A STRATEGIC CONSERVATION AGENDA 2009-2013

Part I: Strategic Directions

Trends that Shape DNR's Mission and Conservation Strategies for the Future

Minnesota Department of Natural Resources
May 2009
www.mndnr.gov/conservationagenda

CONTENTS

COMMISSIONER'S MESSAGE

These are times of extraordinary change and extraordinary opportunity for Minnesota's natural resources and for those who manage them.

Shifts in recreation participation patterns and increasing demands on the State's General Fund are reducing traditional sources of conservation funding. Population growth, development and a changing climate are reshaping the resource base.

At the same time, Minnesotans have voiced unprecedented support for our state's land, water and wildlife. The 2008 Legacy Amendment securing constitutionally dedicated support for natural resources strongly affirmed DNR's efforts to provide healthy habitat, clean water, abundant outdoor recreational opportunities and a strong natural resource-based economy throughout the state.

How do we respond to these changes and look for new opportunities? How do we direct the energy they generate toward the best outcome for all?

An important first step is to clarify the context in which we operate. To this end, we have identified three key trends that are shaping our world: changes in outdoor recreation participation, changes related to energy and climate, and landscape changes from growth and development. The new *Strategic Conservation Agenda* describes these trends and their current and anticipated impacts on Minnesota's natural resources and our work.

But identifying change is not enough. We must align ourselves with these new realities. Earlier this year we began integrating the Divisions of Parks and Recreation and Trails and Waterways to better meet the recreation needs of the 21st century. We also began integrating the Divisions of Waters and Ecological Resources to create a single strong force aimed at ensuring healthy ecosystems, abundant habitat and rich supplies of clean water in the decades to come.

Minnesota DNR staff are responding to change with the passion and commitment that have long been a hallmark of one of the most outstanding natural resource agencies in the country. This *Strategic Conservation Agenda* is the culmination of two years of conversations focused on creating department-wide direction for moving forward in these extraordinary times.

But we can't do it alone. We need strong public and private partnerships and the active participation of citizens. We welcome your input and assistance as we set out on the course toward a strong and sustainable future with abundant and enduring natural resources, a healthy economy and diverse outdoor recreational opportunities for all Minnesotans.

Join us in building a new legacy of conservation success in Minnesota.

Mark Holsten
Commissioner

DNR'S PERFORMANCE MANAGEMENT SYSTEM

Minnesota's lands and waters are undergoing rapid changes related to population growth, development, climate change, and shifts in outdoor recreation patterns. DNR is adapting its organizational structure and enhancing its performance management system in order to better address these challenging trends.

AN EVOLVING SYSTEM

In 2008 DNR leaders began expanding DNR's performance management system to include connecting strategic goals to budgets and using indicators and conservation targets to measure results. This iteration of *A Strategic Conservation Agenda* incorporates these new components. It contains two parts:

Part I: Strategic Directions

This *Strategic Directions* document highlights three key trends that shape DNR's ability to achieve our mission and goals. It describes eight strategic directions we are pursuing to achieve our goals in the context of these trends.

Part II: Performance and Accountability Report

The accompanying *Performance and Accountability Report* document describes more than 90 performance indicators and conservation targets DNR uses to measure and communicate progress as we work to achieve our conservation goals.

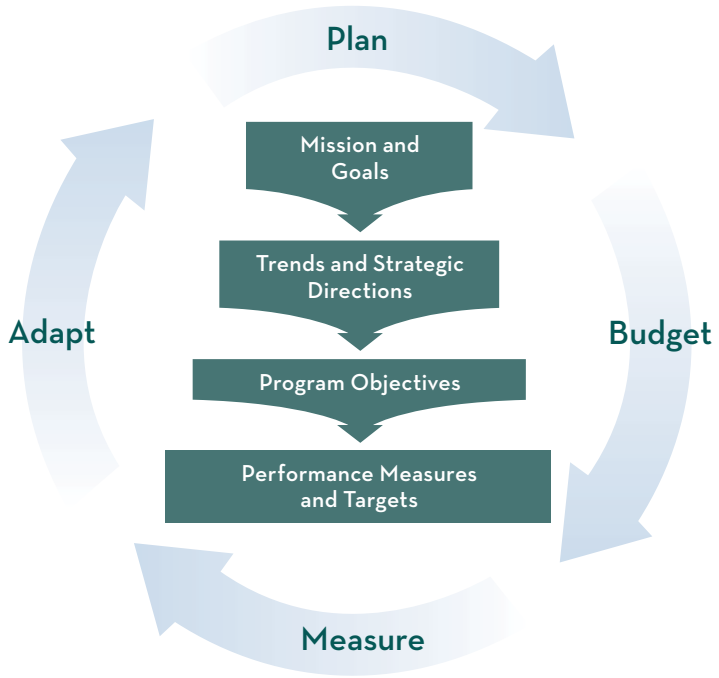
IMPROVING ACCOUNTABILITY TO RESULTS

Identifying trends, charting strategic direction, measuring performance, and making course corrections to improve conservation results are essential to effectively managing programs. DNR's framework for performance management (see figure) illustrates how mission, goals, and trends influence our strategic direction and inform the major objectives built by DNR programs. Program objectives are DNR's fundamental budget unit. Performance measures and conservation targets (outcomes) are created for each program objective and are used to build and present DNR's biennial budget *Budgeting for Results* (see http://www.dnr.state.mn.us/aboutdnr/legislativeinfo/presentations.html).

A NEW DOCUMENT

A Strategic Conservation Agenda, Part I: Strategic Directions is an important new element in DNR's improved performance management system. It more clearly communicates the crosscutting trends that influence natural resource sustainability, and more clearly outlines DNR's strategic directions in a unified approach.

PERFORMANCE MANAGEMENT SYSTEM
- ACCOUNTABILITY TO RESULTS -

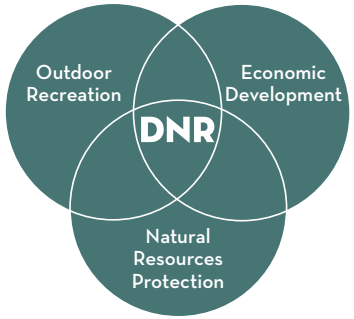


DNR's performance management system connects mission and goals to budgets and uses performance indicators and targets to measure conservation results.

EXECUTIVE OVERVIEW

MISSION (page 6)

DNR'S MISSION IS TO WORK WITH CITIZENS TO CONSERVE AND MANAGE THE STATE'S NATURAL RESOURCES, TO PROVIDE OUTDOOR RECREATION OPPORTUNITIES, AND TO PROVIDE FOR COMMERCIAL USES OF NATURAL RESOURCES IN A WAY THAT CREATES A SUSTAINABLE QUALITY OF LIFE.



GOALS (pages 6 - 8)

Minnesota's natural lands and habitats will be conserved and enhanced

Minnesota's water resources and watersheds will be conserved and enhanced

Minnesota's fish and wildlife populations will be healthy and provide great recreation opportunities

Minnesota will have a high-quality and diverse outdoor recreation system

Minnesota will provide for sustainable economic use of its abundant natural resources

DNR will effectively and efficiently deliver services to meet our mission

TRENDS AND STRATEGIC DIRECTIONS (pages 10 - 31)

DNR has identified eight strategic directions that reflect the agency's strategic position in response to three key trends. Narratives provide examples of what DNR is doing, what outcomes we seek, and what yardsticks we are using to measure our progress.

TREND: Changes in Outdoor Recreation Participation

Strategic Direction:

- Connecting people to Minnesota's great outdoors

TREND: Changes Related to Energy and Climate

Strategic Direction:

- Climate change mitigation and adaptation
- Conservation-based energy sources
- Energy efficiency

TREND: Landscape Changes Related to Growth and Development

Strategic Direction:

- Private lands conservation assistance
- Community conservation assistance
- Integrated approaches to public and private land management
- Water protection and planning

KEY MEASURES (at the end of each Strategic Direction page)

See Appendix B (page 33) for a complete list of measurable performance indicators and conservation targets that are detailed in *A Strategic Conservation Agenda Part II: Performance and Accountability Report*

ADVICE TO THE READER

To get the most from *A Strategic Conservation Agenda*, start with *Part I* (this document). It begins with DNR's conservation mission and six goals (pages 6-8). Following is the heart of the document, the three key trends that shape our work to achieve our mission and goals, and the associated eight strategic directions (pages 10-31). Explore them, consider how they intersect with your interests, and discuss how our work together can shape a better future. For more program and resource specific information, see *Part II: Performance and Accountability Report*. It describes more than 90 performance indicators and conservation targets DNR uses to measure and communicate progress. Visit www.mndnr.gov/conservationagenda for an interactive version of *A Strategic Conservation Agenda* with links to additional resources and programs.

DNR'S CONSERVATION MISSION, GOALS, AND TRENDS

MISSION

The mission of the Minnesota Department of Natural Resources (DNR) is to work with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.

GOALS

DNR seeks to achieve the following six goals. Meeting these goals will require vision and the collaboration of many—DNR, other agencies, local units of government, nonprofits, businesses, citizens, and stakeholders.

Minnesota's natural lands and habitats will be conserved and enhanced

Our vision for Minnesota's future is one of a healthy, sustainable network of natural lands 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 envisions:

• *Remaining natural ecosystems are conserved.* Healthy habitats are connected by natural corridors. 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.

• *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.

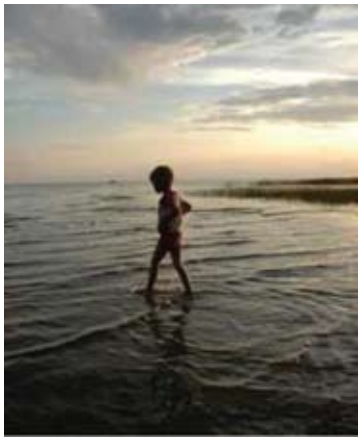
• *Natural resources thrive in the context of human influences.* Invasive species are under control. Natural lands continue to provide ecological, recreational, and economic benefits in the face of climate change. Fire is a part of forest and grassland ecosystems, while people and property are protected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

• *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.

• *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 water resources and watersheds will be conserved and enhanced

Our vision for the future includes clean water and plenty of it. Aquatic ecosystems are healthy and sustainable. Fish and wildlife populations and natural communities that depend on them are balanced and self-sustaining. Management respects interrelationships among lands and waters. This goal envisions:



• *Waterways have integrity.* Natural characteristics of shorelines, aquifers, and wetlands are protected. Formerly disrupted stream flow has been restored whenever possible. Storm water is managed in ways that protect downstream resources. Point and nonpoint source pollution is minimized. Harmful invasive species have been reduced, and no new invaders are introduced.

• *Water resources are conserved.* Ground water and other water resources are used in a way that preserves their integrity for future generations. They are shared fairly among recreation, residential, and commercial uses while retaining their ability to sustain natural systems. Sensitive and rare aquatic communities, such as trout streams and calcareous fens, are protected.

Minnesota's fish and wildlife populations will be healthy and provide great recreation opportunities

Our vision for the future includes fishing, hunting, trapping, and wildlife-viewing opportunities that meet the expectations of hunters, anglers, and wildlife watchers. Minnesotans and visitors have access to rich public lands and recreational opportunities. Businesses that depend on fish and wildlife resources support sustainable management of these resources. This goal envisions:

• *Fish and wildlife populations and the habitats that support them are healthy.* Habitat types in jeopardy, such as prairies, wetlands, and shallow lakes, are restored. Endangered and threatened species, species of special concern, and species in greatest conservation need are conserved.

• *Conservation partnerships and stewardship ethics are strong.* Public- and private-sector partners work together to support Minnesota's resources and promote conservation. Natural resources education and enforcement help citizens safely enjoy outdoor recreation and provide decision makers with the information they need to make wise resource-related decisions.

