

Minnesota Forest Resources Council



**2007 Annual Report
to the Governor and Legislature
on the Implementation
of the Sustainable Forest Resources Act**

Thank You

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

Associated Contract Loggers
Audubon Minnesota
Blandin Foundation
Cloquet Forestry Center
Institute for Agriculture and Trade Policy–
Community Forestry Resource Center
Minnesota Association of County Land Commissioners
Minnesota Center for Environmental Advocacy
Minnesota Deer Hunters Association
Minnesota Department of Natural Resources
Minnesota Forest Industries
Minnesota Forest Resources Partnership
Minnesota Forestry Association
Minnesota Indian Affairs Council
Minnesota Logger Education Program
Minnesota Resort and Campground Association
Minnesota Ruffed Grouse Society
Minnesota Timber Producers Association
The Nature Conservancy
The Trust for Public Land
USDA Forest Service
Chippewa National Forest
Superior National Forest
Northern Research Station
State and Private Forestry
University of Minnesota-Duluth
Natural Resources Research Institute
University of Minnesota-College of Food, Agricultural,
and Natural Resource Sciences
Sustainable Forests Education Cooperative
University of Minnesota Extension

Citizens of Minnesota who participate in SFRA
and MFRC programs

Cover photo credits: Eli Sagor, University of Minnesota Extension (upper left inset); Minnesota DNR (right inset); and MFRC (lower left inset and large background photo)



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*Respectfully submitted
by the Minnesota Forest Resources Council*

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Photo courtesy of Minnesota DNR

Dedication

The Minnesota Forest Resources Council would like to dedicate this 2007 Annual Report to Dr. Mike Phillips, guideline development/monitoring coordinator for the Council since its inception in 1995. Mike's tireless dedication and invaluable contributions to the Council, the Minnesota Department of Natural Resources, and the forestry and natural resources community in Minnesota and the Great Lakes region are widely recognized and deeply appreciated.

Mike sustained a brain aneurysm and subsequent stroke in May 2007. We wish him continued progress on his courageous path to recovery, and we look forward to Mike rejoining us as an active participant in the forestry community.

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From the Chair

An Overview of MFRC Accomplishments in 2007

The Minnesota Forest Resources Council (MFRC) achieved several noteworthy accomplishments over the past year. In 2007, the Minnesota Legislature reauthorized the MFRC for 10 years, confirming the value of the MFRC and its programs to the sustainability of our Minnesota forests.



Purpose of the MFRC

Created in 1995, the MFRC operates within the policy framework for sustainable forestry set forth in the Sustainable Forest Resources Act (SFRA), which is to:

- **Pursue 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.

1. The MFRC developed the first state-level guidelines in the United States for the sustainable removal of woody biomass for energy from forests, brushlands, and open lands. In response to concerns about potential environmental impacts of woody biomass harvest for energy, the 2005 Minnesota Legislature directed the MFRC to develop guidelines for sustainably managed woody biomass on forestland, and directed the Minnesota Department of Natural Resources (DNR) to develop similar guidelines for brushland and open land. The DNR subsequently asked the MFRC to take the lead in developing brushland and open land guidelines. The MFRC approved the guidelines in 2007, with printing completed in January 2008.

2. The MFRC provided staff support to the 2007 Governor's Task Force on the Competitiveness of Minnesota's Primary Forest Products Industry. This task force developed strategies and 16 long-term recommendations to achieve the goal of a healthy, integrated, and competitive industry. The MFRC was asked to develop metrics and benchmarks for implementation of these recommendations.

3. Because forest parcelization and subsequent development is a critical issue threatening the benefits received from intact forestlands, the MFRC commissioned the University of Minnesota to conduct a pilot study to quantify the amount and rate of forestland parcelization and development occurring in Itasca County. From 1999-2006, researchers found a consistent trend of decreasing parcel size and a strong relationship between parcelization and subsequent development. The MFRC is currently pursuing additional resources to expand this assessment to other counties and conduct an analysis of policy tools available to the Minnesota Legislature to address forest parcelization.

Role of the MFRC

The MFRC is a 17-member organization working to promote long-term sustainable management of Minnesota's forests in two ways:

- By coordinating implementation of the Sustainable Forest Resources Act (SFRA), established under Minnesota Statutes 89A.
- By advising the Governor and federal, state, county, and local governments on sustainable forest resource policies and practices.

MFRC Membership

The Governor appoints a chair and 15 other members to the MFRC. Recognizing the sovereignty of Indian nations under federal law, the Minnesota Indian Affairs Council appoints one additional member. MFRC membership includes a 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

4. At the request of the Minnesota Legislature, the MFRC, in conjunction with the DNR and the Minnesota Department of Agriculture, appointed a task force to develop a plan for addressing invasive species that threaten the tree cover of Minnesota. The task force, which includes members from private industry, nonprofit organizations, and public agencies, is expected to deliver a plan to the Legislature in January 2008. The plan will address invasive species detection, planning, management roles and responsibilities, education and outreach, and funding.

5. With the planning process completed in all six of the major forested landscapes in 2005, the MFRC Landscape Program continued to focus on plan implementation in 2007. Regional landscape committees, made up of forestry professionals, private landowners, public land managers, and the forest products industry, among others, meet on a quarterly basis to guide the implementation and coordination of their landscape plans. The Landscape Program has been recognized nationally as a model for “integrating diverse...interests across multiple ownerships for sustainable forest landscapes and desired long-term outcomes” (Dr. John Fedkiw, senior policy adviser, U.S. Department of Agriculture).

6. The Riparian Science Technical Committee, convened by the MFRC in 2004, completed a report that synthesizes the most recent advances in scientific understanding of forest management impacts on riparian areas. The MFRC began considering the scientists’ findings and judgments related to various types of waterbodies and initiated an economic analysis of riparian forest management alternatives.

7. The DNR, with assistance from MFRC staff, completed a draft analysis of pre-guideline practices from 2000-2002 in comparison to post-guideline practices from 2004-2006. This analysis provides the MFRC with valuable information for assessing strategic direction of the site-level guideline program, guideline revision, and future training and technical assistance efforts.

8. With substantial research funding from the Minnesota Legislature, the MFRC reconvened its Research Advisory Committee, which is pursuing research as recommended by the 2006 Governor’s Task Force on the Competitiveness of Minnesota’s Primary Forest Products Industry and the MFRC Biomass Guidelines Committee.



*Photo by Patrick O'Leary/
University of Minnesota*

A handwritten signature in black ink that reads "Alfred D. Sullivan". The signature is written in a cursive, slightly slanted style.

Alfred D. Sullivan
Chair

Forest Policy Initiatives

Over the past several years, the role of the Minnesota Forest Resources Council has evolved from a primary focus on core program development to an expanded focus on identifying and addressing policy issues and initiatives related to sustainable forest management. This expanded focus includes providing ongoing policy advice to the Governor, the Minnesota Legislature, and state, county, and federal governments.

