

Sustainable Forest Resources Act Implementation in 2002



**Minnesota Forest Resources Council
Annual Report to the Governor and Legislature**

Thank You

Thank you to all of the organizations that continue to support and participate in the programs established by the Sustainable Forest Resources Act (SFRA) and coordinated by the Minnesota Forest Resources Council (MFRC):

Associated Contract Loggers
Audubon Minnesota
Blandin Foundation
Minnesota Association of County Land Commissioners
Minnesota Center for Environmental Advocacy
Minnesota Department of Natural Resources
Minnesota Department of Revenue
Minnesota Forest Industries
Minnesota Forest Resources Partnership
Minnesota Forestry Association
Minnesota Indian Affairs Council
Minnesota Logger Education Program
Minnesota Resort Association
Minnesota Timber Producers Association
Sierra Club
The Nature Conservancy
The Ruffed Grouse Society
USDA Forest Service
 Chippewa National Forest
 Superior National Forest
 North Central Research Station
 State and Private Forestry
University of Minnesota
 Southeast Regional Sustainable Development Partnership
University of Minnesota-Duluth
 Natural Resources Research Institute
 Bureau of Business and Economic Research
University of Minnesota-Twin Cities
 College of Natural Resources
 Center for Continuing Education
 Dean's Office
 Department of Forest Resources
 Extension Service

Thank you also to all of the individual citizens of Minnesota who participate in SFRA and MFRC programs.



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**Respectfully submitted
by the Minnesota Forest Resources Council**

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The Minnesota Forest Resources Council's Vision for Minnesota's Forest Resources

◆ Minnesota's forests are managed with primary consideration given to long-term ecosystem integrity and sustaining healthy economies and human communities.

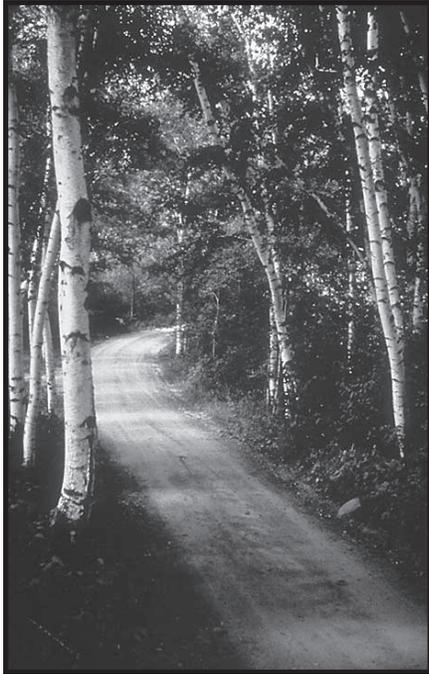
◆ Forest resource policy and management decisions are based on credible science, community values, and broad-based citizen involvement.

◆ The public understands and appreciates Minnesota's forest resources and is involved in and supports decisions regarding their use, management, and protection.

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Message from the Chair



The 2002 annual report of the Minnesota Forest Resources Council (MFRC) includes twelve major areas of accomplishment:

1. We completed draft plans for two major forested landscape regions in Minnesota, the Northeast and North Central landscapes.* We completed an economic analysis of draft landscape goals for these two regions.

2. Our landscape committees made significant progress in developing goals and strategies for three other forested landscape regions—the Southeast, West Central, and Northern landscapes.

3. We made major progress on our forest spatial analysis project to improve understanding of past, present, and possible future forest spatial patterns that are important for wildlife, forest productivity, outdoor recreation, and other forest values.

*See page 6, Figure 1, for a map of the MFRC's eight landscape program regions.

A final report on this project will be developed by June 2003. The report will help managers better assess:

- ◆ The effects of changing the size and type of harvest
- ◆ How natural disturbances interact with management practices
- ◆ How coordination across ownerships affects spatial patterns

4. We considered revisions to Minnesota's voluntary timber harvesting and forest management guidelines proposed by the public, a guideline technical review committee convened by the MFRC, and MFRC members. Agreement was reached on how to address each of these potential revisions.

5. We approved a timeline for review and revision of the next version of timber harvesting and forest management guidelines, based on changes made to the Sustainable Forest Resources Act (SFRA)** by the 2002 Legislature.

** Minnesota Statutes, Chapter 89A.

In 2003, the MFRC will decide which guideline recommendations will undergo peer review, and a peer review of those guidelines will be conducted. In 2004, the guidelines will undergo a final public review. If the MFRC decides that the guidelines should be revised, we expect that the MFRC will approve the new guidelines prior to the statutory deadline of June 2005.

6. We supported and monitored progress on an empirical research study to evaluate who pays for implementing the timber harvesting and forest management guidelines: loggers, forest landowners, or timber purchasers.

This study, to be completed in spring 2003, will serve as an important part of the economic analysis of the guidelines required by the SFRA. Subsequent research will focus on how much it costs to implement the guidelines, as well as on potential policy and legislative implications.

7. We supported and monitored progress on an ongoing research study funded by the Legislative Commission on Minnesota Resources and the MFRC to evaluate how well the timber harvesting and forest management guidelines protect forest resources, especially in forested riparian areas.

8. With the MFRC providing oversight and program direction, the Minnesota Department of Natural Resources (DNR) published results of the 2001 monitoring field reviews for 118 timber harvest sites on public and private forest land.

Additional monitoring field reviews were conducted for 102 timber harvest sites in 2002. The results from the first three years of monitoring field reviews (2000-02) will be published in 2003.

9. Eleven workshops titled “Protecting Site Quality: Forest Management and Timber Harvesting” were held in the fall of 2002 to assist in the increased application of those water and soil quality protection practices identified through guideline monitoring as having the lowest rates of implementation.

The 11 workshops attracted 952 participants, including 703 loggers and 249 resource managers.

The workshops were cosponsored by the Minnesota Logger Education Program and the University of Minnesota Center for Continuing Education, College of Natural Resources.

10. With the MFRC providing program advice and funding, the DNR undertook an evaluation of riparian areas in Minnesota and published the results in the report *Harvest of Riparian Forests in Minnesota: A Report to the Legislature*.

11. We initiated policy studies on the social aspects of forest-dependent community vitality and forest certification that will result in recommendations to the Legislature and public forest management agencies when the studies are completed in 2003.

12. Implementation of the Sustainable Forest Incentive Act* began this year. This act, designed to encourage private landowners to be better stewards, was largely the result of MFRC efforts.

More than 400 landowners enrolled 400,000 acres of forest land in this state-paid incentive program. These owners have made a long-term commitment to good stewardship and management of their land.

* Minnesota Statutes, Chapter 290C.

The MFRC focuses on a collaborative approach—rather than a regulatory approach—to forest management, which is far less expensive and at least as successful in the long run.

In Summary

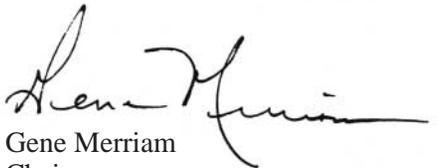
The MFRC focuses on a collaborative approach—rather than a regulatory approach—to forest management, which is far less expensive and at least as successful in the long run.

For the past seven years, the MFRC has provided a unique forum for collaborative problem-solving among diverse groups who are both interested in sustainable management of Minnesota’s forest resources and committed to cooperation in addressing the state’s forest resource issues.

The coming year will be another critical one for the MFRC and its work to implement the Sustainable Forest Resources Act (SFRA). Facing a significant state budget shortfall, the Legislature will need to decide whether the policies and programs established under the SFRA—including the MFRC—should be continued, and, if so, at what level of investment.

The Minnesota Forest Resources Council intends to build on its many accomplishments and continue to promote voluntary and incentive-based sustainable forest management policies and practices on all forest ownerships in Minnesota.

