SECTION THREE: NATURAL LANDS

GOAL: MINNESOTA'S NATURAL LANDS AND HABITATS WILL BE CONSERVED AND ENHANCED

DNR and partners are working towards a Minnesota future where a healthy, sustainable network of natural lands is in balance with agricultural, urban, and developed spaces. Undeveloped areas protect our natural heritage for future generations, providing plant and animal habitat, water and watershed protection, and beauty and open space. This goal for the future envisions:

- **Remaining natural ecosystems are conserved.** Healthy habitats are connected by natural corridors. Our forest resource is substantial and enduring. The forest is as big as, or bigger than, forests today. With DNR assistance, private landowners manage forests for multiple values. Corridors link tracts of forest land and provide the extensive habitat wildlife needs to thrive. Native prairies are protected, and grasslands and riparian forest are restored through donations, purchases, and easements. We are responsible stewards of DNR-administered lands and good neighbors to adjacent landowners. Uncommon and rare habitats are protected.

DNR – WHAT WE DO

- **Work with partners across ownerships and landscapes to conserve natural lands and waters**
- **Use grants, education, and technical assistance to help landowners care for natural and agricultural lands**
- **Manage 5.5 million acres of land**

- **Degraded habitats are restored.** Lakes, wetlands, and rivers are renewed. Grasslands and forests have been restored. Marginal cropland is enrolled in long-term conservation easement programs. Corridors such as public rights of way support rich natural resources. With DNR assistance private landowners improve the habitat values of their lands.

- **Natural resources thrive in the context of human influences.** Invasive species are under control. Natural lands continue to provide ecological, recreational, and economic benefits in the face of climate change. Fire is a part of forest and grassland ecosystems, while people and property are protected from wildfire.

- **Urban and developing areas support a diversity of plant and animal communities and offer diverse recreational opportunities.** Surface and ground water is clean and abundant enough to meet the needs of ecosystems, businesses, and residents. Local decisions are supported by public-private partnerships, with DNR providing technical assistance and coordination.

Minnesota's natural lands are a defining component of the state's quality of life. This forest-wetland complex in Scott County protects critical wildlife habitat. It was conserved through community efforts and DNR's Metro Greenways program.

POSITIONING DNR FOR THE FUTURE

- **The new Division of Ecological and Water Resources will play a critical role in supporting the state's prosperity by working more effectively with partners to protect the water, biodiversity, and ecosystem services beyond state-administered lands and beyond the limits of DNR's regulatory authority.**
- **DNR is monitoring the effects of managed grazing as an alternative and complement to prescribed burning as a means to protect prairie and grassland conservation values and generate revenue in the growing bioenergy economy.**
- **DNR is pursuing innovative ways to sustain Minnesota's forests. For example, we are examining the benefits and implications of leasing state forest lands for management by other entities and examining coordinated, multi-owner forest management and protection efforts.**

CRITICAL TRENDS

Strong partnerships, innovation, and leadership will help DNR and partners achieve these desired future conditions in the face of critical trends.

A major ongoing trend is the **conversion** of natural lands to other uses. Minnesota is projected to grow by more than 1 million people in the next 20 years. With population growth and associated development come increasing demands on natural systems – our lakes and rivers, forests and grasslands, wetlands, and shorelands.

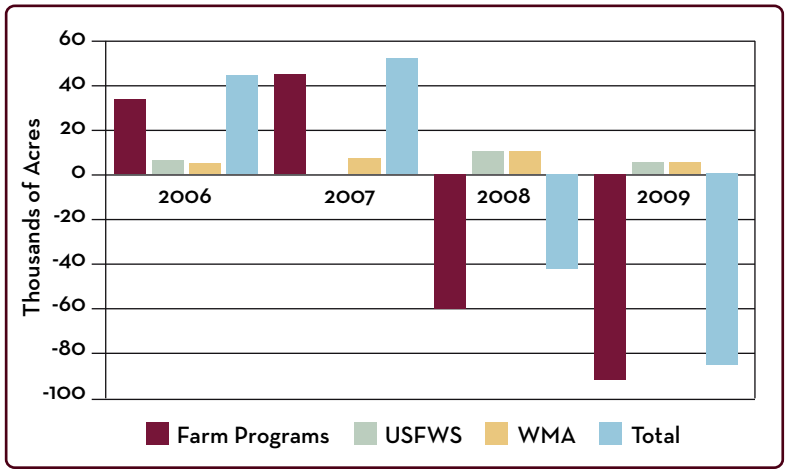
Rural Minnesota has changed dramatically in the past 50 years. Wetlands have been drained, grasslands have been converted to row crops, and fewer livestock roam the landscape. Larger, less-diverse farms support less habitat for wildlife. Since settlement, over 99 percent of the original native prairie has been lost and over 90 percent of wetlands have been lost in the agricultural portions of Minnesota.

Federal farm policy drives many of the day-to-day decisions of Minnesota farmers and is key to protecting wildlife habitat on private lands. While conservation land retirement programs have retired about 1.8 million acres of land and have shown success for wildlife and water quality, there remain significant long-term challenges. In 2008 farm crop prices increased dramatically and more than 60,000 acres were withdrawn from the federal Conservation Reserve Program (CRP). For example, approximately 113,000 acres now enrolled in the CRP in Minnesota are scheduled to expire in September 2011. An additional 250,000 acres are set to expire in September 2012. Strategies are in place to encourage contract extension and renewal. At the same time, acreage devoted to row crop production, which provides limited habitat value, has continued to increase (soybeans increased from 5.1 million acres in 1985 to 7.3 million acres in 2006).

TYPICAL LAND USE 1940 TYPICAL LAND USE 1984

These maps illustrate the long-term historical changes in the agricultural landscape. Land use in the 1940s was diversified and provided a variety of habitat for wildlife. By the 1980s, land use became simplified as many areas converted to row crops.

Annual Change in Habitat Acres (2006-2009)



Total acres protected by state and federal farmland retirement programs and U.S. Fish and Wildlife Service and state Wildlife Management Area acquisition programs increased in 2006 and 2007. However, loss of acres enrolled in the federal CRP resulted in a net loss of 42,000 protected acres in 2008 and 84,000 acres in 2009.

Demand for biofuels such as ethanol ebbs and flows. Meeting increased demand with expanded row crop agriculture poses challenges for habitat conservation and water quality. However, meeting it with restored, diverse native vegetation that is properly managed and harvested has potential for significant environmental benefits. DNR will continue to support the existing federal conservation programs, as we look forward to the development and implementation of the Federal Farm Bill to provide income protection and reward farmers for producing conservation benefits.

Climate change is impacting the health and productivity of lands and waters and the animals and plants that depend on them. It will increase the impacts of habitat loss and invasive species. It threatens the services that natural lands provide – from clean water, habitat, and forest products to outdoor recreation.

Rare natural areas such as old-growth forest and native prairie require protection and ongoing management. Old-growth forest today covers less than 4 percent of the area it covered before European settlement. Native prairie, Big Woods forest, and oak savanna cover less than 1 percent of their original extent.

Fragmentation of natural habitats is a major concern. Natural land tracts are being reduced in size and isolated from each other, creating islands of habitat too small to support a healthy ecosystem or sustainable recreational or commercial use.

Parcelization, the division of land into smaller ownership blocks, is a major concern confronting the economic and ecological health of Minnesota's northern forests. Parcelization often leads to development of parcels with consequences for public recreational access, wildlife habitat, and forest products production.

Retooling our management and channeling our resources in new ways will prepare us for these rapidly changing trends. We will take advantage of new opportunities for managing our natural lands to provide clean and abundant water, fish and wildlife habitat, and outdoor recreation, while meeting emerging markets for biomass energy and carbon storage.

Minnesotans have voiced unprecedented support for habitat protection and we are seeing continued **growth in conservation partnerships** between public and private entities. The 2008 Legacy Amendment secures constitutionally dedicated funds for the protection, restoration and enhancement of prairies, forests, wetlands, and other fish and wildlife habitat for 25 years. Agencies and organizations are working together to restore and protect natural lands and the multiple benefits they provide. Together we can create a diverse and connected system of healthy and productive natural lands for the benefit of all citizens.

As we strive to sustain Minnesota's natural lands, in part through the indicators and targets outlined here, we look forward to working with our partners in the months and years ahead.

NATURAL LANDS INDICATORS & TARGETS

INDICATOR	TARGET	PAGE	
DNR-administered lands			
Number of acres protected in Wildlife Management Areas (WMAs)	Acquire 8,000 acres per year during FYs 2011-12	34	
Number of sites protected as Scientific and Natural Areas (SNAs)	Designate five to ten new SNAs in FY 2011-12 and in FY 2013-14	35	
Number of acres protected annually within statutory park boundaries	Acquire 430 acres of inholdings in FY 2011 and 450 acres in FY 2012	36	
Acres of remnant and restored prairie in State Parks and along State Trails	Initiate restoration of at least 625 acres of prairie annually	37	
Number of DNR land management units mapped for terrestrial invasive plants; acres of control efforts.	Continue to map and control aggressive terrestrial invasive plant species on DNR lands	38	
Completion of an updated land records system	DNR's updated computerized land records system is scheduled to be deployed in July of 2011	39	
Number of school trust land parcels meeting fiduciary responsibilities	During FY 2011, DNR will exchange approximately 1,000 acres of school trust lands containing old-growth forest for lands more appropriate for revenue generation	40	
Income from state mineral leases	Obtain market-based mineral lease revenue for the Permanent School Fund, the Permanent University Trust Fund, and local units of government	41	

Farmland conservation			
Acres in conservation land retirement programs under state and federal farmland programs	Have at least 2 million acres enrolled in conservation land retirement programs by the end of the 2008 Farm Bill and maintain enrollment of the highest priority acres following CRP contract expirations	42	
Number of prairie stewardship plans and management projects	Conduct at least 20 prairie stewardship plans and 50 management projects each year	43	

NATURAL LANDS INDICATORS & TARGETS

INDICATOR	TARGET	PAGE	
Conservation partnerships and community assistance			
Acres and number of conservation easements held by DNR and regularly monitored	Set schedules to regularly monitor all DNR-held conservation easements for compliance with easement terms by June 30, 2011	44	THIS INDICATOR IS A KEY MEASURE IN PART ONE
Acres acquired for local community projects funded with grants	Acquire approximately 200 to 300 acres per year in FY 2010-2011 and thereafter	45	
Number of habitat acres protected and restored in the greater Twin Cities metropolitan area	To be defined in 2011	46	THIS INDICATOR IS A KEY MEASURE IN PART ONE
Number of counties with a Minnesota County Biological Survey	Complete a total of 82 counties by 2012 and all counties by 2021	47	
Number of development projects with environmental review; number of habitat projects affected by development projects	To provide timely review that provides valuable data to inform decision making about the impacts and strategies to mitigate environmental impacts of proposed projects	48	
Acres of mineland reclaimed	Maintain the current rates of progressive mineland reclamation	49	
State Forest Land Management			
Acres of state-administered lands approved for forest certification	Maintain DNR's dual forest certification on 4.8 million acres of state-administered forest lands	50	THIS INDICATOR IS A KEY MEASURE IN PART ONE
Number of cords of wood offered for sale on DNR lands	Meet multiple forest management objectives and offer at least 800,000 cords of wood for sale each year through FY 2013	51	
Acres of protected old-growth forest on DNR lands	Maintain a 44,000-acre network of designated DNR old-growth forest sites	52	
Percentage of older forest maintained on DNR lands	Target to be established at the landscape level	53	
Early successional and young forest maintained on DNR lands	Target to be established at the landscape level	54	
Net annual growth of growing stock on DNR-administered lands	Significantly improve tree growth rates on DNR forest lands by 2015	55	
Acres of DNR forest lands re-inventoried	Reinventory 150,000 acres of DNR forest land in FY 2011	56	
Acres of state-administered forest lands mapped and classified to native plant community	Map and classify an additional 115,000 acres of forest lands to native plant community in 2011	57	THIS INDICATOR IS A KEY MEASURE IN PART ONE
Percent of DNR forest land managed under Subsection Forest Resources Management Plans (SFRMPs)	Complete all SFRMPs in 2011 so that all DNR forest land is managed under an active SFRMP	58	

NATURAL LANDS INDICATORS & TARGETS

INDICATOR	TARGET	PAGE
Fire Management		
Number and acres of wildfires suppressed by DNR	No target set	59
Private Forest Stewartship		
Acres of private forest lands with forest stewardship plans	Complete stewardship plans for 125,000 acres of forest in FY 2011 with plans for 25,000 acres completed by DNR staff and the remainder by private consultants, Soil and Water Conservation District personnel, and industry foresters	60
Acres of permanent forest conservation easements	Acquire over 91,000 acres of permanent forest conservation easements in 2011	61

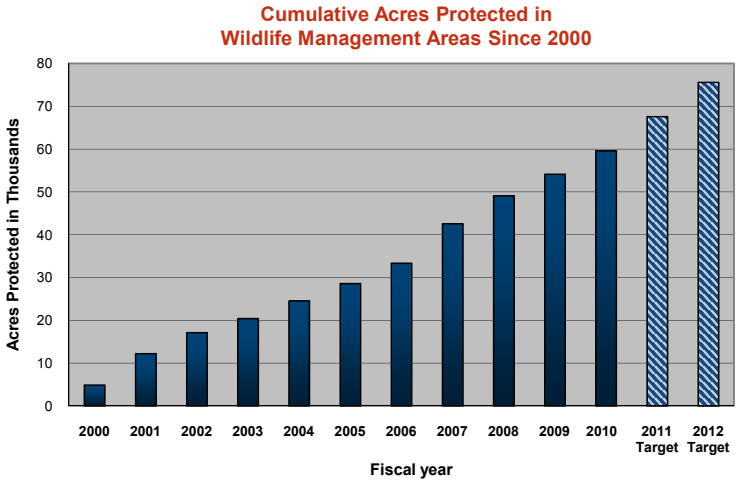
WILDLIFE MANAGEMENT AREAS

INDICATOR: Number of acres protected in Wildlife Management Areas (WMAs)

THIS INDICATOR IS A KEY MEASURE IN PART ONE

WHY IS THIS INDICATOR IMPORTANT?

