

Weyerhaeuser Company: *The Next 100 Years*

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In 1997, George Weyerhaeuser Sr., the grandson of Frederick Weyerhaeuser, founder of Weyerhaeuser Company, sat in his office in Corporate Headquarters in Federal Way, Washington. He pondered the future of his family's legacy which had become the world's largest private owner of standing softwood timber, North America's largest producer of softwood lumber, and the world's largest supplier of softwood pulp. Looking back, Weyerhaeuser felt the company had worked hard to become a leader in the forest products industry. For a while, public perception had seemed to turn against the company as it was caught up in the industry's negative image. In response, the company had embarked on an effort known as 'Project Legacy' to reevaluate and reinvigorate its approach to both the natural resource base and the stakeholders that were impacted by its operations.

The company had spent years investing in a model of forestry they now called Weyerhaeuser Forestry and looked forward with much anticipation to the 'Wall of Wood' that was expected as high-yield plantations began to come on line over the next decade and produce a seemingly unlimited supply of timber.

As the company's centennial celebration for the year 2000 drew near, Weyerhaeuser wondered what the next 100 years would bring to Weyerhaeuser Company. He looked out his window at Mount Rainier 35 miles away and thought about the steps that needed to be taken to strengthen the organization that carried his family's name.

Company History

The Beginning

In 1900, Frederick Weyerhaeuser and a number of partners, founded the Weyerhaeuser Timber Company with a purchase of 900,000 acres of forestland in Washington belonging to Union Pacific Railroad. Weyerhaeuser was one of the first U.S. forest products companies to move to the west coast from the midwestern lake states at the turn of the century. As the midwestern forests of Michigan, Wisconsin, and Minnesota neared exhaustion the great forests of the Pacific Northwest in California, Oregon and Washington clearly held the most promise to supply America with the timber it required for westward expansion and growth.

In those early years, timber was harvested to provide returns to the original investors and to pay for the survey of the land holdings because the threat of fire and adverse tax conditions made it unattractive to hold forest lands for the long term. Early operations were concentrated in the Pacific Northwest, with a separate sales company, called Weyerhaeuser Sales Company, based out of St. Paul, Minnesota. From the late teens through the 1930s, the company invested in milling facilities to vertically integrate beyond the sale of unprocessed logs. Harvest levels increased as the company acquired additional lands to meet demand. During this period, regeneration of logged-over land was left to natural processes. However, the success of such regeneration, especially with the more desirable Douglas fir, was mixed at best.

1940-1970: Investment and Expansion

By the late 1930s, the Company faced a decision: Should the land that had been cut be sold or could it be retained and continue to earn a profit?¹ Contrary to conventional wisdom, Weyerhaeuser believed that timber could be grown like a crop on a sustainable and profitable basis. The decision was made to retain and reforest the land holdings.

In 1941, the company established the nation's first privately owned tree farm to prove that intensive management of previously harvested forestlands could be profitable. The facility became a laboratory where experiments in forest regeneration, aerial seeding, fire and brush control techniques were undertaken. This research indicated that an economically viable tree farming operation would require more than merely allowing secondary forests to naturally regenerate where virgin forests had stood before.

The effort during the 1940s therefore focused on how to better regenerate cut-over land to Douglas fir through seeding methods. At the same time, the Company also worked to change tax policies that discouraged the long-term holding of productive forestlands, and helped to shape fire suppression policies that reduced the risk of long-term investment.

¹ Much of the motivation for "cutting and running" had to do with the tax consequences of holding on to cut over land: The conventional wisdom suggested that it would take too long for the next generation of trees to mature.

By the end of the 1940s, Weyerhaeuser had begun the transition to a “tree growing” company in contrast to much of the rest of the industry, which was still largely focused on liquidating old-growth stands or cutting timber from public lands in order to feed downstream mill operations.

Beginning in the late 1940s and into the mid-1950s, the company expanded downstream operations to include production of kraft pulp, containerboard, wood fiber, paperboard, ply-veneer, hardboard, and particleboard. In 1956, the company moved beyond the Pacific Northwest by acquiring timberlands and production facilities in the southeastern United States.

By the early 1950s, it was also evident that while seeding methods were superior to natural regeneration, a more systematic, research-based approach would be required if tree farming were to be profitable. Research efforts were first concentrated on how to make the dense, second-growth stands of Douglas fir merchantable in a shorter time. By the late 1950s, however, it became increasingly clear that planting seedlings after harvesting was a more reliable method of forest regeneration.

By the mid-1960s, the company launched its High Yield Forestry (HYF) program. Efforts sought to develop practices that would promote the establishment of dense, second-growth stands in a shorter time period. Expansion continued in the early 1960s with the acquisition of timberlands in New England and Canada. Proud of its commitment to regeneration, the gains it had made in decreasing seedling mortality, and the increases it had contributed toward high-yield management, the company began a national television advertising campaign in 1968 proclaiming itself ‘The Tree Growing Company.’

Weyerhaeuser was listed on the New York Stock Exchange in 1963, the same year a sales office was opened in Tokyo, Japan. A year later, a European sales office was initiated, and by 1965, the company had a distribution subsidiary established in Australia. In 1967, Weyerhaeuser International, Inc. was organized to consolidate the direction of overseas activities. By the 1970s, the company was an international leader with operations in Indonesia, Venezuela, South Africa, the Philippines, Jamaica, Malaysia, Guatemala, Canada, Belgium, France, Spain, Italy, and Greece. Additional offices existed in Hong Kong, Singapore, Seoul, Copenhagen, London, Brussels, Milan, Rome, Dusseldorf, and Paris.