Sincerely,



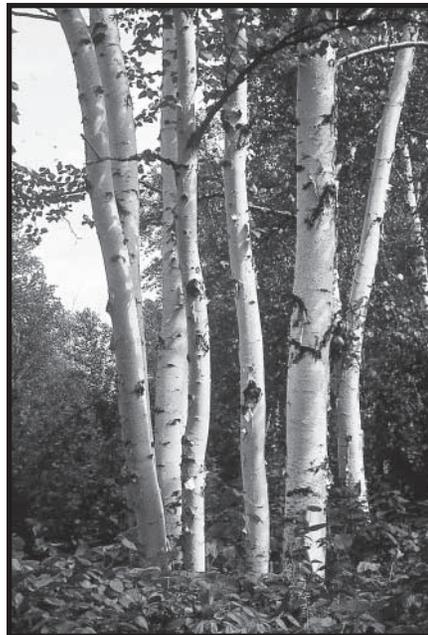
Gene Merriam
Chair

The Minnesota Forest Resources Council

The MFRC promotes long-term sustainable management of Minnesota's forests by coordinating implementation of the SFRA and advising the Governor and federal, state, county, and local governments on sustainable forest resource policies and practices.

The Minnesota Forest Resources Council (MFRC) is a 17-member organization promoting long-term sustainable management of Minnesota's forests.

The MFRC is responsible for implementation of the Sustainable Forest Resources Act (SFRA) and advises the Governor and federal, state, county, and local governments on sustainable forest resource policies and practices.



Created in 1995, the MFRC operates within the policy framework for sustainable forestry set forth in the SFRA, which is to:

◆ **Promote the sustainable management, use, and protection** of the state's forest resources to achieve the state's economic, environmental, and social goals.

◆ **Encourage cooperation and collaboration** between public and private sectors in the management of the state's forest resources.

◆ **Recognize and consider forest resource issues**, concerns, and impacts at the site and landscape levels.

◆ **Recognize the broad array of perspectives** regarding the management, use, and protection of the state's forest resources, and establish processes and mechanisms that seek these perspectives and incorporate them into planning and management of the state's forest resources.

The Governor appoints the chair and 15 members to the MFRC. The Minnesota Indian Affairs Council appoints one additional member. MFRC membership includes the chair plus individuals representing the following categories:

- Commercial logging contractors
- Conservation organizations
- County land departments
- Environmental organizations (two representatives)
- Forest products industry
- Game species management organizations
- Labor organizations
- Minnesota Department of Natural Resources
- Minnesota Indian Affairs Council
- Nonindustrial private forest landowners (two representatives)
- Research and higher education
- Resort and tourism industry
- Secondary wood products manufacturers
- USDA Forest Service

MFRC Collaboration with Other Sustainable Forestry Efforts

The MFRC coordinates its programs with other organizations that have complementary goals for sustainable forestry. In 2002, the MFRC placed particular emphasis on collaborating with two other organizations.

Working with the Blandin Foundation on Sustainable Forests for Vital Communities

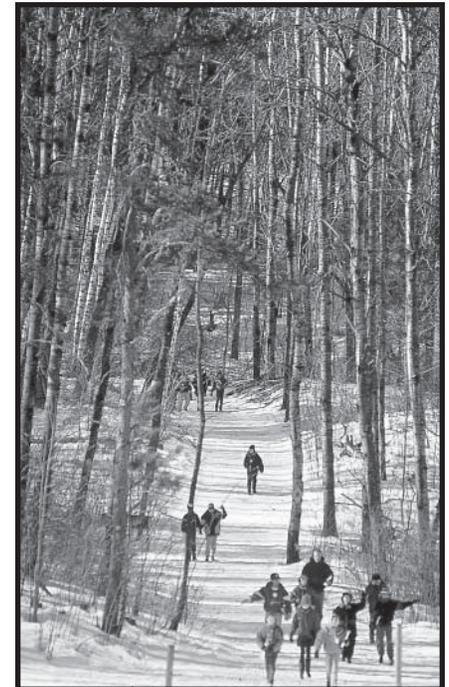
In 2002, the Blandin Foundation asked the MFRC to collaborate in developing a new public policy initiative, “Sustainable Forests for Vital Communities.”

The initiative—based on the premise that growing and managing healthy forest ecosystems makes environmental *and* economic sense—aims to:

- ◆ Help diversify Minnesota’s forest-based economy through collaborative approaches.
- ◆ Promote ecology-based forest management practices and help move research and knowledge into practice.
- ◆ Build public support for long-term investments in forests and natural resource management agencies and programs.
- ◆ Improve the effectiveness of public engagement in natural resource management processes.

In 2003, the MFRC will assist the Blandin Foundation in presenting a series of Minnesota Forestry Forums to focus public attention on the challenges and opportunities facing Minnesota’s forests, forest-based communities, and forest industries.

The Blandin Foundation, based in Grand Rapids, Minnesota, provides community leadership development and grants, and implements public policy initiatives focused on helping rural communities generate viable local economies.



Partnering with the Minnesota Forest Resources Partnership

The Minnesota Forest Resources Partnership (MFRP) was established in 1995 as a voluntary partnership of forest landowners, forest resource managers, and loggers.

Participants in the partnership include the Superior and Chippewa national forests in Minnesota, the DNR Division of Forestry, 13 county forestry organizations, five forest products companies, nonindustrial private forest landowners, and timber harvesters.

Formed prior to the passage of the SFRA, the Minnesota Forest Resources Partnership (MFRP) is referenced in the SFRA as playing a key role in implementing MFRC recommendations:

*“The partnership shall serve as a forum for discussing operational implementation issues and problem-solving related to forest resources management and planning concerns, and be responsive to the recommendations of the Minnesota Forest Resources Council. This partnership shall also actively foster collaboration and coordination among forest managers and landowners in addressing landscape-level operations and concerns.”**

In 2002, the MFRC and the MFRP focused on developing a more collaborative relationship.

Through cross-participation in each organization’s initiatives, formal meetings, and informal information-sharing forums, the MFRC and the MFRP are seeking closer alignment on both site-level and landscape-level implementation goals. The MFRC recognizes the important role that the MFRP plays in sustainable forestry implementation.



The MFRC and the MFRP are seeking closer alignment on both site-level and landscape-level implementation goals.

* Minnesota Statutes, Chapter 89A.04, Subd. 4.

Landscape-Level Forest Resource Planning and Coordination

Landscape-level forest resource planning and coordination promotes forest sustainability across large areas. The MFRC's landscape program provides a forum where forest landowners and stakeholders can collaboratively address forest resource issues over broad regions.

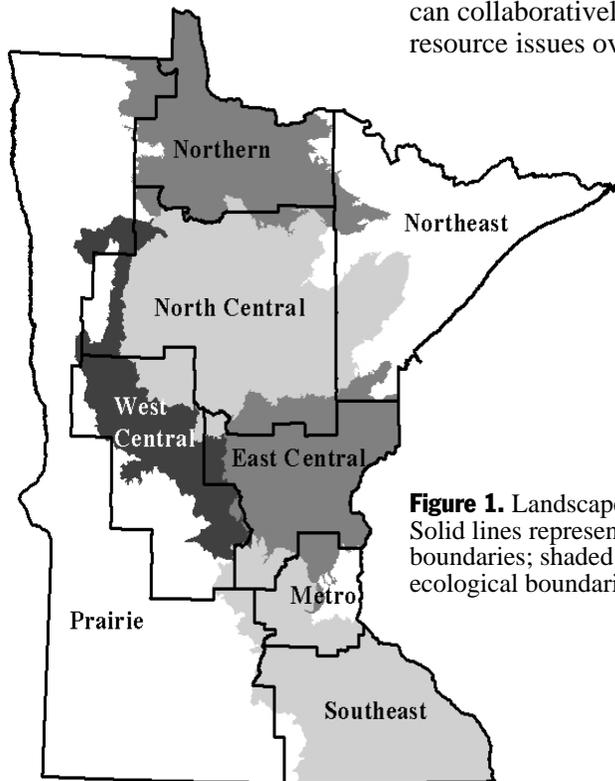


Figure 1. Landscape regions. Solid lines represent administrative boundaries; shaded areas represent ecological boundaries.

The MFRC divided the state into six forested regions plus two non-forested (Metro and Prairie) regions (Figure 1). In each region, committees of citizens and representatives of various organizations have been developed to:

- ◆ **Gather and assess information** on the region's economic, social, and ecological characteristics.
- ◆ **Identify key issues and plan ways to address those issues** to promote sustainable forest management.
- ◆ **Agree on desired future forest conditions that promote sustainable forests**, and on goals and strategies to achieve those conditions.
- ◆ **Coordinate agreed-upon strategies, activities, and plans** among forest landowners and managers to achieve desired future forest conditions.

