

# Developing a certified wood industry

Minnesota's local and state governments should provide incentives to certify the state's forests — a process that will enhance the state's economy, environment and quality of life.

Without question, Minnesota's 16.7 million acres of forests are highly valued. What's more, the economic vitality of many Minnesota communities situated near forests is directly related to the health of these woods. Many cities and towns in northern Minnesota rely on timber harvesting, lumber and paper mills, furniture manufacturing or tourism for jobs and revenue.

At the same time, our forests contain precious wildlife habitats and offer natural absorption qualities that help clean the environment. Given expanding populations, there is little doubt that demands on forests in Minnesota and elsewhere will grow.

To preserve these valuable resources for future generations, a movement has developed to "certify" forests worldwide. Forests can be certified if an independent party identifies them as being managed and harvested to meet various social, economic and environmental guidelines.

The certification guidelines call for such things as protecting cultural sites from harvest, banning certain pesticides and limiting other pesticides to certain areas or specified times.

In this state, the Minnesota Forest Resources Council recently issued a number of voluntary forest management guidelines for the same purpose. These guidelines are similar to international certification standards developed by the

Forest Stewardship Council, an umbrella certification organization based in Oaxaca, Mexico.

The incentive for timber companies to adopt these practices is that they can label and market their products as coming from certified forests. The downside to certification is that following these standards means higher production costs — up to 20 percent — for the timber industry. So far, the demand for certified wood has been strongest in Europe. In recent years, however, demand for certified wood has grown significantly in this country.

## The benefits outweigh the costs

This study recommends that Minnesota's local and state governments enact policies that support the forest certification process and make it attractive to foresters. Why? There are several reasons:

Benefits should ultimately outweigh costs. Despite the lack of empirical data and an extensive amount of experience to draw from, it appears that the environmental, economic and community benefits of certification outweigh the costs in the long run.

Particularly important are the likely environmental and social benefits for communities. This finding is

supported not only by this study's cost-benefit analysis and experiences to date, but also in part by the belief of many in the industry that the concept of certified wood will ultimately take hold.

The citizens, environment and economy of Minnesota stand to gain. Who pays for certification and who benefits? While timberland owners, forest managers, harvesters and wood product manufacturers would pay most of the costs, the benefits would be spread out among tourists, the

*By the end of 2002, we will eliminate from our stores wood from endangered areas and give preference to "certified" wood.*  
— Home Depot  
President and CEO  
Arthur M. Blank

tourism industry, cities and counties with forest industries and the state. So, the public has much to gain from certified forests.

Minnesota can get a head start on a relatively new market. Because the certified wood industry is still in its infancy and demand currently outweighs supply, Minnesota is in an excellent position to take the lead, to make sure that jobs and economic growth related to this industry stay in Minnesota. Failing to take advantage of this opportunity simply means someone else will seize it, and Minnesota will lose that competitive advantage.

The certified wood industry can create jobs and economic growth in an area that needs it most. Though Minnesota’s economy has grown rapidly in the last few years, some parts of the state are not experiencing equal economic success. In 1997, the unemployment rate in the top 10 timber-producing counties was nearly twice the state’s average. Minnesota’s top 10 timber-producing counties are: St. Louis, Koochiching, Itasca, Beltrami, Cass, Lake, Aitkin, Hubbard, Becker and Pine. Lack of employment opportunity has been a contributing factor to population loss in many of these 10 counties. According to the state demographer, Minnesota’s population grew by 107,910 people, while

the top ten timber-producing counties lost a total of 12,210 people between 1985 and 1995.