1970-1989: Diversification

As the 1960s drew to a close, Weyerhaeuser began to diversify beyond softwood forest products. In 1968, the company moved into real estate and housing development and by 1969, it had acquired a Los Angeles-based mortgage banking firm. In 1970, Weyerhaeuser purchased disposable diaper manufacturing plants in Pennsylvania and California. Hardwood veneer plants were purchased in 1975 and a hardwood lumber manufacturer in 1980. A nursery supply business was acquired in 1976, an indoor plant operation was added in 1977, and a wholesale lawn and garden supply distributor was

purchased in 1986. In 1984, the company entered the hydroponics food business by acquiring a six-acre greenhouse specializing in the production of leaf lettuce. A savings and loan operation was added in 1985.

In addition, Weyerhaeuser continued to expand its softwood timber operations. Resource recovery plants were built in North Carolina with the launching of the Secondary Fiber division in 1974. In 1976, the North Pacific Paper Corporation was jointly formed with Jujo Paper Co., Ltd. of Japan to manufacture pulp and newsprint. In 1980, Mount St. Helens erupted, affecting over 68,000 acres of Weyerhaeuser's St. Helens Tree Farm. The company launched an extensive raw materials salvage, utilization and reforestation program in the blast zone. And in 1984, the company opened a sales office in Beijing, China.

By the end of the 1980s, Weyerhaeuser was no longer involved in any of its overseas ventures. Only Canada remained as European offices were sold off to reap tax benefits and other operations like those in Indonesia and Malaysia were terminated because of problems with joint venture partners. In 1987, the company embarked on a national advertising campaign using the slogan 'The Tree Growing Company. And More,' and was named one of the 25 healthiest U.S. companies by *Better Health and Living* magazine.

1989-present: A New Era

As the environmental movement gained momentum during the 1970s and 1980s, public opinion began to turn against the forest products industry. The listing of the Northern Spotted Owl as an endangered species in 1989 pushed forestry issues to the forefront of political debate and caught the industry by surprise. Landowners were accused of mismanaging lands and developing forests that lacked biological diversity. Clearcuts, where all the trees in a harvest unit were removed, became lightning rods for protests. Downstream operations became poster children for anti-pollution campaigns against dioxin, a byproduct of pulp and paper bleaching, which was identified as a probable carcinogen. Like its competitors, Weyerhaeuser viewed the shift in the public's attitude as temporary, reactionary, and extremist. Opposition to certain practices continued despite scientific data produced by companies that justified their operations.

Dogged by poor financial performance relative to its competitors, Weyerhaeuser underwent a series of changes beginning in 1989 when incoming President and COO John Creighton, Jr. set about refocusing the organization on core forest products operations. Returning to its roots, the company once again began to define itself using the slogan "The Tree Growing Company.' In the early 1990s, the company set out to regain the public's trust by seeking to understand the changing social forces that had led to the gap between public perception and Weyerhaeuser's practices through a program called Project Legacy.

In mid-1993, Weyerhaeuser stated its commitment to bringing world class forest stewardship to the Russian Far East by shipping seedlings grown from native seeds

collected in the Khabarovsk Territory to reforest areas devastated by fires and inadequate regeneration. In 1994, Weyerhaeuser announced that it had voluntarily initiated Washington state's first multi-species habitat plan to enhance fish and wildlife habitat on 100,000 acres in the southwest part of the state. That same year, the company received an award from the U.S. Fish and Wildlife Service for helping to protect the last big stand of coastal old-growth forest in Washington state.

Throughout 1994, Jack Creighton, who had by then become CEO, was joined by other Weyerhaeuser officials in a series of Town Hall Meetings -- open, public gatherings to provide the company's senior management the opportunity to hear, first-hand, public concerns about private forests and the forest products industry. In late 1994, the company's six U.S. forest councils unveiled a set of Weyerhaeuser forestry Resource Goals to establish a common standard for managing forest resources and practices on company-owned lands in the United States. In December of 1994, the company endorsed the American Forest & Paper Association's (AF&PA) Sustainable Forestry Principles which Jack Creighton described, '...as a natural extension of our long-standing commitment to sustainable forest management and stewardship.'

In 1996, Weyerhaeuser Forestlands International was created once again to seek out opportunities for international expansion. Its efforts concentrated on potential investments primarily in New Zealand, South Africa, and other temperate or sub-tropical regions where there was a higher likelihood of finding large tracts of mature softwood timber.

The American Forest & Paper Association

The American Forest & Paper Association was the national trade association of the forest, paper, and wood products industry. Its members engaged in growing, harvesting, and processing wood and wood fiber, manufacturing pulp, paper, and paperboard products from both virgin and recycled fiber, and producing engineered and traditional wood products.

Reconciling interests so that a single voice for the industry could speak to the public, legislators, and regulators could pose a challenge given that member firms had a wide range of interests and a multitude of strategies for achieving their goals. For example, firms such as International Paper, Westvaco, Champion International, Boise Cascade, Union Camp, and Willamette Industries concentrated on growing fiber to feed their plants that manufactured pulp, paper, and paperboard. Others like Georgia-Pacific, Louisiana Pacific, and Plum Creek were more focused on engineered and traditional wood products operations. Similarly, some of the organizations had made extensive efforts to build landholdings and operations outside North America, while others remained located primarily in the United States and Canada.

