V. FOREST MANAGEMENT AND POLICY

Introduction
V. Alaric Sample

The mix of public and private forest land ownership, and the resulting diversity of forest management objectives, is both a strength and a weakness in forest conservation. Eternal debate over the right mix and balance of consumptive and non-consumptive uses hobbles many public forest land managers, making it inordinately expensive to achieve a modest set of accomplishments. The largely unregulated management of private forest lands is guided by basic principles of good forestry and increasingly vocal public expectations, but nagging doubts remain over just how solid this commitment will be when profits are down and there is growing pressure on resource managers to get the wood out at least cost. The results of recent shifts in timber harvest patterns among public and private lands are sharpening the concerns over forest conservation, particularly on non-industrial private forest lands, and raising the prospect of heightened controversy in the area of forest practices regulation and private property rights. Forest product markets are increasingly influencing forest management and policy, stimulating the development of various approaches to independent certification of wood products and forest management enterprises as consistent with principles of sustainable forestry. Significant practical and political issues exist in all of the various approaches to certification, and it remains to be seen which of these approaches will ultimately be most effective.

Many owners, many objectives

The distribution of forest land among public and private ownership in the United States is unique among the developed countries of the world. Currently, approximately one-fifth of U.S. forests are managed by federal, state or tribal governments. Another one-fifth is owned by the forest products industry. The remaining three-fifths are held by a variety of non-industrial private landowners that range from farmers to pension funds and insurance companies.

Inspired by forestry models in western Europe and colonial India, early American conservationists like Gifford Pinchot pushed for a departure from the frontier policies designed to transfer lands from the public domain to private ownership as quickly as possible. Arguing that due to the long-term nature of forestry investments—and the long-term impacts of the abuse of these resources—Pinchot and others were successful in establishing an extensive system of forest reserves, now national forests, from the public domain in the western United States. Subsequent laws permitted federal acquisition of private forest lands in the eastern U.S., primarily cut over lands in need of custodial care and recovery. Subsequent debates over the management taking place on the national forests notwithstanding, the most important consideration may be simply that more than 200
million acres of the nation's forests have been placed in public ownership to serve the needs of all citizens in perpetuity.

The early management of the forest lands that remained in private ownership seemed to confirm Pinchot's belief that, without some form of government regulation to establish minimum standards for forest conservation, these lands would continue to be cut over and abused. Well into the 20th century, the standard practice in forest industry was to acquire forested lands, strip them bare, and then abandon them. It took several decades for early private foresters like F.E. Weyerhaeuser to convince fellow industrialists that it could actually be profitable to hold onto the land, replant after timbering operations and continue to harvest successive crops of trees.

This realization was facilitated by the vigorous public discussion of the need to regulate forestry on private lands. By the 1920s, the question was not whether private forestry would be regulated, but whether it would be regulated by federal or state authorities. Forest industry fought hard for state-level regulation. Pinchot and Forest Service leaders fought just as hard for federal regulation. The question was settled in the 1940s in favor of state authority over private lands.

Today, state regulation of forest practices on private lands ranges from pervasive, in states like California and Oregon, to virtually non-existent in many of the southern states. Around the country, relatively few states have forest practices acts that require much more than reforestation after timber harvesting. In practical terms, forest management on private lands is much more strongly influenced by federal and state water quality requirements than by direct forest practices regulation.

Displaced demand and private forest lands

Concern over forest habitat protection for threatened and endangered species has raised the level of debate another notch on both public and private forest lands. Habitat protection requirements on federal lands has reduced timber harvest levels there by 75 percent in less than a decade and returned management to its pre-World War II focus on restoring and maintaining healthy forests and protecting watersheds. The displacement of timber demand from the federal lands to private lands is raising anew the concerns about the ability and willingness of private forest landowners to sacrifice near-term profits in favor of assuring long-term conservation, particularly in states where rigorous forest practices regulation does not yet exist.

Technical assistance and financial incentives for sound forest stewardship are offered to individual forest landowners by both government and industry. But with timber prices in many regions of the country at historic highs, there is growing public concern that voluntary mechanisms will not be enough to ensure sound forest management and conservation. As examples of poor forestry appear on the landscape and in the newspapers, there will inevitably be calls for tighter regulatory controls on forestry on private lands. Despite vocal concerns by forest landowners that this risks infringement on private property rights, recent experience with state forest practices acts in places like Virginia suggest that codifying basic principles of forest stewardship serve to "level the playing field" in the market for private timber and better reward those forest landowners committed to practicing good forestry and responsible land stewardship.

Certification of what, and by whom?

Market forces are beginning to have an important effect on forest land stewardship, especially on private lands, through a variety of approaches to independent certification of sustainable forestry practices. American consumers do not yet express their environmental concerns through their buying habits to the extent that has been seen in Europe. Nevertheless, the trend is growing and it clearly has the attention of forest
products companies and forest landowners in the United States. Furthermore, many U.S. wood and paper products have become global commodities. Failure to address consumer preferences for wood products from sustainably managed forests could shut companies out of important product markets in other countries today, as well as diminish their prospects for success in U.S. markets tomorrow.

Producers' concern for maintaining access to European markets for American paper and hardwood logs first stimulated their interest in international independent certification efforts such as that developed and promoted by the Forest Stewardship Council (FSC). Forest products companies that pursued early FSC certification were often aimed at limited "niche" markets in other countries, or were investing in anticipation of the development of such niche markets with individual consumer-oriented wholesale purchasers or organized "buyers groups." FSC standards are regarded as stringent, prescriptive, and demanding the highest standard of environmentally-sound forestry. Yet the standards are clearly attainable, as evidenced by the number of companies that have already qualified for FSC certification and continue to operate profitably.

Nevertheless, many U.S. forest products companies that are not able or willing to manage their forests according to FSC standards still regard their management practices as falling within the bounds of "sustainable forestry." Companies strongly committed to intensive forest management on their highly productive lands have difficulty reconciling this with FSC's perceived bias against plantation forestry and the use of chemical fertilizers and herbicides that these companies regard as essential to intensive forest management. Others see no practical way to address the FSC "chain of custody" requirements when more than half the wood going into their mills is already on a truck at the mill site, purchased from independent loggers. Tracking all of these logs back to their origins and guaranteeing that the timber harvest was done consistent with a suitable forest management plan is simply not feasible for many companies.

The Sustainable Forestry Initiative (SFI) unveiled last year by the American Forest and Paper Association, is an attempt to raise the forest management standards among U.S. forest products companies to a level that will be recognized by American and overseas consumers as "sustainable." Given that AF&PA member companies represent more than three-quarters of U.S. papermaking capacity and nearly two-thirds of U.S. solid wood products manufacturing capacity, the potential reach of the program may be significantly greater than FSC certification, even though the standards are not as stringent. Debate continues over whether the SFI principles are indeed sufficient to describe sustainable forestry, and whether the system of company self-evaluation and reporting is credible when compared with independent assessments by FSC-trained foresters. As the FSC certification program continues to grow, aspiring to become the "gold standard" for determining what can and cannot be publicly described as "sustainable forestry," tensions with the proponents of SFI are inevitable.

Each in their own way, both efforts have the potential to significantly improve forest management in the U.S. over what it has been in the past. To avoid unnecessary and counter-productive strife between the two, it will be important to keep in mind that each serves a different purpose. FSC certification is still geared to a relatively small share of the total market for wood and paper products, serving consumers who are willing to pay a premium for wood produced in the most environmentally-sound manner. The Sustainable Forestry Initiative is geared to a much larger market and is aimed at bringing virtually all U.S. wood producers into compliance with voluntary standards reflecting basic principles of good forestry and sound land stewardship. SFI will never have the depth of influence of FSC certification, but it is unlikely that FSC certification will have the breadth of influence of SFI.
Soon enough, it is likely that the alternative to FSC certification will not be the SFI principles, but certification under sustainable forestry standards now in development by the International Standards Organization (ISO). The ISO Environmental Management Systems (14000 Series) standards are being negotiated by a diverse group of participants that include industry, government, conservationists, and academics, and are largely process-oriented. Like the standards used by an independent financial auditor, the ISO standards are aimed first at providing a thorough and accurate portrait of a forestry organization's performance relative to accepted principles of sustainable forestry. Secondly, they are aimed at assuring that there are policies and procedures in place to guide management, provide for consistent reporting over time, and quickly surface any departure from desired practices that might occur.

Still to be worked out is a practical and widely acceptable means for verification of performance, i.e., whether the policies and procedures that are in place are actually being followed in all parts of the organization, and whether the results are in fact consistent with the principles of sustainable forestry. As with SFI, conservationists have doubts about the reliability of a system that is dependent upon thorough, accurate self-reporting and that is more oriented to process than to on-the-ground results.

The following papers provide insights into organizational changes taking place in a variety of forest management organizations. For greater clarity, private sector organizations are discussed separately from public sector organizations.

In the first section, Rick Weyerhaeuser provides an overview of the U.S. forest products industry as a whole. He discusses some of the many important changes that have taken place, but also some that have not. He explores an array of impediments to further evolution toward sustainable forestry in the private sector, but also offers a number of options for overcoming these impediments.

Rick Cantrell of the American Forest and Paper Association gives us a more in-depth look at the origins and purposes of the Sustainable Forestry Initiative, and the kinds of changes it is already stimulating in the way U.S. forest products companies manage their forests and interact with conservation groups and the public.

Carlton Owen then describes the efforts at Champion International to embrace and go beyond the requirements of SFI. Their three-part strategy is, first, to establish a land classification system in which substantial areas of fee-owned timberlands will be placed in "reduced intensity management" and other areas with high ecological values will be placed in "protection" status. Secondly, technical assistance will be offered to private landowners with whom Champion has a long-term management agreement to improve forest management standards, particularly in terms of habitat protection. Third, through the establishment of a "preferred suppliers network," Champion will begin limiting its wood purchases to independent logging contractors who have participated in Champion-sponsored training sessions aimed at raising the level of environmental responsibility when harvesting timber on non-industrial private forest lands.

Mason Browne describes Hancock Timber Resource Group's commitment to long-term land stewardship through placing most of its lands under some kind of conservation easement. He also describes the unique outlook and opportunities of a company formed to invest in forest land to preserve capital for pension funds and insurance reserves rather than to feed a mill. Finally, Browne describes Hancock's program for identifying lands of high ecological value and divesting them to the protection of conservation organizations or government agencies.

Michael Bean describes innovative efforts by the Environmental Defense Fund working in cooperation with forest products companies and
individual landowners to mitigate a perverse incentive in the Endangered Species Act. Because the presence of a federally-listed threatened or endangered species is seen as potentially limiting their management options, it is not unusual for private landowners to cut their timber prematurely to avoid providing habitat for threatened or endangered species dependent upon mature or late-successional forests. Bean argues that through "safe harbor" agreements that reduce a landowner's legal liability for unintentionally diminishing habitat for species that subsequently move onto their lands, landowners are more likely to delay harvesting and provide valuable habitat in the meantime.

Eric Palola provides an overview of FSC certification from the perspective of an organization that actually performs the certification assessments in the field. He provides up-to-date details of the evolving FSC requirements and how they are being adapted to fit the unique conditions and resources in several major bioregions in the United States.

William Bentley describes the effort by a substantial collection of forestry organizations in industry and government, as well as universities, foundations, and conservation groups, to organize and convene the Seventh American Forest Congress. The Forest Congress eventually brought together more than 4,000 citizens, most of them from outside the forestry profession, to articulate their "vision and principles" for the future of forests and forestry in America. The overarching objective of the effort was to get beyond the rhetoric of the extreme interests and determine what a large and diverse cross-section of society expects of forest management.

Finally, Jean Mater provides insights from her recent book analyzing in detail how the U.S. forest products industry is changing, but also where forest industry has rejected or simply overlooked important opportunities to bring itself into better congruency with public expectations for sustainable forest management, with minimal if any impact of companies' profitability.

In the second section, Jim Gilmier gives us an overview of the evolution among public sector forest management organizations, including federal, state, and tribal governments.

Minnesota state forester Jerry Rose chronicles his agency's response to public requests for a comprehensive analysis of the potential impact of timber harvesting on a forest now maturing after a second wave of timbering in the early part of this century. This time around, state residents would like to guide the development of its growing forest products industry to work toward forestry as a sustainable source of income and employment for their communities, rather than continue with the boom-and-bust cycle with its undesirable impacts on ecological values and local communities alike.

Jim Grace describes the Pennsylvania Bureau of Forestry's recently released strategic plan for the management of state's public forests, and the agency's guidance for the management of an enormous number of non-industrial private forest tracts in the state. In response to broad public comment, the Bureau is shifting steadily toward a primary emphasis on the protection of forest ecosystem functions and values, especially water quality and biodiversity, on state lands. The Bureau's Forest Stewardship Program will actively assist private landowners in the development of long-term land stewardship plans, within which they can plan timber harvests that will not diminish the important ecological and environmental functions of the predominantly private forest landscape in Pennsylvania.

Hal Salwasser takes on the formidable challenge of describing the past tumultuous decade at the USDA Forest Service, and how innovative programs such as "New Perspectives" helped formulate the agency's return from a predominant focus on meeting annual targets for timber production, to a focus on maintaining healthy, functioning forests and meeting a variety of social needs within the limits of the land. Salwasser then looks at the challenges ahead from the perspective
of a regional manager, and observes why and how long-term solutions will tend to emerge from local communities rather than from national-level policy making. William Lange follows up with a view to how this perspective will influence the U.S. role in international efforts to both demonstrate and promote sustainable forestry.

In the commentary, Brock Evans gives us the benefit of nearly three decades of forest activism, particularly in federal forest management, to put the changes that we are witnessing today into a broader historical perspective. Many of the changes we are seeing today are real, and represent a quantum leap from the quality and sustainability of federal forestry at the start of his career as a conservationist. But the change is uneven, and it doesn't help that the federal agencies get such mixed messages from leaders in Congress and the Administration. A great deal remains to be done, Evans reminds us, but it shouldn't make us blind to the remarkable progress we've made to get to this point.

In the first of two commentary perspectives from individuals in the Forest Service, Daina Apple describes some of the changing social and legal forces that make the task of setting policy and management direction for the Forest Service today far more complex than ever before. But are the seeming inefficiencies and "muddling through" a sign of dysfunction, or are they in fact evidence that the Forest Service is actually being responsive to the diversity of views and perspectives inside as well as outside the agency? Dave Iverson picks up on this theme, and while acknowledging that it has become close to impossible for even the Chief of the Forest Service to "steer" the agency and show prompt response, asks whether it is perhaps inappropriate for us to expect the Forest Service to be in total control of its destiny.

To conclude this section, Jim Kennedy observes that "to understand and work with people's resistance to change often means dealing with their fears." No two individuals or organizations seek or even accept change in the same way. It is always easier to see the need for change in other organizations than in one's own. Resistance may not be based on the fear of change itself, as one not clearly perceived a role for one's self following the proposed change. Society is asking forestry organizations to change their fundamental personalities, to go from professional, expert organizations to being sensitive, responsive "learning organizations." It is asking forestry professionals to relinquish their self-image as "mythic heroes" and to become adaptive managers and good listeners. This is not a trivial task, either for individuals or organizations. They will need time, and they will need a great deal of help.
Forest Management and Policy in the U.S.: An Historical Perspective
Rick Weyerhaeuser, The Nature Conservancy, and James W. Giltmier

Forest management, the manipulation of forest land by man to meet desired objectives, is not a new phenomenon. It has probably been a significant factor influencing North America's forests for as long as there has been a human presence on the continent. Certainly humans have occupied and altered America's forests since both advanced north behind the retreating glaciers over 10,000 years ago.

While Native Americans did not have formal forest policies, they did have practical traditions and ecological groundings to their behavior as it related to resource use. They also had a profound impact on the composition and extent of America's forests. While the absolute number of pre-colonial Native Americans is debated, it is apparent that they cleared large areas of forest land for agriculture and regularly burned to improve conditions for hunting and gathering useful forest products. Shifting cultivation left a mosaic of open lands and forest in various stages of recovery. Wildfires started by native people created and maintained millions of acres of fire dependent pine forest, woodland savanna and open grassland. The diversity of habitat types created by these human disturbances was a major factor contributing to the abundance and variety of species and habitat types that characterized the continent at the arrival of the first European settlers.

At the beginning of the 17th century, forest covered about one billion acres, roughly half the land mass of the current U.S. About three-quarters of this forest was in the eastern one-third of the country. Early arrivals to the eastern seaboard were struck by the seemingly impenetrable sea of trees spreading westward. In all probability, at this time much forest land was in a state of recovery and the area of forest was probably more extensive than it had been in centuries. Dramatic reductions in the native population due to diseases introduced by the earliest European contacts allowed much previously cleared land to revert.

Settlers saw the forest as a mixed blessing. It provided readily available fuelwood and building materials but it also gave cover to the predators that killed their livestock, hid the sometimes hostile Native Americans and took immense amounts of time and labor to clear for their farms. During this period, any talk of conservation, regeneration or sustainability would have been considered lunacy. People were utilitarian, practical and concerned with day to day survival. Forests were put there by God to be used by (white) men... and they were inexhaustible.

Initially, of course, American colonial forest policy was not an issue. Restrictions on forest use were not needed. Trees were abundant and wood was cheap. Forests were largely a nuisance to be cleared and the wood burned or used by the newly arrived settlers to build houses and fences. One notable exception was eastern Pennsylvania: in the 1680s William Penn tried, with some success, to induce early settlers to leave one acre in five in forest.

Easy access to wood drove the developing economy of the New World. Fuelwood, sawmilling, ship building, iron smelting and wood exports to the
Caribbean and back to Europe all became major businesses. But even as early as the mid-17th century, conflict brought about by scarcity arose.

Of particular importance were the tall straight white pines of Maine and New Hampshire. These trees were of strategic importance as they supplied the Royal Navy with masts for its warships. England's global economic prominence related directly to the strength of its Navy and good masts were not available elsewhere. These large pines also made the best lumber, however, and sawmilling had become a principle business of the colonists. The first sawmills in New England had been erected in the 1630s and they quickly spread throughout the region. By 1665 the Piscataqua River in southern New Hampshire alone supported more than twenty mills. Trade, particularly in timber, made New England the most prosperous region of the colonies despite its generally poor agricultural land.

The people of Massachusetts Bay Colony (which included Maine at the time) had enjoyed a great deal of autonomy under the charter granted them by James I in 1629. In 1684, however, Charles II revoked the charter, intent on gaining more direct control over the resources (primarily the mast pines) of New England. The colonial forests thus acquired the same status as royal forests in England, falling under the administrative arm of the nobility, the "Lords of the Treasury."

Subsequently, after a visit to New England and New York State, the King's envoy, the "Earl of Bellomont" reported of "the great waste and havoc of timber there." In order to reduce destruction of the Crown's resource, he suggested, and the English Parliament approved, regulations that essentially forbid cutting of timber for profit: owners of trees would only be allowed to fell trees for personal use. This dramatic, undemocratic and totally impractical step marked a significant change in the relationship between England and the colonies, providing some of the first seeds of discontent that would lead to revolution a century later.

The colonists were an independent group and this royal meddling was considered an affront to their liberty. With support from local officials, they did everything possible to frustrate the King's representative, "The Surveyor of the Woods." Ultimately the regulations proved unenforceable and by the 1730s the crown had capitulated to local interests. Long before the Stamp Act and the Tea Tax incited colonial sensitivities, and long before those with economic interests on the public lands of the west were confronted by "urban environmentalists," there was the tyrannical preservationist, The Earl of Bellomont.

Ironically juxtaposed with the regulations against cutting mast trees were the English policies of promoting American iron (iron smelting consumed large volumes of wood) in order to relieve pressure on English forests. This was an early example of the NIMBY (not in my backyard) syndrome. It seems the environmental impacts of a global trade in forest products are not an entirely new phenomenon either. For the same reason, imports of American lumber, tar and pitch were encouraged with monetary incentives through a 1721 Act of Parliament. However, the same Act placed restrictions on American trade with other countries to which the colonists again reacted angrily. English dependence on American resources worried the English and bolstered the confidence of the Americans to the point that, by the mid-18th century, eventual separation was a foregone conclusion. American independence, it seems, had seeds in forest policy.