Minnesota will have a high-quality and diverse outdoor recreation system

In our vision for the future, Minnesotans' deep affection for nature-based recreation cultivates a stewardship ethic that supports a high-quality, healthy outdoor recreation system. Enthusiasts abound and have ready access to public lands and waters. Healthy water and land resources support fishing, swimming, and other activities. This goal envisions:

• *Natural resources provide a diverse, sustainable range of outdoor recreation opportunities.* Recreation landscapes span the spectrum from primitive areas to heavily used urban trails. Natural features are celebrated and protected. Fish, wildlife, and plants are conserved.

• *A comprehensive outdoor recreation system serves all Minnesotans.* People of all backgrounds, interests, abilities, and geographic settings have access to high-quality recreational resources and to the knowledge needed to appreciate and use them. Opportunities are coordinated across ownerships.

• *Recreational facilities and settings provide safe, high-quality visitor experiences.* Programs, signs, and other resources help users become aware of, understand, and enjoy outdoor recreation opportunities. Educational programs promote safe behaviors that lead to increased participation and memorable experiences.

• *Minnesotans have a lifelong stewardship ethic.* Natural resources education is woven through formal and informal education. DNR, informed citizens, and community leaders work together to care for Minnesota's natural resources.

Minnesota will provide for sustainable economic use of its abundant natural resources

In our vision of the future, Minnesota's abundant natural resources continue to contribute to the state's economic well-being. Lands and waters are sustainably managed to provide minerals, wood products, energy, food, recreation, carbon sequestration, water purification, and other ecosystem services. This goal envisions:

• *Access to mineral resources is preserved.* Sufficient supplies of sand and gravel are available with minimal harm to natural lands and waters. Deposits are assessed early in areas facing development. Mining and reclamation are planned to meet community needs, minimize conflicts, and ensure environmental integrity while producing important mineral products.

• *Healthy forests are sustainably managed to provide ecological, economic, and recreational benefits.* State forest lands are certified as well-managed. Scientific management tools and diversified management practices keep the forest-based industry vibrant while maintaining forest health and our ability to meet nontimber needs. Forests are valued for carbon sequestration. Recreational opportunities are many and varied.

• *Healthy, working farmland and critical habitat are protected as land is used for food, fiber, and energy production.* Expanded renewable energy production promotes restoration and maintenance of land in natural perennial vegetation. Wildlife habitat, outdoor recreation, water quality, and carbon sequestration increase.

DNR will effectively and efficiently deliver services to meet our mission

We envision a future in which innovation and collaboration are hallmarks of DNR's activities, helping to maximize return on investments in protecting and sustaining Minnesota's natural resources. This goal envisions:

• *Fiscal resources are wisely used to meet the changing needs of citizens and natural resources.* As new needs arise, we address them using resources that ensure the enduring health of Minnesota's natural resources.

• *Safety and stewardship are paramount.* Every activity we pursue seeks to ensure the well-being of individuals, communities, and natural resources.

• *A diverse workforce becomes more reflective of the Minnesota communities we serve.* Our commitment to diversity is an integral part of our employment practices.

• *Sustainability guides all we do and is a key yardstick to measure success.* We meet current needs in a way that protects the integrity of our environment and the ability of future generations to meet their needs as well.

TRENDS

Minnesota's natural resources—and our ability to manage them wisely and well—are being shaped today by three key trends:

Changes in outdoor recreation participation

Outdoor recreation participation is declining on a per capita basis in Minnesota and the nation. The primary driving factor behind these declines is that young adults and their children are not participating at the same levels as they have in the past. In addition, as our population becomes older, more urban, and more diverse, demands for recreational opportunities will continue to change.

Changes related to energy and climate

Concerns about energy security, fuel prices, and climate change have led to new national and state standards for energy efficiency and conservation-based alternatives to fossil fuels. Climate change will alter how we manage our land and water resources.

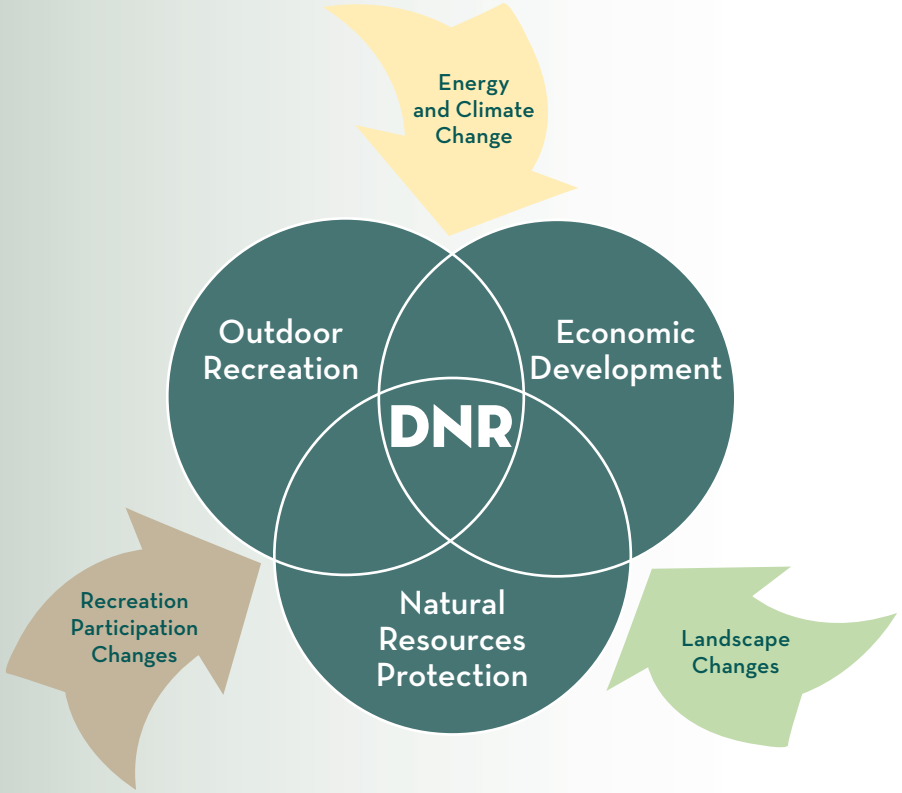
Landscape changes from growth and development

Minnesota is projected to grow by more than 1 million people in the next 20 years. The resulting landscape changes will challenge our efforts to restore and maintain fish and wildlife and provide clean water, quality outdoor recreational opportunities, and sustainable economic uses of natural resources.

The pages that follow elaborate on each of these trends and their impact on DNR strategies and activities. Corresponding specific, measurable activities and conservation outcomes are delineated in the accompanying document, *A Strategic Conservation Agenda Part II: Performance and Accountability Report*.

MULTIPLE PARTNERS, MULTIPLE GOALS

DNR is committed to conserving natural resource systems—working with citizens and partners to simultaneously protect natural resources, provide recreational opportunities, and promote a healthy economy. This systems approach to conservation allows us to benefit from interactions among efforts, harness the energy of partnerships, tap the power of the marketplace, and sustain a broad-based commitment to the environment.



DNR'S CONSERVATION MISSION: Three key trends shape DNR's ability to achieve its long-standing, three-part mission to provide exceptional recreational opportunities, protect and enhance natural resources, and support economic development.

TREND:
CHANGES IN OUTDOOR RECREATION PARTICIPATION

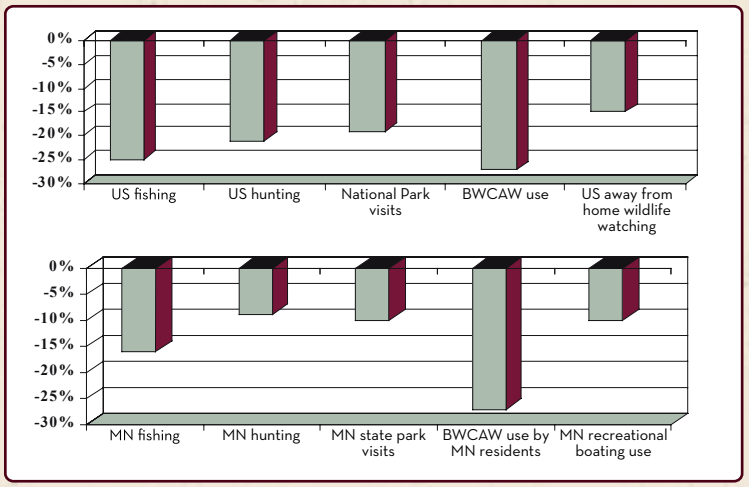
Minnesota has a strong tradition of nature-based outdoor recreation, with participation well above the national average for activities such as boating, fishing, and hunting. But Minnesota is not escaping the dramatic national trend of declining per-capita participation in nature-based outdoor recreation. The decline includes many of the core outdoor activities DNR encourages, such as state park and trail visitation, hunting, and fishing.

GENERATIONAL SHIFT IN PARTICIPATION

The primary driving factor behind these trends is a decline in nature-based outdoor recreation among young adults (ages 20–40) and their children. Today's young adults are not as engaged in nature-based activities as were baby boomers. This news does not bode well for the future of outdoor recreation because parents and other family members are often the ones who introduce youth to the outdoors.

Indicators of Trends in Nature-Based Recreation

Per-capita change* in numbers of participants or visitation/use, US and Minnesota, 1996 to 2006



Sources: USFWS and United States Census Bureau. National Survey of Fishing, Hunting and Wildlife-Associated Recreation. National Park Service visitation records (www2.nature.nps.gov/stats/). MNDNR data on certified hunters and anglers, park visitation from Division of Parks and Recreation, and regional boating studies. BWCAW use data compiled from USFS records of May–September quota group permits.
*Per-capita change figures are most useful for revealing the underlying popularity of an activity because they factor out the influence of population growth or decline on the change value. For example, if an activity goes up 10% at the same time the population increases by 10%, the per-capita change is zero, meaning it maintains the same relative popularity in the population over time.

SECONDARY FACTORS BEHIND PARTICIPATION DECLINES

In addition to the primary factor, a number of secondary factors contribute to the declines in outdoor recreation participation. As the population ages, participation in recreation activities generally declines. Similarly, as our state has become increasingly urban as well as increasingly racially/ethnically diverse, participation in traditional outdoor recreation activities has generally declined. How Minnesotans recreate is changing. All of these secondary factors have increased, and they will require DNR to adapt how we provide nature-based recreation opportunities.

THE GREAT OUTDOORS: NOT WHAT IT USED TO BE?

People take part in outdoor activities for many reasons. According to Minnesota's 2004 Outdoor Recreation Participation Survey, the top reason is simply to enjoy nature. The second leading reason is exercise and feeling healthier, which reflects a traditional linkage between recreation and a healthy lifestyle. Other reasons include an opportunity to spend quality time with family and friends, and an escape from the pressures of modern life.

Yet today we are seeing a fundamental shift away from nature-based outdoor recreation. What is replacing outdoor recreation in people's lives? A recent study of U.S. national park visitation yielded some surprising results. It found that four variables explained 97.5% of the decline in visits to national parks. These were: time spent on the Internet, time spent playing video games, time spent watching movies, and oil prices.

There is a risk that if people continue to lose their connection with the natural world, there will be fewer constituents committed to the conservation of natural resources.

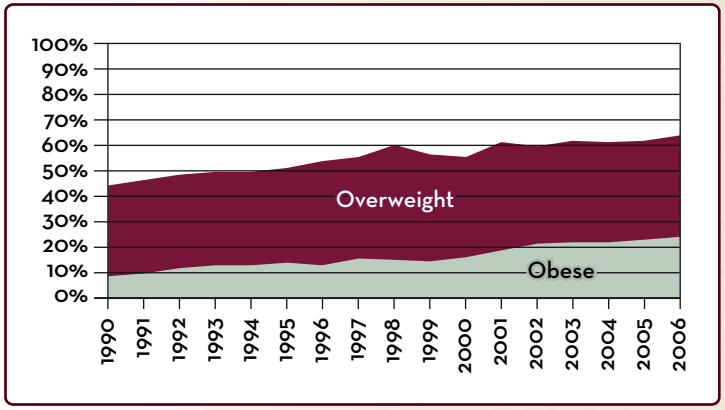
ALARMING RISE OF OBESITY IN MINNESOTA

The replacement of vigorous outdoor activities by sedentary, indoor lifestyles has far-reaching adverse consequences for our physical and mental health, for our economy, and for natural resources themselves.

