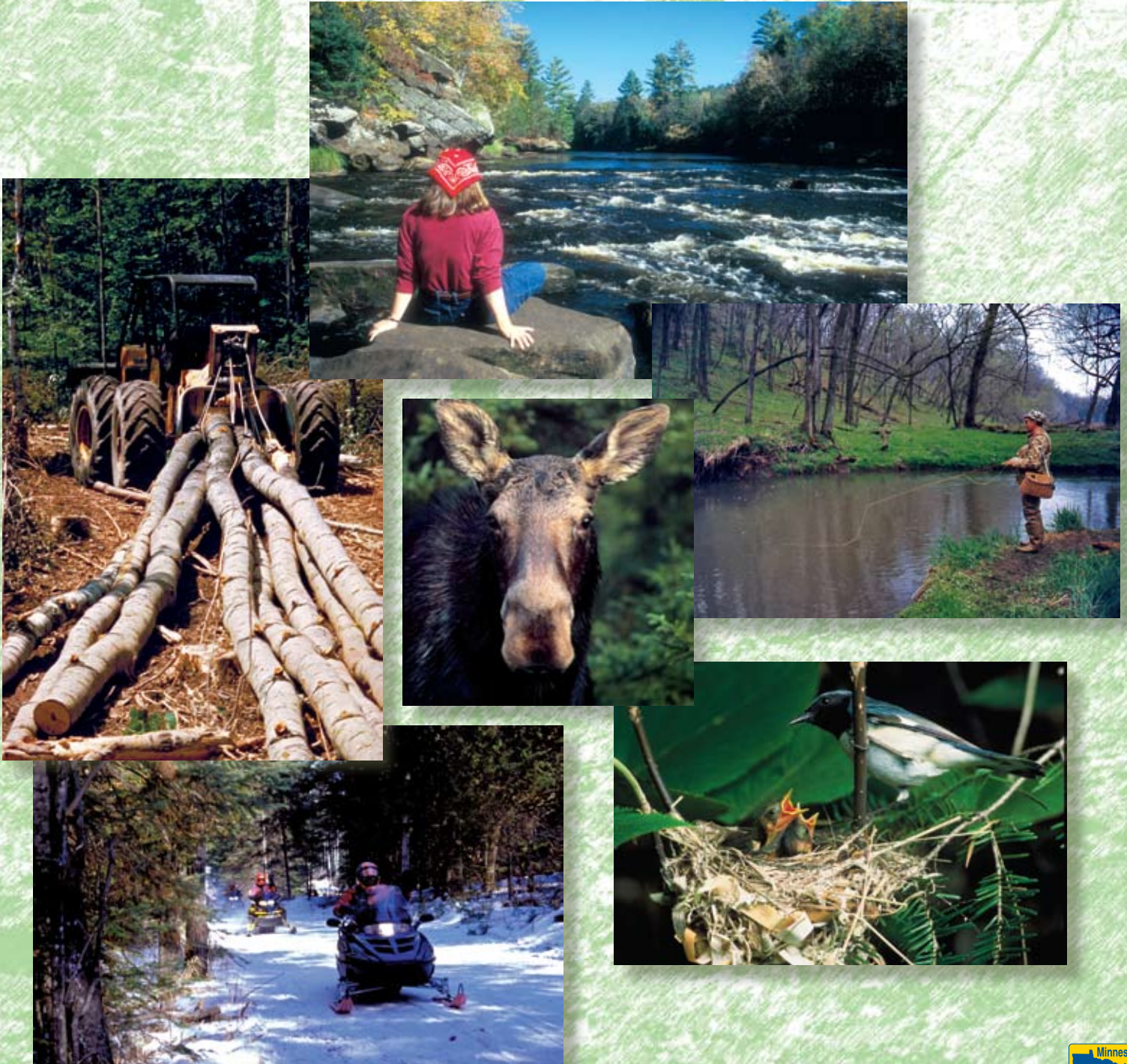


# Minnesota Forests for the Future

**Conserving Minnesota's working forest lands to meet the state's future recreation, economic, and ecological needs.**







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Strategic Report of the DNR Commissioner's Advisory Team  
on the Minnesota Forests for the Future Program  
April 2008

# Advisory Team

The Minnesota Department of Natural Resources (DNR) Commissioner formed the Forest Legacy Advisory Team in July 2007. The team was charged with reviewing the state's past forest conservation easement activities and making recommendations for creating a state program that would work with partners in the public and private sector to use conservation easements and other tools to retain Minnesota's healthy, working forests.



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Minnesota Deer Hunters Association



Laurie Martinson  
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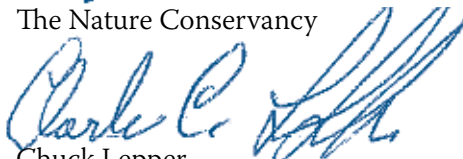
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# I. Executive Summary

Minnesota's forests face a big challenge today: development pressures are increasing and impacting the state's ability to sustain its working forest. The state's private and public forest lands interact with each other across the landscape to create a working forest that provides many essential benefits Minnesotans care deeply about. In northern Minnesota timber and mining companies are selling thousands of acres of Minnesota's private forest lands in large chunks to financial investors. This change in ownership opens the doors to parcelization and fragmentation of large tracts of working forest land that have long been valued and used for public recreation, forest products production, and wildlife habitat. In central and southern Minnesota, key small, forested parcels are at risk of being developed, further reducing the region's already fragmented forest cover. Time may be short. At present, DNR and partners have an opportunity to acquire or permanently gain easements on these private lands that will allow Minnesotans to continue to reap the economic, social, and ecological benefits these forests provide.

To make the most of this opportunity, DNR's commissioner formed the Forest Legacy Advisory Team in July 2007. The team was charged with reviewing the state's past forest conservation easement activities and making recommendations for creating a state program that would work with partners in the public and private sector to use conservation easements and other tools to retain Minnesota's healthy, working forests. The team envisions a sustainable, working forest composed of both private and public lands that meets current needs while remaining diverse, healthy, and productive for future generations. This strategic document summarizes the broad findings and recommendations of that team. It defines a comprehensive and coordinated planning framework and sets the stage for more specific operating details to be found in follow-up implementation and annual performance reports.

## Key Findings

**1. Protecting Minnesota's forest requires a comprehensive conservation strategy that recognizes differences in regional forest conditions.** The Laurentian Mixed Forest Province of northern Minnesota remains predominantly forest land with a patchwork of private, public, and tribal ownership. Its interconnected and intact forest landscape provides diverse recreational opportunities, productive timber management, and ecological values. We have the opportunity to conserve this region's intact forests on a large scale by protecting critical private lands that connect to public lands.

In contrast, the Eastern Broadleaf Forest Province of central and southern Minnesota has a more highly fragmented forest cover. Its remaining forest cover is critical for watershed protection and supports diverse recreational opportunities, hardwood forestry, and ecological values. Urgent attention is needed to prevent further fragmentation of its forest land base. This means working with private landowners to shelter key lands from development and, when possible, linking private lands to pockets of public land.

**2. The greatest threat to sustaining Minnesota's working forests lies in the conversion of private forest lands to other uses.** Retaining a strong and sustainable working forest adequate to meet the full array of forest benefits for current and future generations is a first conservation priority. Retention must be complemented by strategies that work to enhance the health, diversity, and productivity of Minnesota's forests. This requires investments that support a sustainable management infrastructure that will ensure a future working forest that provides the wide variety of recreation opportunities, optimal contributions of forest products, and the abundant wildlife habitat and clean water that Minnesotans deeply value. Conserving this interconnected network of private and public lands as working forest is integral to Minnesota's overall quality of life.

**3. Many factors are converging that could lead to the breaking up of Minnesota's working forest land base and the potential loss of public access for recreation, timber production and jobs, wildlife habitat, wetlands, and other forest values.**

- a. Forest land prices are increasing. Forest land prices increased an average of 13 percent per year between 1989 and 2003. This increases the likelihood of parcelization (the breaking up of land ownership into smaller blocks) and decreases the purchasing power of land protection efforts. In 2003 the cost to protect land from development was five times greater than in 1989. Because price increases are greatest for smaller parcels, forest land protection efforts should focus on larger, contiguous tracts for the greatest "bang for the buck."
- b. The timber industry is restructuring. The owners of large tracts of forest land were typically forest products companies. In the 1990s many of these companies began to sell their forest land base to other types of owners, especially financial investors. These new owners value forest lands not only for their ability to supply forest products, but also for their investment potential through real estate development and other options.
- c. Major land ownership changes are occurring. More than 400,000 acres of Minnesota industrial forest land have changed ownership since 1998. Nearly 1 million acres of large, mostly undeveloped private forest is at risk of being sold and converted into smaller parcels.
- d. Parcelization may lead to development, especially near water and public lands. A study of Itasca County found that parcelization was concentrated near water, public lands, and larger communities. Also, parcelization typically resulted in land development within seven years.

**4. Changes in ownership and parcelization can threaten the future of public recreational access to large tracts of forest land.** They can also limit access to public lands for timber and habitat management. Parcelization

and related development may threaten the competitiveness of the timber industry and contribute to habitat fragmentation, which can increase the spread of invasive species and reduce wildlife habitat and water quality.

**5. Forest conservation evokes strongly held and differing views of the public.** There is broad consensus on the value of retaining Minnesota's forests and the values they provide. However, the public holds strong and differing views on the best mechanisms to retain forest lands and on what forest values should be emphasized, creating conflicts that must be addressed.

**6. Among the many tools to protect the wide array of forest values provided by Minnesota's public and private working forests, working forest conservation easements (WFCEs) are a cost-effective tool for maintaining recreational opportunities, wood products production, fish and wildlife habitat, and many other forest amenities.** Lands with conservation easements remain in private ownership and on local tax rolls. They limit an owner's rights to conduct certain activities, such as subdivision or residential or commercial development. They protect specific forest values in perpetuity. They help sustain a regional economy by protecting the forest land base on which it depends. They could also positively impact state efforts to protect wetlands and mineral interests.

**7. DNR can meet its fiduciary responsibilities to the Permanent School Fund on lands with WFCEs.** DNR and partners have set a precedent of applying a variety of mineral development approaches to meet the state's fiduciary responsibilities to the School Trust Fund while ensuring forest conservation values are protected.



## Recommendations

**1. Program Establishment.** The state should establish a Minnesota Forests for the Future program under statutory authority provided by the Minnesota Legislature. The program should partner with many entities to protect priority private forest lands from development. The program should promote an interconnected network of sustainably managed private and public forests.

**2. Advisory Committee.** The DNR commissioner should establish a standing advisory committee composed of DNR staff and external stakeholders to provide advice on program management and to periodically evaluate program goals, strategies, implementation, and performance. The advisory committee should address program implementation action items listed in Appendix A.

**3. Public–Private Partnership.** The program should build on the success of collaborative approaches and partnerships between landowners, communities, non-profit organizations, public agencies, and others to achieve its goals. Working with partners, the program should identify and recommend changes in state policies that create economic incentives for private landowners to retain working forest.

**4. Local Government Support.** The program should consult and cooperate with appropriate local units of government to understand local interests, build local support, facilitate project implementation, and ensure projects provide local public benefits.

**5. Program Focus: Public Benefits and Geographic Focus.** The program should focus on protecting private forest lands throughout the state that, in combination with public forest lands, provide exceptional value in three core areas: public recreational access; timber production and other economic opportunities; and ecological values, including air and water quality, soil health, and wildlife habitat. It should give top priority to protecting the largest blocks of forest lands owned and managed by corporations, the forest industry,

and other large landowners in the Laurentian Mixed Forest Province, along with at-risk acreage of high-priority lands (generally 100 acres or more) in both the Laurentian Mixed Forest and Eastern Broadleaf Forest provinces.

**6. Toolbox Approach.** The state should use a toolbox approach, in which multiple tools are applied to meet forest conservation goals. The range of tools includes easements, fee title acquisition, land exchanges, tax policies, and cost-share programs.

**7. Fiduciary Responsibilities for School Trust Lands.** The program must facilitate DNR's compliance with constitutional and legislative directives requiring the agency to maximize the long-term economic return to the Permanent School Fund as consistent with sound natural resource management.

**8. Program Acquisition Targets.** The program should proactively identify and prioritize specific lands for easements and other protection tools with the aim of maximizing public benefit from its efforts. The short-term target is to acquire an additional 75,000 acres of working forest easements by 2009. To refine a long-term (up to 25 years) target, DNR should use a Geographic Information System (GIS) to identify and prioritize private lands that best promote the goals of strategic conservation of private forests and provide exceptional public benefits. This analysis will provide rigorous long-term acquisition targets. Based on current landscape-level information on land ownership patterns and natural resource features, the advisory team estimates that targets will lie between 270,000 and 530,000 acres of priority private forest lands. This target range is a preliminary estimate that should be refined through the proposed analysis.

**9. Program Funding.** The program should work with partners to leverage public and private funds, spur new investments, and coordinate with other conservation programs to protect highest priority private forest lands from development. Like the acreage targets, funding needs must be based on additional analysis. The approximate cost to meet the pro-

gram's long-term target of protecting 270,000 to 530,000 acres throughout Minnesota is \$165 million to \$310 million in today's dollars.

**10. Funding Easement Stewardship.** The state should protect the public's interests and values by providing reliable funding mechanisms and necessary infrastructure to maintain a forest easement stewardship program. Such public and/or private mechanisms should fund long-term monitoring and enforcement at the time of easement establishment.

**11. Program Selection Process and Criteria.** DNR should conduct a project selection process to rank and prioritize individual projects. DNR should convene a project review committee of DNR and stakeholder members annually to review, score, and rank projects submitted by landowners and partners for consideration. Scoring should be based on project size, strategic location, recreational opportunities, timber and other economic benefits, and ecological and habitat values. DNR should determine final project priorities based on recommendations from the review committee.

**12. Forest Management.** The conservation of working forests should be the program's cornerstone. The public directly benefits from this program when forest lands are managed in ways that sustainably produce wood products that directly support Minnesota jobs and industries, provide public recreational access, and ensure healthy ecosystems. In candidate projects involving large acreages (>1,000 acres) in northern Minnesota, strong preference should be given to projects that provide economic opportunities from the sustainable harvest of timber and other forest products, and that provide recreational access.

**13. Sound and Accountable Program Management.** All program easements must follow DNR minimum standards governing acquisition process, easement stewardship plans, and relationships between DNR and partners.

**14. Responsive Program Management.** The program should strive to meet clear, measurable goals, monitor and evaluate results, and incorporate new information to continually

improve management performance and leverage other efforts in the face of changing social, economic, and environmental forces such as climate change, invasive species, biofuels demand, and wetlands mitigation. The program should use structured policy analysis briefs (see Appendices B, C) to address complex issues. These briefs can inform the development of legislation, program policy, and strategic communication about issues for which no best solution exists, but a diversity of approaches is needed.

# II. Challenge and Opportunity

## The Challenge

Many factors are converging that could contribute to the breaking up of Minnesota's working forest lands. In northern Minnesota, timber and mining companies are selling thousands of acres of Minnesota forest lands in large chunks to financial investors who value forest lands not only as a source of wood products, but also for their potential to provide return on investment through real estate development and other options. In southern Minnesota, key small parcels are at risk of being developed, further reducing the region's already fragmented forest cover. The challenge is to ensure that land-ownership changes do not lead to the breaking up of Minnesota's working forest land base and the potential loss of timber production and jobs, public access for recreation, wildlife habitat, wetlands, and other forest values Minnesotans care deeply about.

## The Opportunity

Minnesota has a limited-time opportunity to protect its forest heritage. We can do so by:

- Building on and continually improving existing private forest conservation efforts. Minnesota has more than eight years of experience in the use of conservation easements to maintain forest lands in working landscapes. Minnesota has participated in the Federal Forest Legacy Program since February 2000. It has protected 22 tracts totaling 8,368 acres through this program. The state has also completed two conservation easements on 57,415 acres funded solely by state and private dollars.
- Crafting a framework for a state program that works collaboratively to protect Minnesota's working forest landscape.
- Becoming a leader in protecting working forests using multiple tools that meet conservation priorities and follow sound ethical and business practices.

### Key Aspects of Conservation Easements:<sup>1</sup>

- Voluntary
- Individually negotiated
- Legally binding
- Land remains in private ownership
- Land stays on local tax rolls
- Most are permanent



Working Forests provide a broad range of goods and services, including forest products, recreation, fish and wildlife habitat, clean water, clean air, and carbon sequestration.

Large tracts of continuous forest provide recreational opportunities, support wildlife, and form the core land base for Minnesota's timber industry.

## The Forest Legacy Advisory Team: Task and Reporting

To take advantage of this opportunity, DNR's commissioner formed the Forest Legacy Advisory Team in July 2007. The team was charged with creating a uniquely Minnesota program that works collaboratively with partners in the public and private sector to promote the use of conservation easements and other tools to retain Minnesota's healthy, working forests threatened by parcelization and conversion to non-forest land uses. It consists of 13 members, including eight external stakeholders and five DNR senior managers (Table 1) who share a commitment to conserving Minnesota's forest lands and the goods and services they provide.

The advisory team focused on the need to create a coordinated and comprehensive framework that informs all levels of decision making related to private forest conservation. The framework will be presented in three reports, of which this is the first:

**Strategic Report (Report I).** This document sets the program's purpose, goals and strategies, and broad implementation guidelines. It gives the program a clearly defined direction.

**Implementation Report (Report II).** This report will provide details needed to implement specific actions toward the goals delineated in the strategic report. It will address complex, technical, and contentious issues that require a level of detail and analysis beyond that appropriate for strategic documents.

**Annual Performance Report (Report III).** This report will document results of the past fiscal year and provide goals and a work plan to guide efforts for the new fiscal year.