Despite the importance of timber for construction and export, in the late 18th century two-thirds of the wood removed from the eastern forests was used locally for energy—cooking, heating and iron smelting. Much of the remainder went into farm fences. In the first half of the 19th century, fuelwood was still the predominant use and the volume consumed had increased six-fold. The country's lumber needs were satisfied locally by many small mills. Nationwide, the average was 25 mills in every county. But it was not until 1840 that
lumber volume exceeded the volume of wood in split rail fences for the first time.

Dramatic changes had taken place on the landscape in the 250 years following the arrival of the first settlers. In 1850 the great expanse of eastern forest had been effectively eliminated by people trying to survive and thrive in a new country. Few had time to reflect on the broader implications of their individual or collective actions. Thoreau, who published Walden in 1854, was obscure. Most who had heard of him considered him eccentric. The mind set of the country was expansionist, opportunistic and pioneering in spirit. Putting aside the slavery and Native American issues, the Constitution guaranteed individual rights and freedoms. Even today, individual rights are often protected at the expense of group, community or national interests. To the extent that there was a forest policy, it was laissez faire. Most equated clearing the forest with civilizing the wilderness. In any case, there was still plenty of land to the west to be conquered. America was resource rich and forests were there to be used.

During the later half of the 19th century, the American experience remained predominantly agricultural. Farms were needed to settle land hungry immigrants. The few voices that began to question the wisdom of over-exploitation were largely ignored. Government policy was to encourage settlement of the west by shifting public land to the private sector. Homestead laws, railroad land grants and other incentives were the methods of choice.

The westward expansion onto the prairie created a demand for lumber which could not be met locally or by the small inefficient mills in the east. Developing steamship and railroad networks also caused a tremendous demand for (non-local) wood and created a way to distribute it efficiently. The result was consolidation of the lumber industry in the white pine forests of the Lake States. Logging and sawmilling increasingly became large scale industrial operations. Between 1850 and 1910 lumber production increased more than eight times, a rate more than double the rate of population growth.

At that time, the lack of scientific knowledge, fire risk, the availability of cheap timber elsewhere, taxes and other economic disincentives of holding land for long periods made sustainable forestry untenable on private land. Cut over lands were sold (often to settlers for their farms) or went tax delinquent. Tax forfeited holdings were the origin of much public land in the Southern and Lake States. Westward migration resulted in the abandonment of many marginal eastern and southern farms and began the recovery of forests in those states.

It was in the later half of the 19th century that people first began to recognize that America's forests were not inexhaustible. The combination of farm clearing, logging and large wildfires had created dramatic changes in the landscape and had begun to instill in the public a concern about the future. It was during this period that some noteworthy first steps were taken toward a more formal and proactive approach to forest management and policy. Among the more significant events were the following:

In 1864 George Perkins Marsh published Man and Nature. Marsh was one of the first to raise concerns about the adverse effects of deforestation. Despite its publication in the middle of the Civil War, the book (much like Rachel Carson's Silent Spring a century later) was a catalyst for public interest in the environment. The disorganized beginnings of the American conservation movement are often described as starting with this event. Initially, groups with the common interest of conservation were isolated and independent although they were able to accomplish some significant goals including the creation of protected areas: Yosemite (1864), Yellowstone (1872), and the Adirondack Preserve (1885). A major argument in favor of protecting the Adirondacks was their role as a watershed for the
Erie Canal.

In 1875 concerned citizens formed the American Forestry Association (now American Forests) to promote tree planting and responsible forest management.

Commissioned by the Department of Agriculture in 1878, Franklin B. Hough produced his *Report Upon Forestry*, a statistical description of U.S. forest conditions. The report led to the establishment of The Division of Forestry with Hough as the first Director.

With the growth and consolidation of logging and sawmilling into industrial operations in the 1880s, the volume of lumber (commercial trade) surpassed that of fuelwood (personal use) for the first time.

In 1882 the First American Forest Congress was held in Cincinnati with the delivery of some technical papers and a ceremonial tree planting on Arbor Day.

Bernhard Fernow, a German immigrant, became Director of the Division of Forestry in 1886. At the time, Fernow was the only professionally trained forester in the U.S. He campaigned tirelessly for fire protection through the creation of state forestry associations.

A bill, known as the Forest Reserve Act or "Creative Act" passed Congress in 1891. It authorized the President to create, from the public domain, reserves of forested land. This Act signaled the beginning of a shift away from the long time national policy that had been designed to transfer public land to private ownership. A Forest Reserves Commission was created by the National Academy of Sciences. The creation of reserves (with no cutting allowed) generated significant opposition because little consideration had been given to their management and demand for access to the resources in the reserves remained strong.

In 1892 the Sierra Club was founded under the leadership of John Muir. The same year, Gifford Pinchot, the first American trained in forestry, began actively managing the Biltmore estate in North Carolina. Muir's focus on wilderness and preservation was philosophically different from Pinchot's conservation through wise use: "the greatest good for the greatest number over the long run." This fundamental divergence in the environmental movement was significant and remains a very relevant theme today.

The Organic Act of 1897 superseded the Creative Act and gave the forest reserves a management mandate: to "preserve and protect the forests" to "secure favorable conditions of water flows," and to "furnish a continuous supply of timber for the citizens of the U.S." Pinchot succeeded Fernow as Chief of the Division of Forestry in 1898.

In 1900, Frederick Weyerhaeuser and his business partners bought 900,000 acres of western Washington timberland from James J. Hill of the Northern Pacific Railroad. It was the largest such purchase in American history and marked the transition of the forest products industry's focus from the Lake States to the Pacific Northwest.

Following the acceleration of significant events seen in the last decade of the 19th century, the early 20th century was a dynamic period in the history of America's forests. In 1900, two forestry schools (Yale and Cornell) were nascent operations and only a handful of foresters (most with training in Europe where conditions were very different) worked in the U.S. By 1915 there were thirteen schools training students, research programs were being developed and forestry had become well established as a profession.

The Second American Forest Congress was convened in 1905 in Washington, DC. At the time, it was the largest and most significant gathering of forest interests ever held. Also that year, the nation's Forest Reserves were transferred from the
Department of Interior to Agriculture.

With Theodore Roosevelt in the White House and Pinchot as Chief of the Forest Service, many progressive political actions were taken to promote forestry and the cause of forest conservation. An often overlooked, and probably even more important factor influencing change at that time, however, was simple economics. Through the laws of supply and demand, the real value of timber had increased significantly. Two direct results of the increasing real value of wood (five times during the 1800s, a trend that continued through the 1900s) were that it made more sense to protect it and less sense to waste it. Conservation began to make economic sense. This greatly facilitated Roosevelt and Pinchot's mission.

At the turn of the century, wildfires were much more common than they are today, often consuming 20 million to 50 million acres annually (an area the size of Virginia, West Virginia, Maryland and Delaware combined). In 1908 responding to a series of destructive forest fires, timber owners in Idaho and Washington banded together to form their own protective associations. These private cooperative associations worked closely with, and complemented the work of, the state associations. In 1911, the Weeks Act authorized the federal government to further assist the states in protecting forests from fire. At the time, and for most of this century, fire prevention was accepted without question as a sensible goal in forest management. Smokey the Bear, created in 1945, became a national icon during the 1950s and 1960s. Only recently have some of the negative consequences for forest health of complete fire exclusion begun to be understood.

While forest fire protection was an important part of the Weeks Act, the principal purpose was to authorize federal land acquisitions in order to establish a national forest network in the eastern half of the country. National Forests in the west were carved out of the existing public domain but land in the east had largely been transferred to private ownership. Purchases were justified largely for their role in protecting the watersheds of navigable rivers. The majority of eastern federal land acquisitions took place during the Great Depression with the National Forests looking much as they do now by the end of World War II.

The Weeks Act also authorized the federal government to undertake land exchanges. This was important to both public and private timber owners in the west because it allowed them to consolidate their land from the original scattered checkerboard pattern of the railroad land grants into larger ownership blocks. "Blocking up" the land significantly reduced management costs and helped to make long term ownership economically viable.

In 1910, the Forest Service had established the Forest Products Laboratory in Wisconsin to improve the utilization of wood products. Increasing wood prices had also created powerful incentives to use substitutes and to improve efficiency. Fossil fuels and structural substitutes such as steel and concrete (whose real prices were falling) had begun to replace wood on a large scale. Increased efficiencies, including the use of wood stoves rather than open fireplaces, the use of preservatives on railroad ties, the use of new tree species and smaller sizes, increased sawmill efficiency and new products utilizing sawmill waste, all reflected this increased value. From 1905 to 1970, per capita consumption of wood in the U.S. was reduced by three-fifths. Of course total consumption has continued to increase along with the growing human population.

Industrial forestry had its beginnings in 1912 when Finch, Pruyn and Co. started a forestry program on its Adirondack holding in New York. For the first time, trees to be cut were marked by foresters, and the cutting budget was projected on a sustained yield basis.

In 1914, the Smith-Lever Act allotted funds through the state agricultural colleges for forestry extension work with landowners. This concept was
developed further in the Clarke - McNary Act of 1924 which authorized additional funds for cooperative fire control and extended the provisions of the Weeks Act to include cooperation in forest extension, planting and other assistance to forest owners.

The Smith-Lever and Clarke-McNary laws provided the impetus to develop additional state forestry departments. Clarke-McNary was significant for another reason; it undertook a major study of forest land taxation. Because taxes were based on the combined value of land and timber, landowners had a strong incentive to remove timber. Over time, most states provided more favorable property tax status to forestland thereby dramatically increasing the incentives for reforestation following logging.

Another, often overlooked, factor that began to favor forests was the vast improvement in American agricultural productivity. By the 1920s, because of the increasing ability to support more people on less land, the three century-long conversion of forests to farms had largely halted. From 1920 to the present, the ratio of forestland to farmland has remained roughly in balance. And forests in the east and south have recovered (often dramatically). Losses of both productive forest and agricultural land that have occurred have been largely due to suburban sprawl.

In the late 1920s and early 1930s, there was a rapid expansion of programs and legislation promoting forestry at all levels—federal, state, private industrial and private non-industrial. In 1928, the McSweeney - McNary Act created a ten-year program of research into forest protection, production, management, economics and wood technology. The Oregon Forest Yield Tax Law was passed in 1929. This was the first law to formally recognize the problem, identified in the Clarke - McNary study, of the ad valorem tax on standing timber. Under the Oregon law (as with many other state laws that followed), timber was taxed only when it was cut, thereby removing the strong incentive to liquidate.

A major milestone in promoting sustained yield industrial forestry was the publication in 1930 of Bulletin 201, The Yield of Douglas Fir in the Pacific Northwest by Mc Ardle and Meyer. This was the first good documentation of potential yields over multiple rotations and it began to give private landowners the conviction they needed to hang on to their timberland after harvest. Also in 1930, the Knutson-Vandenbarg Act authorized federal money for reforestation nurseries.

As in other aspects of American society, the Depression years saw a major expansion of the federal government’s role in forestry. Under Franklin Roosevelt’s New Deal, The Civilian Conservation Corps, for example, planted 538 million trees. Industry, however, usually looked askance at government intervention. The Lumber Code in the National Industrial Recovery Act of 1933 committed the forest industry to leave land in a productive condition following logging. Industry appealed and it was ruled unconstitutional in 1934.

The Norris-Doxey Farm Forestry Act of 1937 authorized federal funds for states to undertake cooperative forestry on non-industrial private land. That same year the Idaho Forest Practices Act was the first of many state acts passed in the late 1930s and 1940s emphasizing fire protection and reforestation. The state laws were designed to pre-empt a Forest Service move for federal regulation of private forest lands.

By the beginning of World War II, the economics of forestry were fundamentally different from what they had been fifty years earlier. The continued increase in the real price of timber, changes in the tax laws, fire prevention programs and better scientific understanding of the dynamics of forest regeneration had combined to improve returns, reduce risk and make sustained yield possible. The days of "cut and run" were over; long term forest management was a reality. In 1941 in Washington State, the Weyerhaeuser Company
established the first industrial tree farm.

In 1944, a revision in the federal tax code allowed income from timber harvesting to be treated as capital gains rather than ordinary income. Capital gains treatment was abolished in the 1986 tax bill. The post-World War II economic (baby and housing) boom led to strong demand for lumber and other forest products. These factors further benefitted the economics of long term forest management. Industry began to take the lead in forest research looking for new and improved wood products suited to a wider variety of uses. Cooperative projects undertaken jointly by industry, government and universities also increased dramatically.

In the 1950s, increasingly sophisticated fire protection programs had reduced fire to levels only one tenth of what they had been prior to the 1930s. The economics of sustained yield forestry were sound. Land purchases and tree planting by industry (mostly in the south) increased dramatically through the decade but timber production on private lands could not keep up with the demand created by the booming economy. This led to increased pressure on public lands. Cutting in the national forests increased by four times from the late 1940s to the early 1960s.

With more leisure time and discretionary income, public interest in recreational and other non-consumptive uses of forests also increased dramatically. Through the 1950s and 1960s, this interest translated into a developing constituency for the modern environmental movement and this constituency began to assert pressure for a more balanced approach to use of the National Forest System. As early as 1955, the push for wilderness legislation was begun by the Wilderness Society.

The Multiple Use Sustained Yield Act of 1960 signaled a major policy shift. It directed the Forest Service to give equal consideration and treatment to outdoor recreation, range, timber, water, wilderness, wildlife and fish. The tasks of the Forest Service had previously been limited to timber management, livestock grazing and watershed protection. Although there were many reasons for the enactment of this law (and equal treatment for all resources did not occur simply because the law said it should) the Multiple Use Act and the Wilderness Act of 1964 set the stage for the later consideration of ecosystem management as a foundation of public forest policy.

1962 saw the publication of Rachel Carson's book *Silent Spring,* often cited as the springboard for the environmental revolution that followed. Carson's book caught people's attention because of the direct links between pesticides, the food chain and human health. At this point, many in industry and the public agencies generally discounted the importance of environmentalism. Environmentalists were considered unscientific, unrealistic and often eccentric. Environmental issues were usually treated as tangential problem solving or public relations exercises. Those who took this approach would learn their lesson the hard way.

The next twenty years saw an almost unbroken string of victories for environmentalists—in the courts, at the polls and in the hearts and minds of the American public. During this period, many important events and laws impacted forest management and policy. Some of the most significant:

The Wilderness Act of 1964 established the concept of wilderness in law and involved Congress directly in deciding what should be wilderness (i.e. it formally politicized the management of Forest Service lands). From that legislation was born the "Purity Doctrine," defining wilderness as 5,000 contiguous acres of land untrammeled by man. The Doctrine was created to maintain a "proper" balance between wilderness and multiple use lands.

Beginning with the 1965 Scenic Hudson decision in New York, where a judge found in favor of local ad hoc conservation organizations opposing
a proposed hydroelectric project, the courts began to liberalize and redefine the conditions under which the federal government could be sued. This set the stage for the confrontational litigious approach to promoting environmental change that many conservation organizations have subsequently used with great success.

In 1970, the National Environmental Policy Act established the Council on Environmental Quality to advise the Executive Branch on environmental issues. The Act also required evaluations of potential environmental impacts (Environmental Impact Statements) of pending federal legislation and agency initiatives. The Environmental Protection Agency was created to enforce environmental standards, monitor environmental conditions and conduct research. Few people understood the widespread changes that would occur because of the regulatory requirements inherent in these institutions. Also in 1970, the Clean Air Act was updated and Earth Day was celebrated for the first time. If *Silent Spring* was the birth, Earth Day was a coming out party for the modern environmental movement.

The Federal Advisory Committee Act became law in 1972. It required more effective use of advisory boards by federal agencies, and participation by a broader range of citizen interest groups. The law would come to be used as a litigation tool in suits against the Forest Service and other resource agencies. That same year, amendments to the Clean Water Act defined tougher standards for water pollution which had a major affect on paper mills and the construction of logging roads. The development of a regulatory framework and ongoing litigation put industry on the defensive. At this point, industry still had not grasped the bigger picture. They looked at environmental management as simple technical compliance with regulations. This narrow vision did not connect with broadly held public values and helped the public to consolidate its "black hat" image of industry.

The Endangered Species Act became law in 1973, again with little understanding by legislators of the long term significance of the legislation. The ESA gave the federal government a role in wildlife management issues that had previously been held by the states and allowed for a strong federal role on private lands.

In a landmark court decision that year, clearcut logging in West Virginia's Monongahela National Forest, was declared contrary to the "Organic Act" of 1897. The original intent of the law had been to establish the principle of retaining and conserving lands within the public domain. It included strict rules for cutting trees in the forests. Over time, however, silvicultural science and economic demands had become predominant in forest management. Many in the Forest Service saw their mission as growing trees for profit. After the Monongahela suit, some environmental groups saw no reason to discuss or mediate away gains given to them by the courts. They switched their tactics for forest preservation from "fireside chats" (debate and search for "areas of agreement") to litigation and appeals of agency actions all over the nation.

The Forest and Rangeland Renewable Resources Planning Act of 1974 directed the Secretary of Agriculture to assess the condition of all forest and rangelands and prepare a program of work for the Forest Service that would meet national needs. The law replaced the functional planning previously conducted by the agency with a Congressional mandate that whole forest and range units be studied for multiple uses and sustained yield management.

A law in 1975 creating 15 Eastern wilderness areas and 17 wilderness study areas was enacted after heavy lobbying by the Wilderness Society and other environmental groups. The "purity" test for wilderness was rejected. Later, Agricultural Assistant Secretary M. Rupert Cutler would say, "you may prefer the more facetious definition of wilderness as a place where the hand of man has never set foot. Or perhaps you'll settle for
the pragmatic approach: wilderness is whatever the U.S. Congress designates as wilderness."

Congress enacted the National Forest Management Act of 1976 to replace the 1897 Organic Act. The new law established guidelines for suggested management of the National Forest System, including clearcuts. The legislation put heavy stress on interdisciplinary planning and the importance of Forest Service interaction with the public when making land management decisions. A debate centered over whether general guidelines for management should be applied to Forest Service managers or whether the law would contain prescriptive measures. The less prescriptive approach won out.

Also in 1976, resource economist Marion Clawson published a paper in Science magazine which concluded that many timber sales on the National Forests were being made in areas where timber values were too low to yield a net return and should be abandoned for timber growing purposes. Below cost timber sales provided more fuel to the preservation cause.

In 1977, Assistant Secretary Cutler initiated RARE II (the second "Roadless Area Review and Evaluation") to expedite land use decisions in the National Forest system. The intent was to both step up the rate at which suitable areas could be added to the National Wilderness Preservation System, and to reduce the uncertainty of the forest products industry with respect to the timber on which they could base their investment decisions. Perhaps not surprisingly, but for opposite reasons, both industry and environmentalists opposed the initiative. Cutler had tried to help industry come to closure on the wilderness question once and for all. On the other hand, the Forest Service was aggressive in expanding the number of areas and acreage to be considered for wilderness designation. After a lawsuit by the State of California claiming inadequate analysis by the Forest Service, Congress usurped the wilderness designation process. It worked closely with local environmental groups to determine what was to become wilderness in each state and the acreage of wilderness reserves eventually was more than doubled.

In 1978, leaders of the forestry schools, the Forest Service, the National Association of State Foresters, and the Cooperative State Research Service sponsored a conference on forest and rangeland research that subsequently led to the enactment of three forestry bills: The Cooperative Forestry Assistance Act; the Forest and Rangeland Renewable Resources Research Act; and the Renewable Resources Extension Act. All three bills emphasized multiple use and sustainability goals rather than commodity production.

By the end of the 1970s, many in American industry had come to recognize the legitimacy of environmental concerns and had begun trying to portray themselves as part of the solution rather than part of the problem. To many companies, environmentalism came to be seen as "social responsibility. Business, government and some environmental groups began to develop more cooperative relationships. The forest products industry probably lagged behind other industries but some of the more progressive companies began to undertake management activities on their own land to improve fish and wildlife habitat and to protect important or unique areas.

This trend of increasing emphasis on environmental values was not to proceed uninterrupted, however. In the early 1980s, growing resistance to government regulation and infringements on individual rights was typified by the "Sagebrush Rebellion" and the appointment of James Watt as Secretary of the Interior. Ironically, Watt's overtly anti-environmental message gave environmental organizations a major boost in membership and fundraising. A similar backlash to a perceived anti-environment agenda was seen a decade later after the Republicans took control of the 1994 Congress. Clearly the public wants and expects continued progress on improving the
environment.