Six out of 10 Minnesotans are overweight or obese. And 33% of Minnesotans have high cholesterol, 22% have high blood pressure, 6% have diabetes, and 26% have pre-diabetes. Prevalence of obesity among children and adolescents in the United States quadrupled among 6- to 11-year-olds and more than tripled among 12- to 19-year-olds between 1971–1974 and 1999–2002.

These troubling statistics have led some experts to predict that this generation of American children may be the first ever to have a shorter life span than their parents. And the financial cost of obesity is tremendous. Based on national estimates, Minnesota's obesity cost was $1.3 billion in 2004. And weight-related disease is being diagnosed at younger and younger ages, which will likely lead to more lifetime health-related costs.

Proportion of Minnesota Adults Overweight and Obese



Source: Behavioral Risk Factor Surveillance System, 2007, Centers for Disease Control and Prevention

DNR'S STRATEGIC DIRECTIONS:

DNR will more aggressively market our high-quality outdoor opportunities as great destinations for families and friends as well as build on our efforts to promote physical activity and good health. We also will continue to advance our understanding of these trends as a guide for future efforts to promote healthy lifestyles and good natural resources stewardship.

The following narrative provides examples of what DNR is doing, what outcomes we seek, and what yardsticks we are using to measure our progress as we encourage outdoor recreation:

- Connecting people to Minnesota's great outdoors (pages 12-13)

Project Get Outdoors is a DNR after-school program that seeks to connect children with the great outdoors. Based in Whitewater State Park, Project GO encourages kids to get outdoors, play, explore, and have fun.

STRATEGIC DIRECTION:

CONNECTING PEOPLE TO MINNESOTA'S GREAT OUTDOORS

WHY IS THIS IMPORTANT?

Outdoor recreation enriches our lives in many ways, from boosting physical and mental health to strengthening family ties. Outdoor recreation also benefits communities, the state, and society by stimulating the economy and building enduring support for natural resources.

Minnesota's history is rooted in the great outdoors. We have the highest per capita participation in fishing and boating in the nation, and numbers of hunters, park visitors, trail users, and wildlife watchers in Minnesota are far above the national average. However, recent studies have signaled some troubling trends:

Participation declines: After some 50 years of growth, nature-based recreation turned a corner in the 1990s and is now declining on a per-capita basis in Minnesota and nationally. Per-capita visits to state and national parks, use of state trails, hunting, fishing, boating, wildlife watching, and wilderness use are all down. The primary contributing trend is a drop in participation by young adults (ages 20 to 40) and their children.

Health declines: More Minnesotans are overweight or obese than ever before. Lack of physical activity combined with poor diet is second only to tobacco use as the cause of premature death in the United States.

DNR has a role in turning around these troubling trends. By providing high-quality, attractive outdoor opportunities, we can make it fun and easy for Minnesotans to get outdoors and be physically active.

WHERE IS DNR HEADING?

We seek to increase the connections Minnesotans have with the outdoors, particularly families, young adults, and children. In addition, we want to continue to engage our longstanding constituents, as well as increase participation among those who have not traditionally used our facilities and resources. This includes members of communities of color, individuals who experience language or cultural barriers, and single parents.

Opportunities: We are working to provide something for everyone, including winter candlelight events in the parks, educational programs that build fishing and hunting skills, and high quality OHV opportunities in our state forests. We're strengthening partnerships with others, including our connection to schools, and we're expanding our support for after-school programming.

Awareness: We are building awareness of DNR outdoor recreation opportunities through a spectrum of communication efforts. We are expanding the amount of information available online and in a variety of languages—particularly Spanish. We are developing a more user-driven Web site to better engage customers and provide an improved online experience that compels people to get outdoors.

Research: We are conducting research to understand how families, children, and others would like to interact with Minnesota's natural resources. We are also evaluating the effectiveness of DNR outreach efforts. We will use this information to adapt our programs and facilities.

Foundation: We are maintaining the foundation on which outdoor recreation depends—lakes, rivers, wetlands, grasslands, and forests. We embrace green building approaches as well as sustainable and universally accessible DNR facilities.

DNR ACTIONS (A FEW EXAMPLES)

Building on DNR's current successful outdoor programs and facilities, we will reach out to meet the needs of Minnesota's changing population. In early 2009, DNR established a new Division of Parks and Trails to enhance our ability to better serve all Minnesotans and meet challenging trends. The following DNR efforts embody this inclusive philosophy:

DNR outdoor programs: DNR is committed to reaching out to new participants, sharing our passion for the great outdoors. DNR's variety of innovative outdoor programming encourages Minnesotans to have fun outdoors. Programs include park naturalist talks, School Forest assistance, and MinnAqua. Our Becoming an Outdoors Woman program provides opportunities for women and families to learn hands-on skills in hunting, fishing, and outdoor sports.

Technology-based educational programming helps attract younger participants to our DNR facilities. Whether it's a fascination with geocaching, digital photography, or podcasts for self-guided trails, DNR is developing programs to serve the burgeoning interest in technology-based educational programming.

DNR's Fishing in the Neighborhood program is a great example of a collaborative effort with local communities, schools, and others to get children outdoors, teach them about fish and aquatic ecology, and provide them with quality fishing in neighborhood lakes.

DNR Becoming an Outdoors Woman program provides opportunities for women and families to learn outdoor skills.

Geocaching helps attract younger participants to DNR facilities.

Fishing In the Neighborhood teaches kids about fish and aquatic ecology while wetting a line in a neighborhood lake.

LONG TERM DESIRED OUTCOMES

- Minnesotans' outdoor recreation needs are met.
- Increased participation in nature-based outdoor recreation, particularly among young adults and their children.
- Minnesota's children become the natural resource stewards of tomorrow through positive experiences in the outdoors.
- Increased understanding of user needs, particularly interests of families, youth, minorities, and new participants.
- Healthy, functioning watersheds and landscapes support high-quality outdoor recreation opportunities.

KEY MEASURES TO EVALUATE PROGRESS

(Detailed descriptions of these and other measures are found in DNR's ***Strategic Conservation Agenda: Part II – Performance and Accountability Report***.)

Outdoor Recreation Participation: Participation rates across key demographic groupings, e.g. adults ages 20-40, families with children

User Satisfaction Levels: Minnesota state park and trail visitor satisfaction levels; Minnesota boater, water access, and water trail user satisfaction levels; hunter satisfaction levels; angler satisfaction levels; Minnesota state forest recreation user satisfaction levels

Outdoor Education Program Participation: Number of participants in MinnAqua education program, Project WET water education program, forestry education programs, Master Naturalist volunteer program; percentage of park visitors participating in outdoor education activities

Evaluation of Outreach Efforts: Measure DNR ability to change participation patterns as well as return on investment (indicator in development)

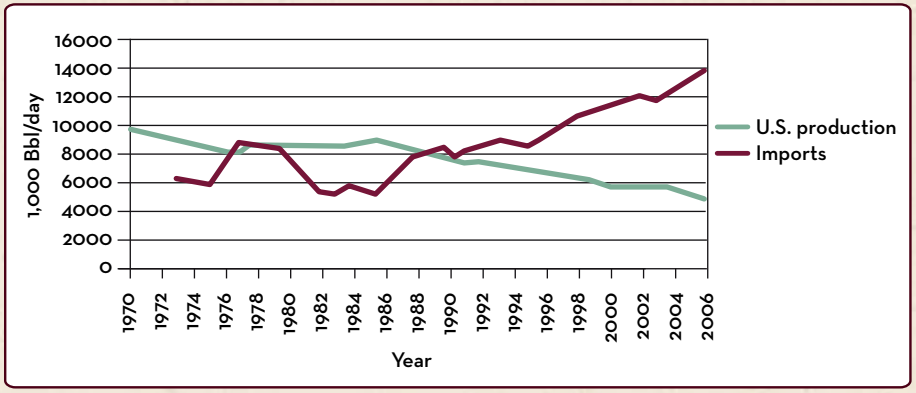
TREND: CHANGES RELATED TO ENERGY AND CLIMATE

Concerns about energy security, fuel prices, and climate change have led to new national and state standards for energy efficiency and increased interest in renewable energy sources. Climate change is predicted to have direct impacts on Minnesota's forests, grasslands, wetlands, lakes, and streams. Climate change can also intensify the negative effects of other factors influencing natural resources, such as the frequency and intensity of wildfires, the spread of invasive species, and the impact of fish and wildlife diseases.

ENERGY SECURITY

U.S. oil production continues to decline and imports grow. Even if the U.S. were to open all sensitive lands to oil production, oil production would continue to decline.

U.S. Crude Oil Production and Imports



U.S. crude oil production has declined nearly 50 percent since 1970, while imports have more than doubled.

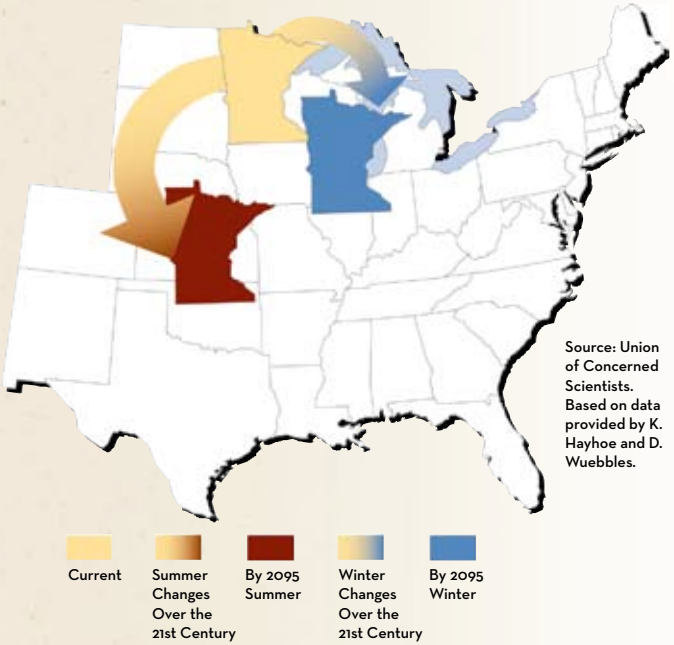
FUEL PRICE FLUCTUATIONS

Oil prices fluctuated between $27 and $147 per barrel between 2000 and 2008. Natural gas prices fluctuated between $2 and $7.50 per million BTU. Minnesotans have felt this directly at the gas pump and in their energy bills, as has DNR. DNR spent 20% more on fleet fuel costs in FY 2008 than in FY 2007. Energy costs have declined since then, but future price spikes will cut into funds available for critical land and water management.

CLIMATE CHANGE

In Minnesota, average annual temperature has risen slightly over 1°F in the south to a little over 2°F in much of the north since the early 1980s. Warmer temperatures will directly affect growing conditions, vegetation patterns, lake water levels, and wildlife populations. Climate change may also result in more extreme events such as severe windstorms, heavy rains, extended droughts, and wildfires.

Since 1950, average ice-out has tended to get earlier by two days per decade. Since 1996, the trend is 7.5 days per decade.



Source: Union of Concerned Scientists. Based on data provided by K. Hayhoe and D. Wuebbles.

In the future, Minnesota's summers may feel like current summers in Kansas.

