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LONG-RANGE BUDGET ANALYSIS OF LAND MANAGEMENT NEEDS

Minnesota Department of Natural Resources
December 2010
www.mndnr.gov

The statutory requirement for this report is found in Minnesota Session Laws 2010, Regular Session, Chapter 361, Article 4, Section 74, which reads in part:
The commissioner of natural resources shall submit the analysis to the chairs of the house of representatives and senate committees with jurisdiction over environment and natural resources finance and cultural and outdoor resources finance by November 15, 2010.

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LEGISLATIVE CHARGE

The statutory requirement for this report is found in Minnesota Session Laws 2010, Regular Session, Chapter 361, Article 4, Section 74, which reads:

DEPARTMENT OF NATURAL RESOURCES LONG-RANGE BUDGET ANALYSIS.

(a) The commissioner of natural resources, in consultation with the commissioner of management and budget, shall estimate the total amount of funding available from all sources for each of the following land management categories: wildlife management areas; state forests; scientific and natural areas; aquatic management areas; public water access sites; and prairie bank easements. The commissioner of natural resources shall prepare a ten-year budget analysis of the department's ongoing land management needs, including restoration of each parcel needing restoration. The analysis shall include:

(1) an analysis of the needs of wildlife management areas, including identification of internal systemwide guidelines on the proper frequency for activities such as controlled burns, tree and woody biomass removal, and brushland management;
(2) an analysis of state forest needs, including identification of internal systemwide guidelines on the proper frequency for forest management activities;
(3) an analysis of scientific and natural area needs, including identification of internal systemwide guidelines on the proper frequency for management activities;
(4) an analysis of aquatic management area needs, including identification of internal systemwide guidelines on the proper frequency for management activities; and
(5) an analysis of the needs of the state's public water access sites, including identification of internal systemwide guidelines on the proper frequency for management activities.

(b) The commissioner shall compare the estimate of the total amount of funding available to the department's ongoing management needs to determine:

(1) the amount necessary to manage, restore, and maintain existing wildlife management areas, state forests, scientific and natural areas, aquatic management areas, public water access sites, and prairie bank easements; and
(2) the amount necessary to expand upon the existing wildlife management areas, state forests, scientific and natural areas, aquatic management areas, public water access sites, and prairie bank easement programs, including the feasibility of the department's existing long-range plans, if applicable, for each program.

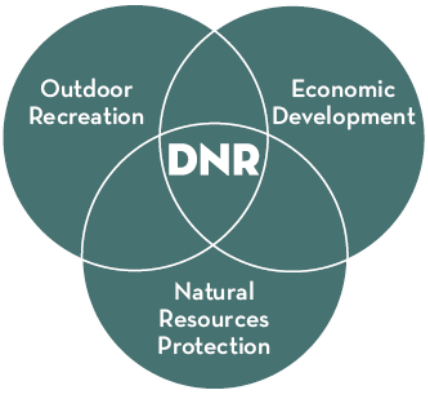
(c) The commissioner of natural resources shall submit the analysis to the chairs of the house of representatives and senate committees with jurisdiction over environment and natural resources finance and cultural and outdoor resources finance by November 15, 2010.

INTRODUCTION

Minnesota is blessed with a wealth of natural resources that define our state and have drawn people here to live, work, and play over generations. The Department of Natural Resources (DNR) is the state's lead agency responsible for conserving these valued natural resources—Minnesota's forests, prairies, lakes, rivers, and wetlands—which form the foundation for the state's economy and high quality of life. DNR's responsibilities are broad, from managing a diverse outdoor recreation system to sustaining natural resource-based economies; from regulating activities that impact the state's land and water resources to promoting natural resource stewardship through public assistance and education; from advancing the hunting, fishing, and trapping tradition to protecting endangered species; from enforcing the state's game and fish laws to monitoring the state's climate and groundwater resources. While broad, DNR's work is fundamentally focused on enhancing and sustaining Minnesota's quality of life through the balance of natural resource protection, outdoor recreation, and economic development. DNR works closely with Minnesota's citizens to achieve this mission.

A Conservation Mission

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*. This unique, three-part mission allows the DNR to optimize conservation results by managing at the center, balancing the protection of the state's diverse resources with the use and enjoyment of these natural assets to ensure a healthy environment, a viable economy, and vibrant communities in Minnesota.



Purpose of the Report

DNR manages 5.5 million acres of state-owned natural resource lands, 12 million acres of state-owned mineral rights, and public waters, including 11,850 lakes and 69,000 miles of natural rivers and streams. Using the best science available to resource professionals and operating within the allocated budget, DNR manages these natural assets according to legislative direction and the authority provided to the department.

DNR administers approximately 11 percent of the land in Minnesota. Although state ownership of land has not significantly increased over the past two decades, in recent years some policymakers have expressed concern over the fiscal and policy implications of state land ownership. The 2010 Minnesota Legislature directed the department to conduct a 10-year budget analysis of land management needs for scientific and natural areas, state forests, wildlife management areas, water access sites, aquatic management areas, and native prairie bank easements and submit the findings to the legislature. The purpose of this report is to satisfy these legislative requirements as well as to address broader policy concerns related to the acquisition and management of natural resource lands in the state.

About the Report

The structure and contents of this land management report closely follow the 2010 session law authorizing the development of the long-range budget analysis (M.L. 2010, Ch. 361, Art. 4, Sec. 74). The report is broken into sections by land management unit. Each section describes the following:

- Details about the land management unit;
- Existing funding available for the unit;
- Guidelines on the frequency of land management activities for the unit;
- A 10-year budget analysis, including the estimated amount of funding needed, first, to address management needs on existing lands within the unit and, second, to expand the existing system and manage that expanded system;
- The feasibility of long-range acquisition plans; and
- Department innovations to manage costs.

An interdisciplinary, internal workgroup of department program managers conducted the analysis provided in the report. The project team met over a period of six months to ensure consistency in the analytical approaches used in the budget analysis. While inconsistencies in conducting the overall analyses were minimized, each land management unit is unique in terms of both administration and funding, leading to variations in how management and acquisition activities were categorized in unit analyses. For example, acquisition may include initial site development in some units while not in others, resulting in higher costs associated with acquisition in one unit over another. Therefore, a unit-by-unit comparison of land management and acquisition costs within this report is not recommended.