During the period from 1986-1991, the number of appeals of Forest Service plans escalated enormously. The great majority focused on halting timber harvests. In the Pacific Northwest, the first interim agency guidelines for timber management in Northern spotted owl habitat (a federally listed endangered species) were issued in 1987. As an indicator species for temperate old growth rainforests, spotted owls became the focal point of controversy over federal forest policy. Suits and countersuits were filed by competing interest groups, eventually leading to Judge William Dwyer's 1989 injunction on Forest Service timber sales in the northwest. The polarized nature of the jobs versus owls debate gathered national attention, with the Forest Service caught in the middle.

Intense political controversy was a new phenomenon for many in the forestry profession. Historically accustomed to high levels of public support, foresters did not understand and were angered by antagonistic feelings and lack of trust from the public. Morale in the profession dipped to very low levels.

The Committee on Forestry Research of the National Research Council issued its report, *Forestry Research: Mandate for Change* in 1990. It called for the establishment of a new research paradigm including issues such as biological diversity, climate change, forest health and the increasing demand for incompatible values. 1990 also brought the Forest Service "New Perspectives" a broader, more integrated approach to forest management. New Perspectives was superseded by a similar concept, "Ecosystem Management" in 1992.

The Society of American Foresters issued its Task Force Report on Biological Diversity in 1991. The Report strongly supported public policy and research aimed at enhancing and maintaining biodiversity. In 1993, SAF issued its Task Force Report on Sustaining Long-term Forest Health and Productivity. The report emphasized the management of forests cooperatively across ownerships in large landscapes "so that goods and services for human use, and ecosystem conditions, such as biodiversity and ecosystem integrity, are ensured in a multi-generational time frame." It incorporated intensive forest management as a necessary part of this framework.

In 1992 the Chief of the Forest Service announced that the National Forest System would reduce clearcutting by 70 percent from the 1988 level. The following year newly elected President Clinton (as well as the Vice President and six Cabinet members) held public hearings in Portland, Oregon and issued a plan to try and bring the spotted owl issue to closure. Both environmentalists and industry were outraged that the option chosen was not all that they expected. A federal court subsequently upheld the President's proposal. That same year Clinton told the Forest Service to phase out below cost timber sales. Nationwide, by 1994, the acreage of federal timber sales had dropped dramatically, to levels not seen since the end of World War II.

Through the late 1980s and 1990s, the power balance between American industry, government and environmental activists began to equalize. But new forces for environmental change provided many industries with strong incentives that they understood and could relate to: customers, investors, insurers, and competitors. Environmentalism became strategic. Much like quality and profitability, environmental values began to be integrated into all aspects of the corporate structure. Good environmental stewardship became an essential component of good business for many American companies in many different businesses.

Perhaps the best example of the forest products industry taking a more strategic approach to environmental pressures is the American Forest and Paper Association's Sustainable Forestry Initiative (SFI). Adherence to SFI, which was
approved in 1994, is required for membership in AF&PA. In practicing sustainable forestry, AF&PA members agree to promote responsible forest practices, to maintain forest health and productivity, to protect significant sites, and work toward continuous improvement of forest management. Third party endorsement is incorporated into the design, and companies that are unable or unwilling to meet the SFI requirements lose their membership in AF&PA. Of course, nothing comes easily and a number of environmental groups have objected to SFI on the grounds that it lets industry off the hook too easily and competes with their attempts to develop a more restrictive certification system.

Nothing symbolized the antipathy and extreme distrust between industry and the environmental community more than the rider to the 1995 Emergency Salvage Timber Sale Program. Known as the "Salvage Rider" or to environmentalists as "logging without laws," the rider was unfortunate in many ways. It muddled public understanding of forest health (a very important issue) and dealt a significant setback to those in industry who had made concerted attempts to improve relations with the environmental community through progressive action.

It was in this environment of mistrust that the Seventh American Forest Congress convened in 1996. The Seventh Congress was billed as a "Citizen's Congress" and nearly 6,000 people participated in preliminary conferences and workshops. Fifteen hundred attended the four day main event, representing the entire spectrum of interests in American forests and forestry. It was easily the most diverse national gathering focused on forests in the nation's history. Using constructive dialogue, the goal of the Congress was to find areas of agreement from which to build, rather than the usual concentration on disputes. Congress participants were successful in devising a common vision for the future of the country's forests as well as principles to be followed in achieving the vision.

As the millennium draws to a close several discernable trends in forestry are clear. Of monumental importance is the increased understanding of ecological principles and a shift from the timber stand to landscape scale blocks such as watersheds and ecosystems as the primary planning units for forestry. This broader approach to thinking, and the new Geographic Information System (GIS) technology that supports it, is leading to fundamental improvements in the way that forests are managed. Industry has made tremendous strides in trying to cope with the increased demand for forest products through increased efficiencies: genetically superior trees, improved silviculture, recycling, reduced waste and new products. The environmental community, for its part, has been a critical catalyst in raising public awareness of forestry issues and in improving forest practices nationwide. At a global level, however, pressure on our forest land will continue to expand along with the human population and the global economy. As demands on our forests increase, the potential for continued conflict will also continue to grow.

Much of the conflict brought about by the environmental movement over the past 25 years has been constructive because it led to the protection of ecologically important areas and to improvements in forest management. Reducing the area of forest land available for timber production has an environmental downside, however. The U.S. is now a net importer of wood. Because much of our wood supply comes from other countries in more ecologically sensitive regions with fewer controls, a strong argument can be made from a global perspective that blanket restrictions on timber harvesting in the U.S. are environmentally counter-productive. A sensible strategy that all forest stakeholders should endeavor to unite behind is to protect the most ecologically important land, maximize production in appropriate areas, and sensitively manage the remainder for a balance of public values.
Environmental improvement through confrontation and litigation appears to have reached a point of diminishing returns. Much of the environmental community is beginning to recognize the necessary role of industry in meeting the wood demands of society. For its part, most of industry is recognizing the importance of ecosystem integrity and non-economic values demanded by the public. Environmental, economic and social goals are interdependent and need to be integrated. Future progress will require sound thinking, reasoned dialogue, and an ability to respect and accommodate the values of others.

After a century of growth and development, forest policy in the United States has become exceedingly complex. On the surface, we appear to be in political gridlock with little opportunity for constructive change. Within the existing policy arena, however, industry, government, and the public are finding new ways to work with one another to find solutions. Often innovative solutions are being worked out at the regional or local community level, leading some to conclude that perhaps the best role for national policy makers is simply to facilitate these efforts by creating a framework in which they can succeed.
The Current Evolution in Private Sector Management and Policy
Rick Weyerhaeuser

The discussion that follows represents the summary of dozens of interviews with people covering the spectrum from corporate executives to environmental activists. Interviewees were selected on the basis of demonstrated thoughtful and creative consideration of forestry issues. Most were chosen for their broad vision and ability to view and understand issues from different perspectives. The questions in bold were mailed in advance to give people an opportunity to think about their responses. Interviews rarely followed the scripted questions exactly but the questions are useful for organizing the results.

1. Are you familiar with efforts from within the organization intended to broaden its approach to forestry, explicitly taking into consideration efforts to demonstrate forestry that is ecologically sound, economically viable, and socially accepted? Briefly describe these efforts, and if possible offer a few specific examples to illustrate. Can these examples be documented?

People interviewed generally agree that the overall trend is toward a broader (including ecological and social, as well as economic measures), and more sustainable approach to forestry. Government, industry and non-industrial private landowners have made substantial progress. Increased knowledge, changing public values and broader public involvement have perhaps been the key factors driving this trend. Forestry is no longer merely silviculture and its practitioners now represent a much more diverse cross-section of the American public than they did several decades ago. The emergence of more holistic thinking and the development of concepts like New Forestry, New Perspectives, Ecosystem Management, Watershed Analysis, Community-Based Forestry and the Sustainable Forestry Initiative are all representative of the change.

The debate now seems to be not so much about whether constructive change is occurring but about the rate at which it is occurring and how best to catalyze continued progress. Many activist environmentalists feel that change is not occurring nearly fast enough (or think the system itself is corrupt and can't be fixed). They feel revolutionary change is needed. However, most interviewees felt this would bring more negatives than positives and, in any case, it is a moot issue. Change in relatively conservative forestry organizations will be evolutionary (several regarded as revolutionary the changes already in place). Institutions have a natural resistance to change due to the gradual rate of turnover in personnel, bureaucratic inefficiencies, limits on the ability to learn and disseminate new knowledge, and honest differences of opinion between colleagues. Many interviewees felt that changing forestry organizations too fast could cause them to become dysfunctional and were concerned that many positive aspects might be jettisoned along with the bad.

This fundamental difference between the idealism of activist environmentalists who want dramatic change now and the reality of how change is likely to occur in forestry organizations will always exist. Unfortunately, this can breed divisiveness, polarization, gridlock, even violence. However, the dynamic tension it creates is necessary for change to occur. The challenge will be to maintain pressure while minimizing divisiveness and to remember that resistance comes not so much from differences over environmental
goals but over methodologies employed to reach those goals.

Of course, change is easiest when goals are identified that are both environmentally and economically sound. Finding ways to internalize environmental costs and benefits, while difficult, is perhaps the most straightforward way to efficiently promote constructive change. Partnerships like the one between Georgia Pacific and The Nature Conservancy, through which they jointly manage forestland in Virginia, also hold great potential.

None of the interviewees felt negative about the transition to a broader definition of sustainable forestry (although these people certainly exist). Several described it as a logical evolutionary step. The major downside to change seems to relate more to the problems of managing forests in an environment of uncertainty. In a discipline that deals in long term time horizons, changes in policy, legislation, rules and regulations, budget cycles, public values and the political pendulum make it difficult to manage, plan or invest with confidence. Furthermore, by their very nature, holistic, process-oriented approaches like ecosystem management do not provide definitive answers and can be frustrating for forest products businesses and land managers. Noting this, a senior executive of a large forest products company indicated that the only quid pro quo they sought in return for their commitment to environmental values was an assurance of management flexibility and long term access.

Foresters and forestry organizations have lost the confidence of a large segment of the American public. Certainly, foresters are not anti-environment. Many were drawn to the profession by their love for nature and the outdoors. But foresters are proud and independent people with strong professional values who find the self-righteous, confrontational approach of some environmentalists to be patronizing and inflammatory. Foresters resistance to change has probably been as much a response to personalities and confrontation as it has to specific ideas. Telling someone that their career is based on mistaken assumptions and misguided values is not a good way to gain credibility and influence. With a more constructive approach, many foresters readily acknowledge that theirs is an inexact science, that they need better information, and that the future of forestry is dependent on continued improvements and regaining the public trust.

Many in the environmental community are recognizing this and have begun to look proactively for opportunities to work constructively with responsible companies. Many progressive companies have responded in kind. As the head of one environmental organization said: "industry seems to have developed an interest in engaging with the public that didn't previously exist. There is much greater dialogue now. There is acceptance of the fact that forests are not the exclusive domain of professional foresters and that there is a legitimate role for the broader public." Indeed, as an industry representative said: "our business is not a right, it is a privilege granted in law by a democratic government. We recognize that our ability to continue doing business relies on an ongoing process of public approval." The challenge for industry and other forestry organizations, public and private, is to find ways to fuel the process. The environmental and foundation communities can be key facilitators of this trend.

A number of efforts to promote a broader approach to forestry and increase communication with the public are underway. Among the most significant are:

- The recent Seventh American Forest Congress and follow-up activities;
- The adoption of first New Perspectives and then Ecosystem Management as policy by the Forest Service;
- The development of community-based forestry in this country—a discipline that
has been effective in the Third World;

- The promotion of the Sustainable Forestry Initiative by industry; and

- The emergence of strategic public/private, for-profit/non-profit partnerships in the forestry arena. These multi-disciplinary partnerships broaden the base of forestry organizations (as well as their partners) and build trust by offering needed third party credibility.

All these efforts would benefit from the positive reinforcement of environmental groups and funding bodies.

The emergence of NGOs as direct players in the field of forest management has been an interesting related development. Through hands-on activities such as purchases, conservation easements and extension programs, land trusts and other conservation organizations like The Nature Conservancy and The Conservation Fund have become significant players in actively managing forest land (as opposed to their more traditional role of purchasing land for reserves—or pressuring government to do it). With the emergence of green certification as a method of promoting sustainable forest management, environmental groups have become much more familiar with the science and practice of forestry. Consequently, there is a greater understanding and appreciation of the technical challenges and judgment calls in managing thousands of acres of forest with a diverse set of landscape features and resource values.

On the negative side, as long as environmental values are an economic sacrifice, there will continue to be a strong disincentive to incorporate them in forest management. Many environmental benefits remain as externalities that are not factored into day to day business decisions. Our economic, political and legal systems continue to reward the short-term bottom line as opposed to longer-term strategies that promote sustainability and may ultimately be of greater benefit to society.

A well-known example, cited by several interviewees, is the case of Pacific Lumber Company. Pacific Lumber was a classic conservative old-growth redwood company that cut only what it needed until it was taken over in a hostile leveraged buyout. The new owners proceeded to liquidate inventory to pay off the heavy debt. There was no recognition of environmental or other forest values beyond that which could be measured in board feet. Sustainability was not a factor in the decision to increase the rate of cutting. Policy initiatives that work to redress these imbalances and provide economic incentives for environmental responsibility will be critically important as forestry continues toward sustainability.

2. What significant changes are you familiar with that the organization has undergone as a result of these efforts? From the examples given above, which efforts have been successful in bringing about positive, constructive change, and why? What efforts have been least successful, and why?

The progressive changes summarized above have clearly begun to make major differences in the way America's forests are used and managed. These changes, on both public and private forestland, parallel the emergence and growth of the modern environmental movement. Most would agree that the environmental movement is the catalyst for these changes. Additional progress is needed, however, and there is considerable disagreement in the environmental community over how to promote future change. To many environmentalists, the forest products industry remains the embodiment of everything bad in the history of America's forests. Others understand that industry is largely a reflection of historical public values and that many companies are struggling to respond to public environmental concerns and to change their negative images.
Perhaps the biggest change by industry has simply been the increased awareness that change needed to occur. Many companies recognize they must become proactive rather than reactive in dealing with environmental problems, and that seeking common ground through partnerships, coalitions, and collaborative dialogue is preferable to continued confrontation and polarization. Several industry representatives interviewed acknowledged environmental responsibility to be part of the unwritten contract with the public that allows them to stay in business.

Over time, some environmental groups have moderated their approach as their relationship with industry and other forestry organizations has matured and new information and resources have become available. Representatives of several environmental groups told of constructive, but off-the-record, dialogue with industry where rhetoric was shelved and solid personal relationships were established. While recognizing that a continuing watchdog/advocacy element to the environmental movement is essential, several environmentalists acknowledged an unfortunate internal weakness: environmentalism is driven by problems not solutions. Industry representatives also noted that some environmental groups have a fundraising self-interest in maintaining conflict because solutions would put them out of business. Pragmatic partnerships with progressive elements of industry are a niche for environmental organizations willing to work toward lasting solutions while maintaining a successful funding base.

As with environmental groups, (which range from advocates of tree spiking to those who partner with industry), there is tremendous diversity in the spectrum of industrial forestry companies (by size, geographic location, land ownership, product mix, progressiveness, etc.). Generalizations are very difficult and comparisons can be misleading. This diversity breeds strong divisions over many issues including environmental standards. Industry, seeking strength in unity, works to present a united front—usually through their trade association, the American Forest and Paper Association (AF&PA). The media and environmental activists seize this image, and portray industry as a monolith, attacking it on a broad front. A more effective strategy might be to use diversity as a Machiavellian lever: "divide and conquer." Encourage the responsible companies while punishing the bad.

This would also appeal to the more responsible companies. Public perceptions of industry are significantly formed from negative reports on the bad actors. The ability of the lowest common denominator to attract attention and drag the entire industry down is another unfortunate result of the current relationship between industry and much of the environmental community. Ironically, one industry representative from a relatively large, responsible company indicated that, in the absence of meaningful positive incentives for good behavior, he would actually like to see regulatory standards dramatically increased. He feels that irresponsible companies have jeopardized his company's ability to do business and that tougher standards would put them at a competitive advantage. There have always been divisions in the industry over regulatory standards as well as other issues but there are some indications that industry's united front may be showing signs of weakening.

Environmental values have enjoyed, and will continue to enjoy, broad public support. Simultaneously, the public demands an ever increasing volume of forest products that can only be produced on the current working forest land base through modern industrial forest techniques. How industry and environmental groups choose to address these values and define their relationship with the public and with one another will continue to evolve and be debated. But it now appears that the relationship may be reaching a more mature and constructive stage.

The following synopsis (adapted from Hoffman, A. From Heresy to Dogma, An Institutional History of Corporate Environmentalism. Northwestern University,
Kellogg School of Management, unpublished manuscript) is not specific to the forest products industry but is a useful summary of how the industry/environmental relationship has evolved in recent decades.

1960s. Public awareness of environmental issues emerges with the publication of Silent Spring in 1962. Industry generally discounts the importance of environmentalism. Environmentalists are considered unscientific and unrealistic. Corporations tend to treat environmental issues as a tangential problem solving or public relations exercise.

1970s. The EPA is established. The development of a regulatory framework puts industry on the defensive. Industry equates environmental management with technical compliance on regulations. The public consolidates its "black hat" image of industry.

1980s. Industry recognizes the legitimacy of environmental concerns and tries to portray itself as part of the solution rather than part of the problem. Business, government and environmental groups begin to develop more cooperative relationships. Corporate environmentalism comes to be seen as "social responsibility."

1990s. The power balance between industry, government and environmental activists begins to equalize. New forces for environmental change develop: customers, investors, insurers, and competitors. Environmentalism becomes strategic. Much like quality and profitability, environmental values begin to be integrated into all aspects of the corporate structure. Good environmental stewardship becomes an essential component of good business.

While Hoffman's thinking is drawn primarily from his experience with the oil and chemical industries, there are undoubtedly strong parallels with the forest products industry. One environmental leader, noting the comparison, stated that the forest products industry was probably about 5-6 years behind the chemical industry (but considerably ahead of the oil industry) in the transition from confrontational to cooperative relationship. In this sense, Hoffman's timeline could probably be considered a standard industrial environmental learning curve.

While certainly not universal, many forest products companies have committed to managing for non-timber resources on their land including:

- Water quality and fish habitat
- Wildlife habitat
- Soil productivity
- Aesthetics
- Plant and animal species diversity
- Culturally or historically unique areas

These companies have hired and empowered new employees with diverse skills and experience, transferred ecologically important timberland to government or land trusts, formed strategic partnerships with environmental organizations, and planned at the landscape or ecosystem level with a variety of non-traditional partners. Many, if not most, large companies now look at this as a necessary cost of doing business.

Some of the more successful tools industry has used in promoting a broader approach to forestry include:

Habitat Conservation Plans: a cooperative approach to planning and managing for biodiversity that allows landowners some leeway in managing their timber resources in return for making accommodations for rare and endangered species. For example, a Safe Harbors Agreement is a type of HCP that allows a landowner to continue managing his land without penalty if progressive management leads to an increase in the numbers or distribution of an endangered species.

Watershed analysis: a landscape scale approach to planning using ecological parameters
that takes into account forest values in addition to timber. Planning at this level has tended to take the onus of management away from the accountants and put it in the hands of resource professionals. This also entails managing "with" natural systems rather than "against" them, for example encouraging appropriate species on certain soil sites rather than trying to force economically preferred species.

**Geographic Information Systems (GIS):**
New computer technology has allowed companies to accurately monitor many environmental parameters in addition to timber. Several companies have developed land classification systems which promote appropriate uses on different land bases (i.e. intensive production vs. protection).

**Results oriented management based on teamwork:** Problem solving by groups of employees with diverse skills, experiences and backgrounds has naturally led to broader approaches. It has also resulted in fewer layers of management, more rapid replication of best practices, and greater employee empowerment and satisfaction at the field operating level.

**Internal audits:** Many companies undertake internal random audits to ensure that their forestry operations adhere to Best Management Practices (BMPs).