Five Primary Policy Issues

In 2006, the Minnesota Forest Resources Council (MFRC) identified five priority issues to pursue in 2006 and 2007:

- Impacts of forestland ownership change, parcelization, and development
- Impacts of biomass harvesting
- Relationships between forests, forest management, and water quality
- Landscape-level forest health, with special attention to invasive terrestrial plants
- Impacts of globalization on invasive species, biomass utilization, and the primary forest products industry

In 2007, the MFRC pursued numerous policy topics, issues, and initiatives, including:

- Parcelization of Minnesota's private forestland
- Increased utilization of woody biomass and impacts of biomass harvesting
- Management of forest pests and invasive species in Minnesota
- Economic impacts of MFRC forest management guidelines
- Competitiveness of the forest products industry in Minnesota
- Global climate change in relation to Minnesota's forests
- Forestland productivity
- Professional resource manager capacity and training
- Impacts of fire on Minnesota's forests and opportunities for risk reduction



The MFRC pursues the sustainable management, use, and protection of the state's forest resources to achieve the state's economic, environmental, and social goals.

Forest parcelization threatens working forests, often resulting in subsequent development.



Highlights of 2007 Policy Initiatives

Forestland parcelization and subsequent development

The issue: The MFRC, Minnesota Department of Natural Resources (DNR), Minnesota Forest Resources Partnership (MFRP), the Governor’s Task Force on the Competitiveness of Minnesota’s Primary Forest Products Industry, and the Legislative-Citizen Commission on Minnesota Resources have all identified forest parcelization (the subdivision of larger parcels of forestland into smaller blocks of forestland with additional owners), along with subsequent development, as a critical issue threatening the benefits received from intact forestlands. The loss of this working forestland through parcelization has been linked to adverse impacts on timber availability, wildlife, water quality, land cover, and recreational opportunities. These impacts will most likely have effects on local economies, put additional pressure on public lands, and bring about ecological changes.

MFRC action: The MFRC commissioned the University of Minnesota to conduct a pilot study to quantify the amount and rate of forestland parcelization and development occurring in Itasca County, and to identify factors influencing this trend. Over an eight-year period (1999-2006), researchers found a consistent trend of decreasing parcel size, with most of this activity occurring near water, public lands, and developed cities. Researchers also found a strong relationship between parcelization and subsequent development, with more than two-thirds of divided parcels developed within seven years of division.

Next steps: The MFRC is currently pursuing additional resources to 1) expand this assessment to other counties, and 2) conduct an analysis of all available policy tools to prevent or mitigate the impacts of forest parcelization. The results of these efforts will be used to develop recommendations for legislators and others as the basis for implementing effective and efficient policy.

Invasive species as a threat to forest health

The issue: The health of Minnesota's forests faces many threats. Some of the most imminent of these threats come from invasive species, such as the emerald ash borer and the gypsy moth.

MFRC action: The MFRC recommended that the Governor, legislative leaders, and other state and federal executives take action regarding these threats to forest health, including:

- Allocating appropriate funding to the DNR and the Minnesota Department of Agriculture (MDA) to 1) implement firewood restrictions on DNR-administered lands, and 2) maintain and augment a robust invasive species survey and inspection program.
- Convening a meeting to discuss 1) coordination with nearby states and provinces; 2) a ban on unapproved firewood; and 3) action steps for rapid interagency response to the introduction of invasive species.

At the request of the Minnesota Legislature, the MFRC, in conjunction with the DNR and the MDA, appointed a task force to develop a plan for early detection, appropriate response, and public education about invasive pests that threaten the tree cover of Minnesota.

Next steps: The task force, which includes members from private industry, nonprofit organizations, and public agencies, is expected to deliver a plan to the Legislature in January 2008. The plan will address invasive species detection, planning, management roles and responsibilities, education and outreach, and funding.



The Minnesota Department of Agriculture is conducting detection surveys for emerald ash borer, an insect that has killed millions of ash trees in Michigan, Ohio, and Indiana. *Top photo courtesy of University of Minnesota. Lower photo by David Cappaert, Michigan State University, bugwood.org*



Buckthorn is an invasive species that is of growing concern due to its ability to outcompete native plants, threatening future forest composition and wildlife habitat. *Photo by Eli Sagor, University of Minnesota Extension*



Local mills today face economic challenges, including global competition and the increasing costs of stumpage, energy, logging, and transportation.

Economic challenges facing the forest products industry

The issue: In 2006, and continuing through 2007, the primary forest products industry has faced numerous difficult economic challenges in Minnesota, including high stumpage and transportation costs, increasing energy and logging costs, challenging global competition, decreasing demand for wood products as a result of slumping housing markets, and historically high capital investment needs.

MFRC action: In light of these challenges, the Governor reconvened the Governor's Task Force on the Competitiveness of Minnesota's Primary Forest Products Industry to formulate long-term strategies to maintain the health of the industry. The MFRC was asked to provide staffing support to this effort. The task force developed 16 recommendations to achieve the goal of a healthy, integrated, and competitive industry.

Recommendations were made in the areas of forest sector policy, forest resource management, renewable energy, transportation, and social investments. Examples of task force recommendations include: the creation of a forestry sub-cabinet; increasing state investments in working conservation easements; ensuring that existing forest products facilities are a priority for state cellulosic biofuels and bioenergy policies; supporting federal legislation to lower rail rates; improving the effectiveness of the SFRA; and conducting a comprehensive, long-term public information program. For a copy of the report, visit www.dnr.state.mn.us/forestry/taskforce

Next steps: The task force has charged the MFRC with developing metrics and benchmarks to monitor implementation of these recommendations. MFRC staff met with the state's forestry sub-cabinet to initiate development of benchmarks for implementation.

Landscape-Level Forest Resource Management

The MFRC Landscape Program fulfills the MFRC's charge to "encourage cooperation and collaboration between public and private sectors in the management of the state's forest resources." The Landscape Program is a grass-roots effort that builds relationships, strengthens partnerships, and identifies collaborative forest management projects that address local needs and represent concrete steps toward reaching citizen-identified goals for broad landscape regions.



A landscape is a large geographic area or region defined by common natural, political, and social features. A landscape may encompass millions of acres.
Photo courtesy of Minnesota DNR

A Collaborative Model for Sustainable Forest Resource Management

As we become increasingly aware of the impacts of human activity on forest ecosystems, and as expectations for forest products and services diversify and grow, people are thinking more comprehensively about human impacts on forest resources on larger and larger geographic scales.

