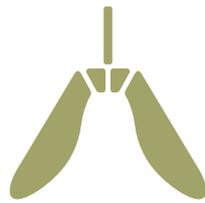


A CITIZENS' GUIDE TO DNR FORESTRY



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A PUBLICATION OF THE MINNESOTA DEPARTMENT OF NATURAL RESOURCES

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For more information on DNR Forestry programs and services, contact the DNR Information Center at 651-296-6157 or toll-free 888-646-6367, or see www.dnr.state.mn.us/forestry.

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Photo: Deborah Rose, Minnesota DNR

Chapter 1: Overview

DNR Forestry was established in 1911. Then known as the Minnesota Forest Service, we focused our efforts on protecting Minnesotans and their property from wildfires, which were a growing problem due to logging and settlement.

In the years since we have taken on many additional responsibilities. Today our job also includes managing state forest lands, gathering and sharing information on Minnesota's forests with other forest managers, promoting the use of forest products, and helping landowners and others value forests and keep them healthy and productive. The unifying aim of all of our work is to promote the conservation, enjoyment, and use of Minnesota's forest resources in a way that contributes to the state's economic health while nurturing and sustaining the health of our environment.

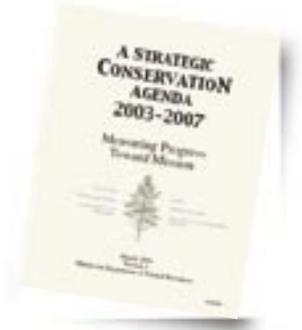
DNR Forestry Mission

Through shared information, technology, and understanding, we empower others and ourselves to: sustain and enhance functioning forest ecosystems; provide a sustainable supply of forest resources to meet human needs (e.g., material, economic, and social); protect lives and property from wildfires; and provide a dollar return to the permanent school trust. To achieve this mission, we:

- manage state-owned forest lands
- prevent, manage, and fight wildland fires
- provide raw material for Minnesota's wood products industry
- gather and share information on Minnesota's forest lands
- grow trees from seeds and distribute them around the state
- help landowners manage their forests
- help local governments plan, plant, and care for trees
- educate Minnesotans about trees and forests
- promote responsible use of forest products
- provide funds to nonprofit groups and government agencies to grow and care for trees and forests.

Increasing Challenge

Keeping Minnesota's economy and environment healthy has become more and more challenging in recent years. Forests are being fragmented as urban areas expand and people build second homes in rural recreational areas; this increases risks of wildfire damage and makes it more difficult to ensure that forests are managed strategically and sustainably. Growing interest in nontimber benefits derived from forests, such as forest-based recreation and ecological diversity, means a growing need to find ways to meet multiple demands concurrently. At the same time, increasing globalization has dramatically altered both our state's forest products industry and the markets that sustain it, making it more and more challenging to manage forests in a way



Forests are one of the main topics of A Strategic Conservation Agenda 2003–2007, established in 2004 as a tool for measuring progress toward DNR's mission. You can find the agenda online at www.dnr.state.mn.us/aboutdnr, or contact the DNR Information Center at 651-296-6157 or 888-646-6367.

Ecosystem:

that maintains their health and the health of the economic sectors that depend on them.

Minnesota's forests represent much of what's right with our state—a strong work ethic, concern for natural resources, a commitment to the future, a constant striving for cooperation and balance. DNR Forestry is committed to ensuring that Minnesota's forests remain strong, healthy, and able to provide the full spectrum of benefits to humans and other living things today, tomorrow, and a hundred years from now.

Take a Tour of DNR Forestry! Information on DNR Forestry activities, Minnesota's forests, programs and materials to help you care for your trees, and much more is available at DNR Forestry's Web site, www.dnr.state.mn.us/forestry.

Check it out!

Statewide Presence

DNR Forestry employees are found throughout the state: in the DNR headquarters in St. Paul and in four regional offices, 27 area offices, and 35 field stations around the state.

For information about DNR Forestry, trees and forests, managing your trees, using state forest lands, or related topics, contact the DNR forester near you:



Northeast Region

Forestry Headquarters:

1201 E. Highway 2
Grand Rapids, MN 55744-3296
218-327-4418

Area Offices:

Aitkin
1200 Minnesota Ave. S.
Aitkin, MN 56431
218-927-4040

Cloquet
1604 S. Highway 33
Cloquet, MN 55720
218-879-0880

Deer River
P.O. Box 157
403 Division St.
Deer River, MN 56636-0157
218-246-8343

Hibbing
1208 E. Howard St.
Hibbing, MN 55746
218-262-6760

Littlefork

421 3rd Ave.
P.O. Box 65
Littlefork, MN 56653-0538
218-278-6651

Orr

P.O. Box 306
4656 Highway 53
Orr, MN 55771-0306
218-757-3274

Tower

650 Highway 169
Tower, MN 55790
218-753-2580 x 260

Two Harbors

1568 Highway 2
Two Harbors, MN 55616
218-834-6602

Central Region

Forestry Headquarters:

1200 Warner Rd.
St. Paul, MN 55106
651-772-7925

Area Offices:

Cambridge
800 Oak Savanna Ln. S.W.
Cambridge, MN 55008
763-689-7101

Little Falls

16543 Haven Rd.
Little Falls, MN 56345-6401
320-616-2450 X 228

Sandstone

613 Highway 23 S.
Sandstone, MN 55072
320-245-6789

Southern Region

Forestry Headquarters:

P.O. Box 607
1200 S. Broadway LL
New Ulm, MN 56073-0607
507-359-6048

2300 Silver Creek Rd. N.E.
Rochester, MN 55906
507-285-7428

Area Offices:

Caledonia
603 N. Sprague St.
#2 Ag Service Center
Caledonia, MN 55921
507-724-5261 x 5

Faribault
1810 N.W. 30th St.
Faribault, MN 55021
507-333-2012

Lake City
1801 S. Oak
Lake City, MN 55041
651-345-3216

Lewiston
P.O. Box 279
Highway 14 & Fremont St.
Lewiston, MN 55952
507-523-2183

Mankato
1160 S. Victory Dr.
Mankato, MN 56001
507-389-6713

New Ulm
P.O. Box 607
1200 S. Broadway LL
New Ulm, MN 56073-0607
507-359-6057

Preston
912 Houston St. N.W.
Preston, MN 55965
507-765-2740

Rochester
2300 Silver Creek Rd. N.E.
Rochester, MN 55906
507-285-7433

Willmar
4566 Highway 71 N.
Suite 1
Willmar, MN 56201
320-231-5164

Northwest Region

Forestry Headquarters:

6603 Bemidji Ave. N.
Bemidji, MN 56601-8669
218-755-2891

Area Offices:

Backus
P.O. Box 6
Backus, MN 56435-0006
218-947-3232

Baudette
206 Main St. E.
Baudette, MN 56623
218-634-2172

Bemidji
2220 Bemidji Ave. N.
Bemidji, MN 56601-3896
218-755-2890

Blackduck
417 B Forestry Dr. N.W.
Blackduck, MN 56630
218-835-3161

Detroit Lakes
14583 Cty. Highway 19
Detroit Lakes, MN 56501
218-847-1596

Park Rapids
607 First St. W.
Park Rapids, MN 56470-1312
218-732-3309

Warroad
1101 Lake St. N.E.
Warroad, MN 56763-2407
218-386-1304

Why Care for Forests?
Trees and forests are important to Minnesotans for many reasons. They provide habitat for living things. They are a valued source of wood, paper, and other renewable materials. They offer refreshment and renewal through outdoor recreation and beauty. They help protect soil, water, and air quality. They absorb carbon dioxide and so help moderate global warming.

Other Useful Contact Information:

- Burning Permits: contact your local DNR office (see above)
- Report Questionable Forest-Related Activity: 888-234-3702
- DNR Main Information Number: 651-296-6157 or 888-646-6367
- DNR Web site: www.dnr.state.mn.us



Chapter 2: Minnesota's Trees and Forests

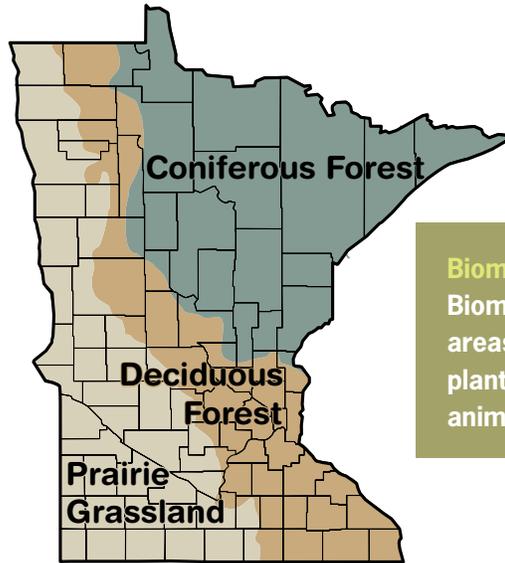
Minnesota is the meeting place of three biomes: the coniferous forest, the deciduous forest, and the prairie. This juxtaposition produces a remarkable diversity in living things within our state.

Trees and forests have always been an important part of Minnesota's natural resource heritage. Today, of Minnesota's 51 million acres of land, 16.3 million acres are forested—almost one-third of our total land area. This forested land can be broken into categories in many ways.

What Kind of Forest Is It?

The kinds of trees that make up a forest vary from place to place, depending on soil, climate, water, topography (the lay of the land), history, and other factors.

Different forests have different combinations of plants and animals. The trees in one forest may be predominantly aspen and birch; another forest may consist largely of spruce and fir trees. Foresters often identify forests by the tree species found there.



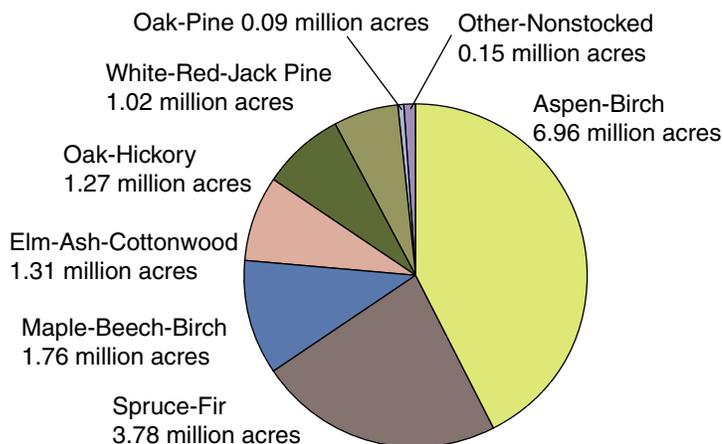
Biomes: Biological communities. Biomes usually occur over large areas and include many similar plant communities and the animals that live in them.

Like to learn more about Minnesota's biomes? Detailed descriptions are available at www.dnr.state.mn.us/biomes. Or call the DNR Information Center at 651-296-6157 or 888-646-6367 to request a poster of Minnesota's biomes.

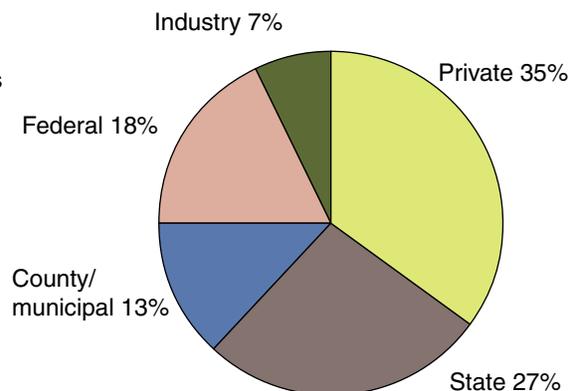
Who Owns It?

Minnesota's forests have many owners. Some forests are owned by the public and managed by public agencies (federal, state, county, local). Others are in the hands of private owners such as individual citizens, forest products companies, and other industry and private nonprofit organizations.

Major Kinds of Forest in Minnesota
(in order of total acreage as of 2002)



Who Owns Minnesota's 16.3 Million Acres of Forest Lands?



Source: U.S. Forest Service, North Central Research Station, Resource Bulletin NC-225, 2003

Source: Minnesota Forest Inventory Analysis (FIA), 2002

What is Timberland?

What Kinds of Trees Grow in Minnesota?

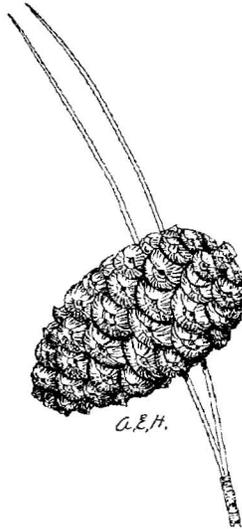
Descriptions of many of Minnesota's tree species are available at www.dnr.state.mn.us/trees_shrubs.

Minnesota is home to 52 native tree species. Among the most familiar:

NAME: Red Pine (*Pinus resinosa*)

WHERE TO FIND IT: Northern and northeastern Minnesota.

FUN FACTS: This is Minnesota's state tree. It gets its name from its reddish bark, which peels off in puzzle-piece-like plates. It is also called Norway pine.



NAME: Eastern White Pine (*Pinus strobus*)

WHERE TO FIND IT: Mainly in northeastern and eastern Minnesota.

FUN FACTS: Deer like to eat the tops (terminal leaders) of young white pines. Porcupines eat the inner bark of mature trees.



NAME: Jack Pine (*Pinus banksiana*)

WHERE TO FIND IT: North-central and northeastern Minnesota.

FUN FACTS: Jack pine cones are serotinous. That means they only release their seeds under high temperatures such as those occurring during a forest fire.



NAME: White Spruce (*Picea glauca*)

WHERE TO FIND IT: Northern Minnesota.

FUN FACTS: White spruce is also called skunk spruce because of the strong odor given off by its needles when they are young.