Perhaps industry's most significant and visible commitment to a broader approach to forestry is the American Forest and Paper Association's Sustainable Forestry Initiative (SFI). SFI is a statement of principles and objectives for forest management that are consistent with values demanded by the public. Adherence to the principles is a requirement for continued membership in the AF&PA. One of its unique characteristics is increased credibility based on third-party monitoring. More than twenty companies have been dropped as members of the AF&PA because they have not adhered to SFI requirements. Most are taking steps to improve their forest management practices to meet the SFI requirements and requalify for representation by AF&PA. Many environmentalists are taking a "wait and see" attitude regarding SFI. One called it "the same old rhetoric," another said "it's all talk and no action." On balance, however, most environmentalists felt that SFI was a significant step in the right direction and should be encouraged. If for no other reason, SFI is significant because for the first time, industry is trying to respond to public demands rather than trying to educate the public that traditional forestry is really what they want.

Like industry, environmental groups, for the most part, have also broadened their approach as their knowledge and experience has expanded. Since the beginning of the modern environmental movement over thirty years ago, environmentalists have used confrontational approaches to secure victory after victory—in the legislatures, in the courts and in the hearts and minds of the public. However, many environmentalists now acknowledge that adversarial approaches have reached a point of diminishing returns. In the future, progress will come from more incentive driven approaches (offering carrots along with sticks), and from creative problem solving through constructive engagement in a community context (both communities of place and communities of interest).

Many interviewees (from vastly different perspectives) cited the recent Seventh American Forest Congress as perhaps the most promising effort to facilitate collaborative problem solving on forestry issues. The Forest Congress was a "Citizen's Congress" in which maximum diversity was sought and participants worked together to develop a shared vision for the future of America's forests. The emphasis was on identifying areas of agreement from which to build rather than the usual focus on areas of disagreement which can be frustrating and are often counterproductive.

Given the diversity of the group and the contentious nature of the issues, levels of agreement were remarkable. Many attendees, who arrived
dubious or cynical, were energized by the process and left ready to continue the spirit of constructive engagement with people of different values and opinions. Both industry and environmental representatives noted how much they had learned by listening and indicated they hoped to continue using consultative processes in planning and problem solving.

Of course, there are still vocal minority elements on both sides who reject the idea of constructive dialogue and consensus building. Two frustrations were mentioned by interviewees: 1) the time and effort needed to bring collaborative approaches to fruition, and 2) the fact that such approaches can be undermined by outsiders who feel they weren't involved and didn't get their way. Finding a way to empower and provide certainty in collaborative processes is a major challenge.

A similar interactive roundtable process took place in Minnesota to develop a Generic Environmental Impact Statement (GEIS) for plans to expand timber harvesting in the state. Government, industry and environmentalists considered the process a success.

The recent Maine clearcutting referendum was cited by interviewees as both a positive and negative model for promoting change. The level of public misunderstanding and indifference on forestry issues has been one of the biggest problems in these debates. On the positive side, Maine probably now has the most informed, engaged public in the country. The compromise Forestry Compact, developed by the Governor, progressive elements of industry and moderate environmentalists, was described by most interviewees as a workable outcome. However, the confrontational, polarized nature of the debate that led to the referendum--and ultimately the Compact--was seen as negative.

The attempted clearcut ban in Maine was a source of major concern to industry but it caused them to engage proactively with the public.

Although one environmental activist referred to the Compact as a "sell-out" by the environmental groups that signed on, perhaps the most thoughtful comment came from a moderate environmentalist who noted that the Compact represented the first time environmentalists and industry had each publicly stated their values, goals and objectives and worked together to build on the commonalities and compromise on the differences. He felt this aspect of the Maine model should be taken national. Industry has stated its values and objectives in the Sustainable Forestry Initiative. If the environmental community could state its plan for America's forests, then the two mission statements could be blended into a national forest policy.

Interviewees mentioned a number of other efforts or trends in the move toward a broader vision of forestry which they felt had been unsuccessful or counterproductive. Several environmentalists felt that the effort to halt all timber management on public lands (particularly federal) was a mistake. They characterized it as an irresponsible zero-sum game which only served to put additional pressure on private lands and/or shifted demand to forests elsewhere in the world. The U.S. is already a net importer of wood, and driving up the cost of doing business in the U.S. makes places with less stringent standards (e.g. the tropics or Siberia) more attractive. Unfortunately, the increasing efficiency of global markets is making the effect more pronounced.

Because of this global cost competitiveness, focusing environmental attention on ecologically sensitive regions (driving up costs there relative to less sensitive areas), would make it easier to increase standards in the U.S. because U.S. industry could afford them while remaining competitive. It should be noted that one environmental activist completely dismissed this argument, adding that he thinks Russia's forest protection laws are stronger and better enforced than those in the U.S.

One environmentalist commented that the focus on public land had overlooked the important
role that private land must play in furthering environmental goals (public lands are only 24% of the nation’s forest land base). Promoting change on private land may be less straightforward than forcing change on public land, but it is arguably easier. If incentives are designed correctly in the private sector, landowners will usually respond. If private forests cannot provide a competitive economic return, they’re not going to survive unless the landowner has independent means. Regulations that significantly reduce the economic returns from forestry encourage conversion of forests for development or agriculture.

The "Timber Salvage Rider" on the 1996 Appropriations Recession Bill was cited as seriously undermining collaborative efforts, resulting in unnecessary and unproductive polarization. Many representatives of large industry thought the Salvage Rider was a mistake at the time and are even more convinced now. Small operators, entirely dependent on federal timber, persuaded their representatives in Congress that the reductions in federal timber sales threatened their survival. The large, highly visible corporations, who have invested heavily in improving their performance and public image, gained little from the Salvage Rider and paid tremendously in public confidence in the industry, and their long term ability to do business.

Other comments about less successful attempts to broaden the approach to forestry include these from two retired industry executives:

Industry and the Forest Service have failed miserably in gaining public acceptance for their agenda. Granted it’s a huge job but conservative foresters have been slow at incorporating the larger ecosystem into forest management decisions and learning to operate in a changed environment. Industry has been oblivious to the need to get people out on their land and explain what they are doing and why. Part of it is time, part is an obsession with property rights, and part is not having people with the necessary skills. The key is multidisciplinary people. Our system turns out specialists, not good team players. Research, even if it was dealing with important progressive topics, has tended not to be client based. So we often can’t use it.

Environmentalists need to use carrots with their sticks. Forestry organizations have changed but they need to start getting credit for the change or the progressive leaders will lose their standing and there will be backsliding. Heaping on blame for sins of the past is not constructive, in fact it is counterproductive because it puts industry back on the defensive. Real trust should result in good, old fashioned praise for a job well done, coming from either side. That would do a lot to encourage change, to assure the public that progress is being made, and to engender more trust.

Interviewees differed in opinion on the effectiveness of activist groups in the Pacific Northwest and in Maine. Some felt they were wholly counterproductive, that they polarized issues and were unreasonable. Others felt that they forced important issues that needed discussion into the public forum. Most acknowledged that although activist groups served the purpose of drawing attention to real problems, they were not as good at solving them.

One person who worked for a large environmental group commented that it was still too early to tell whether efforts to broaden approaches to forestry would lead to constructive change. Monitoring and documenting change require independent efforts and take time.

3. Which of the following kinds of change, to your knowledge, have taken place within the organization?

a. Strategic: Change brought about by a new
strategic direction such as an organizational commitment to sustainability or a university’s encouragement of multi-disciplinary research.

Most organizations try to think strategically. In periods of dynamic change and new paradigms, such as the forestry community has recently been experiencing, the quality of strategic planning clearly dictates the future success of the organization. Several interviewees pointed out that the failure of conservative forestry organizations to recognize and adapt strategically to changing public values was a basic reason they were held in low esteem by the public. To their credit, many of these organizations now do recognize the need for change and are struggling internally with how best to accomplish it.

AF&PA’s Sustainable Forestry Initiative is perhaps the most visible example of a strategic effort by industry to address changing public values. While momentum for SFI may have been catalyzed by the threat of externally imposed certification and a desire to satisfy uneasy customers (primarily in Europe), SFI nonetheless has significant implications and potential for broadening industry’s approach. Industry understands that SFI needs to be credible and has attempted to gain this through third party endorsement and by limiting membership to companies that have agreed to the guidelines.

There are also many examples of AF&PA member companies deciding to take a broader approach. Community outreach programs, partnerships with environmental groups, and multi-disciplinary landscape level planning are strategic approaches common to larger forest products companies. Several companies have begun random internal audits of their operations to get a better appreciation for their level of compliance with Best Management Practices (BMPs) and sustainable forestry principles.

NGOs have also been strategically broadening their roles in order to better accomplish their mission. Recognizing that environmental goals need to be considered in a socio-economic context and that charitable organizations have only a very small fraction of the leverage of the private sector, several NGOs have invested time and effort thinking about compatible development (integrating conservation with real world economic systems). Conservation organizations operating in the third world have promoted this approach for a long time. It is ironic that developing countries are significantly ahead of the U.S. in recognizing that people are a necessary part of the solution to environmental problems.

NGOs also try to carve out strategic positions on issues that allow them to promote their agenda most effectively, for example finding niches unoccupied by other groups. This is integral to their fundraising strategy; it is not unheard of for organizations to stake out positions partially based on fundraising. Mercenary as that might sound, an organization’s effectiveness is tied to its ability to fund its activities, not unlike a corporation promoting an image to secure market share.

At least one environmental organization has made a strategic decision to focus its biodiversity efforts on policy related to private land management. Private land is extremely important to conservation yet it has been relatively neglected, probably because it provides some of the most difficult challenges. Solutions will, by necessity, entail broader, more creative approaches. Another environmental NGO is focusing on improving wood use efficiencies—through design modifications, technology to reduce waste, and substitutes (where environmentally superior).

"Green certification" is one strategic approach that both industry and environmental groups are seriously considering. Such independent third-party certification represents a credible way of endorsing forest practices. Discussion alone represents important progress because it moves the debate from the simple, polarized one about whether or not to harvest timber, to a more meaningful one.
about how to manage forests while maintaining a wide array of resources, uses and values.

Although there are varied approaches and myriad details, environmentalists see certification as an incentive to ensure that industry adheres to sustainable practices, and industry sees it as a way of publicly validating their franchise. Furthermore, some companies see it as a potential marketing advantage (although there is currently no indication of a price premium except in high-end niche markets).

If the costs are reasonable and if the credibility of third party monitoring can be assured, it is likely that certification will become more popular. In fact, several small companies have already opted for certification, although at least one is reconsidering whether it is worth the cost. Ultimately, of course, the consumer will decide which certification system will be used because certification only makes sense to the extent that it provides credibility to the producer. Producers will become certified at the level for which they feel there is public demand for it.

b. Organizational: Change brought about through the use of organizational systems such as recruitment, workforce diversification, performance appraisal, promotion standards, and budgeting.

The need for more stringent environmental requirements and conservation of non-timber resources has prompted hiring of a more diverse workforce. Women, minorities and specialists in non-traditional areas have clearly been a major force for change in government agencies and in the larger forest products companies. The increased diversity, with its broader base of perspectives and experience, has resulted in stronger and more adaptable goal-oriented management teams. This has been a gradual enrichment process, involving recruitment of both broader-based (multi-disciplinary) people and new (non-forester) specialties (soil scientists, hydrologists, first game then biodiversity biologists, and now social scientists).

Perhaps the most effective additions have been the corporate environmental scientists because they interpret problems in ways relevant to management. Mistrust, fear and misunderstanding are at the heart of the problematic relationship between industry and environmentalists. Many things said by outside ecologists and environmental activists are frightening to management. Corporate scientists are insiders who understand the corporate perspective and are able to look for constructive solutions to problems (economically and biologically). Budgets to support their work are a good indication of an organization's commitment to change; a healthy budget indicates more than public relations value. Several larger forest products companies have made significant commitments in this area.

Smaller companies that cannot afford specialists are among those that seem to be most resistant to change. On the other hand, many of the most progressive companies are also small. This is usually because of key people with broad perspectives in ownership and/or management positions. One person or a small group can more easily impact a small closely held company. Managers of large publicly traded companies are accountable to a larger, more diverse group of shareholders. With the short-term focus on shareholder value, managers of publicly-traded companies often cannot be as progressive in promoting sustainable forestry.

Significant organizational changes in some larger companies include increased emphasis on planning, on decentralization of decision-making and on empowering resource professionals and other mid-level managers. Diversity has resulted in regional inconsistency within companies but, overall, it has prompted better and more informed environmental performance. One corporate executive talked about the difference that moving foresters from staff to line positions had made in his
company: "In the old days it was all about logging. Now it's about environmental management. Giving foresters more responsibility has improved our performance and theirs. Mixing people of different backgrounds and perspectives has sparked some good internal debates. Airing differences breeds cross-fertilization and improves the whole organization."

Nobody mentioned performance appraisals or promotion standards as vehicles to promote change, yet one industry person felt their absence was a major barrier to change. According to this individual, companies are writing and promoting stewardship standards but are not holding people accountable on a day-to-day basis in the same way they do for production, cost or safety. A tremendous corporate cultural change regarding safety has been possible because employees are held individually accountable on a daily basis. When environmental stewardship is handled in the same way, it too will become ingrained in the corporate culture.

c. Individual: Collective change brought about through the evolution of individuals' knowledge, values, and behavior over time.

New ideas and information on ecosystem science have clearly been important forces affecting the values and behavior of people in forestry organizations. With the emergence of landscape ecology as a scientific discipline, the growth of the environmental movement, and the development of new technologies for collecting and disseminating scientific information about forest ecosystems, the past thirty years have witnessed an ecological information revolution. People throughout forestry organizations are now more aware of, conversant in, and sympathetic to, environmental issues.

As important as new information and thinking is, however, it doesn't account for all the changes. As one retired timber company executive put it: "Foresters have always had values that were consistent to a broader approach. Love for the outdoors and wildlife were what attracted them to the field in the first place. Until recently, though, foresters have never understood their ability to leverage. Cash drove the system and "accountants" controlled the cash. Now foresters are much more important; the financial "bean counters" no longer drive the equation. The alignment of public values with those always held by foresters is a big reason for this. This is one thing environmentalists have never understood. They disregard individual differences within the corporate monolith and criticize us all. If they had encouraged the positives while continuing to pressure for improvement where it was needed, they would have gotten much further much faster. Instead they put industry, and all the individuals who work there, on the defensive."

Another industry employee (younger and with a resource background) felt there had been positive change in individuals (particularly loggers and foresters) but that the corporate culture still had not changed enough. He felt that this was because a stewardship culture still implied financial sacrifice to many managers. He noted a dichotomy in communication between upper management (who said all the right things) and mid-level managers who were responsible for cost and production. This performance pressure makes it difficult for middle managers to enlighten their thought processes or to take on additional risk.

Perhaps these different perspectives can be attributed to their ages. The retired executive has seen tremendous change within his organization; the young resource person does not have the earlier baseline as a reference and sees change that still needs to occur.

Individual change has been most important at the senior management level; leadership sets the tone for the entire organization. It is also where change has been most pronounced (perhaps because senior managers have more freedom to think for themselves). It seems one important factor is their personal reputation. How do they want to be
perceived by their family (their children have reportedly been a major influence on the behavior of corporate CEOs) and by their community? What kind of legacy do they want to leave for their grandchildren?

4. To the extent changes have taken place within the organization, which of the following influences are you aware of that were primarily responsible?

a. Rational/empirical: Recognition of need to adapt organization to changed scientific knowledge and understanding, or changed economic, social, or political environment in which the organization must operate.

Many changes in forestry organizations are made for the simple reason that they make good sense in the changing political, economic and social climate in which organizations operate. However, promoting rational approaches to change has probably received the least attention from environmental groups. With great success, the environmental movement concentrated its efforts on increasing public awareness, tightening regulations, and litigation. Industry prides itself on creatively developing efficient market-based solutions to problems and on making good business decisions based on facts: tax policy, economics, market conditions and scientific data. Incentive based approaches hold great potential, where good conservation is also good business and rational decisions lead to results that are in the public interest.

The rational/empirical approach has been a profound internal factor influencing constructive changes in the behavior of industry. For example, as one forest policy analyst noted, development of the Sustainable Forestry Initiative was primarily a response by the larger players in industry to the certification movement. By providing a practical and preferable alternative, they rationally hoped to waylay the need for certification (which they anticipated would be expensive and potentially restrictive). Yet other (primarily small) companies saw certification as a means of differentiating themselves from their competitors and creating a market niche. To them, improving their forest management standards to the point that they were certifiable was a rational business decision.

A foundation representative noted that improved environmental performance on the part of some forest products companies is rational behavior resulting from internal accounting systems that value natural capital such as trees and soil on an ongoing basis. In this way investments in forestry or losses in soil productivity through erosion or reduced fertility translate directly to the bottom line. This has helped empower resource professionals in industry and has created a powerful incentive to promote long term productivity of timberlands through good management.

Other examples of rational changes in behavior by industry have resulted from emerging scientific information. The importance of water quality and riparian zone protection for fisheries and aquatic habitats, and the characteristics of wildlife habitat requirements, particularly for non-game and endangered species, has caused some companies to mitigate their forest practices beyond what is required by law.

Several representatives of environmental groups spoke about how their organizations were attempting to adapt to the changing dynamics of sustainable forestry. They recognized that old messages were losing relevance and that rational approaches based on science and constructive dialogue were likely to lend the best long term solutions.

b. Normative/Re-educative: Evolution in organizational values, perspective, or ethics to adapt to or reflect these kinds of changes in broader society.

Historians will look back on a dynamic period, such as the forestry sector is in now, as
highly significant. Forestry organizations that can adapt positively to change are those that will be most successful in the future. Overcoming the crisis mentality that permeates politics and activist campaigns (from both sides of the spectrum) will be a challenge. Long term evolutionary change can only come from meaningful, reasoned dialogue between thoughtful people with creative ideas who take the time to understand each other's points of view. Creativity is essential in any evolutionary process (good ideas in the evolution of sustainable forestry are like beneficial mutations in biological evolution).

The Sustainable Forestry Initiative, an evolutionary leap for industry, was possible because a number of respected individual leaders with unusual vision and energy were committed to it, educated their colleagues, and sold the concept. It was a good idea delivered by the right messengers. Of course many environmentalists are taking a "wait and see" attitude and some see it as a threat to the higher standards of FSC certification, although one conceded that it was a step in the right direction and needed support and encouragement. The challenge is how to inspire and facilitate continued constructive change.

Acknowledging that their image and objectives need to reflect public values and perspectives, forest products companies often use public opinion polls as an educational tool in decision-making. Surveys have been powerful influences on organizational behavior (the development of SFI was heavily influenced by AF&PA's surveys showing what the public was expecting from industry).

For example one company learned that the public perceived it to be isolated from its communities of operation and that it dealt with the forest as merely a commodity. The survey (in the Pacific Northwest) also revealed the importance of waste reduction and recycling. The public wanted a more holistic view of forest management with a stronger conservation ethic. The company convened focus groups and town hall meetings to formalize public feedback. It moved into watershed based planning using integrated teams and expanded its recycling business. The public response has been positive but, unfortunately, not nearly as pronounced as expected. The company feels it has not received credit for the effort and expense which it expended. The public probably feels the company is finally doing what it should have been doing all along.

c. Directive: Change directed by organizational leaders or external authorities (e.g., regulating agencies, courts) and followed by the organization.

To paraphrase what many interviewees said: Regulations and lawsuits have clearly been a very important force for change. Unfortunately, too important. But it could only have been otherwise if the normative/re-educative influences had led to rational/empirical leadership that was ahead of public expectations. The changes have been good, so it is difficult to decry the heavy handed approach. But it's inefficient, like doing surgery with a dull knife—or perhaps a rusty saw. In the future, the key will be promoting the rational and re-educative influences. Ongoing education is key and we need to help people develop better process skills. In other words, the only way that telling industry what to do could have been avoided was if it had been smart enough to do what needed to be done, and we had been smart enough to provide the political, economic and legal framework which would have allowed them to do it.