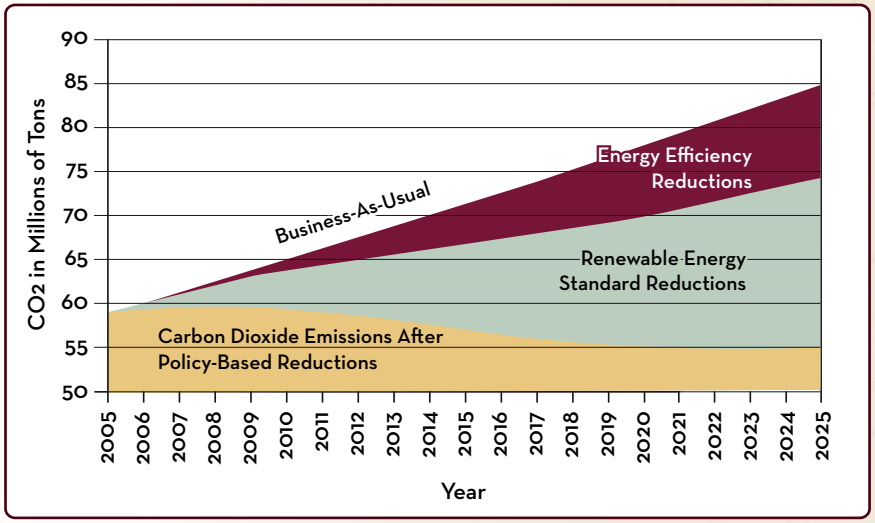
INCENTIVES AND MANDATES FOR ADDRESSING CLIMATE CHANGE AND ENERGY ISSUES

State and federal policies support renewable energy development through incentives and mandates to enhance energy price stability and security and reduce the addition of greenhouse gases to the atmosphere. For example, in 2007 Minnesota passed legislation requiring the state to:

- generate 25 percent of power from utilities using renewable sources by 2025
- Reduce statewide greenhouse gas emissions from 2005 base levels by 15 percent by 2015 and 80 percent by 2050.

In 2008 the governor's Minnesota Climate Change Advisory Group (http://www.mnclimatechange.us/) developed a comprehensive mitigation plan to meet these goals to reduce carbon emissions. The group's recommendations highlighted the role of forest and peatlands in mitigating the effects of climate change by sequestering carbon. Recommendations included establishing substantial acres of new forest land along with enhanced forest management and restoration of peatlands.

Projected Reductions in CO_2 Emissions in Minnesota's Electric Sector



Under a business-as-usual scenario, Minnesota's electricity-generating sector is projected to produce approximately 85 million tons of carbon dioxide by 2025. With the implementation of energy efficiency and renewable energy policies, it is projected to produce only 55 million tons of carbon dioxide.

Source: Izaak Walton League of America and Center for Energy and Environment

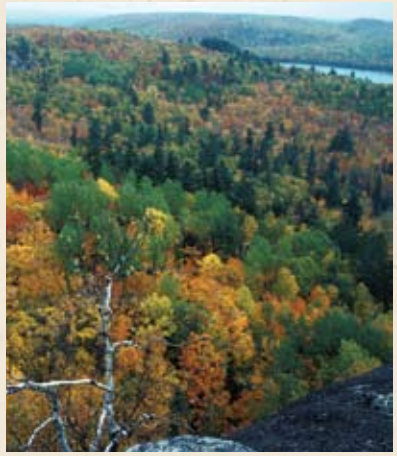
DNR'S STRATEGIC DIRECTIONS:

DNR seeks comprehensive approaches to energy and climate change. We are implementing climate change mitigation strategies that reduce emissions of greenhouse gases. These include producing conservation-based energy sources on public lands and using more renewable energy and all energy more efficiently in our fleet and facilities. These strategies also include tracking carbon storage and sequestration on natural and working lands. Finally, we are exploring adaptation strategies that will boost the capacity of natural and working lands to produce goods and services in the face of unavoidable climate change.

The following narratives provide examples of what DNR is doing, what outcomes we seek, and what yardsticks we are using to measure our progress as we work to manage land and water in the face of climate change, meet renewable energy needs while protecting the environment, and enhance the energy efficiency of our operations.

- Climate change mitigation and adaptation (pages 16-17)
- Conservation-based energy sources (pages 18-19)
- Energy efficiency (pages 20-21)

Expansion of renewable energy sources such as wind and biomass are important examples of climate change mitigation. They will be critical for meeting renewable energy targets and reducing greenhouse gas emissions.



Forests, grasslands, and wetlands mitigate climate change by absorbing greenhouse gases. Forests and grasslands can also provide biomass as an alternative energy source to fossil fuels. These systems also provide essential public benefits such as clean water, habitat, and recreation.

STRATEGIC DIRECTION:

CLIMATE CHANGE MITIGATION AND ADAPTATION

Managing Land And Water In The Face Of Change

WHY IS THIS IMPORTANT?

Climate change poses great challenges to natural resource management. It is impacting the health and productivity of lands and waters and the animals and plants that depend on them, and will exacerbate other threats from habitat loss and invasive species. It threatens the services natural lands provide—from clean water and forest products to outdoor recreation.

Increasing need to mitigate climate change: The governor's Minnesota Climate Change Advisory Group highlighted the role land management can play in reducing greenhouse gases. Preventing conversion of forest lands and protecting peatlands and wetlands play an important role in capturing and storing large quantities of greenhouse gases from the atmosphere.

Increasing need to adapt to climate change: Minnesota ecosystems will be in transition over the next 50 to 100 years. Managers must find new ways to sustain the health, diversity, and productivity of ecosystems in the face of climate change.

Warming waters: Climate change is expected to cause major changes in lakes and streams. Warming waters could shrink the number of trout streams and lake trout and cisco lakes, push walleye and northern pike populations northward, and expand the distribution of bass and panfish populations.

Drying wetlands: Wetlands are projected to become drier, altering plant communities and degrading waterfowl and other wildlife habitat.

Shifting forests: The range of major northern tree species such as black and white spruce and balsam fir is projected to shift northeastward out of the state if warming trends continue over the next 100 years. Forests may become savannas, and hardwood forests may persist mainly on north-facing slopes in some areas.

Recreation and tourism: Recreation will be affected by changed winter weather, loss of habitat, and shifts in fisheries and wildlife populations.

© Golden Eagle Lodge/Gunflint Trail.

Minnesota's northwestern moose population has dropped to fewer than 100 animals, and the northeastern population also is declining. DNR biologists have correlated heat stress and increased mortality. If trends continue, moose could disappear from Minnesota within 40 years.

WHERE IS DNR HEADING?

DNR uses a three-pronged strategy to address climate change through mitigation, adaptation, and monitoring:

Mitigation: Climate change mitigation includes actions that reduce the sources or increase the sinks for greenhouse gases. DNR is actively reducing fossil fuel consumption by its vehicles and facilities (see p. 20). We are investigating management strategies for DNR-administered peatlands, wetlands, forests, and other lands to enhance their natural capacity to store large quantities of greenhouse gases from the atmosphere. DNR's Carbon Metrics Team is engaged in efforts to refine measurement and reporting protocols to track carbon storage and sequestration on natural lands. This is critical to participating in future "carbon credit" programs.

Adaptation: Even with aggressive mitigation, Minnesota's climate will continue to change over the next 50 to 100 years because of past actions. Management actions that improve ecosystem health, diversity, and productivity are key to enhancing ecosystem resilience to climate change and associated impacts. Planned adaptations to reduce the vulnerability of ecosystems and wildlife to expected climate change include efforts to create wildlife corridors, improve habitat connectivity, and expand habitat buffers to facilitate plant and animal migration as climate changes.

Monitoring and applied research: We will begin coordinating monitoring systems and participating in research to detect climate change impacts on natural resources. We will track the effectiveness of mitigation and adaptation efforts.

DNR ACTIONS (A FEW EXAMPLES)

Land managers will need to deploy their conservation "toolbox" in new ways to address the effects of climate change as it compounds other stressors such as habitat fragmentation and invasive species. The following examples illustrate new efforts initiated by DNR and partners to address the growing challenge of climate change:

Minnesota Moose Summit: DNR is building partnerships to identify adaptive responses to climate change impacts. For example, we hosted a moose summit in December 2008 to identify moose population status and trends in neighboring states and provinces and to explore ways to help Minnesota's moose and reduce their vulnerability to expected climate change.

Peatland conservation: Minnesota's 6 million acres of peatlands are globally significant storehouses of carbon. Approximately 2 percent of Minnesota peatlands are protected as Scientific and Natural Areas (SNAs). DNR is developing management plans for these peatland SNAs to protect their carbon stocks and other values in the face of climate change.

Sustaining Lakes in a Changing Environment (SLICE): DNR is leading a collaborative four-year pilot project to monitor biological and chemical changes that occur in two dozen sentinel lakes across the state that represent the diverse range of Minnesota lake types. Data collected will help researchers better understand and monitor basic interactions among climate, watersheds, lake habitats, and fish populations and quickly detect impacts from climate change, watershed development, and invasive species. This will facilitate timely responses by managers and policy makers to mitigate or minimize negative effects caused by these stressors.

The Minnesota Moose Summit exemplifies DNR's work to identify adaptive responses to climate change impacts.

DNR is developing management plans to protect the carbon stocks and other values of peatland SNAs.

The SLICE research program is on the vanguard of DNR's efforts to detect impacts of climate change and other stressors on sentinel lakes representing a diversity of lake types.

LONG TERM DESIRED OUTCOMES

- DNR, stakeholders and partners expand and share their knowledge of climate change impacts and work together to identify adaptive management strategies for natural lands and water.
- Natural lands sequester carbon to mitigate climate change while providing habitat and other co-benefits.
- Adaptive management and expansion of conservation areas help maintain plant and animal populations by allowing species to migrate or adapt in response to climate change.
- Minnesota's natural lands and waters are resilient to climate change so that they continue to provide significant ecological, recreational, and economic benefits.

KEY MEASURES TO EVALUATE PROGRESS

(Detailed descriptions of these and other measures are found in DNR's ***Strategic Conservation Agenda: Part II – Performance and Accountability Report***.)

Carbon Inventory: Acres of DNR-administered lands that have carbon stocks inventoried according to protocol (indicator in development)

Carbon storage and flows: Tons of carbon sequestered and emitted on DNR-administered lands (indicator in development)

Mitigation and Adaptation Planning: Percent of DNR management plans with comprehensive strategies for climate change mitigation and adaptation (indicator in development)

STRATEGIC DIRECTION:

CONSERVATION-BASED ENERGY SOURCES

Meeting Energy Needs While Protecting The Environment

WHY IS THIS IMPORTANT?

Energy is one of the biggest resource challenges—and opportunities—facing Minnesota and the nation today. Conservation-based energy sources are energy sources whose production provides natural resource benefits such as habitat management and restoration, invasive species control, fuel load reduction for prevention of catastrophic fires and improved prescribed fire management, carbon sequestration, and clean water. They include forest residues from timber harvesting, forest and brushland management, and fuel treatments; pulp and paper residues; and perennial native grasses used as bio-energy crops. Such energy sources provide an alternative to fossil fuels and can help Minnesota meet its renewable energy goals while improving the environment and strengthening rural economies.

Increasing demand for renewable energy: Minnesota is a national leader in the development of renewable energy sources. Both state and federal policy support renewable energy development through incentives and mandates to enhance energy price stability, energy security, and green job development and reduce the addition of greenhouse gases to the atmosphere.

Increasing demand for biomass: While wind and solar are growing faster, biomass remains the nation's largest source of renewable energy. Expanded use of biomass is being pursued to replace natural gas, provide the feedstocks for production of advanced biofuels, and generate dispatchable power. Producing and using biomass in ways that provide auxiliary environmental benefits is essential for ensuring the development of a sustainable renewable energy economy that provides a win-win-win solution that supports our nation's energy needs, conserves land and water, and sustains vibrant rural economies.

Native prairie grasses and woody biomass as sources of renewable energy.

