticipated. Forest conditions and public expectations of forest policy are continuing to evolve, however, challenging the science and technology of forest resource management and conservation, and our models of democratic governance.

The Conservation Movement and reversal of early settlement policies

Looking back over the long sweep of history, the three most basic factors in American forest policy are (1) our original land settlement policy, (2) our preservation under public ownership of what is about one-fifth of the forest land area of the nation, and (3) the reliance upon private ownership for all other aspects of the wood products economy.¹

Forestry as we know it in the United States is generally regarded as having begun at the turn of the 20th century, but to truly assess the effect that forest policy has had on the condition of America's forests, we need to delve a bit further into the past. Political scientist Luther Halsey Gulick has observed that the foundation for one of the greatest continuing challenges in American forest policy was set down in the late 18th century. "The major American problem at this time was the settlement and subjugation of a heavily wooded and sparsely

inhabited continent. To this end, the primary policy adopted was that of rapid land distribution in small parcels to private owners as an incentive for settlement and exploitation and the establishment of what Thomas Jefferson called 'an agrarian polity.'" In Gulick's view, this land policy--successful though it was in consolidating a continental empire of nearly three million square miles in little over a century--passed forest land "from the nation to millions of owners in small tracts designed for farming . . . [and] gave us land ownerships unsuited to forest culture and a great deal of land clearance for farming of land that could not produce any crop other than timber." Later, as we shall see, this land ownership pattern-unique at the time to the United States--became a particular challenge for both timber supply and forest protection.

Forests were at first an obstacle, then an indispensable resource, to the spread of European civilization westward across the North American continent. By the late 19th century, most of the accessible timber, except in the Far West and parts of the South, had been cleared. As much as two-thirds of the timber cut was wasted; fires often followed, destroying not only seedlings but the topsoil itself, exposing the land to further degradation by wind and water; millions of acres of stripped land were subsequently found to be unfit for farming, leaving former timber towns with stranded populations; and the clearing of the forest changed the capacity of the land to retain water so that towns often many miles away become subject to floods and other catastrophes.

Diplomat George Perkins Marsh, traveling through the Mediterranean countries in the mid-1800s, saw in their rocky scrublands a vision of the future of America if we continued to pay as little attention to the need for forest conservation as had the Roman empire.³ Marsh's reflections on his observations, published as *Man and Nature* in 1864, galvanized early conservationists to organize the American Forest Congress. This citizen conservation organization provided popular support for a system of forest preserves under Federal stewardship, an idea first introduced in Congress in 1876.

Many took up the call for forest conservation, among them Gifford Pinchot, young scion of a Pennsylvania family that had made its early fortune in the lumber trade, helping to create a broad public groundswell that became known as the Conservation Movement. Congress' decision to retain forest reserves from the Federal public domain, notably in the Forest Reserve Act of 1891 and the Organic Administration Act of 1897, was a complete reversal of existing national policy toward forests, represented most notoriously by the Free Timber Act of 1878 and the Timber and Stone Act of the same year. It was the turning point for the forests of America, from the downward spiral of devastation and degradation to steady improvement at the hands of the fledgling profession of forestry.

When Europeans first arrived in what would become the United States, it was a densely wooded continent, except for plains and deserts, bearing an estimated eight trillion board feet

of timber. By 1900, this vast forest reserve had been reduced to 1.6 trillion board feet.⁴ Even by standards of the time, this was not sustainable, and predictions of a coming "timber famine" were taken seriously by conservationists and industry alike. But the vision of the fledgling forestry profession involved more than halting the wave of forest devastation. Their vision was one of a nation's forests, protected and actively managed for a multitude of public values.

The major objectives of American forest policy in 1900

The major objectives of American forest policy beginning at the turn of the 20th century can be summarized as follows: (1) an adequate supply of wood at reasonable prices, (2) protection of watersheds and other nontimber forest values, (3) increased economic stability, especially in forest-dependent communities, (4) scientific and technological advances in the woods and in wood utilization, (5) national and regional security, and (6) the education of forest landowners for an increased sense of personal responsibility to future generations in their forest practices.

At the turn of the century, the Federal forest reserves had little to contribute to wood supply. Federal forest land ownership came about belatedly, discontinuing the sale of public lands only after most of the productive and accessible forest lands had been sold or given away. This 100 million acres of Western lands would probably never be managed at a profit, but they were important for watershed protection and a host of other uses. From a timber supply standpoint, this situation was changed little by the addition of several million acres of mostly cutover, abandoned, and tax-delinquent forest lands in the East to the National Forest System under provisions of the Weeks Act of 1911.