Emerging issues, like climate change, biomass energy, wildfire fuel reduction, and forestland parcelization, need to be addressed with landscape-level solutions. The Sustainable Forest Resources Act (SFRA) laid the foundation for large-scale forest management by establishing the Landscape Program.

The MFRC oversees the Landscape Program to support a broad perspective and approach to sustainable forest management.

Landscape Committees: The Foundation of Landscape-Level Management

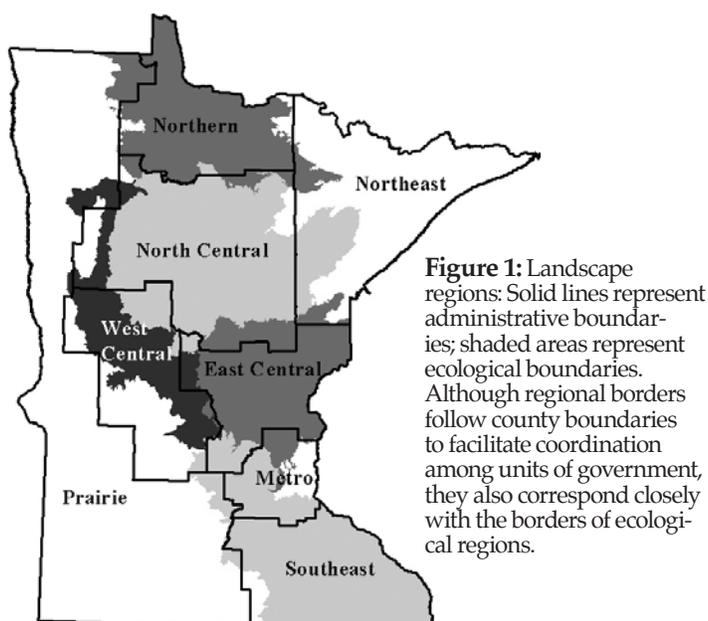
Volunteer, citizen-based regional landscape committees are central to coordinating and carrying out landscape-level management. Regional landscape committees provide an open public forum for diverse interests to cooperatively promote forest sustainability. The MFRC Landscape Program fulfills the SFRA's charge to "encourage cooperation and collaboration between public and private sectors in the management of the state's forest resources."

The Landscape Program is a voluntary grass-roots effort that builds relationships and strengthens partnerships to address regional and local needs. By bringing together representative interests from landscape regions, the committees serve as a springboard for effective forest management activities that address specific needs and challenges in each landscape region.

The Landscape-Level Management Process

The MFRC divided the state into six predominantly forested regions plus two additional (metro and prairie) regions (see Figure 1). A regional forest resource plan or “landscape plan” has been prepared for each of the six forested regions. Each plan begins with statements that describe desired future conditions for the region’s forests over a long-term horizon (up to 100 years). The plans also include shorter-term goals and strategies to guide efforts by landowners, forestry professionals, industry, and tribal and agency officials in the sustainable management of the region’s forest resources.

The landscape-level forest resource management process involves four phases: planning, coordination, implementation, and monitoring and evaluation.



Implementing Plans Based on “Desired Future Conditions”

With the planning process in all six of the major forested landscapes completed in 2005, the Landscape Program continued to focus on plan implementation in 2007. Regional committees meet on a regular basis to guide implementation of landscape plans and coordination of land management activities. The six committees are actively working to:

- **Encourage consideration of the landscape-level context** by all agencies, organizations, industry, and private landowners when developing their resource management plans and implementation projects.
- **Coordinate and support projects by partnering organizations** that promote sustainable forest management practices in the landscape region.
- **Develop and implement committee projects** that proactively address goals and strategies outlined in the regional forest resource plans.
- **Monitor activities and outcomes of projects** implemented by the committees, as well as those by partnering organizations and landowners across the landscape region.



More than 200 people attended a conservation workshop at St. John's University, Collegeville, Minnesota, in June, to learn how to protect woodlands and other natural resources during land development. The MFRC was a major event sponsor, and the West Central Regional Landscape Committee hosted the workshop. *Photo by Tom Kirzeder*

A National Model for “Integrating Diverse Interests”

The MFRC Landscape Program is a unique initiative—unmatched anywhere else in the country—resulting from state legislation to establish and fund a framework for landowners, resource managers, interested groups, and public officials to work together to address forest sustainability on a landscape level.

The Landscape Program has been recognized nationally as a model for “integrating diverse...interests across multiple ownerships for sustainable forest landscapes and desired long-term outcomes,” according to Dr. John Fedkiw, a senior policy adviser for the USDA. “The Minnesota Approach,” he continues, **“clearly provides an effective democratic and decentralized enabling governance and societal integration of the diverse interests in sustainable forest landscapes. It is commendable to other states for adoption or adaptation...and is also worthy of Federal encouragement and support to facilitate its extension to other states.”**

Stewardship and Landscape Coordination for Sustainable Forests. J. Fedkiw and G. A. Rose. The Pinchot Institute for Conservation, Washington, D.C. (In press)

Initiatives of the Regional Landscape Committees

During 2007, the six regional landscape committees have undertaken initiatives in a wide range of areas, including the following:

- **Facilitating numerous cooperative “opportunity area” efforts** that involve multiple partners—landowners, foresters, townships, counties, soil and water conservation districts (SWCDs), resource conservation and development districts (RC&Ds), and state and federal agencies—on projects concerning forest stewardship on public and private lands, technical assistance for private landowners, forestry and watershed education, wildlife habitat, joint timber sale planning, and open lands management.
- **Convening landowner and resource manager workshops** tailored to address forest management issues or concerns of particular interest to residents of various landscape regions.
- **Collaborating with townships, counties, and SWCDs** to integrate goals and strategies in the landscape plans with local forestry projects and local planning processes.
- **Developing research studies** related to pine re-establishment, deer browse, and native plant community classifications and assessments.
- **Collecting information regarding attitudes and the technical/financial capacities** of landowners, forest products industry representatives, economic development professionals, and others with respect to regional forest management and industry opportunities.
- **Sponsoring outreach opportunities**, including appearances at area events, presentations, display booths, and dissemination of fact sheets and brochures related to the work of the Landscape Program.



The Wadena County SWCD Field Day, sponsored by the West Central Landscape Committee, included tours of area forestlands. *Photo by Anne Oldakowski*

“This is one of the best things I’ve ever seen government do.”

Township official
at a workshop unveiling
a regional landscape plan

Looking Ahead

Good planning, like other forest resource management processes, is dynamic, reflecting appropriate change over time. Over the next several years, regional landscape committees and the MFRC will begin preparing the second generation of landscape plans. These updates will reflect changes in regional ecologic, economic, and social conditions caused by forest parcelization, climate change, increased incidence of wildfires, and bioenergy initiatives.