This report complements a similar, 25-year long-range budget analysis on the adequacy of funding for state parks, state trails, state recreation areas, and state forest trails and recreation areas prepared by the department in 2009. DNR's Parks and Trails Budget Analysis (2009) is provided as an appendix to this report and is also available on the department's website: mndnr.gov/aboutdnr/reports.

Statutory Purpose of Natural Resource Lands in Report

Scientific and Natural Areas (M.S. 86A.05, Subd. 5): To protect and perpetuate in an undisturbed natural state those natural features which possess exceptional scientific or educational value.

State Forests (M.S. 86A.05, Subd. 7; M.S. 89.001): To manage those natural assets of forest lands, including timber, biological diversity, recreation, fish and wildlife habitat, water, and aesthetic values, that will best meet the needs of the people of the state, without impairment of the productivity of the land and with consideration of the relative values of the resources.

Wildlife Management Areas (M.S. 86A.05, Subd. 8): To protect those lands and waters which have a high potential for wildlife production and to develop and manage these lands and waters for the production of wildlife; public hunting, fishing, and trapping; and other compatible outdoor recreational uses.

Water Access Sites (M.S. 86A.05, Subd. 9): To provide public access to rivers and lakes which are suitable for outdoor water recreation and where access is necessary to permit public use.

Aquatic Management Areas (M.S. 86A.05, Subd. 14): To protect, develop, and manage lakes, rivers, streams, and adjacent wetlands and lands that are critical for fish and other aquatic life, water quality, biological value, public fishing, or other compatible outdoor recreation uses.

Native Prairie Bank (M.S. 84.96; M.S. 84.961): To acquire native prairie for conservation purposes by entering into conservation easements with landowners, recognizing the value of native prairie land by taking into consideration the wildlife, scientific, erosion control, educational, and recreational benefits of native prairie.

DNR's Role in State Conservation Outcomes

While the department is the lead agency responsible for conserving Minnesota's natural resources, DNR alone cannot accomplish all of the desired conservation results in the state—especially within the context of shifting expectations for the department and increasing demands on the state's general fund that are reducing traditional sources of conservation funding.

As a public agency, DNR operates within a complex network of interests that influence how the department achieves its mission-critical work: DNR implements legislative direction, which sets natural resource policies for the department and determines what portion of the state's budget will be allocated to natural resources conservation; it responds to citizen expectations, which represent the public interests of the state and influence legislative direction; and it relies on partner agencies and organizations to leverage state investments to achieve Minnesota's conservation goals.

About the Land Management Units

Each land management unit contributes to the state's quality of life and economy and plays an important role in the department's ability to achieve its conservation mission. Each of the land management units described in this report is governed by the statutes and rules that establish its purpose, objectives, authorization, and administration.

The Minnesota Legislature established the state's outdoor recreation system through the Outdoor Recreation Act (ORA) of 1975. The ORA identifies scientific and natural areas (SNAs), state forests (SF), wildlife management areas (WMAs), public water access sites (PWAs), and aquatic management areas (AMAs) as units of Minnesota's outdoor recreation system and designates DNR as the managing agency for these units. Likewise, the Native Prairie Bank program was established by the legislature in 1987 to protect native prairie on private lands.

The management objectives for each unit are determined by the purpose of the unit as established in statute. These objectives largely drive the costs associated with managing each unit. For example, site development and facility maintenance costs (such as parking lots, roads, trails, signing, fencing) will vary significantly among units. Site development and facility maintenance costs for SNAs, which are intended to protect the quality of the state's rare resources and native habitats, will include costs related to signing, fencing, and parking areas but will not include costs related to development of public facilities such as restrooms or trails that generally are not provided within these units. On the other hand, site development and facility maintenance costs for PWAs, which are intended to provide public recreational access to lakes and rivers, will include concrete boat launch ramp and dock installation, parking lot and road maintenance, restrooms, and stormwater management; alternatively, these ongoing maintenance costs may be assumed by local government partners through cooperative agreements.

Existing Funding Available for the Land Management Units

The amount of funding currently available to manage, restore, maintain, and acquire lands within each land management unit was based on annual averages for base funding and special funding. Base funding was determined by taking an annual average of the FY 2010-11 biennium. One-time funding is considered special funding. A five-year average (FY 2006-11) was calculated for special funding to account for longer-term trends in funding history from sources such as federal funds, state bonding, Legacy funds, and the Environment and Natural Resources Trust Fund.

The state relies on a diverse funding portfolio to meet its land management needs. This report reflects the complexity of that funding and the need for a state framework that considers the range of land management needs in the state and leverages the best funding sources for those purposes, especially given the dramatic changes in conservation funding occurring over the last 20 years.

Guidelines on the Frequency of Management Activities

DNR uses management guidelines and the best available science to direct management practices on all state-owned lands. The frequency of management activities within each unit depends on many factors, including resource needs, as determined by site-level conditions and surrounding landscape use, and the statutory purpose or intended public use of the unit. For this report, a range of occurrence for land management activities is provided for each unit given the diversity of DNR's landholdings and the variable frequency in which particular management activities are needed to address site-specific conditions within each land management unit.

As scientific understanding and legislative direction change over time, DNR adapts its work and adjusts its management practices to meet these changes. Forest certification, for example, has improved the DNR's management of state forest lands but has also affected the cost of managing these lands in accordance with certification requirements. While the management costs are real, the benefits of maintaining forest certification on state forest lands far outweigh these costs by sustaining the market competitiveness of Minnesota's forest industry and ensuring that the multiple benefits produced by healthy, working forest lands—such as timber, habitat, clean water, and recreation opportunities—continue to be provided in the state.

10-Year Budget Analysis of Land Management Needs

All current and future projections and costs estimates are reported in current dollars not adjusted for inflation for the 10-year period. Two major assumptions were made as the 10-year budget analysis was developed. First, for each land management unit, it was assumed that land management costs would remain relatively constant for the next decade. Second, it was assumed that the level of base and special funding currently available would not change over this 10-year span.

Conservation Investments Pay Off in Minnesota

Investments in conservation provide a high return in benefits to all Minnesotans—from preserving natural amenities that people seek in their daily lives to generating revenue for the state through natural resource-based economies such as the recreation tourism and forest products industries. Minnesota has ranked in the top five among America's most livable states every year for the past 15 years. Careful management of these resources is critical to maintaining this livability and ensuring that tomorrow's businesses, tourists, and skilled workforce continue to be attracted to the state.