SFRA Requirements

The past year has been one of significant expansion of the landscape program in the state. Three additional regional landscape committees have been organized, bringing the total to five forested landscapes (out of the six) that have committees established and are working on forest sustainability issues (Figure 2).

According to SFRA requirements, "...by June 20, 2003, desired future outcomes and strategies (will be developed) for all remaining regions except the Northern, East Central, Metropolitan, and Prairie regions. By June 30, 2004, the Northern Region must complete desired future outcomes and strategies, and by June 30, 2005, the East Central Region must complete desired future outcomes and strategies."*

* Minnesota Statutes, Chapter 89A.06, Subd. 2a.

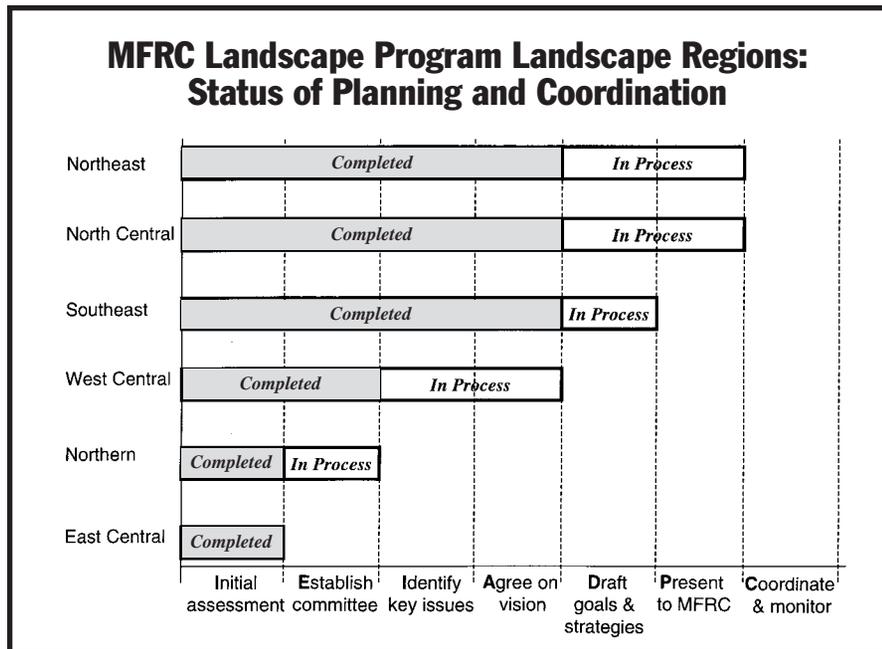


Figure 2. Status of planning and coordination in MFRC forested landscape regions.

Progress To Meet SFRA Requirements

◆ The Northeast and North Central regional landscape committees have developed a draft of desired future forest conditions, goals, and strategies. An economic impact analysis of the draft goals has been completed. The committees are in the process of making their final recommendations on the goals and strategies to the Council. 165 people have been involved in these two planning processes.

◆ Four reports were prepared by MFRC staff, summarizing 47 existing land use and comprehensive plans for the Southeast, West Central, Northern and North Central landscapes. Statements in existing plans that recur throughout landscapes provide useful background information for the regional committees in developing landscape goals and strategies.

◆ In cooperation with the University of Minnesota Southeast Rural Sustainable Cooperative, a regional committee has been established in the Southeast Landscape. Approximately two dozen people have participated and defined desired future outcomes. The committee is now developing goals and strategies.

◆ A regional committee was established for the West Central Landscape, with 20 people showing an interest in participating. The committee is gathering additional information and defining issues.

◆ The Northern Landscape held an organizational meeting in the fall, with more than 20 people expressing interest in participating. A committee is now established and is beginning to gather additional data and define issues.

Additional Accomplishments

Economic Analysis

An economic report titled *Forestry Bottleneck Analysis* was completed in September 2002 under contract with the University of Minnesota-Duluth Bureau of Business and Economic Research.

The study analyzed five different wood supply and species mix scenarios in both the Northeast and North Central landscapes. Several scenarios reflected an ecological emphasis, while others emphasized additional wood supply opportunities.

“Bottlenecks” (supply shortages by species) for each scenario were identified, as well as such impacts as employment and output, in order for each scenario to be compared with respect to their impacts on the landscape.

The report can be accessed at the MFRC website (www.frc.state.mn.us).

Ecological Analysis

The MFRC contracted with the University of Minnesota-Duluth Natural Resources Research Institute (NRRI) to develop a model that will predict changes in forest composition, age structure, and growth.

The project will work cooperatively with the Spatial Analysis Project (pages 9-11) to use forest growth modeling and spatial analysis tools to assess the effects of alternative forest management objectives on the structure, composition, and productivity of northern Minnesota forests.

The model will allow regional landscape committees to visualize how proposed management strategies will alter the regional landscape from its present condition.

The model also ties directly to analyzing the economic impacts of any proposed changes in management strategies by projecting changes in volume of forest stands.

NRRI continues to provide support to the Northeast and North Central landscape committees by analyzing current ecological conditions and the future effects of implementing landscape goals.

Other Accomplishments

Interest remains high in established landscape committees, with a total of more than 150 citizens and interested groups on the mailing list and about half actively participating in regular meetings.

In addition, landscape information and staff expertise are shared by and influence USDA Forest Service, DNR, and county planning across the landscape.

The landscape program hosted a meeting of all agency, research, and private organizations involved in forest planning in northern Minnesota for the purpose of sharing information.

While the benefits of working together, sharing information, and coordinating planning across land management agencies may not be easy to measure, these activities are major contributors to implementing sustainable forest management in Minnesota.

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Future Direction

Future direction will continue to focus on meeting the intent of the SFRA by implementing the landscape program in all landscape regions of the state by July 2005. This effort will include:

- ◆ Completing desired future outcomes and strategies by June 2004 in the Northern Landscape.

- ◆ Establishing a regional landscape committee in the East Central Landscape by winter 2004 and completing desired future outcomes and strategies by June 2005.

- ◆ Developing landscape assessments for the Metro and Prairie regions by June 2005.

The Northeast and North Central regional landscape committees will shift from planning to a focus on landowner coordination of strategies that will accomplish landscape goals and desired conditions across all ownerships in the landscape region.

This shift, from planning to coordination across all ownerships, is vital to on-the-ground implementation of the SFRA and will occur in all landscape regions as goals and strategies are completed.

Forest Spatial Analysis and Modeling Project

The MFRC's forest spatial analysis project is developing tools, conducting analyses, and assessing the value and limitations of using spatial pattern data in forest management.

Forest spatial patterns are important for numerous forest values, including wildlife, forest productivity, and outdoor recreation. For example:

- ◆ Some species require large patches of forest, while others require smaller patches of several forest types in close proximity.
- ◆ Forest productivity depends on spatial patterns of soils and landforms, and costs associated with logging vary according to harvest size and arrangement on the landscape.
- ◆ Spatial patterns affect a whole range of outdoor recreational opportunities, such as hunting, birdwatching, hiking, and off-trail vehicle use.

Despite the importance of spatial patterns, they have not been assessed comprehensively in Minnesota, and a lack of information on spatial patterns has contributed to controversy.

The MFRC's forest spatial analysis project was initiated in 2000 to improve understanding of past, present, and possible future forest spatial patterns. The project is developing tools, conducting analyses, and assessing the value and limitations of using spatial pattern data in forest management.

The study area includes the Drift & Lake Plains and Northern Superior Uplands ecological sections in Minnesota (Figure 3).

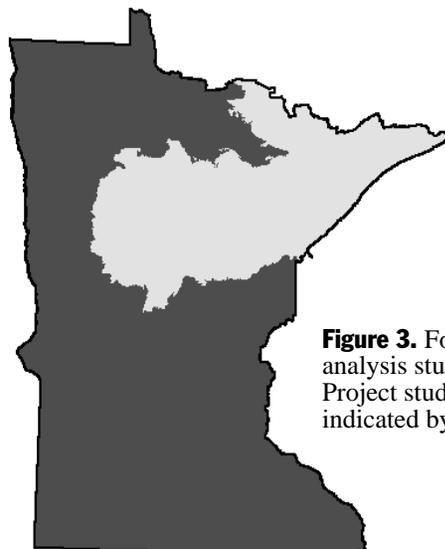


Figure 3. Forest spatial analysis study area. Project study area is indicated by light shading.