For more information about the Landscape Program, or to learn more about forest management initiatives in your region, contact Lindberg Ekola, MFRC landscape program manager, at 320-256-8300 or ekola.mfrc@charter.net

Highlights of Regional Landscape Committee Accomplishments

East Central Regional Landscape Committee: Continued work on the Four Corners Pilot Forestry Project. Partnered with the four area SWCDs to survey 800 landowners regarding their interests in private forest management. Met with the four township boards in Four Corners pilot area. Hosted two joint meetings with local officials, consulting foresters, and resource managers. Partnered with SWCDs to hire a project coordinator/forester to help oversee provision of technical services to interested landowners. Seeking additional funding resources to match funds contributed by the East Central Woodland Owners Council for the project.

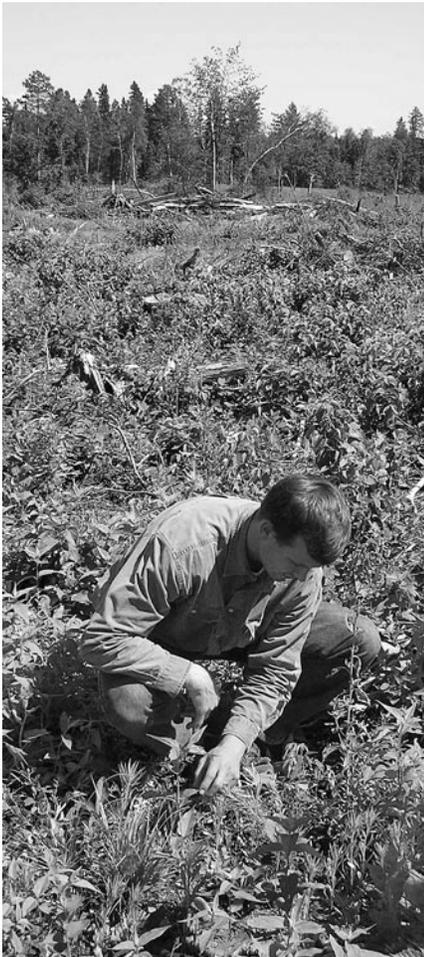
Northern Regional Landscape Committee: Completed a native plant community classification and assessment study. Surveyed forest products industry representatives and economic development professionals to identify economic challenges and emerging opportunities. Supported funding the development of two projects with the Giziibii RC&D to promote forest stewardship on private lands in 10 northwestern counties. Developed GIS (geographic information system) base map work on the Public Access/Wildlife Habitat Project.

North Central Regional Landscape Committee: Commissioned and completed a study with the USDA Forest Service regarding pine regeneration in relation to deer browse and other constraints. Using the knowledge of landowners and land managers, developed a framework for identifying opportunities to increase coordination of forest management activities across ownership boundaries.

Northeast Regional Landscape Committee: Continued facilitation and coordination work with the DNR, U.S. Forest Service, The Nature Conservancy, and other organizations on three opportunity area projects, including Manitou, Sand Lake/Seven Beavers, and Border Lakes (Heart of the Continent). Worked with University of Minnesota Extension staff to support the development of a forestry/watershed education project in Cook County.

Southeast Regional Landscape Committee: Sponsored and organized its first major education event: a two-day workshop titled "Forest Management in Our Region." Plans for a second annual workshop are well under way, as are preparations for hosting the Council's annual two-day meeting.

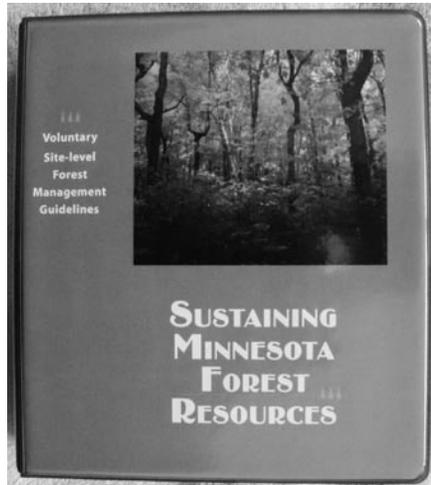
West Central Regional Landscape Committee: Initiated a multi-year pilot forestry project in Wadena County. Completed a survey of more than 800 landowners. Completed GIS mapping for the landscape region and individual counties. Sponsored a booth at the Conservation and Wildlife Expo, attended by more than 1,800 people. Sponsored a forestry field day with more than 60 participants and 20 students. Completed a survey of forest products industry representatives and economic development professionals.



The North Central Regional Landscape Committee focuses on pine regeneration efforts in Beltrami County. *Photo by Tom Kirzeder*

Voluntary Site-Level Guidelines

The development of comprehensive timber harvesting and forest management guidelines is a core mandate of the SFRA. The process of successfully bringing together diverse interests—and focusing those interests on shared concerns and the science related to sustainable forest management—to create voluntary site-level guidelines represents a core part of the MFRC’s work since its inception in 1995.



Integrated Guidelines: A Collaborative Effort

- Recognizing the challenges that sustainable forest management represents, the MFRC produced *Sustaining Minnesota Forest Resources: Voluntary Site-Level Forest Management Guidelines* in 1999, as well as a revised version of the guidebook in 2005. These collaborative statewide efforts involved a broad spectrum of people who value forested lands in Minnesota.
- The guidebook provides a set of integrated guidelines that address projected impacts on forest resources as identified in the 1994 *Generic Environmental Impact Statement Study on Timber Harvesting and Forest Management in Minnesota (GEIS)*. These voluntary guidelines provide valuable decision-making tools for landowners, resource managers, and loggers throughout Minnesota, all of whom share an ongoing responsibility to make balanced, informed decisions about forest use, management, and sustainability.
- The guidelines are intended to provide a diversity of options for landowners, resource managers, and loggers seeking to manage forests sustainably. Request a hard copy of the 2005 *Guidelines* from the Minnesota Forest Resources Council (651-603-6761), or download a copy from the MFRC website at www.frc.state.mn.us

Forestland Certification and Guideline Compliance

- In Minnesota, forestland certification programs seek to promote sustainable forest management. The MFRC timber harvesting and forest management guidelines are critical to successful compliance with the two principal forestland certification programs adopted in Minnesota: the Sustainable Forestry Initiative (SFI) and the Forest Stewardship Council (FSC).

In addition, the MFRC actively supports the Master Logger Certification Program, which was developed by the Minnesota Logger Education Program (MLEP).

- The magnitude of forest certification is great, with 4.8 million acres of DNR-administered forestland dually certified under SFI and FSC, and more than 2.6 million acres of county and private forestland certified under one or both of these programs.

Woody Biomass Harvest Guidelines: First in the Nation

MFRC's 1999 site-level forest management guidelines became a model for other state initiatives throughout the region. The MFRC's woody biomass harvest guidelines, completed in 2007 and published in January 2008, represent the first state-level guidelines in the United States for the sustainable removal of woody biomass for energy from forests, brushlands, and open lands.