Despite difference of opinion on how to address environmental concerns and the issue of sustainable forestry, AF&PA members adopted the Sustainable Forestry Initiative in

1994. Guiding the Initiative were the Sustainable Forestry Principles to which all members had to adhere by January 1, 1995. (See **Exhibit 1.**) By January 1, 1996, compliance with the Sustainable Forestry Principles and Implementation Guidelines was a condition of continued membership in AF&PA.

Industry Overview²

Hardwoods vs. Softwoods

Wood was separated into two categories: hardwoods and softwoods. Hardwoods were deciduous, or leaf-bearing, trees. Softwoods, or conifers, were also referred to as evergreens. Both types of trees were used for the production of pulp, paper, panels and sawnwood, yet because of genetic and structural differences, technologies used in the production of each kind of wood were not immediately transferable.

Softwood species were favored over hardwoods in structural applications for their superior functional characteristics of strength, durability and flexibility, particularly in residential construction. The United States and Japan were the largest consumers of softwood lumber. More recently, softwood lumber had lost market share to less expensive products such as steel, concrete, and engineered wood products (e.g. wooden I-beams, laminated veneer lumber, and oriented strandboard).

All softwood species were not created equal. Douglas fir (*Pseudotsuga menziesii*) had strength and quality characteristics unmatched by other species. The species was found primarily in the United States, Canada, Scandinavia, and the Russian Far East, with some located in New Zealand. Customers in Asia, particularly Japan, paid premium prices for unprocessed Douglas fir logs to be used in traditional post and beam construction.

Radiata Pine (*Pinus monterey*), grown mostly in the temperate tropics of the Southern Hemisphere, and Loblolly Pine (*Pinus taeda*), found in the southeastern United States, were less expensive to grow, but were of lower structural quality. In addition, while Douglas fir was found in colder regions and required 50 to 80 years to reach commercial viability, Radiata and Loblolly were ready to be harvested after 35 years.

Much of the world's softwood resources were on government-controlled lands in the temperate and boreal regions of the northern hemisphere, the availability of which was increasingly constrained by regulatory or political pressures. The United States, Scandinavia, the Russian Far East and Canada alone accounted for two-thirds of the industrial softwood harvest.

² This section is based upon data from: Lent, T., Propper de Callejon, D., Skelly, M., and Webster, C. 1997. Sustainable Forestry Within an Industry Context. New York: Environmental Advantage.

In contrast to softwood, most hardwood lumber was grown in tropical or subtropical regions. Europe and Japan were the largest consumers of hardwood sawnwood. The United States was the leading producer of temperate hardwood used in the pallet, crating, and furniture industries. Indonesia, Malaysia, and Brazil were the leading producers of tropical hardwood logs, sawnwood, veneer, and plywood. Eucalyptus was an extremely popular hardwood for the production of pulp because of its fast growing cycle. In tropical regions, fast-growing eucalyptus plantations could be ready for harvest after only seven to 15 years.

Supply and Demand

Population growth and economic development pushed worldwide consumption of forest products upward at a seemingly modest rate of 1.3% per year over the period 1983-1993. However, the rate of growth varied greatly by region: most developed countries in Europe and North America experienced little or no growth in their consumption of forest products. On the other hand, countries of the Pacific Rim, once major suppliers of timber and pulp, experienced huge growth in demand and are on their way to becoming net importers of forest products. Worldwide, the use of fuelwood for cooking and heating still accounted for more than half of the world's timber harvest.

As it had throughout the 20th century, global demand for forest products was expected to increase into the future in proportion to population growth and rising standards of living. By 2010, total annual paper and paperboard demand was forecast to rise to over 450 million tons from approximately 250 million tons in the mid-1990s. At the same time, global demand for solid wood products was expected to increase almost 60% from 630 million cubic meters annually in 1989 to over 1 billion cubic meters annually in 2010. Demand for softwood logs was expected to grow just under 20% while softwood panel demand was expected to grow approximately 13% by 2010. Global demand for hardwood logs and panels was expected to grow 11% and 40%, respectively, during the same period.

For a variety of reasons, however, the supply of timber and fiber was likely to become tighter over the next 20 years. Some regions' forests had almost reached the point of commercial extinction (e.g. West Africa, Malaysia, and parts of Latin America). In addition, stricter regulations on public forestlands, as well as the removal of some forest resources from production due to continuing environmental pressures, would result in decreased yields in the United States and Canada. Overharvesting or lack of reforestation, as well as the rapid conversion of forestlands to agricultural, industrial, or residential uses further reduced potential supply. And despite rapid growth, high yield plantations in the Southern Hemisphere were expected to make only modest contributions to the overall global timber and fiber supply.

Softwood production overall was estimated to increase from 939 million cubic meters to a total of 1,085 million cubic meters, for growth of about 15% over the next 25 years. Given that demand growth is conservatively estimated at 1.3% per year, the softwood

market appeared to be on a collision course, with demand outstripping supply for the foreseeable future.