On private lands, lumber production reached an all-time high in 1906-1907 with an estimated cut of 46 billion board feet.⁵ Timber was still plentiful in the South and Far West and stumpage prices were low; most private forest owners saw little reason to practice forest management, waiting 80-100 years for another crop of timber which might yield 3 to 4 percent on a somewhat hazardous investment. Yet they were already beginning to foresee a time when different forest conditions would prevail. At their annual meeting in 1903, the National Lumber Manufacturers Association pledged its active cooperation in practical plans to improve the management of forest industry lands and the enactment of laws to encourage reforestation.

More than half the nation's commercial forest land was in small tracts owned by individuals, and it was generally agreed that some of the worst forest abuses were to be found on these lands. In 1919, there was a referendum of the entire membership of the Society of American Foresters on the question: "Regardless of method or machinery, do you favor the prevention

of forest devastation on privately owned commercial timber lands by the enactment and enforcement of effective and fair legislation?" The answer was overwhelmingly "yes." However, when a subsequent ballot was taken on whether forest practices on private lands should be regulated by the Federal or state government, SAF members voted for state control by a margin of 2 to 1. The question of Federal or state regulation of private lands was to be a divisive issue in the forestry community for several more decades. However, this did not prevent forest policy from moving forward to improve management on nonindustrial private forests through cooperative fire and insect control, forest credit, forest insurance, and favorable tax policies.

Condition of American forests and forestry at mid-century

Despite this high level of activity in forest policy, actual forest conditions had yet to show significant improvement. In 1920, Senator Arthur Capper of Kansas requested a report from the Secretary of Agriculture on *Timber Depletion, Lumber Exports, and Concentration of Timber Ownership*, later known as the *Capper Report*. The *Capper Report* estimated that, as of 1920, the area of commercial forest land in the United States had shrunk from 822 million acres to 463 million acres; that sawtimber volume had been reduced from 5,200 billion to 2,215 billion board feet; and that the annual cut and destruction of timber of all sizes was 4.3 times growth. With the depletion of forests in most regions of the country, the Pacific coast contained 51 percent of the nation's remaining sawtimber volume, and 65 percent of the softwood sawtimber volume. Timber prices were rising, and destructive logging had left 81 million acres with practically no forest growth. The transfer of most of the productive forest land from public to private ownership, followed by a general cut-out-and-get-out approach by private owners, had resulted in an instability of private ownership that seriously interfered with management for sustained production.

Toward the mid-1900s, there were several other monumental studies of forest conditions, with a particular focus on timber supply, among them the *Copeland Report*⁷ (1929) and the *Joint Congressional Committee on Forestry Report* (1938). In 1945, the U.S. Forest Service undertook the most comprehensive study to date of trends in forest conditions, in part to take stock following heavy timber harvesting during World War II and in part to assess the agency's progress as it neared mid-century and its own sesquicentennial. The Forest Service's *Reappraisal of the Forest Situation in the United States* was delivered to Congress by Chief Lyle F. Watts in 1949.⁸

The report concluded, "There is enough forest land in the United States, if well managed, ultimately to grow all the timber products we are likely to need, plus a margin for unavoidable losses, new uses, export, and national security. But our forests are not now in condition to do this." Watts reported that of the 461 million acres of "commercial" forest land (out of a total

of 624 million acres of forest), about 16 percent or 75 million acres was "so denuded or so poorly stocked that it must be classed as idle land." Stands of sawtimber could be found on only 205 million acres, of which 160 million were "second-growth stands of varying quality" and 45 million were virgin stands. Of the remnant of virgin timber, only one quarter was of high quality, and more than a third was "of dubious commercial value." The nation was down to less than 1,600 billion board feet of sawtimber, a third of this concentrated on only 6 percent of the commercial forest land mostly in Oregon and Washington. The East, with three-fourths of the commercial forest land area, "does not have enough growing stock to sustain for long its present output."

Thus, nearly fifty years after the introduction of scientific forestry in the United States, and vigorous efforts both in the legislatures and in the woods to improve management of the nation's forests, the volume of standing sawtimber in 1945 was 43 percent less than that estimated in 1909, and that the quality and size of the timber was deteriorating. The sawtimber harvest in 1944 was 53.9 billion board feet, exceeding the estimated growth of 35.3 billion board feet by 50 percent. Further, 80 percent of the harvest volume was softwood sawtimber, whereas much of the growth was "small low-grade trees and inferior hardwood."