Components of the Spatial Analysis Project

The project has several components, including:

- ◆ Making maps of past and current spatial patterns.
- ◆ Measuring spatial patterns on these maps and assessing changes.
- ◆ Modeling future scenarios.
- ◆ Assessing implications of past and potential future changes.
- ◆ Evaluating methods and analyses.

Making Maps

Aerial photo interpretation

The project identified 42 randomly located blocks (nine square miles each) throughout the study region. For each of these blocks, aerial photos were located from the 1930s, 1970s, and 1990s.

During this past year, forest cover types and age classes were delineated and converted to computer format (Geographic Information System or GIS) for all blocks and the three time periods. Figure 4 shows an example of change in urban area for one of the blocks.

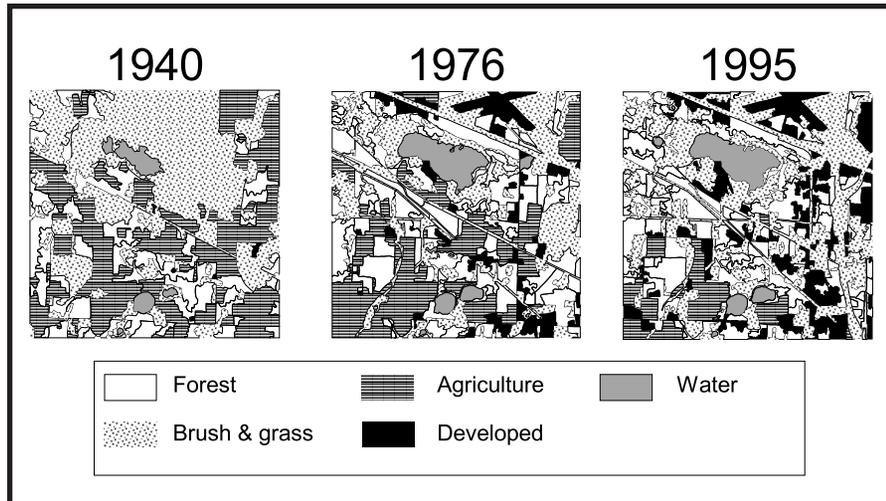


Figure 4. Example of aerial photo interpretation, depicting change in urban area in one of the study blocks.

When analysis of all of the sites is completed in early 2003, forest landowners, managers, and policy-makers will have an overall picture of change in spatial patterns in the study area.

Public Land Survey line-note interpretation

When surveyors conducted the original Public Land Survey (PLS) from 1847-1908, they noted vegetation and disturbance (including burns and blow-downs) as they walked and marked section lines. During 2001-02, line-notes from 168 townships in the study area were converted to computer GIS format (four township blocks surrounding the 42 aerial photo block locations).

Analysis of this data set, to be completed in early 2003, will help improve our understanding of pre-European disturbance patterns and how they affected Minnesota's forests.

1990s satellite data

During this past year, spatial patterns were measured over the whole study area using satellite data from the 1990s. A draft report of results was completed, and the final report will be completed in early 2003.

Future Modeling

This project is using two different models to examine potential changes in forest spatial patterns given different management scenarios. For example:

- ◆ What are the effects of changing the size and type of harvest?
- ◆ What are the best strategies for maintaining larger forest patches?
- ◆ How do natural disturbances interact with management practices?
- ◆ How does coordination across ownerships affect spatial patterns?
- ◆ What are the economic costs of different spatial management strategies?



One of the models was designed to examine ecological and management interactions at a large scale. The other model examines economics of different spatial and economic objectives. For both modeling efforts, draft reports have been completed, and final reports will be available in early 2003.

Wildlife Effects Analysis

This project will examine the implications of changes in spatial patterns for plant and animal species. Methods of analysis are currently being finalized. The work will be conducted from January to June 2003.

Project Participants

Financial and In-kind Sponsors

Financial sponsors of the project are the MFRC, DNR, Minnesota Forest Industries and its members, The Nature Conservancy, and Audubon Minnesota.

In addition to financial sponsors, several institutions are contributing staff time. These cooperators include the USDA Forest Service, NRRI, the University of Minnesota College of Natural Resources (CNR), the Minnesota Association of County Land Commissioners, and others.

Strategic and Technical Leadership Teams

The MFRC formed two interdisciplinary, multi-stakeholder teams to design and carry out the spatial analysis project:

◆ **The Project Strategy Team (PST) provides strategic leadership** and developed the initial vision and questions for the project. The PST has 11 members from a variety of organizations, including public land management agencies, environmental groups, forest industry, conservation groups, and research organizations.

◆ **The Project Technical Team (PTT) provides technical leadership** and develops the methods to answer questions posed by the PST. Members are scientists from a wide range of organizations, each with expertise in at least one of the following fields: remote sensing, landscape ecology, wildlife management, forest biometrics and modeling, and GIS.

The collective expertise of all team members will ensure that project outcomes and results are relevant and credible. The two teams met extensively throughout 2000-2002 and will continue to guide the project through completion in June 2003.



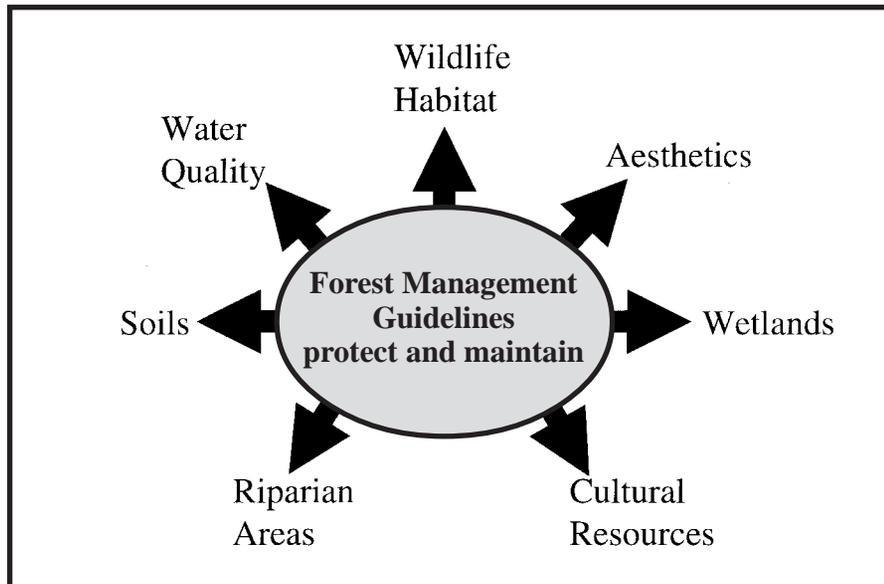
The collective expertise of all team members will ensure that project outcomes and results are relevant and credible.

Guideline Review and Revision

The development and publication of the comprehensive timber harvesting and forest management guidelines in March 1999, in the guidebook titled *Sustaining Minnesota Forest Resources: Voluntary Site-Level Forest Management Guidelines*, was a core mandate in the SFRA and a major MFRC accomplishment.

In passing the SFRA, the Minnesota Legislature anticipated the need to periodically review and revise the guideline recommendations.

Figure 5. Topics addressed by voluntary site-level forest management guidelines.



Specifically, the original statutory language stated that, “By June 30, 2003, the MFRC shall review and, if deemed necessary, update the guidelines.”*

As a consequence of funding reductions to the MFRC, guideline review and revision time frames were modified in Minnesota state law by the 2001 Legislature. The new statutory language states that: “...By June 30, 2003, the MFRC shall review the guidelines and identify potential revisions. If deemed necessary, the MFRC shall update the guidelines by June 30, 2005.”**

The MFRC approved a revised timeline for guideline review and revision based on the statutory changes. There are six broad steps for revising the guidelines:

- ◆ The MFRC approves proposed guideline revision language (June 2003).
- ◆ Complete economic study that assesses what entities bear the cost of guideline application (June 2003).

- ◆ Complete peer review of proposed guideline revisions (December 2003).

- ◆ Complete public review of proposed guideline revisions (June 2004).

- ◆ Modify guideline revision language based on all reviews (November 2004).

- ◆ Publish revised guidebook (May 2005).

The MFRC staff proposed guideline revision language based on public review comments received by December 2001, as well as recommendations by the MFRC’s Guideline Review Technical Committee. Numerous minor and substantive recommendations for guideline revision were received.