DNR works in partnership with others to conserve natural lands and waters that support the state's ability to *promote economic growth and development*; *recruit and retain a diverse, skilled workforce*; and *encourage a healthy, active population*.

Minnesota has the nation's highest per-capita participation in fishing and numbers of hunters, park visitors, trail users, and wildlife watchers are above the national average. Active participation supports the state's robust tourism economy.

- Fishing, hunting, and wildlife watching generate $4.3 billion each year in Minnesota. Spending by hunters and anglers supports 55,000 jobs, providing $1.6 billion to working residents. Southeastern Minnesota's cold-water streams alone draw an estimated 53,000 angler trips annually, generating nearly $30 million in sales and $18 million in income in the state, while nearly 500,000 deer hunters spend $236 million per year.
- The total economic impact of watercraft and boat trip spending in Minnesota is $4 billion annually, which includes spending on lodging and trip supplies.

Outdoor recreation opportunities also contribute to a high quality of life that can attract new businesses and help keep established ones competitive. Small business owners have cited quality of life as an important reason for choosing a location, and park, recreation, and open space are key determinants of quality of life.

The forest products industry also depends on the long-term health of natural resources to sustain the supply of products over time. Healthy, productive forests support jobs in forest products manufacturing and related sectors, as well as contribute to the quality of life that attracts businesses and workers. DNR plays a prominent role in providing these diverse forest benefits. The forest products industry is the state's fourth-largest manufacturing sector, with a total annual economic impact of $18 billion in sales, and supporting 89,500 jobs.

Land Asset Management

As a significant landowner in many counties, DNR recognizes the need to manage as an asset the land base it administers. In FY 2009, the Commissioner's Office directed each of DNR's four administrative regions to conduct a land asset management project. Each tested an approach appropriate in scope and scale for its particular region. In Roseau County, for example, DNR worked closely with local government partners during the project, which involved a five-part analysis of the county's land base, assessing lands that may be internally transferred to improve administration, lands that may be acquired to enhance or refine the existing land base, trust lands that may be condemned to meet fiduciary responsibilities, and lands that may be conveyed by sale or exchange. This regional land asset management project is an example of how DNR is proactively engaging other units of government in making decisions about the long-term management of Minnesota's natural resource lands in order to meet state and local needs as well as citizen expectations.

Also, in 2007 DNR initiated a major reengineering of its land records system to improve decision-making related to land asset management. This new, updated, computerized land records system, scheduled to be deployed in July 2011, will enhance access to public information about state land assets, improve integrated natural resource management, and streamline reporting requirements. Over the next two years, DNR will finish reengineering its land records system to meet its land asset management needs while providing remote access to the state's records for other state agencies, local government, and private land managers.

Significant department programs—such as real estate management and natural resource enforcement—are critical to the DNR's ability to effectively manage natural resource lands, but the costs associated with these programs' services are not included in this budget analysis. The Division of Lands and Minerals, for example, provides services to the department related to real estate management. These services provide for the acquisition of land and transactions related to the management of state-owned lands, such as issuing utility licenses, leases, and easements, and for the sale and exchange of land to improve management. Costs associated with land acquisition are tied directly to the division holding administrative authority in each case, allowing these costs to be included within each land management unit budget analysis. However, the costs of other services related to land management provided by the Division of Lands and Minerals, which totals approximately $5 million annually, are not included in the budget analysis. These important services are not cost-coded by unit, prohibiting the accurate allocation of expenses among the land management units. Therefore, these costs, while real, are omitted from the budget analysis.

Estimated Amount of Funding Needed for Land Management:
Management costs for all land management units are largely tied to providing the people, fleet and fuel, equipment and supplies, contracting, and professional services needed to manage the state's natural resource lands effectively. Within the budget analysis for each land management unit, program managers used the following as the basis for determining the estimated land management need: the system-wide management guidelines, management activity expenditures, and models that considered multiple factors driving management costs within a given unit—such as habitat type, the frequency of habitat occurrences within a system, and the management practices that are needed to effectively restore and maintain that habitat. For example, the WMA land management model calculated the estimated costs of achieving a desired future condition that maintains a high level of wildlife productivity for every major habitat type and management activity within the system.

Estimated Amount of Funding Needed to Expand Land Management Units:
Multiple scenarios were used in establishing future land acquisition rates and estimated funding needed to expand the existing land base for each unit. In each case, at least one acquisition scenario was based on current or historical acquisition rates, while another was based on acquisition goals contained in the department's long-range plans.

Feasibility of Long-Range Acquisition Plans

DNR uses long-range plans, developed in close collaboration with citizens, to inform department planning for land acquisition. DNR's plans vary significantly by land management unit, each taking into consideration diverse factors used in establishing long-term acquisition goals, including the purpose and management objectives of the unit, resource needs, and citizen expectations. The feasibility of meeting acquisition goals in these long-range plans depends on factors such as the estimated budget need for acquiring and managing new lands and the extent of partnership support. For example, DNR works closely with private landowners and conservation partners through the Minnesota Forests for the Future Program and the Working Lands Initiative, which leverage state investments with non-state dollars, achieving conservation goals at the lowest possible cost to the state. These types of partnerships enhance DNR's ability to achieve long-range goals.

Department Innovations to Manage Costs

DNR recognizes that Minnesota's current budget trends and demographic changes demand that the department lead in new ways—to advance conservation results and maintain critical public services while reducing state government costs. To that end, DNR is better integrating its work, being innovative and entrepreneurial in its business, improving efficiencies in department operations, and making investments that lead to better outcomes. Department innovations—including improving energy, fleet, and fuel efficiency and reducing land management costs by employing techniques such as biomass, timber, and seed harvesting and grazing—are described in detail by section.

Citizen Dedication to Natural Resource Conservation in Minnesota

State policies governing the use and protection of Minnesota's natural resources are built on the foundation of an engaged and concerned citizenry. Within the past 25 years, Minnesotans affirmed their support for conservation of the state's valued natural resources and preservation of the state's strong outdoor heritage through three constitutional amendments that either dedicate funding for land and water conservation and outdoor recreation development or declare the importance of Minnesota's hunting and fishing tradition.

The 2008 Legacy Amendment, which dedicates an increase in the state sales tax, providing a significant supplement to the state's existing investment in natural and cultural resource conservation, was the result of a decades-long citizens' campaign to increase conservation funding in Minnesota. Approved by 56 percent of voters, the Clean Water, Land, and Legacy Amendment demonstrates the dedicated efforts of Minnesotans to conserve the diversity of natural lands, waters, and fish and wildlife that provide the backbone for Minnesota's quality of life and growing natural resource-based economies.