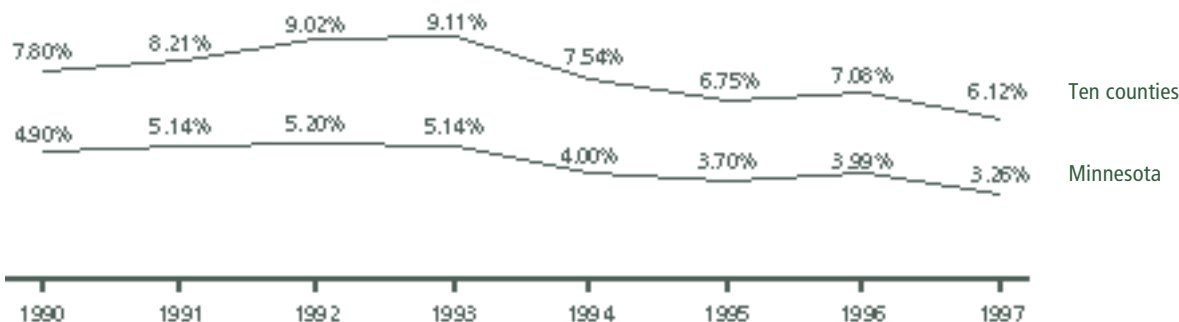
An economic stimulus is needed. Expanding the certified wood industry could create jobs, spur business growth and help reverse the outward flow of people.

Here are four suggestions for how the state might structure incentives to encourage development of a certified wood industry:

**Sales tax:** To balance the price of certified wood products with comparable noncertified goods in the market place, a sales tax exemption on certified wood products would reduce the price by 6.5 percent. This reduction would allow individuals and companies that incurred additional costs to pass those along if they did not exceed 6.5 percent. If the additional costs were greater than 6.5 percent, either the price of the certified product would be greater than the competing noncertified product or the additional costs would have to be absorbed somewhere along the supply chain.

**Property tax:** This approach would help producers in the early stages of their operations — which could be critical to their success — more than a sales tax

**UNEMPLOYMENT RATES IN MINNESOTA’S TOP-10 TIMBER-PRODUCING COUNTIES HAVE BEEN CLOSE TO TWICE THE STATE’S AVERAGE THROUGHOUT THE 1990S**



High unemployment rates in the timber-producing counties can also lead to population loss in these counties.

Source: Minnesota Department of Economic Security

exemption applied to a finished product. One possible approach: the county could forgive a set percentage of property taxes for landowners with certified forests. And, the state could reimburse the county through Local Government Assistance payments.

Timberland owners in Aitkin County pay \$3 to \$4 an acre in property taxes, according to county officials. Producing certified wood would cost from 55 cents to \$1.94 per acre for all timberland acres. Under this scenario, each party would hypothetically share a proportionate amount of the costs according to their benefits. For example, if the additional costs of certified wood production were assumed to be \$1.50 per acre and the business could gain 50 cents an acre back in increased sales, the county would reduce the property tax by \$1 per acre. If it was then determined that the state and the county benefited equally from the growth of the certified wood industry, the state would reimburse the county for 50 cents per acre through government assistance payments.

Wisconsin has a successful program entitled the Managed Forest Law, which is conceptually similar to the hypothetical program above. In exchange for managing timberlands using a state-approved plan,

landowners pay roughly 85 cents an acre in property taxes. This can save up to \$30 an acre in some cases. For most landowners, the savings are more apt to be a few dollars an acre.

**Educate consumers:** Informing consumers about the benefits of purchasing certified products could increase demand and perhaps encourage consumers to pay a higher price for certified wood products. Greater local demand and having a price premium would give newcomers to the certified wood industry additional incentives and expand existing ones.

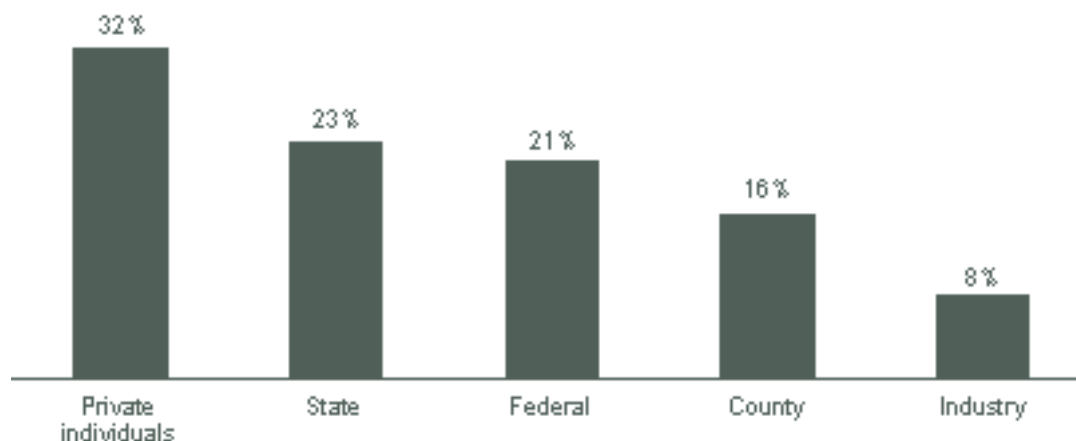
**Actively work with suppliers to meet demand:** Given that requests for certified wood currently go unfilled in Minnesota, the state could benefit by having a staff person who links requests for certified wood requests to suppliers.