DNR acquires and manages Wildlife Management Areas (WMAs) to protect lands and waters that have a high potential for wildlife production, public hunting, trapping, fishing, and other compatible recreational uses. DNR manages more than 1,433 WMAs covering 1.3 million acres of high-quality habitat in 86 of the state's 87 counties. These areas provide recreation for hundreds of thousands of hunters and wildlife watchers each year, who contribute significantly to the state's economy.



Acres protected in Wildlife Management Areas. DNR plans to add 8,000 acres to the WMA system each year during FY 2011–2012.

WHAT IS DNR DOING?

Continued management efforts on existing WMA lands and acquisition of new parcels will be critical to maintaining quality wildlife habitat in Minnesota. DNR works with stakeholders to develop and manage a network of WMAs across Minnesota. While most WMAs are in southern and western Minnesota, the overall widespread distribution of these areas ensures that many landscape types are represented. This helps sustain a variety of species and provides different kinds of outdoor recreation opportunities to people throughout the state. DNR provides online information and maps for WMAs, including hunter access trails, disabled access, and habitat types.

Minnesota has more than 1,433 public wildlife areas covering 1.3 million acres of habitat.

TARGET: Acquire 8,000 acres per year during FYs 2011-12. During FY2009-10 DNR acquired 10,547 acres. With the anticipated addition of Lessard-Sams Outdoor Heritage Fund dollars, DNR should meet its goal of 8,000 acres per year.

WMA acquisition efforts need to be accelerated because of development pressure in rural areas and the continuing loss of critical wildlife lands. Furthermore, there is a window of opportunity to purchase land while its price is relatively low. Stakeholders recommended in December 2002 that DNR acquire 21,000 acres per year for the next 10 years, and then acquire 12,250 acres per year for the following 40 years. This goal of adding 700,000 acres to the WMA system included giving priority to acquiring 263,000 acres of private land in-holdings within existing WMA project boundaries.

LEARN MORE ABOUT:

- WMAs at: www.mndnr.gov/wmas/description.html
- Hunting at: www.mndnr.gov/hunting
- Wildlife viewing at: www.mndnr.gov/nature_viewing/wildlife

SCIENTIFIC AND NATURAL AREAS

INDICATOR: Number of sites protected in Scientific and Natural Areas (SNAs)

THIS INDICATOR IS A KEY MEASURE IN PART ONE

WHY IS THIS INDICATOR IMPORTANT?

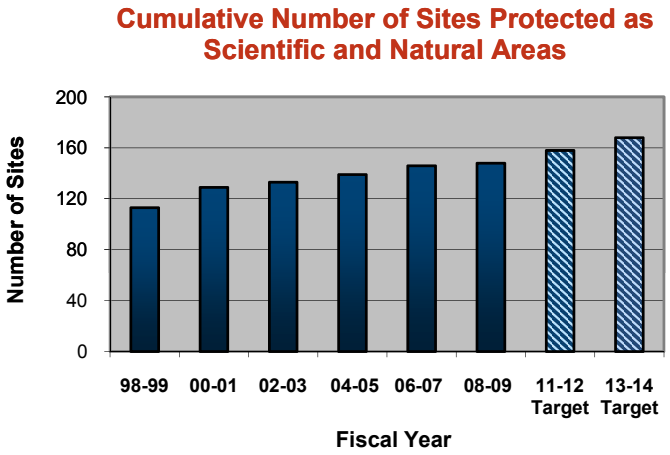
Minnesota's Scientific and Natural Areas (SNAs) preserve and perpetuate the ecological diversity of Minnesota's natural heritage, including landforms, fossil remains, plant and animal communities, rare and endangered species, and other biotic features and geological formations. We work to protect natural communities, rare species, and geological features in order to provide opportunities for nature observation, education, and research.

The SNA program's goal is to ensure that no rare feature is lost from any region of the state. This requires protection and management of each feature in sufficient quantity and distribution across the landscape. It is estimated that 500 natural areas are needed throughout the state to adequately protect significant features.

WHAT IS DNR DOING?

The SNA program, created by the 1969 Minnesota Legislature, administers about 150 natural areas across Minnesota. The program protects and manages land, educates citizens, promotes research, produces publications, and helps private landowners. DNR works with stakeholders to create long-term plans to acquire priority areas.

TARGET: Designate five to ten new SNAs in FY 2011-12 and in FY 2013-14. DNR's long-term goal for 2085, set with stakeholder input, is to manage a system of 500 natural areas by establishing at least five SNAs per ecological subsection for state significant natural communities, and establishing at least three SNAs per subsection for rare species and geological features. Protecting multiple sites in each landscape region is a vital means of capturing genetic diversity and preventing loss of important species and communities in the face of landscape and climate change.



Number of sites protected as Scientific and Natural Areas (SNAs). DNR aims to establish five to ten new SNAs by FY 2012 and another five to ten new SNAs by FY 2014.

Visitors to Pine Bend Bluffs SNA hike through a patch of restored bluff prairies to the Mississippi River overlook.

LEARN MORE ABOUT:

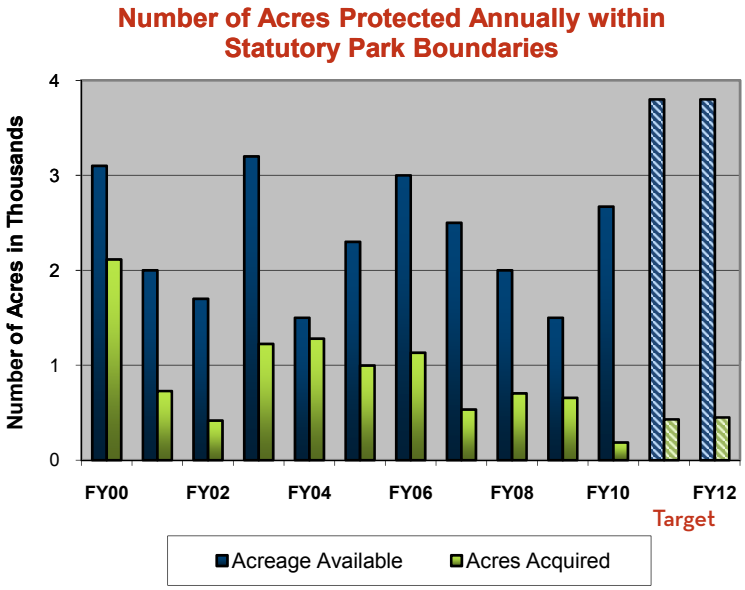
- Scientific and Natural Areas at: www.mndnr.gov/snas

STATE PARK LANDS

INDICATOR: Number of acres protected annually within statutory park boundaries

WHY IS THIS INDICATOR IMPORTANT?

Minnesota's 67 state parks and six recreation areas protect the state's most treasured landscapes and historic sites and are enjoyed by millions of visitors each year. DNR acquires lands for state parks to preserve natural and cultural resources, provide interpretation, and offer recreation opportunities. As the number of Minnesota residents grows, so does demand for recreation space and the potential to lose these very areas to development. Failure to keep up with this growing demand and development pressure would result in overuse and deterioration of our state parks. About 45,000 acres of land within existing state parks and recreation areas remain to be acquired. Acquiring these parcels is key to providing future generations with satisfying outdoor experiences. If these lands are sold and developed privately, they are lost to the system for another generation or even permanently.



Number of acres protected annually in statutory park boundaries. DNR acquires critical parcels within statutory park boundaries as they are offered for sale.

WHAT IS DNR DOING?

DNR continues to develop long-term management plans for the park system. Along with landowners and governments, we identify boundary expansion possibilities that meet goals such as: adding a buffer to an existing facility within the park, buffering the park from development outside the park, providing recreational facilities such as campground expansion, protecting a unique natural or cultural resource, , or providing public access to lakeshore. When a final management plan is approved, DNR proposes legislation for a boundary change. DNR focuses on acquiring the most critical properties as they become available. As of 2010, the critical properties totaled about 28,000 acres. Historically, DNR has been able to acquire an average of 805 acres per year,including donations, over the past five years. In 2010, 186 acres of in-holdings were acquired. This acreage amount is in addition to the acquisition of 3,000 acres for establishing Lake Vermillion State Park. DNR has also partnered with organizations such as the Parks and Trails Council of Minnesota, The Nature Conservancy, and the Conservation Fund to acquire critical parcels.

Crow Wing State Park

TARGET: Acquire 430 acres of inholdings in FY 2011 and 450 acres in FY 2012. DNR will work with willing landowners, local governments, and the Legislature to reach this goal. Our management plan process will continue to help identify expansion needs. DNR's goal is to purchase parcels that are critical to the integrity and resource management of the parks and surrounding communities.

LEARN MORE ABOUT:

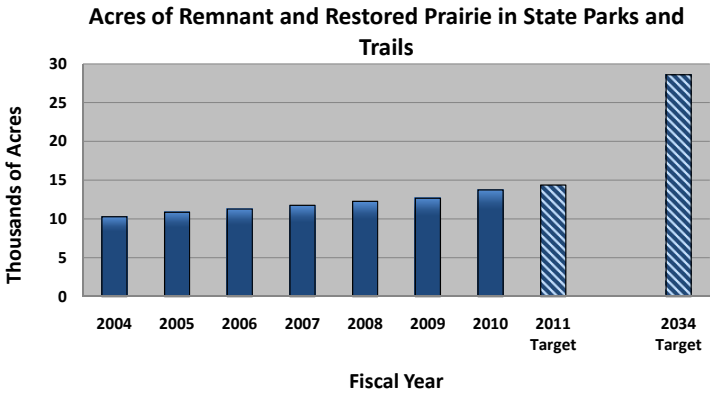
- State parks at: www.mndnr.gov/state_parks

NATURAL VEGETATION IN STATE PARKS AND TRAILS

INDICATOR: Acres of remnant and restored prairie in state parks and along state trails

WHY IS THIS INDICATOR IMPORTANT?

At the time of European settlement, Minnesota was home to 18 million acres of prairie. Today only 1 percent remains. Most endangered, threatened, and special concern species in Minnesota are prairie dwellers. In addition, nearly 140 wildlife species found in Minnesota's prairie parkland province have been classified as species of greatest conservation need. These species are harmed by the loss and degradation of prairies. Prairie restoration helps preserve prairie-dependent species, and species of greatest conservation need such as bobolinks and grasshopper sparrows. Restored prairies can provide a seed source for future restorations. In addition, prairie restoration provides opportunities for visitors to experience a window into Minnesota's past landscapes.



Annual totals of acres of remnant and restored prairie in state parks and trails. An additional 14,800 acres is targeted for restoration over the next 25 years.

WHAT IS DNR DOING?

Minnesota statutes directs state parks to preserve, perpetuate, and restore natural features and to provide maximum potential for appreciation, conservation, and enjoyment of scenic and natural features through which state trails may pass. DNR starts restoration on about 625 acres of prairie each year and manages about 13,500 acres of prairie. We have identified an additional 14,800 acres in need of restoration.

A restored prairie at Lake Louise State Park in southeastern Minnesota

DNR educates visitors about prairies, their historic importance, and their value today. For example, the Prairie Care program at Wild River State Park, begun in 1993, trains visitors to help collect and plant prairie seed in the park. Thousands of schoolchildren, scout groups, families, and others visit the park to help restore prairie.

TARGET: Initiate restoration of at least 625 acres of prairie annually.

DNR's long-term goal is to manage 28,600 acres of remnant and restored prairie in the state park and trail system by approximately 2034. An investment of about 625 acres of prairie restoration per year is needed to achieve this goal.

LEARN MORE ABOUT:

- Prairie Care program at Wild River State Park:
  www.mndnr.gov/education/teachers/fieldtrips/wildriver_prairie.html
  www.mndnr.gov/volunteer/marapr03/seed.html

TERRESTRIAL INVASIVE PLANT SPECIES

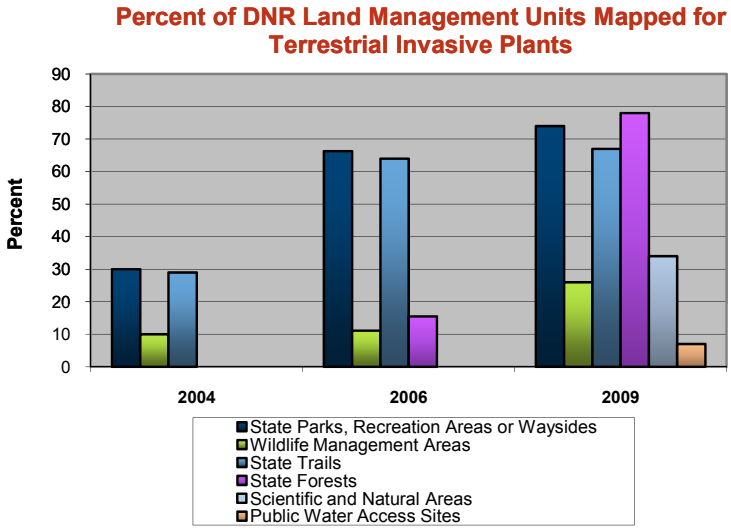
THIS INDICATOR IS A KEY MEASURE IN PART ONE

INDICATORS: Number of DNR land management units mapped for terrestrial invasive plants; acres of control efforts

WHY IS THIS INDICATOR IMPORTANT?