### Table 1. DNR Commissioner's Forest Legacy Advisory Team

<b>Mark Johnson</b> , co-chair Minnesota Deer Hunters Association
<b>Bud Stone</b> , co-chair Grand Rapids Area Chamber of Commerce
<b>Wayne Brandt</b> Minnesota Forest Industries & Timber Producers Association
<b>Dennis Fink</b> St. Louis County Commissioner
<b>Tom Landwehr</b> The Nature Conservancy
<b>Chuck Lepper</b> Koochiching County Board Chair
<b>Susan Schmidt</b> Trust for Public Land
<b>Tom Umphress</b> National Off-Highway Vehicle Conservation Council–Minnesota Representative
<b>Laurie Martinson</b> DNR Deputy Commissioner
<b>Craig Engwall</b> DNR Northeast Regional Director
<b>Dave Epperly</b> DNR Division of Forestry Director
<b>Dave Schad</b> DNR Division of Fish & Wildlife Director
<b>Marty Vadis</b> DNR Division of Lands & Minerals Director

DNR project staff provided support to the advisory team as follows:

**Keith Wendt** –  
Team Project Manager (DNR Office of Management and Budget Services, Manager – Policy, Research, and Planning)  
**Richard Peterson** –  
Forest Legacy Program Coordinator (DNR Division of Forestry)  
**Andy Holdsworth** –  
Team Report Writer (DNR Office of Management and Budget Services – Natural Resource Policy Analyst)



## Minnesota's Forest Lands

From the oak-clad slopes of the southeast to the lake-studded, mixed-conifer forest of the north woods, Minnesota's forests are diverse, productive, and beautiful. They contribute to the livelihoods of more than 41,000 people who provide us forest products.<sup>2</sup> They support a large and growing tourism economy. They provide diverse recreational opportunities for motorized and non-motorized users. They support quality fish and wildlife habitat and harbor life-sustaining biodiversity. They also provide other critical ecosystem goods and services that are becoming increasingly valuable, such as clean water, erosion control, and carbon sequestration.

The extent, pattern, ownership, and recreational use of forest lands differ greatly between Minnesota's two major forested ecological provinces (Figure 1).

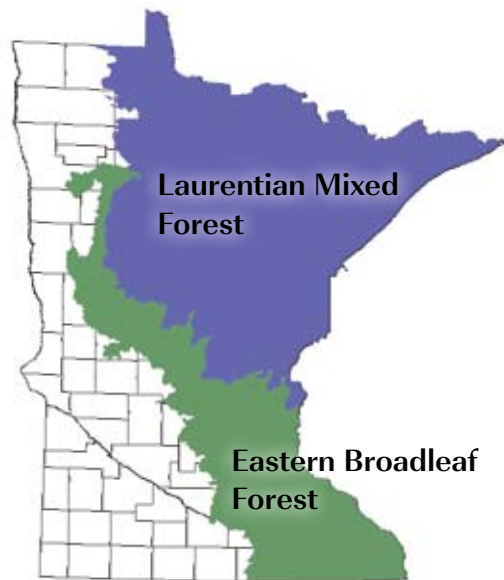


Figure 1. Minnesota's two forested ecological provinces: the Laurentian Mixed Forest Province and the Eastern Broadleaf Forest Province.

## Working Forests' Goods and Services



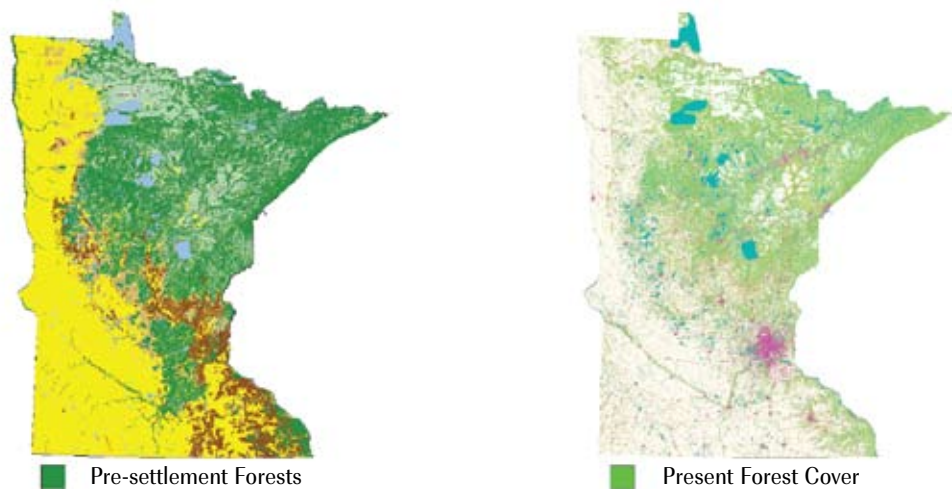
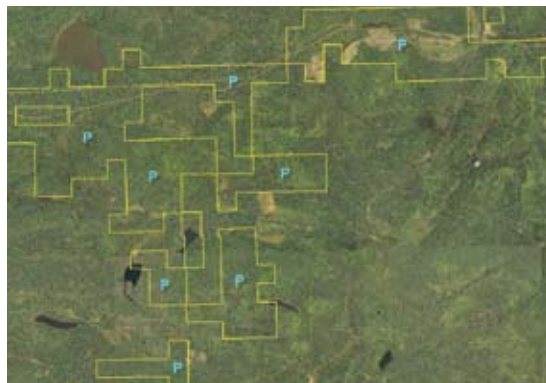


Figure 2. Forest cover before European settlement of Minnesota (left) and today (right). Minnesota has lost approximately half of its 1850 forest cover. The greatest long-term losses occurred in southern Minnesota. For instance, the Big Woods west of the Twin Cities was reduced to 2 percent of its original 1.3 million acres by agricultural and urban-suburban development. In contrast, northern Minnesota has retained or recovered most of its forest cover.

Figure 3. Differences in forest cover and land ownership between northern and southern Minnesota. (Aerial photos taken summer 2003.)

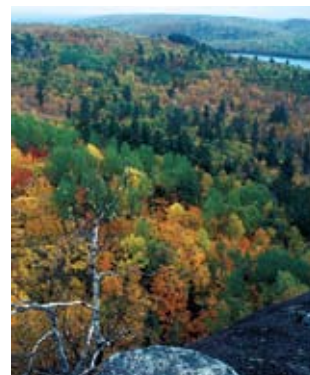


In northern Minnesota, the land is predominantly forested. Forest land exists in a patchwork of private, public, and tribal ownership. This aerial photo taken in Lake County shows large tracts of private land (labeled as P) linking public forest lands to form a large, interconnected forest.



In southern Minnesota, today's landscape is highly fragmented, dominated by agricultural lands with forest cover (dark green) typically restricted to steep slopes of river valleys with private ownership. This area northeast of Rushford shows the small areas of public ownership (outlined in yellow).

## The Laurentian Mixed Forest Province



Northern Minnesota has a forest-dominated landscape with significant potential to continue to provide diverse public recreation opportunities, wildlife habitat, and timber (Figures 2 and 3).

It includes numerous large, privately owned parcels (500-plus acres)<sup>3</sup> of continuous forest. These large parcels total more than 1 million acres and almost all are owned by corporations.<sup>4</sup> They exist in a patchwork of ownership with other private, governmental, and tribal lands.

Numerous wildlife species thrive in these large, multi-ownership forest tracts, including: moose, pine marten, and northern goshawks. Timber companies have traditionally allowed hunters and other recreationists to use their large forest holdings. These large forest tracts also provide clean water for communities, form the core land base for Minnesota's timber industry, and overlie valuable mineral deposits.



## The Eastern Broadleaf Forest Province



Forest land in the Eastern Broadleaf Forest Province of central and southern Minnesota has been fragmented and reduced to smaller patches than the

Laurentian Mixed Forest Province (Figures 2 and 3). Approximately 85 percent of the remaining forest land is privately owned and few of these parcels are larger than 500 acres. Only 0.2 percent of southern Minnesota forest lands are owned by industry. Unlike the industrial owners of large acreage forest lands in the north, small private landowners in central and southern Minnesota do not customarily provide public access to their lands. Thus, public recreational opportunities are much more limited than in northern Minnesota. The forest lands in southern Minnesota provide fish and wildlife habitat and hunting opportunities for such species as wild turkeys, white-tailed deer, and brown trout. Southeastern Minnesota is also home to more than 156 species of animals in greatest conservation need.<sup>5</sup>

From north to south, mixed to broadleaf forests, the greatest threat to sustaining Minnesota's working forests lies in the conversion of forest lands to other uses. Retaining a strong and sustainable working forest adequate to meet the full array of forest benefits for current and future generations is a first conservation priority. Retention must be complemented by strategies that work to enhance the health, diversity, and productivity of Minnesota's forests. This requires investments that support a sustainable management infrastructure that will ensure a future working forest that provides the wide variety of recreation opportunities, optimal contributions of forest products, and abundant wildlife habitat and clean water that Minnesotans deeply value. Protecting this interconnected network of private and public lands as working forest is integral to Minnesota's overall quality of life.

## Trends

Numerous trends affect the integrity of Minnesota's forests and the goods and services they provide. These trends include environmental drivers such as increasing occurrence and impact of climate change, invasive species, fires, and insects and disease. They also include social and economic drivers such as changing demand for woody biomass and public access for recreation as well as increasing development pressure. Of these, increasing development pressure has the greatest potential to contribute to the loss and fragmentation of the forest land base through conversion of forest to non-forest.

### Development Pressure

Increasing development pressure is an overarching trend with many dimensions, including increasing population, increasing forest land real estate values, land ownership changes, timber industry restructuring, and parcelization.

**Increasing Population.** Minnesota's population is projected to grow by 1.2 million by 2035. Between 2005 and 2035, the number of households is expected to grow by 20-170 percent in most forested counties.<sup>6</sup> This will significantly increase development pressure on Minnesota's forest lands.

**Increasing Forest Land Real Estate Values.** Forest land prices and rates of sale have increased in recent years. A study of Minnesota's forest land real estate market between 1989 and 2003 found:<sup>7</sup>

- a 13 percent average increase per year in forest land nominal prices and 21 percent increase since 1995 (Figure 4)
- a price premium for small parcels: 20- to 40-acre parcels were more than twice the per-acre price of parcels larger than 200 acres in 2003

Increased real estate values means loss in purchasing power for those interested in protecting forest land from development through conservation easements or fee title acquisition. This study found that the price to protect forest land from development was five times greater in 2003 than in 1989.

**Key Finding #1:** Protecting Minnesota's forest requires a comprehensive conservation strategy that recognizes differences in regional forest conditions.

**Key Finding #2:** The greatest threat to sustaining Minnesota's working forests lies in the conversion of forest lands to other uses.

**Key Finding #3:** Many factors are converging that could lead to the breaking up of Minnesota's working forest land base and the potential loss of public access for recreation, timber production and jobs, wildlife habitat, wetlands and other forest values.

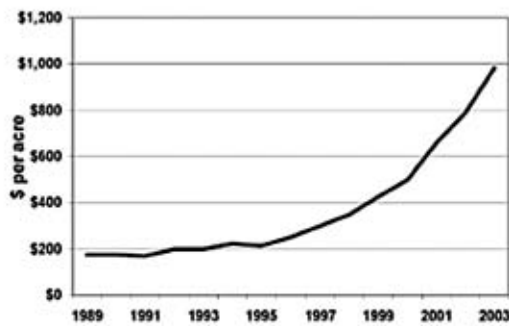


Figure 4. Median nominal sale price per acre of Minnesota forestland, 1989–2003.<sup>7</sup>

**Land Ownership Changes.** The diversity of forest land owner types, the pattern of their ownership on the landscape, and changes in this pattern have important consequences for sustainable forest management and policy, recreational access, and habitat. Forty-six percent (6.9 million acres) of Minnesota’s forest land is privately owned (Figure 5), most by more than 140,000 non-industrial private forest owners. The state of Minnesota owns the next greatest portion (twenty-six percent). Northern Minnesota is characterized by a “checkerboard” pattern of private, state, county, federal, and tribal ownership.

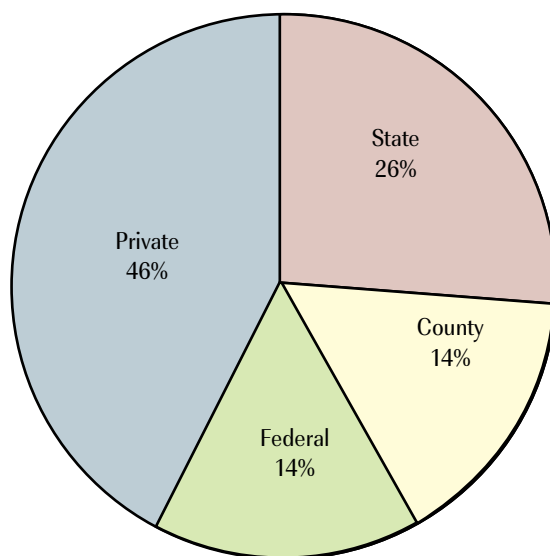


Figure 5. Minnesota timberland ownership.

Land ownership has changed dramatically in recent years. Between 1989 and 2003, land owners sold 540,000 acres of private Minnesota forest land. Area of land sold during that period increased an average of 4 percent per year.<sup>8</sup> Ownership gradually shifted from incorporated interests to individuals.

The transformational event for large blocks of forest is the selling of large timber company holdings. Since 1998, more than 400,000 acres of Minnesota industrial forest land have been sold (Box 1). This represents 2.5 percent of Minnesota’s forest land. Nearly 1 million acres of large, mostly undeveloped private forest are at risk of being sold and converted into smaller parcels.

#### Box 1. Recent Large Minnesota Forest Land Sales

- 1998: Louisiana Pacific sold all of its Minnesota timberlands (30,000 acres)
- 2003: Consolidated Paper sold all of its Minnesota timberland (70,000 acres)
- 2005: Boise Cascade sold all of its Minnesota timberland (309,000 acres)

**Timber Industry Restructuring.** The sale of large timber company holdings in Minnesota is part of a national trend. A variety of global and financial factors converged in the 1980s and 1990s to cause substantial changes in forest land ownership in the United States.<sup>9</sup> The owners of large tracts of forest land were typically vertically integrated forest products companies that owned land to supply their mills with fiber. In the 1990s many of these companies kept their mills but began to sell their forest land base to other types of owners, especially financial investors. The causes for this restructuring are complicated, but they include changes in federal pension investment and tax policies, increased awareness of the investment potential of forest land, and increased globalization of the timber industry.<sup>9</sup> Two major and distinct types of financial investors are Timber Investment Management Organizations (TIMOs) and Real Estate Investment Trusts (REITs) (Box 2). TIMOs and REITs buy and sell land to benefit their investors. This includes selling small parcels for development<sup>10</sup> and selling low-lying areas that are not productive for timber for private recreational use.<sup>11</sup>



## Box 2. TIMOs and REITs

TIMOs are private companies acting as investment managers for institutional clients, primarily pension funds, endowments, and wealthy individuals. Forest lands are owned as illiquid direct investments or partnership shares, generally in separate accounts but frequently in pooled funds.

REITs are companies focusing mostly or exclusively on real estate and forest land ownership with a high degree of liquidity through the public trading of shares on a stock exchange.<sup>10</sup>

**Parcelization.** Development pressure sets the stage for parcelization, the division of land into smaller ownership blocks. The Minnesota Forest Resources Council identified parcelization as the major policy problem confronting the economic and ecological health of Minnesota's forests.<sup>12</sup> Although parcelization does not necessarily result in changes in forest conditions, it can have consequences for public recreational access, wildlife habitat, and timber production.<sup>13</sup>

A study of forest land sales statewide found a 1.4 percent annual decrease in size of parcel sold from 1989 to 2003 (Figure 6). It is unclear, however, whether this is due to smaller tracts being

split from larger tracts (parcelization) or existing smaller tracts representing an increasing share of land sales for the period.<sup>13</sup> With smaller (20- to 40-acre) parcels becoming more common and costing twice as much as parcels over 200 acres (see Increasing Forest Land Real Estate Values section) this trend underscores the loss of purchasing power for conservation interests.



Figure 6. Mean size (acres) of forest land sales in Minnesota, 1989–2003.<sup>7</sup>

A recent study of parcelization in Itasca County (where some major forest land sales have occurred in the last decade)<sup>14</sup> estimated that approximately 0.4 percent of private forest land parcels over 38.5 acres were parcelized annually between 1999 and 2006. The 366 parcel splits that occurred were concentrated near water, public lands, and larger communities.<sup>15</sup> Thirty-six percent of splits were adjacent to water, and 57 percent were adjacent to public land. The splits were also strongly tied to land development. Most (54 percent) occurred on previously undeveloped land, and development occurred within seven years on 68 percent of the parcels that were split between 1999 and 2006.

## Forest Parcelization: the division of land into smaller ownership blocks.



# Potential Consequences of Development Pressure and Parcelization

The combination of forest development pressure and parcelization has numerous potential consequences (Figure 7).