### Forestry has a big presence in Minnesota's economy

Minnesota's forests have a huge economic impact on this state. In 1995, the state's gross sales of forestry, lumber and wood products, furniture and fixtures, and paper and paper products exceeded \$6 billion, according to the Department of Revenue.

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#### MINNESOTA HAS A WIDE DISTRIBUTION OF FOREST OWNERSHIP



Broad distribution of ownership of the state's forestland is an indicator of the broad array of forest management styles.  
Source: Minnesota Department of Natural Resources

Ranked as the third largest manufacturing industry in Minnesota based on employment, the forest industry generates 14 percent of all manufacturing dollars, according to the Department of Revenue. In 1996, wages in the Minnesota forest products industry amounted to more than \$2.5 billion, according to the U.S. Department of Labor.

And, according to the Minnesota Office of Tourism, northeast Minnesota — where most of the state's forests are located — accounted for 18 percent of tourist visits in Minnesota's \$8.7 billion dollar tourism industry.

Minnesota's forestlands are widely dispersed among many ownership groups. Federal, state and county governments own 60 percent. Private individuals own 32 percent and industry owns eight percent.

Of the 16.7 million acres of forestland, the Minnesota Department of Natural Resources estimates that 14.8 million acres are considered timberland and could be harvested. Currently, about 200,000 acres are harvested each year.

Despite federal and state regulations, Minnesota's forests are managed in various ways. Some owners use methods that result in short- and long-term environmental, economic and community costs. Other forests in Minnesota, however, have been certified based on some of the most stringent economic, environmental and community forest management guidelines in the world. The most notable example is the certified county and state forests in Aitkin County.

## **The Forest Stewardship Council leads the way**

Certified forestry has developed as a response to practices that resulted in many avoidable economic, environmental and community costs. For example, unmanaged harvesting during inappropriate times of the year can fill water bodies with unacceptable levels of silt and chemicals. The concept of certifying forests and thus authenticating "green" forest products has been growing since the early 1990s.

The Forest Stewardship Council, a global umbrella certification organization, sets the principles and criteria for forest certification. Many certifiers throughout the world are accredited by the stewardship council, which is recognized as an impartial organization. Certifiers can alter the criteria in minor ways to adapt them to regional forest characteristics.

The 10 principles laid out by the stewardship council address the following issues: compliance with local laws, tenure and use rights and responsibilities, indigenous peoples' rights, community relations and worker's rights, benefits from the forests, environmental impact, management plan, monitoring and assessment, maintenance of natural forests and plantations.

As of the beginning of 1998, the Forest Stewardship Council estimated about 3.5 million acres of forestlands were certified in the United States and 24.7 million acres were certified globally.

Minnesota has 585,000 certified acres. Nearly 40 percent, or about 223,000 acres, is managed by the Aitkin County Land Department. The Minnesota Department of Natural Resources manages the other 362,000 acres. These 585,000 acres represent about 4 percent of the state's timberland.

To date, only county and state timberlands in Minnesota have become certified. Managers of most industrial lands follow the American Forest and Paper Association's Sustainable Forestry Initiative.