Invasive species are nonnative plants or animals that can naturalize, threatening natural resources and their use. They are considered the second most significant threat to biodiversity protection in the United States, affecting about half of all rare species. Some invasive species are classified as prohibited noxious weeds and must be controlled as required by Minnesota statute.

About 20 percent of plants in Minnesota are introduced species. DNR has identified invasive species as one of the greatest land and water challenges facing the state. Many DNR units, such as Ecological and Water Resources, Parks and Trails, Fish and Wildlife, and Forestry are investing substantial time and effort in eradicating small infestations, keeping larger infestations in check, and preventing new infestations.



WHAT IS DNR DOING?

In 2004, DNR began mapping terrestrial invasive species on DNR-administered lands. The goal of this effort is to give land managers a better idea of the scope of the problem. As of 2009, mapping has been conducted on over 734 units. To date, these mapping efforts have identified nearly 50,000 infestations of terrestrial invasive plants on DNR administered lands.

Targeted chemical spraying of invasive plants is an important management strategy for eradicating small infestations of invasive plants.

Beginning in 2005 DNR offered grants to assist DNR land managers with invasive species management. In fiscal year 2009, $610,807 of grants were awarded to complete 47 management grant projects. Many projects targeted the control of woody invasive species such as buckthorn, exotic honeysuckles, and Siberian elm. Other projects targeted species that typically grow in open areas such as common tansy, leafy spurge, and spotted knapweed.

TARGET: Continue to map and control aggressive terrestrial invasive plant species on DNR-administered lands.

DNR has two long-term goals for this indicator. The first is to document the location and abundance of priority invasive plants in state parks, state trails, Scientific and Natural Areas, Wildlife Management Areas, and state forest lands. The second is to reduce the amount and impact of terrestrial invasive species on DNR managed lands.

LEARN MORE ABOUT:

- Terrestrial invasive plant species identification, issues, and control at: www.mndnr.gov/invasives/terrestrialplants

LAND RECORDS MANAGEMENT

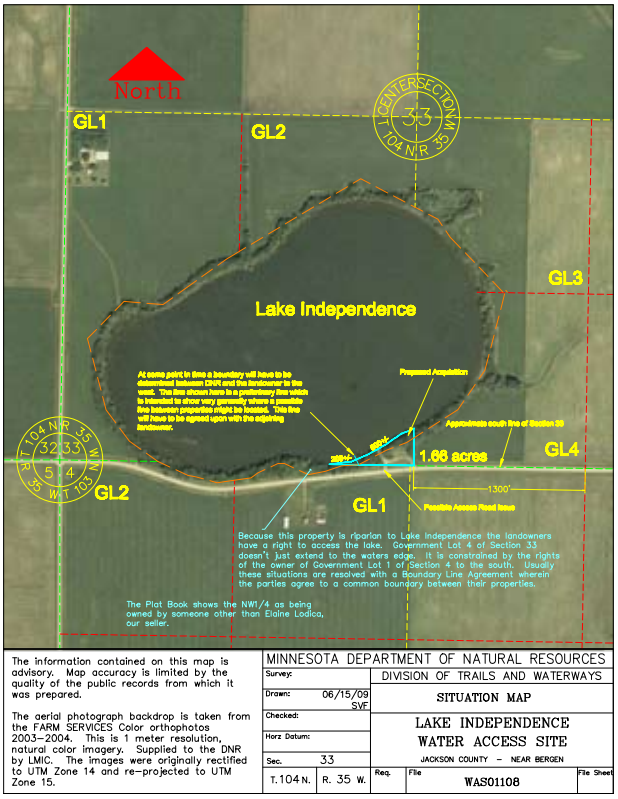
INDICATOR: Completion of an updated land records system

WHY IS THIS INDICATOR IMPORTANT?

DNR manages 5.5 million acres of state-owned land and 12 million acres of state mineral rights. To effectively manage the state's land and mineral resources, DNR staff must have access to accurate land records and related financial records for specific state-owned parcels of land and the ability to integrate this information with public records of local government.

WHAT IS DNR DOING?

In 2007, DNR initiated a major reengineering of its land records system. This effort is the first comprehensive change to the system since the introduction of an interactive computer-based system in the early 1980s. The existing records system was state of-the-art twenty years ago and still produces reliable analytic data for its original designed purposes; however, it does not utilize current information technology, which is necessary to meet the increasingly complex demands of natural resource management. DNR's new land records system will enhance access to public information about state land assets, improve integrated natural resource management, and streamline legislatively-mandated reporting requirements.



Potential acquisition using aerial photography and public land survey information and survey notes.

In FY 2009, DNR completed a high level systems analysis, developed system requirements, and hired a contractor to model business processes and develop applications for the new system. Additionally, DNR scanned and indexed 66,000 deeds and provided web-based access for DNR and the public, obtained forty county parcel layers from local government, created web-based tabular reports for the current Land Records Information, created a prototype for web-based GIS map access, and purchased initial hardware and application software licenses.

In addition, DNR is developing a system module to enhance the department's capabilities to monitor conservation easements. The module will hold field data and help staff ensure compliance with special terms and conditions contained in specific easements.

TARGET: DNR's updated computerized land records system is scheduled to be deployed in July of 2011. Over the next two years DNR will finish reengineering its land records system to meet its natural resource management needs while providing remote access for other state agencies, local government, and private land managers to the state's records.

LEARN MORE ABOUT:

- Lands and minerals at: www.mndnr.gov/lands_minerals

MEETING FIDUCIARY RESPONSIBILITIES FOR SCHOOL TRUST LANDS

INDICATOR: Number of school trust land parcels meeting fiduciary responsibilities

WHY IS THIS INDICATOR IMPORTANT?

DNR manages about 2.5 million acres of school trust lands. The purpose of these lands, as established by state constitution and law, is to provide income for schools through activities such as timber harvest and mining. DNR is committed to meeting its fiduciary responsibilities to maximize long-term economic return from these lands as is consistent with sound natural resource management.

School trust lands generate over $27 million dollars each year. Starting in FY 2010 this money is added directly to the state's education appropriation.

WHAT IS DNR DOING?

DNR is working to generate revenue from school trust lands despite depressed markets for timber and taconite. One approach is to identify and lease sites with aggregate resources that can be mined. Another has been to identify and exchange school trust lands in areas where management prevents revenue-generating activity. In addition, DNR is working with the Permanent School Fund Advisory Committee (PSFAC) to develop other strategies to responsibly manage and utilize the land.

Recent laws have significantly raised the visibility and importance of school trust lands. Before FY 2010, income from the Permanent School Fund was used to augment the general fund's contribution to education. Starting in FY 2010, the income is added directly to the state's education appropriation. The switch has been praised by educators who appreciate the additional money, an amount in excess of $27 million. The positive response has increased attention to, and heightened the Legislature's interest in school trust land revenues. To help ensure the goals of the school trust lands are met, DNR and PSFAC are working with the federal government on a combined land sale and land exchange of school trust lands within the Boundary Waters Canoe Area Wilderness. These actions, in conjunction with plans already in place, will help ensure the viability of school trust lands.

TARGET: During FY 2011, DNR will exchange approximately 1,000 acres of school trust lands containing old-growth forest for lands more appropriate for revenue generation. This target will be implemented at the same time DNR and PSFAC are developing additional recommendations. It is likely that this target will change year to year in response to our evolving efforts to exchange school trust lands where management practices diminish or prohibit revenue generation.

LEARN MORE ABOUT:

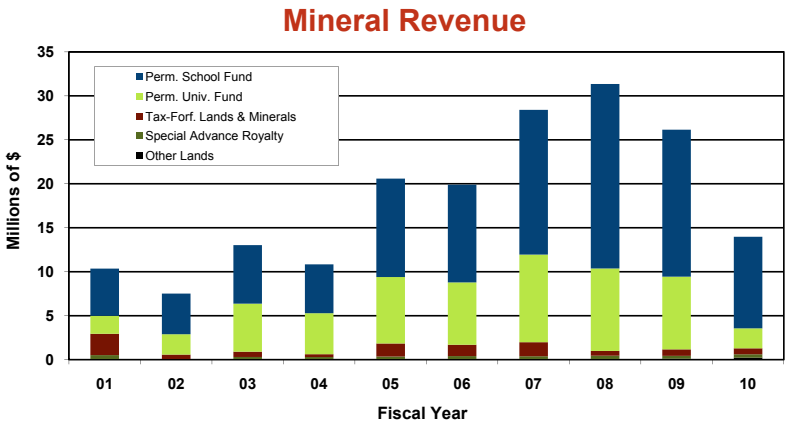
- DNR lands and minerals at: www.mndnr.gov/lands_minerals

MINERAL LEASE INCOME

INDICATOR: Income from state mineral leases

WHY IS THIS INDICATOR IMPORTANT?

The state owns approximately 12 million acres of mineral rights, including about 25 percent of the mineral rights on the Mesabi Range. Mineral revenues provide mineral owners (Permanent School Fund, Permanent University Fund, and local units of government) a long-term income source. DNR works to ensure competitive royalty rates, environmentally sound mining practices, and complete utilization of all ore leased. DNR also has an interest in the overall economic health of the mining industry in order to ensure continuation of operations, protect jobs, and maintain the industry's contributions to the regional and state economy.



The graph reflects the rising global demand for resources from Asia beginning in the mid-2000s, and the 2009 downturn in the world and U.S. economies, accompanied by plant idling in Minnesota. Year-over-year revenues are likely to increase significantly in FY 2011.

WHAT IS DNR DOING?

DNR is working to encourage exploration and mining of state-owned minerals and setting royalty rates that are market-based while ensuring that mining practices protect the environment. The agency is also selling mine tailings that were once considered wastes to companies making use of innovative processing technologies to fully recover remaining iron.

TARGET: Obtain market-based mineral lease revenue for the Permanent School Fund, the Permanent University Trust Fund, and local units of government. The mineral revenue graph depicts the monies generated as mineral royalties for the ten-year period ending in FY 2010. During FY2010, iron ore and taconite leases generated about 93% of the revenue and non-ferrous metallic leases generated about $1 million of revenue. The chart reflects the rising global demand for resources from Asia beginning in the mid-2000s, and the 2009 downturn in the world and U.S. economies, accompanied by plant idling in Minnesota. Year-over-year revenues are likely to increase significantly in FY 2011 reflecting a modest recovery in the demand for steel and the globalization of the mineral industry and attendant commodity pricing. At this writing, all Minnesota taconite plants are operating at full capacity and numerous industrial and precious metals companies are exploring in the state.

LEARN MORE ABOUT:

- DNR lands and minerals at: www.mndnr.gov/lands_minerals

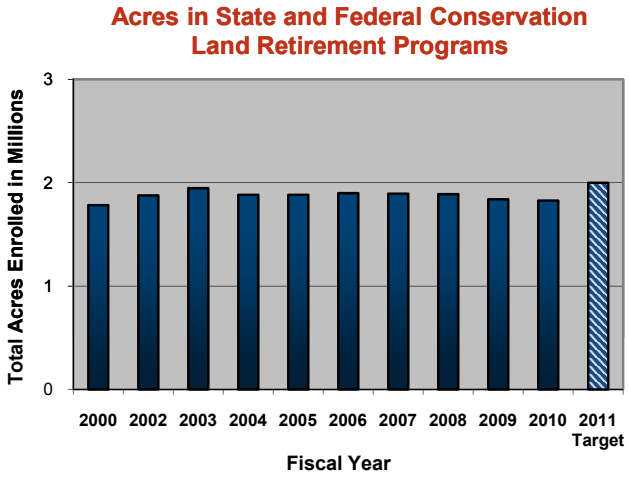
FARMLAND CONSERVATION

THIS INDICATOR IS A KEY MEASURE IN PART ONE

INDICATOR: Acres in conservation land retirement programs under state and federal farmland programs

WHY IS THIS INDICATOR IMPORTANT?

Farming has dramatically altered the landscape in Minnesota's agricultural areas. Wildlife populations declined as the historic prairie wetlands of southern and western Minnesota were converted to croplands. Federal farm policy has played an important role in shaping this landscape. The Federal Farm Bill's Conservation Reserve Program (CRP) has provided substantial conservation opportunities on agricultural lands. The 2008 Federal Farm Bill continues to provide significant conservation provisions vital to habitat conservation. Unfortunately, with the expiration of existing CRP contracts and competing demands for production for food and biofuels, Minnesota and other states are currently losing lands enrolled in this important conservation program.



This graph represents multiple land conservation programs such as: Conservation Reserve Program (CRP), Conservation Reserve and Enhancement Program (CREP), Reinvest in Minnesota (RIM) and Wetland Reserve Program(WRP).