Domestically, softwood harvests in the U.S. Pacific Northwest were expected to remain below the levels that existed during the 1980s due to a combination of tightening regulations, overharvesting during the late 1980s, and reductions in logging on public lands. Likewise, in Canada, softwood harvests were expected to decline as Provincial governments implemented increasingly strict timber harvest controls in response to concerns about environmental issues. In the U.S. Southeast, production on private forest lands would increase marginally, but not enough to offset the drop in sales from public lands in the Pacific Northwest. Small, private landowners, who owned more than half the softwood timber base, in the U.S., tended not to manage their forests in a high-yield manner. The quality and volume of softwood timber from these sources would therefore remain below potential indefinitely.

Overseas, the Russian Far East held half of the world's softwood forests (over 500 million hectares), but production was stagnant and well below cutting potential. Russia contained enough virgin softwood timber to supply total world demand for 66 years at current levels, but an unstable political environment, poor infrastructure and outdated harvesting methods kept it from becoming a top supplier to nearby Asian markets. Scandinavia's harvests were expected to increase incrementally, but forests were already approaching the limits of sustained yield management. Production in Latin America and Asia would be concentrated on the growth of short-rotation hardwood species. Despite the rapid rise of softwood plantations in Chile, Brazil, New Zealand and Australia, their annual cutting potential was expected to rise only from 100 to 160 million cubic meters between 1996 and 2010, a large percentage increase, but relatively small contribution to the total. Furthermore, these fast-rotation plantations would, for the most part, produce Radiata Pine, structurally inferior to Douglas fir.

These trends indicated a market where softwood timber demand would outpace supply, creating a softwood timber "deficit." As softwood timber products became more expensive due to restricted supply, substitute products such as steel, concrete, and engineered wood products (e.g. wooden I-beams, laminated veneer lumber, and oriented strandboard) might grow in popularity.

Weyerhaeuser in 1996

Weyerhaeuser had net earnings of \$463 million on sales of \$11.1 billion in 1996. The company provided products and services through four different business sectors: Timberlands & Wood Products, Pulp, Paper & Packaging, Weyerhaeuser Real Estate Company, and Weyerhaeuser Financial Services. A five-year trend of approximate contributions to operating earnings can be found in **Exhibit 2**.

Timberlands and Wood Products

In 1996, operating earnings for the Timberland and Wood Product sector together totaled \$805 million on \$5.2 billion in net sales. The Timberlands organization was run as a profit center, rather than as a cost center (internal supplier) for the product sectors, which was the more common practice in the forest products industry. Western Timberlands controlled approximately 2.1 million acres located in Oregon and Washington. Southern Timberlands controlled another 3.2 million acres in Arkansas, Oklahoma, Louisiana, Mississippi, Alabama, Georgia, and North Carolina.

Weyerhaeuser Canada oversaw the company's long-term Crown license arrangements which covered approximately 23 million acres in British Columbia, Alberta, and Saskatchewan. While only 39% of the forest lands in the United States were publicly owned, 94% of Canadian forests were owned by the provincial governments. Weyerhaeuser chose not to intensively manage its lands in Canada because it did not own the concessions there and was not guaranteed future access to reharvest any regenerated lands.

The Timberland businesses focused on the production of high-grade softwood timber and sawnwood products, specifically, Douglas fir and Western Hemlock (*Tsuga heterophylla*) in the U.S. Northwest, and Loblolly Pine (*Pinus taeda*) in the U.S. Southeast. In addition, extensive utilization of the softwood Black Spruce (*Picea mariana*) as well as Aspen (*Populus spp.*) and other hardwoods was sourced from Crown concessions in Canada.

Timberlands, in addition to operating company tree farms, managed genetics and selective breeding programs, as well as seed and seedling operations at the company's orchards and nurseries. These nurseries grew 257 million seedlings per year, of which 50 million were used on the company's 5.2 million acres of timberland. The balance, 207 million, was sold to third parties. Finally, Timberlands provided raw material in the form of timber to Weyerhaeuser's manufacturing facilities and to other forest products customers.

The Wood Product businesses manufactured structural and appearance-grade lumber, along with plywood, veneer, composite panels, oriented strand board, doors, treated products, logs, and chips. Weyerhaeuser also operated a wholesale building materials distribution business in the United States. Ten percent of Weyerhaeuser's sales were to Japan where customers placed a high value on reputation and relationships, and consistently paid top rates for a reliable supply of the company's superior quality Douglas fir logs.

Pulp, Paper, and Packaging

In 1996, the Pulp, Paper and Packaging (PPP) sector had sales of \$4.6 billion on \$6.7 billion in assets, representing approximately half of the company's asset base. Earnings in 1995 had soared due to extremely strong pulp and paper prices that year. PPP products included market pulp, newsprint, fine paper, containerboard packaging, and paperboard. The PPP business utilized chips and other residuals from the Timberlands

and Wood Products businesses, but still sourced significant amounts of its raw material from non-company lands. PPP also secured a growing percentage of its raw material needs from recycled fiber. In fact, Weyerhaeuser Recycling, the PPP sector's fastest growing business, added nine new U.S. facilities in 1995 and increased its annual fiber recovery to 2.8 million tons, of which 1.4 million tons was reused by PPP.

Real Estate and Financial Services

The Weyerhaeuser Real Estate Company and Weyerhaeuser Financial Services, Inc. earned \$43 million in 1996, up from \$13 million in 1995. The real estate company developed single-family housing and residential lots, as well as master-planned communities. Operations were concentrated in selected metropolitan areas in Southern California, Nevada, Washington, Texas, Maryland and Virginia. Over the past several years, a number of operating units within the Real Estate Company had been sold off.