Historically, the most influential directives were the state forest practices laws enacted in the 1930s and 1940s (and updated sporadically since). At the federal level the most important mandates have been the major pieces of legislation first enacted during the early 1970s, particularly the Clean Water and Endangered Species Acts (which have also been re-authorized and updated).
As one industry representative put it: "Big changes have occurred since 1988-89 when the Clean Water Act, section 404, required that states develop Best Management Practices. The development of water quality BMPs got industry, public agency and environmental people planning and working together. Working together allowed us to pinpoint problems. Federal regulations were the teeth behind it, and I hate to say it because often regulations are counterproductive. But in this case there was still the flexibility by state to determine whether they would be voluntary or mandatory. If we don't want costly regulations, we need to find a practical alternative, something that works and that satisfies the public."

The controversy over the listing of the northern spotted owl and the Judge Dwyer decision has clearly been the most visible manifestation of the impact of the Endangered Species Act, but red cockaded woodpeckers in the south and the threat of salmon listings in the west have also forced forestry organizations to take a broader approach to forest management. Again, a federal mandate has uncovered issues that needed to be considered in a public forum. While addressing these issues publicly has been a positive change, the Act itself has faults. It is full of disincentives and the cost of species by species recovery makes it an unworkable approach in the long term. The challenge is to design ecosystem scale solutions that provide positive motivation to forest managers rather than just incentives to avoid the negatives.

All three types of influence (re-educative, directive and rational) have clearly played a role in promoting change and there is considerable overlap and interplay between them. For example, a change in perspective (Normative/re-educative), or the threat of regulation (Directive) might result in a different rational/empirical decision. It is interesting that twice, industry representatives said that a different one of each of these three types of influences was dominant for their company in different operating regions.

5. What do you view as the most significant challenges or impediments to change in the "culture" of the organization in the context of sustainable forestry? In what ways do you think these challenges might be effectively addressed or overcome?

The biggest impediment to constructive change is lack of trust between forest stakeholders. Different interest groups continually question the motives of their adversaries, making constructive dialogue and creative problem solving very difficult. This manifests itself in many ways:

**Different assumptions.** Even vocabulary can be a problem; the same word can mean different things to different people so even attempting to define "sustainable forestry" or to describe goals and objectives creates confusion. Reaching agreement on methodologies before definitions are clear will be difficult. Many stakeholders have completely different perspectives. Understandably, one's vision of sustainable forestry is shaped by past experience and an expectation of the impact of change. Several interviewees tried to moderate the enthusiasm coming from the Seventh Forest Congress process by stating that consultative processes can work only with "reasonable" stakeholders (i.e. with similar values), and that they must start small and move in measurable steps.

**Fear.** New concepts like ecosystem management are not clearly understood. Private landowners worry that new ideas mean new restrictions, often without compensation. They are concerned about their ability to continue managing their land in line with their values and goals. There is a fear of knowledge and that it will be used against them. Change needs to be de-politicized and local knowledge needs to be brought in through inclusive and participatory processes. Acknowledging this, how is good science incorporated?

**A moving target.** Continuous new and changing external challenges to forest management
from a large spectrum of interest groups, many with erroneous or misleading information, makes managing a long-term resource problematic.

*Ecological illiteracy.* People are ignorant of the mechanics, importance, fragility and resilience of ecosystems. Many are ignorant of their ignorance. There is a lack of good biological data.

*Economic illiteracy.* There is little understanding among environmentalists of the relationship between risk and reward in forestland investments or of the dynamics of discounted cash flow and its impact on forest management: debt servicing and investments in mills make the time value of money a driving factor. The concept of natural capital (soil fertility and structure, genetic and ecosystem diversity, etc.) directly impacting the bottom line is a new concept to many companies. Some environmentalists equate the profit motive with greed but corporations need to make a competitive rate of return on their investment or capital will flow elsewhere and they won't be able to afford to invest in environmental improvements.

*Human limitations.* Institutions and individuals have a limited capacity to absorb new science and information. Forestry organizations know that they need to change. They know, for example, they need to engage communities. But they don't know how. They don't have the experience and they don't have the right people. The public (including many environmentalists), for its part, seems blind to its use of wood. Very little attention is paid to the demand side. The issue of personal responsibility for using forest products is very important.

*Shortage of effective leadership.* Very few people have the breadth of multi-disciplinary knowledge and experience necessary for effective leadership in a diverse community setting. Those who do are usually very busy. Interactive processes are intense and will exhaust people in leadership positions.

*Inertia.* Changing institutions is like turning an oil tanker. The slow rate of change in forestry organizations is a function of people's limited knowledge and ability to absorb new information and the fact that they disagree.

*Proud Foresters.* Professional foresters are often reluctant to engage other stakeholders because they feel this would be admitting mistakes. They are afraid it would mean giving up their prerogative as landowners or managers. Getting foresters to move from hard to soft science, to discard their defensive posture, and to engage with the public is very difficult.

*Fanaticism.* Many activist environmentalists and property rights advocates are simply too dogmatic and self-righteous. Approaching their cause with ideological religious fervor, they are unable or unwilling to establish the common ground needed to enter into constructive dialogue. Fortunately, radicals on both sides are becoming marginalized.

Other impediments noted by interviewees included:

*Complex regulations and tax policy.* To the extent that the legal and tax codes distort rational economic and ecological decisions, they should be restructured. Ecological costs should be internalized to account for the full cost of managing ecological systems.

*Conflicting laws and policy.* There is no consistent, coherent national forest policy. Different agencies and different levels of government each have their own policies. Regulations are often redundant or they conflict.

*Agricultural subsidies.* Subsidies create an artificial economy. Subsidizing marginal farmland makes forestry a less attractive option.

*Lack of markets and economic incentives.* Markets do not recognize all the benefits to society
that good forest stewardship can provide. Consistent strong markets for a full range of forest production, including small-diameter lower-quality materials from thinning and fuels reduction, help produce an acceptable economic return so that the landowner can afford expenditures aimed at protecting or enhancing other values that currently have no market value. This is also a key consideration in preventing conversions to land uses other than forest. Some sort of economic subsidy may be needed at the outset until sufficiently strong markets are developed.

Consistent earnings. Without competitive rates of return, capital will flow elsewhere and industry will not be able to break out of its traditional framework. They will not be able to afford to implement environmental reforms. A broader approach has to be practical and economic or it can't be done by industry. Earnings are essential for a landowner to bear the cost of protecting or enhancing other resources that have no dollar denominated value.

The media. The press, fundraisers and other communicators underestimate the public and present issues in simple black and white terms. This supports and encourages polarized rhetoric, poor understanding and inadequate responses which, in turn, exacerbate mistrust and fanaticism.

Government. Finding the right level of government on which to place responsibility for regulations and enforcement.

Rhetoric. People who can't divorce themselves from rhetoric are an impediment. Political posturing will always exist but people need to be able to talk off the record and work out practical solutions. Much policy jargon is theoretical and anecdotal. Holistic thinking is great but there is a lack of practical case studies and working examples. We need to put numbers and experience behind the talk.

Lack of funding. Funding for research is collapsing. Government budgets are tightening and industry is forced to focus on the short term bottom line.

Values. We are a consumer society. We need to reduce consumption. This entails a shift in values.

6. What options do you see for facilitating positive, constructive change in the organization in the context of sustainable forestry in the near term? In the long term?

Dynamic tension is a necessary ingredient for change. Nonetheless, with few exceptions, interviewees felt the era of effective rhetoric, strident advocacy and forced change through confrontation and litigation is ending, or at the very least, reaching a point of diminishing returns. In fact, several environmentalists commented that continued confrontation was likely to be counterproductive because it would breed defensiveness and backsliding by many forestry organizations who have made good-faith efforts to improve their practices.

Furthermore, increasing costs to U.S. industry through regulation and litigation has a strong global environmental downside. It makes forestry relatively more attractive in places with less regulation (and often of greater ecological importance). Added costs also leave U.S. industry with fewer resources and less ability to effect change on its own. The pulp and paper industry is the most capital intensive (i.e., it requires the most dollars invested to produce a dollar of sales) in the U.S. Paper production and trade have become increasingly global and U.S. companies cannot incur new costs and remain competitive.

While many environmentalists accept the argument outlined above and feel that environmental pressure ought to be focused more on improving the performance of foreign timber suppliers (especially in developing countries),
others reject it outright. One activist commented: "These are commodity markets. If industry is so strapped for cash, why do they advertise?"

Litigation driven environmental groups would certainly disagree that confrontation has become counterproductive. And undoubtedly new issues will arise where lawsuits focus attention on serious problems. However, the consensus was that, both short- and long-term progress toward sustainable forestry will be more efficiently realized by positive, incentive-based, collaborative approaches. Positive reinforcement of progressive behavior is essential to lasting change. The following options, priorities and strategy are based on this constructive theme.

A big challenge will be to provide opportunities for environmentalists to buy into collaborative processes so that they develop a commitment to their success. Currently, those outside the system have nothing to lose by attacking it. Open, honest dialogue together with the development of ecosystem- or community-based projects that integrate the interests of all stakeholders, are two ways to give environmentalists a stake in the success of collaborative approaches rather than leaving them on the sidelines as disaffected observers.

Inclusive, broad scale conservation initiatives, whether community, landscape or ecosystem based, require trust, creativity, compromise and risk. Although often inefficient and messy (several interviewees expressed frustration with the time and effort) they will ultimately usher in lasting change and so must be supported. As one foundation executive put it: "Third world development experience has taught us to de-emphasize technical responses. Interpersonal relations will be far more important than political posturing. The leadership challenge will be one of diplomacy, creativity, staying the course and not burning out." Perhaps the most elusive element in successful community based conservation is local leadership. The failure of many collaborative approaches can be blamed directly on a lack of strong leadership.

Perhaps buoyed by the success of the Seventh American Forest Congress, interviewees indicated enthusiastic support for consultative dialogue processes. One foundation executive felt everyone involved in the debate over our forests should speak from the experience of participation in a multi-stakeholder dialogue.

Clearly, in the short term, it would not be productive or practical to convene additional events of the scope and scale as the Forest Congress. However, the Congress follow-up maintains the open dialogue process by reconvening local and regional roundtables, supporting broad community-based groups, and building on the common ground established in these efforts. This supports the trend away from national "one-size-fits-all" solutions to problems. One community activist had this word of advice: "Taking on large complex issues before a trust relationship is established is a common mistake. It is important to select reasonable stakeholders and develop a dialogue that initially addresses smaller issues at local levels such as sensitive sites and visual quality along major stream segments."

Local and regional distinctions are crucial in developing appropriate models. Interactive regional workshops like those hosted by American Forests concerning ecosystem management on landscapes of mixed ownership, the GEIS process in Minnesota, development of the Maine Forest Compact, the activities of the Forest Congress Communities Committee and the National Network of Forest Practitioners were all cited as constructive examples of stakeholder dialogue. Local partnership groups such as the Quincy Library Group in northern California, the Applegate Partnership in southern Oregon, and the Willapa Alliance in southern Washington emerged as a response to forest controversies in the west. Many of these local groups have now become active in regional initiatives such as the Lead Partnership
Evolving Toward Sustainable Forestry: Assessing Change in U.S. Forestry Organizations

Group and the Northwest Sustainability Working Group.

In both ecosystem and community contexts, public and private forestland represents two different situations that need to be addressed both individually and jointly. As discussed previously, public lands need to be managed for a broad spectrum of public values. The general feeling among those interviewed was that consultative processes involving the range of stakeholders was essential to doing this. However, on private land, while there was support for some base level standard of stewardship through regulation, it was widely felt that public values provided by individual landowners would be most effectively encouraged through a well designed set of incentives. Private landowners were judged more likely to change through enlightened self-interest than through broad-based consultative dialogue. In areas of mixed public/private ownership, consideration needs to be given to the ecological, social, and economic relationship of the relevant parcels (i.e. ecosystem management).

Policies aimed at managing non-industrial private land must recognize the legitimate interests of millions of individual small landowners. However, the appropriate approach for addressing conservation on lands of large, integrated, publicly traded corporations (with a broad range of employee, shareholder, customer and community stakeholders) probably falls somewhere in between what is appropriate for public and for non-industrial private forestlands. Corporations have a combination of rights and responsibilities yet must be sensitive to market forces. Their varying sizes, product mixes, geographic issues as well as internal and environmental factors will determine how best to address issues with large corporations.

While regulations and financial penalties have been a major force behind positive change in industry, incentives have been much less common. On private land in particular, good forestry needs to be considered as an affirmative way of promoting sustainable development, not just as an absence of negative. Many interviewees spoke of the need to economically internalize values like soil conservation, clean air and water, biodiversity and aesthetics. They felt private landowners should be given opportunities to benefit directly from behavior that is in the public interest but may not be in their personal interest. As one interviewee said: "To the extent that landowner actions provide values to society, society ought to be willing to compensate them. In a policy sense, what do we need to change in order to reward the behavior we want to reward?" Perhaps more than any other point, this needs creative attention.

For example, one of the biggest constraints to sustainable forestry is the "economic" age of rotation--too short in most ecologist's eyes. Extended rotations would provide added structure and diversity (ecological attributes such as diversity and structure are not as pronounced in young, even-aged forests). But debt servicing and capital investments in mills makes the time value of money a driving factor in deciding when to cut so, for purely economic reasons, rotations are shorter. In the current equation, the costs and benefits of ecological services are not a factor and high discount rates (the cost of money) force a timber owner to manage in early successional stages. If there was economic value in biodiversity or, conversely, economic risk in the loss of productivity or reduced water quality, timber owners would lengthen the rotation in their own economic self-interest.

The counter-intuitive nature of short rotation forestry (extended rotations would produce larger, more valuable logs) can be confusing. A common complaint of industry interviewees was economic naiveté on the part of environmentalists ("they think forests are a big bag of money," "they just don't understand the risk factor," etc.). Of course environmentalists also complained about ecological illiteracy on the part of industry. In any case, timber economics is a complex, arcane subject. Raising the level of economic literacy on the part of
all forest stakeholders must be the first step to designing politically acceptable economic incentives.

Economic issues will always be complicated by ideological views but increased understanding would go a long way toward raising the level of discussion and facilitating change. Suggestions included a timber economics primer for environmentalists and a series of forest economics workshops for environmental groups. Conversely, a similar approach might be used to help industry raise its level of ecological understanding.

Two obvious ways to provide constructive motivation to private landowners are through the tax code and through certification.

Changes in the tax code are always a political minefield but tax breaks are a powerful incentive and those with environmental benefits would appeal to a broad constituency. If changes are affordable and commensurate with values to be encouraged, then they should be promoted. A poorly designed tax code can distort rational decisions (both ecological and economic). The numerous taxes and jurisdictions affecting timberland owners provide good opportunities to influence their environmental behavior. A good summary of potential tax based incentives can be found in the report of the Keystone Dialogue (Keystone Center 1991).

As an example, estate tax reform is recommended by both the Northern Forest Lands Study and The Northwest Policy Center. Under current law many land rich/cash poor non-industrial forest landowners (as well as farmers) must break up and sell their land in order to pay inheritance taxes. This causes forest fragmentation and facilitates suburban sprawl. An estate tax break for land under conservation easement would be a powerful incentive for pursuing conservation goals. Carefully targeting relief to those who provide these special values to the public minimizes the perception that estate tax breaks are just tax welfare for the wealthy. Consideration was given to this in the 1997 federal tax legislation.

Certification would also be an effective carrot if certified landowners could realize a higher degree of public acceptance or a price premium for their (sustainably produced) products. Some environmental groups and some forest landowners are promoting certification through the Forest Stewardship Council (FSC), a new international organization established to accredit independent forest management certifiers. FSC guidelines are a prescriptive approach to sustainable forestry with third party oversight of forestry operations in the field to ensure compliance.

A number of forestry operations have chosen to become certified under the FSC guidelines. The AF&PA, representing the majority of forest products companies, however, has problems with the FSC standards: 1) It feels they make it difficult to practice "good" forestry (e.g. standard practices such as herbicide applications and plantations, which they feel are appropriate under the right circumstances, are discouraged or not allowed). Not promoting intensive production in plantations (in appropriate areas) has a serious environmental downside: harvesting will have to be dispersed over larger areas. This conflicts with what will need to happen as incompatible demands for forest products and other forest values continue to increase. 2) FSC requires that the "chain of custody" be tracked from forest to consumer. AF&PA feels this is impossible in a country where thousands of independent landowners, many of them very small, sell wood on the open market. Furthermore, wood fiber is recombined and raw material for recycling is often of unknown origin. 3) The current demand for sustainable timber in the U.S. is limited (demand is greater in Europe). Certification is expensive. To certify timber that exceeds demand is to incur unrecoverable costs. This is not only bad business but adds costs that competing (often environmentally inferior) products such as metals and plastics do not incur.
AF&PA members promote the Sustainable Forestry Initiative as an alternative to certification. SFI is not a certification program per se but, rather, more of a "code of conduct." Most AF&PA member companies hope that SFI will carry sufficient credibility that certification will be unnecessary. Because SFI is an alternative to FSC, some people see it as a threat. Although some prominent environmental groups have endorsed SFI (and SFI is indeed a positive step), it is still a leap from SFI to a third party field audit which confirms companies are actually doing what they say they are.

Several of the more progressive larger companies see the need for third party certification as the next step beyond SFI's "code of conduct" but are uncomfortable with the prescriptive approach of FSC. They prefer an approach which addresses their management system and processes (much like a financial audit). It is their position that a quality environmental management system (certified through the International Standards Organization (ISO) 14000 Series) would be an adequate surrogate to oversight of their field operations. ISO is a familiar organization to these companies and their standards are cheaper and more flexible than FSC's.

One key point many certification advocates overlook is that certification is a demand-driven issue, not a supply-driven one. Because there is no indication of a price premium, certified producers are incurring unrecoverable costs. This not only puts responsible operators at a competitive disadvantage but shifts demand to where costs are lower and forest practices are likely to be worse. However, if consumers were to demand certified products, industry would, no doubt, respond accordingly (as with recycled paper). Rather than push unwilling forest products companies into certification, a more efficient approach might be to create demand by stimulating the public (and large institutional buyers). The "Forest Products Buyers Group" which hopes to promote the demand for certified products is an attempt to address this issue.

One industry representative felt that solid economics will do much more to achieve environmental goals than anything else. He made the point that with overstimulated sources of supply of recycled paper, prices can collapse and progress is much harder to sustain than if demand is consistent with product specification needs supported by technology. He said that political mandates rarely work better than market forces.

Unfortunately, the debate over certification, standards and validation has become increasingly combative. Alternative approaches are perceived as competing choices, each undercutting the others. The important, positive point, however, is that all these options represent real change and all are constructive contributions toward sustainability.

"Show us how it can work. We need solution oriented demonstrations, success stories and model projects." This was a common response to the question of how best to promote sustainable forestry. While conserving high priority natural areas is critical, preservation on a broad front is a dubious approach to protecting global biological diversity given the realities of human population growth, expanding economic markets and the growing demand for forest products. Every acre of forest removed from economic production puts more pressure on the remaining acres. A more efficient approach would be to promote economic development consistent with the integrity and function of ecosystems (e.g. tied into an ecological land classification system and land use planning exercise). Successful examples must be documented and serious dialogue on how best to promote sustainable forest development needs to start now.
AF&PA’s Sustainable Forestry Initiative
Rick Cantrell
Manager, Forest Policy and Sustainable Forestry
American Forest & Paper Association

The close of 1994 marked the end of one era and the start of another for members of the American Forest & Paper Association (AF&PA). This new beginning was ushered in by AF&PA when its members established a major industry goal: to enhance the environment by visibly changing the practice of forestry on industrial forestland, especially as it pertains to water quality, wildlife and biodiversity. Equally important, AF&PA members are engaging loggers and private woodland owners in an ongoing dialogue to encourage reforestation, to use environmental Best Management Practices, and to improve the appearance of harvesting operations, particularly in highly visible areas.

Today—two years later—AF&PA members are on their way toward meeting the goal of sustainable forestry. Through the collection and analysis of reports from individual companies, AF&PA compiled data on environmental performance across the industry. This information—available for the first time in 1996—is being used to identify trends in the practice of sustainable forestry. The data cover a variety of topics ranging from harvesting practices to wildlife habitat diversity on more than 52 million acres members own or control. An independent panel of experts, who reviewed these data and the first annual sustainable forestry progress report, noted that although it was too early to tell how far the changes in commercial forestry practices will go, or how fast they will occur, that they do see positive signs in many of the companies they visit and in the first annual progress report.