WHAT IS DNR DOING?

DNR is increasing collaboration with the Minnesota Board of Water and Soil Resources (BWSR), federal conservation agencies, conservation organizations, Soil and Water Conservation Districts (SWCDs) and others to promote the full range of conservation provisions of the 2008 Federal Farm Bill on private lands. For example, DNR continues to provide funds in partnership with BWSR and Pheasants Forever to hire farm bill technicians who work out of local SWCD offices and help landowners enroll in Federal Farm Bill and state land retirement conservation programs. DNR is encouraging enrollment in continuous CRP, Wetland Reserve Program (WRP), Conservation Stewardship Program (CSP), and the state's Reinvest in Minnesota (RIM) Reserve program. We will continue to work with other conservation partners to further expand and improve the conservation provisions within federal farm policy. We will also work with partners to develop and apply tools to target conservation to marginal agricultural lands and lands with high potential to provide multiple benefits for fish and wildlife habitat, water quality and soil erosion.

Nearly 2 million acres of land have been enrolled in conservation programs to improve soil and water quality and increase wildlife habitat. Natural resource staff help tailor conservation programs to individual farming operations.

TARGET: Have at least 2 million acres enrolled in conservation land retirement programs by the end of the 2008 Farm Bill and maintain enrollment of the highest priority acres following CRP contract expirations. Rising land values, changing program requirements, and a reduced national CRP cap, make it difficult to maintain enrollment after contract expirations. DNR is working with partners to encourage contract extension or renewal. CRP retention, sustainable agriculture, and other conservation programs need to be addressed during the implementation of the 2008 Federal Farm Bill conservation provisions.

LEARN MORE ABOUT:

- Land conservation grant programs at: www.mndnr.gov/grants/land
- Financial assistance at: www.mda.state.mn.us/protecting/conservation/funding.aspx
- Farmland programs at: www.bwsr.state.mn.us/easements

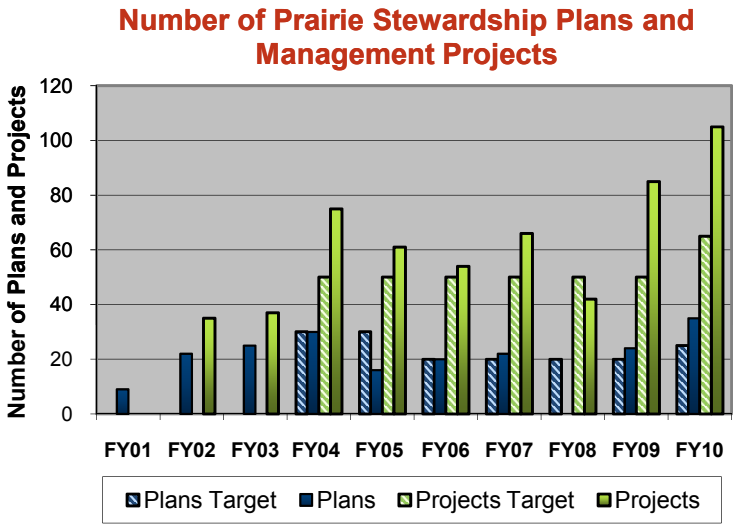
PRAIRIE STEWARDSHIP ASSISTANCE

INDICATOR: Number of prairie stewardship plans and management projects

THIS INDICATOR IS A KEY MEASURE IN PART ONE

WHY IS THIS INDICATOR IMPORTANT?

Prairies are Minnesota's most endangered major habitat type. About 200,000 of the state's original 18 million acres of prairie remain; these lands are home to more than 40 percent of Minnesota's state-listed species (see Endangered Species indicator in Fisheries and Wildlife section). Native prairie requires management such as prescribed burning and invasive species control to remain healthy. Approximately 60 percent of prairie land is privately owned, so conservation depends on private landowners.



Number of prairie stewardship plans and management projects. DNR plans to assist with at least 20 prairie stewardship plans and 50 management projects each year.

WHAT IS DNR DOING?

DNR manages several programs to help private landowners manage native prairie. Landowners can receive help developing a stewardship plan from Scientific and Natural Areas (SNA) program prairie specialists, or from private consultants funded by the SNA program. The SNA program then uses its prairie management staff, private sector contractors, Minnesota Conservation Corps, Sentence to Serve crews, or direct cost-share assistance to help selected landowners carry out their plans. Landowners can also enroll qualifying prairie land in the DNR Native Prairie Bank easement program (98 sites totaling more than 7,869 acres), and/or the Prairie Tax Exemption program (about 500 landowners and 20,000 acres enrolled). DNR has been providing planning assistance to private prairie landowners since FY 2000. The SNA program began providing technical and management assistance in FY 2002 by stationing a private lands prairie specialist in the DNR Windom office. Today the SNA program has three specialists stationed in the prairie regions that are providing assistance to private landowners.

Prairie Landowners. Three generations of landowners and a DNR prairie specialist survey a protected Jackson County prairie.

TARGET: Conduct at least 20 prairie stewardship plans and 50 management projects each year. To reach this target DNR will combine state and federal funding. Expanded funding will be sought to continue and accelerate existing programs to provide 100 plans and projects each year.

LEARN MORE ABOUT:

- Prairie Restoration at: www.mndnr.gov/prairierestoration
- MN Prairie Bank easement programs at: www.mndnr.gov/prairierestoration/prairiebank.html
- The Nature Conservancy – Minnesota: www.nature.org/wherewework/northamerica/states/minnesota
- USFWS Private Lands Brochure: www.fws.gov/midwest/partners/documents/MN-PLOBroch05.pdf

CONSERVATION EASEMENTS

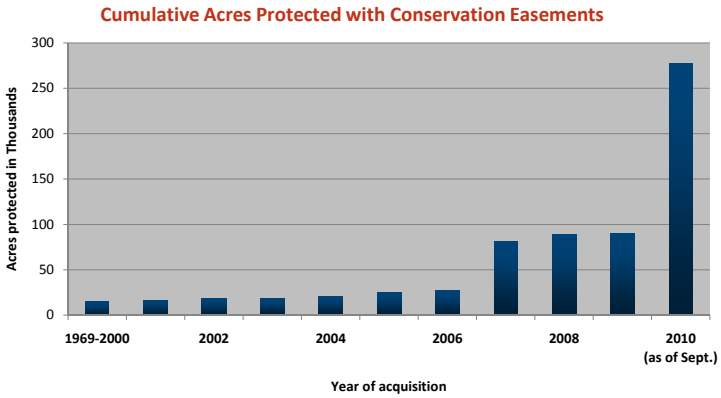
INDICATOR: Acres and number of conservation easements held by DNR and regularly monitored

THIS INDICATOR IS A KEY MEASURE IN PART ONE

WHY IS THIS INDICATOR IMPORTANT?

DNR uses conservation easements to protect natural lands, improve fish and wildlife habitat, and conserve resources for current and future generations. Conservation easements preserve private ownership and compatible private uses of the land while helping DNR achieve specific conservation goals.

DNR has used conservation easements for more than 30 years. Some easements protect rare natural communities or provide access to trout streams. Others protect working forests. Development of baseline property reports, monitoring of compliance with easement terms, and regular communication with landowners are essential to ensure that conservation values remain protected.



Conservation easements are one tool DNR uses to achieve conservation goals without purchasing the property outright. The completion of the Upper Mississippi Forest Project accounts for the large increase in 2010. Data displayed here were compiled from DNR Land Records as of Sept. 2010 and are subject to change.

WHAT IS DNR DOING?

DNR continues to acquire conservation easements on working forests. These easements help insure that forest products and public recreation are avalable in the future. In 2008, DNR began an agencywide inventory and review of all DNR conservation easements. Computer records for each easement are being updated and a land records system will help us document and track conservation easements.

DNR is developing agencywide standards for conservation easement monitoring. In FY 2008, DNR monitored approximately 4.5% of its easements for compliance with easement terms according to the new agencywide standards. This increased to approximately 8.6% in FY 2009 and will again increase in FY 2010. A clear standard for issue resolution and enforcement will be developed to protect the conservation values of, and the public's investment in, DNR easements.

The 51,000 acre Koochiching-Washington forest conservation easement protects the economic, recreational, and ecological benefits of a large working forest. It is responsible for the large 2007 increase in conservation easement acres shown in the graph above.

TARGET: Set schedules to regularly monitor all DNR-held conservation easements for compliance with easement terms by June 30, 2011. Baseline property reports, a precondition for effective easement monitoring, are currently prepared for all new easements at the time of acquisition. We will collect baseline report data for older easements during upcoming monitoring visits.

LEARN MORE ABOUT:

- Minnesota Forests for the Future Program: mndnr.gov/forestlegacy/mff
- Minimum Standards for Conservation Easements Report: http://files.dnr.state.mn.us/lands_minerals/conservation_easements_minimum_standards.pdf

HELPING LOCAL COMMUNITIES PROTECT OPEN SPACE

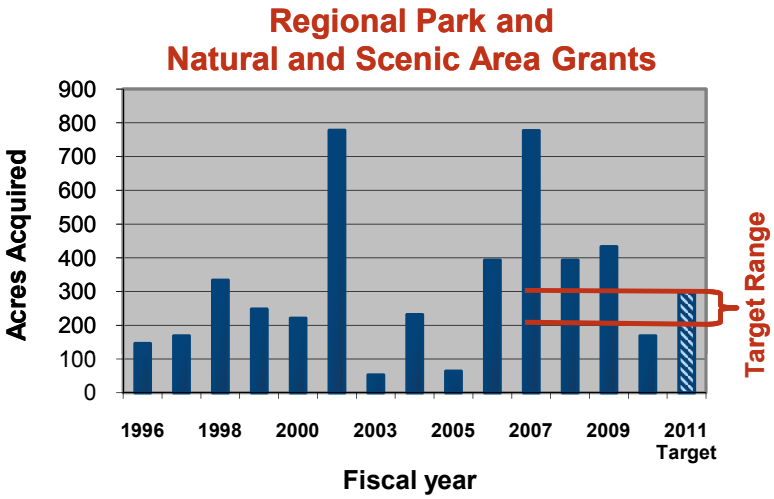
INDICATOR: Acres acquired for local community projects funded with grants

WHY IS THIS INDICATOR IMPORTANT?

Open spaces are often lost because local governments lack resources to acquire them. Local governments, particularly in the fast-growing counties ringing the Twin Cities metropolitan area and in the growth corridor between the Brainerd Lakes area and Rochester, have an opportunity to acquire and protect open space and natural areas. But that opportunity is fading fast.

WHAT IS DNR DOING?

DNR manages several matching grant programs to help local governments protect open space and natural habitats. These programs reimburse local governments for 50 to 60 percent of the appraised value. Because local governments assume responsibility for the areas, this partnership allows the state to help protect natural resource and recreation areas without having to operate or maintain them. In the last eight years, DNR helped local governments acquire 2,500 acres of regional parkland outside the Twin Cities metro area. Over the past thirteen years, 54 Natural and Scenic Areas grants helped local governments acquire almost 1,742 acres of high-quality land. In 2008 DNR awarded three Natural and Scenic Area grants totaling $1,010,000 to help acquire 60 acres. DNR also awarded two Regional Park Grants totaling $2,098,000 to help fast growing communities acquire 333 acres of new regional park lands. This totals 393 acres acquired, exceeding our 2008 target range of 200-300 acres.



Natural and Scenic Areas Grants. Grants totaling more than $8.6 million have helped local communities acquire 1,742 acres of high quality lands.

Canoeing on Pike Lake. The City of Prior Lake received a Natural and Scenic Area grant to purchase 30 acres of land with almost 2,800 feet of shoreline. It will be used for close-to-home nature-related outdoor recreation.

TARGET: Acquire approximately 200 to 300 acres per year in FY 2010-2011 and thereafter. This target is a rough estimate because DNR responds to local government grant requests, which vary from year to year depending on location, acreage, and land value. To reach this target, we periodically request funding for the Natural and Scenic Areas and Regional Parks (Outside the Metro) grant programs through DNR's bonding requests. In addition, we are seeking continued funding through the the federal Land and Water Conservation Fund (LAWCON) program. Additional funding for parks of regional significance statewide is available from the Parks and Trails Fund.

LEARN MORE ABOUT:

- Natural and scenic area grants: www.mndnr.gov/grants/land/natural_scenic.html
- Regional park grants: www.mndnr.gov/grants/recreation/parkgrants.html

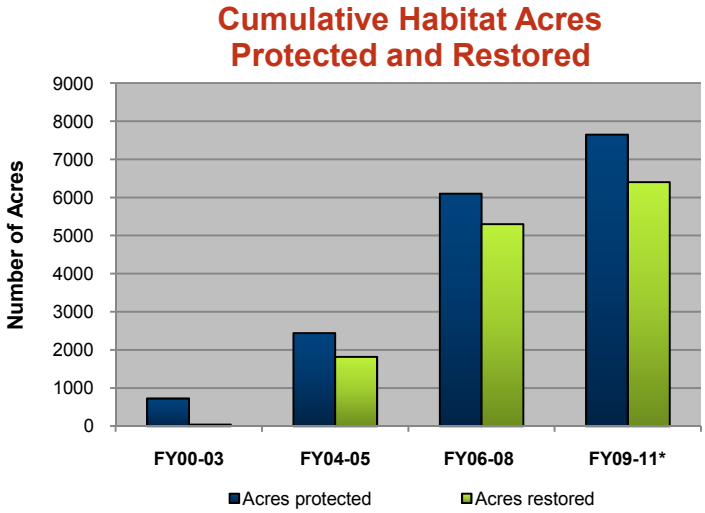
HABITAT PROTECTION IN URBAN AND DEVELOPING AREAS

THIS INDICATOR IS A KEY MEASURE IN PART ONE

INDICATOR: Number of habitat acres protected and restored in the greater Twin Cities metropolitan area

WHY IS THIS INDICATOR IMPORTANT?