Financial Services was involved in a range of service businesses. Its primary operating unit, Weyerhaeuser Mortgage Company resold mortgages in the secondary market through mortgage-backed securities to financial institutions and investors. In addition, insurance services offered property, life and disability insurance. In February 1997, the Mortgage Company was sold to WMC Acquisition Company.

Weyerhaeuser Forestry

Born during the "cut and run" days of early 20th century America, Weyerhaeuser defied conventional industry logic by holding onto timberlands after they were cut rather than walking away. In the late 1930s, the decision was made to regenerate forests and grow timber as a crop, first by seeding harvested areas (1940s) and later by planting seedlings (1950s to present). Beginning in the 1960s, Weyerhaeuser began producing seedlings in nurseries and integrated replanting into its plantation operations. Following this strategy, Weyerhaeuser became the world's largest private owner of standing softwood timber, North America's largest producer of softwood lumber, and the world's largest supplier of softwood pulp.

High Yield Forestry

By the early 1950s, it was evident that while seeding methods were superior to natural regeneration, a more systematic, research-based approach would be required if tree farming were to be profitable. Research efforts were first concentrated on how to make the dense, second-growth stands of Douglas fir merchantable in a shorter time. By the late 1950s, however, it became increasingly clear that planting seedlings following harvesting was a better and more reliable method of forest regeneration.

As a consequence, the company began, by the mid-1960s, to develop a new forestry model which would come to be known as High Yield Forestry (HYF). Research initially

concentrated on management practices such as planting and stocking control to achieve the goal of rapid forest regeneration. Forest nurseries were established to produce the seedlings required for replanting. Biological and financial variables were linked to develop practices that provided a continuous cycle of planting, growth, harvesting, and replanting.

To that end, soil surveys were conducted across the company's entire land base. The resulting data was used to construct simulations of forest growth and yield. These simulations helped to improve the technical and scientific aspects of High Yield Forestry -- planting techniques to optimize siting, spacing and rooting; pest and non-commercial vegetation control to minimize competition; fertilizing regimes and thinning practices to maximize growth; road-building techniques to minimize erosion and compaction; harvest timing to maximize yield, while maintaining wildlife habitat; protecting soil productivity; and ensuring rapid reforestation. Once established, forests managed under these practices grew at unprecedented rates, compared to unmanaged natural stands.

The company then began to work to decrease seedling mortality rates in the nurseries that up to that time had a dismal 50% survival rate. Additional applied sciences aided in the development of seed orchard techniques for efficient cone and seed production and collection, as well as nursery techniques for establishing reliable germination, culturing and fertilizing practices that led to healthy seedlings with strong root systems. Seedling mortality dropped from 50% to less than 5%.

In the early 1970s, the company began to make collections of healthy, vigorous trees from natural stand populations of both Douglas fir and Loblolly Pine. These "plus trees" formed the basis of the tree improvement program for each species. Through selective breeding, trees that were inferior in growth, form, and adaptability were truncated out of the population. Beginning in the 1980s, the tree-improvement program began to focus on breeding varieties for specific end-use characteristics such as increased volume (fast growth), strength (specific gravity), and stem quality (straightness, branching habit).

With HYF, the growth of trees at Weyerhaeuser began as harvest plans were drawn up and information on physiographic and soil features of the next round of planting sites were analyzed to indicate which of the currently available genetic varieties was optimum. A region forester placed an order for seed of that variety to be germinated and grown at the nurseries for one to three years before being planted on those sites and managed according to the optimal silvicultural practices (planting density, thinning, pruning, etc.) which were designed to lead to a particular desired forest community and final harvest product.³

Large quantities of seedlings were sold to other forest landowners but the most advanced seedlings were used exclusively on Weyerhaeuser lands. Within a year of harvesting any

³ The variation of 1-3 years in the nursery is due to site-specific issues such as elevation, frost susceptibility, animal damage, etc.

given area, seedlings were planted by hand following pre-determined spacing and patterns that maximized the desired qualities. Over the forest growth cycle, most sites underwent thinning where less desirable trees were removed, providing more growing space to ensure remaining individuals were larger and straighter. Pre-commercial thinning allowed the company to leave organic matter in the form of trunks and branches on the forest floor where their slow decay added to the soil's organic matter and nutrient base, promoting further growth. Commercial thinning initially yielded trees large enough for use in the pulp mills, and in subsequent thinnings, for lumber. Trees might also be pruned once or more during their life. Lower branches were removed to reduce the presence of knots in future lumber products and increase the production of clear wood. Aerial fertilization might be used to promote growth spurts throughout the rotation.

While HYF sought to maximize growth of the primary commercial species at each site while suppressing other non-commercial species, the resulting forest was not a pure monoculture. Complete repression of undesired species was impossible as seeds were dispersed by wind, water, and animals. The result, while significantly different from a natural forest, was far from 'sterile' either visually or ecologically.⁴ Furthermore, HYF did not imply introducing the wrong species onto unsuitable sites. In addition to Douglas fir and Loblolly Pine, there were also active regeneration programs in Hemlock, Noble Fir, Long-Leaf Pine, and some species of hardwood.