Responding to a new concern

- Interest in biomass energy in Minnesota has intensified because of increasing energy prices, state-supported incentives to produce renewable energy, and an aggressive new state renewable energy standard. Although wood-fired energy facilities have been operating in Minnesota for quite some time, recent expansion of the energy industry has raised concerns about the impacts of increased removal of biomass from the state's forests, brushlands, and open lands on long-term site productivity, biodiversity, and wildlife populations.
- In response to these concerns, the 2005 Minnesota Legislature, as part of its legislation on energy production from woody biomass, directed the MFRC and the Minnesota DNR to develop guidelines or best management practices for *sustainably managed woody biomass* on forestland (MFRC) and brushland/open land (DNR), as per Minnesota Statutes Chapter 216B, Section 2424 (M.S. § 216B.2424). The DNR subsequently asked the MFRC to take the lead in developing brushland and open land guidelines.



What is woody biomass harvesting?

On forested sites, biomass harvest removes different or additional woody material from a site than would be removed under typical roundwood harvest. In addition to the use of tops and limbs from trees harvested in a roundwood operation, biomass harvest may include the use of small-diameter trees or stems (which have historically been “non-merchantable”), dead trees (snags), down logs (coarse woody debris), brush, and stumps.¹

Often biomass harvesting is conducted in conjunction with roundwood harvest. Biomass harvest may also be used as a tool to rejuvenate sites or to reduce fuel loads. This practice may be conducted on sites where a roundwood harvest is not occurring.

¹The guidelines generally recommend retaining snags, coarse woody debris, and stumps, as well as some tops and limbs.



Woody biomass harvesting guidelines are designed to protect important forest components, such as sensitive native plant communities and species, water quality, soil productivity, and wildlife habitat. Residual woody brush and debris (shown at left) provide essential hiding areas and thermal cover for such species as the snowshoe hare (above). *Photo at left courtesy of Minnesota DNR; photo above by Terry Spivey, USDA Forest Service, bugwood.org*



MFRC members and staff visit a site harvested for woody biomass and roundwood.

Developing biomass guidelines

In fall 2005, the MFRC appointed a 12-member interdisciplinary technical committee to develop both forestland and brushland biomass harvest guidelines for use by equipment operators, contractors, biomass procurement agents, loggers, natural resource managers, and landowners.

Committee members were specialists in soil science, wildlife biology, hydrology, forest management, silviculture, and logging. The committee included university researchers, DNR representatives from several divisions, a wildlife biologist from a nonprofit interest group, a logger, and forest managers from an Indian tribe, a county land department, and a forest industry.

Development of the guidelines was informed by a worldwide literature review conducted by a diverse group of experts from the University of Minnesota. Draft guidelines, completed in January 2007, were peer reviewed and subsequently distributed for public review and comment. After further revisions, the MFRC formally approved the guidelines in May 2007.

The forest and brushland/open land woody biomass harvest guidelines were developed as additional chapters in MFRC's 2005 *Sustaining Minnesota Forest Resources: Voluntary Site-Level Forest Management Guidelines* and printed for distribution in January 2008.



Snags left on site may provide important nesting or food resources. This tree has been excavated by a pileated woodpecker in search of ants and beetle larvae.

Scope of the biomass guidelines

The new guideline chapters provide rationale for including certain topics (such as wildlife and soil productivity). Specific guidelines address biomass harvest on sensitive sites, managing water quality and riparian management zones, managing soil productivity, re-entry into previously harvested sites to remove biomass, managing and retaining wildlife habitat and structural diversity, biomass harvest for fuel reduction, and biomass harvest considerations as a tool for silvicultural management. They seek to protect important forest components, such as native plant communities and species, the forest floor, and wildlife habitat.



This slash bundler collects woody biomass from a pine thinning site, which will help prevent bark beetle buildup and provide potential markets for previously non-merchantable stems. *Photo courtesy of Minnesota DNR Forestry*

Forestland, timberland, brushland, open land

- Minnesota has 16.2 million acres of forestland, including 14.8 million acres of timberland.
- In addition, Minnesota has 1.3 million acres of brushland and open land.
- Brushland and open land are predominantly non-forested habitats dominated by shrubs (such as alder and willow), grasses, sedges, and herbs.
- Brushland differs from open land only by the percent cover of trees and shrubs (more than one-third tree and shrub cover for brushland; less than one-third tree and shrub cover for open land).

First in the nation

Based on results of the University of Minnesota worldwide literature review, the MFRC biomass guidelines for forestlands, brushlands, and open lands represent **the first state-level guidelines in the United States for the sustainable removal of woody biomass for energy.**

Reviewing and Evaluating Existing Riparian Guidelines

A core component of guideline development is the need to periodically review and revise guidelines based on new information. The MFRC is moving forward in this process by evaluating the science of riparian forest management, the effectiveness of existing riparian guidelines, and the economics of riparian forest management alternatives.

Reviewing current riparian science

Protection of riparian forest functions and values is a major aspect of the MFRC's timber harvesting and forest management guidelines. In 2004, the MFRC convened the Riparian Science Technical Committee (RSTC) to review the best applicable scientific knowledge regarding riparian forest management to help resolve outstanding riparian guideline questions and inform future guideline revisions.

The RSTC evaluated the temporal and spatial impacts of forest management on three major riparian attributes: hydrology, geochemistry, and habitat. The literature review evaluated 30 indicators (including amphibians, sensitive plants, water temperature, and dissolved oxygen), which provide a measurable response of how the various attributes respond before, during, and/or after forest management operations.



Riparian areas are considered to be among the most important and diverse portions of forest ecosystems. They support a diversity of associated vegetation and wildlife, and they perform important ecological functions.



A riparian area is a zone of interaction between aquatic and terrestrial ecosystems.
Photo courtesy of Minnesota DNR

The committee's work from 2004-2007 is summarized in a report titled *Analysis of the Current Science Behind Riparian Issues* (available online at www.frc.state.mn.us). This report will inform MFRC discussions on future guideline revisions.

Examples of key considerations discussed in the report include the following: waterbodies requiring riparian management zones (RMZs); the importance of landscape considerations when addressing riparian issues; recommendations for filter strip/RMZ width and residual basal area; and beaver impacts.

Evaluating the effectiveness of existing riparian guidelines

Work at the University of Minnesota is continuing on Phase II of the riparian research project titled *Evaluating Riparian Timber Harvesting Guidelines: Phase II*, which is funded by the Legislative-Citizen Commission on Minnesota Resources. This project is intended to characterize lasting impacts from timber harvesting and assess whether those changes affect forest productivity and future site conditions.