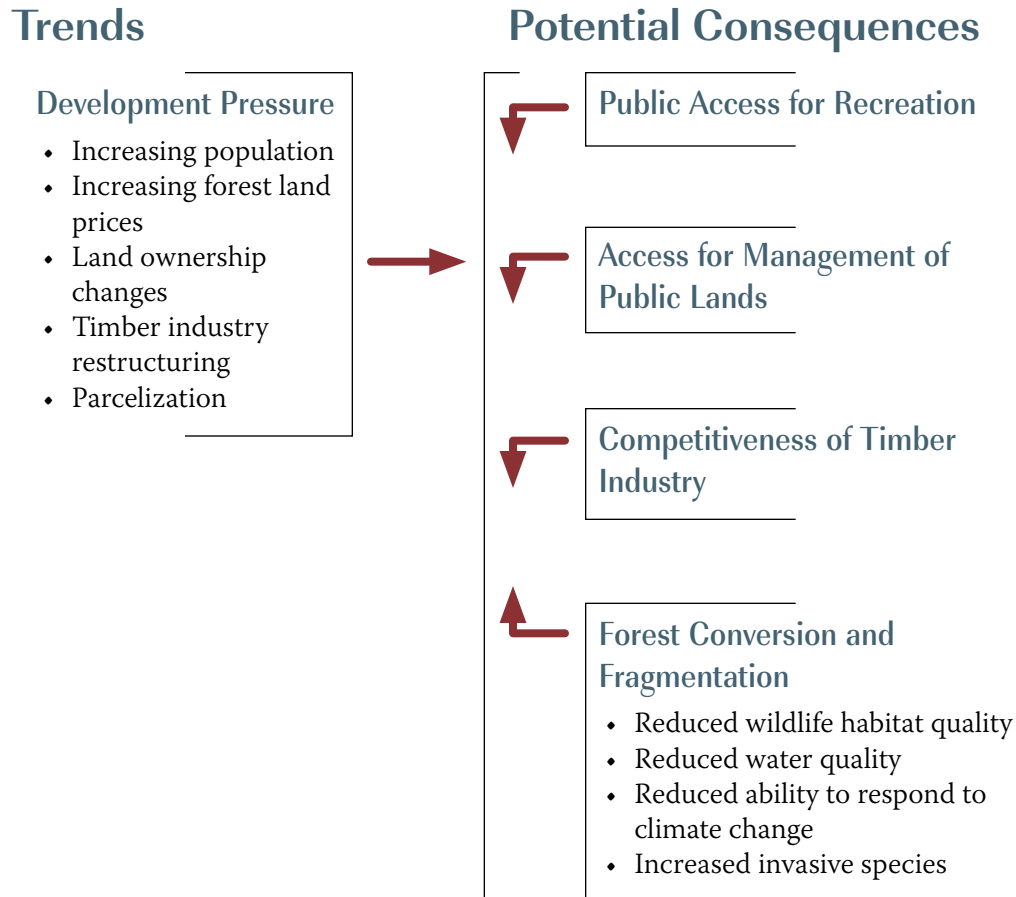


Figure 7. Increasing development pressure has the potential to lead to parcelization and consequences that diminish forest values. While the direction and magnitude of the potential consequences is uncertain, all should be considered in efforts to protect Minnesota's forests.

**Public Access for Recreation.** Development pressure and parcelization threaten future public recreational access to forest land. Timber companies have traditionally allowed public recreational access to large tracts of forest land. Generations of hunters have used these lands for hunting and to access adjacent public lands. When these forest lands are sold, the new owners might restrict public access.

Subsequent development could also affect the public's ability to hunt on adjacent public land, since Minnesota law prohibits discharge of a firearm within 500 feet of a residence. Development adjacent to public lands can also nullify trail easements.<sup>16</sup> As a result, sale of private land can diminish the recreational value of surrounding public forest land.

### Access for Management of Public Lands.

In regions of northern Minnesota with large tracts of private forest, corporate forest land often bridges state and county forest land. Parcelization and development of such lands impedes access to the public lands (Figure 8). This can reduce the economic viability of forest management as well as the land base available for timber management. In addition it can limit management access to other types of public land, including wildlife management areas and scientific and natural areas.

**Competitiveness of Timber Industry.** The competitiveness of Minnesota's timber industry relies on a healthy and productive forest resource supply that can be efficiently managed. An abundant resource supply will be critical to sustainably meet demands for forest products, including woody biomass to supply new biomass energy facilities.<sup>17</sup> The Governor's Task Force on the Competitiveness of Minnesota's Primary Forest Products Industry identified parcelization of Minnesota's forests as a major threat to the competitiveness of the state's timber industry.<sup>18</sup>

Multiple studies have found that decreasing parcel size can reduce the economic viability of forest management for wood products and reduce investment in and implementation of forest management by non-industrial private forest land owners.<sup>19, 20, 21, 22</sup>

### Forest Conversion and Fragmentation.

Forest conversion and fragmentation are two major physical alterations to forest that can result from development pressure and parcelization. Forest conversion is the replacement of forest cover with other cover such as urban, suburban, or industrial development and cropland. Conversion results directly in the loss of forest resources for forest recreational users, wildlife, and forest products. Conversion can also result in forest fragmentation—the creation of forest “islands” that are isolated from one another by unforested land.

Fragmentation has many possible consequences. It can limit seed dispersal, affecting genetic qualities of forest populations and their ability to recover from

**Key Finding #4:** Changes in ownership and parcelization can threaten the future of public recreational access to large tracts of forest land. They can also limit access to public lands for timber and habitat management. Parcelization and related development may threaten the competitiveness of the timber industry and contribute to habitat fragmentation, which can increase the spread of invasive species and reduce wildlife habitat and water quality.

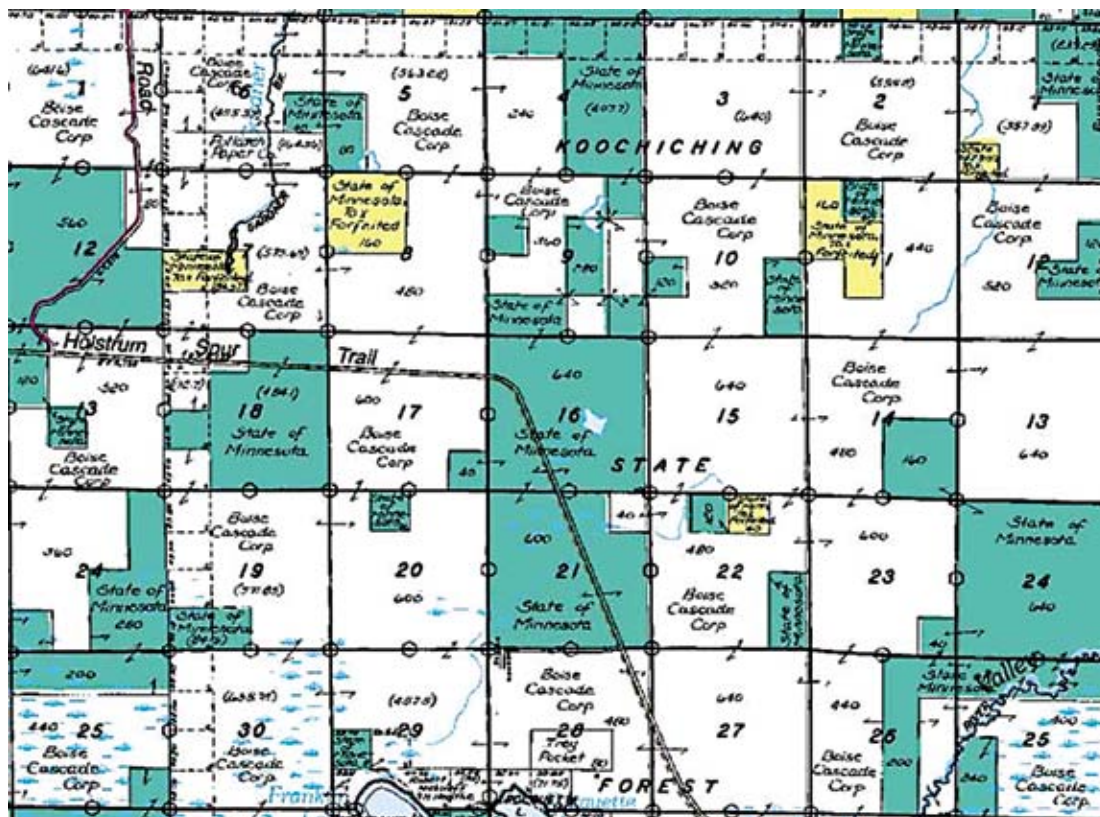
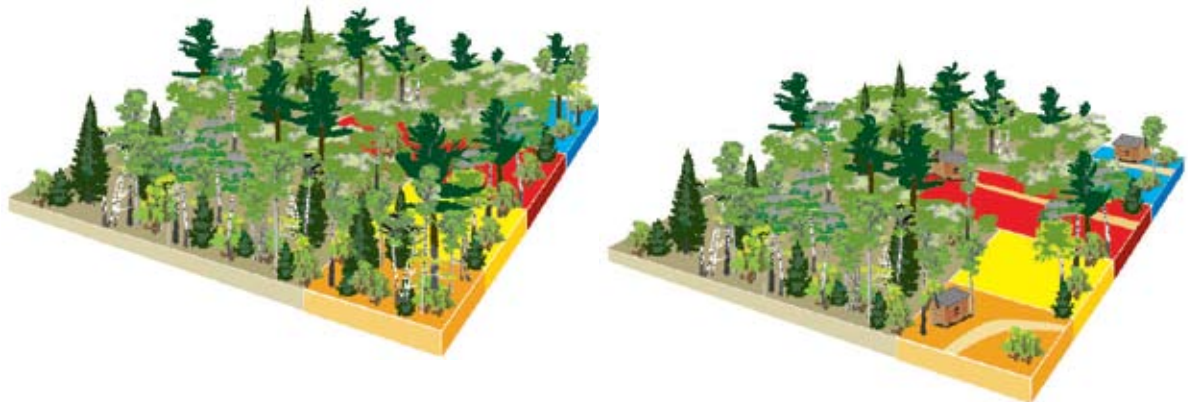


Figure 8. In the part of Koochiching County shown above, private lands (white) surround and connect state forest land (green). Boise Cascade sold the private lands to Forest Capital Partners (a TIMO) in 2005.

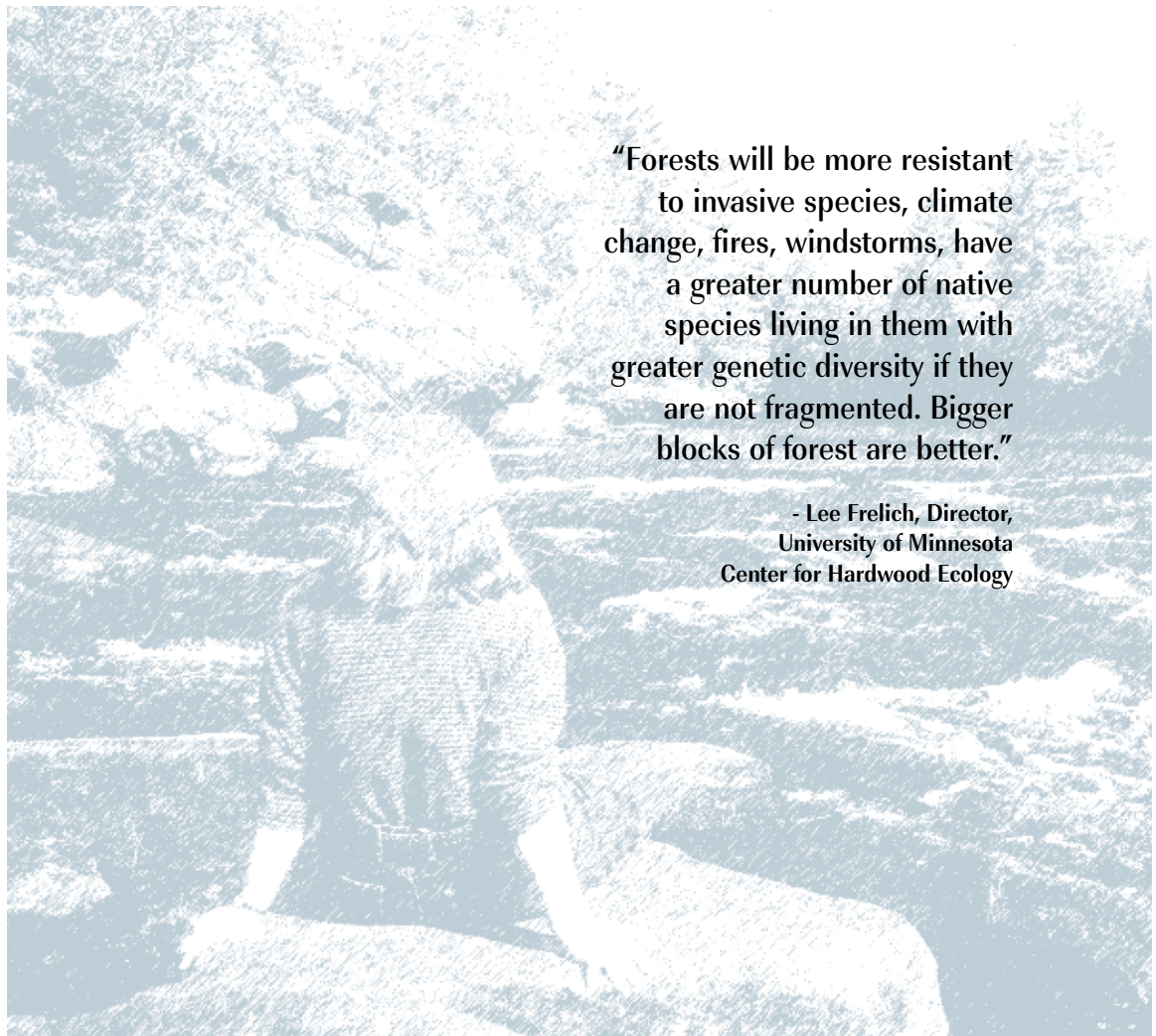


## Fragmentation of Parcelized Forest: The breaking up of continuous forest into isolated “islands.”



disturbances such as fire or to migrate in response to climate change. Fragmentation can favor habitat edge species and negatively affect forest interior species.<sup>23</sup> It can con-

tribute to the spread of invasive species.<sup>24, 25</sup> Small, fragmented forests are related to reduced water quality and wildlife habitat quality, especially for area-sensitive forest species.<sup>26, 27, 28</sup>



**“Forests will be more resistant to invasive species, climate change, fires, windstorms, have a greater number of native species living in them with greater genetic diversity if they are not fragmented. Bigger blocks of forest are better.”**

**- Lee Frelich, Director,  
University of Minnesota  
Center for Hardwood Ecology**



## Considerations for Successful Forest Conservation

The trends described above pose a major challenge to conserving Minnesota's interconnected network of private and public forest lands. There is broad consensus on the value of retaining forests and the values they provide. However, the public holds strong and differing views on the best mechanisms to retain forest lands and on what forest values should be emphasized. Citizens also hold a variety of values related to the use of what is below the forested surface. Much of the 1 million acres of undeveloped corporate land at risk of parcelization overlaps with the 1 million acres of severed mineral interests in northern Minnesota. Constitutional and legislative directives require DNR to maximize the long-term economic return from these interests to the Permanent School Fund as consistent with sound natural resource management. Although the chance of mineral development on a given unit is small, should development

occur, royalties could be hundreds of millions of dollars (Appendix B). The state needs forest conservation mechanisms that provide long-term conservation while meeting its fiduciary responsibilities to the School Trust Fund.

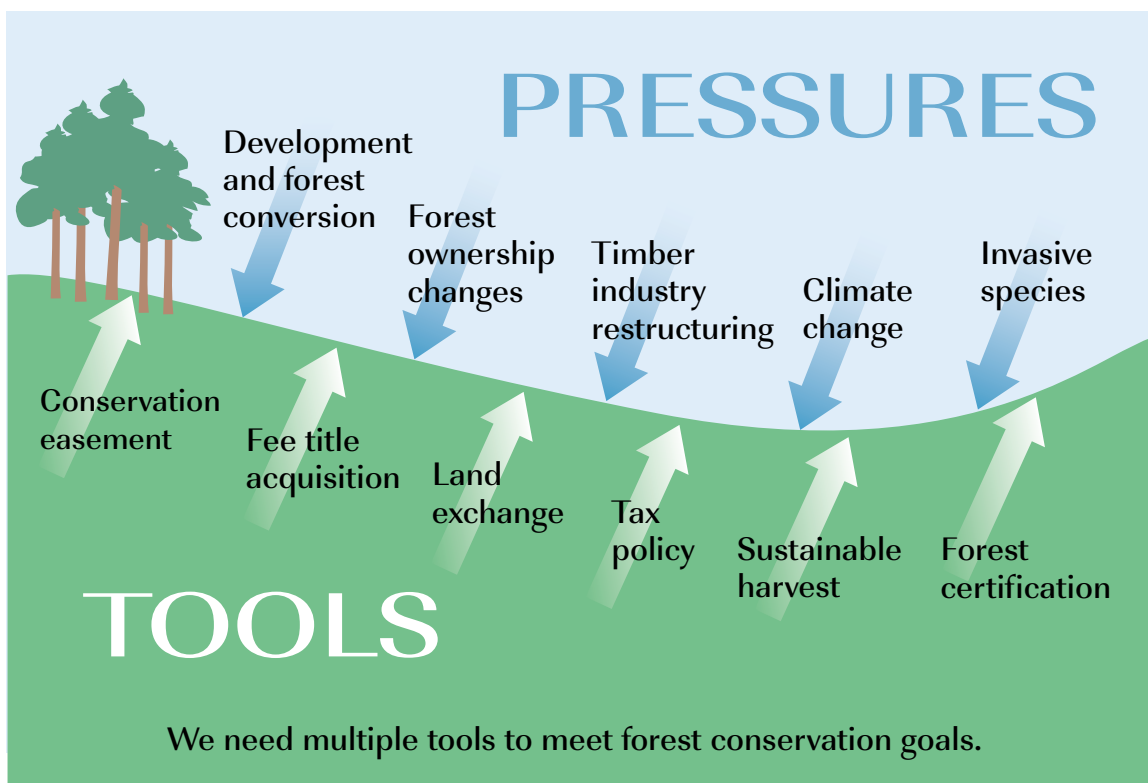
Many tools are available to conserve Minnesota's working forests, including forest stewardship planning, technical assistance, cost-share programs, tax policies, land exchange, fee title acquisition, landscape-level planning, land-use planning, and forest certification. Each has a role in protecting working forests. The choice of strategies for particular properties depends on many factors and is a topic of research being coordinated by the Minnesota Forest Resources Council and partners.