NAME: Black Spruce (*Picea mariana*)

WHERE TO FIND IT: Northern and northeastern Minnesota.

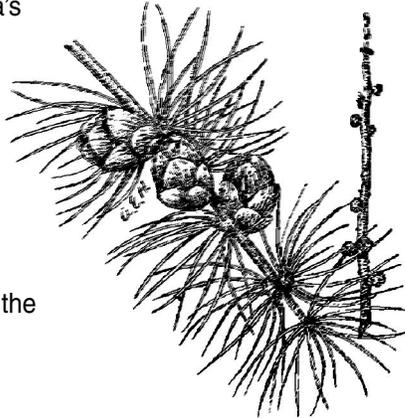
FUN FACTS: Black spruce grows very slowly in cold, wet conditions. Century-old trees may be only 2 inches in diameter.



NAME: Tamarack (*Larix laricina*)

WHERE TO FIND IT: Northern Minnesota.

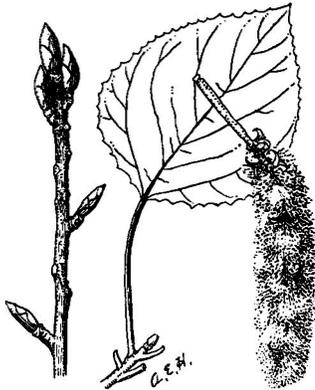
FUN FACTS: Tamarack is Minnesota's only coniferous (cone-bearing) tree that sheds its leaves (needles) in the fall.



NAME: Quaking Aspen (*Populus tremuloides*)

WHERE TO FIND IT: Throughout Minnesota; one of the first trees to grow after fire or harvest.

FUN FACTS: The quaking aspen's flattened leaf stems cause the leaves to tremble—"quake"—in the breeze, hence its name.



NAME: Northern Red Oak (*Quercus rubra*)

WHERE TO FIND IT: Throughout the state, but most common in southern, central, and southeastern Minnesota.

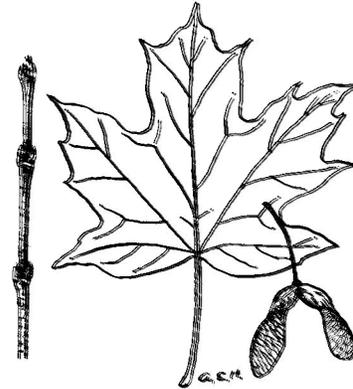
FUN FACTS: Red oak wood is so porous that a barrel made from it will not hold liquid.



NAME: Sugar Maple (*Acer saccharum*)

WHERE TO FIND IT: Eastern half of Minnesota.

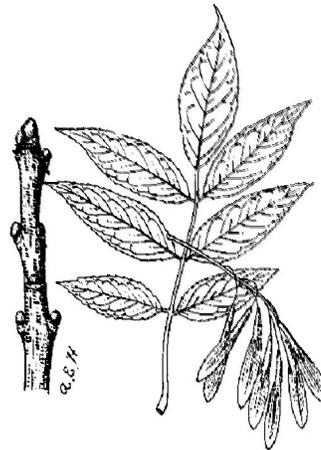
FUN FACTS: The sugar maple's rich sap is used to make maple syrup.



NAME: Green Ash (*Fraxinus pennsylvanica*)

WHERE TO FIND IT: Throughout the state, except in the western prairie region.

FUN FACTS: Green ash is a common urban tree, often planted along city streets in the late 1900s to replace elms lost to Dutch elm disease.

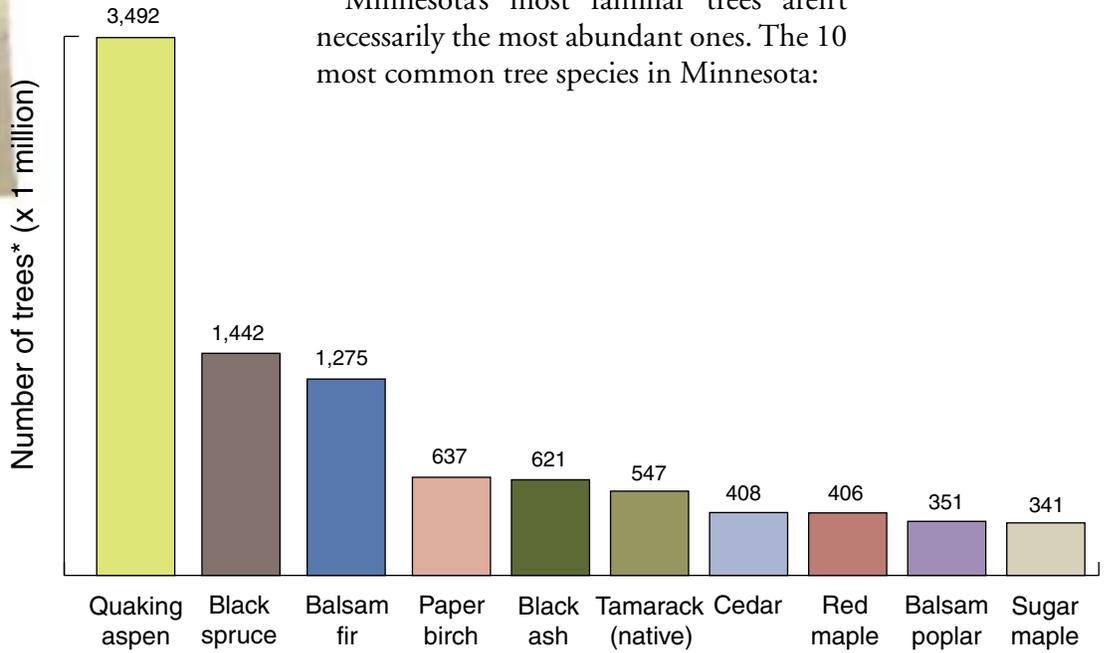


Minnesota's Forest Treasures poster illustrates 35 of Minnesota's 52 native tree species with leaves, seeds, and tree shapes. To obtain a copy, contact the DNR Information Center at 651-296-6157 or 888-646-6367.



Minnesota's Top 10 Trees

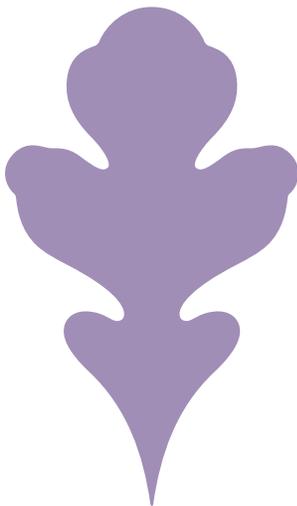
Minnesota's most familiar trees aren't necessarily the most abundant ones. The 10 most common tree species in Minnesota:



Minnesota's Big Tree Registry. The DNR verifies and keeps records on the largest of each of Minnesota's native 52 tree species. View a list of Minnesota's current champions at www.dnr.state.mn.us/trees_shrubs/bigtree, or call the DNR Information Center at 651-296-6157 or 888-646-6367.

*Stems more than 1 inch diameter, 2002

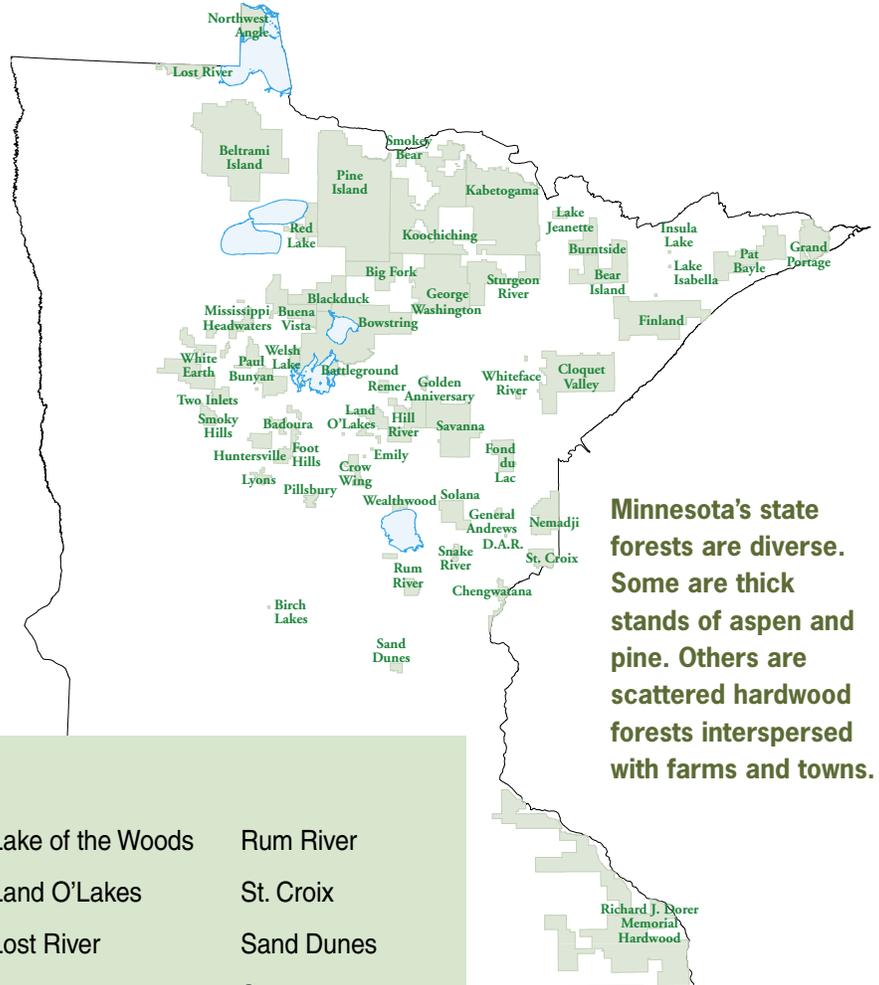
Data courtesy of Andrew Finley, Department of Forest Resources, College of Natural Resources, University of Minnesota



Chapter 3: Managing State Lands

According to 2002 survey data, Minnesota has 16.3 million acres of forest land. DNR administers 5.6 million acres of land, 4.5 million acres of which is considered forest land. Much of this land is located within the boundaries of Minnesota's 58 state forests.

The first state forest was established in 1900 when Governor John Pillsbury donated 1,000 acres of land in Cass County to the state, and the land was designated Pillsbury State Forest. Our newest state forest, the 15,000-acre Waukenabo State Forest in north-central Minnesota, was established by the Legislature in 2000.



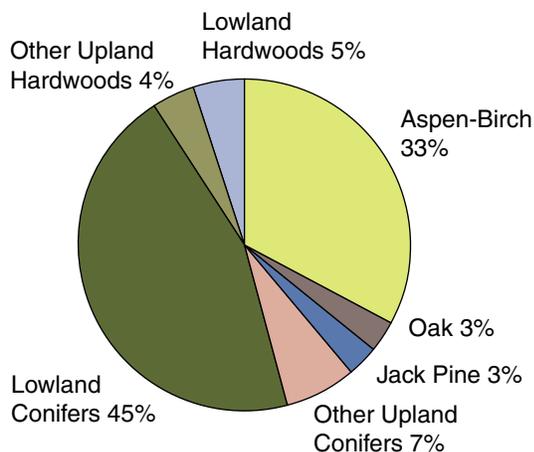
Minnesota's state forests are diverse. Some are thick stands of aspen and pine. Others are scattered hardwood forests interspersed with farms and towns.

Lake of the Woods and Waukenabo state forests are still being digitized and are not shown on the map.

Minnesota's State Forests

Badoura	Emily	Lake of the Woods	Rum River
Battleground	Finland	Land O'Lakes	St. Croix
Bear Island	Fond du Lac	Lost River	Sand Dunes
Beltrami Island	Foot Hills	Lyons	Savanna
Big Fork	General C.C. Andrews	Mississippi Headwaters	Smokey Bear
Birch Lakes	George Washington	Nemadji	Smoky Hills
Blackduck	Golden Anniversary	Northwest Angle	Snake River
Bowstring	Grand Portage	Pat Bayle	Solana
Buena Vista	Hill River	Paul Bunyan	Sturgeon River
Burntside	Huntersville	Pillsbury	Two Inlets
Chengwatana	Insula Lake	Pine Island	Waukenabo
Cloquet Valley	Kabetogama	Red Lake	Wealthwood
Crow Wing	Koochiching	Remer	Welsh Lake
D.A.R. (Daughters of the American Revolution)	Lake Isabella	Richard J. Dorer Memorial Hardwood	White Earth
	Lake Jeanette		Whiteface River

Composition of DNR Forest Lands



Source: *A Strategic Conservation Agenda, 2003–2007*, Minnesota DNR

Aspen, birch, oak, and jack pine currently comprise nearly 40 percent of DNR forest lands. These types make up over 50 percent of all forest land in Minnesota.

Lands for Many Uses

As diverse as the forests themselves are the benefits and values they provide. State forest lands produce timber. They also provide a spectrum of tangible and intangible benefits, including wildlife habitat, nontimber crops, recreational opportunities, beauty, clean water, and biological diversity. They provide opportunities for hunting, birding, skiing, snowmobiling, camping, and other outdoor activities. They help protect waterways and water quality by reducing erosion, filtering runoff, and shading streams. They provide rich habitat for native plants and animals.

DNR Forestry works to make sure multiple benefits are sustained on state forest land. As a consequence, state forest managers have many jobs:

Improving Habitat. We work with DNR Fish and Wildlife staff to maintain

and improve habitat for game and nongame species. The primary activity is the joint planning of timber harvesting and other forest management activities. Other joint efforts include managing shrub and grassland habitat, carrying out prescribed burns, and building hunter/walking trails.