Based on conversations with forestry experts, this initiative is seen as an improvement over previous practices, but most experts say the industry's guidelines are not as stringent as the stewardship council's standards. However, because the global market for certified products expanded during the last year, some larger forestry businesses have begun to realize the benefits of third-party certification. As a result, some companies are exploring the use of the International Standards Organization 14001 registration and a third party audit process. But most U.S. businesses see no advantage to ISO 14001 registration because there is no label to let consumers know how the wood is harvested and processed.

### **Certification is catching on**

Since certification of forestlands and production processes is so new, it is hard to determine its degree of success. However, most people familiar with the concept remain optimistic that it will continue to develop.

With 2.1 million acres, the State of Pennsylvania has the largest acreage of lands certified in the United States. In November 1997, Pennsylvania had 1.2 million acres certified. The remainder was certified a year later. So far, the economic effects of certification are unknown. However, given the commitment that Pennsylvania has made to certify its state lands and the interest expressed to date, officials there anticipate a potential for new investment and jobs and a clear benefit to Pennsylvania's environment and communities.

A commercial forestry company, Seven Islands Land Management Co. in Bangor, Maine has about 975,000

certified acres. These lands were certified in 1993 but this has not resulted in any new jobs, according to a company vice president. The company has yet to reap any other economic benefits; however, its public image has improved significantly. Moreover, the company, which traditionally supplied most of its wood to Canadian mills, is now building its own mill on-site to take advantage of the potential benefits of value-added processing. Unlike most involved in the certified wood industry, the Seven Islands Land Management Co. officials were not optimistic that certification would lead to new jobs and investment. While economic benefits have not been evident in Maine to date, certification has nonetheless resulted in environmental and social benefits.

Since 1992, the Menominee Tribal Enterprises in Wisconsin has managed one of the first certified forests in the United States. Although the Menominee have managed their forests the same way for the last 140 years, they were officially recognized for their sustainable practices in 1992. For the tribe, the benefits of certification have been less financial and more social. In recent years however, there has been consistent demand for certified wood from tribal lands. And, the Menominee Tribal Enterprises has been recognized globally as a model to follow.

Due to the increasing demand for certified wood products, the Department of Natural Resources wants to certify more than one million more state- and county-managed acres. That would be about 7 percent of the state's timberland in up to nine other Minnesota counties.

Besides public lands, the Department of Natural Resources and the Institute for Agriculture and Trade Policy have plans to help private nonindustrial forest owners certify their lands through a \$150,000 Legislative Commission on Minnesota Resources project.

This project will certify foresters, who can then manage and certify small tracts of timberland. This will primarily benefit small private landowners who want to become certified but do not have the resources to do so.

In the fall of 1997, Aitkin County had about 223,000 acres, about 1.5 percent of Minnesota's timberland acreage, certified as a pilot project. To date, Aitkin County has received a great deal of publicity for being one of the first public land parcels in the country to be certified. In addition, certification has increased public confidence in the county's management of the forests, and there have been requests from around the world for their certified timber.

As of June 1999, three saw mills in Aitkin County had been certified for the chain-of-custody of certified wood. But Aitkin County still cannot fulfill all the requests for certified wood, according to the Minnesota Department of Natural Resources.

At the beginning of June 1999, Cass County had undergone the certification evaluation process and was awaiting its results. The county wants its land to be certified for two reasons. First, the county wants to be recognized as managing its forests in a sustainable fashion, and second, county officials expect this to be a sustained source of income for the county which will keep taxes as low as possible.

In 1997, estimated sales of county-owned timber amounted to a \$1 million tax break for county taxpayers. Twenty percent went to the townships. Forty percent went to school districts, and the other 40 percent went into the county general fund. As a result, Cass County officials have decided that keeping their forests healthy makes good economic sense now and in the future.

## **Demand for certified products is on the rise, especially in Europe**

Demand for certified wood products has been relatively low in the United States, but it has been high in Europe, especially the United Kingdom.

One strong impetus behind this demand has been a United Kingdom group known as the Worldwide Fund for Nature 1995 Plus. According to a Spring 1997 article in *The Amicus Journal*, this group represents a full 25 percent of the wood demand in the country.

This consortium consists of about 80 companies, most of which are committed to buying nothing but certified products by the year 2000, according to an article, "Certification in the Marketplace: A Global Review" in the May 1998 issue of *Western Forester*.