Based on differing amounts of RMZ basal area, the researchers have found site differences in light availability, the size of blown-down trees, habitat variables, macroinvertebrate abundance, organic matter, and species richness on treatment sites.

The study also demonstrates continuation of an increasing trend in abundance of early-successional forest species post harvest. While ovenbird and red-eyed vireo abundances continue to be well below pre-harvest conditions, preliminary analyses show that two deciduous forest species that had declined two years post harvest (least flycatcher and veery) may be approaching pre-harvest abundances.



The red-eyed vireo is a species sensitive to timber harvest. *Photo by Carrol Henderson, Minnesota DNR*



Evaluating the effectiveness of existing riparian guidelines is an important component of the work of the MFRC. For example, recovery of seasonal pond species following disturbance was a key research need identified by the RSTC.

Assessing the Cost of Applying Guidelines

The MFRC recognizes that applying timber harvesting and forest management guidelines does not come without a cost. The results of a formal study of the marginal cost differences in forestry operations with and without the guidelines will provide a valuable perspective related to the economic implications of guideline application.

The additional costs of timber harvesting guidelines

The MFRC, in conjunction with a number of other agencies and organizations, is supporting research quantifying the additional costs of timber harvesting as a result of the application of timber harvesting guidelines. Data for the study—titled *An Empirical Cost Assessment of the Timber Harvesting and Forest Management Guidelines in Minnesota*—have been collected from 49 harvest sites, covering more than 1200 acres, utilizing field assessments and aerial photography. This information will provide an empirical measure of the difference in operational harvesting costs with and without the guidelines.

Economic analysis of riparian forest management alternatives

To assist in making better-informed decisions regarding guideline revisions, the MFRC will be conducting an economic analysis of riparian forest management alternatives. The MFRC has convened an ad hoc committee to provide direction for this economic analysis of the findings of the RSTC.

Forest Resource Monitoring

Ongoing monitoring of the site-level guidelines is an important aspect of the MFRC's sustainable forest management programs. Monitoring is critical to providing reliable ongoing data related to the implementation of—as well as the effectiveness of—site-level guidelines for timber harvesting and forest management.

An Essential Component of MFRC Efforts

Monitoring is an essential component of MFRC efforts to ensure implementation of the SFRA.

The DNR, with oversight by the MFRC, is responsible for three key monitoring programs identified in the SFRA:

- **Compliance monitoring** is the evaluation of the use of MFRC's timber harvesting and forest management guidelines on public and private forestland.
- **Forest resource monitoring** evaluates broad trends and conditions in the state's forest resources at statewide, landscape, and site levels.
- **Effectiveness monitoring** provides a research focus by evaluating how well guideline practices protect specified resource functions and values.



Analyzing Monitoring Results

The DNR is in the process of analyzing three years of pre-guideline practices (2000-2002) and statistically comparing these results to three years of post-guideline practices (2004-2006). Pre-guideline practices represent those from sites that were either harvested or contracted for harvest prior to publication of the MFRC guidelines in 1999.

This comparative analysis will provide the MFRC with important information, including:

- Identification of successes and deficiencies in the application of specific guidelines by landowner categories
- Assistance to the MFRC, Minnesota Logger Education Program, Minnesota Forest Resources Partnership, and Sustainable Forests Education Cooperative in targeting future education efforts

Reviewing the Monitoring Program

In consultation with the MFRC, the DNR deferred routine data collection activities associated with guideline implementation monitoring for the 2007 and 2008 field seasons to permit a comprehensive review of the monitoring program. This study will be based in part on the comparison of monitoring data described above in *Analyzing Monitoring Results*.

The comprehensive monitoring program review will examine current data collection and reporting practices, survey the program's stakeholders about their monitoring information needs, and identify strengths and weaknesses of the current program in satisfying those needs and in fulfilling its statutory requirements. In April 2008, a report that summarizes findings of the review and presents recommendations for improvement will be submitted to the Council for consideration. Full monitoring activities will resume in May 2009.

Monitoring is an essential component of MFRC efforts to ensure implementation of the SFRA. Monitoring programs focus on compliance monitoring, forest resource monitoring, and effectiveness monitoring.

Research

Ongoing forest resources research is essential to providing “sound science” that serves as the foundation for future policy decisions and forest management priorities. The reconvening of the Research Advisory Committee, thanks to recent funding appropriations to the MFRC, will support research needs identified by the Governor’s Task Force on the Competitiveness of Minnesota’s Primary Forest Products Industry and by the MFRC Biomass Guideline Committee.

Recent Appropriations To Address Key Research Needs

The MFRC reconvened its Research Advisory Committee (RAC) in 2007. The purpose of the committee is to encourage 1) collaboration among forest research institutions, 2) interdisciplinary linkages among researchers, and 3) interactions among researchers and practitioners.

The seven-member committee was reinvigorated with substantial research funding from the Minnesota Legislature, including a direct appropriation of \$200,000 to address research needs identified by the 2006 Governor’s Task Force on the Competitiveness of Minnesota’s Primary Forest Products Industry. Items to be studied include 1) factors that impact the price for stumpage in Minnesota, and 2) new opportunities for value-added manufacturing by Minnesota’s primary forest products industry.

Through the Minnesota Board of Water and Soil Resources, the committee also received a legislative appropriation of \$300,000 to fund research on the ecological impacts of woody biomass harvesting, as identified by the MFRC’s Biomass Guideline Committee.

Ecological impacts to be studied may include 1) the effects of biomass harvesting on fire-responsive species, native plant communities, nutrient cycling, or species of plants, animals, and fungi in the Great Lakes region that are dependent upon dead wood, and 2) site-level management factors influencing forest ecosystem resilience and sustainability.

The RAC has developed and distributed Requests for Proposals regarding these two areas of interest and will be making awards in early 2008.

Many beetles, like this firefly larva, forage or reproduce on dead or dying wood. Little is known about species and communities in Minnesota forests that depend upon woody debris and snags. Further research is needed to determine the impacts of biomass harvesting on these communities.

Photo courtesy of Bekah Dalen, Lee and Rose Warner Nature Center

Providing a Strategic Direction for Forest Resources Research

In the coming year, the RAC will undertake a statutorily mandated assessment of strategic directions in forest resources research (M.S. § 89A.08). This study will include an evaluation of the current state of forest resources research in the state and the identification of important research issues and priority activities.

Utilizing the input of administrators, researchers, practitioners, and members of the public, this assessment will provide a strategic direction for needs and priorities related to forest resources research for Minnesota.



Partnerships and Collaboration

Over the past 12 years, a primary commitment of the MFRC has been to forge and nurture significant ongoing partnerships with other entities committed to sustainable forest resource management. This commitment to ongoing cooperation and collaboration has enriched and expanded the scope and effectiveness of MFRC's efforts—as well as the efforts of our partners—to pursue the sustainable management, use, and protection of the state's forest resources. Some of these major efforts are described below.