Protecting Biological Diversity and Cultural Resources. We work with the Division of Ecological Services to conserve biological diversity and sustain healthy forest ecosystems. A key effort is the joint development of forest management plans (see page 13) that includes addressing old-growth forests, extended rotation forests, areas of high and outstanding biological diversity significance, rare native plant communities, use of the natural heritage database, and ecologically important lowland conifers. Archaeologists review DNR timber sales and road projects to identify and protect important cultural or historic resources.

Keeping Forests Healthy. We monitor the condition of forest lands. We plan timber harvests and plant trees to help keep forests healthy and productive. We are required to reforest an amount of land equal to land harvested each year. We also improve existing forests with activities such as thinning; removing damaged, sick, and poor-quality trees; and monitoring and treating forest pest outbreaks.

Maintaining Forest Roads. We maintain more than 2,000 miles of forest roads. These roads support two of the state’s major industries, forest products and tourism. More than 95 percent of state forest road use is for recreation.

Providing Recreational Opportunities. State forest lands and the state forest road

and trail system provide diverse recreational opportunities, including hunting, hiking, birding, berry picking, camping, cross-country skiing, and off-highway vehicle use.

FORIST. The Forestry Information System (FORIST), currently under development, is an integrated set of computer databases and programs for use by DNR Forestry staff. FORIST is expected to dramatically enhance DNR Forestry’s ability to do its many jobs, including managing state forests, by making it easier for various programs to share information and coordinate efforts. Two components of FORIST that have been completed are already helping to streamline state forest management.



Future Forests. You can help keep Minnesota’s forests growing strong and honor or commemorate a loved one, too, through DNR Forestry’s Future Forests Fund. Tax-deductible contributions are used to plant trees on state lands. For information call 651-296-5958.

Land Acquisition, Sales

We occasionally purchase and sell state forest land. Land purchases tend to focus on tracts within or adjacent to existing state forest land, or land that would serve as access to state forest land.

New Tools, New Information... Better-Managed Forests

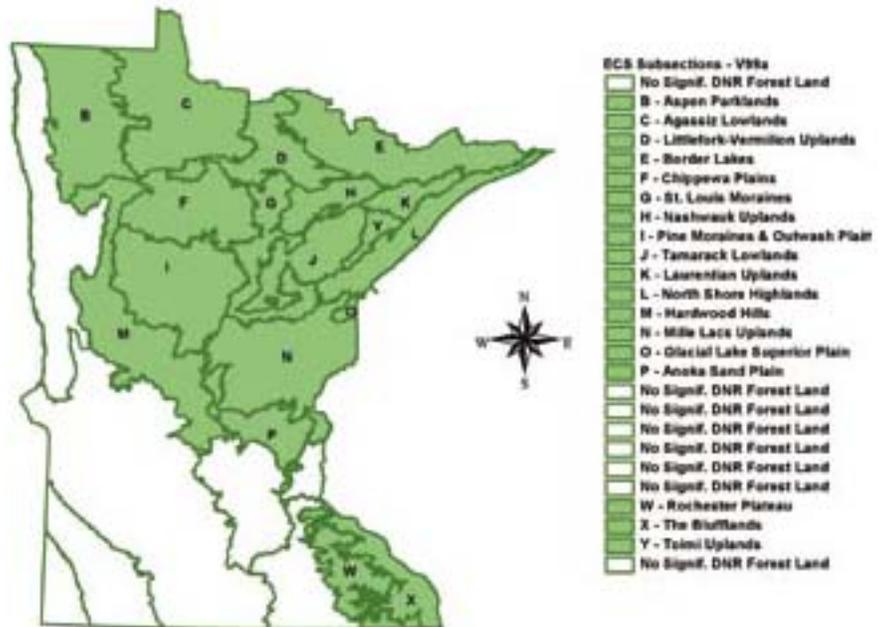
The complexity and considerations in forest management have grown as new information, management tools, and management approaches have become available. We are increasingly trying to build back certain forest conditions that will make our forests more diverse, resilient, and sustainable. For example, through timber harvesting and subsequent reforestation, we are attempting to restore certain forest types and tree species that are far less common today than in the past. We also plan our management to maintain habitat corridors and patches of forest land in a mix of sizes and stages of growth. Management plans are developed to maintain and enhance areas of particular biodiversity significance.

To help forest managers do these things in the most suitable locations, DNR has developed the Ecological Classification System (ECS) for Minnesota, a means of categorizing forests according to a variety of characteristics such as climate, geology, topography, hydrology, soils, and vegetation. The ECS provides valuable information on the types of ecological communities that are native to or best suited to a particular site. By using this information to plan the next generation of trees, we work with rather than against nature. This not only enhances the health of the state forests, but reduces the cost of managing them, too.

Subsection Planning

DNR Forestry used to manage state forest lands by DNR administrative unit. But that's not how nature divides itself. To more closely align our efforts with natural systems, we have begun managing forests instead based on ECS landscapes.

ECS Subsections With DNR Forest Land



DNR Forestry is developing subsection management plans for the state's forested ECS subsections.

Within Minnesota, the ECS has divided land into (from largest to smallest) provinces, sections, subsections, and land-type associations. Our forest management planning efforts currently are organized around the subsection level (see map).

DNR Forestry is in the process of creating a Subsection Forest Resource Management Plan (SFRMP) for each forested subsection with input from the public. Currently plans have been developed or are under development for nine of the 18 subsections in Minnesota that contain a substantial amount of state forest land.

The plans provide long-term direction and a 10-year operational plan for vegetation management on DNR-administered forest lands (excluding state parks and Scientific and Natural Areas) to provide the appropriate mix of wildlife habitat, rare feature protection, and timber harvesting. This includes identifying the types and amount of desired changes in the characteristics of DNR forest lands, and the types and timing of forest management activities needed to make those changes happen. DNR anticipates plans for all 18 forested subsections will be completed by the end of 2007.

Old Forests. DNR old-growth forests, forests that have not seen logging or other major disturbance for 120 years or more, provide unique habitat for plants and animals. DNR has identified and is committed to protecting 40,000 acres of remaining old-growth forests on state land. In addition, DNR is working to link old-growth forests and provide a certain amount of older forests by establishing areas and corridors of old (but not necessarily old-growth) trees, known as extended rotation forests, to create complexes of old forest habitat.

A World of Recreation

State forests provide a rich venue for recreation. Popular activities on state forest land include:

Hunting, Fishing, Bird-Watching, Berry Picking—State forests provide rich habitat for numerous species of animals and plants.

Touring—More than 2,000 miles of forest roads offer access to the forests and provide opportunities for enjoying their natural beauty.

Hiking and Skiing—Hikers and cross-country skiers enjoy more than 150 miles of nonmotorized trails that stretch through state forest land.

OHV Riding—Off-highway vehicles are allowed on trails specifically signed for OHV use.

Horseback Riding—A number of camps and trails are designated specifically for horseback riding.

Snowmobiling—State forests provide many miles of groomed snowmobile trails that tie into other trail systems.

Mountain Biking—Mountain bikes are allowed on all state forests roads unless they are posted otherwise. (In Richard J. Dorer Memorial Hardwood State Forest, mountain bikes are allowed only on designated trails.)

Camping—More than 1,000 campsites and day-use areas are available as a home base for outdoor adventurers.

For more information on state forest recreation, contact the DNR Information Center at 651-296-6157 or 888-646-6367.

Following the Guidelines. Forest management on state-owned land follows a set of voluntary guidelines established by the Minnesota Forest Resources Council in 1998 to protect cultural resources, soils, riparian areas, visual quality, water quality, and wetland quality. The guidelines, known as the Voluntary Site-Level Timber Harvesting and Forest Management Guidelines, establish a recommended set of forest management practices aimed at maintaining forest ecosystem health while harvesting and carrying out other management activities.

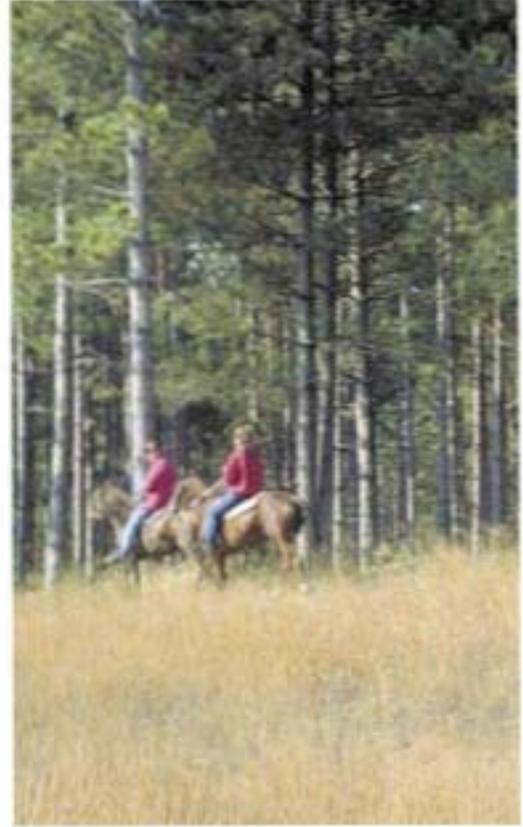


Photo: Minnesota DNR

Riparian Areas:

Biological Diversity:

Chapter 4: Preventing and Managing Wildfires

Fighting wildfires was the Division of Forestry's first job when it was established as the Minnesota Forest Service in 1911. It has remained an important part of our work ever since.

DNR Forestry works with other public agencies to protect 45 million acres of land—and the people who live there—from wildfire. We help prevent wildfires from starting and suppress wildfires when they do occur. We allow some wildfires to burn if they don't threaten people or property. We even deliberately set fires under controlled conditions to mimic the natural renewing force of fire in certain habitats. But our overarching concern is to protect people and property.

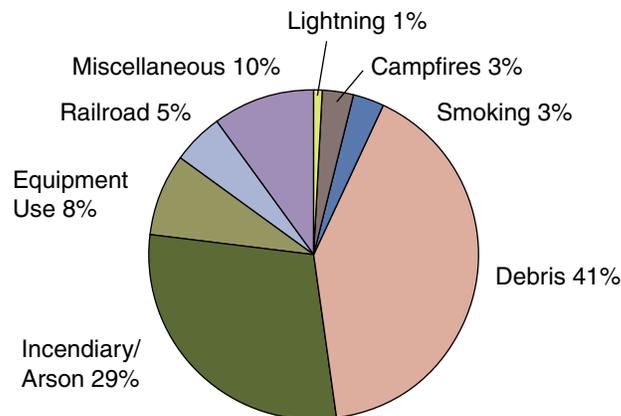
Wildfire Prevention

We strive to prevent wildfires through a combination of education, regulation, and enforcement. We provide information to homeowners on minimizing risk of loss due to wildfire. We also provide free materials for teaching children about wildfire prevention.

Regulation of open burning and the use of burning permits are also important for preventing wildfires. By prohibiting open fires during high-risk times, we reduce the likelihood that such fires will burn out of control. (Burning permits are required for most open fires in Minnesota—see sidebar.)

Finally, law enforcement is sometimes needed when people disregard the law or set fires that endanger their neighbors.

Causes of Wildfires, 1993–2002



Source: DNR Division of Forestry

Burning Permits. Helping prevent wildfires in Minnesota are some 2,000 dedicated volunteer township fire wardens throughout the state. To help reduce the risk of wildfire, DNR requires burning permits for most open fires (except for campfires, contained fires, fires in approved burners under certain circumstances, and fires on snow-covered ground). The permits help us keep track of where controlled fires are burning, provide a mechanism for restricting fires in times of high fire danger, and help us educate citizens about proper burning procedures. Fire wardens issue more than 70,000 burning permits each year.

Each year in Minnesota we fight an average of 1,500 fires, which together burn some 30,000 to 35,000 acres of land.

Firewise Minnesota, a statewide fire-risk mitigation program instituted in 2001, supports local efforts to assess fire danger and help property owners reduce dangerous fuel accumulations and possible wildfire damage. Homeowners and communities that use Firewise principles and practices greatly increase the chance their property will survive a wildfire. Firewise also funds projects that aid firefighting, such as installing emergency water sources and improving street signage. As of early 2004, the program had provided grants to more than 100 communities, shipped Firewise homeowners kits to some 350 homeowners, and provided on-the-ground Firewise assessments of wildfire risk to more than 7,000 homes. To learn more or to order a Firewise homeowners kit, see www.dnr.state.mn.us/firewise or call the DNR Information Center at 651-296-6157 or 888-646-6367.

The Minnesota Interagency Fire Center (MIFC), located in Grand Rapids, coordinates state, local, and federal firefighting efforts. The center assembles crews to fight fires as they arise and manages equipment, from shovels to helicopters, needed by firefighters. MIFC serves as firefighting equipment headquarters for 20 northeastern states. It also serves as the central distribution center for the Smokey Bear, Woodsy Owl, and Junior Ranger programs.

Buddy, can you spare a fire truck?

Fire Control

DNR Forestry trains firefighters, monitors fire-related weather conditions, watches for fires through aerial surveillance, and develops plans for handling various wildfire situations. Twenty-four hours a day, seven days a week, firefighters are ready to go when a fire starts. Three airport bases for water-dropping air tankers provide resources for fighting fires from the air. During the fire season, helicopters with large water buckets are on alert throughout the state. Through the Minnesota Incident Command System (MNICS), an interagency partnership, we participate in coordinated firefighting efforts, dispatching personnel and equipment as needed. When wildfires rage in



Photo: Boyd Barrott

Happy Birthday, Smokey Bear!

Smokey Bear, America's wildfire prevention icon, turned 60 in 2004. The U.S. Forest Service created Smokey in 1944 to help publicize citizens' role in preventing wildfires. Today DNR Forestry offers a Smokey Bear puppet show, an electronic quiz game, posters, and activity books to help teach children about fire safety. To learn more, see www.dnr.state.mn.us/education/wildfire or call the DNR Information Center at 651-296-6157 or 888-646-6367.