The goal of HYF was to produce wood that was ultimately more valuable to the end user. After 30 years in the Southeast (Loblolly Pine) and 45 years in the Pacific Northwest (Douglas fir) specific sites were harvested consistent with the needs of the company's downstream businesses. To ensure a sustainable flow of product, on average, only 2% of Weyerhaeuser's forest sites in the West and 3% in the South were harvested in a given year. None of the harvest was wasted. Crowns and branches were left on site to return nutrients to the soil through decomposition. Bark might be burned for energy or sold as mulch for landscaping. Depending upon the region where it was processed, the bulk of a log became either lumber and other solid wood products or ended up as chips for pulp production. The remaining sawdust was used for particleboard, mulch, or burned for energy.

HYF had resulted in significant increases in forest productivity on Weyerhaeuser's lands since the 1960s. Yields per acre had *doubled* in the Northwest and increased *four-fold* in the Southeast (compared to a natural forest), making the company's lands some of the most productive in the world. However, HYF also required great patience: Investments made in the 1960s began to yield economic returns early in the next century, as genetically improved plantations began to reach maturity.

Indeed, by 2010-2020, as the genetically improved plantations would reach maturity, the company estimated there would be an *additional* increase in yield on its lands in both the

⁴ For example, in coastal Washington, if 100% Douglas fir is planted, the forest matures into a mix of approximately 50% Douglas fir and 50% Hemlock and other canopy species.

Pacific Northwest and the US Southeast. These yield improvements should translate into an increased wood harvest per acre of 50% in the Northwest and 100% in the Southeast. The result would be a reliable, high quality, and growing volume of softwood timber (referred to internally as a “Wall of Wood”), which was expected to reach maximum yield in a time of constricting supply, beginning around the year 2005. (See **Exhibit 3.**)

Weyerhaeuser Forestry

In the 1990s, High Yield Forestry evolved into Weyerhaeuser Forestry as management moved to incorporate the concerns of external stakeholders into operational decisions to better align company practices with public values. A stewardship statement and a set of resource strategies that provided a guideline for the company’s version of sustainable forestry provided the framework for Weyerhaeuser Forestry. (See **Exhibits 4 and 5.**) To meet these resource and stewardship commitments, as much as 10% of the timber asset base was to be left on the land in fragile areas such as riparian zones, key habitats, and areas of cultural and aesthetic significance.

Weyerhaeuser Forestry also challenged the company to assume a more proactive role in the protection of endangered species habitats, and facilitated the development of new tools and data for better management of the natural environment. For example, the company’s Habitat Conservation Plans (HCPs) reduced operational impacts on threatened and endangered species through multi-species management, while watershed analyses allowed the company to operate more flexibly by managing forests as systems rather than addressing the scores of regulations that applied to forest lands one at a time.

Weyerhaeuser Forestry was put to the test in 1989 when the Northern Spotted Owl was listed as a threatened species in the Pacific Northwest. The management plan proposed by the U.S. Fish and Wildlife Service, would have defined a “no cut” zone 1.2 miles in radius around each identified Spotted Owl nest. Through its HCP approach, however, Weyerhaeuser was able to demonstrate a more effective conservation plan for the owl which also enabled more flexible use of its forest lands, opening up timber assets that had previously been defined as off limits under the “owl circle” management plan.

With some wild salmon stocks on the verge of being listed as threatened or endangered in 1996, Weyerhaeuser Forestry would again be put to the test: proposed management strategies by regulatory agencies included 300-foot-wide riparian zones on each side of fish-bearing streams. The company’s challenge once again was to define an environmentally appropriate and socially acceptable management plan while also retaining flexibility in the use of its lands. Reasonable set-asides of harvestable timber for the achievement of environmental goals could be offset by the higher yields associated with Weyerhaeuser’s forestry practices.

Environmental Certification

The concept of environmental certification and product labeling emerged during the early 1990s from the non-governmental (NGO) sector to provide a driver for voluntary,

market-based mechanisms to improve environmental performance. Since then, several industry-specific initiatives in “sustainable forestry” had emerged with Scientific Certification Systems (SCS), Smart Wood, and the Forest Stewardship Council (FSC) programs leading the way in the forest products industry. These programs all set forth principles and criteria for site-specific forest management, and required third-party evaluation.

To receive certification, most programs also required “chain of custody” tracking of suppliers’ operations if wood or fiber was purchased from non-company-managed lands. A few niche players used third-party certification to their advantage. Virtually all of the large industry players, however, resisted the certification programs advocated by NGOs. Companies preferred instead to identify outcome-based goals and design management systems that foster measurable progress toward those goals. The U.S. American Forest and Paper Association’s (AF&PA) “Sustainable Forestry Initiative” (SFI) represented such a “management system” approach, as did the emerging standards under ISO 14000.

So far, demand for certified wood products had been limited to niche markets in Western Europe and North America. Worldwide, buyers had consistently shown that they would not pay a premium for “environmental” wood products. Several factors, including the fragmented market of end-uses, the low value-added commodity nature of the softwood business, and the tendency of the construction industry to be passive on environmental issues hindered the development of a certified softwood market. At the same time, because hardwoods were more closely linked to their end users, there had been more of a push by consumers, particularly Europeans, to initiate environmental certification of ‘green’ wood. Indeed, several large retailers, including WalMart, Home Depot, and Sainsbury had begun recently to require certification for products utilizing tropical hardwoods.