AF&PA represents a vital national industry which accounts for over 7 percent of the total United States manufacturing output. Its members produce more than 84 percent of domestic paper and recycled paper and account for 50 percent of solid wood manufacturing capacity. The forest products industry owns about 14 percent (70.5 million acres) of the nation’s 490 million acres of commercial forest land; and, in 1995, was responsible for 43 percent of the 1.6 billion tree seedlings planted in the United States.

Development of the Sustainable Forestry Initiative

An independent consulting firm was commissioned in 1992 by AF&PA member companies’ CEOs to research issues related to public policy on forestry and other industry issues. Extensive interviews were conducted with industry CEOs, politicians, media, academia, environmental groups and others. This research revealed that the forest products industry suffered from a credibility problem that reduced their effectiveness in communicating with the public and legislators. Based on this research, industry CEO’s developed a strategic plan to improve the credibility of the industry. In May of 1993, as a part of this plan, the CEOs challenged their employees through AF&PA to develop a program which would provide for sustainable management of forest resources. The program that evolved, the cornerstone of the strategic plan, is the Sustainable Forestry Initiative (Wallinger 1995).

The SFI was constructed from the bottom up using this research and a nationwide task force of more than 60 representatives from member
companies, logger associations, state and regional forestry associations and others. The first draft, completed in May of 1994 was used in 15 regional workshops to elicit critical reviews from the individuals who would primarily be responsible for implementing its provisions. Comments and suggestions were received from field foresters, loggers, procurement personnel, and consulting foresters from across the United States. Additional reviews were conducted by state and federal agency personnel, academics, conservation organizations and others (Wallinger 1995). Following incorporation of these reviews and the preparation of several drafts, the proposal was presented to and approved by the AF&PA Board of Directors on October 14, 1994.

The Concept of Sustainable Forestry

Sustainable forestry is an emerging concept that may mean different things to different people. To make the industry's commitment clear, AF&PA wants to be precise about this important environmental goal. The association spelled out its definition of sustainable forestry to ensure that it was both complete and scientifically correct. AF&PA based it largely on the Bruntland Commission on Sustainable Development adopted by the international Earth Summit held in Rio de Janeiro in 1992.

"Sustainable forestry means managing our forests to meet the needs of the present without compromising the ability of future generations to meet their own needs by practicing a land stewardship ethic which integrates the growing, nurturing, and harvesting of trees for useful products with the conservation of soil, air and water quality, wildlife and fish habitat, and aesthetics."

Principles

Support for sustainable forestry stems from the AF&PA membership's belief that forest landowners have an important stewardship responsibility and commitment to society. In keeping with this responsibility, the members of AF&PA support the following principles:

Sustainable Forestry. To practice sustainable forestry to meet the needs of the present without compromising the ability of future generations to meet their own needs by practicing a land stewardship ethic which integrates the reforestation, managing, growing, nurturing, and harvesting of trees for useful products with the conservation of soil, air and water quality, wildlife and fish habitat, and aesthetics.

Responsible Practices. To use in its own forests, and promote among other forest landowners, sustainable forestry practices that are economically and environmentally responsible.

Forest Health and Productivity. To protect forests from wildfire, pests, diseases, and other damaging agents in order to maintain and improve long-term forest health and productivity.

Protecting Special Sites. To manage its forests and lands of special significance (e.g., biologically, geologically, or historically significant) in a manner that takes into account their unique qualities.

Continuous Improvement. To continuously improve the practice of forest management and also to monitor, measure and report the performance of our members in achieving our commitment to sustainable forestry.

The SFI's Implementation Guidelines (AF&PA 1994), summarized in Tables 1 and 2, translate these principles into action by providing forest managers with a specific road map for the best way to achieve sustainable forestry. The guidelines are suitably flexible to accommodate the wide variety of forest types, soil conditions and other natural features found across the vast temperate forests of the United States. Beginning in 1996, compliance with these Guidelines is required
as a condition of membership in the American Forest & Paper Association.

**Conclusions**

AF&PA member companies are rapidly integrating and implementing the Forest Principles and Guidelines for management of their own lands. January 1996 was the deadline for initial compliance. They are also actively supporting the formation of state implementation committees (SICs). The SICs will implement programs at the state level including coordinating logger & forester training and education programs. Thirty-one forested states had SICs in operation by January 1, 1996. Although the status varies by state, many of these states have existing logger training and education programs and key individuals identified or the framework for a state implementation committee. Other second year results include:

- AF&PA's Board of Directors ordered the suspension of 17 member companies on March 25, 1996 for noncompliance; 15 of these members failed to comply with the SFI during the suspension period and their memberships were terminated in July 1996.

- AF&PA members contributed $52.8 million to support forestry, wildlife, and biodiversity research.

- On AF&PA member company lands, 97% of harvested acres targeted for planting or seeding were completed within 2 years. Across all harvested acres, 99% had been successfully regenerated by planting, seeding or managed natural regeneration within 5 years.

- AF&PA member companies reforested a total of 1.2 million acres on their own lands by planting, seeding or planned natural reforestation.

- AF&PA member companies reported that 34% of forest fiber used to make paper and wood products was delivered by loggers trained in sustainable forestry.

- AF&PA member companies trained some 17,000 employees in SFI principles and guidelines.

- State Implementation Committees raised more than one half million dollars for sustainable forestry training and landowner outreach--training more than 3,300 loggers and foresters.

AF&PA member companies recognized the need for improved communications with the public to assure the public that our management practices will provide a continuous supply of all forest benefits for future generations. Sustainable forestry and the SFI will evolve with experience and knowledge gained through research. The SFI Principles & Guidelines are "living documents" and will be modified over time as necessary to adopt new research and technology.

The Sustainable Forestry Initiative is the beginning. Continued improved management of industrial and non-industrial forestlands and a reporting of these successes will lead to the ultimate goal of productive, healthy forests that assure a sustained supply of useful products for generations to come.
Table 1: Summary of sustainable forestry implementation guidelines--members' forests

**Objectives and Performance Measures**

**AF&PA Members' Forests**

1. Broaden Practice of Sustainable Forestry
   - Define company programs, policies, and plans
   - Support research

2. Prompt Reforestation
   - Reforestation by a certain date
   - Report success to AF&PA

3. Protect Water Quality
   - Meet or exceed existing laws
   - Protect all perennial streams and lakes
   - Involve experts
   - Support research

4. Enhance Wildlife Habitat
   - Define company programs, policies, and plans
   - Support research

5. Minimize Impact on Visual Quality
   - Define company programs, policies, and plans
   - Manage clearcut size
   - Green-up requirement

6. Protect Special Sites
   - Identify and manage appropriately
   - May include involvement of independent experts

7. Contribute to Biodiversity
   - Support research
   - Adaptive management

8. Continue to Improve Utilization
   - Employ appropriate technology

9. Continue Prudent Use of Forest Chemicals
   - Meet or exceed all legal requirements
Table 2: Summary of sustainable forestry implementation guidelines—nonindustrial private forestlands, logger training and education and public reporting and involvement

Objectives and Performance Measures

Procurement from Loggers and Other Landowners

10. Broaden the Practice of Sustainable Forestry
   • Information from companies to landowners
   • Procurement foresters and logger training and education programs in place by January 1, 1996
   • Annually report progress to AF&PA
   • Communicate commitment throughout company
   • Each member plans inventory and procurement policies
   • Support and promote other landowner education efforts

Public Reporting and Involvement

11. Publicly Report Performance
   • Members annually report to AF&PA
   • AF&PA issues annual report
   • Independent expert review of report

12. Public and forestry community participation
   • Support and promote appropriate mechanisms for public outreach
   • Appropriate program funding at state level to address concerns
   • National forum of loggers, landowners, and member companies
Champion International Corporation's
Commitment to Sustainable Forestry Principles
Carlton Owen
Director, Resource Issues
Champion International Corporation

As one of the world’s largest manufacturers of paper and forest products, Champion owns or controls more than 5.3 million acres of forestlands in the United States. While these lands supply our fiber and timber needs, they are also managed with careful attention to the social responsibilities that go with such ownership.

To fulfill these responsibilities, Champion is committed to practicing sustainable forestry as outlined in the American Forest and Paper Association’s (AF&PA) Sustainable Forestry Initiative (SFI). Our commitment to SFI reflects our understanding that doing the right thing in our forestlands makes sense, both from a business and an ecological perspective.

Forces Driving Sustainable Forestry

Significant national and international forces are driving the rapid development of Champion’s sustainable forestry practices. Environmental groups, government regulators, the general public and key customers are asking questions about our forestry practices. Increasingly, our customers want assurance that we are managing our forests in an environmentally acceptable manner. Additionally, our own managers and employees share these same concerns.

In 1994, Champion recognized that clear actions needed to be taken to demonstrate to the public and our customers that we were managing our forests in a sustainable manner. We believed that failure to take aggressive action could result in more regulations, loss of management options, and more preservation set-asides.

Organizational Changes

To chart an aggressive course of action, Don Taylor, a senior resource manager with over 30 years’ experience across the U.S., was appointed to a newly created position of vice-president of Sustainability and Stewardship in 1994—the only such position in the industry. The initial focus of Taylor’s position was to develop an implementation strategy for Champion’s emerging sustainability and stewardship policies as well as AF&PA’s Sustainable Forestry Initiative.

We formed a company-wide Sustainability and Stewardship Team (S&S Team) to assist Taylor in the development, implementation, and communication of Champion’s sustainable forestry principles. Senior forest managers from each of our nine forest resource regions were appointed as team members. In addition to the national team, each of the nine regions also formed local implementation teams. The mission of the local teams: (1) provide the national team with input on proposed SFI strategies, (2) refine the policies set by the national team to more specifically address local business and environmental needs, and (3) develop local implementation plans.

Senior management recognized that without the strong support of field-level operations personnel, our implementation effectiveness would be greatly reduced. This team-based “bottom-up”
implementation strategy was designed to encourage rapid buy-in from operations personnel at all levels.

To assist in the on-the-ground implementation of the SFI, 16 new resource professionals were hired including additional wildlife biologists, soil scientists and a geomorphologist. In all, Champion committed over 50 managers with part-time or full-time responsibility to ensure full scale implementation of SFI—a very strong signal from Champion senior management that as a company we are committed to the implementation of the SFI.

Communication - A Key to Success

The process we used to communicate our policies and strategies to every management and procurement forester in the company was a key to the successful implementation of the SFI. Taylor, with support from corporate staff specialists, traveled to each region at least twice a year to meet with operations personnel and key members of the logging community. During the two-to-four day visits, the team would conduct an on-the-ground critique of the region’s SFI efforts and provide recommendations on future action steps. This helped to clearly demonstrate to our operations personnel and contract loggers the importance Champion was placing on the SFI. In addition to meeting with forestry staffs, a communication effort was also directed at the company’s pulp and paper mill managers and solid-wood facility managers.

To enhance external communications, Champion convened an environmental forum in December of 1995 with leaders of conservation and environmental organizations. Champion’s senior forestry executives presented an overview of the company’s efforts to advance sustainable forest management within the U.S. and abroad. This represented a unique effort to bring together senior executives from a major forest products company and representatives of environmental groups. The participants shared insights on resource management issues and sought opportunities for cooperation on items of common concern.

The “New Approach”

Under sustainable forestry principles, our forest management began to shift, in 1994, to a landscape based approach. While cost and wood productivity are still very important, a higher degree of attention is now given to the protection of the “other” forest values. Potential impacts to water quality, wildlife habitat, soil productivity, aesthetics, and biodiversity are now more carefully evaluated prior to starting forest management activities.

The foundation of this new approach is the company’s forestland classification system. This innovative approach to forest management was developed by the national S&S Team. The system identifies four different land use classifications on our forestlands. The four classifications recognize that land characteristics such as ecological, biological and historical value, uniqueness, and soil productivity form the logical basis for land use decisions. The four land classifications are:

**Protected Areas:** Land with unique natural or cultural value that has been removed from timber production. These areas are either part of Champion’s Special Places in the Forest™ program or other efforts designed to maintain and protect the area’s unique values. Examples include rare geologic features, significant historical sites, state natural heritage sites and exemplary natural communities.

**Restricted Management Areas:** Land where non-timber values, such as wildlife habitat, water quality, or recreation are the basis for management decisions, with timber production a secondary value. Example areas include streamside management zones, cypress domes and ponds, and significant wildlife/plant areas.
General Management Areas: Land where timber production is the primary value, but where other values are also accommodated through a landscape approach to management. This approach takes into account the biodiversity of the entire area that is being harvested rather than an individual stand of trees. Example areas include bottomland hardwood stands and wildlife corridors.

High Yield Areas: Land with the highest timber productivity potential. Here we optimize the wood and fiber production through the latest scientific forest management techniques. Those techniques include regeneration methods that use genetically superior tree seedlings and a harvest schedule based on products that our customers want.

This classification system provides Champion’s resource managers with a framework to integrate the protection of water quality, soil, wildlife and fish habitats with the production of commodity forest products.

Enhanced Woodyards

Roundwood and chip storage capacity is a major factor in an organization’s ability to minimize best management practice (BMP) violations during saturated soil conditions. With adequate mill inventories, woods operations can be curtailed during wet weather conditions without the risk of the mill running out of wood.

With Champion’s commitment to treating all BMPs as mandatory, we recognized the need to assess the adequacy of our woodyards to ensure BMP compliance during wet weather conditions. This assessment led to millions of dollars of capital improvements to the company’s woodyard system. This expenditure of capital resources sent another clear message to both Champion employees and our contract loggers--senior management is committed to the SFI effort.

Reinventing the Wood Supply System

One of the most significant changes that Champion is implementing because of sustainable forestry relates to logging contractors. Historically, Champion and logging contractors have maintained an “arms length” relationship. If we are to achieve our goals, a better, deeper relationship is imperative.

To help in the redesign of our wood supply system, Champion managers recently began meeting with logging contractors from across the nation. From the dialogue, we are developing a set of professional and operating standards designed to mutually benefit both parties. We believe that together we can build a more effective wood supply system that meets twin goals—superior environmental performance and long-term financial success for both businesses.

The new standards will apply to loggers working in Champion forests as well as other private lands where Champion purchases wood. That’s significant, because even though we own or control over 5.3 million acres in the U.S., about 70 percent of our wood comes from private landowners.

BMP Monitoring

To monitor the company’s BMP compliance, we have adopted an internal monitoring and auditing program. This effort, designed and implemented by the national S&S Team, is intended to ensure that all state and Champion BMPs are met. Where problems are identified, action plans are developed to correct the deficiencies.

The implementation of the BMP monitoring system produced several outcomes. First, it served as another example of the company’s commitment to the SFI—both internally and externally. Company contract administrators, who helped develop the system, were asked to monitor all forest management activities for BMP compliance. If they found that BMPs were not implemented, the
contractor would not be awarded another contract with Champion. Only companies that consistently implement BMPs and the SFI principles are maintained as part of the company's contract force.

Second, our monitoring system showed us that road construction and maintenance activities were the most significant contributors to BMP violations. In response, Champion targeted significant additional capital resources to our road program. We also hired external road construction and maintenance consultants to assist us with the development of new road construction and maintenance techniques.

Finally, the company has openly shared our monitoring program with groups interested in our practices. All of our regions are encouraged to include guests in their BMP auditing efforts. External members of some of the audit teams have included state natural resource agency personnel, members of local environmental groups, tribal representatives, and Champion customers.

Summary

At Champion, BMP monitoring, site classification, increased wood inventories and a deeper relationship with contractors, are all important aspects of our effort to attain sustainable forest management. Since we expected that implementing the SFI would meet some resistance, we designed a change process that involved all levels of the organization. We also aggressively worked to communicate our efforts both internally and externally. While change is often difficult, our employees and contractors are showing strong support for the SFI, which we view as an indication of a successful implementation effort.

Champion's SFI effort is one of the most comprehensive approaches to good forest stewardship in the forestry community. Champion supports the effort because we believe it's the right thing to do. It will assure a brighter future for our forests and the industry that depends on them.
Forest Stewardship and the Hancock Timber Resource Group

Mason Browne
Hancock Timber Resource Group

Stewardship: A Changing Concept

The criteria that society has used to judge good stewardship has evolved through time. Early in this century, when large uncontrolled forest fires were prevalent, good forest stewardship was measured by how well a property was protected from wildfires. Later, the importance of controlling soil erosion was added as a stewardship element, as society saw the result of poor agricultural practices such as those manifested during the Dust Bowl Era. Then, in the 1940s, reforestation was shown to be an economically viable stewardship practice, as Weyerhaeuser began planting and growing trees as an economic crop on its Clemons Tree Farm in western Washington. "Stewardship" was further defined by the U.S. Forest Service (and others) as they used various methods of harvest control to create a continuous supply of wood.

This evolution of the meaning of good stewardship continues, albeit at a more rapid rate. Four significant changes have recently occurred. The first is an expansion of stewardship to include both timber and non-timber values. These non-timber resources include: wildlife, plants, air, water, archeological sites, and scenic beauty. In addition, resource managers are being asked to look at these resources on a larger scale. No longer is it acceptable to merely look at a forest, timber stand by timber stand. Now, foresters are looking at "watersheds" and "ecosystems." They are also working with the various stakeholders who have an interest in the forest. No longer can a forester merely know how to grow a tree. Equally important is the skill of knowing how to constructively interact with governmental agencies, environmental groups, the general public, and other parties who have a stake in how forests are managed. Finally, foresters are being asked to learn the skill of communication. Without two-way communications with stakeholders, it becomes difficult to understand and align oneself with society’s changing concept of stewardship.

Many have suggested that, in a democratic society, public values and business’ values will eventually converge. If a business strays too far from society’s values, society will change the rules under which business can be conducted. Thus, the changing criteria for what constitutes good stewardship can be viewed as resulting from a change in society’s values. Environmental awareness, activism, and increased scientific knowledge have recently accelerated these changes.

Forest Stewardship as it Applies to Hancock

These changes in the definitions of “good stewardship” have caused a number of changes within the Hancock Timber Resource Group. We’ve had to define what good stewardship means to us:

Forest Stewardship relates to how well we manage, on a sustainable basis, all the assets entrusted to us. This includes both timber and non-timber resources.

Forest Stewardship is the establishing, growing, and protecting our client’s forest investments, the complete and diverse community of interconnected natural resources.
This has led us to develop land management policies that we feel are consistent with this definition of stewardship. In effect, we’ve had to, in writing, define what our land management ethics are. These policies define our values as they relate to such things as non-timber resources, sustainability, harvesting methods, and aesthetics. We’ve written these policies to bring a conservation ethic into our business in a way that makes good business sense. If done right, we believe that stewardship adds value to our business. We believe that:

**Good Stewardship is Good Business**

The Hancock Timber Resource Group has used its values and policies to develop and implement a stewardship program that we believe is consistent with these values and beliefs. We’ve taken a lead in developing habitat enhancement programs for wildlife. For instance, we recently won the American Forest and Paper Association’s (AF&PA’s) Wildlife Stewardship Award for our comprehensive salmon enhancement efforts in the Pacific Northwest. These efforts were conducted in cooperation with many stakeholders, including numerous environmental groups, government agencies, and interested citizens.

One of the most successful land management initiatives at the Hancock Timber Resource Group is our sensitive Land Sales Program. Since the Program was developed in 1990, we have helped to conserve thousands of acres of forest land for the enhancement of wildlife and the public’s enjoyment.

We also have instituted a program to identify environmentally sensitive lands and to sell these lands to conservation groups. This protects the conservation values of these lands in perpetuity. We were also one of the first private landowners to enter into an agreement with the Federal Government to protect and enhance populations of red-cockaded woodpeckers, an endangered species of woodpecker found in the southeastern U.S.

We’ve attempted to reach out to our stakeholders and to involve them in our forest management process. We’ve developed Memoranda of Understanding (MOUs) with the National Wild Turkey Federation, the Ruffed Grouse Society, the Rocky Mountain Elk Foundation, and the National Fish and Wildlife Foundation with their Partners in Flight Program. We’ve sought advice from our stakeholders as we’ve formed an outside advisory group comprised of many different stakeholders to help us in our management of our forest properties in the northeastern U.S. These are just a few of the many projects we’ve undertaken.