Helping the Volunteers. DNR Forestry administers a grant program that provides funds for establishing and coordinating volunteer fire departments in communities with fewer than 10,000 residents. More than \$4 million has been disbursed to some 800 fire departments since 1975.

Enforcing the Law.

other states, Minnesota firefighters are sent to help. And when we have a need that exceeds our capacity, we can call on experts from other states to help us, too.

Prescribed Fire

Various divisions in the DNR burn some 40,000 to 60,000 acres of land each year to mimic the ecosystem-renewing benefits of natural fires. Prescribed fires also provide opportunities for wildland firefighters to gain experience under controlled conditions. DNR Forestry coordinates department activities to ensure these prescribed burns are carried out under appropriate weather conditions and with the necessary personnel and equipment. Prescribed fires on private lands are monitored and controlled through our burning permit system.

Future

As the number of Minnesotans living in forested areas grows, so does the challenge of preventing damage due to wildfires. As a result, education and technical support to reduce risk of loss due to fire are an increasingly important part of our job. We are also placing more emphasis on preventing fires from starting in the first place through education and through seasonal restrictions on open burning.

Chapter 5: Timber Sales

Growing and harvesting timber is an important part of state forest management. By harvesting trees, foresters improve the condition of our state forest lands while generating money to support tree planting, forest improvement, schools, and other public services. We produce raw materials for the state's wood products industry. Timber harvest also creates a variety of habitat types for wildlife.

Timber is harvested from state land by individuals, small businesses, or large corporations that have bought the timber from the state. A top priority for DNR Forestry in arranging timber harvests is to ensure harvests occur in a way that sustains the resource and protects the environment.

Forest Stand: An area throughout which tree species composition, tree age, and other characteristics are similar.

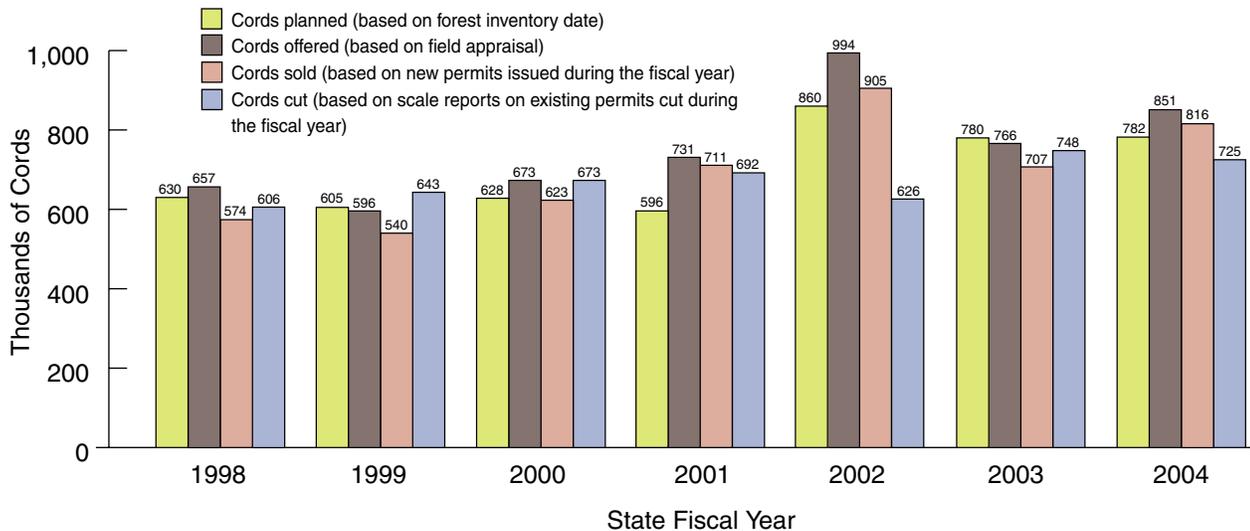
To Harvest or Not to Harvest?

The first step in a timber sale is to choose the stands to be harvested. DNR Forestry determines how much state forest land overall can be sustainably harvested for a given planning period, usually seven to 10 years. We then develop Annual Timber Harvest Plans made up of forest stands to be field visited for potential harvest. The plans specify which stands appear to be ready for harvest and the type of harvest that would likely be applied to each. Members of the public may comment on the plans, and their comments are taken into consideration in finalizing harvest strategies.

Next, foresters walk through stands listed in the Annual Timber Harvest Plan, using scientific techniques to determine the

Promoting White Pine. Harvests can be used to selectively nurture certain tree species. For instance, DNR Forestry is currently working to increase the amount of white pine on state lands by allowing harvest of white pines in pine forests only to the extent that it promotes growth and regeneration, and requiring harvests of other forests containing white pine to leave enough white pine to produce seeds for the next generation.

State Land Timber Sales Program Recent History



Source: DNR Division of Forestry

Why Harvest Wood From State Lands?

Why not just leave trees alone? Harvest produces numerous benefits. It:

- **creates forest disturbance that helps maintain a mix of forest types and ages to support diverse wildlife and recreation**
- **reduces fire risk**
- **provides a source of funds for forest management, education, and other public services**
- **provides economic activity that supports local communities**
- **provides wood and paper to meet our needs.**

amount of various types of wood available for sale. DNR foresters (with advice and assistance from Wildlife and Ecological Services staff) also decide what type of harvest is most appropriate, depending on the type of trees, characteristics of the site, nontimber values to be protected (aesthetics, wildlife habitat, etc.), and desired composition after harvest. Some harvest methods remove most of the trees on a site. Others remove only selected trees, leaving the rest to mature or to provide seeds or shelter for the next generation. Common harvest methods are:

- clear-cut
- seed tree
- shelterwood
- salvage cut
- sanitation
- group selection
- single tree selection
- commercial thinning.

Historically, stands were considered eligible for harvest when they reached harvestable age for the species. In recent years, growing awareness of and interest in preserving the ecological value of mature trees has increased the use of a management approach known as extended rotation forestry. In this practice, harvest of some stands is delayed beyond “normal” harvest age to provide “old forest” characteristics. The older stands provide reservoirs of habitat for plant and animal species that thrive in a mature forest.

Making the Sale

Once the timber contents of a stand have been determined, the timber is offered for sale, primarily by a public auction. Loggers, most of whom are independent business owners, bid on the timber and the sale goes to the highest bidder.

DNR Forestry offers three types of sales. A regular auction sale is used for large sales. Intermediate auction sales are used for small business set-aside sales of up to 3,000 cords. Informal sales take place without an auction and are limited to sales of 500 cords or less. DNR can also issue special product and fuelwood permits. We issue an estimated 1,600 to 2,100 harvest permits per year.

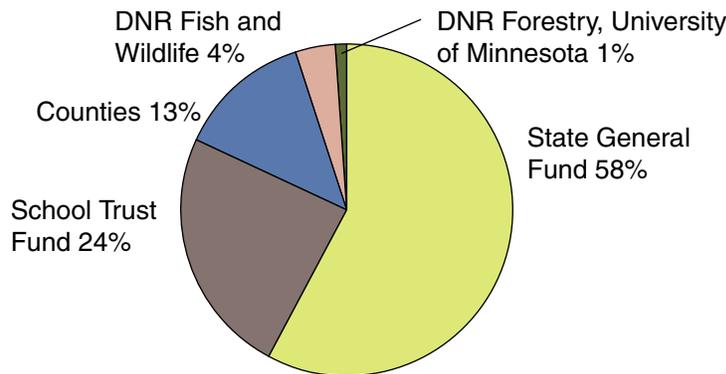
Harvest

DNR foresters supervise the harvest to make sure it’s done according to terms of contract. Loggers harvesting state land must follow the Voluntary Site-Level Timber Harvesting and Forest Management Guidelines established by the Minnesota Forest Resources Council to protect cultural resources, soils, riparian areas, visual quality, water quality, and wetland quality.

Regeneration

An important part of harvest is preparing the land to produce the next generation of trees. We are required by law to reforest an amount of land equal to land harvested each year. Regeneration can be natural, in which seeds, sprouts, or root suckers from the harvested trees provide the new growth, or it can be artificial, with seeds or seedlings planted to create the new forest.

Distribution of Timber Revenues From State Lands



Cord: An amount of wood equal to a stack 8 feet long, 4 feet wide, and 4 feet high.

Future Issues

As the world around us changes over time, so do the opportunities and challenges associated with timber production on state land. Markets are constantly changing, and DNR Forestry needs to work to remain competitive with other public and private timber providers. As more and more people make their homes in or near the forest, we will need to be increasingly sensitive of minimizing the aesthetic impacts of harvest.

A major change for the future will be the types of trees offered for harvest. Currently about half the harvest on state land is aspen. Because of age imbalance caused by logging a century ago, subsequent fires, and a long-standing poor market for aspen until the late 1980s, there will be a significant reduction in harvestable-age aspen in years ahead. The large paper companies and oriented strand board (OSB) plants that use primarily aspen have already begun to shift their needs away from aspen to other hardwoods and softwoods.

Good Wood

Wood products produced from state-owned timber are among the most environmentally sound products you can buy. Why?

- Wood is a renewable resource. The cycle of life means that, when we manage forests properly, we can both use trees and ensure they're available for future generations.
- Laws governing state tree harvest and the need for public accountability help ensure the wood was harvested in the most environmentally sound way possible—a higher standard.
- Wood uses less energy to manufacture than many other products.

Public Involvement

The public plays an important role in decisions regarding timber production from state lands. We offer opportunities to review and provide input on forest management plans, annual timber harvest lists, and individual timber sale offerings. Members of the public also have an opportunity to bid on timber auctions.



Photo: Minnesota DNR

Oriented Strand Board (OSB):

Forest Certification. In recent years an increasing number of landowners have sought third-party certification of their forest lands. Such certification provides independent verification of a landowner's claim that wood was produced in an environmentally sound, sustainable manner. DNR is currently pursuing forest certification with a goal of having the 4.5 million acres of state-administered forest lands certified by the end of 2005. DNR will seek certification both by the Sustainable Forestry Initiative (SFI) and the Forest Stewardship Council (FSC). Certification is expected to improve forest management and enhance markets for timber harvested from state land.

Chapter 6: Resource Assessment

Minnesota has more than 16 million acres of forests. Foresters' day-to-day work of planting, thinning, and harvesting this huge patchwork of lands would be impossible without a continuous, large-scale effort to record the constant natural and human-caused changes that occur. This is the job of DNR Forestry's resource assessment staff.

Many Tools

More than one kind of information is needed to manage forests, and no single tool is adequate for providing that information. Policymakers need strategic inventory information that describes broad statewide conditions and trends. Field foresters, on the other hand, require information on individual stands of trees and what actions have been taken or planned for particular tracts. For both kinds of inventory, some data can only be collected on the ground, some can be more economically gathered from the air, and some are most efficiently obtained from earth-orbiting satellites.

Walking the Woods

Summer and winter, spring and fall, inventory foresters with pocket computers and global positioning system (GPS) location gear travel the woods gathering data for



Photo: Minnesota DNR

An inventory forester uses a glass prism to find out if a tree belongs in the sample.

the **Forest Inventory and Analysis (FIA)** system. Run by the U.S. Forest Service, FIA has been America's strategic forest inventory system since the 1930s.

In Minnesota, DNR handles fieldwork for FIA and for the federal **Forest Health Monitoring** system, both of which are based on a grid of permanent, intensively measured field plots. Minnesota's innovative approach to strategic inventory, particularly its use of satellites, helped point the way to changes now taking effect nationwide in these flagship programs.

Aerial Photos

Aerial photography has been a standard forest inventory tool for 70 years. DNR Forestry's aerial photography program provides state, federal, county, and private foresters with valuable information on the structure and pattern of forest vegetation. Color infrared film helps interpreters distinguish vegetation types. Photos are turned into digital images and made available to the public on DNR's Airphotos Online Web site (www.dnr.state.mn.us/airphotos).



High-resolution aerial photos reveal details of vegetation.

Photo: Minnesota DNR

The Interagency Information Cooperative was created by the Minnesota Legislature in 1995 to provide a central resource for developing and sharing data on Minnesota forest resources. Members include the DNR, Land Management Information Center, Minnesota Association of County Land Commissioners, U.S. Forest Service, and University of Minnesota. Visit www.iic.state.mn.us for more information.

Ecological Classification System. Years ago, forest management focused on logging, and resource assessment focused on trees. Today we value the spectrum of benefits a forest provides, including recreation and ecological integrity as well as timber. As a result, old ways of describing forests—revolving around tree species, size, and other characteristics—are no longer sufficient.

To meet new needs, DNR staff now classifies Minnesota lands under the Ecological Classification System (ECS), a nationwide system that considers a variety of characteristics of an area, including climate, geology, topography, hydrology, soils, and vegetation. Under the ECS, land is divided into categories at various levels of resolution. From largest to smallest, they are domain, division, province, section, subsection, land-type association, land type, and land-type phase.

In the short term, DNR Forestry plans to use ECS classifications to guide management of trees and other forest plant life. In the longer term, the classifications will figure into activities for other areas as well, including fire management, private landowner advising, and recreation planning.

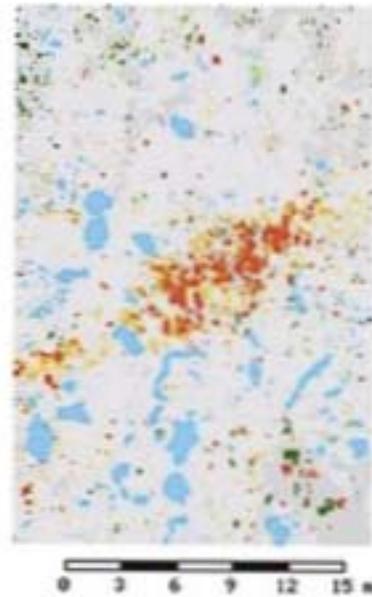


Photo: Minnesota DNR

A 1995 satellite image shows a swath of wind damage (red and orange) near Lake Itasca.