Timber cutting on private lands, with some "notable exceptions," was "far from satisfactory." "Encouraging improvement has been made in recent years, especially by some of the larger owners, but about two-thirds of the cutting is still poor or destructive; only 8 percent is up to really good forestry standards. The larger properties, chiefly lumber and pulp company holdings, receive the best treatment. But these comprise only 15 percent of the private commercial forest land. Three-fourths of it, about 261 million acres, is in more than four million small properties averaging 62 acres each. About half of these small forest holdings are farm woodlands. On the small forest holdings, farm and non-farm, about 71 percent of the cutting is poor or destructive. Improvement of forest practice on these millions of small holdings is an especially difficult problem."

About one-third of the nation's standing sawtimber was on the national forests, even though this represented only one sixth of commercial forest land. Timber output from these lands was expected to increase, Watts noted, but he also asserted that "it becomes doubly important to safeguard their future productivity by keeping the cut within their sustained yield capacity." With only 16 percent of the country's commercial forest land, the national forests could not be expected to supply all the requirements for wood. For that, Watts observed, "we must depend mainly on the private land."

A centennial reappraisal

Now fifty years after Watts' sobering *Reappraisal* report, and a century after the launch of the forestry profession in the United States, what might such a report say today about the influence of American forest policy on the condition of America's forests? How would the accomplishments of the forestry profession measure up against the major forest policy objectives at the turn of the 20th century?

An adequate supply of wood at reasonable prices

Forest area in the United States seems to be holding its own, despite some alarming trends in the conversion and development of an increasing area of private forest lands. The nation lost 5.6 million acres of forest land, an area nearly twice that of the state of Connecticut, to permanent development during the decade 1982-1992. We are likely to find that this rate of forest land conversion to development was far higher in this decade, given the recession of the early 1980s and the record breaking bull market of the 1990s.

Forest growth rates now exceed harvest levels in many regions of the nation, and although there are persistent concerns about quality, average diameters are increasing in many areas. ¹² Forest industry in the Pacific Northwest anticipates an approaching "green wall" of timber as earlier investments in reforestation and intensively-managed plantations come to fruition. The exception is the US South, where softwood reforestation rates have been lower than expected, and harvests continue to outpace growth by a significant margin. ¹³

The health and productivity of vast areas of America's forests continue to be of concern, from the declining beech, hemlock, and sugar maple forests of New England, to the mysteriously dying mixed mesophytic forests of the central Appalachians, to the wildfire-prone overstocked ponderosa pine forests throughout the intermountain West, to the extensive insect-killed yellow cedar forests of southeast Alaska. Are there effective management options yet to be discovered, or are these manifestations of larger-scale climatic or environmental effects that are beyond our control?

Protection of watersheds and other nontimber forest values

During the past five decades, public concerns over the protection of ecological values and other forest uses have grown beyond anything dreamed of in 1900, or even when Chief Lyle Watts offered his *Reappraisal* in 1949. Wilderness came to be recognized in statute as something unique and fundamental to the American character, culture and history, and therefore a value necessary to preserve as a legacy for all future Americans. The National Wilderness Preservation System now consists of more than 100 million acres, most of which is within the National Forests.

The alarming loss of animal and plant species in the world's forests has become a dominant concern in forest management. Species diversity in temperate and boreal forests, as well as those in the tropics, continues to decline at a rate not seen since a comet slammed into the Yucatan peninsula 65 million years ago and plunged the entire planet into prolonged and frigid darkness. These sensitive species are our canaries in the coal mine, and they are dying one by one. Understanding the reasons for this and taking steps to ensure their survival may be key to our own. Concerns over biodiversity conservation have reduced timber supplies from Federal forests by three-quarters, further shifting the burden for wood production to private lands. Whether efforts to increase biodiversity protection have resulted in improved forest conditions remains a matter of heated debate even among ecologists themselves.

Watershed protection, one of the primary purposes behind the Organic Administration Act of 1897, is poised to become the single greatest issue in forest management in the future. Because of its scope and its direct effect on the life of each and every American, no matter how city-bound, watershed protection will eclipse even biodiversity conservation as an issue in forest management. Repairing damaged watersheds and maintaining watershed health has become the foremost priority in management of the National Forests. ¹⁴ Demonstrating the compatibility of active forest management with the production of an abundance of high quality water for municipal, agricultural, and industrial uses is both a challenge and an opportunity for managers of private forest lands as well.