Working forest conservation easements (WFCEs) applied to private lands are a cost-effective tool for maintaining recreational opportunities, wood products production, fish and wildlife habitat, and many other forest amenities. They are supported by a broad range of entities, including conservation and recreation non-profit organizations and gov-

**Key Finding #5:**  
Forest conservation evokes strongly held and differing views of the public.

**Key Finding #6:**  
Among the many tools to protect the wide array of forest values provided by Minnesota's public and private working forests, working forest conservation easements are a cost-effective tool for maintaining recreational opportunities, wood products production, fish and wildlife habitat, and many other forest amenities.

### Toolbox Approach for Forest Conservation

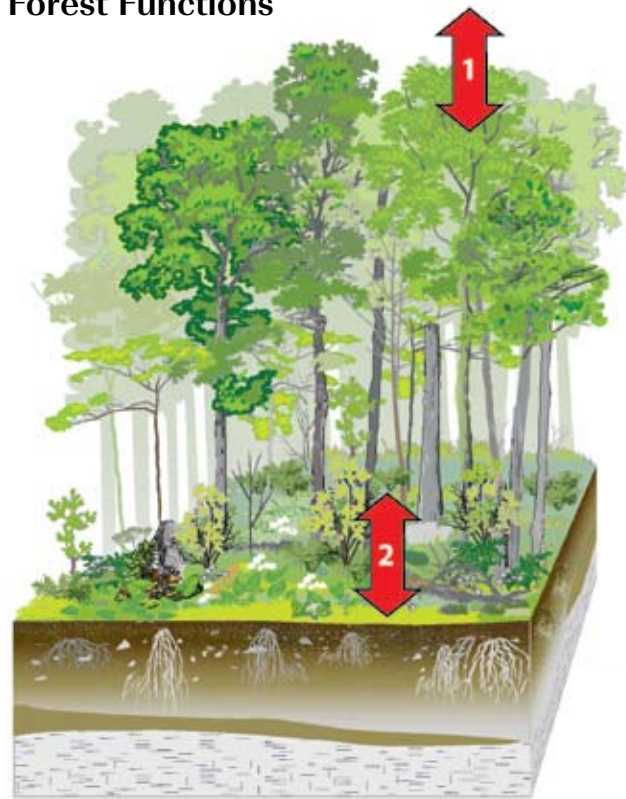


ernment agencies. In July 2007 the Governor’s Task Force on the Competitiveness of Minnesota’s Primary Timber Industry recommended the use of WFCEs as a major tool to maintain the forest land base that a competitive forest industry requires.

**Key Finding #7:**  
DNR can meet its fiduciary responsibilities to the School Trust Fund on lands with working forest conservation easements.

Lands with WFCEs remain in private ownership and on local tax rolls. WFCEs limit an owner’s rights to conduct certain activities, such as subdivision or residential or commercial development. They protect specific forest values in perpetuity. They help sustain a regional economy by protecting the forest land base on which it depends. WFCEs could also help the state protect wetlands and mining interests and mitigate climate changes and its effects (Box 3). DNR and partners have set a precedent of applying a variety of mineral development approaches to meet the state’s fiduciary responsibilities to the School Trust Fund while ensuring forest conservation values are protected (Appendix B).

## Forest Functions



**1**

- intercepts and slows precipitation
- removes carbon and other pollutants
- releases oxygen
- moderates climate by releasing water into the air and providing shade

**2**

- stores carbon, nutrients and water
- prevents erosion
- moderates floods

### Box 3. Working Forests and Climate Change

Forests are significant carbon sinks: forest trees and soils capture and store large quantities of greenhouse gases from the atmosphere.

Conservation of working forests is an important strategy for mitigating climate change and its effects in three key areas: 1) Forest Protection: Decreasing the conversion of forest to non-forest cover maintains carbon stocks and enhances carbon sequestration. 2) Forest Restoration and Management: Restoring forest cover and applying best management practices can increase the amount of carbon sequestered in forest biomass, peat-forming wetlands, and other forest carbon sinks. 3) Forest Bio-Energy Crop Production: Producing renewable and carbon-negative energy from forest biomass feedstocks can substitute for fossil fuels.

Conserving forests is also critical for preventing the loss of species due to climate change. The conservation of new forest areas and the expansion of existing protected areas will help maintain species in future decades by allowing animals and plants to migrate in response to climate change.





## Status Report and Case Studies



# Building on Success: Status Report

## Forest Conservation Easements in Minnesota: 1999-2008

Minnesota joined the federal Forest Legacy Program in 1999 and since has used federal funds to protect 8,368 forest acres throughout the state (Figure 9). However, this effort has not met the scale of the challenge. To start the path to landscape-scale working forest conservation, DNR joined with partners to form the Forest Legacy Partnership in 2005. Since then, total program funding and acres protected have increased over 4-fold and 13-fold, respectively (Figures 10, 11). The following status report and case studies (on pages 20-25) highlight the foundation of a statewide network of private forests protected with conservation easements and other tools.

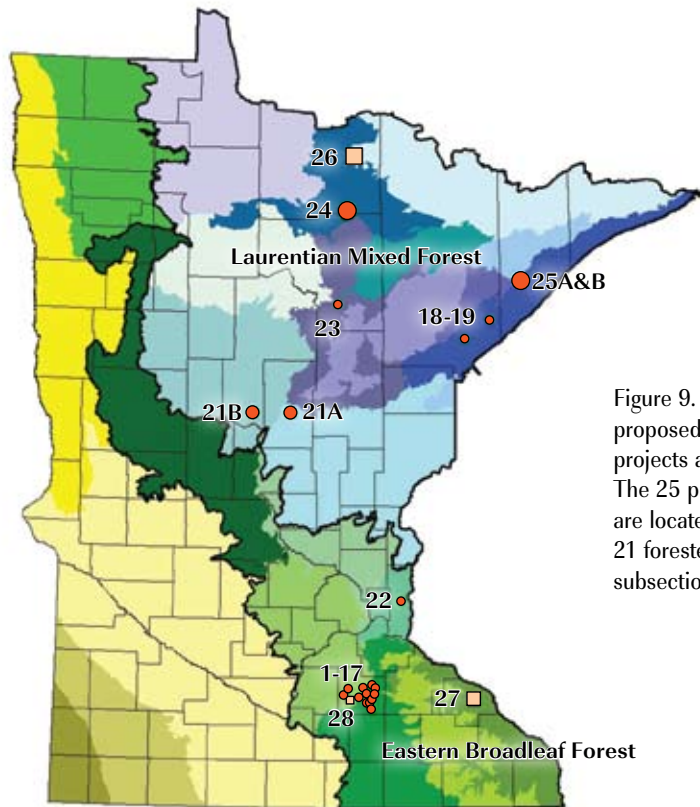


Figure 9. Completed and proposed forest legacy projects as of January 2008. The 25 projects completed are located in nine of the 21 forested ecological subsections.

● Completed Projects

■ Proposed New Projects

1-17 Rice County Big Woods  
1,171 acres

18-19 North Duluth 768 acres

21 A & B Brainerd Lakes 1 & 2  
4,770 acres

22 Arcola Mills 47 acres

23 Sugar Hills 1,659 acres

24 Koochiching Washington  
51,163 acres

25A&B Clair A. Nelson Memorial  
Forest 6,252 acres

26 Koochiching Project

27 Mississippi Blufflands Forest Legacy  
Projects 3,395 acres (16 landowners)

28 Rice County Big Woods Phase 4  
235 acres (3 landowners)



# Status Report:

## Growth in Program Funding and Acres Protected

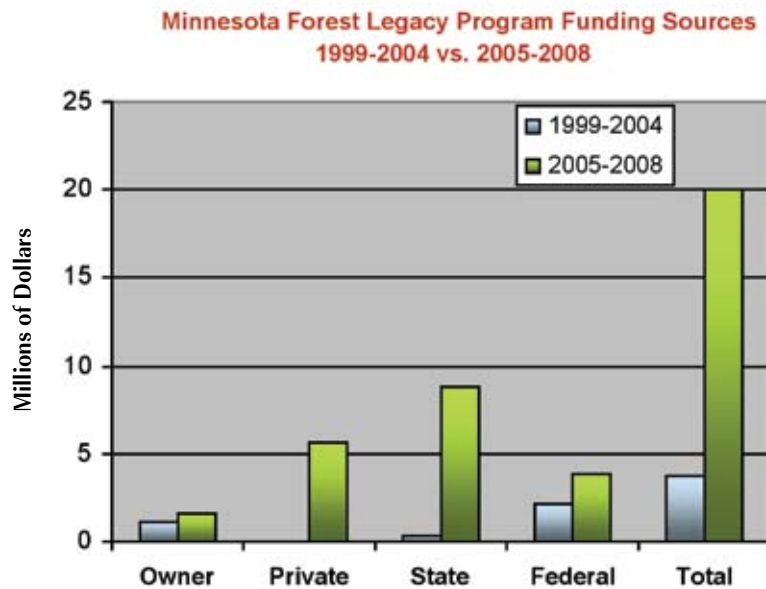


Figure 10. Trends in owner-donated, private, state, and federal funding of conservation easements during the first six years (1999–2004) and the last four years (2005–2008) of Minnesota’s Forest Legacy Program (as of 2/1/2008).

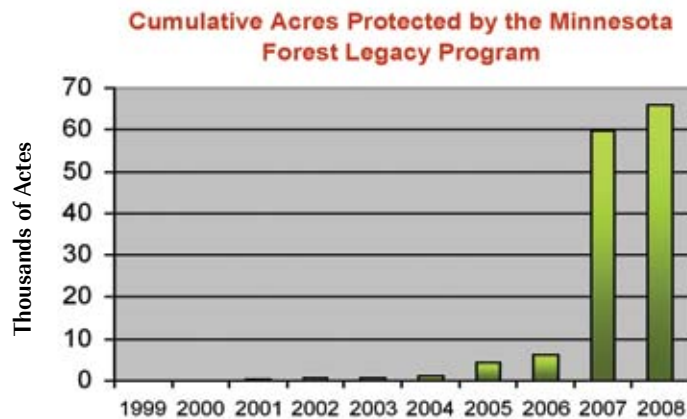


Figure 11. Cumulative acres protected with conservation easements by the Minnesota Forest Legacy Program between 1999 and 2008. The program protected 128 acres during its first year (1999) and now includes 65,870 acres (as of 2/1/2008).

# Case Study 1: Early Success

## Protecting and Restoring Fragmented Forests in Southern Minnesota



### Rice County Big Woods Forest Legacy Project

Deciduous forests once dominated the Big Woods ecological subsection of south-central Minnesota. Today, most of this region is farmed and only a small fraction (2%) of the original “Big Woods” remains forested and less than 4% of the subsection is in public ownership. The Minnesota Forest Legacy Program and partners completed 18 projects that provide permanent protection from development to over 1,000 acres of existing Big Woods habitat (Figure 12). An additional 250 acres of upland forest, savanna, prairie, and wetlands were restored as part of these projects. They also serve to link and buffer regionally important forests in Rice County, Minnesota. Forest Stewardship Plans for the projects emphasize habitat restoration, exotic species control, and the maintenance of quality forest, savanna, prairie, and wetland habitats.

#### Project Features:

##### *Public Benefits:*

- Recreational: 239 acres available for pedestrian public access
- Economic: not specified
- Ecological: protection of 12 native plant communities, 2 threatened and endangered species, 8 wetlands, 23,000 feet of river shores

##### *Strategic Conservation:*

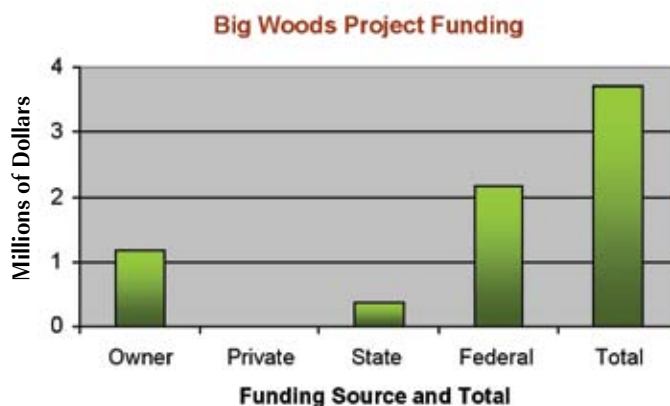
- These 18 projects help connect and protect regionally important forests in the Big Woods ecological subsection.

#### Partners:

U.S. Forest Service Forest Legacy Program (federal funding), Legislative-Citizens Commission on Minnesota Resources (state funding), Habitat Conservation Partnership, The Big Woods Project

#### Funding:

In addition to federal and state funding, landowners contributed nearly \$1.3 million through bargain sales (sale of easements for an amount below the appraised market value).



## Rice County Big Woods Forest Legacy Projects

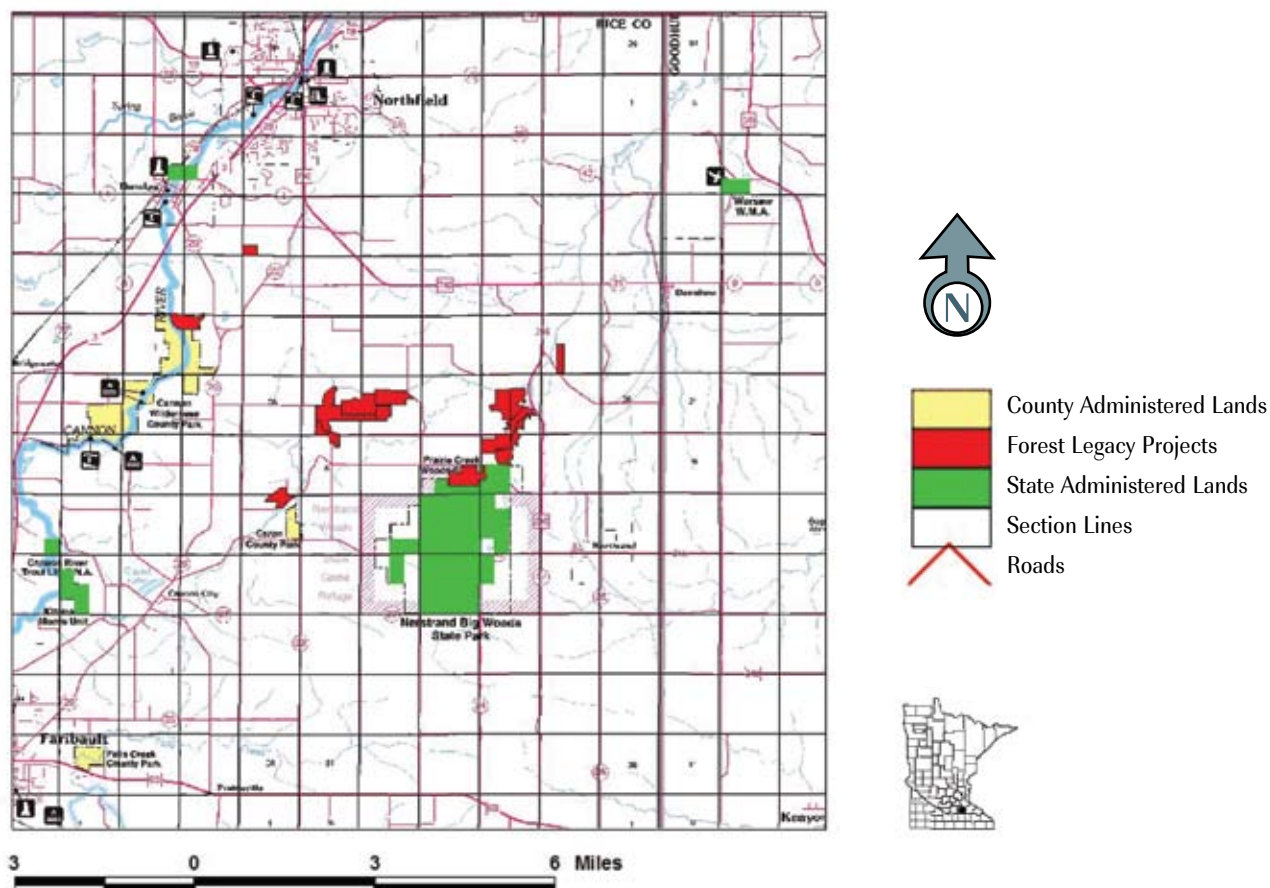


Figure 12. These 18 projects provide permanent protection from development to over 1,000 acres of existing Big Woods habitat. They also serve to link and buffer regionally important forests in Rice County, Minnesota.







## Case Study 2: Recent Progress

### Protecting the Forested Landscape of Northern Minnesota



#### The Koochiching–Washington Forest Legacy Project

Governor Pawlenty announced on October 2007 that more than 51,000 acres of forest – almost 80 square miles – in Itasca and Koochiching counties have been conserved (Figure 13). State and private money totaling \$12 million has been used to purchase a working forest conservation easement that restricts subdivision and precludes development of the property. This is the single largest conservation project in Minnesota in at least a decade. The agreement will preserve wildlife habitat, guarantee public access for outdoor recreation, and provide for sustainable harvest of timber.