WHERE IS DNR HEADING?

DNR plays a key role in developing a conservation-based energy market in Minnesota. It serves as a transitional source for conservation-based energy while new processing technologies are implemented and markets develop. It also plays a role in setting the standard for best management practices for growing and harvesting biomass.

DNR's strategy is to promote conservation of natural lands and ensure a sustainable biomass supply by advancing the development of conservation-based energy sources across the state.

Sustainable biomass harvest: We will improve the planning, management, and evaluation of biomass harvest on DNR-administered grasslands and forest lands. DNR contributed to the development of the nation's first woody biomass harvesting guidelines as a foundation for sustainable forest biomass harvest. We will expand the sustainable woody biomass supply through innovative management and increased assistance to private landowners and other partners. In addition, we are harvesting and planting more local native prairie seed on DNR-administered lands to increase the availability of native prairie seed stocks for prairie reestablishment and biomass fuel production.

Establish strategic partnerships: We will boost conservation-based energy markets through coordinated outreach and project development on public and private lands.

DNR ACTIONS (A FEW EXAMPLES)

DNR is pursuing new strategies and new approaches to promote conservation-based energy sources while conserving natural lands. Recent innovations include:

Woody Biomass and Habitat Restoration Pilot Project: In 2007, DNR established a woody biomass project to facilitate the restoration of overgrown prairie, oak savanna and woodlands by removing undesirable woody vegetation and making the resulting woody material available for conversion to renewable energy. This involves a pilot project with District Energy St. Paul in removing buckthorn and other invasive shrubs from more than a dozen natural areas and trucking it to a biomass-to-energy plant.

Native prairie management and renewable energy sources: DNR pilot projects on Wildlife Management Areas in Stevens, Chippewa, and Kandiyohi counties are exploring the feasibility and habitat management benefits of using perennial native grasses for fuel. We hope these projects will show that it's possible for conservation lands to provide renewable energy without creating land use conflicts or compromising conservation values. The projects also provide experience that can be transferred to growing energy crops on private lands while enhancing wildlife and water quality.

Forest biomass harvest: DNR offers woody biomass, forest residues leftover from timber harvesting, in many of its timber sales. The Minnesota Forest Resources Council's Biomass Harvest Guidelines help us mitigate any potential negative environmental impacts. Besides supplying a renewable source of energy, woody biomass harvest can help restore forest habitats and reduce the risk of catastrophic wildfires.

Woody biomass harvest for habitat restoration and energy

A grassland biomass harvest in Stevens County

A forest biomass harvest in northern Minnesota

LONG TERM DESIRED OUTCOMES

- Renewable energy is produced while restoring and maintaining natural lands and biodiversity.
- DNR models the way for expanded use and production of conservation-based energy sources.
- Healthy, functioning watersheds and landscapes provide diverse ecological, economic, and recreational benefits.

KEY MEASURES TO EVALUATE PROGRESS

(Detailed descriptions of these and other measures are found in DNR's ***Strategic Conservation Agenda: Part II – Performance and Accountability Report***.)

Conservation-based Energy Sources on DNR-administered Lands: Acres of DNR-administered lands harvested for conservation-based energy sources; tons of conservation-based energy sources harvested from DNR-administered lands (indicators in development)

Conservation-based Energy Sources on Private Lands: Acres of private lands managed for bio-energy crops with DNR assistance (indicator in development)

STRATEGIC DIRECTION:

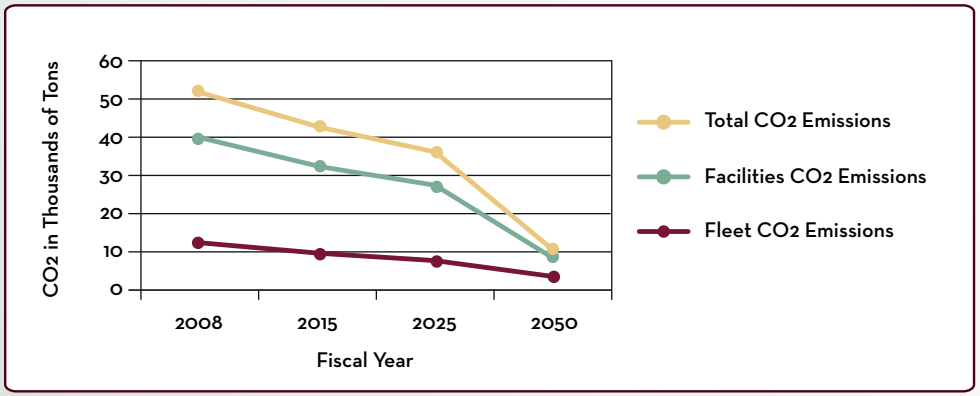
ENERGY EFFICIENCY

Reducing DNR's Environmental Footprint

WHY IS THIS IMPORTANT?

Increasing energy efficiency is an important strategy for reducing carbon dioxide emissions as well as energy costs for DNR operations. DNR's 2,600 buildings and 5,000 vehicles consume large amounts of fossil fuels and incur more than $5 million a year in energy costs. Fortunately, there are unprecedented opportunities to enhance energy efficiency and reduce our environmental footprint. Advances in technology have lead to cost-effective and efficient renewable energy systems such as wind, solar, and geothermal systems. State and federal mandates and incentives support implementing these systems. DNR's commitment to minimizing our contribution to global climate change through enhanced energy efficiency is a core element of our work to conserve natural resources.

Projected Reductions in CO_2 Emissions from DNR Facilities and Fleet (FY2008 - 2050)



DNR facilities and fleet programs strive to do their part to meet the targets set forth in Minnesota's Next Generation Energy Act of 2007. The current targets are to reduce DNR's carbon footprint by 15% in FY2015, 30% in FY2025 and 80% in FY2050.

WHERE IS DNR HEADING?

To cut the production of environmental pollutants without disrupting our ability to do our work, we are pursuing a fundamental transformation in operations, including:

Improving fleet energy efficiency: DNR is working to reduce fleet fossil-fuel consumption 5 percent per year to achieve the governor's target of reducing petroleum consumption by 25 percent by 2010. We are reducing petroleum consumption, optimizing the use of standardized equipment, sharing equipment, and using Green Star–certified repair shops whenever possible.

Enhancing facility sustainability: We are reducing facility costs by 10 percent; consolidating work sites and reducing inventory by at least 10 percent; improving building systems performance and applying renewable energy technologies; installing energy-efficient appliances; and using recycled products.

Encouraging environmentally responsible choices: We will facilitate environmentally responsible choices in our workforce by expanding videoconferencing capabilities; improving staff training on energy-efficient driving; facilitating recycling and appropriate disposal of office products; and encouraging biofuel use.

Encouraging green purchasing: DNR purchases some $35 million worth of goods and services each year. We will consider life-cycle environmental factors when selecting products, including pollutant releases, waste generation, recycled content, energy consumption, depletion of natural resources, and potential for impact on human health and the environment.

DNR ACTIONS (A FEW EXAMPLES)

The Camden State Park contact station used the B3 Minnesota Sustainable Building Guidelines in its design, and includes a geothermal heating system and a 10 kW wind generator. The systems are sized to cover the energy needs of the building, making this DNR's first carbon neutral building.

We encourage employees to choose the most fuel efficient vehicle available to get their job done.

In 2006, 2007, and 2008, DNR has been one of *Fleet Equipment* magazine's "100 Best Fleets" out of 39,000 public and private fleets. DNR continues to innovate—in 2008, electric utility vehicles were added to the fleet.

LONG TERM DESIRED OUTCOMES

- DNR models energy efficiency and conservation.
- Information technology helps reduce travel and increase productivity.
- DNR staff make informed choices to reduce their energy consumption.
- Carbon loading from DNR operations is offset by actions to sequester carbon.
- Materials are reused and recycled wherever possible.

KEY MEASURES TO EVALUATE PROGRESS

(Detailed descriptions of these and other measures are found in DNR's ***Strategic Conservation Agenda: Part II – Performance and Accountability Report***.)

DNR Facility Energy Use: BTUs of electricity, heating fuels, and wood consumed by DNR facilities

DNR Fleet Fuel Consumption: Gallons gasoline equivalent of gasoline, diesel, E-85, and other fuels consumed by DNR's fleet

Renewable Energy Use: Percent renewable energy use by facilities and fleet

TREND:
LANDSCAPE CHANGES FROM GROWTH AND DEVELOPMENT

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. These landscapes are integral to our quality of life. They support a diversity of fish and wildlife habitats and ecosystems that form a foundation for agriculture, timber production, mineral extraction, human health, and recreation. They provide a spectrum of ecosystem services, including water purification, erosion control, and carbon sequestration.

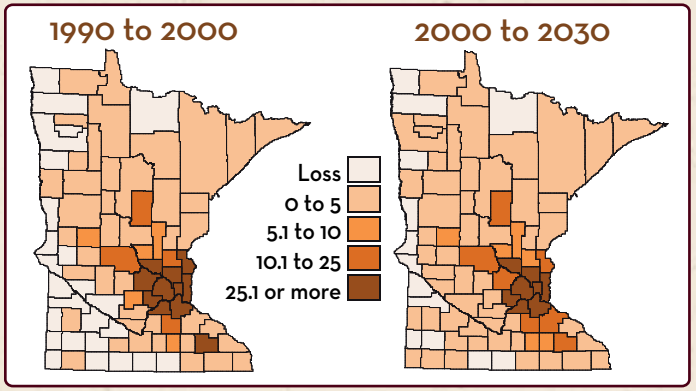
Where and how we grow and develop influences the state's water and land health. Conservation-based approaches are imperative for creating sustainable developments that protect, restore, and enhance the natural environment - the foundation for long-term economic benefits and quality of life.

GROWTH

Population growth in Minnesota is expected to continue to concentrate in the Twin Cities metropolitan area and the corridor between Rochester and Saint Cloud.

Density Change

Change in people per square mile of land area per decade



Change in population density between 1990 and 2000 and projected change between 2000 and 2030.

Sources: U.S. Bureau of the Census; and Minnesota Department of Administration, State Demographic Center, Minnesota Population Projections 2000-2030.

DEVELOPMENT

The landscape is changing in cities, suburbs, and towns. New development patterns are altering land use and impacting land and water conditions. For instance, as lakeshore develops, shorelines may lose their ability to support fish, wildlife, and clean water—the very resources that attracted people to them in the first place.

With population growth and associated development come increasing demands on natural systems—our lakes and rivers, forests and grasslands, wetlands and shorelands.

Development for urban and other uses can harm land and water health. However, many communities are choosing to foster low-impact, conservation-minded development that enhances land and water health and recreational and economic opportunities.

Source: City of Lino Lakes and Brauer & Associates, Ltd.

Under a traditional development approach (left), desired public values such as open space and clean water are not fully realized.

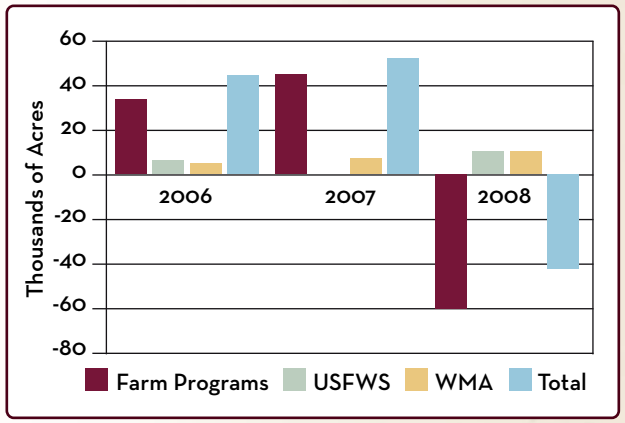
Under a low-impact conservation development approach (right), the final plan includes one additional lot, more than twice as much protected natural area, and an endowment fund for long-term stewardship.