We’ve also combined our stewardship program with our communication program in such a way that it is sometimes difficult to tell one from the other. We recently co-sponsored (along with Washington State Congressman Norm Dicks and the environmental organization, For Sake of the Salmon) a salmon conference which focused on habitat restoration.

We’ve developed a salmon restoration logo that we hope people will use as a symbol for habitat restoration. We’ve also developed, a video promoting the establishment of a 1200 acre scenic and historic park. This video was developed in partnership with the River Network, an environmental organization working to help people save rivers. As a further “twist,” sometimes this partnership approach means that we help our stakeholders in their communication efforts. Our co-sponsorship of The Nature Conservancy’s educational video “Common Ground in Timber Country,” is one such example.

At Hancock, we believe that we are creating both a successful business and a successful stewardship program. Since 1984 (when we owned no forest land), we have grown to nearly 2.5 million acres which makes us the seventh largest private forest landowner in the United States. We manage approximately 60% of the U.S. pension fund money that is invested in timberland, and we have done so
in a manner that has yielded superior returns for our clients. We've also done this in a way that we believe is good for the environment. Ultimately, though, it is society's changing stewardship values that will determine the success of our program.

The Future

What does the future hold for stewardship? We believe that there will be a continuing trend to learn how stewardship and business can become more compatible concepts. There will be more working together by all the stakeholders and less adversarial behavior. Landowners will be looked on, not as part of the problem, but as part of the solution. There will be more of a conservation ethic incorporated into business, and more of a business ethic incorporated into conservation.

The types of changes we're likely to see in the future include:

- Landowner incentive programs such as are outlined in “Producing Forest Wealth,” a publication produced by the Northwest Policy Center, University of Washington, Box 353060, Seattle, WA, 98195-3060, Tel: 206-543-7900.
- Changes in the tax laws, especially inheritance taxes for small non-industrial landowners. These laws are presently structured in a way that forces landowners to liquidate their timber land in order to pay their inheritance taxes.
- Carbon sequestration regimes whereby fossil fuel producers and/or users will compensate landowners for storing carbon. This will be done by landowners growing more trees on longer rotations.
- More market-based solutions and less reliance on regulatory approaches. This will make stewardship more economically efficient.

Other stakeholders, including endowment funds and other non-profits, can help move to this future state of forest stewardship. They can do this by focusing on solutions that work for all stakeholders. Seeking win-win solutions for the stakeholders can be economically more efficient and more self-regulating than our present regulatory-dependent approach. These stakeholders can help us learn how to be both good stewards and to do it in a way that is good for business.
Developing Independent Forest Management Certification
Eric S. Palola
National Wildlife Federation

This paper will offer a brief perspective on the status of third-party or independent forest management certification, and contrast it in part with other models that have been discussed. Let me start by providing a definition: my definition of third-party certification is: "...a market-based and place-based evaluation tool for forest management..." More specifically, I would describe it as "...a voluntary market and place-based tool for testing, operationalizing, and verifying principles of sustainable forestry in a practical setting." I emphasize the word practical because, although the process of becoming certified may not feel practical—especially for the early entrants—the process is designed to work within the real-world economic constraints and informational gaps that landowners confront on specific forested sites.

The National Wildlife Federation’s (NWF) regional office in Vermont has been working for almost three years with the SmartWood program in the development of a North American temperate forest certification program. SmartWood is a program of the New York-based Rainforest Alliance. It is the oldest forest certification program, having been pioneered in the tropics; and it was one of the first programs to be accredited by the international accreditation body for forest management, the Forest Stewardship Council (FSC), headquartered in Mexico.

NWF and SmartWood

For NWF, what our collaboration with SmartWood means is that we are working both to conduct in-the-field forest management certifications in the northeast region as well as, from an institutional standpoint, assist in the development of a network of NGO groups that similarly collaborate with the SmartWood Network as regionally-based certifiers. This is a wholly new type of organizational structure and one that NWF, among others, is not generally accustomed to. Providing certification services which are ecologically-grounded and regionally-sensitive requires that the program function as a "network," in particular, a network that capitalizes on the local knowledge of its member groups. This is a different organizational role than, say, a coalition fighting for legislation on Capitol Hill. Even though the Network has a common purpose in providing certification, the "product" of the network is diffused across a wide array of ecological, economic, landowner, and political landscapes.

A few facts for context: Right now there are about 70 operations certified worldwide—from community based ejidos in Mexico, to teak plantations in Indonesia, to natural temperate forests in the U.S. This amounts to roughly 15-20 million hectares worldwide. In the U.S., the major players at this time are Scientific Certification Systems (SCS), based in California, and the SmartWood program of the Rainforest Alliance based in New York and Vermont. By 1997, SmartWood will have certified about 500,000 acres in the U.S. In the northeast region, NWF has completed its first three SmartWood certifications in three different states—two private land and one public land certifications—totaling about 90,000 acres. This is obviously a very small percentage of the land base and of the market. However, what is important about these numbers is that virtually none of this existed as recently as three years ago.

The North American arm of the
Evolving Toward Sustainable Forestry: Assessing Change in U.S. Forestry Organizations

SmartWood Network now consists of six regionally-based collaborating NGO’s while another two groups are on deck in Canada. And as I hinted before, the important organizing principle—and one that is relevant to other organizational issues discussed in this book—is that we shouldn’t do certification from a centralized institutional structure. We feel that the involvement of local and regional groups and the reliance on certification standards developed in accordance with bioregional differences will be a key to long term success. In the northeast we have embarked on a regional certification guidelines development process, starting with a small technical group consisting of key academic, forestland company, and public forestry officials. A draft set of guidelines produced by this group was sent to another forty experts around the region and have been finalized into a working document. This document will also be fed into an FSC working group recently convened in our region. Three major factors summarize these guidelines and the requirements of FSC accreditation: conservation and maintenance of environmental functions, sustained yield silviculture related to the ecological capacity of the forest, and positive impacts on local communities.

Institutional Thresholds at the FSC

Regarding other institutional players in certification, I’ve mentioned the FSC. After a bumpy start, I think it is fair to say that the FSC is steadily gaining cohesion and focus. It is worth spending a little time talking about the FSC because they are the umbrella group for the whole third party certification effort. They have an enormous task between developing policy, conducting accreditations of certifiers, monitoring and helping generate certification standards, auditing certifiers, and above all, working with the different political and cultural interests of its member groups. Currently the FSC has roughly 150 member organizations from some 30 countries. In terms of major recent institutional milestones that the FSC accomplished in 1996:

- A "plantation principle" was ratified by the membership. This principle provides the necessary guidance for developing certification programs that address plantation issues in the areas of exotics, chemical use, scale and impact, and their role in serving community needs.

- A change in the FSC voting structure which now gives the "economic chamber" equal footing with the "social" and "environmental" voting chambers. This removes a persistent criticism by industry that the FSC membership structure was unfairly weighted against them.

- The accreditation of five certification organizations such as SmartWood. However, another 15 groups are already in various stages of application from around the world. Two of the initial five are the U.S.-based programs I already mentioned; two are based in the U.K. (SGS Forestry and Soil Association) and one is based in the Netherlands (Skal).

- More focus and resources on the North American effort, particularly in the areas of regional standard setting and general visibility (thanks in large part to the efforts of Bruce Cabarle from the World Resources Institute and Jamie Ervin of FSC).

In terms of major institutional and policy issues still to be resolved within the FSC, there are at least four under consideration:

Forest conversions

Historically, while the FSC has prohibited the certification of native forest conversions (e.g. to a plantation), the policy has been less clear about the role and acceptance of restoration or regeneration activities that utilize plantation management.
Use of "percentage-based" products and labels

This will be a key policy especially for Europeans who see resolution on this issue as essential to unlocking the market for FSC-accredited pulp and paper products. The debate here focuses on: determining reliable auditing techniques for paper makers, settling on permissible levels of non-certified content, and development of a labeling standard that accurately conveys the percentage content of certified and non-certified pulp.

The other two issues before the FSC are of particular interest by those of us in the SmartWood Network because they directly affect the ability of small landowners and companies to participate in certification:

Exclusive versus non-exclusive sources

Some companies or forest land managers are not prepared to bring their whole forest land base or product stream into certification at once due to cost, risk, uneven forest management planning, or other business factors. These operations are described as "non-exclusive." We need systems that will permit this flexibility, but also curb any tendency by companies to "game" the system, (e.g. greenwash) or require excessive auditing to ensure compliance.

Development of certification systems to encourage very small landowners

Encouraging very small landowners to participate is important to us as a means for encouraging local community benefits. Because it is inherently more cost-effective to certify very large operations than small ones, there is a big potential for disproportionate participation by large companies. NWF and SmartWood Network members have addressed this by developing protocols for certifying what we call Resource Managers. In our region these are typically consulting foresters and their respective client base. This process verifies that a consistently high

standard of forest management is being applied across the client base and requires that the land manager have tight control over all management planning and harvesting decisions. This is basically an aggregation approach, similar in concept to agricultural resource cooperatives. The FSC calls these "group certification strategies," and is also working on general policy in this area, drawing on our pilot initiatives.

Certification At Large

Leaving the FSC for the moment, I should also comment on the institutional swells and eddies around different concepts of certification. These manifest themselves in real and perceived differences about what independent forest certification is and how it should be practiced. One way to think of these differences is within a spectrum of certification-like programs that are routinely advanced among segments of the forest products industry. These include:

- Individual-by-individual training or licensing of loggers and foresters by governments, NGO's groups, and to a certain extent, even some companies. Examples include logger safety programs, SAF forester licensing, and state forester licensing programs;

- Self-reporting or self-auditing systems which are designed primarily around the existence of certain management systems and internal company policies. The prime example here is the Sustainable Forestry Initiative (SFI) administered by the AF&PA; and

- External verification of management and performance which consists of independent assessments and audits, such as those conducted by FSC-accredited certifiers.

Of these three general approaches, only the last approach, third-party certification, is explicitly
tied to actual performance in the forest. This is very important when it comes to building confidence within the environmental community and, we believe, will be increasingly important to the wood-consuming public and to companies involved in wood products manufacturing and distribution. However, I will be quick to emphasize that this does not mean that the other approaches are unworthy or unworkable. Indeed, they have much to contribute. The real issue here is one of long term credibility and verification in a marketplace which values environmental performance.

Comparisons are often made between the SFI program and FSC-accredited certification. A frequent description that is used by AF&PA in comparing the SFI program to FSC-accredited certification is the euphemistic preference for a "systems-based" over a "prescriptive" approach. The less than subtle message here is that the internal self-reporting process of the SFI is less intrusive and carries equal benefit compared to the more transparent independent review process of the FSC. This comparison becomes especially vivid when FSC certification is characterized as bureaucratic, rigid, and tantamount to letting environmentalists run loose across your property!

But the fact remains that there are prescriptive and systems-based elements in both SFI and FSC. Stereotyping these programs satisfies perhaps some political goals of AF&PA, but otherwise only creates misunderstandings and misplaced perceptions. Ultimately, the market will convey its expectations. While I do not want to leave the impression that there are not positive aspects to SFI, we do not feel it provides the verification of performance that some markets desire, and which many in the environmental community and general public expect. Simply put, this level of verification must be able to discern whether a piece of wood can be traced to an ecologically functional forest.

Key Drivers to Participation

Based on NWF’s experience in the Northeast and the broader experiences of the SmartWood Network, we are finding that what drives landowners, land managers, or companies to get involved in SmartWood certification can vary considerably. Although we describe certification as a market-based approach, non-market factors can be important as well. Some of the major determinants appear to be:

Certification may or may not provide market premiums.

The conventional wisdom is that certified products automatically mean higher prices to absorb the costs of certification, and that this in turn requires a premium payment of some sort. Based on our own market research we have found that there are opportunities for premiums in specific markets with specific product lines based on willingness to pay at the manufacturing or retail level, but it is by no means uniform across the industry. The near-term opportunities for such premiums appear to be in value-added solid wood and component manufacturing. This should come as no surprise because these are the sectors where the most significant gains in margin are realized between the forest and retail level and, most importantly, they tend to involve products that people can see, feel, and touch. In our own region, NWF completed a survey of secondary wood manufacturers and found that over 20 percent on average were willing to pay a premium with the figure as high as 70 percent in some states for certain product lines such as furniture.

Certification is also about maintaining or enhancing market share and security of supply.

For people in the industry who are in the business of moving wood, their struggle is as much about maintaining a volume of sales—based on comparative advantages in price and product quality
and, increasingly, the product's "environmental story"—than it is about premiums. In a competitive world any positive distinction in the marketplace can translate into gains in market share. We have seen that for companies who are used to moving steady volumes of wood, the certification costs become negligible over time and, with shrewd marketing, the environmental certification story they add to their product can maintain or improve their share in the market. In addition, based on consumer interest in distant markets, many buyers are beginning to seek certified wood. For example, I was recently told that 40 percent of the firms in the National Hardwood Exporters Association have received inquiries for certified wood.

*Public recognition and access to new information helps drive the process.*

While many operations are nervous and sometimes indignant at having an independent team assess (and criticize) the quality of their forest management, practically all forest land managers have found the experience professionally challenging and helpful. This is because an FSC-accredited SmartWood certification assessment requires a team of skilled, regionally-based practitioners in the areas of forest and wildlife ecology, silviculture and utilization, and community relations. This team typically spends several days in the field with forestland managers reviewing management systems and harvesting operations.

*Public recognition is a powerful incentive.*

In situations where returns to stumpage are not the predominant concern, the public recognition and professional satisfaction to a forestland company from engaging in an independent review is a powerful incentive. For consulting foresters involved in our Resource Manager certification program, it is also apparent that certification is seen as a potential selling point. This is true in particular for non-industrial properties, and for forest products companies that are facing new supply constraints due to landowner withdrawal of lands from harvesting due to environmental concerns.

**Conclusion**

Before I conclude, let me commend a recently issued book entitled Certification of Forest Products: Issues and Perspectives (Island Press 1996), which offers a comprehensive discussion on many aspects of certification, both technical and institutional. Finally, let me be clear that NWF and other organizations in the SmartWood Network do not view certification as the panacea to all the technical and organizational questions that underlie what I hope is an evolution towards sustainable forestry. We see it instead as a very promising tool; a tool which if used appropriately can link in-the-field applications of sustainable forestry and ecosystem management to the market in a realistic way. Is certification effective now? I would say yes unequivocally—not from a market penetration standpoint, although I think that will change over time—but because of how certification has already leveraged significant changes in how we think about, implement, and recognize sustainable forest management.
Habitat Protection on Private Forests:
Ending the Impasse
Michael J. Bean and David S. Wilcove
Environmental Defense Fund

A 14-month moratorium on any new additions to the endangered species list ended recently, when congressional leaders gave in to President Clinton's demand that most environmental riders be removed from remaining fiscal year 1996 spending bills. More than 200 species that had been proposed for listing, but never acted upon, are now likely to receive the protection of the Endangered Species Act (ESA), including California's red-legged frog, made famous in Mark Twain's short story about the jumping frog of Calaveras County. Reactions to the ending of the moratorium were predictable: The environmental community cheered one of its few legislative "victories" in the current Congress, while landowners and other regulated interests brooded about likely new restrictions on their activities.

Though the listing moratorium has ended, the underlying factors that prompted it remain: deep division and lack of consensus about what changes to the ESA are needed. As the waning days of the 104th Congress draw near, there is every reason to expect that the impasse over the future of the act, already in its fifth year, will continue into a sixth. Lack of progress in re-authorizing the act might be a satisfactory outcome—if the existing law were achieving its purposes reasonably well. For those truly concerned about reversing the slide toward extinction of much of our native wildlife, however, continuing the status quo indefinitely ought to be a deeply disturbing prospect.

The best available assessment of how well the act is working is the U.S. Fish and Wildlife Service's 1994 report to Congress on the status of recovery efforts for all listed species in the United States. It paints a somber picture. Fewer than a tenth of all listed species are judged to be improving. Nearly four times that number are declining. For about a third, the service simply lacks the resources to determine how they are faring. Even the low number included in the "improving" category represents a stretch, for the category includes several species whose progress has been modest at best.

Behind the disappointing results documented in the service's report lies a set of problems that has been given little serious attention by environmentalists or by the relevant government agencies. Yet fixing those problems will be essential if the ESA, intended to serve as an emergency room, is ever to be more than a hospice for most species.

The Achilles' heel of the ESA is the private landowner problem. More than half of all threatened or endangered species in the United States depend, at least in part, on habitat that is privately owned. A significant number occur exclusively there. In states like Texas, which has one of the highest numbers of listed species, virtually the entire land base is privately owned. Earth First!'s founder, Dave Foreman, hit the nail on the head when he wrote recently that "it is self-defeating and unfair to penalize landowners for hosting threatened and endangered species." If the goal of averting the loss of biological diversity is to be achieved, it will be essential to have strategies in place that work well on private land. The strategies embodied in the current law do not.
Consider the case of the red-cockaded woodpecker, which inhabits mature pine forests in the southeastern United States. The clearing of the Southeast’s longleaf pine forests, coupled with modern forestry’s emphasis on short cutting cycles, has caused this small, black-and-white woodpecker to vanish from much of its range. It was added to the endangered species list (which predated the ESA) in 1970, yet, over the past quarter century, it has continued to decline. Part of the blame can be laid at the feet of the Forest Service, which for many years failed to protect the woodpecker’s habitat in the national forests. Another share of the blame goes to the landowners who quietly destroyed woodpecker habitat despite the law. But some of the problem stems from a fear of regulatory restrictions that has prompted some landowners to destroy potentially suitable habitat before woodpeckers can occupy it.

An example of this problem is provided by a North Carolina landowner named Ben Cone, who owns an 11,000 acre tract of pine forest known as “Cone’s Folly.” About a tenth of that tract is occupied by red-cockaded woodpeckers. Fearing that the woodpeckers would expand their range on his property, Cone announced plans to begin clearcutting those areas not yet occupied by the bird. Doing so would not violate the ESA, since no woodpecker deaths or injuries would result from destroying unoccupied habitat. Yet, Cone’s actions surely frustrate the purposes of the act. The unoccupied habitat he plans to cut represents potential future habitat that, if left uncut, would aid in the woodpecker’s recovery.

Cone is unique only because of the efforts he made to publicize his intentions. Reportedly, forest consultants throughout the Southeast routinely advise private timberland owners to cut their timber before it reaches the age at which red-cockaded woodpeckers might utilize it. That such fears are greatly exaggerated is of little consequence. The perception of landowners that their timber investment may be put at risk if endangered species show up is all that matters, for it is the perception that drives such landowners to do exactly the opposite of what could help the species.

The phenomenon of “panic cutting” is not unique to the Southeast. In the Pacific Northwest, small private forest landowners have the same motivation: If their trees are reaching an age where they might provide suitable habitat for the northern spotted owl, cutting the trees before an owl takes up residence is one way to avert the risk of unwanted land use restriction. In California’s Central Valley, farmers have taken to plowing fallow fields, lest endangered kangaroo rats and other species move onto them once native vegetation is reestablished. The environmental consequences of such behavior are entirely negative.

Many of the same problems occur when a species is identified as a candidate for possible future listing. An unfortunate race sometimes ensues between landowners on whose land the species occurs and the Fish and Wildlife Service. The Service’s aim is to add the species to the list while there is still a chance of protecting it. The landowners’ aim is to get the species off their land before the Service lists it. In one widely publicized example, the Service had to use its emergency listing authority to extend protection to the golden-cheeked warbler in Texas because a prominent development interest had accelerated its land clearing activities in anticipation of the songbird’s possible listing. In California, after a federal judge found fault with the procedures used to list the California gnatcatcher, he reinstated the listing upon reading in the newspaper the suggestion by a plaintiff in the case that the hiatus in the validity of the listing provided an opportunity to carry out habitat-destroying land clearing.

These problems, for the most part, are in fact solvable under the existing law. One of the more creative new solutions to the problem typified by Ben Cone is an idea called “safe harbor.” It provides a means whereby the Fish and Wildlife Service can offer future land use assurances to a
landowner in return for the landowner’s commitment either to enhance habitat or to maintain for a period habitat that may eventually be used by endangered species. The central idea is straightforward: The landowner voluntarily agrees to undertake a beneficial action (or forego a detrimental, but legal, one); in return, he or she receives an assurance that his or her obligations under the ESA will not be increased as a result.