Urban growth patterns directly and indirectly impact natural habitats. Current patterns of low-density development continue to threaten remaining habitats by fragmenting areas into smaller and smaller parcels that cannot sustain healthy plant and animal populations or by eliminating habitat altogether. By 2030, more than 1 million new residents and nearly 500,000 new homes are projected in the 11-county metropolitan area alone. In the face of such growth pressures, the protection and restoration of undeveloped lands is essential to conserve the many benefits of natural habitats that contribute to our quality of life and Minnesota's economic stability.



*FY 09-11 includes only acres from the Metro Conservation Corridor Program

WHAT IS DNR DOING?

For over a decade the Metro Greenways and the Metro Conservation Corridors programs worked in partnership with other organizations to conserve habitat in the rapidly urbanizing metropolitan region. This collaboration protected and restored over 14,000 acres of habitat. In 2008, the DNR began to broaden local options for conservation by providing Community Assistance grants so that cities, townships, and counties could better plan for and implement conservation as growth occurs.

To expand the scope of Metro Greenways statewide, it has morphed into the Community Conservation Assistance program. Future efforts will focus on working with local governments to achieve land and water conservation through a variety of voluntary ways.

TARGET: To be defined in 2011.

This green infrastructure map for DNR's Central Region is one of many important tools the Community Conservation Assistance program uses to help local governments achieve land and water conservation.

LEARN MORE ABOUT:

- Community Conservation Assistance at: www.mndnr.gov/nrplanning/cca
- Metro Conservation Corridors at: www.mndnr.gov/metroconservationcorridors

MINNESOTA COUNTY BIOLOGICAL SURVEY

INDICATOR: Number of counties with a Minnesota County Biological Survey

WHY IS THIS INDICATOR IMPORTANT?

An important goal for DNR is to ensure that Minnesotans have the information needed to manage natural resources wisely. The Minnesota County Biological Survey (MCBS) systematically collects, interprets, and delivers baseline data on the distribution and ecology of plants, animals, native plant communities, and functional landscapes needed to guide decision making. These data help guide prioritization of sites of biodiversity significance for management, conservation, and monitoring of critical habitat and ecological functions.

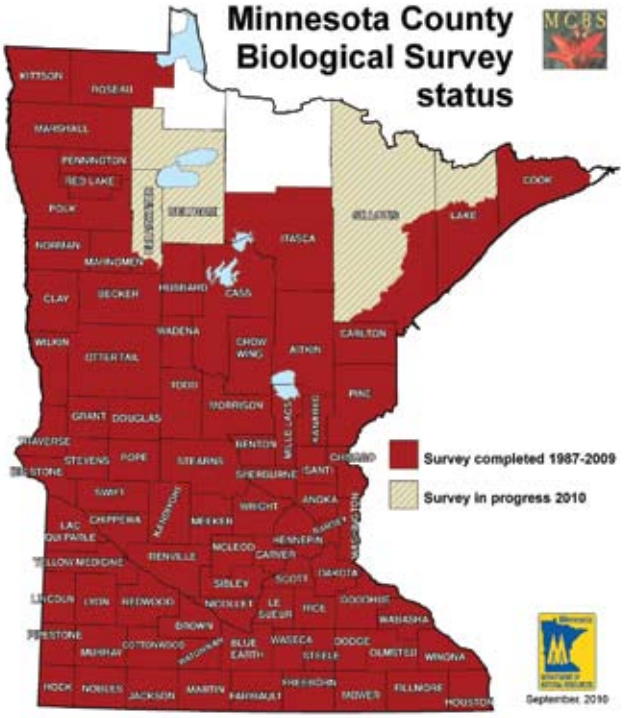
WHAT IS DNR DOING?

We have completed surveys in 81 of Minnesota's 87 counties and have surveys underway in four others. We make survey information available in various formats. For example, digital map files for all or portions of 65 counties are accessible at http://deli.dnr.state.mn.us/data_catalog.html.

Information from MCBS surveys is valuable to decision makers. For example:

- MCBS compiled a map of the statewide status of native prairie that is being widely referenced in conservation discussions related to climate change, prairie monitoring, wildlife habitat, biofuel production, watershed management, exotic species, and other current issues.
- MCBS has collaborated to publish field guides on Minnesota's native plant communities. These field guides are of use to land managers, field surveyors, researchers, ecological consultants, and others interested in the diversity and ecology of the state's vegetation.
- MCBS data are being used as part of DNR's forest certification process and for DNR state forest plans.
- MCBS prepared a written ecological evaluation as part of a proposed conservation project for a 3,200 acre landscape within the LaSalle Creek watershed in Hubbard County.

TARGET: Complete a total of 82 counties by 2012 and all counties by 2021.



MCBS data are being used to guide conservation of a rich complex of cliff, seepage swamp, forest, and prairie habitats on public and private land along the St. Croix River between Taylor's Falls and Scandia.

LEARN MORE ABOUT:

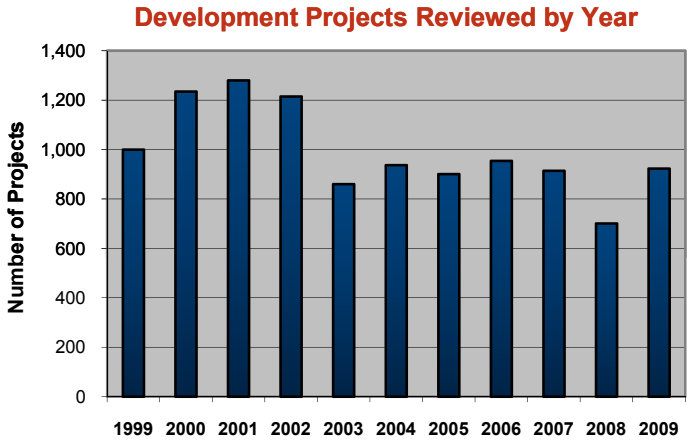
- The Minnesota County Biological Survey at: www.mndnr.gov/eco/mcbs
- MCBS county maps: www.mndnr.gov/eco/mcbs/maps.html
- Minnesota's native prairie map: http://files.dnr.state.mn.us/eco/mcbs/prairie_map.pdf

ENVIRONMENTAL REVIEW BY DNR

INDICATORS: Number of development projects with environmental review; number of habitat acres affected by development projects

WHY ARE THESE INDICATORS IMPORTANT?

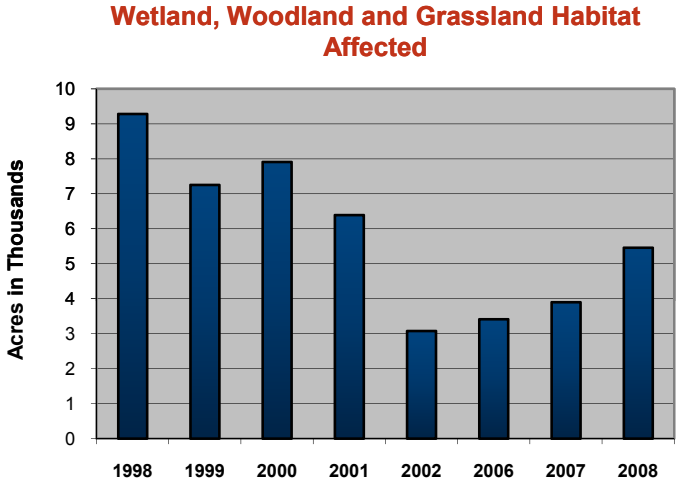
Between 700 and 1,000 land development projects are proposed each year by local, state, and federal government agencies as well as private citizens and businesses. In total, these projects annually convert thousands of acres of natural habitats such as woodlands, grasslands, and wetlands into developed landscapes that are less supportive of healthy wildlife populations. The number of projects reviewed each year and the amount of natural habitat involved in project proposals provide two measures for the level of conservation assistance provided by DNR staff.



WHAT IS DNR DOING?

Through environmental review, we seek to inform decision makers about the impacts and strategies to mitigate environmental impacts of proposed projects. We hope to avoid or reduce habitat losses; ensure long-term health of ecosystems and natural communities; and conserve a healthy economy by incorporating consideration of natural resources and environmental health into project design.

Almost 80 percent of Minnesota's land base is in private ownership. Many of the land development activities that occur on private land affect public resources such as fish and wildlife living on that land or nearby public lands and waters. Environmental review is one of the ways in which we can provide information and expertise that maintains healthy natural lands and watersheds.



The number of development projects reviewed each year and the amount of natural habitat involved in project proposals provide two metrics for the level of conservation assistance provided by DNR staff.

Environmental review looks at proposed projects as a whole. We analyze both direct and off-site impacts associated with project proposals, and examine cumulative impacts when applicable. Through environmental review, we can also look at multiple landscape scales.

TARGET: To provide timely review that provides valuable data to inform decision making about the impacts and strategies to mitigate environmental impacts of proposed projects. Our expected output is between 700 and 1,000 new project proposals reviewed each year. DNR qualitatively tracks the effectiveness of environmental review in protecting natural resources by documenting success stories each year. Quantitative indicators that measure damage prevented because of environmental review or related program activities are lacking; such indicators are difficult to develop and accurately assess.

LEARN MORE ABOUT:

- Environmental review at: www.mndnr.gov/input/environmentalreview

LAND STEWARDSHIP THROUGH MINELAND RECLAMATION

INDICATOR: Acres of mineland reclaimed

WHY IS THIS INDICATOR IMPORTANT?

Iron ore and taconite have been mined in Minnesota since the 1890s. Most lands disturbed by mining are on the Mesabi Iron Range in northeastern Minnesota. Currently, 256,000 acres are covered by *Permits to Mine*, 73,300 acres of which have been altered since 1980 when the legislature established the DNR's permitting program. Of this acreage, about 33,000 are tailings basins, about 20,000 are mine pits, and about 18,000 are stockpiles.

Reclaimed overburden stockpile ten years after planting, U.S. Steel, Mountain Iron, MN.

Reclamation of disturbed areas, conducted in a manner that provides for future uses such as recreation, light industry, tourism, community growth, and infrastructure, is at the core of land stewardship along the Mesabi Iron Range. The Mineland Reclamation Law (Minnesota Statutes Sec. 93.44-93.51) requires mine operators to submit long-range mining and reclamation plans in order to obtain mining permits. Proper mine planning and reclamation, in conjunction with local planning and zoning, can alleviate many future land-use conflicts and provide for post-mining uses embraced by local government.

WHAT IS DNR DOING?

The department is an advocate of progressive mineland reclamation, which is a process that begins with the mine plan and occurs throughout the life of a mine. Since 1980, mining companies have permanently reclaimed about 16,000 acres of disturbed land and temporarily stabilized about 5,500 acres of tailing basins. While the majority of reclamation primarily involves reshaping and revegetating the mine site, wetland replacement and wildlife habitat establishment, DNR is exploring other options for reclaimed lands. For example, DNR is investigating the use of tailing basins for growth of short-rotation biomass for wood fiber and fuel; the use of biosolids as a soil amendment to increase fertility of mine lands; and the establishment of wetlands in tailings basins. DNR is also participating with industry, Iron Range Resources, and local government in the Laurentian Vision, a public planning process to prepare for post mining land use.

TARGET: Maintain the current rates of progressive mineland reclamation. About 500 acres of land are permanently reclaimed each year on the Mesabi Iron Range, while 2,000 acres of tailings are temporarily stabilized for dust control. About 100 acres of wetlands are impacted and replaced each year. To reach this target, DNR will continue to monitor reclamation work and compliance with approved plans. Close monitoring ensures that long-range reclamation goals are met. DNR will also continue to undertake cooperative projects with other units of government and industry to expand knowledge about wetland creation, use of biosolids, and other ways of enhancing the usefulness of reclaimed minelands.

LEARN MORE ABOUT:

- Biosolids use in reclamation at: www.mndnr.gov/lands_minerals/pubs.html

FOREST CERTIFICATION

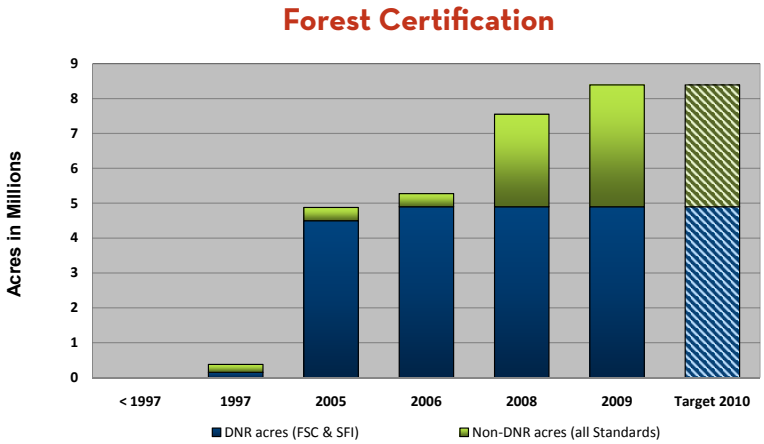
INDICATOR: Acres of state-administered lands approved for forest certification

THIS INDICATOR IS A KEY MEASURE IN PART ONE

WHY IS THIS INDICATOR IMPORTANT?