The first two companies to be certified in the United States were Colonial Craft, which is based in Roseville, Minnesota, and Collins Companies of Portland, Oregon, one of the world's largest suppliers of certified wood.

According to the vice president of marketing for The Collins Companies, the company had less than 500 employees just three years ago. Today, Collins employs more than 1,000 workers. The vice president attributed much of the increased employment to the growth of the certified forest product industry in the United States and abroad. Most of the company's new jobs involve the manufacturing of wood products.

Though certified wood products are in short supply in certain European countries, the current American market is spotty. Demand is strong in such cities as San Francisco and Austin, Texas, where citizens are well educated and have high incomes, and is likely to spread as awareness of the products grows, noted the Collins vice president. Minnesota is in a good position to develop industries relating to certified resources, he

added. The state is known for having a strong manufacturing sector. What's more, the Department of Natural Resources could consider certifying more land.

Colonial Craft has benefited enormously from producing certified wood products, according to the company's president, Eric Bloomquist. First, the company has received a great deal of publicity and recognition for being a pioneer in the U.S. certified wood product market. Second, Colonial Craft has generated new jobs and higher sales because of certified wood. Recently, the company built a new manufacturing facility in Alabama to meet increased demand resulting from a contract with a United Kingdom company. However, Bloomquist says that the low supply of certified wood still holds the industry back.

The Department of Natural Resources reported that Minnesota receives numerous requests for certified wood from around the world, but requests often go unfilled because such a small portion of Minnesota's timberland is certified. The result is many missed opportunities for expanding Minnesota's economy.

Given this demand, why are more certified operations not opened in Minnesota? There are a number of reasons, including:

- Since existing mills already work at full or near-full capacity, they have little incentive to search for additional business.
- Currently, most certified wood products are not sold at a premium, therefore the costs of certification to a mill owner or timberland owner are seen as reducing profitability.
- No state incentives exist to help interested parties become certified.
- Many companies considering certification are waiting to see if the market for certified wood is a fad or has long-term possibilities.
- Gaps exist in the supply chain. For example, there may not be enough sawmills or value-added manufacturing plants for the number of certified acres.

## **Consumers are unlikely to pay a premium**

While most consumers indicate in surveys that they would pay more for "green" products, they do not act on their beliefs in the marketplace.

According to Mark Eisen of Home Depot, consumers' purchasing behavior is fixed more on "price-quality" relationships than on environmental considerations. The "greenness" of a product is only a factor when all other criteria are relatively equal. This could be an obstacle. As a 1996 article in *World Watch* notes, "If a price premium cannot be expected for sustainable production, noncertified competitors have an advantage over certified producers due to the extra costs associated with certification."

It is important to note that Home Depot once stocked some stores with certified wood. However, because the retailer could not purchase a large enough supply for all its stores, it stopped selling it. In August 1999, Home Depot announced that it will discontinue purchasing wood from sensitive areas, and by 2001 would place a priority on the purchase of certified wood products.

To increase American demand for certified wood products, the Certified Forest Products Council has been established in the United States. The Council is America's largest organization promoting the improvement of forest management practices through the purchase of certified wood products. The organization has more than 140 corporate members committed to using and selling certified wood products.

## **Examining the costs and benefits**

This cost-benefit analysis examines the additional costs involved in certifying, managing, harvesting and producing certified wood products in comparison to the potential environmental, economic and social benefits. Exact cost and benefit figures could not be calculated because the certified wood industry and

certified forestry management are in their infancy, especially in Minnesota. Thus, most of the measures used in this study for social and environmental benefits are qualitative in nature.

This analysis attempts to incorporate as many of the factors as possible into a monetary analysis. The figures are only estimates and should therefore be used with caution. Unfortunately, a dollar value could not be put on some cost factors and most of the benefit factors. This type of analysis will be done with greater precision in the future as experience and knowledge of the certified wood industry increases.

The costs and benefits considered in this analysis are based on an extensive literature review of sustainable forestry and the production processes of certified wood products. The principal resource used is the Minnesota Forest Resources Council's *Economic Implications of Proposed Forest Management Guidelines for Minnesota*.