The largest forest conservation easement project in Minnesota history was completed in 2007 in Koochiching and Itasca counties. This easement will protect jobs, preserve wildlife habitat, and ensure public access for outdoor recreation. *Photo by Art Norton. Copyright The Nature Conservancy*

Forest Legacy Advisory Group

Several MFRC members and staff serve on the Forest Legacy Advisory Group. This group played a critical support role in helping obtain \$12 million in foundation, private, and state funding to secure the largest forest conservation easement in Minnesota history: a 51,163-acre easement in Itasca and Koochiching counties.

A major contribution from the Blandin Foundation to The Nature Conservancy was critical in making this transaction possible. MFRC member Shaun Hamilton, senior project manager for The Trust for Public Land, served as chief negotiator for this easement agreement between the landowner, Forest Capital Partners, and the Minnesota DNR, the agency that will hold the easement.

Minnesota Logger Education Program

The Minnesota Logger Education Program (MLEP) is a logger-initiated program established in 1995 to promote high operational standards, enhance logger professionalism, and respond to the SFRA. MLEP provides training for logging business owners, employees, and other resource managers in areas of sustainable forest resource management, workplace safety, business management, and transportation.

In addition, MLEP's Master Logger Certification Program provides added confidence to customers and the public that the person performing a harvest has the education and experience to do the job correctly. It is an independent, third-party audit of a logging business's harvest, safety, and business practices. Logger certification provides formal recognition of those logging businesses that have met the high standard required for certification.

Sustainable Forests Education Cooperative

The Sustainable Forests Education Cooperative (SFEC), located in the College of Food, Agricultural, and Natural Resource Sciences, University of Minnesota, was established in response to the Sustainable Forest Resources Act of 1995. Its purpose is to provide innovative education programs for natural resource professionals by providing training on current research findings, new technologies, and state-of-the-art practices. Along with MLEP, the Cooperative has been a leader in the planning and implementation of MFRC forest management guideline training sessions since 1999.



MLEP and SFEC staff and trainees discuss stream and wetland crossings, an example of training provided to loggers and natural resource professionals.
Photo by Dave Chura, Minnesota Logger Education Program

2008 Training on Woody Biomass Harvesting Guidelines

MLEP and SFEC will be providing training in 2008 on the new woody biomass harvesting guidelines. Grants from the MFRC and the USDA Forest Service will help support this training.

Visit the MLEP and SFEC websites (www.mlep.org and <http://sfec.cfans.umn.edu>) to learn about upcoming training opportunities throughout the state.

Minnesota Forest Resources Partnership

The MFRC works closely with the Minnesota Forest Resources Partnership (MFRP) to provide staff assistance and support to the three landscape regions located in the northern portion of the state. Formed in 1995, the MFRP is a voluntary partnership of 26 organizations, including forest landowners, forest resource managers, and loggers, whose primary objectives are productive, sustainable forest resources and economically viable forest management organizations and forest products industries.

The MFRC worked with the MFRP in pursuing its goal of increasing timber productivity in Minnesota. MFRC members and staff served on the steering committees for both of the timber productivity conferences sponsored by the MFRP in 2007. MFRC members and staff also attended and made presentations at both of the conferences. In conjunction with the Information Management Committee (see page 24), the MFRC and the MFRP are partnering on a project to summarize current forest inventory methodologies.

Blandin Foundation

The MFRC has continued to partner with the Blandin Foundation and its Vital Forests/Vital Communities Initiative, supporting its aim to strengthen and diversify Minnesota's forest-based economy and promote the long-term ecological health of the forest resources that support it. Several MFRC members and staff serve on the advisory board for this initiative.

In response to the outcome of a 2006 Blandin Foundation conference on family forest stewardship, the MFRC commissioned a study to determine the current state and capacity of consulting foresters in Minnesota. Results of this work are being used to examine capacity of the public and private sectors to assist family forestland owners in managing their properties.

Minnesota Climate Change Advisory Group

Recognizing the implications of global climate change on the economy, environment, and quality of life in Minnesota, the Next Generation Energy Act of 2007 (M.S. § 41A.105) called for the development of a comprehensive plan to reduce Minnesota's emissions of greenhouse gases. The Center for Climate Strategies was asked to help facilitate and provide technical support to a new Minnesota Climate Change Advisory Group that would prepare a Climate Mitigation Action Plan for presentation to the Governor and the Minnesota Legislature in February 2008.

The 56-member advisory group represents a wide range of public and private sector organizations and citizen interests. The group is using a stakeholder-based, consensus-building process to develop a set of state-level policy recommendations for reducing or sequestering greenhouse gas emissions. The Minnesota Climate Change Advisory Group is also identifying opportunities to promote energy-efficient technologies and clean, renewable energy resources that will enhance economic growth.

Five technical working groups supplement the efforts of the advisory group. An MFRC staff member serves on the Agriculture, Forestry, and Waste Technical Working Group. MFRC staff have also provided technical analysis, designed policy options for consideration, and advised both the advisory group and Center for Climate Strategies staff on technical forestry and forest policy matters.

Information Development and Management

Information development and management are essential components of effective sustainable forest management. Funding of these initiatives supports ongoing needs related to efficient and effective information analysis, communication, and data management tools that provide the foundation for sustainable forest management.

Managing Information and Identifying Needs

The MFRC's Information Management Committee (IMC) assists the Council in meeting its statutory mandate to advise the Governor and federal, state, county, and local governments on sustainable forest resource policies and practices.

The IMC assists the MFRC by 1) advancing and focusing the discussion of forest policy issues selected by the MFRC; 2) compiling and disseminating information and analyses to the MFRC that are relevant to those policy issues, ensuring that the Interagency Information Cooperative (IIC) fulfills its purpose; 3) bringing to the attention of the MFRC trends in ecological, economic, and social factors that may affect Minnesota forests; and 4) developing tools (e.g., papers, publications, audio-visual presentations) for communicating the results of MFRC policy work to the Minnesota Legislature and Governor.

The IMC has undertaken a strategic review of current MFRC policy initiatives to identify existing data and information voids and determine criteria for prioritizing information needs and issues. The IMC is also undertaking an assessment of forest inventory information and methodology to 1) provide a summary of current inventory methods and information; 2) promote understanding and communication among agencies; and 3) identify potential inventory efficiencies.

Developing Effective Data Management Tools

The Interagency Information Cooperative (IIC) was created as part of the Sustainable Forest Resources Act of 1995 (M.S. § 89A.09) to coordinate the development and use of forest resources data in the state. The IIC has been used as a forum for agencies to discuss data standards, as well as a place to store data and tools. It has also provided leadership in interagency data collection and analysis projects. As the IIC has not received funding in recent years, the benefits of the IIC have not been fully realized.