Report Findings

As shown in Table 1, the department's 10-year budget analysis of land management needs for AMAs, NPB, PWAs, SNAs, SFs, and WMAs found that the total amount of annual funding currently available for land management and acquisition is approximately $74 million, of which approximately $52 million is dedicated to land management. Approximately 15 percent of the total amount of funding currently available for management and acquisition of these units is supported by the state's general fund, and nearly all such appropriations are directed to the management of state forest lands. The findings reveal an estimated $19 million annual gap in current land management needs for the more than 5 million acres of state-owned lands within these units. If DNR continues to acquire lands at current acquisition rates and manages both the existing and expanded lands according to management guidelines (Scenario A), the annual funding gap is $32 million (or approximately $13 million more than what is needed to manage the existing land base). If the department acquires lands at rates necessary to meet long-range plans and effectively manages the expanded system (Scenario B), the annual gap is approximately $84 million. While these funding gaps are significant in today's budget climate, they represent only a fraction of state government costs. Citizens receive a high return on conservation investments. The benefits are multiple—economic, social, and environmental.

Table 1. Summary of Findings in the 10-Year Budget Analysis of Land Management and Acquisition Needs (in thousands)

			Land Management Needs		Scenario A: Land Management and Acquisition Needs (based on current acquisition rates)		Scenario B: Land Management and Acquisition Needs (based on long-range plan acquisition rates)	
Land Management Unit	**Total Annual Funding Available**		**Annual Amount Necessary to Manage Existing System**	**ANNUAL FUNDING GAP** (between Amount Available for Management and Annual Amount Necessary to Manage Existing System)	**Annual Amount Necessary to Manage and Expand System**	**ANNUAL FUNDING GAP** (between Total Funding Available and Scenario A)	**Annual Amount Necessary to Manage and Expand System**	**ANNUAL FUNDING GAP** (between Total Funding Available and Scenario B)
Aquatic Management Areas (AMAs)	**2,960**		610	40	4,150	1,200	20,700	17,740
	Amount Available for Management	Amount Available for Acquisition						
	570	2,390						
Native Prairie Bank (NPB)	**1,270**		920	530	2,340	1,070	4,890	3,620
	Amount Available for Management	Amount Available for Acquisition						
	390	880						
Public Water Accesses (PWAs)	**14,880**		14,690	3,800	18,710	3,830	20,120	5,240
	Amount Available for Management	Amount Available for Acquisition						
	10,890	3,990						
Scientific and Natural Areas (SNAs)	**2,660**		2,290	1,440	4,850	2,190	12,410	9,750
	Amount Available for Management	Amount Available for Acquisition						
	850	1,810						
State Forests (SF)	**25,320**		32,290	7,200	33,630	8,310	34,820	9,500
	Amount Available for Management	Amount Available for Acquisition						
	25,090	230						
Wildlife Management Areas (WMAs)	**27,080**		19,950	5,930	42,490	15,410	64,950	37,870
	Amount Available for Management	Amount Available for Acquisition						
	14,020	13,060						
TOTAL FOR ALL UNITS (ANNUAL):	**74,170**		**70,750**	**18,940**	**106,170**	**32,010**	**157,890**	**83,720**
	Amount Available for Management	Amount Available for Acquisition						
	51,810	22,360						
TOTAL FOR ALL UNITS (10-YEAR):			**707,500**	**189,400**	**1,061,700**	**320,100**	**1,578,900**	**837,200**

Conclusion

DNR manages the state's land and water resources effectively, especially within the context of current budget trends. However, there is a gap in funding between what is currently available and what is needed to optimally manage these lands and maximize natural resource results in Minnesota.

DNR recognizes that the natural resource challenges we face today are different from those in the past and, looking forward, the challenges and opportunities of tomorrow will differ from those of today. Over time, as our knowledge and understanding of natural resources change, how we manage state-owned lands and the cost of managing these lands to their highest value will also evolve. As this report illustrates, DNR has recently implemented changes in how we do our business—both to improve results and to reduce costs. DNR's bottom line is the value provided to the citizens of the state—the results achieved per dollar invested. Over the next 10 years, DNR will continue to improve the management of state-owned natural resource lands to increase the value provided to Minnesota's citizens.

DNR acknowledges the acquisition goals in the department's long-range plans are ambitious. However, land acquisition needs will not disappear in the future. Minnesota's prairie pothole region, for example, once boasted more wetlands than North and South Dakota combined, providing a critical mix of wetlands and prairie grasslands that sustained millions of migratory birds every year. Today, more than 90 percent of wetlands and 99 percent of prairie grasslands in the region are lost. Protecting these lands not only provides key habitat for waterfowl but also improves water quality, provides flood control, and benefits local economies through outdoor recreation tourism. Likewise, the Minnesota Forests for the Future Program is an excellent example of land protection efforts that successfully utilize acquisition (primarily conservation easements) as a tool to meet multiple state needs: maintaining forest productivity, supporting important wildlife habitat, providing public access to recreation opportunities, and reducing future state costs by ensuring management access to public lands. This program has served a critical function in preventing the further fragmentation of land ownership in Minnesota's northern forested region.

And, as the state's baby boomer generation begins to retire in greater numbers and its overall population ages, the greatest challenges to maintaining Minnesota's competitive advantage in the world economy will be attracting businesses and recruiting and retaining the knowledge workers of tomorrow. Quality of life is one key determinant that draws businesses and skilled workers. DNR will continue its effort to acquire lands that provide the treasured quality of life that defines Minnesota. However, without the ongoing support and commitment of policymakers, DNR's ability to address these needs and take advantage of once-in-a-lifetime opportunities—such as the land agreement that helped create Lake Vermilion State Park—will be significantly hindered.

Even during times of declining budgets and shifting policy directives, DNR will not turn away from our conservation mission, and land acquisition is an important strategy in achieving this mission. DNR will continue to focus our efforts on strategically managing our land assets so that we not just own land, but we own the right land in the right places, optimizing natural resource results for the public at the lowest long-term cost to the state. DNR's responsibility is to conserve and manage the state's valued natural resources, and we will continue to balance natural resource protection, outdoor recreation, and economic development for the long-term benefit and enjoyment of generations of Minnesotans. However, we cannot achieve this alone—the department depends on strong public and private partnerships and the active participation of citizens to achieve conservation goals.