Forest Certification recognizes sustainable and responsible forest management. Consumers can be confident that products displaying a forest certification logo were grown, harvested and produced in a sustainable manner. In the U.S., the three major Forest Certification systems are the Forest Stewardship Council (FSC), the Sustainable Forestry Initiative (SFI), and The American Tree Farm System.

Meeting the requirements for certification has improved DNR forest management practices and our interdisciplinary coordination. Certification has also increased the competitiveness of Minnesota's forest products. Maintaining Forest Certification demonstrates DNR's dedication to sustainable and responsible forest management.



DNR is a leader in forest certification. To date 4.8 million acres of state-administered lands have dual certification. DNR is also assisting private landowners in obtaining certification.

WHAT IS DNR DOING?

Beginning in 1997, DNR and the Aitkin County Land Department sought Forest Certification for 378,000 acres of state and county-administered forestlands in Aitkin County. These were the first public forest lands to be certified in the United States.

Support for Forest Certification has continued to grow. In response to market demand and the Governor's Task Force Report on the Competitiveness of Minnesota's Primary Forest Products Industry, DNR obtained dual (FSC & SFI) certification for all DNR Forestry and Fish and Wildlife-administered lands in the forested region of the state, 4.8 million acres in all, in 2005.

DNR staff and auditors discuss forest management practices and improvements during an annual forest certification audit.

TARGET: Maintain DNR's dual forest certification on 4.8 million acres of state-administered forest lands.
In order to maintain certification, DNR must make improvements to policies or procedures that don't meet certification standards. These improvements, called Corrective Action Requests (CARs), are identified during periodic audits. As we make the improvements identified in CARs, we fine tune our management and insure the sustainability of Minnesota's forest resources.

LEARN MORE ABOUT:

- Forest Certification at: www.mndnr.gov/forestry/certification

DNR TIMBER SALES

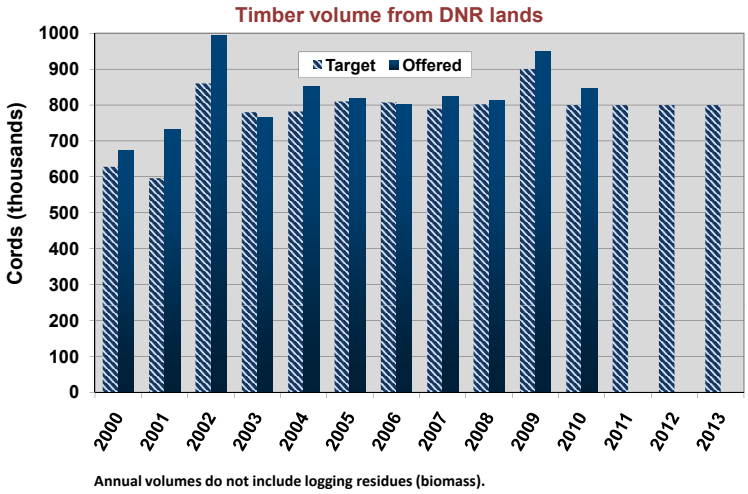
INDICATOR: Cords of wood offered for sale on DNR lands

WHY IS THIS INDICATOR IMPORTANT?

A predictable, sustainable supply of quality wood from DNR-administered lands supports Minnesota's forest products industry and the state's economy.

WHAT IS DNR DOING?

Timber harvesting is essential for maintaining forest health, improving forest productivity, enhancing wildlife habitat diversity, and reducing risk of wildfire. DNR produces timber while also maintaining water quality, fostering biodiversity, and providing for recreation access.



DNR met or exceeded timber offer targets in most recent years.

TARGET: Meet multiple forest management objectives and offer at least 800,000 cords of wood for sale each year through FY 2013. This provides approximately one-third of Minnesota's forest products industry's total annual wood need.

DNR met or exceeded it timber sale goals in most recent years. Four factors influence how much and what kind of timber DNR offers each year:

1) The current and the desired condition of Minnesota's forest
2) The need to provide for a wide range of social, economic, and environmental values
3) The needs of the forest products industry
4) DNR budgets and staffing levels

During Subsection Forest Resource Management Planning, DNR determines which stands may need management attention. Harvest is one management option among many. The most common form of harvest removes all mature trees, allowing younger trees to become established via planting, seeding, or sprouting. In recent years, thinning of young and middle-aged stands has increased to foster faster growth and increase wood quality. The amount of timber DNR might offer from stands to be harvested takes into account prior sales and the amount of timber already scheduled to be harvested. Through FY 2013, DNR will offer for sale at least 800,000 cords each year. DNR will also increase the availability of woody biomass.

LEARN MORE ABOUT:

- Timber harvesting on state lands at: www.mndnr.gov/forestry/harvesting
- Forest mitigations and the GEIS at: www.frc.state.mn.us
- Statewide timber harvest at: www.mnplan.state.mn.us/mm/goal.html
- Minnesota's Forest Resources at: www.mndnr.gov/forestry/um/index.html

OLD-GROWTH FOREST

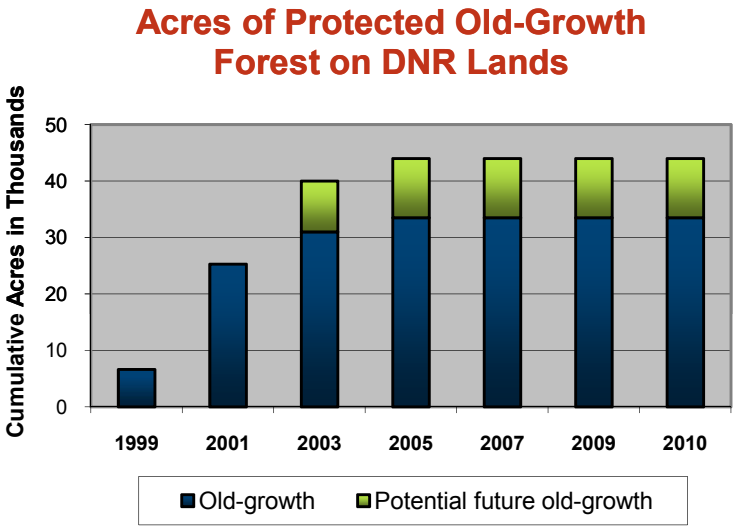
INDICATOR: Acres of protected old-growth forest on DNR lands

WHY IS THIS INDICATOR IMPORTANT?

Old-growth forests, typically more than 120 years old, are rare in Minnesota. They constitute less than 4 percent of our forest. Before European settlement, however, about half of Minnesota's forests were old growth. Because they provide special habitat for plants and wildlife, serve as scientific benchmarks, and have aesthetic appeal, they are worth preserving.

WHAT IS DNR DOING?

In 1994 DNR, forest industry, and environmental interests committed to "identify and protect the highest quality remaining natural old-growth forest communities." DNR ultimately designated a 44,000-acre network of old-growth forest sites (including Itasca State Park) on state-administered land for preservation. DNR manages these sites for old-growth characteristics and they are reserved from timber harvest.



Old-growth forest acres on DNR lands. DNR will maintain a 44,000-acre network of old-growth forest sites.

DNR will maintain the old-growth forest network and create connected, mature forest landscapes where appropriate, using corridors of older forests (see older forest indicator). This is a recommended mitigation in the 1994 Generic Environmental Impact Statement on Timber Harvesting and Forest Management (GEIS). Reserving old growth from harvest also fulfills forest certification requirements (see forest certification indicator).

TARGET: Maintain a 44,000-acre network of designated DNR old-growth forest sites. DNR's old-growth guideline is adaptive in response to new information. In 2006, 33 acres of old-growth white and red pine near Burntside Lake were added to the network. As DNR high quality stands with old growth characteristics, some low quality stands may be removed from the network. Stakeholders will be consulted if the overall network changes by 10% relative to the acreage designated in 2006.

STEVE SCHNEIDER

This old-growth yellow birch/white cedar forest at Crosby Manitou State Park provides valuable habitat, scientific information, and beauty.

The DNR is establishing targets for lowland conifer old growth (definitions and targets for lowland conifers were not included in DNR's 1994 Old-Growth Forests Guideline). A draft of lowland conifer old growth definitions and draft targets will likely be available in early 2011.

LEARN MORE ABOUT:

- DNR old-growth forests at www.mndnr.gov/forests/oldgrowth/index.html

OLDER FOREST

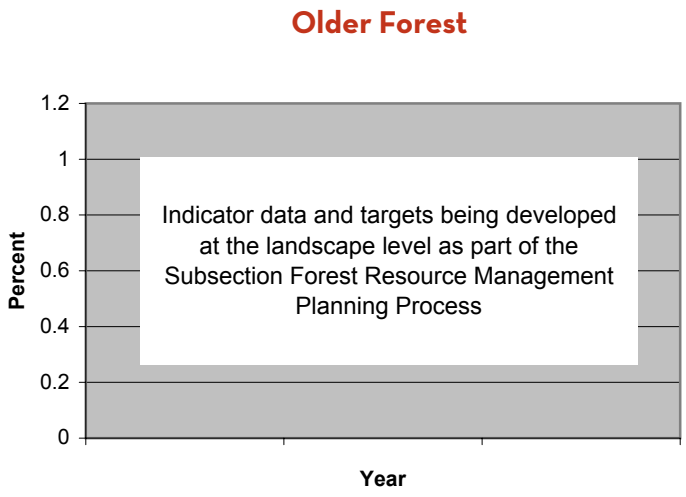
INDICATOR: Percentage of older forest maintained on DNR lands

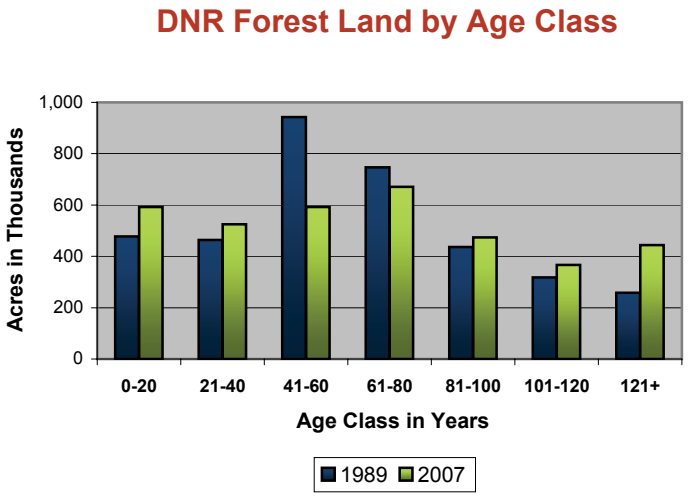
WHY IS THIS INDICATOR IMPORTANT?

Older forest applies to a forest managed primarily for a single age class and that is managed beyond traditional harvest age. These forests provide the conditions needed by many species of plants and wildlife, for certain aesthetics, and for producing a greater variety of forest products. Older forests complement DNR old-growth forests in maintaining all age classes of forest on DNR-administered forest lands across the state.

WHAT IS DNR DOING?

On some ownerships, older forests of types typically managed for a single age class (e.g., aspen, birch, black spruce, and jack pine), are likely to decrease during times of strong timber demand. Recognizing this, DNR adopted guidelines in 1994 for maintaining a portion of these forests on DNR-administered land as older forest. Since then, DNR has been determining the amount and location of older forest to maintain on DNR-administered timberlands through its Subsection Forest Resources Management (SFRMP; see SFRMP indicator) planning process. Determining where to retain older forest takes into consideration the overall sustainability of the forest, forest habitat needs of plants and wildlife, historic levels of older forest in each landscape, the effects of older forests on timber quality and quantity, and the need to connect and protect old-growth forests, riparian areas, and travel corridors.





Over the past 18 years, younger age-class forest on DNR lands has increased due primarily to timber harvesting. Older age-class forest has also increased.

TARGET: Target to be established at the landscape level. DNR's long-term goal is to maintain as older forest 12% of the forests managed primarily for a single age class. Since there are large differences between the state's forested landscapes, the desired amount of old forest varies across the state (see individual SFRMPs for landscape specific older forest goals).