The Next 100 Years

Leaning back in his chair, Weyerhaeuser was proud of his grandfather’s legacy. While the company had underperformed the industry during the decade of the 1980s in the equity markets, the company had performed significantly better in the 1990s due to refocusing efforts, reaching and maintaining its top quartile performance goal since 1993. (See **Exhibit 6.**) Furthermore, the increased yields from Weyerhaeuser Forestry, at 1996 market prices, were expected to significantly improve the company’s cash flow position over the next 25 years. (See **Exhibit 7.**) Weyerhaeuser appeared well-positioned to reap financial rewards from its investment in forests and forest operations over the past 30 years.

Yet, many issues remained. As the forest products industry was consolidating and internationalizing at an unprecedented rate, Weyerhaeuser also felt the pressure to develop a more extensive overseas portfolio. However, having experienced several difficult joint ventures in the past, executives were hesitant as to what the portfolio should look like: subsidiary or joint venture, greenfields or brownfields, softwoods or hardwoods, tropical or temperate and boreal forests, manufacturing facilities or forestland.

Additionally, as global demand continued to grow and destruction of native forests accelerated, how could the company position Weyerhaeuser Forestry in the larger debate on sustainable development? Executives believed the company's high yield plantation forestry constituted a model of "sustainable forestry," but should they also seek certification for Weyerhaeuser's company-managed timberlands or its products? Weyerhaeuser found himself turning these questions over in his mind as tried to determine whether the environment offered a source of potential competitive advantage or a threat to the company's future position.

Exhibit 1

American Forest & Paper Association Principles for Sustainable Forestry

America's managed forests make a vital contribution to the nation and to the world by providing economic, consumer, environmental and aesthetic benefits indispensable to our quality of life. A vital forest-based economy provides wood and paper products, employment, and a viable tax base. Accomplishing sustainable forestry on private land requires a partnership among landowners, contractors, and the companies that purchase wood.

AF&PA members, therefore, support on the forestland they manage and will promote on other lands sustainable forestry practices. Moreover, AF&PA members will support efforts to protect private property rights and the ability of all private landowners to sustainably manage their forestland. This support 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 the American Forest & Paper Association 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.

Source: AF&PA

Erratum Insert for Weyerhaeuser Company: The Next 100 Years Case Study
 Published by World Resources Institute, 1997
 Prepared by Mark B. Milstein, under the supervision of Stuart L. Hart

REVISED Exhibit 2

Consolidated Statement of Income, 1992 - 96
 (in millions, except earnings per share)

Year	1992	1993	1994	1995	1996
Net Sales					
Timberlands & Wood Products	\$ 3,417	\$ 4,468	\$ 4,992	\$ 4,931	\$ 5,240
Pulp, Paper & Packaging	4,109	3,579	4,066	5,682	4,648
Real Estate*	690	829	911	723	804
Financial Services**	832	401	206	196	205
Corporate and other	220	269	223	256	217
Total Net Sales	<u>\$ 9,268</u>	<u>\$ 9,546</u>	<u>\$ 10,398</u>	<u>\$ 11,788</u>	<u>\$ 11,114</u>
Net Operating Expenses					
Timberlands & Wood Products	\$ 2,902	\$ 3,577	\$ 3,958	\$ 4,123	\$ 4,435
Pulp, Paper & Packaging	3,858	3,518	3,855	4,501	4,341
Real Estate*	677	811	904	954	769
Financial Services**	764	325	195	242	197
Corporate and other	327	315	365	473	400
Total Net Operating Expenses	<u>\$ 8,528</u>	<u>\$ 8,546</u>	<u>\$ 9,277</u>	<u>\$ 10,293</u>	<u>\$ 10,142</u>
Operating Income	\$ 740	\$ 1,000	\$ 1,121	\$ 1,495	\$ 972
Interest Expense	\$ (262)	\$ (292)	\$ (315)	\$ (347)	\$ (338)
Capitalized Interest	85	100	114	96	86
Income Taxes	(191)	(281)	(331)	(445)	(257)
Extraordinary Item	<u> </u>	<u>\$ 52</u>	<u> </u>	<u> </u>	<u> </u>
Net Income	<u>\$ 372</u>	<u>\$ 579</u>	<u>\$ 589</u>	<u>\$ 799</u>	<u>\$ 463</u>
Earnings per Share	\$ 1.83	\$ 2.83	\$ 2.86	\$ 3.93	\$ 2.34