The MFRC approved all of the proposed revisions in 2002 and provided direction to MFRC staff on developing final revision language for the remaining pertinent recommendations proposed by the public and the Guideline Review Technical Committee.

* Minnesota Statutes, Chapter 89A.05, Subd. 1. (2001)

** Minnesota Statutes, Chapter 89A.05, Subd. 1. (2002)

MFRC Research

An MFRC-funded study will evaluate who bears the cost of implementing Minnesota's timber harvesting and forest management guidelines. This is the first empirical (on-the-ground) study of this type ever done in Minnesota.

MFRC-Sponsored Forest Resources Research

Research projects funded by the MFRC meet the research goals listed in the SFRA.

In selecting projects for funding, the MFRC strives to:

- ◆ Support collaboration among organizations that conduct forest resources research.
- ◆ Link forest resources researchers of various disciplines.
- ◆ Maintain interaction and communication between researchers and practitioners in the development and use of forest resources research.



Projects Initiated or Continued in 2002

During 2002, one MFRC-funded study was initiated, and work continued on a multi-year study that is partially funded by the MFRC. Results from both of these studies will be used in combination with previous studies to review and, if deemed appropriate by the MFRC, revise the voluntary site-level timber harvesting and forest management guidelines.

Empirical Analysis of Timber Harvesting and Forest Management Guideline Financial Impacts

The MFRC initiated a study undertaken by University of Minnesota researchers to determine who bears the cost of implementing Minnesota's timber harvesting and forest management guidelines (i.e., loggers, landowners, and/or timber purchasers). The DNR and the St. Louis County Land Department are cooperators on this project. This is the first empirical (on-the-ground) study of this type ever done in Minnesota.

The study's purpose is to assess who incurs any additional costs or benefits as a result of implementing Minnesota's timber harvesting and forest management guidelines.

Study objectives include:

◆ Testing whether or not loggers differentiate timber markets as reflected in their willingness to pay for stumpage (standing trees to be harvested) based on the requirement to use certain guidelines.

◆ Assessing the size of any difference in stumpage bidding when the timber sale requires the logger to follow certain timber practices recommended in the forest management guidebook.

◆ Identifying additional administrative costs associated with incorporating guidelines into timber sales that may be borne by public land management agencies (landowners).

Any differential in willingness to pay for stumpage based on the requirement to use guidelines will identify the extent to which these costs or benefits are passed on to landowners as opposed to being incurred by loggers.

The study will not determine the actual difference in costs associated with logging individual tracts of timber with and without the use of certain guidelines. This will need to be assessed in a subsequent study.

This study was designed to enable follow-up work that assesses differences in actual logging costs attributed to applying guidelines.

All timber tracts used in this study will be auctioned off by January 31, 2003. One-half of the timber sales will be randomly selected to be sold with the requirement to use the guidelines stated in the bid specifications. The remaining timber sales will be sold without the requirement to use the specified guidelines.

The study's investigators will begin analyzing the logger bidding and administrative information collected from the study's 28 timber sales once all timber sales have been auctioned. The investigators anticipate submitting a final study report to the MFRC in spring 2003.

When completed, this study will provide an important part of the economic analysis of revised guidelines required by the SFRA.

Evaluating the Sustainability of Timber Harvesting and Forest Management Practices in Riparian Areas

Because this research supports the goal of understanding the effectiveness of applying voluntary forest management and timber harvesting guidelines, this research is described in the Effectiveness Monitoring section of this report (page 17).



Monitoring

Four Types of Monitoring



The SFRA obligates the DNR and the MFRC to establish a program to monitor the **use** of the timber harvesting and forest management guidelines. This initiative is called **compliance monitoring**.

The SFRA requires the DNR to undertake a program that evaluates the **effectiveness** of the timber harvesting and forest management guidelines to protect specific resource functions. This initiative is called **effectiveness monitoring**.

The DNR, in consultation with the MFRC, is also required to accelerate monitoring the extent and condition of riparian forests, the extent to which monitoring occurs in riparian management zones and seasonal ponds, and the **use and effectiveness of timber harvesting and forest management guidelines in protecting riparian management zones** and seasonal ponds. This initiative is called **riparian monitoring**.

The DNR, with oversight by the MFRC, is also required to establish a program for **monitoring broad trends and conditions** in the state's forest resources at statewide, landscape, and site levels. This initiative is called **future resource monitoring**.

These four types of monitoring are described in the following sections.

Compliance Monitoring

The SFRA mandates that the DNR, with program oversight and direction provided by the MFRC, monitor the application of timber harvesting and forest management guidelines on public and private forest land in Minnesota.

Compliance monitoring is the process of identifying and recording the combination of guidelines applied to protect specific resource functions and values on a site

where timber harvesting or other forest management activity is conducted. The monitoring program for Minnesota is based on the guidelines contained in the guidebook *Sustaining Minnesota's Forest Resources: Voluntary Site-Level Forest Management Guidelines*.

Site selection methodology for the 2001 field reviews was similar to that used in 2000. Blocks of land one-half township in size were randomly selected throughout the forested area of Minnesota. Complete aerial photography of these one-half townships was used to identify recently harvested forest land.

Where sites were identified, permission was requested of the landowner to permit guideline monitoring on their property. Field evaluations were conducted by independent contractors, who were provided with forms to collect data on the application of measurable timber harvesting and forest management guidelines.

It is important to understand that the monitoring results in 2001 are considered to be baseline, except for water quality and wetlands protection guidelines.

The monitoring sites were harvested and/or stumpage sold prior to publication of the comprehensive timber harvesting and forest management guidelines in 1999.

In 2001, 118 timber harvest sites were monitored. The results for monitoring in 2001 are contained in the report *Monitoring the Implementation of the Timber Harvesting and Forest Management Guidelines on Public and Private Forest Land in Minnesota: Report 2001*.

Timber harvest sites were evaluated on state, county, USDA Forest Service, private industrial, and non-industrial private forest land. The number of sites monitored in each landowner category is presented in Table 1.

Number of Sites Monitored by Landowner Category	
State	44
County	32
USFS	12
Private industrial	7
Nonindustrial private	23
Total	118

Table 1. Number of sites monitored by landowner category.

It is important to understand that the monitoring results in 2001 are considered to be baseline, except for water quality and wetlands protection guidelines.

Some of the important findings from monitoring in 2001 are given below. In general, the results from 2001 are similar to what was reported for 2000.

- ◆ 24% of the monitored sites were visually sensitive. Landowners and loggers were aware of the visual sensitivity classification on 39% and 18% of these sites, respectively.
- ◆ Filter strip compliance with the guideline recommendation (< 5% mineral soil exposure, dispersed over the filter strip) averaged 62%, ranging from 74% for water bodies adjacent to the harvest area to 52% for those water bodies located within the harvest area.

- ◆ For lakes, perennial streams and open water wetlands, 44% of riparian management zones (RMZs) met the guideline recommendations for width and residual basal area.

A higher proportion of RMZs that met the guideline recommendations were adjacent to the harvest area, compared to those for water bodies that were within (that is, open water wetlands) or traversed (that is, perennial streams) the harvest area.

- ◆ Only 4.5% of skid trail and road approaches to wetlands and streams had the appropriate water diversion devices installed to divert surface runoff from directly entering these water bodies.

- ◆ The guidelines recommend that site infrastructure (i.e., roads, landings) occupy no more than 3% of the harvest area. The state-wide average was 3.2%.

- ◆ Landings were located outside of filter strips and RMZs 77% and 94% of the time, respectively.

- ◆ Slash was retained at the stump or redistributed back on the site for 81% of the sites monitored.

- ◆ Rutting was found on 30% (35 of 118) of the sites monitored. Rutting was confined to roads and skid trails on only 16 of these 35 sites.



◆ Skid trails were found to occupy less than 15% of the harvest area for 83% of the sites monitored.

◆ A total of 63% of the clearcut sites met the leave tree guideline recommendations.

Monitoring results from 2000 and 2001 provided the focus for natural resource manager and logger workshops held in the fall of 2002. (For more information on these workshops, see the Education section, page 20-21). The workshops focused on aspects of the guidelines where monitoring indicated that compliance levels were low.

Compliance Monitoring in 2002 and Beyond

Field monitoring of 108 timber harvesting sites was completed in 2002. Although many of these sites were considered baseline sites, a few of the timber harvest sites were harvested or contracted for harvest post-guidebook publication and will not be evaluated as baseline data.