AGRICULTURE

In the 1940s farmland provided diverse habitat for wildlife. By the 1980s, many acres had been converted to habitat-poor corn and soybeans.

In recent years, 1.8 million acres of Minnesota farmland have been enrolled in federal and state land conservation programs, benefiting wildlife and improving water quality. However, in 2008 farm crop prices increased dramatically and more than 60,000 acres were withdrawn from the federal Conservation Reserve Program (CRP).

Annual Change in Habitat Acres (2006-2008)



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.

Sustainable agriculture trends are encouraging. Organic agriculture is the fastest growing agricultural sector, and the demand for locally produced food is increasing. Minnesota now has more than 400 certified organic farms contributing to land and water health.

INVASIVE SPECIES

Invasive species harm Minnesota's environment and economy and threaten human health. With increasing population and development, proactive conservation strategies are needed to minimize harm caused by the spread of invasive species such as emerald ash borer and Eurasian watermilfoil.

Emerald ash borer
David Cappaert, Michigan State University

DNR'S STRATEGIC DIRECTIONS:

DNR seeks comprehensive approaches to improving land and water health at local, landscape, and watershed scales. We are evolving more integrated and coordinated delivery of conservation assistance to private landowners, local units of government, and others. We are building new partnerships aimed at creating an interconnected network of sustainably managed natural and working lands that conserve the full range of natural resource benefits and values across entire landscapes. We are developing new science-based tools to help us understand hydrologic systems and use landscape-level information to sustain water supply and quality.

The following four narratives provide examples of what DNR and partners are doing, what outcomes we seek, and what yardsticks we are using to measure our progress as we work to protect Minnesota's natural resources in the face of population growth and development:

- Private lands conservation assistance (pages 24-25)
- Community conservation assistance (pages 26-27)
- Integrated public and private land management (pages 28-29)
- Water protection and planning (pages 30-31)

DNR seeks comprehensive approaches to improving land and water health at local, landscape, and watershed scales.

STRATEGIC DIRECTION:

PRIVATE LANDS CONSERVATION ASSISTANCE

Working With Landowners To Improve Land And Water Conditions

WHY IS THIS IMPORTANT?

We as a society have an obligation to future generations to carefully manage and conserve Minnesota's forests, brushlands, grasslands, wetlands, and shorelands. With more than 75 percent of Minnesota's land under private ownership, private landowners are critical to fulfilling this obligation.

A variety of pressures on private lands are growing, increasing the need to proactively protect natural and working land and the natural resources and recreational and economic opportunities they provide. For example:

Grassland habitat change: Less than 1 percent of Minnesota's native prairie remains, and over half of that is on unprotected private land. In addition, nearly 425,000 acres now enrolled in the federal Conservation Reserve Program (CRP) are scheduled to be eligible for release by 2012. With commodity prices high, private landowners may expand crop production rather than re-enroll lands in conservation programs.

Forest ownership change: Forty percent of Minnesota's forest land is in the hands of private landowners (excluding industry). This land, which is distributed among some 147,000 individuals and organizations, faces increasing development pressure at the same time it is being passed to a new generation of forest landowners who may have different management goals than their predecessors.

Shoreland development: Shoreland development can destroy natural habitat and reduce the recreational value of lakes and streams. Even small, single-lot changes to the shore can add up to major harm to water quality and fish and wildlife habitat.

Working with private landowners is essential for improving Minnesota's land and water health.

WHERE IS DNR HEADING?

DNR will accelerate its work to help private landowners conserve natural resources by assessing natural resources, providing technical and financial assistance, developing management plans, and delivering information.

Priority Setting: Using inventories such as the Minnesota County Biological Survey and integrated landscape planning such as the Minnesota Duck Plan, DNR and partners prioritize private lands for conservation assistance.

Conservation Management: We work with landowners to develop stewardship plans that conserve prairies and other grasslands, brushlands, forestlands, wetlands, and shorelands.

Financial Assistance: We help landowners find funding for planting trees, developing wildlife plans, and other habitat management activities. We are looking for ways to help landowners obtain compensation for sequestering carbon in their forests.

Integrated Conservation Assistance: We are working to improve delivery of private lands assistance through enhanced outreach and collaboration with private landowners and other partners.

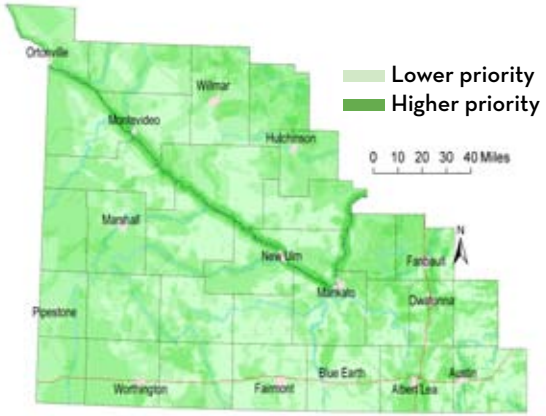
DNR ACTIONS (A FEW EXAMPLES)

DNR will increase the effectiveness of our private lands assistance programs and simplify the process for helping landowners achieve conservation goals. The integration of the divisions of Waters and Ecological Resources in February 2009 will enhance our ability to integrate land and water conservation assistance. Other actions include:

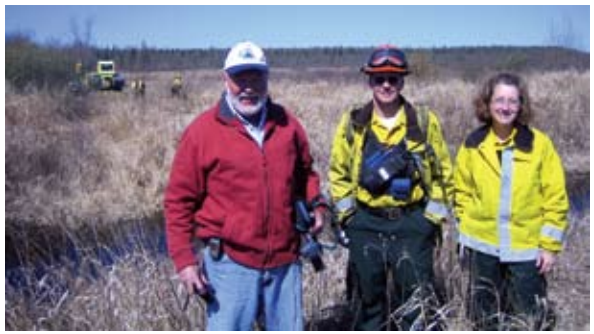
Conservation Priority Mapping: Area managers in DNR's southern region created an interactive map integrating the conservation priorities for fish and wildlife habitat, waters, forest resources, rare species, and recreation. Higher priority areas will guide conservation assistance aimed at producing the greatest conservation returns.

Brushland Conservation Management: Guided by a wildlife assessment in the transition and forested regions of central and northern Minnesota, we help private landowners manage priority brushlands with prescribed burns and other tools. This increases the habitat value of brushlands for sharp-tailed grouse and other species that have declined with the loss of grassland and brushland.

Shoreland Habitat Restoration: We provide assistance to private landowners to restore degraded shorelands. On one property on Long Lake in Otter Tail County, DNR cost-share funds and technical assistance allowed the landowner to transform a degraded shoreline that sent sediments and nutrients to the lake. The restored shoreline has a diverse mix of native trees, grasses, and wildflowers that reduce runoff and provide excellent fish and wildlife habitat. We are now providing block grants to lake associations, conservation organizations, and local governments to orchestrate similar shoreland restoration projects.



Southern region conservation focus areas help target private lands conservation assistance.



Private lands specialists assist private landowners with brushland prescribed burns and other management actions.

This restored private shoreline property on Long Lake in Otter Tail County improves habitat and water quality.

LONG TERM DESIRED OUTCOMES

- Landowners receive consistent, high quality information and assistance best suited to their land and the landscape.
- Landowners make land management decisions that advance natural resource conservation.
- Healthy, functioning watersheds and landscapes provide significant ecological, economic, and recreational benefits.

KEY MEASURES TO EVALUATE PROGRESS

(Detailed descriptions of these and other measures are found in DNR's ***Strategic Conservation Agenda: Part II – Performance and Accountability Report***.)

Forest Stewardship Assistance: Acres of private forest lands with forest stewardship plans

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

Prairie Stewardship Assistance: Number of prairie stewardship plans; number of prairie management projects

Prairie Wetland Complexes: Acres of prairie wetlands and grasslands protected annually

Brushland Habitat Conservation: Number of landscapes designated as priority open landscape areas, number of brushland management projects implemented, and acres managed

Shoreland Habitat Conservation: Amount of lakeshore habitat restored

Wetlands Conservation: Net change in Minnesota wetland acres

STRATEGIC DIRECTION:

COMMUNITY CONSERVATION ASSISTANCE

Building Partnerships To Protect And Conserve Land And Water

WHY IS THIS IMPORTANT?

Because 75 percent of the land area in Minnesota is privately owned, the land use decisions and actions of local governments and private landowners directly impact the state's ability to protect and conserve Minnesota's natural resources.

With the state's population expected to grow by one million people over the next 20 years, much of the remaining natural resources are at risk of being converted or degraded unless we make conservation an integral element of local planning and implementation. By partnering with cities, counties, and townships and providing the information, assistance, and financial incentives they need to identify, prioritize, and protect key natural features, we can ensure clean water, fish and wildlife habitat, and the other benefits of a healthy natural environment.

The rapid, low-density growth and development that occurred in recent decades has resulted in the loss of wetland and terrestrial habitats and large increases in impervious surface area, dramatically impacting water bodies of all types. Recognizing that land-use planning and zoning is largely a local government responsibility, along with the creation of stricter water quality standards in the near future, State and local governments must work together to plan for and integrate land and water conservation measures into future development.

Good local land use planning is a powerful tool for conserving natural resources. By strategically guiding development, communities can protect natural resources, create strong recreation systems, enhance economic opportunities, and avoid unintended consequences such as fragmented open space, degraded waters, and compromised community character.

WHERE IS DNR HEADING?

Working with local units of government and other partners to conserve land and water is a departmental priority. This work includes providing a variety of tools to improve land use and water-use decisions in the face of development. In undeveloped areas this may mean identifying vital natural areas and connecting corridors. In more developed areas, it may mean guiding the application of storm-water management best practices, conservation developments, and local ordinances to conserve natural resources and enhance recreational and economic opportunities.

Technical Assistance: DNR resources such as the Minnesota County Biological Survey, the DNR Basin Watershed dataset, Minnesota Land Cover Classification System, and Green Infrastructure mapping give communities information they need to conserve locally and regionally important natural places. DNR also supports communities by offering workshops for local governments; holding low-impact development and conservation design training sessions for developers, consulting firms, and others; guiding local ordinance development; and helping with storm water management and shoreland restoration.

Financial Assistance: DNR provides funds to local governments to conserve natural resources and establish recreational opportunities. Resources include numerous grant programs such as the Metro Greenways, Natural and Scenic Area, and Local Trail Connections programs.

DNR ACTIONS (A FEW EXAMPLES)

DNR will build trusting relationships with local communities, private landowners, developers, and other partners to conserve natural resources, support economic growth, and provide high-quality recreation opportunities. Here are a few examples:

The Lower Zumbro River Habitat Corridors project seeks to restore the Mississippi River's vibrant backwaters, develop innovative approaches to improve habitat connectivity for the many species of fish, wildlife, and plants native to southeastern Minnesota, and enhance the outdoor recreational activities that depend on a healthy natural environment. This cooperative partnership includes local communities, state and federal agencies, nongovernmental organizations, private landowners, and many others.

The Mississippi River Renaissance project focuses on the only stretch of the Mississippi River in Minnesota that does not have special designation or protection. Located in central Minnesota between the cities of Rice and Sauk Rapids, this project seeks to help local communities create a shared vision for the future of the river by working collaboratively on development and protection strategies. In the photo (right center), local officials, resource experts, and landowners sift through natural resource inventory information as they discuss the design of a housing development on the Mississippi River near Rice, Minnesota.

Green Infrastructure mapping is one tool DNR provides to local governments to help them identify locally important existing and potential natural areas for protection and restoration. Using green infrastructure maps early in the land use decision-making process is critical for ensuring that land and water resources are protected and available for public use and enjoyment.

The Lower Zumbro River is one of the Mississippi River's vibrant backwaters.

Planning for the future of the Mississippi River.

This green infrastructure map for DNR's Central Region is an important tool for effective community conservation assistance.