#### **Project Features:**

##### *Public Benefits:*

- Recreational: hunting, fishing, hiking, and cross-country skiing. Snowmobiles and ATV use will continue as is subject to future trail designation on the property.
- Economic: land will continue to be managed for timber production and continue to provide jobs and revenue for local economies as private land; project provides significant contribution to recreation-based economy.
- Ecological: 18,971 acres of wetlands, 3 lakes, over 90 ponds, 43 miles of rivers and streams; as many as 81 of Minnesota's 292 Species in Greatest Conservation Need (declining, rare or vulnerable in the state) will benefit from this project including Canada lynx, gray wolf, American black duck, American woodcock, neotropical migratory bird species; includes large sinks of carbon in trees and soils and associated ecological services such as water purification.

##### *Strategic Conservation:*

- The 51,163 acre project is near 439,658 acres of state-administered land and serve as a critical link in creating a conservation area nearly 500,000 acres in size.
- Landscape scale forest conservation is critical to sustaining multiple public benefits.

##### *Sustainable Forestry:*

- Lands are currently certified by the Sustainable Forestry Initiative and will meet the State's Best Management Practices for protecting water, wetlands, riparian areas, wildlife habitat, cultural and scenic resources.

#### **Partners:**

Forest Capital Partners (the landowner), The Nature Conservancy, The Trust for Public Land, Minnesota DNR, Blandin Foundation, the Grand Rapids Area Chamber of Commerce, the Minnesota Forest Resources Council, The Conservation Fund, the Minnesota Deer Hunters Association.

#### **Funding:**

Public funding for the easement purchase comes from \$6.6 million in bond funds appropriated by the Minnesota Legislature in 2006. A private foundation and conservation groups contributed \$5.4 million.

## Koochiching-Washington Forest Legacy Project

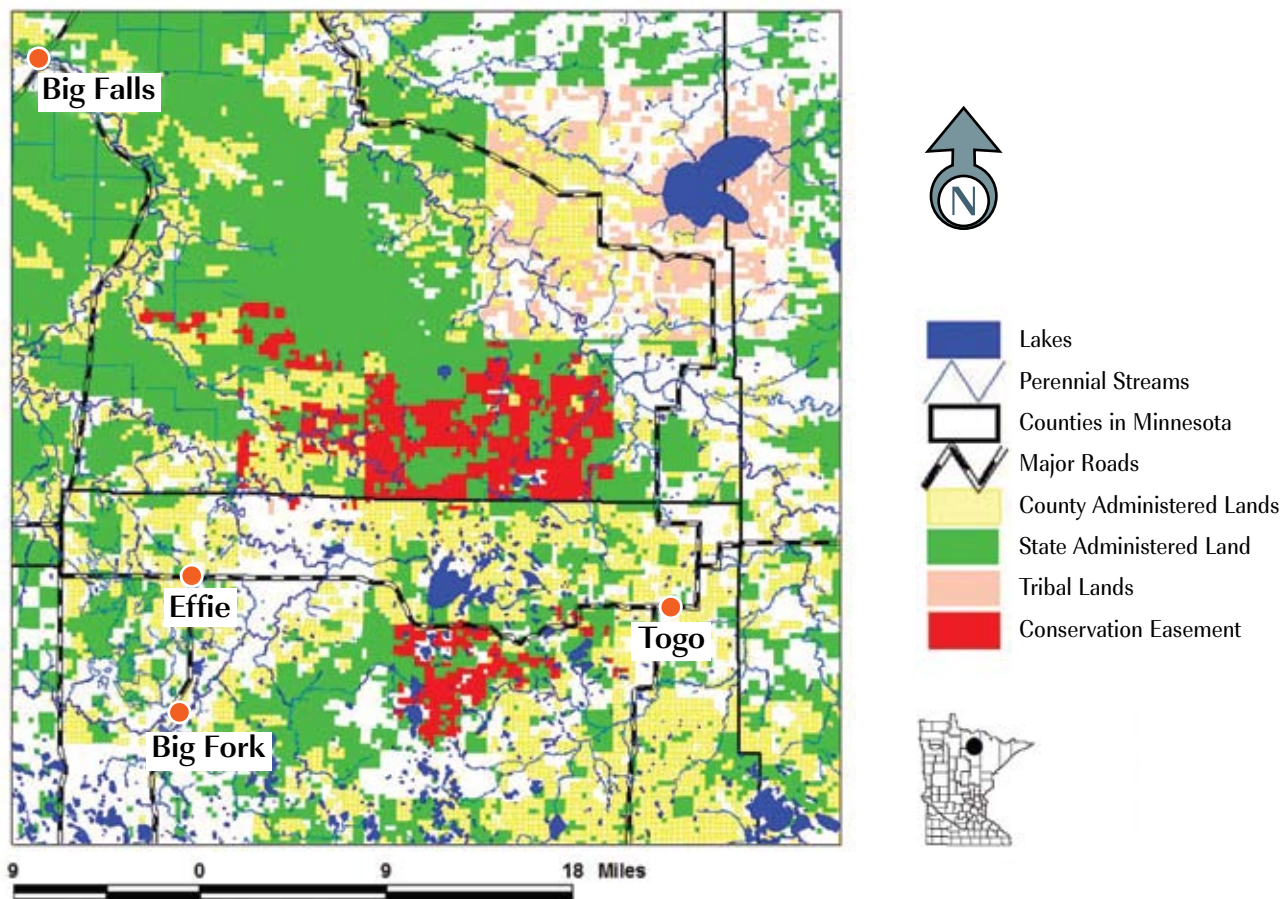
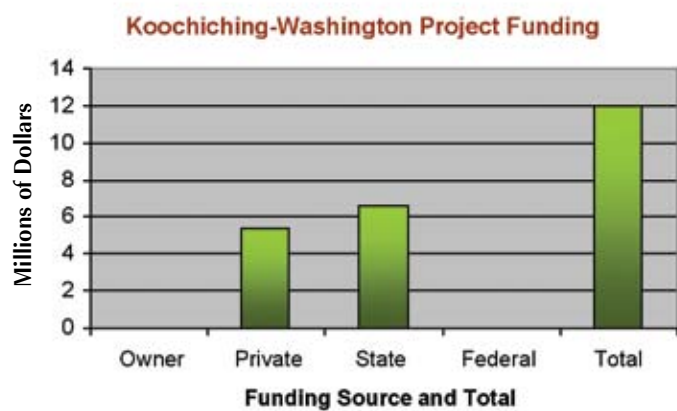



Figure 13. Landscape-scale conservation. The Minnesota Forest Legacy Partnership (a public-private partnership) leveraged \$12 million to create a 51,163-acre WFCE in Koochiching and Itasca counties. This easement connects more than 500,000 acres of working forest lands.





## Case Study 3: Current Opportunity

### Advancing Landscape-scale Conservation

#### The Koochiching Project - proposed

The proposed Koochiching project will protect the forest economy and the recreational and ecological resources on over 76,000 acres of forest land in Koochiching County, Minnesota (Figure 14). The property is located adjacent to the Superior National Forest, the Boise Forte Indian Reservation, and Minnesota's largest state forest. Purchasing a working forest conservation easement that restricts subdivision and precludes development of the property will require leveraging state, federal, and private funds. This project builds on the completed Koochiching-Washington Project (Case Study II) to protect multiple public benefits provided by the 127,804 acres of former Boise Cascade timberlands.

#### **Project Features:**

##### *Public Benefits:*

- Recreational: hunting, fishing, hiking, camping, cross-country skiing, snowmobiling, ATV use; the area is renowned for world class grouse, woodcock and deer hunting.
- Economic: highly productive forest land, generating 50,000 cords of wood/year for mills in International Falls, Bemidji, Duluth, and Grand Rapids. Helps sustain over 800 jobs in the nearby International Falls paper mill; project provides significant contribution to recreation-based economy.
- Ecological: contains eight ecological communities of state concern, including 100s of acres of rare bogland and other wetlands; contains 21 federal or state endangered or threatened species; conserves habitat for numerous wide-ranging animals (bald eagle, 8 distinct wolf packs, black bears, moose, marten, fisher, and Canada lynx); sharp-tail grouse leks (breeding grounds); includes large sinks of carbon in trees and soils and associated ecological services such as water purification.

##### *Strategic Conservation:*

- Protecting the 76,000 acres in this block will conserve 95% of a 190 square mile forest block; landscape scale forest conservation is critical to sustaining multiple public benefits.
- Supports goals of the MN Forest Resources Council's Northern Landscape Plan and the Minnesota Campaign for Conservation.

##### *Sustainable Forestry:*

- Lands are currently certified by the Sustainable Forestry Initiative and will meet the State's Best Management Practices for protecting water, wetlands, riparian areas, wildlife habitat, cultural and scenic resources.

#### **Partners:**

Forest Capital Partners (the landowner), Minnesota DNR, Grand Rapids Area Chamber of Commerce, Koochiching County, The Trust for Public Land, Minnesota Deer Hunters Association.

#### **Funding:**

Project appraisal is underway. Funding for the project is expected to come from a combination of federal and state funds. \$3.5 million in federal funds has already been appropriated.



## Proposed Koochiching Project

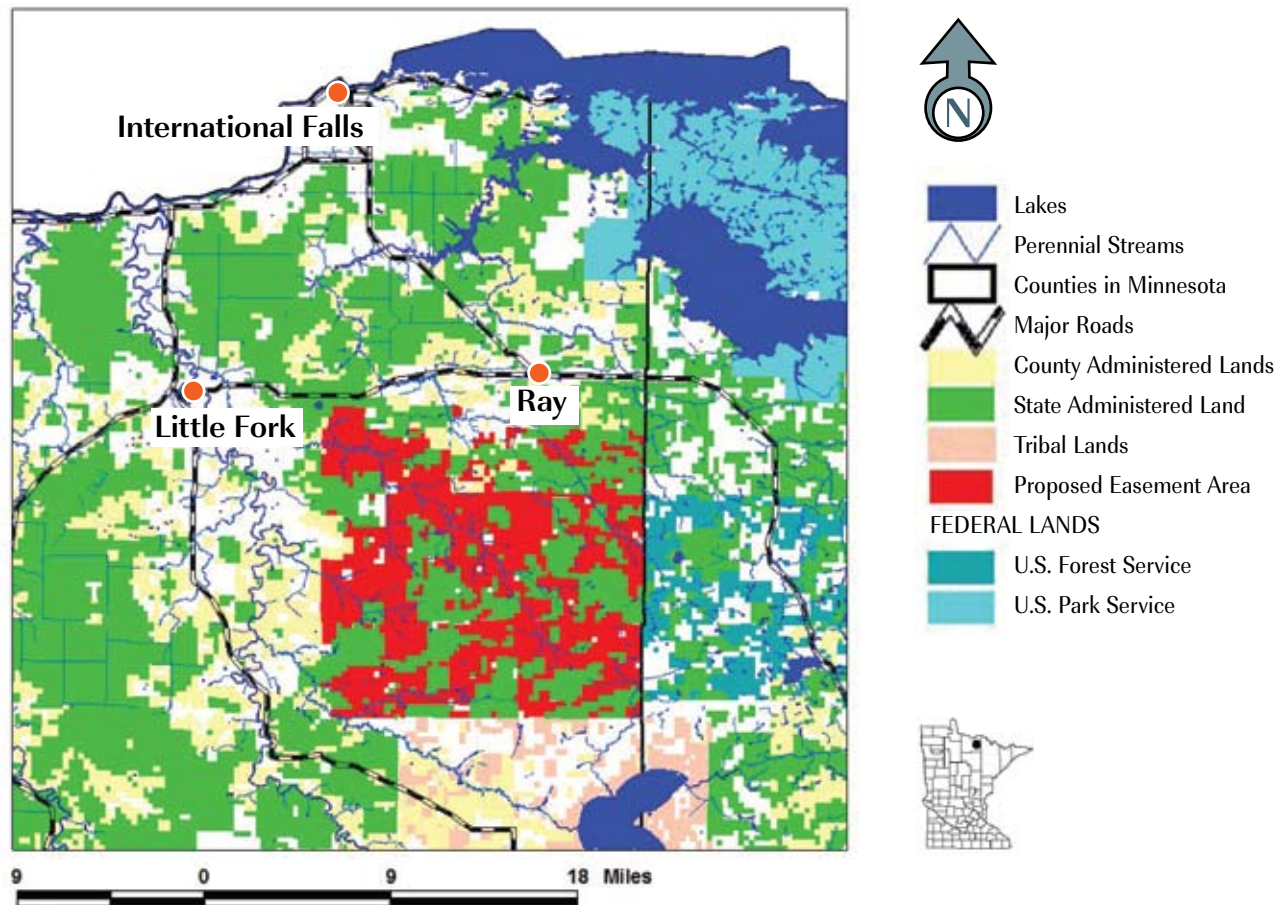


Figure 14. Another opportunity for landscape-scale conservation. A working forest conservation easement on the 76,000 acres of Forest Capital Partners land in Koochiching County would conserve 95% of a 190 square mile block of working forest lands.



# III. Response: Minnesota Forests for the Future

The Forest Legacy Advisory Team recommended establishing a Minnesota Forests for the Future program under statutory authority provided by the Minnesota Legislature. The program should provide overall guidance for acquisition and stewardship of forest conservation easements and application of other forest conservation tools in Minnesota, partnering with many entities, including the federal Forest Legacy Program, when project conditions permit.

**Recommendation #1:** The state should establish a Minnesota Forests for the Future program under statutory authority provided by the Minnesota Legislature.

Specific recommendations regarding the Minnesota Forests for the Future program are described in the remainder of this report. The vision is a forest that is enlarged and protected, healthy and resilient, and sustainably managed to provide a diversity of public benefits—economic, ecological, and recreational.<sup>29</sup>

## Purpose

The Minnesota Forests for the Future Program should collaborate with public and private partners to prevent the parcelization, conversion, and fragmentation of Minnesota's private working forests in order to retain healthy forests that meet societal objectives for economic products, recreational opportunities, and critical ecological functions.

## Organization

DNR should use this report's findings to draft the guidance needed to establish the Minnesota Forests for the Future program in statute. The advisory team made four major recommendations regarding the organization of the program:



### Conservation and the Minnesota Forests for the Future Program.

The Minnesota Forests for the Future Program should focus on conserving private forest lands throughout the state that, in combination with public forest lands, provide exceptional value in three core areas: public recreational access; timber production and other economic opportunities; and ecological values, including air and water quality, soil health, and wildlife habitat. The program will serve to integrate and sustain these interdependent forest values.



**Recommendation #2:** The DNR commissioner should establish a standing advisory committee composed of DNR staff and external stakeholders to provide advice on program management and to periodically evaluate program goals, strategies, implementation, and performance. The advisory committee should address program implementation action items listed in Appendix A.

**Recommendation #3:** The program should build on the success of collaborative approaches and partnerships between landowners, communities, non-profit organizations, public agencies, and others to achieve its goals. Working with partners, the program should identify and recommend changes in state policies that create economic incentives for private landowners to retain working forest.

**Recommendation #4:** The program should consult and cooperate with appropriate local units of government to understand local interests, build local support, facilitate project implementation, and ensure projects provide local public benefits.

**Recommendation #5:** The program should focus on protecting private forest lands throughout the state that, in combination with public forest lands, provide exceptional value in three core areas: public recreational access; timber production and other economic opportunities; and ecological values, including air and water quality, soil health, and wildlife habitat. It should give top priority to acquiring working forest easements on the largest blocks of forest lands owned and managed by corporations, the forest industry, and other large landowners in the Laurentian Mixed Forest Province, along with at-risk acreage of high-priority lands (generally 100 acres or more) in both the Laurentian Mixed Forest and Eastern Broadleaf Forest provinces.





## Goals and Strategies

The following goals and strategies (Table 2) provide the overall direction for the Minnesota Forests for the Future program and should

help guide the selection, acquisition, and stewardship of forest conservation projects.

**Table 2.**

### Goals and Strategies for the Minnesota Forests for the Future Program

Goals	Strategies
Retain and conserve forests with high public benefits (economic, recreation, and ecological)	<ol style="list-style-type: none"> <li>1. Preferentially pursue projects that provide public recreational access.</li> <li>2. Preferentially protect properties that provide economic opportunities from forest products.</li> <li>3. Preferentially pursue projects that provide multiple or single exceptional environmental, ecological, and habitat benefits.</li> </ol>
Promote strategic conservation of private forests	<ol style="list-style-type: none"> <li>4. Preferentially protect the largest, most intact blocks of forest.</li> <li>5. Preferentially pursue projects that will result in the greatest amount of consolidation, linkage, and contiguity of protected forest lands.</li> <li>6. Preferentially encourage projects that are linked to regional and statewide conservation efforts and that create a cumulative conservation effect.</li> <li>7. Preferentially pursue projects that provide management access to public lands.</li> </ol>
Practice sustainable forestry and maintain productive forest lands	<ol style="list-style-type: none"> <li>8. Preferentially pursue projects that maintain productive forests through sustainable forest management that supports forest-based jobs and industries.</li> <li>9. Ensure sustainability of managed forests through required forest management plans, adherence to best management practices (BMPs),<sup>30</sup> and third-party forest certification.</li> </ol>
Establish and maintain sound and accountable program processes, practices, and procedures	<ol style="list-style-type: none"> <li>10. Ensure that all transactions meet statutory requirements and DNR policies regarding legal descriptions, appraisals, environmental review, easement drafting, record keeping, title review, etc.</li> <li>11. Define a set of indicators to be used to track, measure, and manage progress toward program success.</li> <li>12. Require transparency in transactions between DNR, non-government organizations, and lease sellers by documenting the roles of all parties such that the transaction is readily understood. Require accounting of the expenditure of all public funds related to the easement.</li> <li>13. Operate the program in a manner consistent with standards of DNR in place at the time of the transaction as the guiding principles for operation. Such standards may govern program aspects such as project selection, acquisition processes, and monitoring.</li> <li>14. Develop a Web page to deliver public information on program projects.</li> </ol>
Implement a comprehensive easement stewardship program	<ol style="list-style-type: none"> <li>15. Develop agency capacity sufficient to ensure that the necessary monitoring and stewardship can be accomplished.</li> </ol>
Establish and maintain diverse partnerships	<ol style="list-style-type: none"> <li>16. Work with partners to identify and protect priority forest land.</li> <li>17. Work with partners to secure and leverage project funds.</li> <li>18. Work with partners to continuously improve program performance.</li> </ol>

## Toolbox Approach

The choice of conservation strategies for particular properties should be informed by results of research being coordinated by the Minnesota Forest Resources Council and partners.