SECTION 1. AQUATIC MANAGEMENT AREAS (AMA)

About Aquatic Management Areas

Purpose

The Aquatic Management Area (AMA) program, created by the 1992 Minnesota Legislature as part of the Outdoor Recreation Act, administers hundreds of shoreline miles on lakes, rivers, and streams across the state. The purpose of aquatic management areas is to provide a critical foundation for shoreland management that seeks to protect, improve, and restore fish populations and aquatic habitat while ensuring access for angling and non-motorized recreation, management, education, and research on public lands and waters. The AMA program is administered by the department's Division of Fish and Wildlife.

Description of the Unit

Aquatic management areas protect critical shoreland to conserve fish populations and aquatic habitat and provide recreational access to the public. Lands within the AMA system are near shore and adjacent to lakes, rivers, and streams. DNR acquires these lands through fee title or easement acquisition. Trout stream angling and management access is acquired largely through permanent easements. "Trout water" AMAs include those lands with a cold-water distinction along designated trout streams or lakes. DNR also acquires AMAs along lakes and warm-water streams through fee title, permanent access easement, and conservation easement. These "non-trout water" AMAs include lands along lakeshores, islands, and warm-water streams or rivers.

Statutory Authorization

Designation and management of AMAs are authorized and directed through Minnesota statutes and rules, including:

M.S. 86A.05, Subd. 14. Aquatic management areas. (a) Aquatic management areas (AMA) may be established to protect, develop, and manage lakes, rivers, streams, and adjacent wetlands and lands that are critical for fish and other aquatic life, for water quality, and for their intrinsic biological value, public fishing, or other compatible outdoor recreational uses.

M.S. 97C.02. Acquisition of critical aquatic habitat. The commissioner shall acquire lands that are critical for fish and other aquatic life and that meet criteria described for aquatic management areas in section 86A.05, subdivision 14. The lands that are acquired may be developed to manage lakes, rivers, streams, and adjacent wetlands and lands for aquatic life, water quality, intrinsic biological value, public fishing, and other compatible outdoor recreational uses. The land may be acquired by gift, lease, easement, or purchase. The commissioner shall designate land acquired under this subdivision as aquatic management areas for the purposes of the outdoor recreation system.

Extent of the Unit

	AMAs	Miles	Acres
Non-trout water fee title	770		13,650
Non-trout easements	440		2,321
Trout water fee title	127	117	16,419
Trout water easements*	825	462	7,435
Total	**2,162**	**579**	**39,825**

*Of the 9,756 acres in fishing easements, 4,355 acres are conservation easements

Definition of Land Acquisition and Management Activities

Activities to manage the statewide system of AMAs fall into two broad categories:

- *Acquisition*: Acquisition includes only the funding available for or cost of the land acquisition (fee title or easement).
- *Development and Maintenance*: Development and maintenance include the funding available for or cost of managing, restoring, and maintaining the lands as well as the funding available for or cost of professional services associated with acquiring and managing the land. Professional services include appraisals, land surveys, and department-shared support services. Demolition and improvements include removing buildings, in-ground structures, old fences, and debris; adding boundary and entrance signs; developing parking areas and trails; and installing fence stile crossings, fishing piers, and shore-fishing sites for angling access. Restoration and enhancement

include cultivating native plant communities and removing excess woody debris and logjams in streams. Shoreland habitat improvement includes enhancing selected portions of lakeshore, stream bank, and in-stream habitat that benefit fish and aquatic life; installing overhead cover structures in trout streams; reconfiguring altered stream channels; stabilizing eroding stream banks; re-vegetating eroding shoreline; maintaining stream low-water crossings and field crossings; and providing off-site livestock watering sites. Vegetation management includes such ongoing duties as burning, spraying, mowing, selective timber harvest, and noxious plant control. Planning, monitoring, and enforcement include coordinating for current and long-term AMA maintenance and management needs; conducting site visits to monitor use and clean up litter; beaver control and dam removal; repairs; surveys and assessments of habitat; enforcing against illegal use and encroachment; and meeting with fee owners or adjacent landowners.

Existing Funding Available for Aquatic Management Areas

Approximately $3 million is available to the department annually for acquisition and management of AMAs. As illustrated in Table 2, sources of base funding for AMAs are largely directed toward management, restoration, and maintenance of these lands. The FY 2010–11 annual average in base funding for this program is $570,000. Sources of special, or one-time, funding are primarily funneled toward land acquisition. The five-year annual average in special funding is $2.4 million. This table represents funding available to the department for the purposes of acquiring and managing lands. Partner organizations also receive special funding from sources such as the Outdoor Heritage Fund and Environment and Natural Resources Trust Fund for acquisition of AMA lands, which are donated to the department for management. Minnesota Trout Unlimited receives funding through grants, donations, association dues, and special funds for stream habitat improvement and coordinates with DNR to provide management assistance on trout streams. Funding received by partners is not included in this table but represents a significant source of dollars directed toward AMA acquisition and management.

Table 2: Total Average Base and Special Funding Available for Aquatic Management Areas (in thousands)

Base Funding (Annual Average for FY 2010-11 Biennium--in thousands)			
Fund Name (code)	Total Amount Available	Amount Available to Manage, Restore, Maintain	Amount Available for Acquisition
Game & Fish Fund (230)	360	360	
Trout/Salmon Stamp Fund (234)	110	110	
Heritage Enhancement Fund (239)	100	100	
Subtotals:	$ 570	$ 570	$ -
Special Funding (Annual Average for FY2006-11--in thousands)			
Fund Name (code)	Total Amount Available	Amount Available to Manage, Restore, Maintain	Amount Available for Acquisition
Environment and Natural Resources Trust Fund (030)	410		410
General Fund (100)	170		170
Outdoor Heritage Fund (350)	710		710
Bonding (500)	680		680
RIM Account Fund (522)	420		420
Subtotals:	$ 2,390	$ -	$ 2,390
Totals:	**$ 2,960**	**$ 570**	**$ 2,390**

Guidelines on Proper Frequency of Management Activities for Aquatic Management Areas

In general, management guidelines for AMAs promote the protection of native land cover types with a vision of restoring habitat and vegetation that best buffers the natural landscape along lakes and streams. AMA acquisitions should protect riparian habitat and prevent degradation from inappropriate or excessive development. Key elements considered when shoreland is proposed for acquisition include sensitive shoreline, heritage features, and other factors. The frequency of management activities on AMAs varies depending on the surrounding landscape use, the size of the AMA unit, habitat conditions, the level of protection per unit, and the intended public use of the resource.