For compliance monitoring in 2002, the site selection methodology was modified to test the effectiveness of employing satellite imagery in combination with aerial photography to improve the capabilities of the DNR to identify potential timber harvesting sites.

The DNR will not conduct the field portion of the compliance monitoring program in 2003, due in part to resource and funding limitations. However, other aspects of monitoring will continue. It is expected that field monitoring will resume in 2004. The DNR will use this time to accomplish the following:

◆ Prepare a three-year summary report of baseline guideline conditions (2000-2002).

◆ Evaluate the compliance monitoring program and make revisions based on experience from the three years of monitoring. This effort will include an assessment of the resources needed by the DNR and the MFRC to most effectively and efficiently accomplish monitoring.

◆ Revise the monitoring database program to improve the efficiency of analysis.

◆ Continue with riparian monitoring in 2002, with a report being submitted as required by the SFRA.

◆ Expand monitoring efforts to evaluate trends and conditions of forests in Minnesota, including evaluations of the extent of terrestrial timber harvests in Minnesota and trends in forest land use change (see the Future Resource Monitoring section, page 18).

Effectiveness Monitoring

At the MFRC's request, in 2000 a proposal was submitted to the Legislative Commission on Minnesota Resources (LCMR) by the University of Minnesota to evaluate how well the MFRC's forest management and timber harvesting guidelines protect forest resources in riparian areas within northern Minnesota.

The 2001 Legislature appropriated \$200,000 in the 2002-03 biennium for the project titled *Evaluating the Sustainability of Timber Harvesting and Forest Management Practices in Riparian Areas*. These funds can be carried over until June 30, 2004. Objectives include the following:

◆ Locate and establish two treatment areas within each of seven to ten different northern Minnesota watersheds.

◆ Collect pre-harvest baseline data on tree and plant regeneration, aquatic habitat health, and terrestrial wildlife habitat features.

◆ Carry out treatments within each treatment area.

◆ Monitor harvesting impacts for one year after harvest.

In 2002 the MFRC provided \$32,000 in supplementary funding for the site selection and project set-up process, as well as to support additional data collection and analysis. To date, the MFRC funding has been used to accelerate site selection and project set-up.

A proposal was submitted to the LCMR to continue funding through the 2004-05 biennium. Funding would have been used to collect post-harvest data that could help provide a better understanding of the initial response to treatments. The LCMR did not recommend funding for this project.

Limited funds from other sources are available to provide continuing support for some of the aquatic research, but no other project components have continuing support.

There is a need to obtain continued project funding for up to 10 years to adequately monitor post-harvest impacts. The MFRC is actively working with University of Minnesota researchers and other partners to obtain funds for this important guideline effectiveness monitoring research.

Riparian Monitoring

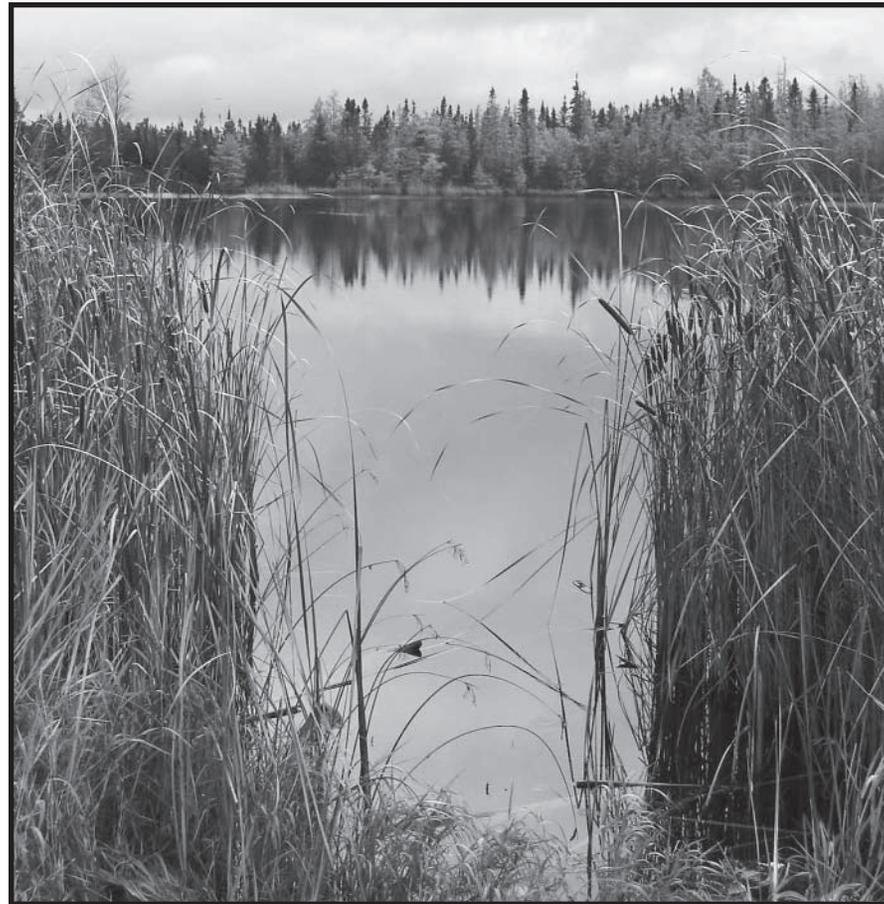
The SFRA directs the DNR, with program advice from the MFRC, to accelerate efforts to monitor the trends and conditions of riparian areas in Minnesota. The SFRA states:

*“Monitoring riparian forests. The commissioner, with program advice from the MFRC, shall accelerate monitoring the extent and condition of riparian forest, the extent to which harvesting occurs within riparian management zones and seasonal ponds, and the use and effectiveness of timber harvesting and forest management guidelines applied in riparian management zones and seasonal ponds.”**

An evaluation of harvesting within riparian management zones (RMZs) was completed and the results published and submitted to the Minnesota Legislature, the DNR, and the MFRC in June 2002.

The analysis was completed by:

- ◆ Mapping forested riparian management zones.
- ◆ Selecting a representative sample of forest harvest sites.



- ◆ Quantifying the relationship between satellite-derived data and photo-interpreted data on harvest.

- ◆ Calculating statewide harvest estimates.

The report, titled *Harvest of Riparian Forests in Minnesota: A Report to the Legislature, DNR Document MP-0602*, includes a thorough

discussion of the methodologies used to determine riparian harvests. The report can be viewed on the MFRC website in PDF format at www.frc.state.mn.us.

The estimate of annual statewide harvest in RMZs for the period between August 1999 and July 2001 was 10,145 acres, or approximately 6% of the total statewide acres harvested.

This represents approximately 0.4% of the total acres of forested RMZs. An analysis of timber harvesting in RMZs will be done for at least one more year.

Future Resource Monitoring

In consultation with the MFRC, the DNR will expand monitoring efforts to evaluate trends and conditions of forests in Minnesota. This expansion will include continuing efforts to evaluate the extent of timber harvests.

In addition, the DNR Resource Assessment Unit will evaluate trends in forest land use change, with a focus on regional loss of forest land, spatial configuration of timber land and forest land, and parcelization by region and county.

This analysis will include changes from: 1) forest to harvested forest; 2) forest to urban development; 3) forest to water; and 4) forest to agriculture.

* Minnesota Statutes, Chapter 89A.05, Subd. 4.

Public Concerns Registration Process

The Public Concerns Registration Process (PCRP) was set up in 1998 *to accept comments from the public on negligent timber harvesting and forest management practices.** The PCRP provides a way for citizens to inform landowners, foresters, and loggers of specific concerns about timber harvesting and forest management practices that they see in Minnesota. Since its inception in 1998, the PCRP has received a total of 15 concerns.

Although it is not a regulatory or punitive program to stop timber harvests or resolve disputes over contractual issues or forest management activities, the PCRP does encourage sustainable management of Minnesota's forests by emphasizing education of those involved.

* Minnesota Statutes, Chapter 89A.07, Subd. 5.

Benefits of the PCRP

Citizens benefit by:

- ◆ Formally letting the MFRC know their concerns about forest management activities they see.
- ◆ Being a catalyst for mitigation of any problems on a site.
- ◆ Learning more about forest management and sustainable forestry.