Increased economic stability, especially in forest-dependent communities

During the recession of the early 1980s, when home mortgage rates approached 20 percent and the number of new housing starts plunged, forest-dependent communities learned a bitter lesson--maintaining a steady supply of logs to the local mill is no guarantee of economic and social stability. Beginning with the building boom of the 1950s, well-intentioned policies regarding forest-dependent communities contributed to a narrowing of their economic base, actually increasing their vulnerability to swings in the forest products business cycle. Since the painful collapse of many of these communities following recession of the 1980s, national forest policy has shifted to encouraging the diversification of rural economies into a variety of forest-based enterprises, precipitating an unexpected boom in the development of nontimber forest products.

Weary of being swept along by the tide of national-level forest policy debates, forest-dependent communities across the country are playing a more direct role in determining their futures. They are taking the initiative to diversify their local economies, and form their own collaborative efforts with both public and private forest owners to discover innovative pathways to ecological, economic, and social sustainability.

Scientific and technical advances in the woods and in wood utilization

In the 1949 *Reappraisal*, Lyle Watts observed that "less than half the weight of wood we cut or destroy in logging shows up in finished products." In the intervening five decades, there has been a steady stream of technological advances, from reconstituted panels like oriented-strand board to engineered solid wood products that take the place of large dimension lumber, that have greatly increased utilization of wood byproducts and small diameter materials that once were wasted. In creating markets for such materials, value has also been created where there was none before, encouraging reinvestment in forests and improved land stewardship.

Advances in forest biotechnology have reinforced the dominant role of private lands in providing timber for fiber and wood products. Increasingly specialized genetics and intensive silviculture have allowed forest industry to meet market needs, and at the same time reduce harvest pressure on forests. One recent study estimated that, with the application of such technologies on a large scale, the current demand for industrial roundwood globally could be met from as little as 4 percent of the world's forests.¹⁶

National and regional security

Given these advancing technologies and improving forest conditions, it is unlikely that a shortage of wood fiber will soon become the national security issue that it appeared to be during the dark days of World War II. What we have learned during the past century about forest resource conservation may serve a key to making the world a safer place. In his book, *Ultimate Security*, Norman Myers points out that several recent regional conflicts in which the United States has become involved, such as the civil war in Somalia, have had their basis in environmental disasters brought on by misuse or abuse of natural resources. Assisting developing nations with maintaining forest productivity for fuelwood, forage and other needs while protecting watersheds for irrigation and to mitigate drought and floods can head off natural disasters that often become human catastrophes and political crises that escalate across national boundaries. Assistance in natural resource conservation and environmental management is quickly becoming an integral component in US national security policy.

Increased sense of responsibility by private forest landowners to the public at large and to future generations

It can safely be said that more private forest land in the United States is under reasonably good management now than at any time in our past. Federal and state cooperative forest management programs, and private programs like the American Tree Farm System, have reached millions of landowners and helped them to become better stewards of their forests. At the same time, the difficulties associated with efficiently managing small tracts of private land for forestry purposes--the legacy of our original land settlement policies and Jeffersonian

agrarian idealism--have been compounded by continuing fragmentation, reduction in average tract size, decreasing average tenure of ownership, and exponential growth in the number of individual landowners.¹⁸ The number of extension and consulting foresters would have to be increased a hundred-fold simply to make a single visit to each private forest landowner during their period of ownership.

We are still working against the adverse economics of small-tract forestry. Traditional approaches such as cost-sharing and technical assistance are being reinforced by a reconsideration of tax policy. Use-valuation, conservation easements, reforestation tax credits, favorable capital gains treatment, and estate tax relief all encourage the protection of public values on private forests, and help stem the conversion to nonforest land uses in the face of urban sprawl. Timber investment management organizations ("TIMOs") have shown that risk-adjusted rates of return on private forest lands can be quite favorable. ¹⁹ It remains to be seen, however, whether or not this is a temporary phenomenon based on the tide of investment capital flowing into baby-boomers' pension funds, and the need by fund managers to diversify investments on the chance that the "irrational exuberance" in today's securities markets comes to an abrupt end.