The power of the safe harbor idea is that it not only provides habitat where otherwise there would be none, but that it makes landowners willing partners in the endangered species conservation effort. In coastal Texas, where a safe harbor program was instituted in 1995 to restore coastal prairie habitat for the critically endangered Attwater’s prairie chicken, one example makes the point. One of the first participants in the program discovered one of the rare birds on land where he had recently undertaken habitat enhancement activities. As a result of the land use assurances that the safe harbor program conferred, the landowner was pleased to be given local acclaim for his good stewardship. The marquee in front of the local Chamber of Commerce announced his success. Elsewhere, without the incentive of a safe harbor program, many private landowners might go to great lengths to avoid disclosing that endangered species occurred on their property.

Safe harbor is an administrative creation, a discovery of a new way to solve a vexing problem by using the flexible authority the ESA already confers. When the first safe harbor program was proposed in the Sandhills of North Carolina, not a single comment was received in opposition to it, and the same reaction greeted the second plan in coastal Texas. In an arena often characterized by hostility and wariness, the safe harbor idea has made private landowners willing participants in conservation efforts.

The essence of the safe harbor idea has the potential for broader application to situations involving declining species that have not yet reached the point where they need to be listed. In such circumstances, if the Secretary of the Interior could offer reasonable certainty with respect to future land use restrictions to landowners who were willing to make significant and lasting conservation commitments in advance of listing, the incentive to destroy habitat would be reduced, and the opportunity to avert a precipitous decline in the species would be gained. The service’s authority to give such assurances under existing law is severely constrained, however, and legislative changes to expand that authority are needed. Some environmental interests have been reluctant to support that expanded authority, insisting instead that the service retain the power to nullify an agreement and impose whatever requirements it deems necessary in the future, even on those landowners who did all the beneficial things they agreed to do at a time when they had no obligation to do anything at all. This will only cut off the nose to spite the face, since without reasonable assurances of what will be required of them in the future, few private landowners will be willing to carry out actions designed to sustain declining but unlisted species on their land.

We can, in short, remove the existing disincentives in the act that make landowners leery of attracting endangered and near-endangered species to their property. What, however, can be done to promote a conservation-friendly attitude among the many landowners who already have endangered species on their property and who feel at risk because of the presence of those species? The irony with respect to these landowners is that, though they often chafe at both real and perceived restrictions on their freedom to use their land, the act has generally achieved little success in protecting species on private land. To appreciate why such modest results have been attained, it is necessary to understand how the ESA works in practice. Popular notions to the contrary, the ESA does not absolutely prohibit either public or private activities that detrimentally affect listed species. For federal agencies (including federal regulatory agencies involved in permitting private
development), the act's key requirement is found in Section 7, which requires the agencies to ensure that actions they authorize, fund, or carry out do not jeopardize the continued existence of any threatened or endangered species. This is the provision to which the Supreme Court gave a sweeping interpretation in the 1978 Tellico Dam case, *Tennessee Valley Authority v. Hill*. When, as was thought to be the case with Tellico Dam, a proposed federal action will completely destroy all that remains of a species and its habitat, Section 7 requires that the action not go forward. Though this is a very significant restraint on federal agencies, it stops well short of a prohibition against any further erosion in the status of already imperiled species.

The fact that federal agencies can, consistent with Section 7, actually make the status of a listed species more precarious was the conclusion of the Interior Department's associate solicitor for conservation and wildlife in 1981. The associate solicitor's opinion reasoned that, at least for most listed species, some further loss of habitat or other natural resources on which a species depends can be allowed before the threshold of causing "jeopardy" to the continued existence of the species is crossed. The opinion referred to the amount of permissible further deterioration as the "resource cushion," and reasoned that federal agency actions could progressively erode away all of that cushion before further action was barred by Section 7.

This may seem a dubious interpretation of one of the key provisions of a statute that seeks to restore, rather than to maintain minimal populations of, already imperiled species. Nevertheless, the notion that federal actions can take a toll on listed species without contravening the prohibition against causing jeopardy was ratified by Congress in 1982. In the ESA amendments of that year, Congress acknowledged that some federal agency actions that are permissible under Section 7 (i.e., they did not jeopardize the continued existence of any listed species) could nevertheless result in the incidental "taking" (i.e., killing or harming) of at least some individuals of that species. These incidental takings are authorized as long as the agency complies with measures identified by the Fish and Wildlife Service (or the National Marine Fisheries Service) to minimize the impact thereof. In practice, the Services routinely authorize such incidental takings when reviewing proposed actions of other federal agencies. In one recent example, Fish and Wildlife authorized the incidental taking of 90 San Joaquin kit foxes (3 annually for a total of 30 years) in the course of oil and gas development on Naval Petroleum Reserve Numbered One in Kern County, California. In recent years, the total fox population on the Reserve has ranged between 12 and 40.

Sometimes, mitigation is a mirage. The National Marine Fisheries Service (which implements the ESA with respect to marine species) once imposed as a mitigation measure a requirement that when a channel dredging operation had killed a specified number of sea turtles, further dredging must cease. When the specified limit was reached, however, rather than halt the dredging, the Service simply reopened its earlier decision and increased the permissible number of turtles to be taken. When that new limit was reached, the number was bumped up yet again. Its sister agency, the Fish and Wildlife Service, is now going through a similar exercise with respect to the incidental taking of short-tailed albatrosses in an Alaskan fishery. The limit of two incidentally taken albatrosses that was supposed to trigger a closure of the fishery did not, and now the service is proposing to solve the dilemma by increasing the limit to a level not likely to be reached.

Purely private actions (e.g., most forestry, farming, and development on private lands not involving wetlands) lie outside the scope of Section 7. However, Section 9 of the act, prohibiting the "taking" of endangered wildlife species, can significantly constrain such activities. Last year's Supreme Court decision in *Sweat Home Chapter of Communities for a Great Oregon v. Babbitt* upheld Fish and Wildlife Service regulations
interpreting the taking prohibition to extend to actions that degrade the habitat of listed species, thereby disrupting such essential behavioral patterns as feeding, breeding, and resting. Property rights advocates decried the decision as a frontal assault on their interests.

As with Section 7, however, the prohibition of Section 9 is not absolute. Section 9 does not flatly prohibit the taking of endangered species; rather it prohibits the taking of such species without a permit. Since 1982, Section 10 of the law has authorized the issuance of permits for the taking of listed species incidental to any lawful activity, including land development, agriculture, forestry, and anything else. To grant such a permit, the service must make a number of findings, including that the applicant "will, to the maximum extent practicable, minimize and mitigate the impacts of such taking." These mitigation measures are embodied in a "conservation plan" (more commonly called a "habitat conservation plan" or HCP) that the permit applicant submits with the permit application. Interest in HCPs and incidental taking permits was slow to take root, but there is now a nearly feverish effort to address endangered species conflicts on private land through this mechanism.

Although the goal of the ESA is to bring about the eventual recovery and de-listing of species facing the threat of extinction, the act's mitigation requirements are not explicitly linked to that goal. In practice, they may sometimes make the attainment of that goal less likely.

The recent Red Oak Habitat Conservation Plan illustrates this point. The plan had its genesis when the Red Oak Timber Company purchased a 1,016-acre tract of forestland in Louisiana that contained two groups of red-cockaded woodpeckers occupying 137 acres. The company proceeded to log all of the land that was not inhabited by the woodpeckers and then applied to the Service for a permit to log the remaining stands of timber. The Service's options were severely constrained. It could deny the company an incidental-take permit and in doing so ignite a firestorm of controversy. Or it could condone the loss of the last piece of woodpecker habitat on the Red Oak land. It chose the latter course, issuing an incidental-take permit after first capturing the hapless woodpeckers and releasing them at a nearby military base. The Red Oak Timber Company covered the costs of relocating the woodpeckers, and installing and monitoring several artificial nesting cavities in a national forest. The cost to the company was $8,800, roughly equivalent to the value of the timber harvested from 5 to 6 acres of the 1,016-acre property. Moreover, this money paid for habitat enhancement activities that the Forest Service should have performed anyway under the ESA. The big loser, of course, was the red-cockaded woodpecker, which found itself with fewer acres of suitable habitat despite its endangered status.

The Fish and Wildlife Service could simply adopt a more aggressive stance when dealing with private landowners, demanding greater conservation land set-asides as mitigation for permitted activities. Assuming such an approach were politically palatable (which it may well not be) and "practicable" (the statutory standard), it might nonetheless fail in many cases for a simple reason: Landowners know that some endangered species "problems" will disappear eventually if they are patient. Consider again the Red Oak Timber Company and its red-cockaded woodpeckers. Red-cockaded woodpeckers will nest only in relatively open pine forests. If the oaks in the understory grow too tall, the birds will abandon the area. In times past, fires caused by lightening burned the Southeast's pine forests, creating ideal conditions for the woodpecker. Today, most forest fires in the Southeast are quickly suppressed, especially on private lands. By simply preventing forest fires from starting on its property, the Red Oak Timber Company could have allowed the oaks to grow, thereby driving off the woodpeckers. Time, in short, was on the side of the timber company and not the woodpeckers.

156
Although the particular circumstances pertaining to the red-cockaded woodpecker are unique, its predicament is not. A large number of endangered species require some type of active management to perpetuate their habitats or their populations. Activities such as prescribed burning, predator control, and the removal of exotic or alien species are critical ingredients in many, if not most, recovery plans. The Service cannot force landowners to undertake these activities, and even a good samaritan might balk at their cost. Hiring a team of pyrotechnicians to burn the back 40 is not cheap, in other words.

Where, then, do we find the money to fund these activities? The question is all the more difficult to answer because the need for these activities tends to be recurrent rather than one-time. We cannot expect that annual appropriations to the Fish and Wildlife Service will soon be sufficient to cover these costs. In fact, the opposite is far more likely: a smaller amount of money divided among an ever-growing number of desperately eligible species. A national endangered species trust fund is an appealing idea, but one that lacks any apparent momentum at this time. An alternative that could appeal across a broad spectrum of interests would be to create real incentives for private conservation, including the active management of habitat that will be necessary to maintain the endangered species that utilize it. As currently written, the federal tax code seldom allows landowners to deduct the costs associated with maintaining or restoring the habitats of endangered species (e.g., prescribed fire, weed control, etc.). Were landowners allowed to claim a tax credit for the costs associated with maintaining the habitats of endangered species, more of them might be inclined to undertake such steps.

The safe harbor idea may provide another means of creating real incentives for habitat restoration. What landowners who enroll in safe harbor programs get, in return for their commitment to carry out species-benefiting activities, is the right to incidentally take the endangered species that subsequently utilize the habitat they restored or enhanced. At present, landowners who enroll in safe harbor programs receive no financial benefit for doing so. It may be possible, however, to create an economic incentive for landowners to enroll in such programs—if they can sell their safe harbor rights to another landowner needing to mitigate for some planned activity on the latter’s land. The result of such a market could be mitigation that actually offsets the detrimental impacts of permitted activities, rather than mitigation that simply sanctions a steady deterioration in the amount of habitat available for a species.

Another useful way to create incentives could be with reform of federal estate tax laws. Federal law imposes a tax on the amount of a decedent's estate in excess of $600,000.1 The tax begins at a rate of 37 percent, and climbs to 55 percent for estates in excess of $3 million. For estates in which undeveloped land represents a significant portion of the estate's total value, the need to pay the federal tax creates powerful pressure to develop or sell off part or all of the land or to liquidate the natural resources of the land. Because land is appraised by the Internal Revenue Service according to its "highest and best use," and such use is often its development value, the effect of the tax is to make retention of land in forest or other undeveloped condition difficult at best. For farmers, ranchers, forest landowners, and others who are "land rich and cash poor," the federal estate tax is a widely perceived threat to the ability to pass on the family's property to the next generation.

The pernicious environmental effects of the federal estate tax laws have been widely recognized. The recent recommendations of the Northern Forest Lands Council with respect to maintaining the privately owned forest land of the Northeast prominently feature estate tax reform. In addition,

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1 The Taxpayer Relief Act of 1997 raises this non-taxable threshold by increments from $600,000 to $1 million by 2006.
the recently completed multi-agency habitat preservation plan for the highly endangered Florida panther outlined a number of needed incentives to encourage the retention of high priority, privately owned habitat in compatible agricultural land uses. Near the top of the list, once again, was estate tax reform that would eliminate the perverse incentive to destroy ecologically valuable land.

A vivid example of this problem occurred recently in the Sandhills area of North Carolina, one of several "recovery areas" identified in the recovery plan for the red-cockaded woodpecker. The tract in question is a several thousand acre forested area with significant acreage of old longleaf and loblolly pine forest that supports a number of active and formerly active woodpecker sites. Longleaf pine acreage has declined dramatically throughout the Southeast generally, and North Carolina in particular, in recent decades. In addition to its substantial longleaf stands, the tract in question also contains a number of unusual natural communities. A survey of longleaf pine tracts undertaken for the North Carolina Natural Heritage Program several years ago identified this tract as the second most important privately owned parcel in the Sandhills. The parcel has long been managed with sensitivity to its unusual ecological value.

The death of the owner of the tract has placed its future in doubt. The tract was valued by the Internal Revenue Service according to its development potential. The resulting estate tax liability forced the heirs to consider liquidating most of the land's timber assets, thereby destroying most of its ecological significance. A representative of the estate has sought clearance from the U.S. Fish and Wildlife Service to harvest essentially all the trees on the tract save for those that must be maintained to provide nesting and foraging habitat for the few woodpeckers currently on the property. Reportedly, if not for the need to pay the federal estate tax bill, the heirs of the property would not be considering the major logging plans described, but would instead continue the sensitive management that has been in place heretofore.

Situations like the one described above are commonplace. At the same time that state and federal governments are pursuing the conservation of endangered species, federal tax laws are forcing the destruction of many of the last best privately owned lands that could provide the future habitat needed for endangered species recovery. Senator Dirk Kempthorne (R-Idaho) has introduced a bill that would defer the estate taxes due with respect to any land for which a voluntary endangered species conservation agreement is in effect. If the agreement is honored in perpetuity, the estate tax need never be paid. If the heirs or other subsequent owners discontinue such management, the tax then would become due. In this way, landowners and their heirs would have a clear incentive to aid species conservation and the estate tax laws would be turned into a tool to promote that purpose rather than undermine it.

A wide variety of other tax incentive ideas have been suggested. The Keystone Center's 1995 report on incentives for endangered species conservation on private land, for example, contained several that were endorsed by environmental, timber, mining, and other landowner interests (Keystone Center 1995). These sorts of incentives, coupled with changes like those described above, would eliminate many of the perverse incentives now leading landowners to take detrimental rather than beneficial action. They could also provide the basis for ending the legislative impasse that has prevented re-authorization of the ESA and perpetuated a status quo that is failing to prevent the steady slide of many species into extinction.
Reinventing the Forest Industry:
Convincing a Skeptical Public
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In order to promote the adoption of sustainable forest management, leadership, critical thinking, and organizational expansion of "the box" have all been evaluated. These internal activities will have little impact on the public's support of sustainable management without persuasive evidence of new industry practices. We need to look outward to the public stakeholders in the forest who believe they have a right to the land, lumber, recreation, aesthetic satisfaction, habitat for species, food, shelter, a stable climate, spiritual nurture, or other forest bounties. Also, many people now believe that clean air and water are entitlements in the legal and social sense and demand that the forest industry respect and protect these entitlements in both public and privately owned forests.

Sustainable forest management is the industry response to these demands. The entire forest industry is under pressure to comply with sustainable forest management mandates. The organizations that provide essential support--education, research, federal and state agencies, professional and trade associations, and institutes -- are engaged in major efforts to restructure and rethink their operations to respond to sustainable mandates. The environmental community likewise is reevaluating its position on sustainable management.

The driving force underlying the need for sustainable forestry is rarely articulated, but it shadows all discussions on man's relation to the environment. The inescapable impact of the expanding population -- which in the United States alone has doubled since World War II -- has been an increase in sensitivity to the environment. As the population grows, competition intensifies between stakeholders for resources in the planet.

The present environmental culture in which we find ourselves represents one response to the growing population. Although this culture has been building for the past 30 or more years, the forest industry and those organizations involved with it have been slow and often reluctant to acknowledge the shift in cultural values. The industry's resistance to the culture change has earned it a negative public image, a perception that affects the industry's economic and social status. For example, it has become environmentally chic to suggest that we can save trees and forests by substituting steel, cement, or plastic for wood. The campaign to discourage the purchase of wood downplays its environmental advantages. Harvesting trees instead is equated with destruction of the earth.

Those with an eco-centric perspective promote reducing consumption of all resources by Americans in order to preserve them for the future. The American public, however, has not bought into the idea of doing without today to protect tomorrow.

The relationship of the forest industry to the public has been marked by conflict. Media reports have identified some 55 specific conflicts involving the industry. Contrary to general opinion, many of these disagreements go beyond the conflicts between the forest industry and environmentalists. The diverse objectives of various interest groups
also come into play: hunters versus campers, homeowners in forested areas versus fire management, skiers versus backpackers, and other disharmonies.

The forest industry itself is in the process of changing to reflect the new culture. American Forest & Paper Association's (AF&PA) Sustainable forest Initiative (SFI), The Forest Stewardship Council's (FSC) certification programs, the International Standards Organization (ISO) 14000 series and others are all examples of initiatives designed to institutionalize sustainable forest management. Although these landmark efforts are improving the practices of the forest industry, thus far they have done little to enhance the industry's position with the public.

While these efforts are bringing industry practices in line with environmental demands, they have failed to enhance the public perception of the industry because:

- The forest industry does not recognize its significance to the economy and environment. The livelihood of more than 25 million persons in the United States depends on forests, yet most of these sectors feel little connection to the forest. About 81 percent of the establishments in the wood-related businesses are small, with fewer than 20 employees. Direct employment in the forest and primary processing makes up only a very small percentage of the 25 million. These disconnected establishments working together could exert positive leadership in sustainable forest management.

- The 400 plus members of the AF&PA are a major force in the industry and the SFI could be very influential in demonstrating the industry's sincerity and intent to protect the environment. However, self-assessment of conformance to SFI principles has not found acceptance with the public. The SFI experience is similar to the Chemical Manufacturer's Responsible Care initiative. In that case, the manufacturers' pledge to monitor their own adherence with environmental principles has also met with skepticism on the part of the public.

  - Although the AF&PA and FSC principles are based on a commitment to the concerns of society, neither organization clearly articulates that as stewards of the forest they have a responsibility to society.

  - The mix of self-assessment and third party certification of sustainable forest management, and the numerous stated principles confuses outsiders (and the industry) and dilutes public confidence.

  - Political efforts to reach compromise between interest groups rather than to provide real solutions have added to public cynicism about sustainable forest management.

  - The industry appears to be relying on standard product marketing techniques instead of idea marketing to inform the public. The industry has not marketed an equivalent of the environmental Earth Day, an effective tool in raising the environmental-consciousness of the public.

  Appropriate specific strategies could move sustainable forest management into the public forum and create the foundation for increased credibility of the industry's efforts. These strategies include:

  - Articulating the forest industry's responsibility to society for sustainable stewardship of forests;

  - Recognizing that all forests have value and serve many purposes, but each forest may
not serve all purposes simultaneously;

- Allocating forests into segments according to ecosystem attributes and classifications of uses, including timber production, various forms of recreation, diversity, and protected species. Allocations would be based on the best and most current scientific findings;

- Implementing the allocation process using appropriate political techniques in coordination with affected communities;

- Promoting understanding of the uniqueness of each tree species, that some species provide superior timber for specific utilization and others are more useful for non-timber purposes. Managing and maintaining each forest segment to retain its unique characteristics;

- Planning for intensive forest management on forest plantations to provide maximum timber in the segments allocated for timber production. Planning for appropriate biodiversity to be incorporated into each plantation;

- Encouraging recognition of the interdependence of the numerous segments of the domestic and global forest industry.

Conferences, confrontations, politics, and research have not solved the dilemma about the role forests should play in our society. There is danger of forest deterioration while we wait for the perfect resolution to problems of conflicting demands. This is the time for bold proposals and bold action.