LEARN MORE ABOUT

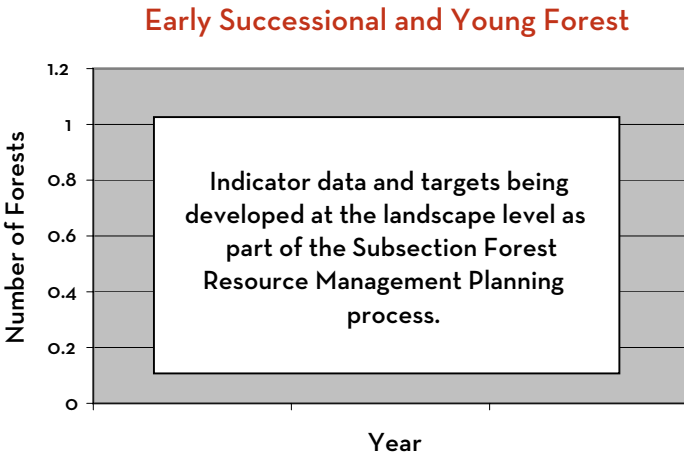
- DNR's Subsection Forest Management Plans at: www.mndnr.gov/forestry/subsection/index.html

EARLY SUCCESSIONAL FOREST

INDICATOR: Early successional and young forest maintained on DNR lands

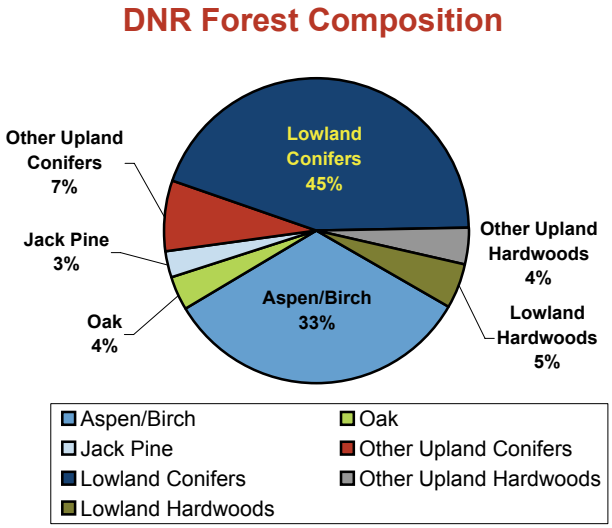
WHY IS THIS INDICATOR IMPORTANT?

Early successional forests develop following disturbance (e.g., fire, timber harvesting, wind storms). Aspen, jack pine, and birch are "pioneer" species characteristic of early successional stages of forests that become readily established after a disturbance. Young forests also develop following disturbance, often as a result of planting or seeding, but may include species that are typical of later successional forests, such as oak and white pine. Early successional forest types and young forests are habitats required by some plants and wildlife. They also contribute to the wood supply and provide for recreation and aesthetic benefits.



WHAT IS DNR DOING?

Interdisciplinary DNR teams determine the appropriate amount of early successional and young forest for each subsection when they develop Subsection Forest Resource Management Plans (SFRMPs). DNR's efforts to maintain enough early successional and young forest complement its efforts to maintain old-growth and older forest and help maintain all forest age classes on Minnesota landscapes. The DNR creates young forest primarily through timber harvest (see DNR Timber Sales indicator). Ensuring that early successional forests are adequately represented in appropriate landscapes will help meet targets for important wildlife species (see Ruffed Grouse indicator). Harvesting complements wind storms, fires and other disturbances that maintain early successional forests on the landscape.



Early successional and young forest currently comprise 40 percent of DNR forest lands. These types make up more than 50 percent of all forest land in Minnesota.

TARGET: Target to be established at the landscape level. SFRMP teams determine desired levels of early successional forest and young forest (see Subsection Forest Resource Management Plans indicator) using information on historic conditions and landscape characteristics as well as timber supply and wildlife habitat needs.

LEARN MORE ABOUT

- DNR's Subsection Forest Management Plans at: www.mndnr.gov/forestry/subsection
- Aspen at: www.mndnr.gov/volunteer/sepoct00/aspen.html
- Jack pine at: www.mndnr.gov/trees_shrubs/conifers/jackpine.html
- Paper birch at: www.mndnr.gov/trees_shrubs/deciduous/paperbirch.html

WOOD FIBER PRODUCTIVITY

INDICATOR: Net Annual Growth of growing stock on DNR-administered lands

WHY IS THIS INDICATOR IMPORTANT?

The 1994 Generic Environmental Impact Statement on Timber Harvesting and Forest Management in Minnesota recommended that we increase wood fiber production (tree growth) on timberlands to help mitigate the effects of harvest. The 2003 *Governor's Task Force on the Competitiveness of Minnesota's Primary Forest Products Industry* also recommended that we increase wood fiber production while conserving Minnesota's forest lands. Increasing tree growth and wood fiber production generally increases timber supply, builds resistance to disease and insects, accelerates the development of old forest characteristics, and reduces fire danger.

WHAT IS DNR DOING?

DNR promotes tree growth by planting and seeding sites soon after harvest or damage; reducing the impact of harmful insects, diseases, and exotic species; and matching tree species and management techniques to individual sites though its Ecological Classification System (see Ecological Classification System indicator). Additional increases in tree growth come from intermediate stand treatments, such as thinning overcrowded stands to improve vigor and reduce competition. Timber growth rates are affected by management activities and natural events that occurred long ago, and it may take years for the effects of current actions to become evident.

TARGET: Significantly improve tree growth rates on DNR forest lands by 2015. Current metrics accurately measure growth rates of large trees (over 5 inches DBH) but not smaller trees. A large portion of Minnesota's forest is young forest with small trees. DNR will continue work on a metric appropriate for measuring tree growth rates in Minnesota forests.

LEARN MORE ABOUT:

- The Governor's Advisory Task Force on the Competitiveness of Minnesota's Primary Forest Products Industry report at: http://www.dnr.state.mn.us/forestry/index.html
- The 1994 Generic Environmental Impact Statement on Timber Harvesting and Forest Management in Minnesota at: http://www.frc.state.mn.us/SFRA/GEIS.htm

FOREST INVENTORY

INDICATOR: Acres of DNR forest lands reinventoried

WHY IS THIS INDICATOR IMPORTANT?

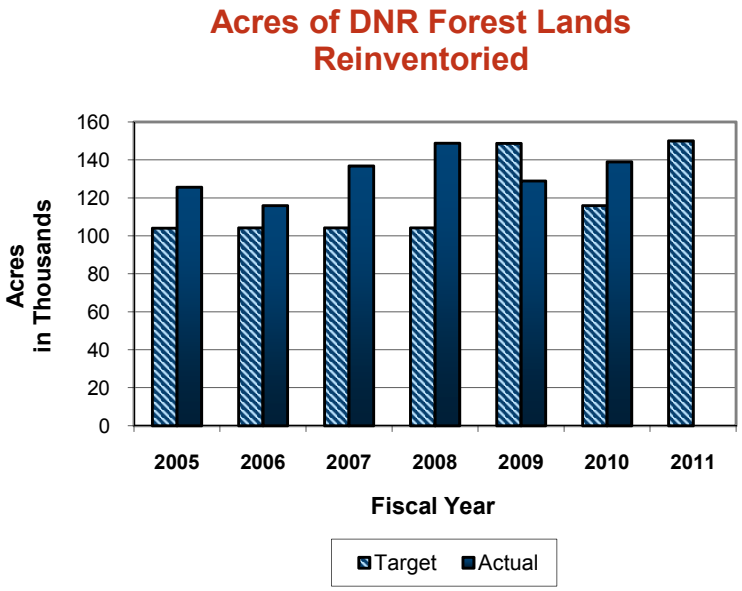
Forests change due to growth and aging, succession, fire, windstorms, insects and diseases, forest management and other factors. A regularly updated field inventory is essential for tracking these changes and providing the information needed for making sound management decisions.

WHAT IS DNR DOING?

DNR maintains information about its forest lands in the Forest Inventory Module (FIM). The FIM contains stand-level forest inventory data for each stand on more than 4 million acres of DNR forestland. Inventory information includes overstory and understory tree species, shrub and ground species, timber volumes, stand age, site productivity, information on insects and diseases, and other useful information.

Decisions about when, where, and how DNR forest stands are treated relies on this information.

TARGET: Reinventory 150,000 acres of DNR forest land in FY 2011. Reinventorying 150,000 acres each year is equivalent to a complete inventory every 20 years. Our long-term target is to reduce the length of the inventory cycle to 15 years.



Acres of DNR forest lands re-inventoried. The target for FY 2011 is 150,000 acres.

Good forest management rests on the foundation of accurate and regularly updated forest information.

LEARN MORE ABOUT:

- DNR's Cooperative Stand Assessment inventory at: www.mndnr.gov/maps/forestview and www.mndnr.gov/maps/forestview/csa_defs.html

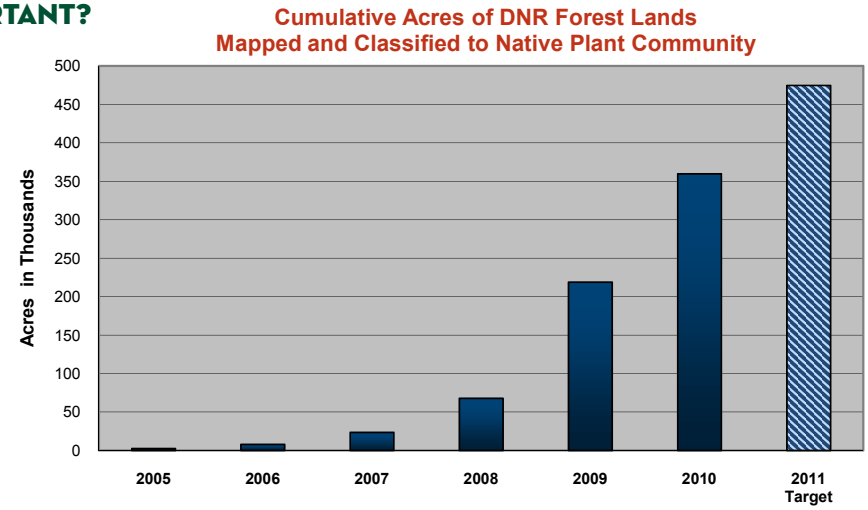
ECOLOGICAL CLASSIFICATION SYSTEM

THIS INDICATOR IS A KEY MEASURE IN PART ONE

INDICATOR: Acres of state-administered forest lands mapped and classified to native plant community

WHY IS THIS INDICATOR IMPORTANT?

Our Ecological Classification System (ECS) is a scientific framework for managing natural resources. ECS tools (maps, databases, and field guides) help us select appropriate silvicultural treatments to optimize timber production and wildlife populations and protect water and soil. Mapping native plant communities on DNR's forest lands and classifying forest stands are essential for using ECS to guide sustainable forest management.



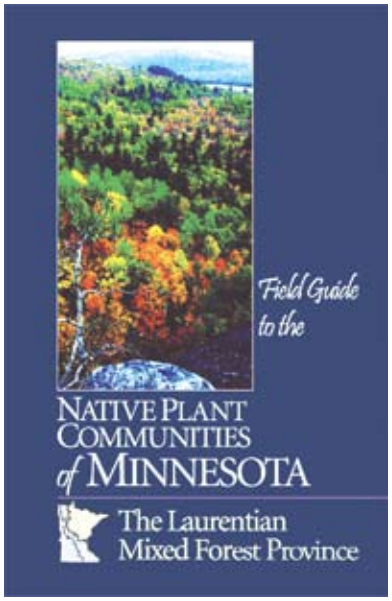
DNR has mapped and classified over 350,000 acres of state-administered forest land to native plant community. This helps us optimize timber production and wildlife populations and protect soil and water.

WHAT IS DNR DOING?

DNR's field guides to the native plant communities of the state help field managers recognize plant communities and understand the soil and climate conditions that influence them. These field guides mark the culmination of nearly 20 years of research by DNR and our cooperators. In 2004-2006 DNR trained all DNR Forestry field staff on ECS principles and began obtaining information on native plant communities in a systematic way.

In FY 2010 DNR significantly increased its effort to classify and map native plant communities on large blocks of contiguous state lands. DNR completed silvicultural information for all 50 forested native plant communities. We will continue to improve silvicultural interpretations based on ecological characteristics of our native plant communities and make them easier to use by foresters, wildlife managers, park managers, and other land managers.

TARGET: Map and classify an additional 115,000 acres of forest lands to native plant community in 2011. DNR has mapped and classified native plant communities on significantly more forest lands in the last few years, including 140,000 acres of forest in FY 2010.



Field Guide to one of the ECS provinces

LEARN MORE ABOUT:

- The Ecological Classification System at: www.mndnr.gov/ecs/index.html

SUBSECTION FOREST RESOURCE MANAGEMENT PLANS

INDICATOR: Percent of DNR forest land managed under Subsection Forest Resource Management Plans (SFRMPs)

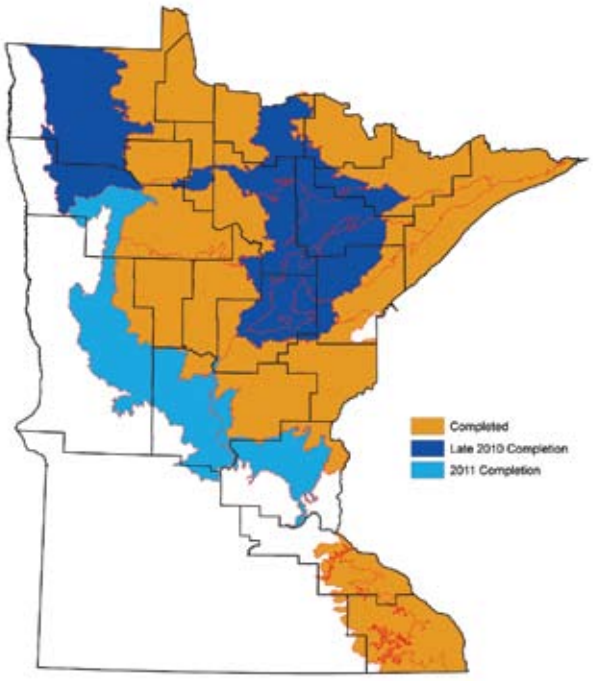
WHY IS THIS INDICATOR IMPORTANT?