Forestry officials have stated that these voluntary guidelines are very similar to guidelines required for forestry certification. Therefore, the cost estimates to adopt these guidelines should approximate the costs involved in managing and harvesting a certified forest.

## Costs of certification

To explain the cost of certification on a per acre basis and for comparison to the hypothetical property tax break, we assumed that all of Minnesota's 14.8 million harvestable acres would be certified and 200,000 acres per year harvested.

**Certifying:** Certification costs include the initial inspection, review of management plans and annual monitoring by an independent third party. Depending on the owner, size of the tract and location of the property, the initial certification costs could range from less than 50 cents per acre to several dollars an acre. This study assumes a high end estimate of \$4 per acre. Annual audits could range from 5 cents to more than 20 cents per acre. It is assumed that the initial up-front certification costs would be spread over a five-year period. Annually then, these up-front costs for the first five years would range from 10 to 80 cents per acre. Adding the annualized up-front costs with the cost of annual audits, 5 to 20 cents per acre, yields an annual estimate range of 15 cents to \$1 an acre on all lands, harvested or not.

## Management and guideline

**implementation:** Costs for administering and operating the forest management plan depend on the

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## MAJOR COSTS AND BENEFITS OF CERTIFIED WOOD INDUSTRY

### Costs

- Certification
- Management and implementation of guidelines
- Harvesting
- Foregone revenues from uncut trees
- Reduced profitability assuming no premium for certified products
- Costs associated with chain-of-custody
- Increased cost of raw material for saw mills and value added business

### Benefits

- Business growth and jobs
- Tourism
- Increased value of older forests
- Improved soil and water conditions
- Improved biodiversity and habitat protection
- Carbon storage
- Public relations and recognition
- Reduction in conflict over forest management
- Preservation of cultural and historical assets
- Intrinsic value

These factors were selected primarily from a list of potential costs and benefits identified in Minnesota Forest Resources Council's *Economic Implications of Proposed Forest Management Guidelines for Minnesota*.

Source: Minnesota Planning



owner's current forest management practices. Owners with comprehensive management plans and professional expertise are likely to incur minimal costs. Those who do not have plans or use professional forest managers are likely to incur a great cost to meet the guidelines. In general, nonindustrial private owners would incur the greatest expense because only about one-fifth of these owners currently use professional forest managers, according to the Minnesota Forest Resources Council. These private owners bring in about one-third of Minnesota's wood harvest each year.

Once management plans are written, putting the plan in place (for example replanting, stand cultural treatments and so forth) are likely to occur on harvested acres rather than on the entire tract of certified land. For this reason, the additional cost for incorporating timber harvest forestry management guidelines into timber sale activities is expected to range from \$1 to \$1.2 million for about 200,000 acres that are harvested each year, according to the Minnesota Forest Resources Council. This is assumed to be roughly equal to the cost of managing a certified forest. The council's estimate is based on a survey of forest managers' cost estimates for managing and planning, site preparation, regeneration and stand cultural treatments under the new guidelines. Thus, the annual estimate ranges from \$5 to \$6 for every harvested acre.

**Harvesting:** Estimating harvesting costs is difficult because the cost would vary considerably depending on the location, operation constraints, methodology used and forest type. However, one means of estimating additional costs associated with harvesting under the new guidelines is to look at the range of current harvesting operations. Based on a Minnesota Forest Resources Council survey of current Minnesota harvesting practices, the low- to high-cost differences ranged from \$5 to \$7 per cord.

The Minnesota Forest Resources Council estimates that the marginal difference when moving from not using the guidelines to full implementation of the guidelines could be as high as \$3. Therefore, assuming that one-half of the extra cost is due to operational constraints, which is likely to happen if the guidelines were followed, then the high estimate is assumed to be \$3.50 per cord with a low estimate of \$2.50 per cord. Assuming a low-range harvest of ten and a high range of 18 cords per acre, the additional harvesting cost would range from \$25 to \$63 per acre for the 200,000 harvested acres.