LONG TERM DESIRED OUTCOMES

- Local units of government, citizens, and state and federal agencies make well-informed land use decisions that conserve natural resources.
- Developing communities retain healthy, functioning watersheds and landscapes that provide significant ecological, economic, and recreational benefits.

KEY MEASURES TO EVALUATE PROGRESS

(Detailed descriptions of these and other measures are found in DNR's ***Strategic Conservation Agenda: Part II – Performance and Accountability Report***.)

Natural Resource-Based Planning and Regulation: Number of communities with Green Infrastructure plans included in their comprehensive plans; number of communities with natural resource–based land use plans and protective ordinances; number of communities that revise their ordinances to encourage low-impact development practices that protect land and water (indicators in development)

Habitat Protection in Urban and Developing Areas: Number of habitat acres protected and restored in urban and developing areas

STRATEGIC DIRECTION:

INTEGRATED PUBLIC AND PRIVATE LAND MANAGEMENT

A Comprehensive Landscape Approach To Land And Water Health

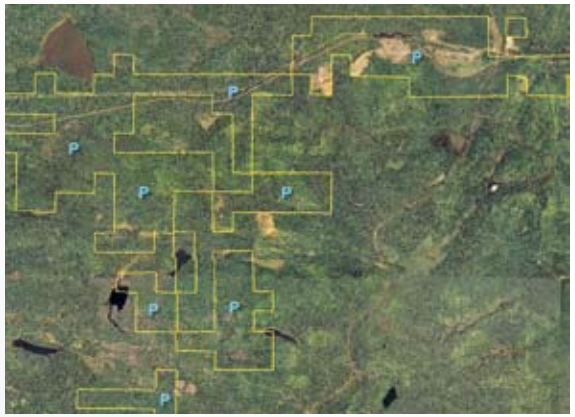
WHY IS THIS IMPORTANT?

Natural resources don't start or stop at ownership boundaries. As a result, DNR's ability to administer state forests, parks, wildlife management areas, aquatic management areas, and scientific and natural areas is strongly influenced by the management of surrounding lands and waters. Integrating public and private land management helps us manage state lands for the benefit of all Minnesotans while enhancing the integrity of land and water across ownerships.

Habitat fragmentation and development are diminishing the ability of land and water to provide ecological, recreational, and economic benefits. For example:

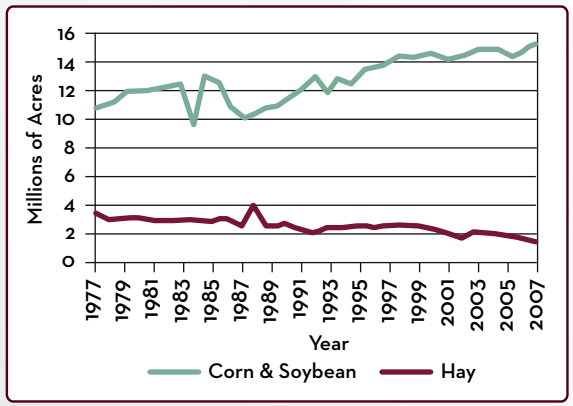
Forest ownership change: In northern Minnesota, timber and mining companies are selling thousands of acres to investors who value forest lands not only as a source of natural resources, but also for their potential to provide return on investment through real estate development and other options. These lands are often situated between state and county forests. Development and fragmentation of lands adjacent to public lands can impede management, restrict public recreational access, and reduce the habitat value of public lands.

Agricultural intensification: We anticipate possible loss of agricultural lands enrolled in the Conservation Reserve Program (p. 24). At the same time, row crop production continues to increase. Row cropping provides limited habitat value and poses challenges for water quality and habitat conservation on nearby public and private lands.



In Lake County, large tracts of private land (P) are interwoven with public forest lands. Changing ownership opens the door to parcelization and development, threatening the integrity of unbroken habitat.

Acres Planted to Row Crops and Hay



Minnesota acres planted to hay and pasture are declining while row crop acreage is increasing.

Source: USDA National Agricultural Statistics Service

WHERE IS DNR HEADING?

DNR is promoting integrated management of private and public lands in many ways. For example:

Comprehensive Land Asset Plans: We are developing comprehensive plans for acquiring and managing land. Such plans help us integrate economic, ecological, and recreational benefits. They also enhance real estate services, improve productivity of DNR-administered lands, and protect resources.

Land Records: We are improving the value of our land records system for informing decisions about land assets. The re-engineered system will increase efficiency and transparency of land transactions and improve public access to records.

Conservation Easements: A conservation easement is a restriction placed on a property to protect its conservation values. DNR holds more than 1,000 easements as large as 51,000 acres. We are improving our easement management system and seeking long-term funding for monitoring and enforcing easements.

Fee-Title Acquisition: Fee-title acquisition is a fundamental tool for protecting priority lands and waters as wildlife management areas, state parks, state forests, scientific and natural areas, and other DNR-administered units.

Landscape-scale Programs: We are pursuing integrated management for extensive interspersed public and private lands. We are strengthening our participation in public-private partnerships to build our capacity to work across ownership boundaries.

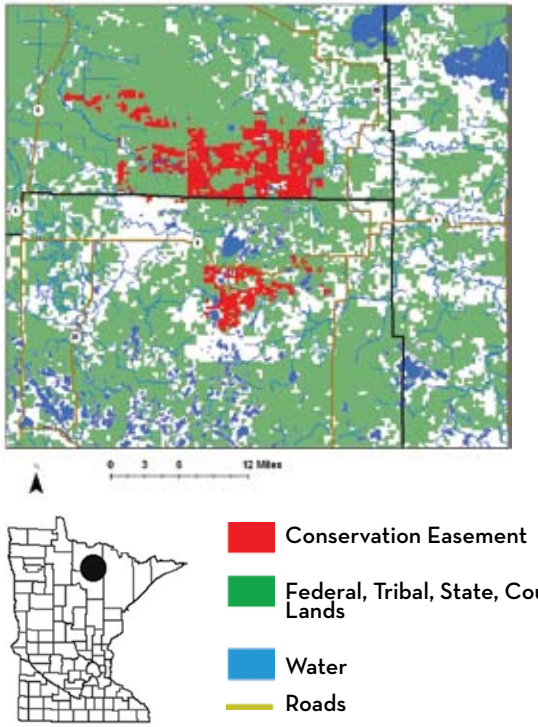
DNR ACTIONS (A FEW EXAMPLES)

DNR is advancing conservation efforts aimed at creating an interconnected network of sustainably managed natural and working lands across entire watersheds and landscapes.

Forests for the Future Program: In 2007, a public-private partnership created one of the largest conservation projects in state history by protecting 51,000 acres of forest in northern Minnesota through a "working forest" conservation easement that connected more than 500,000 acres of public and private forest lands. DNR and partners established the Minnesota Forests for the Future Program to build on this success by setting a goal to protect an additional 530,000 acres of private forest lands throughout the state using conservation easements and other tools.

Adaptive Forest Management Projects: We are initiating six "adaptive forest management projects" to help improve sustainable forest management in the face of emerging challenges such as climate change and invasive species. In one of the projects—the Manitou Ecological Silviculture Project—DNR and partners are coordinating harvesting and conifer restoration across ownership boundaries to improve wildlife and biodiversity conservation while providing quality timber and reducing management costs.

The Working Lands Initiative: Grassland-wetland complexes, found in the historical prairie areas of Minnesota, are valuable for many species, including waterfowl, shorebirds, amphibians, pheasants, and deer. To meet Minnesota's long-term goals for waterfowl, pheasant, and upland bird populations, we will work with public and private partners through the Working Lands Initiative to reach our goal to restore and protect an additional 2 million acres of prairie wetlands and grassland.



The 51,000 acre Koochiching-Washington working forest conservation easement connects more than 500,000 acres of public and private forest land.

A cooperative Board of Water and Soil Resources/DNR restoration site is a result of the Working Lands Initiative.

LONG TERM DESIRED OUTCOMES

- Public and private partners collaborate across boundaries to conserve resources at watershed and landscape scales.
- Healthy, natural systems provide more ecological, economic, and recreational benefits.

KEY MEASURES TO EVALUATE PROGRESS

(Detailed descriptions of these and other measures are found in DNR's ***Strategic Conservation Agenda: Part II – Performance and Accountability Report.)***

Wildlife Management Areas: Number of acres protected in Wildlife Management Areas

Aquatic Management Areas: Number of shoreline miles protected in Aquatic Management Areas

State Park Lands: Number of acres of state parks in native plant communities

Scientific and Natural Areas: Number of sites protected as SNAs

Forest Certification: Acres of state-administered lands approved for forest certification

Conservation Easements: Total acres and number of conservation easements that are held by the DNR and regularly monitored (indicator in development)

Prairie Wetland Complexes: Acres of prairie wetlands and grasslands protected annually

Terrestrial Invasive Species: Number of DNR land management units mapped for terrestrial invasive plants

STRATEGIC DIRECTION:

WATER PROTECTION AND PLANNING

Ensuring Sustainable Water Supply And Quality

WHY IS THIS IMPORTANT?

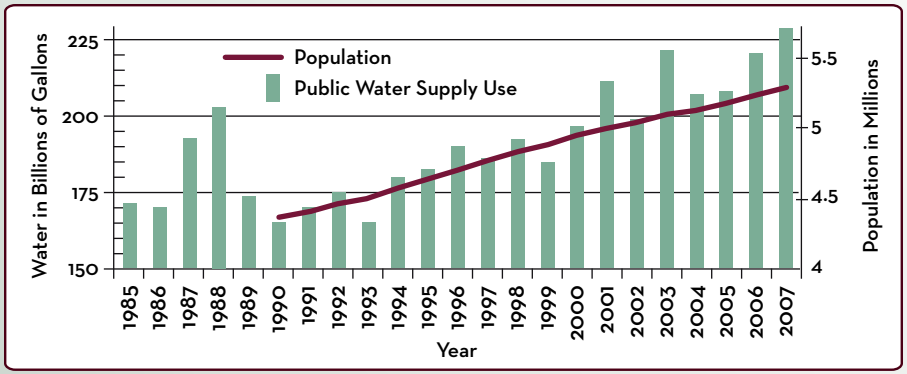
Water is at the heart of Minnesotan's connection with the outdoors. Lakes, rivers, and streams provide places to swim, boat, fish, hunt, and play. Surface water and ground water sustain homes, farms, businesses, and communities. Abundant clean water is essential for quality drinking water and to support the healthy populations of fish and wildlife that are at the core of our multi-billion-dollar outdoor recreation industry. Landscape changes from growth, development, and land management practices alter the quantity and quality of our waters. Climate change threatens to increase storm severity, runoff, and flood damage. Working with partners, DNR plays a vital role in helping Minnesota achieve water sustainability.

Water sustainability faces challenges from increasing domestic, agricultural, and industrial demand for water; climate change; riparian development; wetland loss; pollution; and aquatic invasive species.

Increasing demand for water: Two-thirds of Minnesota's public water supply comes from ground water. Demand for water is increasing faster than population growth is increasing. As demand grows, some communities are struggling to find adequate supplies of clean water.

Increasing numbers of impaired waters: Of the 10 percent of Minnesota surface water bodies tested, 40 percent are impaired in some way. Impairments include excessive nutrients, sediment, bacteria, mercury, and other contaminants. As testing proceeds, the number of impaired waters will increase and the challenge of restoring them while protecting our healthiest waters will become even greater.

Minnesota Public Water Supply Use and Minnesota Population



Demand for water is increasing faster than population growth is increasing. Increasing water use challenges our ability to meet current needs without sacrificing the ability to meet the needs of future generations.

WHERE IS DNR HEADING?

As we address ongoing and emerging demands on water supply and quality, DNR is building on its water management strengths and improving the effectiveness of its programs to protect water.