DNR manages approximately 4.5 million acres of forest land, about one-quarter of all forest land in the state. DNR's Subsection Forest Resource Management Plans (SFRMPs) describe the mix of values and products (e.g., wildlife habitat, rare features, timber) that will be sustained through vegetation management on DNR-administered forest lands. The plans outline both long-term (50-plus years) and short-term (10-year) management strategies.

WHAT IS DNR DOING?

Local interdisciplinary DNR teams identify issues and assess forest resources, determine a strategic direction, and identify forest stands to be treated in the next ten years. The public is invited to review and comment at each step of the planning process.

DNR began preparing SFRMPs in 2000 and intends to complete plans for all DNR forestlands (in 14 forested subsections). To date, 7 SFRMPs are in effect, covering 90 percent of DNR's forestland.



Subsection Forest Resource Plan projected completion dates. Forest planning by ecological subsection identifies comprehensive, landscape-level strategies for sustaining forest resources.

TARGET: Complete all SFRMPs in 2011 so that all DNR forest land is managed under an active SFRMP. DNR will continue to improve the SFRMP process and increase the utility of the resulting plans. DNR aims to finish plans for all subsections with substantial DNR-administered forest lands by the end of 2011.

LEARN MORE ABOUT:

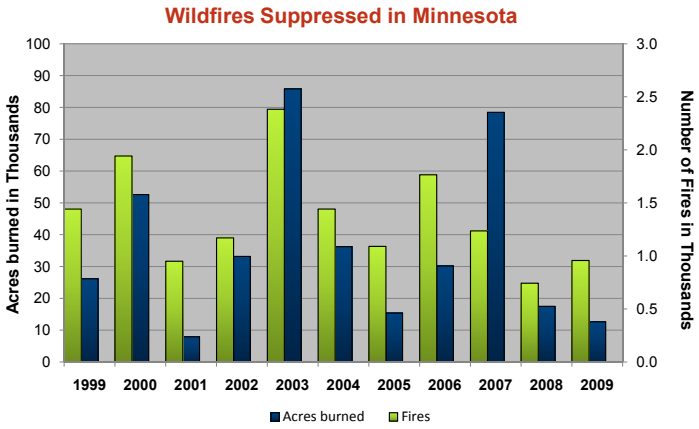
- SFRMPs at: www.mndnr.gov/forestry/subsection

WILDFIRE

INDICATOR: Number and acres of wildfires suppressed by DNR

WHY IS THIS INDICATOR IMPORTANT?

DNR is charged by statute with protecting life, property, and natural resources from wildfires on 45.5 million acres of public and private land in Minnesota. Wildfire control efforts under state authority began in the early 1900s after a series of wildfires destroyed Hinckley, Baudette, Chisolm, and Cloquet. Growth in the number of residential and seasonal homes in areas prone to wildfire increases the need for wildfire preparedness and suppression.



The number and severity of wildfires vary considerably from year to year based on ground moisture and weather. DNR must respond to wildfires; the severity of a wildfire season affects DNR's ability to achieve other forest targets.

WHAT IS DNR DOING?

DNR focuses on:

- prevention, including education (e.g., Smokey Bear, fire prevention week, school visits) and enforcement of state wildfire and open burning statutes (Minnesota Statutes, Chap. 88)
- presuppression, including training firefighters and support personnel; developing and maintaining partnerships with other fire protection agencies; operating the Minnesota Interagency Fire Center; maintaining a national interagency fire equipment cache; contracting for heavy ground and aerial suppression equipment; maintaining a radio communications network; and developing mobilization and dispatch plans;
- suppression of wildfires by a balanced force of firefighters, support personnel, and aerial and ground equipment;
- mitigating wildfire risk via Firewise Structures and communities' activities (e.g., fuel reduction).

DNR's wildfire prevention and suppression efforts protect public safety, property, and natural resources.

DNR recognizes that forest fuel loads (and wildfire risk) are influenced by forest management practices such as timber harvesting, thinning, and prescribed burning. Related indicators include DNR Timber Sales and Wood Fiber Productivity.

TARGET: No target set. Wildfires are not predictable and vary widely from year to year primarily due to weather. Consequently, wildfire suppression is not suited to target setting. Because DNR must respond to wildfires, frequent or severe wildfires can dramatically affect our ability to achieve other targets.

LEARN MORE ABOUT:

- Wildfire at: www.mndnr.gov/forestry/fire
- Prevention at: www.mndnr.gov/firewise

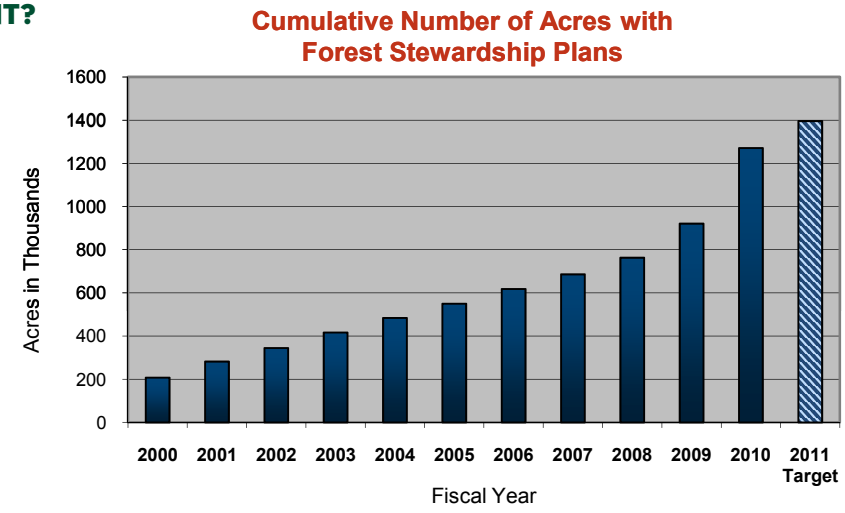
PRIVATE FOREST STEWARDSHIP

INDICATOR: Acres of private forest lands with forest stewardship plans

THIS INDICATOR IS A KEY MEASURE IN PART ONE

WHY IS THIS INDICATOR IMPORTANT?

Some 147,000 individuals and organizations (excluding industry) own 40 percent of Minnesota's forest land. Much of this land consists of small woodlots under increasing development pressure. The Forest Stewardship Program offers landowners a viable alternative to selling their land for development in the form of management expertise and cost sharing for tree planting and other activities. Participating landowners pursue sustainable forestry goals, including improving wildlife, maintaining water quality, and applying sustainable timber harvesting.



Nearly 1.3 million acres have been enrolled in forest stewardship plans.

WHAT IS DNR DOING?

Minnesota leads the nation in Forest Stewardship Program enrollment. In 2008, we celebrated as we enrolled the millionth acre under a stewardship plan.

TARGET: Complete stewardship plans for 125,000 acres of forest in FY 2011 with plans for 25,000 acres completed by DNR staff and the remainder by private consultants, Soil and Water Conservation District personnel, and industry foresters. DNR's long-term target is to have 50 percent (2.5 million acres) of nonindustrial private forest land 20 acres or larger in size under stewardship plans. The combination of trained staff to write stewardship plans and the popularity of two tax relief programs has led to record numbers of new forest stewardship plans being written since 2008.

Eli Sagor

Stewardship plans promote sustainable management of private forest lands.

LEARN MORE ABOUT:

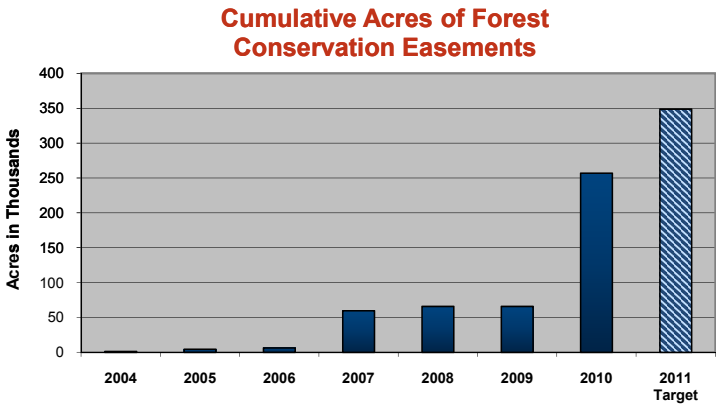
- Minnesota Forest Stewardship Program at: www.mndnr.gov/grants/forestmgmt/stewardship.html
- National stewardship programs information: www.na.fs.fed.us/stewardship/index.shtm

FOREST CONSERVATION EASEMENTS

INDICATOR: Acres of permanent forest conservation easements

WHY IS THIS INDICATOR IMPORTANT?

The current weak market for forest products has encouraged industrial forest land owners to consider non-traditional sources of revenue. As a result, thousands of acres of northern forest lands owned and managed for decades by timber and mining companies are being sold to timber investment management organizations (TIMOs). Nearly 1 million acres of mostly undeveloped forest are at risk of being sold as small parcels as the TIMOs take advantage of stronger real estate markets to satisfy their investors. Subsequent development of these parcels would threaten wildlife habitat, timber resources, and outdoor recreation. Conservation easements are an alternative source of revenue for industrial forest landowners and means to protect forest lands.



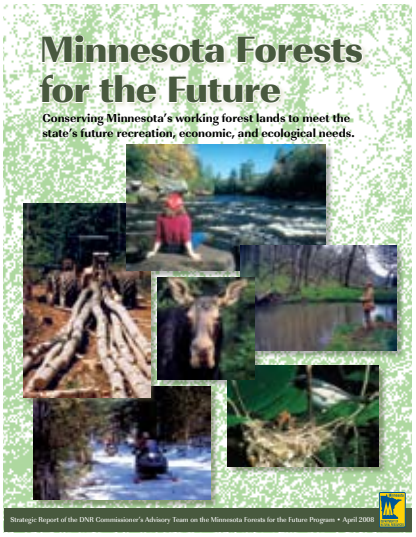
In 2010 DNR and partners completed the largest conservation project ever undertaken by the state of Minnesota–the 187,876 Upper Mississippi Forest Project. This project stitches together over 4,000 square miles of public and private forests, conserves over 60,000 acres of wetlands and over 280 miles of stream, lake and river frontage.

Conservation easements are a critical, cost-effective tool to:

- provide long-term conservation of valuable blocks of undeveloped forestland;
- maintain forest industry-related jobs;
- maintain public recreational access;
- preserve ecological functions of forest (e.g., habitat, air quality, water quality);
- keep corridors of undeveloped private forest connected to public forestland.

WHAT IS DNR DOING?

As of November 2010, DNR had purchased forest conservation easements on 256,951 acres of private forest lands through the Federal Forest Legacy program and the State Forest Legacy Program. The recent sale of large blocks of industrial forest lands calls for coordinated conservation action. In 2008 DNR established the Minnesota Forests for the Future Program (MFF) to cooperate with state, federal and private partners on efforts to acquire forest conservation easements, primarily on large blocks of private forest lands.



In 2008 the DNR Commissioner's Advisory Committee on the MFF released a strategic report to guide the establishment of the program.

TARGET: Acquire over 91,000 acres of permanent forest conservation easements in 2011. The MFF and its partners have raised approximately $15 million in funding from federal, state, and private sources for four pending projects which total over 91,000 acres. The tentative long-term target is 530,000 acres of forest easements within 25 years.

LEARN MORE ABOUT:

- Federal Forest Legacy Program at: www.fs.fed.us/spf/coop/programs/loa/flp.shtml
- Minnesota Forests for the Future Program at: www.mndnr.gov/forestlegacy/mff

NATURAL LANDS KEY INDICATOR GAPS

INDICATORS IN DEVELOPMENT:

New indicators were identified to better measure and communicate progress as we pursue the eight strategic directions detailed in *Part I: Strategic Directions*.

The indicators in development include:

Indicator to track acres of DNR-administered lands that have carbon stocks inventoried according to protocol
Indicator to track tons of carbon sequestered and emitted on DNR-administered lands
Indicator to measure percent of DNR management plans with comprehensive strategies for climate change mitigation and adaptation
Indicator to track acres of DNR-administered lands harvested for conservation-based energy sources; tons of conservation-based energy sources harvested from DNR-administered lands
Indicator to track acres of private lands managed for bioenergy crops with DNR assistance
Indicator to track number of communities with green infrastructure plans included in their comprehensive plans

INDICATOR GAPS:

Although the indicators in this report have data of sufficient quality and coverage to support trend reporting, we recognize gaps in our ability to report on important natural resources trends. The following is a preliminary list of important indicators that require either additional data or new monitoring efforts. When baseline and trend data for new indicators are available, cooperative efforts will be needed to establish conservation targets.

A preliminary list of indicator gaps includes:

Indicator to track land use change in urban and developing areas
Indicator to measure the status and change in the extent of natural habitat in urban and developing areas
Indicator to track the number of partnerships actively conserving natural lands and habitats
Indicator to measure forest productivity trends standardized across forest ownerships
Indicator to measure status and change in the extent, composition, and spatial patterns of forest habitats
Indicators to measure status and trends in type of, extent of, and damage from forest insects and diseases
Indicators to measure status and trends in forest-based recreation