The DNR, the University of Minnesota, and the MFRC are actively pursuing funding for the IIC as recommended by the 2006 Governor's Task Force on the Competitiveness of Minnesota's Primary Forest Products Industry. Funding of this proposal would enable the IIC to:

- Develop and make available a **common forest inventory format** that would describe key attributes of Minnesota's public forestlands and foster common formats for related resource data.
- Develop **growth models for managed forest stands** for use in harvest scheduling models and forest management planning.
- Develop a **forest wildlife habitat model format and synthesis** for forest management planning.
- Develop an **information database on Minnesota's family forest ownership**, as well as associated management and use issues and trends (such as forest land parcelization/fragmentation).

Public Participation

MFRC and SFRA programs all require participation of individuals interested in forest resources in Minnesota. This participation is essential to ensuring that a “broad array of perspectives regarding the management, use, and protection of the state’s forest resources” are represented and incorporated into forest resource planning and management.

Opportunities for Public Participation

There are many ways for interested individuals to become involved:

- **Attend MFRC meetings.** Scheduled meetings are posted on the MFRC website at www.frc.state.mn.us/Info/calendar, or call 651-603-6761 for meeting dates.
- **Participate in regional landscape committees.** For more information, contact Lindberg Ekola at 320-256-8300 or ekola.mfrc@charter.net
- **Use the timber harvesting/forest management guidelines.** They are available on the MFRC website at www.frc.state.mn.us/FMgdline/Guidebook, or contact the MFRC at 651-603-6761 for a 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 (See Public Concerns Registration Process sidebar at right.)
- **Attend forest resources educational programs.** For additional information, contact:
 - Sustainable Forests Education Cooperative: Call 218-726-6404 or visit <http://sfec.cfans.umn.edu>
 - Minnesota Logger Education Program: Call 218-722-5442 or visit www.mlep.org
- **Access information regarding Minnesota’s forest resources** from the Interagency Information Cooperative at <http://iic.gis.umn.edu>

Public Concerns Registration Process

The Public Concerns Registration Process (PCRP) provides an opportunity for citizens to inform landowners, foresters, and loggers of specific concerns regarding timber harvesting and forest management practices they see in Minnesota.

Although it is not a regulatory or punitive program to stop timber harvests or resolve disputes over contractual issues, the PCRP does encourage sustainable management of Minnesota’s forests by emphasizing education of those involved. Through this program, 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. All aspects of the Public Concerns Registration Process are managed with confidentiality.

To learn more about activities of the PCRP, or for a detailed explanation of the PCRP process, visit the MFRC website at www.frc.state.mn.us

MFRC Publications

Sharing information with the public is an important component of the MFRC's work. For that reason, the MFRC makes its publications available online to all interested individuals. In addition, written documentation of the MFRC's substantial accomplishments in the areas of policy research, monitoring, and public involvement represent a significant contribution to the growing body of knowledge related to the field of sustainable forest resource management.

Documents Produced in 2007

*All MFRC documents are available on the MFRC's website:
www.frc.state.mn.us/Info/MFRCdocs.html*

MFRC Annual Report

2006 Annual Report to the Governor and Legislature on the Implementation of the Sustainable Forest Resources Act (January 2007)

Policy Research

Report on Minnesota Consulting Foresters: 2007. Peter Bundy, Masconomo Forestry (May 2007)

Assessing Trends in Forest Parcelization and Development in Minnesota: An Itasca County Case Study. A report to the Minnesota Forest Resources Council. Joseph Mundell, Steven J. Taff, Michael Kilgore, and Stephanie Snyder (July 2007)

Landscape Program

Forest Products Industry Survey Project: West Central Landscape Region. Minnesota Forest Resources Council - Landscape Program. Spatial Analysis Research Center, St. Cloud State University (July 2007)

Constraints on Pine Regeneration in Northern Minnesota: Causes and Potential Solutions. The results of a manager's survey and literature review. Final report to the North Central Landscape Committee. Brian Palik and Jason Johnson (November 2007)

Guideline Program

Biomass Harvesting on Forest Management Sites. Developed as an additional chapter in *Sustaining Minnesota Forest Resources: Voluntary Site-Level Forest Management Guidelines*. Biomass Guideline Committee, Minnesota Forest Resources Council (December 2007)

Woody Biomass Harvesting for Managing Brushlands and Open Lands. Developed as an additional chapter in *Sustaining Minnesota Forest Resources: Voluntary Site-Level Forest Management Guidelines*. Biomass Guideline Committee, Minnesota Forest Resources Council (December 2007)

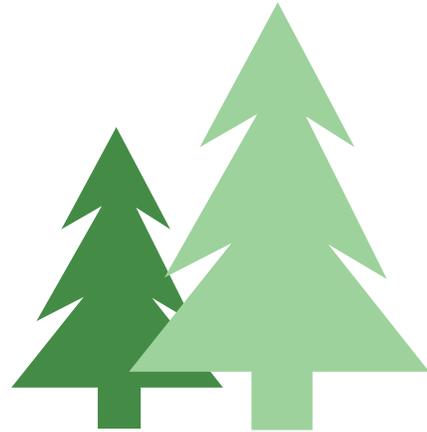
Analysis of the Current Science Behind Riparian Issues: Report to the Minnesota Forest Resources Council. MFRC. Riparian Science Technical Committee (August 2007)

Monitoring Program

Minnesota Forest Resources Council – Public Concerns Registration Process 2007 Annual Report (August 2007)

Acronyms

DNR	Department of Natural Resources
FSC	Forest Stewardship Council
GIS	Geographic information system
IIC	Interagency Information Cooperative
IMC	Information Management Committee
MDA	Minnesota Department of Agriculture
MFRC	Minnesota Forest Resources Council
MFRP	Minnesota Forest Resources Partnership
MLEP	Minnesota Logger Education Program
PCR	Public Concerns Registration Process
RAC	Research Advisory Committee
RC&D	Resource Conservation and Development
RMZ	Riparian management zone
RSTC	Riparian Science Technical Committee
SFEC	Sustainable Forests Education Cooperative
SFI	Sustainable Forestry Initiative
SFRA	Sustainable Forest Resources Act
SWCD	Soil and Water Conservation District



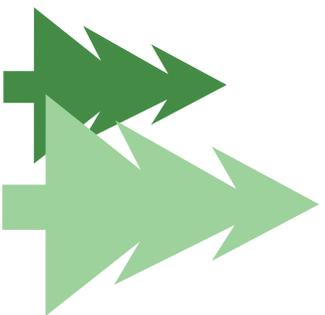
Minnesota Forest Resources Council 2007 Annual Report to the Governor and Legislature on the Implementation of the Sustainable Forest Resources Act

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