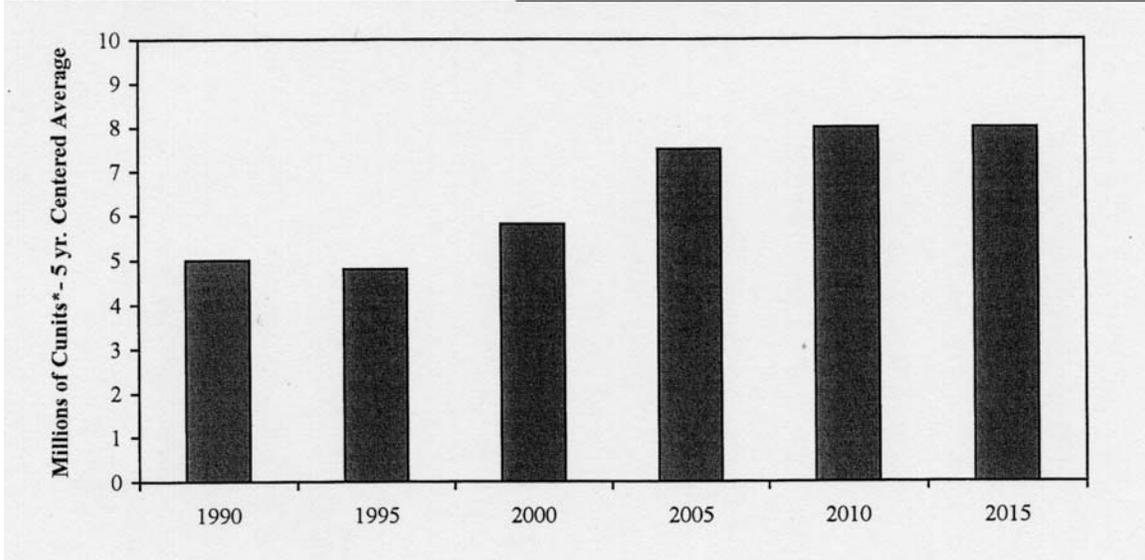
* In 1995, Weyerhaeuser Real Estate Company incurred a special charge of \$232 million to dispose of certain real estate assets.

** Weyerhaeuser Financial Services, Inc. incurred a special charge of \$58 million to dispose of certain real estate assets in 1995, and a \$42 million gain on sale of GNA Corporation in 1993.

Source: Annual Reports

Exhibit 3 Wall of Wood

Weyerhaeuser Annual Timber Harvest
(Five-Year Intervals)



*A cunit is a volume measure. One cunit equals 100 cubic feet.

Exhibit 4

Weyerhaeuser Forestry

Stewardship Statement

Our commitment:

- To continuously improve our performance as responsible stewards of the environmental quality and economic value of the forests we manage

- To actively listen to and act upon public expectations

- To communicate consistently to ensure understanding of our forest stewardship goals, practices and accomplishments

What our commitment means:

We will manage our forestlands for the production of wood. In addition, our goals are to protect, maintain or enhance other important environmental values, such as:

- Water quality and fish habitat.

- Wildlife habitat.

- The productivity of the soil.

- Aesthetics.

- Plant and animal species diversity.

- Culturally or historically unique areas.

We will accomplish this by:

- Practicing sustainable forestry to meet increasing worldwide demand for wood and wood products

- Performing to standards set for all forest operations.

- Basing our management processes and practices on scientific research and technology

- Leading cooperative efforts with public agencies and other groups interested in forest resources to develop balanced, cost-effective forest practices and regulations based on sound scientific standards.

- Meeting specific resource goals set by our regional Forest Councils.

Exhibit 5

Weyerhaeuser Forestry

Resource Strategies

Principles

While managing our forestlands to provide a competitive return to shareholders, we are committed to:

- using scientifically based practices.
- communicating with our stakeholders.
- actively listening to their concerns.

Strategies

Forest Products

We manage our forestlands for the sustainable production of wood and other forest products by:

- reforesting promptly after harvesting.
- practicing intensive forestry to produce wood and wood products that meet our customers' needs.
- maintaining healthy forests minimizing loss due to fire, insects and disease
- harvesting at sustainable rates over the long term.
- minimizing waste in our harvesting.
- encouraging the use of other products from the forest.

Water Quality

We protect water quality and fish habitat by:

- developing and implementing processes to assess the impact of our forest practices on these resources, and adapting our practices accordingly.
- practicing sound road construction and maintenance.
- continuously improving management practices in streamside areas.

Wildlife Habitat

We provide habitat for wildlife by:

- identifying and protecting unique sites.
- implementing landscape planning for wildlife, using wildlife-habitat data gathered on our lands.
- protecting threatened and endangered species on our lands.
- cooperating with government agencies to determine how Weyerhaeuser forestlands can contribute to the conservation of threatened and endangered species.

Soil Productivity

We protect soil stability and ensure long-term soil productivity by:

- using equipment and practices appropriate to the soil, topography and weather to minimize erosion and harmful soil disturbance.
- using forestry practices and technology to retain organic matter and soil nutrients.

Cultural, Historic and Aesthetic Values

We consider cultural, historical and aesthetic values by identifying sensitive areas and adapting our practices accordingly.

Exhibit 6 Total Shareholder Return

<u>1985-90 Percent Change</u>		<u>1990-95 Percent Change</u>	
MacMillan Bloedel	153%	Willamette	210%
International Paper	146%	Louisiana-Pacific	202%
S&P 500	80%	Weyerhaeuser	136%
Temple-Inland	71%	Georgia-Pacific	112%
Willamette Ind.	63%	S&P 500	111%
Westvaco	62%	Bowater	96%
Georgia Pacific	49%	Champion Int.	72%
Union Camp	46%	Westvaco	70%
Louisiana-Pacific	39%	Potlatch	67%
Weyerhaeuser	28%	Temple-Inland	59%
Champion Int.	22%	International Paper	59%
Potlatch	13%	Union Camp	56%
Boise Cascade	-9%	Boise Cascade	45%
Bowater	-18%	Stone Container	32%
Stone Container	-19%	MacMillan Bloedel	-1%

Source: Internal Weyerhaeuser documents; ranking is consistent with data from *Standard & Poor's Security Owner's Stock Guide*.

Exhibit 7

Annual Average Pre-Tax Free Cash Flow from Timberlands