Minnesota has fiduciary responsibilities for substantial acreages of state School Trust Lands and mineral rights. The mineral rights are concentrated in northern Minnesota, where the opportunity to protect the working forest landscape are greatest (see Appendix B). Multiple tools will provide an array of options for meeting these fiduciary responsibilities while meeting forest conservation goals.

The working forest conservation easement (WFCE) should be a core tool of the Minnesota Forests for the Future program. WFCEs remove an owner's rights to conduct certain activities such as subdivision, residential, or commercial development. They also add language that informs forest management to protect specific forest values. WFCEs provide a means to address societal goals such as sustaining a regional economy and other important public values by protecting the forest land base on which they depend.<sup>31</sup>



### Fee Title or Easement Acquisition?

A common question is when fee title ownership is preferable to conservation easements. If the easement holder seeks management control to attain particular ecological goals, fee title ownership is likely the better option. However, "if important public values are maintained by forest management practices on a property, a WFCE may be the best tool to permanently protect those values."<sup>32</sup>

**Recommendation #6:** The state should use a toolbox approach, in which multiple tools are applied to meet forest conservation goals. The range of tools includes easements, fee title acquisition, land exchanges, tax policies, and cost-share programs.

**Recommendation #7:** The program must facilitate DNR's compliance with constitutional and legislative directives requiring the agency to maximize the long-term economic return to the Permanent School Fund as consistent with sound natural resource management.

## Program Acquisition Targets

### Short-term Target (Two Years):

The Minnesota Forest Legacy Partnership set a 2009 target of acquiring up to 75,000 acres of forest conservation easements. DNR's Strategic Conservation Agenda included this target as a key conservation priority (Figure 15).

### Preliminary Long-term Target (up to 25 years):

To refine a long-term target, DNR should use a Geographic Information System (GIS) to identify and prioritize private lands that best promote the goals of strategic conservation of private forests and provide exceptional public benefits.<sup>33</sup> This analysis will provide rigorous long-term acquisition targets. Based on current landscape-level information on land ownership patterns and natural resource features, the advisory team estimates that targets will lie between 270,000 and 530,000 acres of priority private forest lands (Table 3). This target range is a preliminary estimate that should be refined by ecological subsection through the proposed analysis as part of the implementation report (see Appendix A).

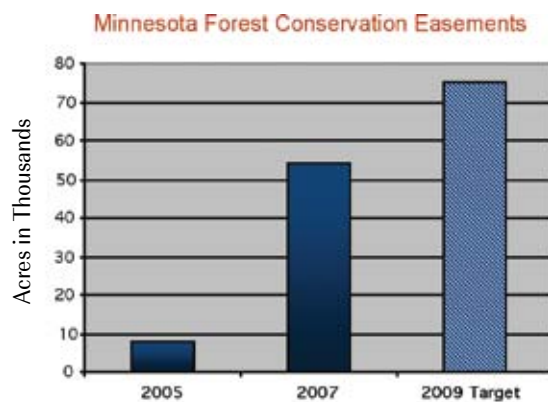


Figure 15. Strong public-private partnerships will be necessary to achieve the 2009 target of 75,000 additional acres of forest conservation easements in Minnesota.

**Recommendation #8:** The program should proactively identify and prioritize specific lands for easements and other protection tools with the aim of maximizing public benefit from its efforts.

### Program Acreage Targets

#### Laurentian Mixed Forest Province:

Projects will be focused on very large blocks of industrial forest lands, although some small and medium-sized projects will also be included. The preliminary target range for the province is 250,000-500,000 acres (Table 3).

#### Eastern Broadleaf Forest Province:

Projects will generally be less than 5,000 acres in size, although a few might be larger. The preliminary target range for the province is 20,000-30,000 acres.





**Table 3.**

**Preliminary Long-Term (up to 25 years) Targets and Estimated Costs<sup>1</sup> by Ecological Province for the Minnesota Forests for the Future program.**

Additional assessment is required to refine these estimates by identifying where protection and retention of undeveloped forests will provide the greatest economic, recreational, and ecological benefits to the state.

Target Range	Laurentian Mixed Forest Province <sup>2</sup>	Eastern Broadleaf Forest Province <sup>3</sup>	Statewide Totals
Low End	250,000 acres \$125 million	20,000 acres \$40 million	270,000 acres \$165 million
Upper End	500,000 acres \$250 million	30,000 acres \$60 million	530,000 acres \$310 million

1 Estimated costs are in today's dollars. Cost estimates are based on \$500/acre for easements acquired in the Laurentian Mixed Forest Province and \$2,000/acre for easements acquired in the Eastern Broadleaf Forest Province. Cost estimates should be refined as new information becomes available.

2 Laurentian Mixed Forest Province: Much of the target for this province should consist of very large blocks (several tens of thousands of acres) of industrial forest lands. However, some should consist of medium or small tracts (less than 5,000 acres) throughout the province.

3 Eastern Broadleaf Forest Province: The target is based on achieving a goal of protecting one or more blocks of forest in each of seven forested subsections. Block size will vary across the province.



## Program Funding

Recommendation #9. The program should work with partners to leverage public and private funds, spur new investments, and coordinate with other conservation programs to protect highest priority private forest lands from development. Like the acreage targets, funding needs must be based on additional analysis. The approximate cost to meet the program's long-term target of protecting 270,000 to 530,000 acres throughout Minnesota is \$165 million to \$310 million in today's dollars (Table 3, 4).

Recommendation #10. The state should protect the public's interests and values by providing reliable funding mechanisms and necessary infrastructure to maintain a forest easement stewardship program. Such public and/or private mechanisms should effectively fund long-term monitoring and enforcement at the time of easement establishment.

**Table 4.**  
**Estimated Easement Monitoring Costs for the Minnesota Forests for the Future Program.<sup>1</sup>**

These estimates are based on the same projected mix of small, medium, and large projects used for the preliminary long-term estimates in Table 3.

Target Range	Small Projects (number, cost)	Med. Projects (number, cost)	Large Projects (number, cost)	Total Costs <sup>2</sup>
Low end	80 projects, \$20,000/yr	20 projects, \$15,000/yr	10 projects, \$45,000/yr	\$80,000/yr
Upper end	120 projects, \$30,000/yr	40 projects, \$30,000/yr	15 projects, \$67,000/yr	\$127,000/yr



<sup>1</sup> Monitoring costs (today's dollars) are based on annual costs of \$250/project for small projects (less than 500 acres) \$750/project for medium projects (501–5,000 acres) and \$4,500/project for large projects (> 5,000 acres). The program's preliminary long-term target is protecting 270,000 to 530,000 acres.

<sup>2</sup> Costs include personnel, overhead, remote sensing, etc.

# Project Selection

This section provides guidance on how individual candidate projects should be scored, ranked, and prioritized. The program’s selection process should:

- provide a clear, easily articulated, and defensible ranking process;
- ensure fair, equitable and thorough review of all proposed projects;
- establish a priority list of projects in anticipation of securing funding from various funding sources.

Project selection should be conducted annually by DNR and a project review committee chaired and administered by DNR and composed of DNR staff and stakeholder representatives. Potential stakeholders include environmental organizations; forest recreational user groups; federal, state, and local government agencies; local government; tribal representatives; forest landowners; forest industry; land trusts; conservation organizations; and others deemed appropriate by the commissioner. Table 5 outlines the steps and responsibilities. Appendix D describes specific roles.

Recommendation #11: The DNR should conduct a project selection process to rank and prioritize individual projects. Annually, DNR should convene a project review committee of DNR and stakeholder members to review, score, and rank projects submitted by landowners and partners for consideration. Scoring will be based on project size, strategic location, recreational opportunities, timber and other economic benefits, and ecological and habitat values. DNR will determine final project priorities based on recommendations from the review committee.

**Table 5.**  
**Project Selection Steps and Responsibilities**

Step	Responsibility
Issue a request for proposal	Forest Legacy Coordinator
Prepare and submit an application for project consideration	landowner, partners
Review applications and prepare project selection packet	Forest Legacy Coordinator
Review, score, and rank projects and recommend priority list of projects to the Division of Forestry (Appendix E).	Project Review Committee
Establish a final prioritized list of projects and notify landowners. Incorporate prioritized list into biennial acquisition plans. Submit biennial acquisition plan to Commissioner’s management team for review and approval. Submit individual projects to the regional management team for review and approval prior to beginning acquisition activities.	Forest Legacy Coordinator
Consult with Division of Forestry when federal funds are being sought through the Federal Forest Legacy Program.	Forest Stewardship Committee



## Overall Criteria

The Minnesota Forests for the Future program should operate throughout Minnesota, focusing on the largest tracts as the highest priority.

- In northern Minnesota the program should give priority to acquiring large-scale (generally 5,000 acres or larger) WFCEs on timberlands owned and managed by corporations, the forest industry, and other major landowners. These large-scale easements will help keep the northern forests intact and promote the goals of the program.
- Elsewhere in Minnesota, the program priority should be larger tracts of forest (generally 100 acres or more), mostly owned by private individuals, that provide a significant public benefit and contribute to regional forest conservation efforts.

## Scoring and Ranking Projects

The advisory team suggested scoring criteria and considerations for use by the Minnesota Forests for the Future project review committee (see Appendix E). The team agreed on six major criteria: project size, strategic location, recreational opportunities, timber and other economic benefits, ecological and habitat values, and other considerations. It did not assign points to each of these criteria. However, it did draft questions the project review committee should answer to score candidate projects with respect to each criterion. These considerations represent the minimum thought process required for the project review committee to ensure that project selection enhances the program's success. The advisory team recommends that the proposed Minnesota Forests for the Future advisory committee refine the scoring and ranking system as part of the implementation report (see Appendix A).

**Recommendation #12.** The conservation of working forests should be the program's cornerstone. The public directly benefits from this program when forest lands are managed in ways that sustainably produce wood products that directly support Minnesota jobs and industries, provide public recreational access, and ensure healthy ecosystems. In candidate projects involving large acreages (>1,000 acres) in northern Minnesota, strong preference should be given to projects that provide economic opportunities from the sustainable harvest of timber and other forest products, and that provide recreational access.



## Implementation

The following standards are focused on WFCEs. They will be updated as necessary to conform to any minimum standards adopted by DNR governing conservation easements. Projects using Federal Forest Legacy Program funds will adhere to that program's guidelines. As the Minnesota Forests for the Future program adopts other tools, it will develop standards to guide their use.

### Legal and Program Standards

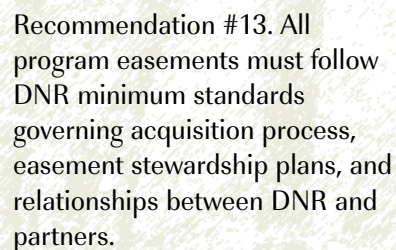
- All projects will be consistent with Minnesota Statutes, chapter 84C.
- All projects will be consistent with the program purpose.
- All projects will go through the evaluation and selection process to ensure accountability and transparency in project selection and to establish the public benefits of the project.

### Acquisition Process

Every WFCE acquisition will use the DNR acquisition process as follows:

- The property proposed for consideration for a WFCE will be physically inspected.
- A fact packet will be prepared that includes a completed program application, a fact sheet, an initial site assessment, and a landowner bill of rights.
- A forest management plan will be prepared and approved prior to closing. The plan will include monitoring provisions that ensure that the proposed forest management is sustainable in the long term. The conservation easement will require the approval of the forest management plan by the holder (DNR).
- A determination of the potential of environmental hazards on the property will be made prior to closing.
- Each easement will have a well-defined legal description to assure that its location is determinable on the ground.

- A base-line property report will be prepared that includes a detailed inventory of the natural and artificial features found on a property at the time the easement is acquired.
- The easement will be tailored to the unique characteristics of the land it covers.
- Easement purposes and conservation values of the property will be clearly stated.
- Easement restrictions will be directly relevant to the conservation purposes and conservation values and should be, to the extent possible, unambiguous and measurable.
- Every easement document will be written in clear and unambiguous language that is understandable to the owner and DNR.
- The following issues will be considered during the development of the easement:
  1. Land uses
  2. Subdivisions
  3. Transfer of development rights
  4. Structures and developments
  5. Signs and billboards
  6. Roads and trails
  7. Mining, construction aggregate operations, and surface alterations
  8. Waste
  9. Nonforest areas
  10. Forest management
  11. Public access, recreation and timber harvesting
- Each project will have conformed to state (and federal, if applicable) standards for determining easement value.
- Grantors of easements must have marketable title.



**Recommendation #13.** All program easements must follow DNR minimum standards governing acquisition process, easement stewardship plans, and relationships between DNR and partners.

## Stewardship

Every Minnesota Forests for the Future easement will have a comprehensive stewardship plan that includes these features:

- A written base-line property report will be prepared according to DNR and program standards.
- A primary contact will be assigned, and DNR will maintain regular contact with the landowner.
- The easement will be monitored annually for compliance with easement terms.<sup>34</sup>
- Records will be kept in a manner that complies with the written records policy.
- Easement violations will be documented and addressed in a manner specified in the written enforcement policy.
- Easement amendments will comply with pertinent DNR and program policy.
- The program will maintain an up-to-date list of easement properties under its administration. This information will be available for public inspection.
- DNR will commit sufficient resources for easement stewardship.

## Relationships

The Minnesota Forests for the Future program will value and promote open, clear, and accountable communications and processes.

When WFCEs are acquired with public monies, the use of public monies will be clear and transparent.

When non-governmental organizations are working with DNR, roles, responsibilities, and expenditure of public funds will be clear and accountable.

DNR will pre-approve the language of any easement acquired by or through a non-governmental organization for which it will be the end-holder.

Non-governmental organizations acquiring easements for transfer to DNR will sign the DNR's Landowner Bill of Rights.

## Responsive Program Management

In the face of changing social, economic, and environmental forces the Minnesota Forests for the Future Program must be responsive to new challenges and opportunities. The “plan, do, check, adapt” framework is a basic element

for responsive program management (Figure 16). This strategic report provides the planning foundation and sets the stage for implementation and the monitoring and adaptation that are critical for continuous improvement.

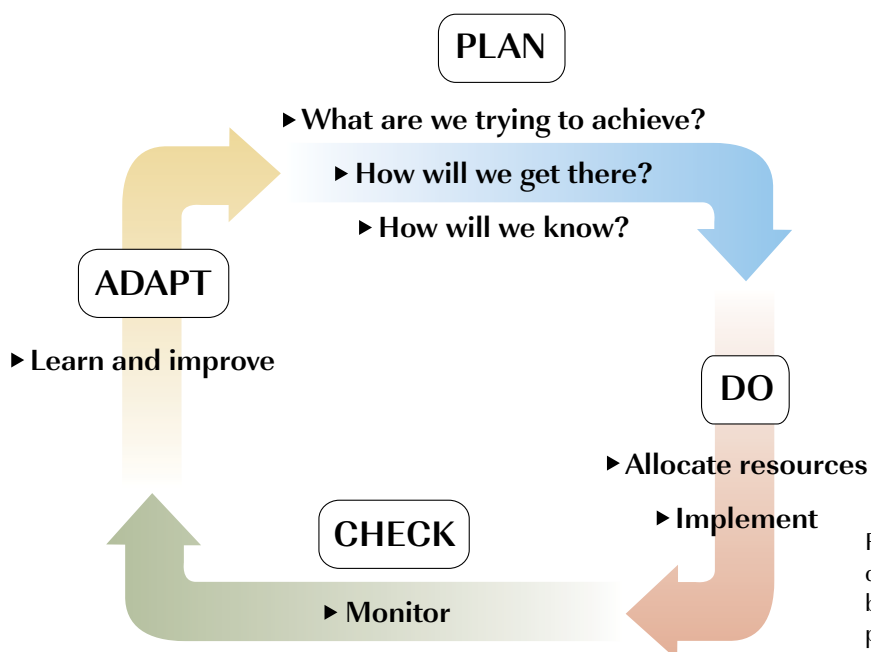


Figure 16. The “plan, do, check, adapt” framework is a basic element of responsive program management.



**Recommendation #14.** The program should strive to meet clear, measurable goals, monitor and evaluate results, and incorporate new information and leverage other efforts to continually improve management performance in the face of changing social, economic, and environmental forces such as climate change, invasive species, biofuels demand, and wetlands mitigation. The program should use structured policy analysis briefs (see Appendices B, C) to address complex issues. These briefs can inform the development of legislation, program policy, and strategic communication about issues in which no best solution exists, but a diversity of approaches is needed.

## Performance Measures

The advisory team suggested the following preliminary measures to evaluate the performance of the Minnesota Forests for the Future program. They are organized according to the goals of the program.