Conclusion

Forest conditions in America at the end of the 19th century precipitated a dramatic change in American forest policy, which in turn resulted in improvements in US forest conditions that have continued throughout much of the 20th century. From this standpoint, it can be said that the policies inspired by the Conservation Movement have had their intended effect, and thus can be judged a success. When examined more closely in terms of several specific objectives of American forest policy, it is fair to say that early progress was slow and uncertain. An assessment of forest conditions at mid-century showed that many physical and biological indicators of sustainable forest management remained virtually unchanged from the days of "forest devastation" in the late 19th century, and that in terms of several key indicators, forest conditions had actually declined significantly.

Much of the forestry profession's energy during the first half of the century seems to have been directed to establishing and building the basic framework of forestry institutions in both the public sector and private sector, and then sorting out the roles and responsibilities among them. With this institutional framework in place, however, the forestry profession was able to make important strides relative to each of the major policy objectives during the second half of the 20th century.

Looking ahead to the future, the objectives of American forest policy will continue to evolve. Biodiversity conservation will continue to be a major concern in forest management on both

public and private lands. Watershed protection may become so preeminent as a forest management objective that it necessitates major revisions in statutes and policies regarding multiple-use forestry. Boreal forests may be called upon increasing as repositories for atmospheric carbon, with management practices modified accordingly to maximize the effectiveness of forests for this purpose.

The institutional framework of forestry created during the 20th century is a strong one, and will support continued progress toward improved forest conditions and the other major objectives of American forest policy. The evolution in the objectives themselves will test the flexibility of this institutional framework, however, and challenge the forestry profession to adapt to continuously changing needs and conditions in America's forests.

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PINCHOT INSTITUTE FOR CONSERVATION

About the Pinchot Institute

The Pinchot Institute for Conservation is an independent, non-profit organization dedicated to leadership in conservation thought, policy, and action. The Pinchot Institute was dedicated in 1963 by President John F. Kennedy at Grey Towers National Historic Landmark in Milford, Pennsylvania, historic home of conservation leader Gifford Pinchot, to facilitate communication and closer cooperation among resource managers, scientists, policymakers, and the American public. The Institute continues Pinchot's legacy of conservation leadership as a center for policy development in support of sustainable forest management.

Programs and activities

- Policy research and analysis. The Pinchot Institute serves as a bridge between the scientific and policymaking communities in forest resource management. The Institute provides independent policy research and timely, objective analysis targeted to the current information needs of policymakers and resource managers.
- Convening and facilitation. The Institute serves as a convenor and facilitator, fostering collaborative approaches to resolving key issues in forest policy. The Institute brings together leaders in forest management, research, and education from federal and state agencies, universities, industry, and conservation organizations to address new challenges and discover new solutions for advancing sustainable forest management.
- Leadership development. Through its program on leadership in natural resource conservation, the Institute conducts research and provides training for resource management professionals and community leaders in participatory decision making and conservation leadership.

Current programs

Institutional and policy changes to implement sustainable forest management. Much of the effort to date in sustainable forestry has focused on policy development, with far less attention devoted to the mechanisms by which these policies will be implemented, or potentially thwarted. Policies for integrated approaches to resource management will make little difference on the ground until the appropriate organizational structures and administrative processes are developed. These include the development of processes for conservation-oriented strategic goal setting and performance measurement, and integrated resource management planning, budgeting and fiscal accountability. These considerations are complex and intensely politicized, and the Pinchot Institute can play a critical, constructive role through both independent analysis and facilitation.

Forest stewardship and sustainable rural development. The restoration and maintenance of forest ecosystems for multiple objectives requires a variety of continuing land treatments that can be the basis of stable employment and income in rural communities. There is a need for policies aimed specifically at facilitating the development of local capacity to carry out such land treatments through the kind of small entrepreneurial firms that characterize rural communities. The Pinchot Institute is working with policymakers, federal and state land management agencies and with a network of community-based rural development practitioners to identify and address key policy issues such as contracting, bonding requirements, capital financing, and training in the development of specific strategies to advance both forest stewardship and sustainable rural development.

Developing collaborative models of conservation leadership. The Pinchot Institute is committed to the development of effective natural resource conservation leadership among both beginning and mid-career professionals, in public agencies, private organizations, and conservation NGOs. The Pinchot Institute offers leadership workshops and executive development seminars in participatory decision models that are beginning to redefine the relationship between land management agencies and the communities they serve. The Institute's leadership development program is integrated with the training and conservation fellowship programs held at Grey Towers National Historic Landmark, primarily for mid-level managers in federal natural resource management agencies.

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