Major Land Management Activities	Descriptions	Range of Occurrence (Frequency)
Initial site preparation	Remove hazards, in-ground structures	Once, with 2 to 4 follow-up visits
Signing	Boundary; entry, rule, interpretive	Once; inspect every 4 years
Public access facilities	Parking, gates, crossings, piers, gravel	Once per year
Fence and stile repair	Perimeter inspection, repairs	Once per year
Debris removal	Garbage clean up	1 to 3 times per year
Restoration and enhancement	Native wooded or prairie management	3 times first year; every 3 to 5 years after
Trout stream improvement	In-stream, overhead habitat structures	Continuous; 7 months per year
Vegetation management	Spraying, mowing, noxious plant control	1 to 3 times per year
Planning and coordination	Plan maintenance, monitor, enforce	1 to 3 times per year per AMA

Budget Analysis and Cost Projections for Aquatic Management Areas

Estimated Amount of Funding Needed to Manage Existing Aquatic Management Areas

Table 3 illustrates the department's estimated 10-year budget need for managing existing lands within the AMA system. The average annual available funding for managing the existing 39,825 acres of AMAs is $570,000. In order to meet current land management guidelines, the department's annual budget need for AMA management is approximately $610,000, meaning an additional $40,000 is required annually to adequately manage, restore, and maintain these lands. Assuming existing funding levels and land management costs remain relatively constant, the department would require approximately $400,000 in additional funding over the next 10 years to adequately manage, restore, and maintain the existing AMA system.

Table 3: 10-Year Projection of Total Land Management Needs for Existing Aquatic Management Areas

Number of Acres	Annual Funding Available to Manage, Restore, Maintain Existing Lands (in thousands)	Annual Funding Needed to Manage, Restore, Maintain Existing Lands (in thousands)	Annual Funding Gap for Existing Lands (in thousands)
39,825	**$570**	**$610**	**$40**
		10-Year Budget Need	**$400**

Estimated Amount of Funding Needed to Expand the Existing Aquatic Management Area System

Three alternative scenarios were considered for expanding the existing land base for AMAs, as shown in Table 4. The scenarios present the additional annual need for acquisition and management of the expanded acres. The first demonstrates the annual funding required to acquire lands at the department's historical rate, approximately 700 acres annually. Scenario 2, which the department considers most likely, is based on the historical rate plus the current annual acquisition rates (approximately 300 acres) by partners who donate lands to DNR to manage as AMAs. Scenario 3 is based on the long-term, statewide acquisition plan developed by the AMA Planning Committee in 2007 to guide departmental decision-making for AMA acquisition. The committee, consisting of a diverse group of public and private partners, recommended the following:

- Trout stream habitat: Acquire 1,500 miles of cold-water stream habitat in conservation easement or fee title from willing sellers in the next 25 years. Accelerated acquisition was recommended for the first 10 years of the 25-year plan, approximately 100 miles of cold-water stream habitat annually.
- Lake and warm-water stream and rivers: Acquire 1,100 miles of lake and warm-water stream habitat from willing sellers in the next 25 years. Accelerated acquisition was recommended for the first 10 years of the 25-year plan, approximately 75 miles of habitat annually.

Table 4: Annual Amount of Funding Necessary to Expand the Existing System of Aquatic Management Areas

		Funding Needed to *Expand* Lands (in thousands)	
Alternative Scenarios	**Number of Acres**	**Manage, Restore, Maintain**	**Acquisition**
Scenario 1: Annual amount needed based on current acquisition rate (700 acres/year)	700	$ 30	$ 3,500
Scenario 2: Annual amount needed based on partners' addition to current acquisition rate (700 acres/year + 300 acres/year)	1,000	$ 40	$ 3,500
Scenario 3: Annual amount needed based on long-range acquisition plan (4,000 acres/year)	4,000	$ 90	$ 20,000

10-Year Total Estimated Budget Need for Land Acquisition and Management of Aquatic Management Areas

Table 5 highlights the estimated annual cost both to manage and to expand the AMA system in the state. The acquisition rate used to determine annual budget need for an expanded land base follows Scenario 2 in Table 4 above, which reflects current rates of acquisition by DNR and partners. The annual funding needed to manage and expand the AMA system under Scenario 2 is $4.2 million, resulting in an annual funding gap of approximately $1.2 million. Assuming current levels of funding and costs related to acquisition and management remain relatively constant, an estimated $12 million in additional funding is needed over the next 10 years to both manage and expand the AMA system. The recent addition of new dollars, such as from the Outdoor Heritage Fund, has enabled the department and partners to acquire additional lands for the AMA system. However, DNR will need to rely on a diverse mix of sources to continue to address the system's ongoing land management needs.

Table 5: Total Estimated Annual Need for Land Acquisition and Management for Aquatic Management Areas

	Number of Acres	**Annual Funding Available**		**Annual Funding Needed** (in thousands)		**Annual Gap** (in thousands)		**Total Annual Funding Gap**
		Manage, Restore, Maintain	Acquisition	Manage, Restore, Maintain	Acquisition	Manage, Restore, Maintain	Acquisition	
Existing Land Base	39,825	570		610		40		**40**
Expanded Land Base (based on Scenario 2 acquisition rate)	1,000		2,390	40	3,500	40	1,120	**1,160**
Totals:	**40,825**	**$ 570**	**$ 2,390**	**$ 650**	**$ 3,500**	**$ 80**	**$ 1,120**	**$ 1,200**