Goals	Measures
Public Benefits	<ul style="list-style-type: none"> <li>• Acres of permanent forest conservation easements<sup>35</sup></li> <li>• Percentage of easement acres that are open for public recreational use</li> <li>• Percentage of easement acres that will be actively managed to produce timber and other forest products</li> <li>• Amount of timber and other forest products produced from easement acres</li> <li>• Percentage of projects that provide multiple environmental, ecological, and habitat benefits<sup>36</sup></li> </ul>
Strategic Conservation	<ul style="list-style-type: none"> <li>• Percentage of projects that are greater than 1,000 acres</li> <li>• Percentage of projects that are adjacent to or link public lands</li> <li>• Percentage of projects that contribute to the implementation of regional or statewide conservation plans</li> </ul>
Sustainable Forestry	<ul style="list-style-type: none"> <li>• Percentage of easement acres that are certified by a third-party certifying organization</li> <li>• Percentage of easement acres where access for DNR monitoring of Minnesota Forest Resources Council guideline compliance is provided</li> </ul>
Sound and Accountable Program Processes, Practices, and Procedures	<ul style="list-style-type: none"> <li>• Percentage of projects that meet DNR standards regarding legal descriptions, appraisals, environmental review, easement drafting, record keeping, and title review</li> <li>• Percentage of easements with base-line reports at time of closing</li> </ul>
Easement Stewardship	<ul style="list-style-type: none"> <li>• Percentage of easements with annual monitoring</li> </ul>
Partnerships	<ul style="list-style-type: none"> <li>• Percent of total project cost leveraged from partners</li> </ul>

# Appendix A

## Implementation Report Action Items

During their development of this strategic report, advisory team members raised several action items to be addressed in the implementation report. These are:

### 1. Program Acquisition Targets

- **Refine long-term acreage targets and associated costs** by identifying where protection and retention of undeveloped forests will provide the greatest economic, recreation, and ecological benefits to the state. Additional assessment and GIS analysis will be a critical component of this task.
- **Refine time frame for achieving targets.** The advisory team defined a preliminary long-term time frame of up to 25 years. However, the major opportunities for the program may be in the next 10 years.

### 2. Implementation

- **Refine strategies for addressing goals.** For instance, what are the most appropriate actions for “maintaining productive forests through sustainable forest management that supports forest-based jobs and industries” (Table 2, Strategy 8)? Strategies should also be refined based on an assessment of barriers to the program’s success.
- **Refine project scoring and ranking system.** The advisory team suggested six criteria and associated considerations for scoring and ranking projects (Appendix E), but left assignment of points for the implementation report.

### 3. Responsive Program Management

- **Explore opportunities for the program to leverage state efforts** to protect wetlands and other important natural assets. The implementation report should include further assessment of the connection between program tools and other mechanisms for wetland protection.

### 4. Performance Measures

- Refine preliminary performance measures. The advisory team had differing opinions on the relevance of some preliminary performance measures, but did not have the time to resolve them.

# Appendix B

## Mineral Interests and Conservation Easements Policy Analysis Brief

### How does the Minnesota Forests for the Future program address the state's trust fund mineral interests?

Policy Work Group: Marty Vadis, Keith Wendt, Andy Holdsworth, Dick Peterson;  
DNR reviewers: Kathy Lewis, Dennis Martin, Steve Colvin

#### Introduction

**The policy issue is how the Minnesota Forests for the Future (MFF) program should address the state's trust fund mineral interests on large WFCEs.** Minnesota's Forest Legacy Program (FLP) originated in 2000 as a federally funded program operating under standards of the USDA Forest Service. The federal standards strictly limit mining. Minnesota has fiduciary responsibilities for substantial acreages of state School Trust Lands and mineral rights. These mineral rights are concentrated in northern Minnesota where the opportunity to protect the working forest landscape are greatest. Given that FLP conservation easements exist in perpetuity, the state is concerned about the impact easement mineral exclusions would have on its fiduciary responsibilities for School Trust Lands and its ability to use easements as a major tool to protect recreational access, habitat, and timber productivity on a significant scale. The policy work group examined these issues and provides core background and four alternative options to advance the MFF program.

#### Background

- **The federal and Minnesota forest legacy programs:** The federal Forest Legacy Program (FLP) began as a federal program of the 1990 Farm Bill. Minnesota joined the federal program in 2000 and has protected 22 tracts totaling 8,368 acres. In response to mounting concerns over ownership changes on large industrial forestlands, the

Forest Legacy Partnership formed in 2005. This effort created the foundation for the Minnesota FLP that has recently completed the first state forest legacy project on 51,163 acres (see Case Study 2).

- **Fiduciary responsibilities for School Trust Lands<sup>1</sup>:** Minnesota has approximately 2.5 million acres of surface and minerals in School Trust Land status, plus an additional 1 million acres of severed mineral rights. The rental and royalty income from these rights goes to the state's Permanent School Fund whose interest and dividends are distributed to all school districts of the state through the state aid formula. Constitutional and legislative directives require DNR to maximize the long-term economic return to the Permanent School Fund as consistent with sound natural resource management. Although the chance of mineral development on a given unit is small, royalties from a developed mineral deposit are substantial (hundreds of millions of dollars).
- **Compatibility of mining with the purpose of federal FLP:** The purpose of the federal FLP is to "protect environmentally important forest areas that are threatened by conversion to nonforest uses."<sup>2</sup> In an April 27, 2006, letter to DNR, the USDA Forest Service Northeastern Area director stated that "mineral interests that have potential for extensive surface disturbance at any time in the future must

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<sup>1</sup>Although this policy brief focuses on School Trust Fund mineral interests, other state-held mineral interests, such as tax-forfeited mineral interests that benefit local units of government, are also affected by easement provisions. Eighty percent of mineral revenues from tax-forfeited mineral interests are divided between the county, municipality, and school district and the remaining twenty percent go to the state's general fund.



be extinguished and subsurface extraction must be restricted to minimize surface disturbance and effects on the purposes for which the property is entered into the FLP<sup>23</sup>. In addition, the Internal Revenue Service income tax deduction regulations consider extensive surface disturbance to be incompatible with the purpose of the easement.

- **Impact of federal FLP mining**

**provisions:** Both the 1 million acres of undeveloped corporate land at risk of being broken into smaller parcels and 1 million acres of severed mineral interests are concentrated in northern Minnesota. In fact a significant amount of them overlap. Overly restrictive mining provisions could significantly limit 1) options for mineral development and related economic benefits, and 2) the FLP's ability to protect recreational access, habitat, and timber productivity on a significant scale.

- **Scale of FLP easements vs. scale of potential mining surface impacts:** The potential extent of forest legacy easements in northern Minnesota is relatively large in space and time. However, the surface impacts of potential mineral development on FLP easements would be limited in time and extent, depending on the minerals present and mining practices, such that the values that easements protect are not significantly impacted. For example, DNR Lands and Minerals estimates that if mineral development activities were highly successful on the 51,163-acre Koochiching-Washington Forest Legacy easement, there might be one to three deposits worth mining. Mining these would impact approximately 80-120 acres for 40-50 years (<0.3% of the area for 1 rotation of timber production).

## Recommended Policy Options

The policy work group outlined four alternative options to address the issue of how

the Minnesota Forests for the Future (MFF) program addresses the state trust fund mineral interests.

### **Policy Option 1: Prohibit surface mining and limit subsurface mining to areas that do not affect the conservation purposes of MFF easements. Do not acquire easements on lands with good to excellent potential for mineral development.**

Pros: Conforms to federal FLP mining standards and current Minnesota Assessment of Need document that federal FLP operates under in Minnesota; permits MFF to use federal funds under current federal FLP standards; provides a relatively simple standard to apply.

Cons: Assumes that mining and forest conservation are fundamentally incompatible; would notably constrain the number and size of MFF easements on large tracts of forest land because of fiduciary responsibilities for School Trust Lands; would limit diversity of economic benefits from forest lands to local, regional, and state economy.

### **Policy Option 2: Give priority to acquiring MFF easements on lands with minimal potential for mineral development. Where mining occurs, limit its impact to less than 5% of easement area and reclaim impacted area to its natural state. Where mining will impact >5% of easement area, replace impacted lands at a ratio of 2 to 1 acres of forestlands with equal or better forest resource values.**

Pros: Attempts to avoid conflicts with mineral interests through site selection criteria; provides clear area threshold for mining impacts and a conservative replacement ratio.

Cons: Risks being overly restrictive and thus constraining the number and size of MFF easements on large tracts of forest land; assumes that mining and forest

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<sup>2</sup>Forest Legacy Program Implementation Guidelines. USDA Forest Service, State and Private Forestry, Cooperative Forestry. June 30, 2003.

<sup>3</sup>Note that federal standards for mineral development on Forest Legacy Program lands are administrative standards.

conservation are fundamentally at odds; ranking of mineral potential for perpetual conservation easements changes with time as mineral demand, prices, and technologies change; limits future options for benefits of minerals development to School Trust Fund without clear benefit to forest conservation values; does not enable an adaptive process to respond to context-specific conditions.

**Policy Option 3: Retain option for exploration and mining of school trust mineral interests on MFF easements subject to compliance with state laws, including mine-land reclamation laws. If mined lands can't be reclaimed to forest land, they must be replaced with forest land providing comparable forest conservation values and subject to conservation easement. If surface area disturbed exceeds specified amount negotiated per easement, replacement must occur prior to mining.**

Pros: This option is enabling rather than overly prescriptive. Enables an adaptive process to respond to context-specific conditions that are impossible to predict now; clearly maintains Minnesota's fiduciary responsibilities for School Trust Lands while minimizing impacts of mining on conservation values of MFF easements; improves ability to realize multiple economic, social, and environmental benefits of MFF easements; retains option for use of federal funds under current federal FLP standards on individual easements with very low potential for mineral development.

Cons: For easements on lands with moderate to high potential for mineral development, would likely prohibit use of federal funds under current federal FLP standards; some stakeholders may question the degree to which replacement forest lands provide comparable forest conservation values.

**Policy Option 4: Prohibit mining and compensate the School Trust Fund for lost mineral revenues from MFF easements.**

Pros: Conforms to federal FLP standards and thus would permit use of federal funds under current federal FLP standards; maintains fiduciary responsibilities of School Trust Lands.

Cons: Cannot identify real value of mineral interests without exploration; Trust Fund interests could sue for fair market value; purchase costs of mineral rights could significantly constrain the number and size of MFF easements on large tracts of forest land; may limit diversity of economic benefits from forest lands to local, regional, and state economy.

## Conclusion

The advisory team recommends maintaining the flexibility to pursue a variety of policy options to avoid, minimize, and mitigate the impacts of mineral development on the conservation values protected by MFF easements. This approach follows the precedent of applying a variety of mineral development approaches (see examples below) to meet the state's fiduciary responsibilities to the School Trust Fund while ensuring forest conservation values are protected in easements.

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Example 1 – Koochiching-Washington Forest Legacy Project (FCP Ph.1) and the Wolfwood Project: state FLP projects with state and private funding and moderate or better potential to contain commercial mineral resources. In each of these projects, the state affirmed its right to manage state-owned minerals, sand, and gravel. Under the terms of the easements, the state, as the owner of portions of the mineral estate of the property, affirmed its rights for exploration and mining on those state-owned mineral estates, subject to compliance with state laws, including mine-land reclamation laws. Where the lands cannot be returned to forest use after mining, new lands must be substituted. If the surface area disturbed exceeds specified amounts, then substitution must occur prior to mining. Substituted lands must be suitable for commercial forest management and subject to a conservation easement. In these projects (large forest-landscape easements), the likelihood of impacts to conservation values is relatively low due to the limitations imposed on the mining activities. Those limitations, together with the relatively low probability of extensive surface disturbance, protect the public values of the forest and justify the public investment in these projects.

Example 2 – Sugar Hills Forest Legacy Project: federal FLP project with federal funding and low potential to contain commercial mineral resources. On federal FLP projects, no surface mining is permitted. As a result, in the conservation easement for this project, the state did not affirm its rights to manage State-owned minerals on the property. This approach, while not entirely acceptable to the state, was required by the federal FLP. This approach was justified based on a mineral assessment of the property that concluded that the potential of the property containing commercial mineral resources was low and therefore this approach has little or no impact on the state's ability to generate revenue for the trust from this land.

# Appendix C

## Sustainable Forestry Incentives Act (SFIA) Policy Analysis Brief

### Can landowners participate in both the SFIA and Forest Legacy Program?

Policy Work Group: Dick Peterson, Bill Becker, Keith Wendt, Andy Holdsworth

DNR Reviewer: Cindy Nathan

External Reviewers: Bruce Zumbahlen, Mike Kilgore

#### Introduction

**The policy issue is whether DNR needs to provide further direction, including possible legislative action, on the issue of whether a landowner can participate in a conservation easement program such as the FLP and SFIA concurrently.** This issue is being considered at this time because the DNR is engaged with stakeholders in a process to develop a written report that brings together in one document a framework for a stand-alone state FLP. The issue of concurrent participation in both programs has been raised in the Legislature and by the Legislative-Citizen Commission on Minnesota Resources (LCCMR), where some members have questioned whether dual participation in SFIA and a conservation easement purchase program such as the FLP would amount to double payments for what some many of feel are essentially the same set of public benefits. This has raised concerns that future funding appropriation language or new statutory policy could restrict participation in SFIA when forestland is also enrolled in FLP.

#### Background

**SFIA program overview:** The purpose of the SFIA is to encourage the practice of long-term sustainable forest management on private forestland. SFIA uses annual payments as an incentive to practice sustainable forestry.

1. The landowner needs to acquire and follow a forest management plan.
2. Enrolled lands must total at least 20 acres of contiguous land, at least half of which is forested.
3. Land must be enrolled for a minimum of eight years and requires a four-year wait-

ing period before removing land from the program.

4. The penalty for violating the covenant is that all of a landowner's enrolled lands will be removed from the program and the landowner will be assessed a penalty that is equal to the total of all payments received on all enrolled lands for the previous four years, plus interest.
5. The program prohibits buildings and structures activity and agricultural activity.
6. The landowner must record a legal covenant with the property deed prior to applying for enrollment.
7. The program requires non-motorized public access to fish and wildlife resources if acres total enrolling more than 1,920 acres of land.
8. Only forest lands are eligible. The definition of forest lands excludes lands enrolled in Conservation Reserve Program (CRP), Re-invest in Minnesota (RIM), Green Acres, or Agricultural Reserve programs.
9. Payment-per-acre rates are determined by the Minnesota Department of Revenue annually. The minimum payment amount per acre is \$1.50.
10. The landowner agrees to follow forest management guidelines when conducting management activities.

**FLP program overview:** The FLP program protects important forest lands by purchasing conservation easements or fee title from willing landowners whose lands are threatened by conversion to non-forest uses. The FLP program is a partnership between the USDA Forest Service and participating states.

1. Forest land eligibility requirements are developed through an assessment of need that is developed in each state. In



Minnesota, these eligibility requirements include a minimum of 20 acres, at least 90% of which must be forested.

2. All FLP easements are held by the state lead agency (e.g., DNR Division of Forestry) in perpetuity.
3. The landowner must acquire a state-approved forest stewardship plan or a multi-resource management plan.
4. The program prohibits non-compatible non-forest uses of the land, including residential subdivisions and commercial development. Compatible non-forest uses, including farmland, pasture, grassland, shrub land, open water, and wetlands, are allowed up to a maximum 10% of the total enrolled area.
5. Public access may be acquired, but public access is not required.
6. Purchase price is negotiated following an appraisal and appraisal review that is used to substantiate the value of the conservation easement. Landowners often sell the easement for a price below appraised value (bargain sale).

#### **Other Conservation Easement Programs:**

Other conservation easement programs available to Minnesota's private forest landowners include:

1. The Minnesota Land Trust
  - a. Eligibility requirements vary by easement program. Some programs have minimum acre requirements to participate.
  - b. Easements are perpetual.
  - c. Vegetation management plans are required.
  - d. A variety of land uses may be allowed including forestry and agriculture.
  - e. Public recreational access may be acquired, but is not required.
  - f. Easements are typically donated, not purchased.
2. Re-invest in Minnesota (RIM) easements (this program may be looking at opportunities to help in protecting woodlands in the future)
  - a. A variety of lands are eligible, including wetland restoration areas, riparian agricultural lands, marginal cropland,

pastured hillsides, and sensitive groundwater areas.

- b. Easements are both term and perpetual.
- c. Once enrolled, land is managed under a conservation plan that generally includes items such as wetland restoration, native grass plantings, and tree plantings.
- d. Public recreational access is not required.
- e. Easements are purchased at a payment rate based on average market value of land in the township.

**FLP guidance:** Neither the FLP nor the current state FLP has policies, guidelines, or program directives that either restrict FLP participants from participating, or permit them to participate, in SFIA or similar programs.

**SFIA guidance:** The SFIA statutes do not prohibit lands enrolled in the FLP from enrolling in the SFIA. However, land enrolled in federal or state agricultural incentive programs that it does restrict, including conservation reserve or easement reserve programs (e.g., CRP or RIM easements), the Green Acres program, or agricultural reserve programs, is prohibited from enrolling in the SFIA.

**LCCMR restriction perspective:** The 2007 LCCMR Environmental Trust Fund appropriation prohibits SFIA payments to landowners whose easement payments are funded by the appropriation.

**SFIA and the target landowners overlap:** Some of the largest private forest land holdings in the state (UPM Kymmene-Blandin, Forest Capital Partners) currently participate in SFIA. These forests owned by these landowners are also a primary focus for easement acquisition under the FLP. Currently, involuntary termination requires repayment for all SFIA payments received over the past four years on all enrolled lands, plus interest.

**Enhanced practices with dual participation:** A convincing argument by the DNR to the Legislature to allow dual participation in SFIA and FLP with no loss of payments to the landowner will require DNR to communicate fundamental differences between the SFIA and

forest legacy programs and show that the two programs have different but compatible objectives, therefore making stacking the programs desirable.

### **Current LCCMR Approach to SFIA and Potential Implications**

Legislative staff has warned DNR that the approach to SFIA payments used by LCCMR in the 2007 Environmental Trust Fund appropriation might be applied to future forest legacy appropriations by the Legislature. The implications of that approach to landowners who receive payments under the FLP are the loss of the SFIA payments. However, land enrolled in donated easement programs would likely continue to remain eligible under the SFIA. The implications to landowners of partial donations (“bargain sale”) are unclear. The impact to the FLP might be that the loss of SFIA payments would act as a disincentive to landowners considering a sale of an FLP conservation easement to the state.