Images From Space

DNR Forestry is helping to research and develop the application of space-based remote sensing to forestry. Satellite images can be used to detect changes in the forest. A mapped instance of change may be as small as two acres. Images potentially could be used in programs that monitor forest harvesting practices and detect impact of forest harvests on waterways and other sensitive ecosystems.

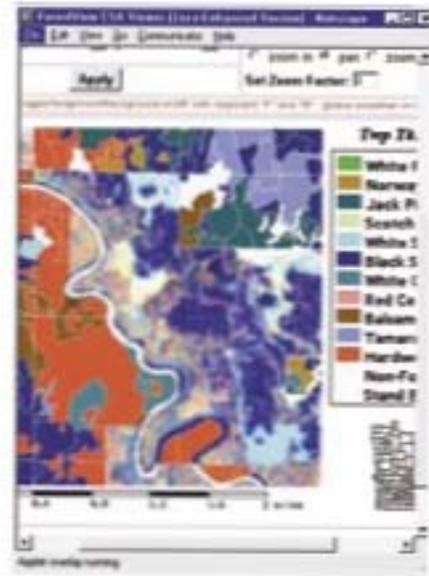


Photo: Minnesota DNR

ForestView and other Internet resources present current Minnesota forestry data to all interested persons.

Keeping Taxpayers Informed

DNR has a responsibility to keep all citizens informed of the condition of the more than 5 million acres of land it manages. The Web-based information system ForestView (www.ra.dnr.state.mn.us/forestview/fvj.html), developed by DNR and the University of Minnesota, puts the state's entire **Cooperative Stand Assessment** management inventory—the main source of information on DNR-managed forest lands—online, giving every member of the public access to detailed inventory data. A parallel system displays DNR Forestry's timber harvesting plans at www.dnr.state.mn.us/forestry/harvesting/plans.html, and allows for public comment on them. These systems are unique in the United States in the degree of public involvement in forest management they provide.

Chapter 7: Growing New Trees

In 1931, the Minnesota Legislature authorized the production of seedlings as a way to ensure the existence of future forests. That same year, Badoura State Forest Nursery was established near Akeley. General Andrews State Forest Nursery was established near Willow River in 1939, and began producing seedlings the following year.

Located on a combined total of 560 acres, the two state nurseries got their start as a source of trees for reforesting public land after harvest. When we began encouraging private landowners to plant trees, we also began selling seedlings as a service. Over the years, the nurseries have distributed hundreds of millions of trees around the state.

The two state nurseries produce more than 20 species of trees and many species of shrubs. All told, 10 million seedlings are sold each year to state, federal, county, and local land managers; commercial forest managers; and schools, organizations, and individuals.

Healthy Stock

We place high value on producing healthy, well-adapted stock. The ideal seedlings for use in Minnesota are grown from seeds collected from Minnesota trees. DNR nurseries also maintain seed orchards from which we harvest seed from superior trees of some of the more common species. We also buy seeds from private collectors.

Collecting Cones. Some of the seed used to grow new conifers in state forest nurseries comes from individuals who collect cones and sell them to the DNR. Current prices for cones range from \$16 to \$100 per bushel, depending on the species. For more information on gathering cones for use in DNR nurseries, contact your local DNR Forestry office (see page 4).

Quality Counts

Quality is an important consideration when growing the seedlings that will become Minnesota's future forests.

We take several approaches to ensuring that tomorrow's trees will be healthy, vigorous, and productive. We promote the use of native Minnesota tree species, which are adapted to our environment. We use seeds from healthy, strong stock. We also use selective breeding to produce the best possible trees for the conditions in which they will grow.

Tree Sales

DNR nurseries sell seedlings in lots of 100, with a minimum purchase of 500 trees. Orders are accepted from August 15 until early spring or until supplies run out. Seedlings purchased from DNR forest nurseries must be planted in Minnesota. They must be used to establish or reforest wood lots, windbreaks, and shelterbelts,



Photo: Minnesota DNR

or used for erosion control, soil and water conservation, or permanent food and cover for wildlife. They may not be planted for ornamental purposes or resold with roots attached for 10 years.

Species grown and sold by DNR Forestry include red pine, white pine, jack pine, white spruce, balsam fir, white cedar, tamarack, red cedar, red oak, bur oak, white oak, black walnut, green ash, silver maple, hybrid poplar, cottonwood, red-osier dogwood, and common chokecherry.

For information on tree sales, contact:

- **General Andrews Nursery**
P.O. Box 95
85894 Cty. Highway 61
Willow River, MN 55795
218-372-3183
- **Badoura Nursery**
13885 State Street
Akeley, MN 56433
218-652-2385
- or see www.dnr.state.mn.us/forestry/nurseries

Chapter 8: Promoting Forest Health

Insects and Diseases

Fifty years ago, tree-infesting insects and diseases were seen as enemies of forests. Today we recognize that some of the living things we once called pests are an important part of the forest ecosystem. Many provide food and shelter for other forest residents.

But not all, and not in all cases. Some insects and diseases are invaders from other places. They work against, rather than as part of, the natural balance. And in some cases we choose to control even “natural” pests to minimize damage that interferes with timber production, aesthetics, and other benefits we derive from trees and forests.

Forest Health Specialists

DNR Forestry's four regional forest health specialists advise DNR field foresters and other public and private forest managers around the state on how to deal with forest health issues. They balance the economic and ecological considerations involved to identify strategies that are cost-effective, represent good stewardship of the forest resource, and are environmentally sound.

In recent years we have seen many changes in forest health practices. Where once our goal was healthy trees, today it is healthy forests. Where once we concentrated on problems as they arose, today we try to anticipate and prevent them by managing the composition, vigor, and configuration of forests. Where biological controls were once a novelty, today they are a major component of our pest-fighting arsenal.

Unwelcome Invaders

Of major concern today is the threat posed to forests by nonnative species. Because these animals and plants are not native to the area, they do not have natural enemies to help keep them in check, and our native trees have not built up mechanisms for coexisting with them. DNR Forestry and other agencies develop and carry out strategies for controlling these invaders.

One nonnative insect that poses a potential threat to Minnesota's forests is the **gypsy moth**. A native of Europe and

Asia, this pest was introduced to the Boston area in the late 1860s and has gradually been working its way westward. It feeds largely on oaks and aspen trees, reducing productivity and sometimes killing them. Although no populations have become established in Minnesota, gypsy moths have been trapped here.

The **emerald ash borer** is another nonnative pest that could harm Minnesota trees and forests in the years ahead. A native of Asia, this insect was found in Michigan in 2002. It attacks and kills ash trees, and can be transported from one area to another on firewood and nursery stock. If this insect invades Minnesota it could cause major damage because ash is one of the most common hardwood trees in the state's forests, and is also found in large numbers in residential areas.

A fungus-caused disease known as **sudden oak death** is also of concern to Minnesota forest health specialists. Originally discovered on the West Coast, this disease can travel on nursery plants such as rhododendrons and

Gypsy Moth



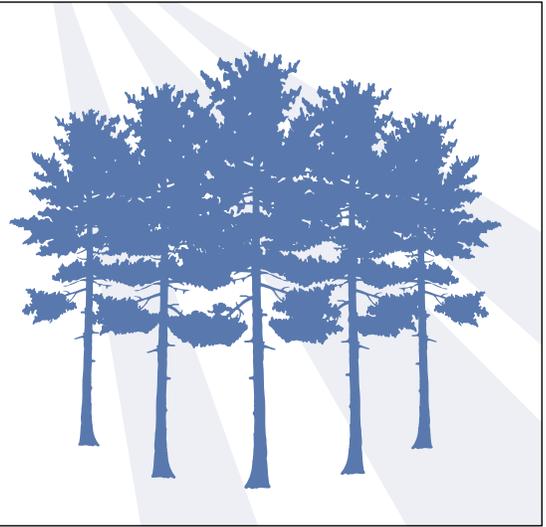
Photo: Peter Dziuk

Common Pests. Insects, diseases, animals, and weather all can harm trees and forests. Among the more common tree pests in Minnesota are spruce budworm, forest tent caterpillar, oak wilt, two-lined chestnut borer, jack pine budworm, and white pine blister rust.

Integrated Pest Management. DNR Forestry maximizes forest health and productivity using an approach to insects and diseases known as integrated pest management (IPM). IPM combines biological, chemical, mechanical, and other control techniques to achieve the most economically and environmentally appropriate level of control. With IPM, pests are a consideration in all aspects of forest management. Integrated pest management means planting insect- and disease-resistant trees. It means watching a growing forest and removing or treating problem spots promptly. It means pruning, thinning, and carrying out other management with the goal of maintaining a healthy forest. It also means using chemical pesticides when appropriate. Under IPM, regeneration plans consider previous pest problems as well as which mix of tree species will be the healthiest on the site.

Changing Climate

Scientists expect Minnesota's climate to change in the years to come because of atmospheric changes caused largely by combustion of fossil fuels. This change will have implications for Minnesota's forests. Although there is much uncertainty regarding actual impacts, changing climate is expected to alter forest composition, tree growth, pest distribution, and populations of mammals and birds inhabiting the forest.



azaleas. It has not yet spread to Minnesota. If it does, it could devastate our oak populations.

Buckthorn was introduced into Minnesota as an ornamental plant. It has spread rapidly through the state, carried by birds that eat its berries and deposit its seeds in their droppings. Buckthorn crowds out native species.

Garlic mustard was imported from Europe. It spreads through the understory of forests, crowding out native plants and altering the habitat for other living things.

Earthworms, which are not native to Minnesota forests, eat the rich layer of organic materials on the forest floor, harming habitat for wildflowers and altering the conditions tree seeds need to sprout.

DNR Forestry works with the Minnesota Department of Agriculture and federal regulatory organizations to help address the threats posed by invasive species. The problem will likely grow in years to come as our increasingly global economy and mobile population enhance the chances for troublesome organisms to move into Minnesota. Controlling problems caused by invasive species will likely become a bigger issue in the future. For more information visit www.dnr.state.mn.us/invasives.

Soil Protection

Healthy soil is the foundation of a healthy forest. Soils can be harmed by erosion and by compaction and rutting from large vehicles such as those used in logging. We protect soils on state forest lands by following recommendations in the Voluntary Site-Level Timber Harvesting and Forest Management Guidelines (see page 38). Through individual contact, meetings, and publications, we teach managers how to use soil-related information to make environmentally sound choices for their land.

For more information on forest health check out the *Forest Insect and Disease Newsletter*, available online at www.dnr.state.mn.us/fid (or contact the DNR Information Center at 651-296-6157 or 888-646-6367). Information and advice for managing specific pests is available through links listed at www.dnr.state.mn.us/treecare.

Chapter 9: Private Forest Stewardship

Private, nonindustrial landowners—farmers, rural residents, lake property owners—own some of the most valuable forest land in Minnesota. Unlike government or industrial landowners, most lack the professional forestry expertise needed to keep their forests healthy and producing whatever amenities they desire, be they habitat, recreation, timber, or some other benefit.

To help keep these forests diverse, healthy, and able to meet multiple goals, DNR Forestry works with the U.S. Forest Service, nonprofit groups, consulting and industrial foresters, soil and water conservation district resource professionals, and others to provide education and technical assistance to private landowners. Through workshops, written information, Web sites, and one-on-one consultation, we help them understand the value of planning and translate their dreams into sound, sustainable management plans.

Minnesota's 147,000 private nonindustrial forest landowners control some 35 percent of the state's total forest land.

DNR Forestry prepares forest stewardship plans free of charge. We also reimburse many plan preparers outside the DNR.

In recent years, forest stewardship plans have been written for some 60,000 to 120,000 acres of land annually.

Follow Through

After we help develop a forest stewardship plan, we provide advice and hands-on technical assistance to help turn dreams into reality. We also help the landowner connect with federal incentive plans and other sources of financial assistance for improving forest lands.

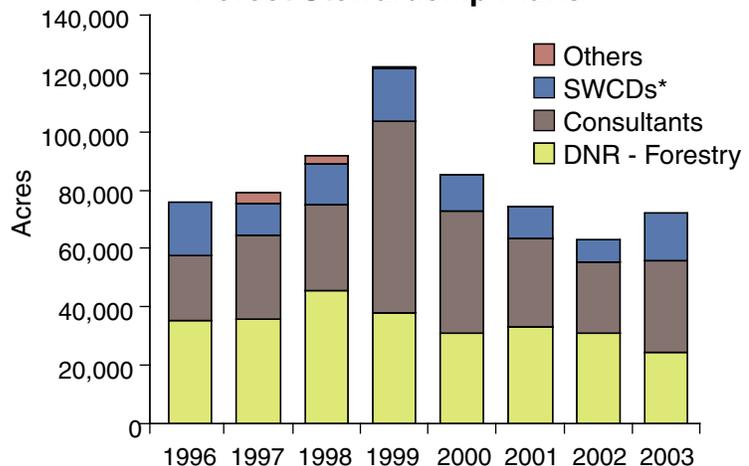
Over the years, federal and state governments have created various programs to encourage the proper management of private lands. These programs often use a combination of education and technical assistance to make sure landowners get the information they need to make land man-

Forest Certification. We encourage private forest owners whose forest management plans include timber harvesting to pursue third-party certification of their lands. Certification provides independent verification that a forest is being managed sustainably and lets consumers know that wood they purchase was produced in an environmentally sound manner. For more information on forest certification, contact your local DNR Forestry office (see page 4).

The Forest Stewardship Plan

The hallmark of our private assistance efforts is the Forest Stewardship Plan Program. Any private landowner with between 20 and 5,000 acres of land, at least 10 acres of which has (or will have) trees, is eligible to participate. A DNR forester or other plan preparer meets with the landowner to identify goals—generating income, protecting biodiversity, providing for outdoor recreation, and so on. We go over the other functions the land has, including maintaining a healthy ecosystem. Then we help develop a plan the landowner (and future landowners, if the property changes hands) can use to manage the property.