Mapping and Monitoring: Mapping and monitoring of ground water and stream flow provides state, local, and private partners with up-to-date information needed for water supply planning and long-term protection of water. It also provides citizens with information they can use to help make decisions about the future of our water resources.

Clean Water Legacy: DNR is helping implement the 2006 Minnesota Clean Water Legacy Act by boosting lake and stream monitoring and assessments and expanding our efforts to help communities meet water quality standards.

Refining Regulations: DNR is evaluating, refining, and applying regulatory tools to conserve water supply and promote land and water-use practices that protect water quality. For instance, we are improving shoreland standards that reflect key resource values, are adaptable to local issues and needs, and ensure both protection and recreational enjoyment of the state's waters.

Integrated Resource Management: Water issues can no longer be treated as isolated problems. Private lands and community assistance, strategic outreach, and other programs all play important roles in protecting water supplies and improving water quality. DNR is working to create a more explicit link between its land management activities and their impact on water conservation.

DNR ACTIONS (A FEW EXAMPLES)

In February 2009 DNR began the integration of the Divisions of Waters and Ecological Resources to ensure that Minnesota has healthy watersheds and good supplies of clean water for decades to come. Here are a few examples that illustrate DNR's work in water protection and planning:

We are expanding our network of lake and stream gages to provide data for hydrological analysis that is critical for attaining Clean Water Legacy goals.

We are developing a new method to assess the health of lakes to help meet Clean Water Legacy goals. This method combines the Section of Fisheries' traditional fish survey results with additional samples collected along the shore.

We are conducting open houses across the state to gather local input for improved shoreland standards.

The use of riparian management zones and buffer strips is an important land management practice for protecting water quality and terrestrial and aquatic habitat.

LONG TERM DESIRED OUTCOMES

- Landowners, businesses, local units of government, and state and federal agencies receive information and assistance to make well-informed decisions for water sustainability.
- Ground water and surface water are used in a way that does not degrade them for future generations.
- Healthy natural systems provide clean water and other ecological, economic and recreational benefits.

KEY MEASURES TO EVALUATE PROGRESS

(Detailed descriptions of these and other measures are found in DNR's ***Strategic Conservation Agenda: Part II – Performance and Accountability Report***.)

Water Resources Data: Number of counties with a County Geologic Atlas or a Regional Hydrogeological Assessment; number of hydrologic monitoring sites; stream gaging of major watersheds

Water Quality: Proportion of tested waters that are impaired; fish contaminant levels in important fishing waters; proportion of TMDL plans with DNR involvement

Aquatic Invasive Species: Number of water bodies infested with zebra mussels and Eurasian watermilfoil

Shoreland and Wetland Habitat Conservation: Amount of lakeshore habitat restored; net change in Minnesota's wetland acres

Stream Restoration: Number of river and stream restoration projects

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

APPENDIX A

An Excerpt From *A Strategic Conservation Agenda Part II: Performance and Accountability Report*

Learn more about DNR's performance indicators and conservation targets in *Part II*. This document describes more than 90 performance indicators and conservation targets DNR uses to measure and communicate progress as we work to achieve our conservation goals.

Wildlife Management Areas

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

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 1,380 WMAs covering 1.2 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.

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.

Target: Acquire 5,000 acres per year in FY 2003–05, accelerate acquisition in FY 2006–07, and acquire 8,000 acres per year in FY 2007-08. DNR acquired more than 11,330 acres of new WMA lands in FY 2003–05, meeting 75 percent of the target goal of 5,000 acres per year. Rising land prices across Minnesota limited the total number of acres purchased during this period. During FY 2006, DNR acquired an additional 4,584 acres of new WMA lands. A major influx of funding for WMA acquisition starting in FY 2006 will allow the DNR to significantly increase WMA acquisition efforts to an estimated 8,000 per year in FY 2007-08.

WMA acquisition efforts need to be accelerated because of increased development in rural areas, the continuing loss of critical wildlife lands, and the escalating cost of lands. 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. Long-range planning will help Minnesota achieve an outstanding network of WMAs totaling an additional 700,000 acres over the next 50 years.

Acres protected in Wildlife Management Areas. DNR plans to add 8,000 acres to the WMA system each year during FY 2007–2008.

Minnesota has more than 1,380 public wildlife areas covering 1.2 million acres of habitat.

Learn more about:

- WMAs at: http://www.dnr.state.mn.us/wmas/index/html
- Hunting at: http://www.dnr.state.mn.us/hunting/index/html
- Wildlife viewing at: http://www.dnr.state.mn.us/nature_viewing/wildlife/index.html

4

APPENDIX B

Index of Indicators Detailed in *A Strategic Conservation Agenda Part II: Performance and Accountability Report*

This index includes indicators that DNR tracked in the first iteration of *A Strategic Conservation Agenda (2003-2007)*. It also includes new indicators (marked with *) that were developed to better measure and communicate progress as we pursue the eight strategic directions detailed in *Part I: Strategic Directions*. This list is being refined as we develop *Part II: Performance and Accountability Report*.

NATURAL LANDS INDICATORS

DNR-administered lands

Number of acres protected in Wildlife Management Areas (WMAs)
Number of acres annually protected within statutory park boundaries
Number of sites protected as Scientific and Natural Areas (SNAs)
Number of DNR land management units mapped for terrestrial invasive plants; acres of control efforts
*Acres of DNR-administered lands that have carbon stocks inventoried according to protocol; tons of carbon sequestered and emitted on DNR-administered lands (indicators in development)
*Percent of DNR management plans with comprehensive strategies for climate change mitigation and adaptation (indicator in development)
*Acres of DNR-administered lands harvested for conservation-based energy sources; tons of conservation-based energy sources harvested from DNR-administered lands
Completion of an updated land records system
Number of school trust land parcels meeting fiduciary responsibilities
Income from state mineral leases

Farmland conservation

Acres in conservation land retirement programs under state and federal farmland programs
Number of prairie stewardship plans; number of prairie stewardship management projects
*Acres of private lands managed for bioenergy crops with DNR assistance (indicator in development)

Conservation partnerships and community assistance

*Total acres and number of conservation easements that are held by the DNR and regularly monitored
Acres acquired for local community projects funded with grants
Number of habitat acres protected and restored in the greater Twin Cities metropolitan area
Number of counties with a Minnesota County Biological Survey
Number of local governments using Natural Heritage Data
Number of local officials and citizens attending educational presentations about land use and natural resource conservation
*Number of communities with Green Infrastructure plans included in their comprehensive plans (this and related indicators are in development)
Number of development projects with environmental review; number of habitat acres affected by development projects
Acres of mineland reclaimed

State forest land management

Acres of state-administered lands approved for forest certification
Number of cords of wood offered for sale on DNR lands
Acres of protected old-growth forest on DNR lands
Percentage of Extended Rotation Forest (ERF) maintained on DNR lands (indicator in development)
Early successional forest maintained on DNR lands (indicator in development)
Net Annual Growth of growing stock on DNR-administered lands
Acres of DNR forest lands re-inventoried
Percent of forested Native Plant Community Classes with silvicultural interpretations
Number of Subsection Forest Resources Management Plans (SFRMPs) completed

Fire management

Number and acres of wildfires suppressed by DNR

Private forest stewardship

Acres of private forest lands with forest stewardship plans
Acres of permanent forest conservation easements

WATERS AND WATERSHEDS INDICATORS

Mapping and monitoring

Gallons of public water use
Number of counties with a County Geologic Atlas or a Regional Hydrogeological Assessment
Number of hydrologic monitoring sites

Index of Indicators continued

Flood damage reduction
Number of buildings removed from flood plains to prevent flood damages

Lake, river and stream conservation
Number of shoreline miles protected in Aquatic Management Areas (AMAs)
Amount of lakeshore habitat restored; number of lakeshore workshop participants
Number of mine pit lakes and associated watersheds restored
Number of unsafe or unsound dams removed or modified
Number of river and stream restoration projects
Number of streams with current mussel data; number of long-term mussel monitoring sites
Number of shoreline alteration permits issued for rip rap and retaining walls
Number of miles under Adopt-A-River stewardship

Clean Water Legacy
*Proportion of tested waters that are impaired; proportion of TMDL plans with DNR involvement
Fish contaminant levels in important fishing waters

Wetlands conservation
Ability to monitor 'no net loss' of Minnesota wetlands; net change in MN wetland acres
Number of enforcement hours on the Wetlands Conservation Act (WCA)

Aquatic invasive species
Number of water bodies infested with Eurasian watermilfoil and zebra mussels

FISHERIES AND WILDLIFE INDICATORS

Fisheries resources and angler satisfaction
Pounds of walleye fingerlings stocked; walleye population levels
Red Lake walleye biomass; Red Lake mature female walleye spawning stock
Brown trout population levels
Lake Superior steelhead trout catch rates and spawning numbers
Percentage of wild lake trout in the recreational fishery of Lake Superior
Number of metro region ponds stocked for fishing and education

Wildlife resources
Disease sampling of deer: Chronic Wasting Disease and Bovine Tuberculosis
Percent of deer permit areas within goal range for harvest levels
Number of wild turkey hunting permits offered; harvest levels; range expansion
Pheasant harvest levels
Ruffed grouse harvest levels
Number of landscapes designated as priority open landscape areas; brushland projects implemented; acres managed
Acres of prairie wetlands and grasslands protected annually
Number of wild rice lakes actively managed for waterfowl
Minnesota's share (%) of the yearly Mississippi Flyway duck harvest

Fish and wildlife enforcement
Number of law enforcement hours by activity
Number of enforcement hours designated to work experimental and special regulation waters
Number of enforcement hours designated for the Waterfowl Task Force

Nongame wildlife populations
Loon population levels in six lake 'index areas'
Frog and toad species distribution
Percentage of stream reaches in the Missouri River watershed with Topeka shiner
Number of species on the Minnesota endangered species list
Number of Species in Greatest Conservation Need

OUTDOOR RECREATION INDICATORS

State Parks, Trails, and Water Accesses
Acres of natural vegetation actively maintained or restored in the state park system
Acres of natural vegetation restored and managed within trail rights-of-way
Maintenance and restoration of historic buildings, structures, and districts within state parks
Number of state forests officially reclassified with signed road/trail designation orders
Number of state trail miles acquired and developed
Number of access points acquired and/or developed along high priority lakes and rivers
Number of fishing piers and shore fishing sites developed and maintained on lakes and rivers in partnership with local units of government
Development of reliable information enhancing water trail opportunity, safety, and satisfaction

Index of Indicators continued

Wildlife observation
Number of participants in wildlife observation; number of local birding events

User satisfaction
Minnesota state park visitor satisfaction levels
*Minnesota state trail user satisfaction levels
Minnesota state forest recreation user satisfaction levels
Angler satisfaction levels
Hunter satisfaction levels
*Minnesota boater, water access, and water trail user satisfaction levels

Outdoor education
Number of students completing safety training classes; number of fatalities /100,000 registrations (watercraft, ATV, snowmobile)
Number of youth license sales; number of participants in special youth hunts
Public involvement in DNR forestry education programs
Number of participants reached by the Minnesota Project WET Water Education Program
Number of participants involved in MinnAqua fisheries aquatic and angling education program
Number of individuals educated about river and stream systems
Percentage of park visitors participating in outdoor education activities
Number of master naturalist volunteers participating in programs; hours of volunteer work completed by master naturalist volunteers

Evaluation of DNR outreach efforts
*DNR ability to change participation patterns as well as return on investment (indicator in development)

ORGANIZATION INDICATORS

Energy and environmental performance
BTUs of electricity, heating fuels, and wood consumed by DNR facilities;
Gallons gasoline equivalent of gasoline, diesel, E-85, and other fuels consumed by DNR's fleet
*Percent renewable energy use by facilities and fleet

Training and development
*Participation in DNR leadership and supervisory training

Safety
*Number of OSHA recordable injuries and illnesses per 200,000 hours worked

ACKNOWLEDGEMENTS

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