Feasibility of the Long-Range Plan for Aquatic Management Areas

The recommendations established in the long-range plan developed by the Aquatic Management Area Planning Committee, in terms of additional acreage and its distribution across the state, accounted for aquatic and riparian habitat conservation priorities and needs as well as for desired angling and non-motorized riparian access for recreation. The report was based on targets for riparian habitat protection and trout habitat and angler access, on sites of aquatic biological significance as identified by the Minnesota County Biological Survey, on key river reaches identified through state wildlife action planning, and on existing plans and priorities developed by DNR, the Pollution Control Agency, The Nature Conservancy, and other public and private entities. The report assessed needs across the major ecological sections of Minnesota and addressed lake and warm-water systems as well as trout stream and cold-water systems. The recommended goals represent resource needs across the state and citizen and stakeholder aspirations and expectations for the AMA system. The plan's holistic approach considers the role of AMAs in the context of all shoreline protection efforts, including best management practices, shoreland regulations and incentives, zoning, technical guidance, and protection programs administered by other public and private entities. In recent years, accelerated funding for AMA acquisition has been appropriated by the legislature both through bonding bills and, more recently, the Outdoor Heritage Fund. State agencies and other supporting organizations have the capacity to deliver the level of effort called for in the plan, and to date many owners in priority areas have expressed interest in selling their land for this purpose. However, even with the recent accelerated funding, the current rate of acquisition will not allow DNR to reach recommended goals within the allotted timeline. In addition to funding shortfalls, other factors that could affect the department's ability to achieve these goals include escalating riparian land costs and local concerns over public lands and the Payment in Lieu of Tax program.

Department Innovations to Manage Costs

Internal efficiencies are visible during the early stages of AMA project proposal planning as local DNR staff share ideas and knowledge across disciplines to measure the level of support prior to writing land management plans or unit policies. Toward this end, DNR is developing and maintaining administrative documents that provide a comprehensive repository for the department's statutes, rules, policies, and procedures on a variety of issues related to acquiring, developing, and managing these lands.

Current efficiencies for AMA land acquisition commonly involve external partners assisting with or entirely covering purchase costs. Outreach and educational efforts by such organizations as Green Corridors, Pheasants Forever, and Trout Unlimited build landowner trust and lead to the transfer of critical lands through which the program protects existing prime shoreline habitat. Oftentimes priority AMA land needs little to no rehabilitation, but when called upon external partners routinely assist with habitat work on open fields, lakeshores, and in-stream corridors.

Innovations relevant to management levels of AMAs are strengthened through partnership participation, as DNR gathers from other sources important inventory or habitat information that aids in management of riparian lands. For example, out of the long-standing stream survey program evolved a Fisheries Trout Stream Easement Monitoring effort that will identify existing stream corridor conditions and lead to prioritized management actions. In some cases, angler groups, schools, or lake associations have adopted land management policies that protect AMA parcels while allowing for unique angling access.

Finally, the Division of Fish and Wildlife has greatly improved efficiency through fleet reduction and use planning and through cooperative equipment sharing agreements with other agencies.

SECTION 2. NATIVE PRAIRIE BANK (NPB)

About Native Prairie Bank

Purpose

Native prairie is Minnesota's most endangered natural habitat type. Of the state's original 18 million acres of prairie, today less than one percent (approximately 220,000 acres) remains, and nearly 105,000 of those acres are unprotected. Sixty percent of Minnesota's native prairie is privately owned. A number of these parcels are "working prairies," providing valuable hay and pasturelands. Many landowners want to keep the land in their family while protecting the prairie for future generations. This program provides private landowners that option.

The Native Prairie Bank (NPB) program was established by the 1987 Minnesota Legislature to allow private landowners to protect native prairie on their property through a conservation easement with DNR. To qualify, a tract must be covered by native prairie vegetation and never have been plowed. Eligible tracts are prioritized based on factors including size, quality and diversity of the native prairie habitat, occurrence of or suitable habitat for rare species, location of the tract relative to other native prairie tracts and/or public land, and potential for long-term habitat management and enhancement. This program is administered by the Scientific and Natural Area program of the Division of Ecological and Water Resources.

Statutory Authorization

Establishment of NPBs are authorized and directed through Minnesota statutes and rules, including:

M.S. 84.96 NATIVE PRAIRIE BANK

Subd. 1. Establishment. The commissioner shall establish a native prairie bank, determine where native prairie land is located in the state, and prescribe eligibility requirements for inclusion of land in the native prairie bank.

Subd. 2. Definition. For the purposes of this section, "native prairie" means land that has never been plowed, with less than ten percent tree cover and with predominantly native prairie vegetation.

Description of the Unit

As of the end of FY 2010, DNR holds 98 Native Prairie Bank conservation easements totaling 7,869 acres. Five additional NPB easements totaling 372 acres have been purchased in fee title by DNR and designated as either scientific and natural areas (SNAs) or wildlife management areas (WMAs) and are currently managed by those programs.

NPB easements must be in a predominantly high-quality native prairie but may be degraded from agricultural practices or lack of natural disturbance, such as fire. In addition, peripheral disturbed areas are often part of an acquisition, and threats to the integrity of native plant community remnants, such as invasive species or human disturbance, continue to increase.

While fee ownership and the bulk of land management responsibilities remain with the private landowner, the NPB easement language provides substantial rights and responsibilities for DNR to manage these properties and assure the protection of prairie resources. As described in the SNA Program Easement Stewardship Plan (currently in draft), responsibilities include maintaining good communications with the landowner, regularly monitoring the easement for compliance with its terms and conditions, working with the landowner to resolve problems and address natural resource needs, and, if necessary, utilizing enforcement tools.

The SNA program provides direct technical assistance to native prairie landowners—including NPB owners—in the form of prairie stewardship plans and financial assistance for management activities. To date, 169 prairie stewardship plans have been provided to landowners of native prairie covering nearly 15,000 acres; about half of these plans are for NPB easement sites. The SNA program assists landowners in implementing their prairie stewardship plans by cost-sharing management practices (e.g., prescribed burning, invasive species control, woody encroachment removal, prairie plant community reconstructions, prescribed grazing systems). On average, SNA program provides assistance to 26

landowners and implements 52 projects annually on NPB easements and other native prairie sites. Costs associated with providing such assistance for NPB lands is included in this report.

Extent of the Unit

	Easements	Acres
Enrolled NPB conservation easements (as of end of FY 2010), managed through the NPB program	98	7,869
Enrolled NPB conservation easements designated as SNAs or WMAs, currently managed within these other programs	5	372

Definition of Land Acquisition and Management Activities

Activities to manage the statewide system of NPBs fall into two broad categories:

- *Acquisition*: Acquisition includes landowner payments, transaction costs (such as payments to the Division of Lands and Minerals and attorney general office, appraisals, recording fees, and other related costs), and acquisition-related salary costs (primarily SNA program acquisition specialists). It includes the full process from landowner contacts to negotiate easement terms through baseline property report and boundary survey if done as part of the acquisition; it also includes shared services costs.
- *Management, Restoration, and Maintenance*: Management, restoration, and maintenance include those activities associated with land asset management (including easement monitoring, boundary survey, signs, and related activities); restoration and enhancement (full-cycle management from planning through implementation to monitoring and adaptive management practices to improve resource conservation); operations (including NPB landowner relations and other easement stewardship practices); and shared support service costs.