Minnesota Acreage Annually Covered by Forest Stewardship Plans



*SWCDs = Soil and Water Conservation districts

Source: DNR Division of Forestry

agement decisions in an ecologically sound manner. In some cases financial incentives are offered to help defray the cost of installing certain management practices.

To date, DNR Forestry and partners have prepared forest stewardship plans covering more than 1.1 million acres of land. Our goal is to have half of all Minnesota forest land under nonindustrial private ownership managed under stewardship plans.

A Forest Legacy

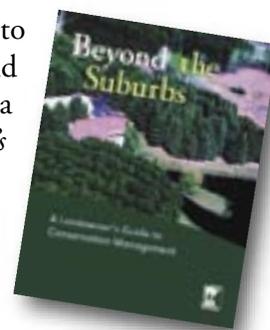
Under the Sustainable Forest Incentive Act (SFIA), a program was created that offers an incentive payment to landowners who enroll 20 or more acres of contiguous forest land for eight or more years, have a forest stewardship plan in place, and agree to use the Voluntary Site-Level Timber Harvesting and Forest Management Guidelines (see page 38). For more information go to www.cnr.umn.edu/cfc/nryb/nrr/SFIA_NRR.pdf.

Sustainable Woodlands

The Sustainable Woodlands Program, established in 1997 by the Minnesota Forestry Association and Legislative Commission on Minnesota Resources, pays up to 65 percent of the costs of projects to improve the value of forest land for uses such as habitat, recreation, aesthetics, and forest products production. Private landowners with 20 to 1,000 acres of eligible land may apply for assistance through the program.

Less than 20?

Eligibility for the Forest Stewardship Plan program is limited to landowners with 20 or more acres of land. If you own less land than that but would still like to learn how you can develop a plan to manage it, check out *Beyond the Suburbs: A Landowner's Guide to Conservation Management*. Download a copy of this informative 64-page guide at www.dnr.state.mn.us/forestry (look under Tree Care and Management) or contact the DNR Information Center (651-296-6157 or 888-646-6367) for information on purchasing a copy.



Public Partners

In addition to advising individual landowners, we also help county and city governments manage the timberland they own. Timber sales are an important source of income for a number of northern Minnesota counties. When requested, we assist with administration, inventories, and interpreting aerial photos. This helps ensure that these land managers have access to current information and expertise needed to manage forests well.

How to Apply

To learn more or to request a Forest Stewardship Plan, contact your local DNR Forestry office (see page 4) or the Private Forest Program Coordinator at 651-297-4467. Or fill out an application online at www.na.fs.fed.us/spfo/forms/wdstew_form.html.

Financial Assistance

A variety of cost-share, loan, and grant programs are available through the DNR and other agencies to provide financial support for landowners interested in improving their forest management practices. For more information contact your local DNR Forestry office (see page 4).

Chapter 10: Utilization and Marketing

A strong forest products industry contributes to the economic well-being of the state and helps ensure that the interest and financial resources are available for maintaining healthy forests. Producing income from state-owned lands is also an important part of DNR Forestry's mandate. Consequently, an important part of what we do is to encourage markets and promote the use of forest products.

Analysis, Assistance, and Education

DNR Forestry's utilization and marketing program encompasses three main areas:

Resource Analysis. Resource analysis paints a picture of forest product supply and demand and how they change over time. It provides information for manufacturers on the kind and amount of raw materials available today and likely to be available at various points in the future. We also keep track of the demand for wood products.

Business Assistance. Our business assistance program helps reduce waste by providing information on technologies to improve wood use. We also help businesses with planning and marketing and link forest products manufacturers with suppliers and consumers. We encourage the establishment of wood-based, value-added industries. For example, we currently are encouraging land-owners to plant hybrid poplar on marginal agricultural lands.

Education. Our educational efforts focus on helping the public understand the value of the wood products industry for forest and economic health.

Currently supply and demand for Minnesota forest products are about equal, and our efforts focus on maintaining this balance. To help keep our forest-based economy strong while protecting forest ecosystems, we are also encouraging the development of enterprises that produce nontraditional products, including foods, decorative objects, herbs, and other items, from forests.

Strengthening Minnesota's Forest Industry. In 2003 the governor established the Advisory Task Force on the Competitiveness of Minnesota's Primary Forest Products Industry to recommend strategies to strengthen the industry in response to a loss of forest products-related jobs in recent years. The task force offered a number of recommendations, including increasing timber production, improving environmental review, improving transportation, and encouraging third-party certification, which promotes environmentally sound forest management. The report is available at www.dnr.state.mn.us/forestry.

DNR Forestry's Utilization and Marketing Program:

- helps find markets for timber
- encourages development of nontraditional forest products such as birch twigs, balsam boughs, nuts, and seeds
- reduces waste by finding and developing markets for wood scraps and other byproducts of wood products manufacturing
- publishes a newsletter providing information on wood utilization and marketing and connecting buyers and sellers of wood products
- publishes directories of forest products manufacturers for forest managers and businesses
- maintains information on wood product supply and demand
- encourages the use of wood and wood byproducts for fuel.

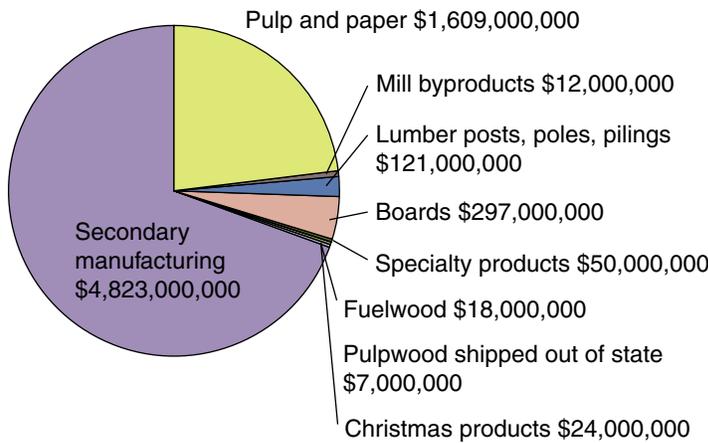


For information on marketing opportunities see *Minnesota's Special Forest Products*, available for download at www.dnr.state.mn.us/forestry/um.

Economic Impact. The forest products industry has a huge positive impact on Minnesota's economy. More than 55,000 Minnesota workers get at least some of their income from the industry. Each dollar of timber sold supports about \$41.60 in economic activity for the state. Including value-added products, the industry contributes more than \$6.9 billion annually to our economy. It's the fourth-largest manufacturing industry in Minnesota based on employment (behind computer and electronics equipment, fabricated metal products, and food manufacturing).

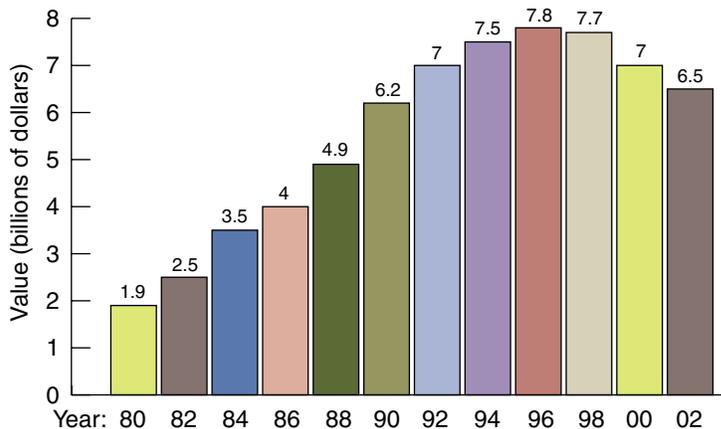
Special Forest Products. Interest is growing in Minnesota and around the country in the production of special forest products, also known as nontimber or nontraditional forest products. This growing industry allows individuals and businesses to derive income from forests while minimizing impact and promoting long-term sustainability of both the resource and the local economy. Examples of special forest products include Christmas trees, balsam boughs, bark, cones, nuts and seeds, herbs, and decorative vegetation such as ferns and mosses.

Value of Forest Products Manufactured in Minnesota



Source: Minnesota Forest Industries, 2001

Value of Forest Products Manufactured in Minnesota



Source: Minnesota Forest Industries

Selected Publications

The following publications are available from DNR Forestry or at www.dnr.state.mn.us/forestry/um.

Minnesota Primary Forest Products Producer Directory, lists sawmills, pulp and paper mills, oriented strand board mills, veneer mills, and dry-kiln facilities.

Minnesota Secondary Forest Products Producer Directory, lists wood-product manufacturing companies.

The Market Place, quarterly newsletter provides information, including free ads, for foresters and members of the forest products industry.

Minnesota's Forest Resources, annual publication provides information related to Minnesota's forest resources and forest products industry.

Chapter 11: Education and Communication

DNR Forestry is responsible for caring for Minnesota's forest resource. But in order to do our job, we must have the support of Minnesotans who know and care about trees and forests. The purpose of our education and communication efforts is to ensure that Minnesotans of all ages understand the value of Minnesota's forest resource and are aware of programs and opportunities that nurture and support forest stewardship.

DNR Forestry offers a variety of education and information-sharing programs to the public. Since education is a lifelong process, programs are designed for all ages, from preschoolers through adults.

Minnesota Project Learning Tree

Our premier curriculum resource for educating children about forestry and natural resources is Minnesota Project Learning Tree (PLT). This innovative environmental education program trains volunteers who in turn train educators to use the national Project Learning Tree curriculum in their classroom or informal learning settings. PLT typically reaches 300 educators and 9,000 students annually.

The Minnesota PLT program includes preschool, elementary, and high-school components. PLT reaches educators and students through formal classrooms, scout troops, environmental learning centers, forestry groups, and public events. The curriculum is periodically reviewed and updated.



School Forests

The School Forest Program allows schools to designate outdoor classrooms where students can



explore and learn about the natural world. DNR Forestry provides forest management advice, curriculum support, and forestry information to more than 100 school forest sites. In addition, many local, regional, state, and federal partners provide support to school forest sites. More than 7,000 acres of land are currently enrolled in the program.

Schools anywhere in Minnesota can be involved in the School Forest Program. School forests can be found in urban, suburban, and rural parts of Minnesota. They range in size from one to 600 acres. Local DNR, county, and city foresters ensure school forest sites are well-managed.

Other Classroom Resources

We provide teachers with a variety of classroom resources for teaching students about trees and forests. *A Teachers' Guide to Arbor Month* contains activities and lessons in math, science, language arts, and physical education to help grades K-8 students and teachers explore Minnesota's forests. The Firewise Com-



Lifelong Learning. Many of our education and information efforts are integrated into other agency programs. For example, the Woodland Stewardship Program provides advice to landowners on options for managing forests; the utilization and marketing program provides publications and advice to guide individuals and businesses involved in harvesting and selling forest products; the forest health program offers a bimonthly newsletter with updates on insect and disease issues; and the urban and community forestry program provides educational programs and materials to residents, local government employees, organization members, and businesspersons to help nurture trees in the urban environment. For more information, see other sections of this publication.

munities Curriculum is new for middle and high school teachers. It combines wildfire education, Geographic Information Systems (GIS) technology, and service learning to meet national high school geography standards.

Gypsy Moth Curriculum.

Partners. Volunteers play an enormous role in DNR Forestry education efforts. Project Learning Tree trainers, for example, offer hundreds of hours of service each year free of charge to pass on the important message of forest stewardship to educators around the state. Becoming a DNR volunteer is easy. Simply call 651-297-1449 (Twin Cities metropolitan area) or 888-646-6367 (toll-free) to request an information packet and application.

Equally critical are partnerships with other institutions such as the Minnesota Extension Service and the U.S. Forest Service. Such cooperative efforts make efficient use of limited resources and multiply our outreach efforts many times over.

DNR Forestry contributes to the efforts of the Minnesota Logger Education Program (MLEP). Established in 1995, MLEP provides educational programming to Minnesota's logging community in the areas of sustainable forest management, transportation, safety, and business management. We work

with MLEP to help design and deliver logger education related to Minnesota's Voluntary Site-Level Timber Harvesting and Forest Management Guidelines and other forest management topics. MLEP members are responsible for approximately 90 percent of Minnesota's annual timber harvest. Membership is voluntary and reflects the commitment of logging business owners to safe, productive, and environmentally responsible timber harvesting. Through 2003, MLEP has sponsored more than 270 workshops with a total combined attendance of 8,466. DNR Forestry is also represented on MLEP's board of directors.

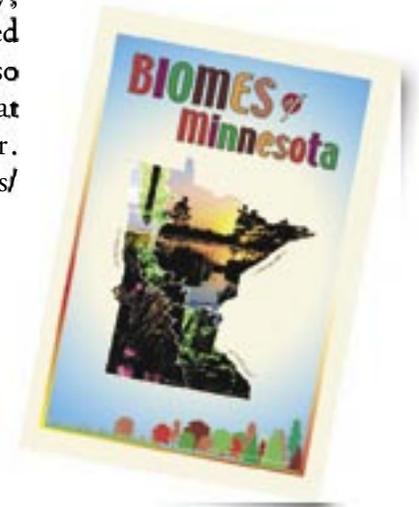


Photo: Minnesota DNR

Publications and More

DNR Forestry offers Minnesotans numerous opportunities for learning about trees and forests. A variety of publications and posters covering topics such as Minnesota's biomes, forest management, tree species, and much more are available to interested individuals at no charge.

An abundance of information about Minnesota's forests, forest policy, DNR Forestry, and related topics is also available at www.dnr.state.mn.us/forestry.