For the purpose of estimating the per acre property tax break necessary to promote certification in Minnesota, the costs of certification must be spread to cover all certified lands (14.8 million acres) rather than limiting the costs to the land harvested annually (200,000 acres).

The cost estimates are: a range of 15 cents to \$1 an acre for the initial and on-going certification process on all 14.8 million timberland acres; \$5 to \$6 per acre for the 200,000 harvested acres for management and guideline implementation; and an additional \$25 to \$63 per acre for harvesting the 200,000 acres.

The costs for management and guideline implementation and harvesting for the annual 200,000 acre cut amount to \$6 million (\$30 multiplied by 200,000) to \$13.2 million (\$66 multiplied by 200,000). When distributing these costs over the 14.8 million acres, they amount to a range of 40 to 94 cents per acre. Adding the per acre certification costs then yields an estimated range of \$.55 to \$1.94 per acre for the owner to certify all 14.8 million acres and harvest 200,000 annually.

### **Nonmonetary costs**

Not all costs could be given a dollar value in this analysis, but these costs are nonetheless considered

important when analyzing the benefits and drawbacks of the certified wood industry.

**Uncut trees:** The foregone costs resulting from guidelines requiring greater percentages of trees left uncut could be considered as a cost if a short-term perspective is taken. However, if a long-term perspective is taken, this cost would be negated by the environmental, social and economic benefits of leaving a greater number of uncut trees.

The economic benefit to landowners is the increased value and quality of uncut trees for a future harvest. This simply exchanges short-term loss for long-run gain. For landowners who have a vested interest in the long-term prosperity of a particular forest, this benefit is easier to realize. Landowners and harvesters who are interested only in maximizing their per-acre harvest in the short term will consider this a cost and the guidelines a burden.

**Chain-of-custody management:** This has to do with how a company tracks its inventory up to the point of sale or transport. Depending on a company's size, the efficiency of an inventory control system and the number of kinds of wood handled, costs associated with chain-of-custody could be a factor. Typically, it costs on average \$3,000 to be certified as a chain-of-custody company. However, in cases where a company does not already have an existing inventory control system, they would have to bear the additional expense of setting one up.

**Reduced profitability due to increased raw material costs:** For saw mills and value-added businesses, higher costs for raw materials must be taken into account because consumers have yet to show they will pay premium prices in the marketplace. Therefore, high raw materials costs would reduce profitability and deter participation in the certified wood market.

## **Benefits of certification**

A wide range of benefits accompany the certification of forests. The industry is still in its early stages and dollar figures are difficult to assign. Because of this, the benefits discussed here are more qualitative than quantitative.

**Business growth and jobs:** Most national and state experts on sustainable forestry who were interviewed for this study predicted the market for certified wood products will continue to expand and create jobs. While a few experts disagreed, Collins Company and Colonial Craft have already done both. These two companies created new jobs. They did not simply transfer jobs from the noncertified to the certified-wood sector.

A recently certified wood product manufacturer in Aitkin County expressed his optimism about the certified wood industry and noted his plans to expand his business. Without the certification of lands in Aitkin County, this potential expansion would likely not have been considered.

A sizeable portion of saw timber is currently shipped out of state to be turned into wood products. Thus, job growth related to the certified wood industry may not necessarily result from more timber being harvested, but rather from keeping more Minnesota-grown timber in the state to be made into finished products close to home. This is because certified wood is supposed to be grown and manufactured locally. The idea is that the local economy should benefit from the local resource. This guideline could spur businesses to develop in counties that have certified forests.

Minnesota businesses that could be involved in the production of certified wood products are in an excellent position to get in on the ground floor of a young industry. Doing so would enable them to expand operations and create more jobs. This, in turn, would create a ripple effect in the economies of local

communities and the state because new jobs would also be generated in supporting sectors.

**Tourism:** Minnesota's recreation and tourism industries depend on the beauty of our forests. And, since having more certified forests would enhance the beauty of these areas, it is easy to conclude that certification would help tourism. Natural scenery is the number one reason vacationers visit these areas, according to a recent study by the Minnesota Office of Tourism.

*The Economic Implications of Proposed Forest Management Guidelines for Minnesota* also concluded that the certification guidelines would enhance Minnesota's forest resources for recreation and tourism.