Landowners, loggers, and foresters benefit by becoming more aware of public concerns regarding forest management, and by learning more about guidelines for sustainable forest management.

The MFRC benefits from receiving summaries of concerns registered through the PCRP. These summaries help the MFRC understand citizens' expectations for how Minnesota's forests should be managed.

The MFRC can use these insights to decide which, if any, additional guidelines are needed and to identify continuing education programs needed for forest managers, forest owners, loggers, and citizens.



Addressing PCRP Concerns

In 2002, three citizens contacted the PCRP, although only one formal concern was registered.

The concern dealt with an issue of rutting on skid trails that occurred during a recent harvest in Mille Lacs County. The timing of the harvest (May and June) contributed to the degree of rutting.

The landowner and logger were contacted and given educational material relating to forest management and visual quality. They also received fact sheets on managing water quality and water body crossings.

The registered concerns through the PCRP provide an opportunity to improve knowledge of forest management and communicate ways to mitigate impacts on the sites involved.

Education

Approximately 80% of Minnesota's annual timber harvesting is done by MLEP member businesses, who are trained in MFRC's voluntary guidelines.

As a result of the SFRA, two continuing education programs were established:

- ◆ Loggers and partner organizations created the Minnesota Logger Education Program (MLEP) to promote high operational standards and enhance professionalism for loggers.
- ◆ The Center for Continuing Education in the University of Minnesota College of Natural Resources (CNR-CCE) was established to provide innovative education programs for natural resource professionals.

Continuing Education for Loggers

In 2002, MLEP achieved a membership of 565 logging business owners and associates. Approximately 80% of Minnesota's annual timber harvesting is done by MLEP member businesses, who are trained in MFRC's voluntary guidelines.

In addition, an important training program was conducted cooperatively by MLEP and CNR-CCE for loggers and resource managers. Forest management guideline monitoring results from 2000 and 2001 directed the areas of focus for the training:

- ◆ Eleven "Protecting Site Quality: Forest Management and Timber Harvesting" workshops were held in the fall of 2002 to assist in the increased application of those water and soil quality protection practices identified through compliance monitoring as having the lowest rates of implementation.

Field-training sites were developed throughout the state to demonstrate field implementation of the water quality practices. The workshops drew 952 participants, including 703 loggers and 249 resource managers.

- ◆ Delivery of "Introduction to Timber Harvesting and Forest Management Guidelines" continued in 2002, with one classroom and one field session offered at the University of Minnesota Cloquet Forestry Center.

Primary participants assisting in the development of the continuing education activities include MLEP, University of Minnesota, DNR, USDA Forest Service, county land departments, Minnesota Forestry Association, and the primary forest products industry.

Continuing Education for Natural Resource Professionals

The CNR-CCE continues to be an active MFRC partner in promoting excellence in natural resource management. It offers a broad range of technical and professional education programs for practicing natural resource managers in all sectors of the forestry profession.

CNR-CCE has been a co-leader in the planning and implementation of guideline education programs. During 2002, their workshops were attended by nearly 900 participants.

In 2002, educational programming for natural resource professionals included workshops targeted at forest management guidelines, new research findings, and new technologies.

Training on timber harvesting and forest management guidelines included a continuation of the introductory and field sessions for the forest management guidelines, as well as developing the curriculum and instructor training for the fall 2002 workshops titled "Protecting Site Quality: Forest Management and Timber Harvesting." Eleven sessions were held around the state.

In January 2002, CNR-CCE held a popular and successful symposium titled "Forest Research Review." The MFRC was a financial sponsor of this symposium. The symposium attracted 190 participants, with an additional 60 interested professionals placed on the waiting list. Because of the high level of interest demonstrated for this type of program, the Forest Research Review will become an annual event.

Other educational programs offered during 2002 included the following:

- ◆ Small Business Management for the Consulting Forester
- ◆ Fire, Wind, and Landscape Structure in the Lake States Forests: Natural Range of Variability (3 sessions)
- ◆ Fundamentals of Global Positioning Systems in Forest Management (3 sessions)
- ◆ Beneficial Use of By-products as Soil Amendments: Preliminary Research Outcomes and Future Prospects
- ◆ Forest Hydrology
- ◆ Identifying Plants to Classify Forest Habitats
- ◆ Reaching Out to Forest Landowners: Understanding New Tax Laws, Landowner Characteristics, and Marketing Techniques
- ◆ Timber Harvesting: Financial Risk Analysis



In addition to workshops and conferences, CNR-CCE manages a database that tracks CEU credits for the Minnesota Forest Stewardship Program.

Plan preparers are now required to complete 60 units of continuing education every three years if they are to be "approved" and eligible to write plans for nonindustrial private forest landowners.

This new requirement is the first official "approval/certification" program for foresters in Minnesota and is receiving high participation due to the criteria established for participation in the newly passed Sustainable Forest Incentive Act (pages 24-25).

Forest Information

Interagency Information Cooperative

The Interagency Information Cooperative (IIC), created in response to the SFRA, was designed to increase information-sharing among agencies involved in forest resources. The SFRA assigns responsibility for coordination of the IIC to the DNR.

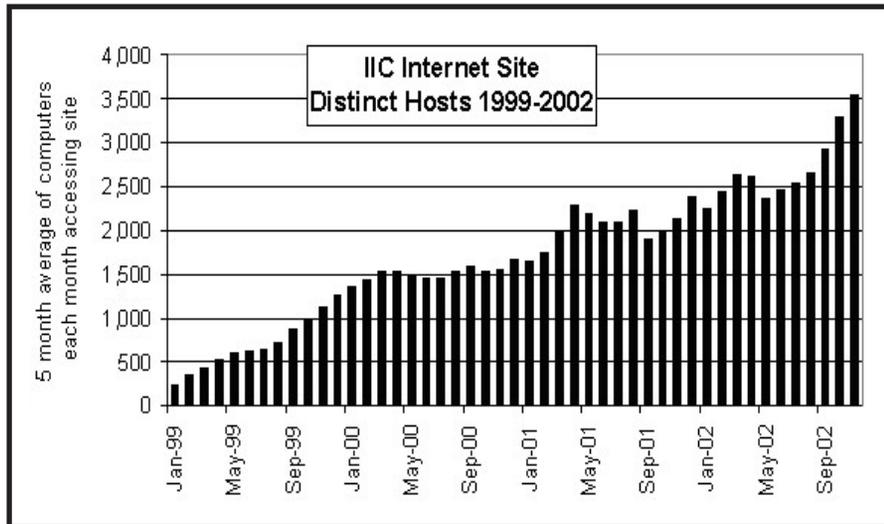


Figure 6. Unique computers accessing the IIC website daily, totaled for each month.

In 2002, IIC activities were limited to a website (www.iic.state.mn.us) that provides the public with references to forest resources data in Minnesota. Usage of data available on the website continues to increase since its inception in 1999 (Figure 6).

Another important function of the IIC in the past was to conduct meetings with its members to assess new opportunities for increased interagency information-sharing. Due to reduced DNR and MFRC funding in recent years, these meetings have not been held. As a result, IIC has not been entirely successful in achieving the information management goals assigned to it under the SFRA.

The IIC has the potential to improve forest sustainability through expanded information-sharing and use of the website. However, the IIC has lacked adequate funds, leadership, and staff to meet its goals. The absence of primary funds makes cost-sharing unattractive to most of the groups involved, including the MFRC. In the future, the MFRC hopes to obtain support and funding in order to reinvigorate the IIC.

Information Management Committee

This year, MFRC's Information Management Committee (IMC) began a project to obtain information in one of the areas of need identified in *Review of Availability and Accuracy of Information about Forests* (The Irland Group 2001). The IMC determined that the most important information gap is the lack of good estimates of statewide harvest by acres.

Surveying public landowners may be the best method for obtaining better estimates of the acres harvested, broken out by various cover types. Development of the survey and a database for management of the information is under way. The results of this initiative will help the MFRC better define sustainable timber harvest levels by acres.

Outreach

Disseminating Information

The MFRC conducts a number of different outreach efforts:

- ◆ The MFRC regularly posts new reports and information on its website, www.frc.state.mn.us



- ◆ The MFRC appears periodically in the press. Recent articles and citations include coverage of the MFRC's landscape planning program, discussion of ongoing research, and an announcement of an MFRC member replacement.