Chapter 12: Community Forestry

Trees are an important part of a community's environment. They shelter residents from summer sun and winter wind, provide wildlife habitat, beautify streets, and increase property values. DNR's urban and community forestry program helps communities plan, plant, and care for trees in neighborhoods, parks, business places, and other populated areas.

Education

One way in which we help nurture trees in an urban environment is to provide educational programs and materials to residents, local government employees, organization members, and business people.

We offer recommendations on how to choose trees for a site and how to ensure trees' success once they are planted. We provide advice on managing tree diseases, on protecting trees from damage, and on preventing injury and property damage from aging trees.

We also work with the Minnesota Shade Tree Advisory Committee, a coalition of public and private partners. Together we work to raise awareness of the importance of actively managing trees in cities and towns.

Advising and Funding

DNR foresters work one-on-one with community leaders in areas such as designing tree ordinances and advising zoning committees.

We serve as the main contact for several programs that encourage community forestry efforts, including the National Arbor Day Foundation's Tree City USA program and Minnesota ReLeaf. We also administer a federal urban and community forestry

program that provides grants in support of community forestry.

Through the Minnesota ReLeaf program, we provide matching grants of up to \$15,000 to help local governments, school districts, and nonprofit organizations develop and carry out plans for developing and sustaining healthy community forests. For more information contact your local DNR Forestry office (see page 4), call 651-296-9110, or visit www.dnr.state.mn.us/grants/forestmgmt/urban.html.

Asian Outreach Project

DNR and Tree Trust, a Minnesota nonprofit organization, are partnering with local Hmong, Lao, Vietnamese, and Chinese organizations to conduct a variety of urban forestry projects. Career opportunity and educational tours, tree planting and care projects, and neighborhood celebrations are helping Asian residents more fully integrate into their communities.

An Eye to the Future

We have made much progress over the years in encouraging communities to value trees and in educating community leaders and citizens on the nuts and bolts of community forestry. But there is still much work to be done.

We need to continue to encourage established communities to enrich existing settings with trees. We also need to continue to play a key role in encouraging growing communities to value trees. We must encourage communities and developers to protect existing forest land, minimize forest fragmentation, protect trees from construction damage, and make trees an integral

Up-to-date information on tree care is available on the DNR Web site at www.dnr.state.mn.us/treecare.

Tree Care Advisors. DNR is a sponsor of the Tree Care Advisor program, which trains citizens to educate other citizens about trees. Tree Care Advisors work in communities to help others learn about planting and caring for trees. For more information see www.mntca.org.



part of their landscape. Our message is that natural areas provide many benefits, from sheltering wildlife to beautifying landscapes, and any development will be richer for the trees it protects and plants.

We also need to address new threats. Many of the trees that replaced elms killed by Dutch elm disease several decades ago will not reach maturity because they were planted improperly. Exotic pests such as gypsy moth, Asian longhorned beetle, and emerald ash borer could devastate community forests. DNR foresters will continue to work with our partners in the Minnesota Shade Tree Advisory Committee and other organizations to bring communities the information they need to maintain a healthy canopy of trees.

May Is Arbor Month
in Minnesota.



Is Your City a Tree City U.S.A.? Communities are eligible for the designation if they have a tree board or department, a tree care ordinance, a community forestry program with a budget of at least \$2 per person per year, and an Arbor Day proclamation and observance. Tree City U.S.A. designation helps a community develop and maintain a strong tree program, provides opportunities for financial assistance, and builds a sense of community pride. For more information see the Tree City USA Web site at www.arborday.org/programs/treecityusa.cfm or phone 402-474-5655.



Volunteers collect data on city street trees.

Photo: Tree Trust

Chapter 13: Policy

Many layers of direction help determine how Minnesota forests are managed. These range from statutes and rules, to broadly developed guidelines, to internal policies and recommendations.

Legislative Support

DNR Forestry works with the Legislature in a variety of ways. We develop biennial and capital budgets to support our work and present them to the Legislature. We help develop legislation related to state land management and forest issues. We also share our insights with legislators regarding laws proposed by others, and develop fact sheets and other materials that give legislators science-based background information related to forests and forest management.

Policy and Guidelines

The DNR and DNR Forestry are involved in a number of levels of forest policy and guideline development. Some of the more significant and controversial policies are developed with broad interdisciplinary and public stakeholder involvement (e.g., Voluntary Site-Level Timber Harvesting and Forest Management Guidelines, DNR Old-Growth Forest Guidelines). Others are developed internally to address DNR processes and operations (e.g., Forestry/Wildlife Coordination Policy). Still others are developed as evolving management recommendations to address specific issues or species needs.

DNR Forestry planners also review and comment on the policies and plans of other DNR divisions, other government agencies (e.g., U.S. Forest Service, U.S. Fish and Wildlife Service, counties), and organizations that might affect or influence forest management in Minnesota.



Photo: Deborah Rose, Minnesota DNR

Environmental Review

DNR Forestry planners are responsible for coordinating division input on the environmental review of development projects (DNR and others) that may affect forest resources. We also assist other state agencies in the completion of required environmental review documents and any resulting litigation associated with major wood mill expansions.

Minnesota Forest Resources Council

The DNR is a member of the Minnesota Forest Resources Council (MFRC), established by the Legislature in 1995. DNR Forestry's director currently represents the DNR on the MFRC. The council's 17 members, who represent both the public and private sectors, develop programs to help sustain Minnesota's forests and advise government agencies on forestry issues. For more information see www.frc.state.mn.us or call 651-603-0109.

Minnesota Forest Resources Partnership

The Minnesota Forest Resources Partnership is a voluntary partnership of forest landowners, forest resource managers, and loggers. The mission of the partnership is to implement and coordinate scientifically based, technically and economically feasible forest management practices. The primary objectives are productive, sustainable forest resources and economically viable forest management organizations and forest products industries. The partnership was formed in 1995 and includes 26 organizations.

Voluntary Management Guidelines

Recognizing the importance of managing forest resources in a way that keeps them healthy for future generations, the Minnesota Legislature in the mid-1990s assigned the Minnesota Forest Resources Council the task of developing a set of guidelines recommending forest management practices that help protect cultural resources, soils, riparian areas, visual quality, and water and wetland quality. The resulting Voluntary Site-Level Timber Harvesting and Forest Management Guidelines, finalized in 1998, have been distributed widely among landowners, resource managers, and loggers. They are now being used to direct harvest and other practices on all state land and on land under other ownership throughout the state. For more information see www.frc.state.mn.us/FMgdline/Guidelines.html.

Do you see evidence that the Voluntary Site-Level Timber Harvesting and Forest Management Guidelines are not being followed? Get the word to the people who can do something about it by calling the confidential Minnesota Forest Resources



Management guidelines help to minimize rutting impacts, which can affect future forest stand productivity.

Council's Public Concerns Registration Line, 888-234-3702, or submit a concern online at www.frc.state.mn.us/monitor/PCRP.htm. An investigator will assess the situation, provide educational materials as needed, and recommend actions to resolve any problems found.

Photo: Mike Phillips, Minnesota DNR

Chapter 14: A Brief History

- 1894:** In September, the Hinckley fire takes 418 lives, drawing widespread attention to Minnesota's forest resources.
- 1895:** The Minnesota Legislature appoints the state auditor as forest commissioner. The auditor appoints General C.C. Andrews as Minnesota's first chief fire warden. In his first annual report, Andrews notes the state contains 11,890,000 acres of forest.
- 1899:** The Legislature creates a forestry board to manage lands granted to the state by the federal government or private individuals for forestry purposes.
- 1900:** Minnesota's first forest reserve is established when 1,000 acres of cutover pine lands in Cass County, donated to the state by Governor John S. Pillsbury, become Pillsbury State Forest.
- 1909:** Motivated by a forest fire that swept the mining village of Chisholm the year before, the Legislature authorizes the appointment of a corps of forest rangers.
- 1910:** On October 9, six weeks after the forest rangers are laid off due to lack of funds, numerous small fires are fanned by wind into a holocaust. Before the day ends, Baudette and Spooner are in ashes and 42 people are dead.
- 1911:** The Legislature creates the Minnesota Forest Service. Responsibility for forests (except for timber management, which remains with the state auditor) is placed under a forestry board. William T. Cox is appointed Minnesota's first state forester. Cox organizes a state forest protection system with district rangers.
- 1914:** A constitutional amendment is passed designating trust fund land as state forests.
- 1917:** The Minnesota Legislature designates 350,000 acres of state lands in northern St. Louis, Lake, and Cook counties as state forests. The first extensive tree planting is undertaken when wild stock is dug up and planted on various types of land.
- 1918:** On October 12, a forest fire wipes out Cloquet, most of Moose Lake, and more than a dozen smaller villages. Property damage exceeds \$28 million, and 438 lives are lost. A burning permit law is passed regulating when and where fires can be started.
- 1924:** The federal Clarke-McNary Act is passed, providing Minnesota with increased funding for fire prevention.
- 1925:** The Conservation Commission and Department of Conservation are established. The state forester becomes the commissioner of forestry and fire prevention. Forestry laws are reorganized and codified. The forested area of the state is defined as any county with 1,000 acres or more of timber or unbroken prairie land or of cutover land not cleared of combustible material.
- 1931:** The Department of Conservation is reorganized. Administration of state forests and state parks is assigned to the department's Division of Forestry.
- 1931:** The Legislature authorizes the production of native conifers for planting on state land. The Badoura nursery near Akeley begins producing trees.

- 1933:** The Legislature moves timber sales from the state auditor's office to the Department of Conservation, Division of Lands.
- 1933:** The Legislature passes a law requiring income from "acquired lands" in state forests to go to the state's general revenue fund, with half reinvested into the county from which the income came.
- 1933:** Civilian Conservation Corps camps are established. Thousands of young men begin working in fire protection, firefighting, forest management, and nursery work. The Legislature establishes 13 more state forests.
- 1934:** Timber sale responsibility is moved from the Division of Lands to the Division of Forestry in the Department of Conservation.
- 1935:** Thirteen new state forests are established. A separate state parks division is set up.
- 1936:** The first statewide forestry inventory is completed.
- 1939:** General C.C. Andrews nursery is established near Willow River. The nursery begins producing trees in 1940.
- 1943:** Minnesota's first minimum cutting regulations law is enacted. It defines the size of trees to be cut and provides for leaving seed trees.
- 1943:** The state forest laws are codified. Twenty-nine state forests are reestablished under a single act.
- 1944:** Keep Minnesota Green forest fire prevention education and the Tree Farm program are established.
- 1944:** The U.S. Forest Service creates Smokey Bear to help publicize citizens' role in preventing wildfires.
- 1946:** Private forest management assistance begins with the hiring of two foresters with funds provided by forest industries.
- 1947:** The Legislature provides for private forest management service to owners of not more than 1,000 acres. The Division of Forestry is authorized to produce planting stock of all species for use on private land. Tree production skyrockets.
- 1949:** The Legislature mandates that tax-forfeited land may be designated as a school forest to encourage educators to use nature as an outdoor classroom. It requires the Department of Conservation to support school forest lands.
- 1952:** The first school forest is established at Blackduck.
- 1953:** The Legislature names the red (Norway) pine Minnesota's state tree.
- 1955:** For the first time in the history of the state, an inventory of the timber on the 4.7 million acres of state land owned or administered by the Department of Conservation is completed and published.
- 1956:** The Division of Forestry is reorganized into two sections, state land management and cooperative forestry.
- 1957:** The Legislature designates the first Friday in May as Arbor Day in Minnesota. It also passes the Minnesota Tree Growth Tax Law, making it possible to tax private forest lands on the basis of the annual increase in value.
- 1957:** Division of Forestry field staff is organized into four regions, 18 administrative areas, and 74 ranger districts.
- 1959:** The commissioner of conservation adds an additional 830,116 acres of state land to existing state forest land.
- 1963:** The Legislature establishes and reestablishes 54 state forests.
- 1963:** The Minnesota Outdoor Recreation Resources Act is passed, encouraging the development of numerous recreation facilities within the state.

- 1965:** Arbor Day is changed from the first Friday in May to the last Friday in April.
- 1967:** The Division of Forestry becomes the Division of Lands and Forestry, and takes on responsibility for state land leases, sales, and land records.
- 1967:** The surveyor general's office is consolidated with the Department of Conservation; the Division of Lands and Forestry assumes responsibility for measuring the amount of timber on state land.
- 1971:** The Department of Conservation is renamed the Department of Natural Resources.
- 1972:** The Division of Lands and Forestry is reorganized into a Division of Forestry and a Bureau of Lands.
- 1978:** The national Project Learning Tree curriculum is introduced into Minnesota to teach young people about trees and forests and their role in a healthy economy and environment.
- 1982:** The Legislature passes the Forest Management Act, which requires the Division of Forestry to reforest an amount of state land equal to the amount harvested each year.
- 1984:** The Minnesota Incident Command System (MNICS) is created to coordinate state, local, and federal firefighting efforts.
- 1986:** DNR Forestry, now with more than 400 employees, celebrates its 75th anniversary.
- 1989:** The Environmental Quality Board begins work on a generic environmental impact statement (GEIS) assessing the potential environmental impacts of various levels of future harvest.
- 1990:** Water quality best management practices (BMPs) to help loggers minimize impacts on lakes and streams are published.
- 1990:** The Legislature establishes Lake of the Woods State Forest, bringing the state forest total to 57.
- 1991:** The ecological classification system (ECS) is adopted as a tool for categorizing lands not only by tree type but also by other physical and biological characteristics.
- 1994:** The GEIS is approved, providing an important framework for sustainable management of forests in Minnesota.
- 1994:** DNR Forestry and tourism and forestry industry partners publish visual best management practices (BMPs) to guide logging in areas valued for their scenic quality.
- 1994:** DNR Forestry is reorganized into five regions, 40 areas, and 29 workstations.
- 1995:** The Legislature passes the Minnesota Sustainable Forest Resources Act. The law encompasses many of the recommendations of the GEIS and creates the Minnesota Forest Resources Council (MFRC) to coordinate implementation of the act and help guide policy development.
- 1995:** Water quality BMPs are extended to protect wetlands.
- 1995:** The Minnesota Forest Resources Partnership is formed to promote the implementation and coordination of scientifically based, technically and economically feasible forest management practices.
- 1998:** MFRC establishes Voluntary Site-Level Timber Harvesting and Forest Management Guidelines for landowners, resource managers, and loggers. The guidelines offer suggestions for protecting cultural resources, soils, riparian areas, visual quality, water and wetland quality, and wildlife while managing forests for timber production and other uses.