### **Recommended Policy Options**

There are three recommended options to pursue:

**Policy Option 1. Work with the Minnesota Forestry Association and the Minnesota Department of Revenue to clarify SFIA language to allow dual participation in both SFIA and FLP as well as other conservation easement programs.** For example, the following language might be added to the SFIA: “Land subject to easements acquired by the FLP and (list other applicable programs) are eligible for payments under SFIA.”

Pros: Provides more guidance than is currently available and ensures that landowners would not be penalized for dual participation.

Cons: Does not address the issue; may not be able to answer the question of double payments for essentially the same property rights purchased.

### **Policy Option 2. Address dual participation in new Statutory FLP Legislation.**

Under this option, proposed new state legisla-

tion that would establish a stand-alone state FLP in Minnesota would also provide guidance on dual participation and dual payments in these two programs. The basis for receiving payments from both programs would require that the individual rights purchased through each program (e.g., development rights) be uniquely identified.

Pros: Provides a programmatic framework to address the issue of dual participation and double-dipping; enables a clear identification of the benefits associated with the rights acquired under each program, relative to the payment amount for each benefit.

Cons: Separating the unique property rights acquired under each program and their associated payment could be difficult to accomplish in practice on a parcel-by-parcel basis.

**Policy Option 3. No change to the current SFIA requirements.** Under this option, no changes would be recommended to the existing SFIA program and no additional legislative direction would be sought. DNR’s position would be that these are separate and distinct programs with separate purposes and that according to current SFIA eligibility requirements, lands could be enrolled in both the SFIA and a forest conservation easement program.

Pros: Does not require new legislative action.

Cons: May put DNR in a reactive mode if the Legislature proposes FLP appropriation language that places restrictions on SFIA payments similar to the 2007 Environmental Trust Fund appropriation; if those restrictions were approved by the Legislature, one result might be lost opportunities if landowners decided against enrollment due to lost SFIA payments; some landowners may not see the loss of SFIA payments as a negative if the appraisal process considered that loss of payments and thereby reduced the value of the appraisal; if that occurred, the result of SFIA payment restrictions would be a higher cost to the state to purchase the easement.

# Appendix D

## Project Selection: Specific Roles

### Landowners and Conservation Partners

- Prepare and submit an application that includes maps, legal description, deeds, etc.

### Division of Forestry/Forest Legacy Coordinator

- Issues a request for proposals once each year.
- Help landowners and partners prepare applications.
- Review applications to ensure completeness and compliance with eligibility requirements.
- Consult with DNR area team and lands team on applications.
- Prepare project package for project review committee.
- Convene project review committee annually to review projects.
- Establish a final prioritized list of projects.
- Notify applicants of final prioritization and recommendations.
- Incorporate prioritization list into biennial acquisition plans.
- Submit biennial acquisition plan to DNR Commissioner's management team for final approval.
- Consult with the state forest stewardship committee on applications to the federal FLP.
- Obtain approval of the appropriate DNR regional management team and regional manager signature for projects before beginning the acquisition process.

### Project Review Committee

- Review projects and numerically score projects according to state criteria.
- Review priority list and make recommendation to DNR on prioritization and selection of projects.

### Forest Stewardship Committee Role

- Consult with DNR on applications to the federal FLP.



# Appendix E

## Project Selection: Criteria and Considerations for Scoring

The advisory team suggested the project review committee use the following scoring criteria and considerations to assign scores and rank candidate projects and make selection recommendations to DNR (see Appendix D).

Criteria	Scoring Considerations
1. Project size	<ul style="list-style-type: none"> <li>• ____ points for 20–1,000 acres</li> <li>• ____ points for 1,001--5,000 acres</li> <li>• ____ points for 5,001+ acres</li> </ul>
2. Strategic location	<ul style="list-style-type: none"> <li>• Is the project adjacent to public land, within _ mile of public land, or an inholding surrounded by public land?</li> <li>• Does the project contribute to a corridor between tracts of public land or private conservation lands?</li> <li>• Is the project part of a regional or statewide effort to conserve forest lands?</li> <li>• Is the project an isolated tract?</li> <li>• Does the project provide management access to public land?</li> <li>• Is the project of such a size and location to provide unique public benefits?</li> </ul>
3. Recreational opportunities	<ul style="list-style-type: none"> <li>• Is there good access to the property from existing public roads, trails, or waterways?</li> <li>• Does the property provide public recreational access, including hunting and fishing?</li> <li>• Does the property contain public motorized recreational trails, including snowmobile trails?</li> <li>• Are there opportunities to connect existing trails or to provide new trails or additional recreation corridors in the future?</li> <li>• Does the project provide full or only limited access to the property?</li> <li>• Does the property contain exceptional recreational resources?</li> </ul>

## Criteria

## Scoring Considerations

<p>4. Timber and other economic benefits</p>	<ul style="list-style-type: none"> <li>• Is the property composed of a relatively high percentage of productive timberlands? What percentage of the property is unproductive/low productivity (e.g., swamps, bogs, beaver flowages, non-forest types)?</li> <li>• Does the project contribute to the resource-based economy of the area or region? Does the owner actively manage/harvest timber or other forest products?</li> <li>• Is the landowner willing to commit to harvesting mature timber?</li> <li>• Is the timberland well stocked with merchantable species?</li> <li>• Has the property owner demonstrated sound forest management, such as having a management plan, participating in the Forest Stewardship Program, or enrolling in a third-party certification system?</li> <li>• Are there exceptionally valuable timber or nontimber forest products (e.g., sawtimber, high-site index aspen, veneer, black walnut) on the property?</li> </ul>
<p>5. Ecological and habitat values</p>	<ul style="list-style-type: none"> <li>• Does the site have known individuals and/or habitat for state or federally designated rare, threatened, or endangered plants or animals?</li> <li>• Does the site contain unique forest communities and/or important fish and wildlife habitat as specified or documented by a wildlife or other natural resource plan?</li> <li>• Does the property contains riparian areas, wetlands, lakes, shorelines, river systems, or other important water resources, and/or is it important as a source for public drinking water or as an aquifer recharge area?</li> <li>• Is the site located within a viewshed of a formally designated scenic feature or area (e.g., trail, river, roadway) or does it contain areas of scenic interest?</li> <li>• Are formally documented cultural or historical features located on the site?</li> <li>• Is the land predominantly natural, without significant developments or improvements?</li> <li>• Are there ecological features of the property that are of exceptional quality or significance (e.g., federally endangered species endemic to a small area)?</li> </ul>
<p>6. Other considerations</p>	<ul style="list-style-type: none"> <li>• Does the project provide matching funds?</li> <li>• Is there strong public and partner support for the project?</li> <li>• Is there a strong threat to the property that would result in forest parcelization and conversion?</li> </ul>

# Key Terms

**Conservation Easement:** A legal agreement between a landowner and a qualified organization (usually a land trust or government entity) that restricts future activities on the land to protect its conservation values. Most conservation easements are perpetual and apply to current and future landowners.

**Fee-title Acquisition:** Full and unconditional ownership of land, with the right to use and sell during the owner's lifetime, and then to pass on to one's heirs.

**Forest Conversion:** the replacement of forest cover with other cover such as urban, suburban, and industrial development; and cropland. Conversion results directly in the loss of forest resources for forest recreational users, wildlife, and forest products.

**Forest Fragmentation:** the creation of forest "islands" that are isolated from one another by unforested land.

**Forest Legacy Program:** part of the State and Private Forestry division of the USDA Forest Service, the agency administers Forest Legacy in partnership with States and works with interested private landowners to acquire lands and conservation easements.

**Forest Stewardship Committee:** it, or a suitable substitute, is required by the Federal Forest Legacy Program. It provides oversight to the Minnesota Forest Legacy Program by helping to establish the priority of individual tracts of land and by providing overall philosophical guidance.

**Parcelization:** the division of land into smaller ownership blocks.

**Sustainable Management:** Management to maintain the long-term health of ecosystems and sustain a full range of environmental, economic, and social benefits for current and future generations. A sustainably managed forest provides not just timber and other economic products, but also public benefits like water quality, recreation, and wildlife habitat.

**Working Forest:** forest providing a broad range of goods and services, including forest products, recreation, fish and wildlife habitat, clean water, clean air, and carbon sequestration.

**Working Forest Conservation Easement:** a working forest conservation easement (WFCE) removes an owner's rights to conduct certain activities such as subdivision, residential, or commercial development. It also adds language that informs forest management to protect specific forest values. WFCEs provide a means to address societal goals such as sustaining a regional economy and other important public values by protecting the forest land base on which they depend.



# Endnotes

- <sup>1</sup> Fernholz, K., J. Howe, and J.L. Bowyer. 2006. *Conservation Easements to Protect Working Forests*. Dovetail Partners, Inc. Minneapolis, Minnesota. <http://www.dovetailinc.org/reports/pdf/DovetailEasements0206lg.pdf> (accessed March 11, 2008).
- <sup>2</sup> U.S. Department of Labor statistics as reported in Minnesota Forest Industries' Fact Book. 2007. *A Lot Goes into Caring for our Forests*. Minnesota Forest Industries, Duluth, Minnesota. <http://www.minnesotaforests.com/resources/pdfs/2007factbook.pdf> (accessed March 11, 2008).
- <sup>3</sup> Large parcels were defined as greater than 500 acres in the document that established the federal Forest Legacy Program in Minnesota. Minnesota Department of Natural Resources. 1999. *The Forest Legacy Program in Minnesota: Statewide Assessment of Need*. Minnesota Department of Natural Resources, St. Paul, Minnesota.
- <sup>4</sup> Minnesota Department of Natural Resources. 1999. *The Forest Legacy Program in Minnesota: Statewide Assessment of Need*. Minnesota Department of Natural Resources, St. Paul, Minnesota.
- <sup>5</sup> For blufflands subsection alone. From: Minnesota Department of Natural Resources. 2006. *Tomorrow's Habitat for the Wild and Rare: An Action Plan for Minnesota Wildlife*. Minnesota Department of Natural Resources, St. Paul, Minn.
- <sup>6</sup> Minnesota State Demographic Center. 2007. *Minnesota Household Projections 2005-2035*. Minnesota State Demographic Center, St. Paul, Minnesota. <http://www.demography.state.mn.us/projections.html> (accessed March 11, 2008).
- <sup>7</sup> M. Kilgore and D. MacKay. 2006. *Trends in Minnesota's forest land real estate market: implications for forest management*. Northern Journal of Applied Forestry 24(1): 37-42.
- <sup>8</sup> *ibid.*
- <sup>9</sup> Hagan, J.M., L.C. Irland, and A.A. Whitman. 2005. *Changing timberland ownership in the Northern Forest and implications for biodiversity*. Manomet Center for Conservation Sciences, Report # MCCS-FCP- 2005-1, Brunswick, Maine.
- <sup>10</sup> Fernholz, K., J. Bowyer, and J. Howe. 2007. *TIMOs & REITs: What, why, and how they might impact sustainable forestry*. Dovetail Partners, Inc. Minneapolis, Minnesota. <http://www.dovetailinc.org/reports/pdf/DovetailTIMOREIT0507wo.pdf> (accessed March 11, 2008).
- <sup>11</sup> Davies, P. 2007. *Not out of the woods yet: The consequences of commercial timberland sales may not be as dire as some fear*. Federal Reserve Bank of Minneapolis, FedGazette, January 2007. <http://woodrow.mpls.frb.fed.us/pubs/fedgaz/07-01/forests.cfm?js=0> (accessed March 11, 2008).
- <sup>12</sup> Minnesota Forest Resources Council. 2006. *2005 annual report to the governor and legislature on the implementation of the Sustainable Forest Resources Act*. CP-0106. [http://www.frc.state.mn.us/Info/MFRCdocs/MFRC\\_annual\\_%20report\\_body.pdf](http://www.frc.state.mn.us/Info/MFRCdocs/MFRC_annual_%20report_body.pdf) (accessed March 12, 2008).
- <sup>13</sup> Kilgore, M. and D. MacKay. 2006. *Trends in Minnesota's forest land real estate market: implications for forest management*. Northern Journal of Applied Forestry 24(1): 37-42.

- <sup>14</sup> Mundell, J., S. Taff, M. Kilgore, and S. Snyder. 2007. *Assessing trends in forest parcelization and development in Minnesota: An Itasca County case study*. July 2007. the Minnesota Forest Resources Council, St. Paul, Minnesota.
- <sup>15</sup> This result is supported by studies using Forest Inventory and Analysis data for Minnesota, Wisconsin, and Michigan. Forums of forest stakeholders revealed that few participants saw benefits of parcelization and development. Most saw negative impacts on forest health and productivity, recreation and aesthetics, quality of life, and local infrastructure. Source: Gobster, P. *Parcelization and development of private forest lands in the northwoods*. <http://ncrs.fs.fed.us/4902/local-resources/documents/parcelization.pdf> (accessed March 12, 2008).
- <sup>16</sup> M. G. Rickenbach and P.H. Gobster. 2003. *Stakeholder's perceptions of parcelization in Wisconsin's north woods*. *Journal of Forestry* 101(6): 18–23.
- <sup>17</sup> Minnesota Forest Resources Council. 2007. *DRAFT: Biomass Harvesting on Forest Management Sites in Minnesota*. The Biomass Harvesting Guideline Development Committee. May 1, 2007. Minnesota Forest Resources Council, St. Paul, Minnesota.
- <sup>18</sup> Report to the Governor. July 2007. *Governor's Task Force on the Competitiveness of Minnesota's Primary Forest Products Industry*. <http://www.dnr.state.mn.us/forestry/taskforce/index.html> (accessed March 12, 2008).
- <sup>19</sup> W. D. Greene, T. G. Harris, Jr., C. E. DeForest, and J. Wang. 1997. *Harvesting cost implications of changes in the size of timber sales in Georgia*. *Southern Journal of Applied Forestry* 21(4): 193–98.
- <sup>20</sup> V. C. Mehmood and D. Zhang. 2001. *Forest parcelization in the United States: A study of contributing factors*. *Journal of Forestry* 99(4): 30–34.
- <sup>21</sup> J. Romm, R. Tuazon,, and C. Washburn. 1987. *Relating forestry investments to the characteristics of nonindustrial private forest land owners in northern California*. *Forest Science* 33: 197–209.
- <sup>22</sup> T. J. Straka, H. W. Wisdom, and J.E. Moak. 1984. *Size of forest holding and investment behavior of nonindustrial private owners*. *Journal of Forestry* 82: 495–96.
- <sup>23</sup> For example, brown-headed cowbirds, skunks, and raccoons reduce the nest success of interior forest-dwelling songbirds. G. R. Matlack and J.A. Litvaitis. 1999. *Forest edges*. pp. 234–64 in: M. L. J. Hunter, ed. *Maintaining biodiversity in forested ecosystems*. Cambridge University Press, Cambridge, U.K.
- <sup>24</sup> T. S. Brothers and A. Spingarn. 1992. *Forest fragmentation and alien plant invasion of central Indiana old-growth forests*. *Conservation Biology* 6: 91–100.
- <sup>25</sup> K. A. With. 2004. *Assessing the Risk of Invasive Spread in Fragmented Landscapes*. *Risk Analysis* 24: 803–15.
- <sup>26</sup> D. M. Theobald, J. R. Miller, and N.T. Hobbs. 1997. *Estimating the cumulative effects of development on wildlife habitat*. *Landscape and Urban Planning* 39: 25–36.
- <sup>27</sup> D. N. Wear, M. G. Turner, and R.J. Naiman. 1998. *Land cover along an urban-rural gradient: Implications for water quality*. *Ecological Applications* 8(3): 619–30.
- <sup>28</sup> S. LaPierre and R. H. Germain. 2005. *Forest land parcelization in the New York City watershed*. *Journal of Forestry* 103:139-145.

<sup>29</sup> This vision comes from the vision and goals established by the Minnesota Forest Resources Council and the DNR's *Strategic Conservation Agenda*.

<sup>30</sup> As described in: Minnesota Forest Resources Council. 1999. *Sustaining Minnesota Forest Resources: Voluntary Site-Level Forest Management Guidelines for Landowners, Loggers and Resource Managers*. Minnesota Forest Resources Council, St. Paul, Minnesota.

<sup>31</sup> Lind, B. 2001. *Working Forest Conservation Easements: A Process Guide for Land Trusts, Landowners and Public Agencies*. Land Trust Alliance, Washington, D.C.

<sup>32</sup> *ibid.*

<sup>33</sup> A new GIS-based tool developed by the Natural Resources Research Institute and The Nature Conservancy, the Forest Legacy Ecological Evaluation Tool (FLEET), could also be useful in deciding which land to protect. FLEET allows users to select criteria, vary their weight, and see how this affects the model's output.

<sup>34</sup> Periodic monitoring is essential to achieving the conservation goals of the easement and serves three essential purposes: 1) to ensure that there are no violations of the terms of the easement, 2) to discover and document any violations that have occurred, and 3) to establish and maintain a strong working relationship with the owner. More frequent monitoring may serve to limit the extent of violations and lead to quicker remediation and restoration of the property. The annual costs of monitoring need to be factored into the decision to acquire the easement.

<sup>35</sup> This is an existing measure in DNR's *Strategic Conservation Agenda*.

<sup>36</sup> This measure is not specific enough and difficult to measure accurately. The proposed Advisory Committee needs to consider an alternative to address the related strategy.



# Acknowledgements

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Cover and page 5 ....Snowmobilers: Deborah Rose, MN DNR

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p. 31.....Birdwatcher: John Gregor, Coldsnap Photography

p. 32.....Grouse hunter: Mark LaBarbera, MN DNR

p. 34.....Logger: John Gregor, Coldsnap Photography

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