Encouraging Participation

The MFRC and SFRA programs benefit from the participation of individuals interested in forest resources in Minnesota. There are many ways to become involved:

- ◆ Attend MFRC meetings. A listing of scheduled meetings is posted on the Internet at www.frc.state.mn.us/Info/calendar.htm, or call 651-603-0109 for meeting dates.

- ◆ Participate in the landscape regional committees. Contact Dave Miller for more information at 218-720-4256 or dmiller@nrri.umn.edu

- ◆ Use the Forest Management Guidelines. They are available on the Internet at www.frc.state.mn.us/FMgdline/Guidebook.html, or contact the MFRC, 651-603-0109, for a paper copy.

- ◆ Notify the MFRC of specific timber harvesting or forest management activities that concern you. Call toll-free 1-888-234-3702, or register your concern online at www.frc.state.mn.us

- ◆ Attend forest resources educational programs. Additional information can be obtained from the CNR-CCE at 612-624-4986 or www.cnr.umn.edu/CCE/calendar.html and from MLEP at 218-722-5442 or www.mlep.org

- ◆ Access information on forest resources data from the IIC at www.iic.state.mn.us

Strategic Forest Resource Issues

The Sustainable Forest Incentive Act provides a state-paid incentive to owners of forest land who are willing to make a long-term commitment to good stewardship and management of their land.

Minnesota's forests are important to all citizens. The goal of sustainability requires strategic examination of issues facing Minnesota's forests. In 2002, we explored three strategic forest resource issues:

- ◆ The promotion of sustainable forest management on private lands through tax policy change
- ◆ The economic and social resiliency of communities that depend on Minnesota's forests
- ◆ The status of forest management certification programs and their impact on Minnesota

Sustainable Forest Incentive Act

The Sustainable Forest Incentive Act (SFIA)* became effective January 1, 2002, as a result of work done in 2000 by the MFRC, the Minnesota Department of Revenue, and several other partners.

* Minnesota Statutes, Chapter 290C.

Based on a study of the impact of Minnesota tax policy on private landowner management practices, the MFRC provided recommendations to the Minnesota Department of Revenue to define a new incentive for landowners to practice sustainable management.

The resulting law, the SFIA, was passed by the Legislature in 2001. The SFIA provides a state-paid incentive to owners of forest land who are willing to make a long-term commitment to good stewardship and management of their land.

A condition for receipt of the incentive payment is that landowners must manage their forest lands consistent with approved management plans and guidelines.

The first year of the program was 2002. The due date for submitting applications for the program to the Minnesota Department of Revenue was September. Of the estimated 140,000 private forest landowners who may be eligible, the Department of Revenue initially estimated that 3,000 landowners would enroll.



Approximately 400 landowners submitted applications in 2002. While the number of landowner applicants was fewer than expected, these applicants own 400,000 acres of forest land—close to the original estimate of 500,000 acres.

The program hopes to enroll a total of 10,000 landowners by 2004, but, based on this year's enrollment, it is now believed that this goal will be achieved later in this decade.

To increase enrollments, the Minnesota Department of Revenues plans to increase its publicity efforts for 2003. Applications and covenant forms for the 2003 enrollment cycle will be available in June.*

Current enrollees will receive their incentive payments by October 1, 2003. The payment amount will be determined by July 1, 2003; the estimated 2003 payment is \$2.60 for each enrolled acre.

*The Department of Revenue is compiling a mailing list of those wishing to receive materials when they become available. Call 651-296-2286 or email maureen.arnold@state.mn.us



Forest-Dependent Community Vitality

Communities in Minnesota are experiencing the effects of multinational ownership of mills and consolidation of firms as forest products industries seek improved productivity and profits.

In light of this climate, along with other factors, communities that are dependent on forests are facing challenges to their vitality, socially as well as economically.

Compared to economic aspects of community vitality, qualitative social effects of forest dependency have received relatively little attention.

The MFRC is interested in exploring these qualitative aspects of community vitality. To do so, the MFRC is developing a white paper that will discuss the following questions:

- ◆ What defines community vitality?
- ◆ What does a forest-dependent community in Minnesota look like? How have our forest-dependent communities changed in the last decade?
- ◆ What is the relationship between forests and community identity?

As a result of this analysis, recommendations will be made to the Legislature and public forest management agencies when the white paper is completed in 2003.

Forest Management Certification

Certification emerged in the late 1980s and the 1990s as a grassroots movement to devise market incentives for forest managers to integrate sustainability objectives into their operations.

However, because sustainability is difficult to define, certification is an uncertain practice. Changes and challenges are ongoing in forest certification. The MFRC is analyzing trends in certification programs and potential policy implications.

Today, forest management certification has evolved into the process by which forest products companies and forest landowners allow third-party auditors to evaluate their forest management practices against standards established by independent programs.

These audits assess compliance with standards so that customers and the public know that individual companies are managing forests in an environmentally friendly, responsible, and sustainable manner.

Two major forest certification programs exist in North America today: the Sustainable Forestry Initiative (SFISM) and the Forest Stewardship Council (FSC).

Each program has a comprehensive system of standards and principles that integrate sustainable forestry with protection of wildlife, plants, and soil and water quality.

In addition, the International Organization for Standardization (also known as ISO) has standards for Environmental Management System (known as ISO 14001) registration for mill and forestry operations.

Because sustainability is difficult to define, certification of sustainability is an uncertain practice. Changes and challenges are ongoing in the forest certification area.



Many Minnesota landowners have adopted certification:

- ◆ More than 2.73 million acres of public and private forest lands are licensed under the SFISM program.
- ◆ The DNR has 362,000 acres certified under FSC.
- ◆ Aitkin County became one of the first counties to certify their county-managed forest land. 223,000 acres of Aitkin County land were certified in 1997 under FSC.

◆ Cass County certified 252,000 acres of forest land under FSC.

◆ St. Louis County was the first public land management agency to become an SFISM licensee, and anticipates certification under ISO 14001 in December 2003.

◆ Many of Minnesota's forest product companies are also pursuing certification. For example, Blandin Paper was the first U.S. forest products company to meet both ISO and SFISM standards.

Acronyms

CNR-CCE

University of Minnesota-Twin Cities
College of Natural Resources:
Center for Continuing Education

DNR

Minnesota Department
of Natural Resources

FSC

Forest Stewardship Council

GIS

Geographic Information System

IIC

Interagency Information Cooperative

IMC

Information Management Committee

ISO

International Organization
for Standardization

LCMR

Legislative Commission
on Minnesota Resources

MLEP

Minnesota Logger Education Program

MFRC

Minnesota Forest Resources Council

MFRP

Minnesota Forest Resources
Partnership

NRRI

University of Minnesota-Duluth
Natural Resources Research Institute

PCRP

Public Concerns Registration Process

SFI

Sustainable Forestry Initiative

SFIA

Sustainable Forest Incentive Act

SFRA

Sustainable Forest Resources Act

UMD

University of Minnesota-Duluth

MFRC Documents Produced in 2002

MFRC Annual Report

Sustainable Forest Resources Act
Implementation in 2001: Minnesota
Forest Resources Council Annual
Report to the Governor and Legislature
(CP-0202)

Landscape Program

Minnesota North Central Regional
Landscape Desired Future Forest
Conditions (updated draft)

Forest Road Geographic Information
System (GIS) Data Collection Process
and Summary of Road Data

Forest Resource Management in
Southeast Minnesota - A Landscape
Perspective

Forest Resource Management in West
Central Minnesota - A Landscape
Perspective

Forest Resource Management in
Northern Minnesota - A Landscape
Perspective

Forestry Bottleneck Analysis: Summary
and Technical Report

Sustainable Forest Resources in North
Central Minnesota: A Summary
of Promotion of Blocks of Continuous
Forest Land in Local Planning
Documents (LP-1002)

Census Data from 1970 to 2000
and Economic Data from 1969
to 1999 for the Minnesota Forest
Resources Council's Landscape
Regions (LT-1102)

Monitoring Program

Monitoring the Implementation
of the Timber Harvesting and Forest
Management Guidelines on Public
and Private Forest Land in Minnesota:
Report 2001 (MP-0902)

Harvest of Riparian Forests
in Minnesota: A Report to the
Legislature (MP-0602)

Research

Progress in Addressing the 2001
MFRC White Pine Management
Recommendations

**All MFRC documents
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