1998: The process of designating old-growth forests for protection begins.

2000: The Legislature establishes Minnesota's 58th state forest, the 15,000-acre Waukenabo State Forest in north-central Minnesota.

2001: Minnesota adopts Firewise, a national program to help communities reduce the risk of loss due to wildfires.

2002: The DNR is reorganized into four regions.

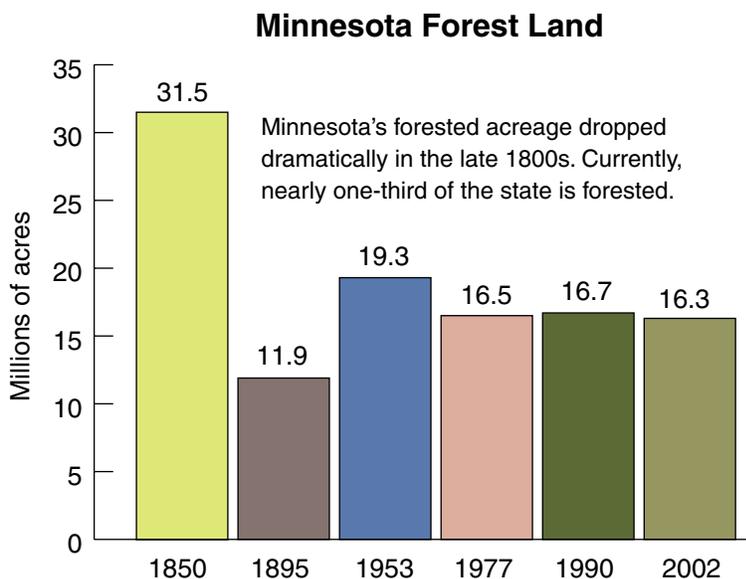
2003: The governor establishes the Advisory Task Force on the Competitiveness of Minnesota's Primary Forest Products Industry. The task force issues a report describing Minnesota's forest industry and identifying policies and programs that can improve competitiveness.

2004: The DNR commits to certifying 4.5 million acres of state-administered forest lands by the end of 2005 through the Sustainable Forestry Initiative (SFI) and Forest Stewardship Council (FSC).

2004: Smokey Bear celebrates his 60th birthday.

2004: The 100th school forest is established in Minnesota, bringing the amount of land enrolled in the Division of Forestry's School Forest Program to 7,000 acres. Private, public, and tax-forfeited lands enrolled in the program annually impact 24,000 students.

2004: DNR Forestry consolidates its offices into four regions, 27 areas, and 35 field stations around the state.



Source: *A Strategic Conservation Agenda, 2003–2007*, Minnesota DNR

Chapter 15: Questions and Answers

Q: How much of Minnesota is forested?

A: That depends on how you define forest and whom you ask. In Minnesota, land use and land cover are measured in a variety of ways. Land ownership records, U.S. Forest Service Forest Inventory and Analysis (FIA) assessments, and the DNR's Cooperative Stand Assessment data all yield different numbers. In addition, forest land and timberland are defined differently.

Here are some numbers commonly used to describe the extent of Minnesota's forested land:

- 54 million acres comprise Minnesota's land base, including water.

Source: *Minnesota Land Use and Cover: 1990s Census of the Land*

- 51 million acres comprise Minnesota's land base, not including water.

Source: *Minnesota Land Use and Cover: 1990s Census of the Land*

- 16.3 million acres in Minnesota are considered forest land (approximately one-third of Minnesota's land base).

Source: *Minnesota Forest Inventory and Analysis (FIA) 2002 data*

- 15 million acres of Minnesota's forested land are considered timberland.

Source: *Minnesota Forest Inventory and Analysis (FIA) 2002 data*

- 5.6 million acres of Minnesota's land base are administered by the DNR.

Source: *DNR Division of Lands and Minerals—Land Records System 2003*

- 4.5 acres of land administered by the DNR are considered forested.

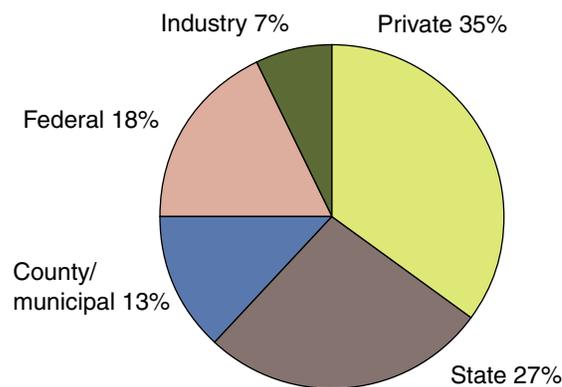
Source: *Cooperative Stand Assessment data*

Q: What's the difference between forest land and timberland?

A: Forest land is all forested land, including timberland and land reserved from harvest or not suitable for growing trees for harvest. Timberland is land considered useful for growing and harvesting trees. More than 1 million acres of Minnesota's public forest land is reserved from or off-limits to timber harvest. This includes the Boundary Waters Canoe Area Wilderness, Voyageurs National Park, state parks, scientific and natural areas, and county parks.

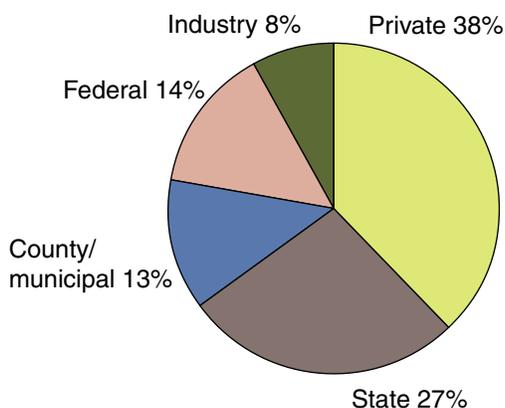
Q: Who owns Minnesota's 16.3 million acres of forest land?

A: According to Minnesota Forest Inventory Analysis (FIA) 2002 data, forest-land ownership breaks down as follows:



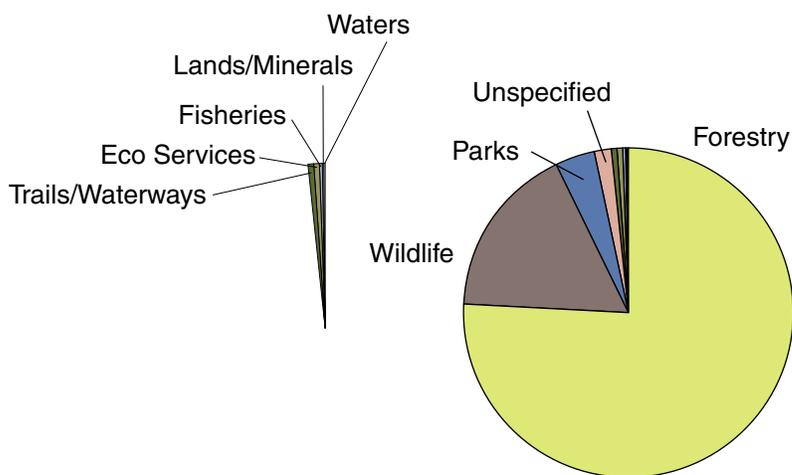
Q: Who owns Minnesota’s 15 million acres of timberland?

A: According to Minnesota Forest Inventory Analysis (FIA) 2002 data, Minnesota’s 15 million acres of timberland breaks down as follows:



Q: How much land does DNR administer?

A: DNR administers 5.6 million acres of land (DNR Division of Lands and Minerals—Land Records System 2003). Various divisions administer the land as follows:



Q: What are the threats to Minnesota’s forests?

A: The biggest threat to Minnesota’s forest land is our desire to be near it. Vacation houses and urban sprawl reduce the amount of forest, complicate the forest ownership picture, and break forests into fragments that are less able than an intact forest to support a diversity of living things.

Q: Is forest land declining in Minnesota?

A: Not right now. Over the past century and a half some 16 million acres of forest were lost to land clearing for agriculture and urban development. Projections today suggest that forest area in northern Minnesota will continue to decline due to development. However, forest area in southern Minnesota is increasing as land reverts from agriculture. Overall, forest area in Minnesota is expected to increase slightly from now until 2040.

Q: Why do we harvest trees?

A: Wood is one of America’s most important raw materials. The amount (by weight) used each year in the United States exceeds the amount of all metals, plastics, and cements combined. Unlike many other materials, wood is renewable. That means we can grow more to replace what we harvest, so we can use it without using it up. If we were to stop harvesting timber, we would increase our use of nonrenewable raw materials such as fossil fuels. Timber harvest is also a primary tool for creating desirable habitat for wildlife. When done properly, tree harvesting is an environmentally sound choice for meeting human needs.

Q: Who harvests timber on state land?

A: In Minnesota, independent loggers do most timber harvesting. The DNR sells the right to harvest a specified amount of timber in a specific location in a specified way through a legal tool called a timber sale permit. The permit ensures that loggers cut only the trees we want them to cut using methods that protect soil, water, wildlife, aesthetics, and other forest benefits.

Q: What is clear-cutting? Where and why is it used?

A: Clear-cutting means removing all trees except those reserved for special purposes. In most cases, scattered trees or small groups of trees are left to provide diversity and wildlife habitat and forage.

Clear-cutting is used to encourage growth of tree species that require full sunlight when they are young (for example, jack pine, aspen, paper birch, tamarack, and some oaks). Clear-cutting also encourages the growth of ground vegetation, which provides food for wildlife.

Clear-cutting is not used with species such as maple and basswood because they regenerate best under the canopy of older trees. Clear-cutting is also not recommended on steep slopes, near open water, or on fragile soils because it can result in erosion.

Q: Is state land reforested after harvest?

A: The DNR is required by law to reforest acreage equal to that harvested each year. Each year we seed 4,000 to 5,000 acres, plant seedlings on 4,000 to 5,000 acres, and encourage natural regeneration on more than 20,000 acres.

Q: Why do DNR foresters pay so much attention to trees and so little attention to other parts of the habitat?

A: They don't, anymore. Since 1982 we have had a multiple-use/sustained-yield mandate. Trees are the primary component that defines a forest as a forest (rather than prairie, brushland, etc.). As a result, foresters focus on managing forest types—including the shrubs and forbs associated with these forest types—to provide certain mixes of tree species and age classes for diverse habitat. The location of these forest types on the landscape is also an important consideration in enhancing habitat and biodiversity.

Q: Who can help me manage my forest land?

A: If you own 20 to 5,000 acres of land, at least 10 acres of which is or will be forested, we will provide a woodland stewardship plan for you at no charge. The plan will help you manage your land for personal benefit while protecting soil, water, plants, and animals. If you have less than 20 acres, you can find valuable management advice in *Beyond the Suburbs: A Landowner's Guide to Conservation Management*. Download a copy at www.dnr.state.mn.us/forestry (look under Tree Care and Management) or contact the DNR Information Center, 651-296-6157 or 888-646-6367. Consulting foresters are another valuable source of advice. Contact your local DNR Forestry office (see page 4) for a list of consulting foresters near you.

Q: Can I buy tree seedlings from the DNR?

A: Yes. DNR nurseries sell seedlings in lots of 100, with a minimum purchase of 500 trees. Seedlings must be planted in Minnesota, and must be used to establish or reforest wood lots, windbreaks, and shelterbelts; for erosion control; for soil and water conservation; or for permanent food and cover for wildlife. They may not be planted for ornamental purposes or resold with roots attached for 10 years. Orders for seedlings are accepted from August 15 until early spring or until supplies run out. For more information, including information on available tree and shrub species, see www.dnr.state.mn.us/forestry/nurseries or call the DNR Information Center at 651-296-6157 or 888-646-6367.

Q: How can I find out how to take care of the trees in my yard?

A: Contact your local community forester or tree inspector. If you don't have one, contact your local DNR Forestry office (see page 4).

Forest Type: A way to categorize a forest based on the predominant tree species found there (see figure on page 7 for examples).

Q: When do I need a burning permit?

A: You need a permit to have an outdoor fire (except for a recreational campfire or cooking fire) whenever the ground does not have complete snow cover. Obtain a burning permit at your local DNR Forestry (see page 4) or fire warden office. Check with local officials to see if there are special burning regulations in your area.

Q: May I ride my off-highway vehicle (OHV) in state forests?

A: OHV teams are evaluating trails in Minnesota's state forests as to whether they are closed to OHV use or opened to limited OHV use. Contact the DNR Forestry office closest to the state forest you're interested in visiting (see page 4) to get the current status of OHV trails in that state forest.

Q: May I remove trees or other plants from state forests?

A: You may take fallen pine cones and harvest fruits and mushrooms. In general, you may not cut trees or dig up plants in state forests. In some areas you may cut trees for fuel, but you need a permit first. You also need a permit to harvest boughs for decorations. For permits, contact your local DNR Forestry office (see page 4).

Q: May I hunt in state forests?

A: Yes, if you follow all applicable hunting laws and regulations. State forests contain private holdings within their boundaries, many of which are signed for no hunting. State forest maps, available at DNR Forestry offices, can help you plan your hunt around these areas.



Photo: Mark Escher

State forest roads and trails are being classified as either "limited" or "closed" to OHV use. For more information visit: www.dnr.state.mn.us/ohv.