Improvements in the visual quality of the forest and cleanliness of the surrounding water bodies enhances a forest's aesthetic value and therefore benefits tourism and recreation such as hiking, cross country skiing and bird watching. This, in turn, helps tourism-related businesses, such as shops, lodging facilities, guides and restaurants, as well as communities that depend on the success of those businesses for healthy economies.

Measuring these benefits is difficult. Given the facts that the rewards for managing a sustainable forest are likely to occur in the long-term and that they are difficult to positively correlate with a sustainable management style, there is no accurate means to estimate the tourism-related benefits at this time.

The tourism industry currently adds \$8.7 billion a year to Minnesota's economy, according to the Office of Tourism. All told, the industry has 163,000 travel- and tourism-related jobs, which generate \$3.5 billion in wages and salaries, and tax receipts of \$800 million. Northeast Minnesota, where most Minnesota's forests are located, accounts for 18 percent of Minnesota tourism visits. With an \$8.7 billion annual impact, it is

easy to see the potential economic benefits of improving the visual quality of Minnesota forests and water bodies through the implementation of certification guidelines.

**Fishing and hunting:** In general, most experts believe that adopting the guidelines would improve fish and wildlife habitat, and thus the stability of their populations. But it is also possible that long-term changes in forest composition and habitat may harm some game birds and animals. However, with stricter guidelines for harvesting timber around water bodies, it is probable that lakes, rivers and streams would be cleaner and fish populations would increase.

Sustainable forests also should improve fishing conditions. Each year, about 2.3 million people fish Minnesota waters. They spend about \$400 million on trip-related expenditures, according to the Department of Tourism. With improved fishing conditions, the fishing industry should benefit.

**Increased value of older forests:** Sustainable forestry practice calls for selective harvesting in hardwood cover types, that is, allowing some trees to remain while others are harvested. Depending on the time frame, management objective and site conditions, there could be clear economic benefits from a selective harvest because larger, high quality trees are more valuable. However, this benefit exists only if the owner has a long-term interest in a forest. In the short-term, selective cutting should be considered a cost.

**Soil benefits:** Certification guidelines affecting soil productivity and run-off are likely to have many benefits. Adopting the guidelines is likely to improve the productive capacity of forest soil, a key ingredient for a healthy and stable forest. In addition, using the guidelines would help reduce other problems that can arise in a forest. These include compaction, erosion, chemical soil concerns and flooding. Also, poor

management of forests and harvesting techniques can create sedimentary, water treatment and chemical problems in water bodies.

**Biodiversity:** In general, the health and value of the forests, characterized by greater biodiversity and more resilient biophysical systems, is projected to improve if the guidelines proposed by the Minnesota Forest Resources Council and others are adopted. Because many of these benefits are long-term and are not directly captured in marketable goods and services, it is beyond the scope of this analysis to place a value on them.

**Carbon storage:** If sustainable forestry practices are followed, the threat of global warming could be mitigated. This is because carbon storage in above-ground forest biomass and soil carbon would probably increase. Not knowing the full impact and complete relationship between the benefits of carbon storage and global warming prevents estimating the dollar value of this potential benefit.

**Public relations and recognition:** Certified forests have an undeniable public image benefit. To date, businesses and organizations associated with

certification have received a great deal of positive recognition and publicity. Such recognition may increase sales and employment opportunities as noted in the economic section. But also, building good will in communities near Minnesota's forests is no small thing. Discussions with Aitkin County officials have noted this as one of the benefits stemming from the certification of county and state lands. In addition, there is likely to be less conflict among environmental groups and foresters on forest management.

**Preservation of cultural and historical assets:** The guidelines call for the preservation of cultural and historical assets. While the tourism industry may benefit from protecting these attractions, Minnesota's few remaining ties to the lifestyles and cultures of its past would also be better preserved. These are irreplaceable educational and community assets.

**Intrinsic value:** The guidelines would increase the intrinsic value of the forests as well.

After looking at all of the costs and benefits considered, it appears that the environmental, economic and community benefits of certification should outweigh the costs in the long run.