Existing Funding Available for Native Prairie Bank Easements

Table 6 represents the department's funding levels for acquiring and managing NPB lands. Approximately $1.3 million is available annually for acquisition and management of NPBs. As the table illustrates, acquisition is primarily funded through special, or one-time, sources, while land management activities are supported both through base and special funding sources. The FY 2010–11 annual average in base funding for this program is approximately $240,000. The five-year annual average in special funding is approximately $1 million.

Aside from the funds administered directly by the SNA program, private NPB landowners are encouraged to use external funding whenever possible and to contribute their own in-kind time and equipment to state and federal cost-share projects. External funding through the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) programs, such as the Wildlife Habitat Incentives Program (WHIP) and Environmental Quality Incentives Program (EQIP), can be utilized to cost-share the management, restoration, and maintenance of NPBs. U.S. Fish and Wildlife Service programs, such as the Partners for Fish and Wildlife Program or the Landowner Incentive Program (LIP), are also sources of funding for NPB management. While the intent of these programs is not to provide ongoing program support for the management, restoration, and maintenance of NPBs, they do offer cost-share assistance directly to NPB landowners.

Table 6: Total Average Base and Special Funding Available for Native Prairie Bank (in thousands)

Base Funding (Average Annual for FY 2010-11 Biennium--in thousands)			
Fund Name (code)	Total Amount Available	Amount Available to Manage, Restore, Maintain	Amount Available for Acquisition
General Fund (100)	130	60	70
Heritage Enhancement Fund (239)	110	90	20
Subtotals:	$ 240	$ 150	$ 90
Special Funding (Annual Average for FY2006-11--in thousands)			
Fund Name (code)	Total Amount Available	Amount Available to Manage, Restore, Maintain	Amount Available for Acquisition
Environment and Natural Resources Trust Fund (030)	280	170	110
Outdoor Heritage Fund (350)	100	20	80
Federal (200 & 300)	50		50
Bonding (500)	600	50	550
Subtotals:	$ 1,030	$ 240	$ 790
Totals:	**$ 1,270**	**$ 390**	**$ 880**

Guidelines on Proper Frequency of Management Activities for Native Prairie Bank Easements

All NPB acres are to be managed as existing or restored native prairie and associated native plant communities. Activities include reconstruction of native prairie on sites previously converted to other uses and rehabilitation of degraded sites through interseeding. Among existing NPBs (as of the end of FY 2010), about 500 acres need prairie reconstruction with local seeds. In order to minimize noxious or invasive weed problems, such converted areas are usually retained in their converted condition until the materials and funding are available to restore them to a suitable native plant community.

On all NPBs, fire-dependent plant communities are managed through prescribed burning and control measures are implemented to reduce the effects of species harmful to the plant community or other native features. The terms and conditions of an easement grant the state the ability to enter an NPB to manage the prairie using, for example, prescribed burning and invasive species control. Whenever possible, DNR leverages external cost-share programs for landowners and the NPB landowner's own capacity to implement these practices. Plant management treatments target herbaceous and woody invasive species that displace native prairie communities. Control of these species may be manual, biological, or mechanical, and chemicals are used in very limited circumstances. While noxious weed control is a legal responsibility of the NPB landowner, DNR is bound to protect the easement's native prairie values from the effects of invasive species. The responsibility for fencing remains with the landowner, but DNR may offer cost-share assistance if necessary to manage and protect the easement's native prairie values. Specifically, an estimated 90 percent of NPB acres require management through prescribed fire (up to 25 percent of each site per year), about two percent of NPB acres are in need of major woody invasive species removal, and under current conditions about five percent of the acres require some form of invasive species monitoring and treatment on an annual basis.

Major Land Management Activities	Descriptions	Range of Occurrence (Frequency)
Signing	Signs demarking easement boundaries	Installed shortly after enrollment; checked for replacement about every 6 years
Conservation easement stewardship	Communications with NPB landowners on easement stewardship and natural resource management; monitoring of easement terms and conditions	Landowners are contacted at least annually; on-site monitoring and report completion is at least every 3 years
Plant community reconstruction	All activities involved in re-establishing plants native to a site converted to a different use (e.g., agricultural fields, conifer plantations, former building sites) will be reconstructed from a bare soil seedbed. The process includes soil preparation, plant material collection (and testing) and propagation (if needed), plant material installation, and several years of weed maintenance for the planted area. Native seeds (or other propagules) are collected or purchased from local sources within about 25 miles.	Done in multiple phases, each considered a one-time activity spread across a 5- to 10-year timeframe: 1 to 4 years of soil preparation and plant material collection and propagation; then plant material installation; and 5 years of weed maintenance of planted area
Plant community rehabilitation	All activities involved in rehabilitating an existing, degraded native prairie by interseeding a low-diversity site or sites where woody materials have encroached. Native seeds (or other propagules) are collected or purchased from local sources within about 25 miles.	Done in multiple phases, each considered a one-time activity spread across a 5- to 10-year timeframe: 1 to 4 years of plant material collection and propagation; then plant material installation; and 5 years of weed maintenance of planted area. The timing of this activity depends upon resource availability and priorities.
Prescribed burning	Management of fire-dependent plant communities through planned and controlled fire	On average, grassland/wetland and brushland systems need to be burned every 4 to 5 years. To protect fire-sensitive species, no more than 25 percent of a given site (or site complex) is burned per year.
Invasive species control	Treatments target herbaceous and woody invasive species that displace native prairie communities	NPB sites with serious invasive species typically require some treatment every year

Budget Analysis and Cost Projections for Native Prairie Bank Easements

Estimated Amount of Funding Needed to Manage Existing Native Prairie Bank Easements

Table 7 illustrates the department's estimated 10-year budget need for managing existing lands within the NPB system. The average annual available funding for managing the existing 7,869 acres of NPBs is $390,000. In order to meet current land management guidelines, the department's annual budget need for NPB management is approximately $920,000, meaning an additional $530,000 is needed annually to adequately manage, restore, and maintain these lands. Assuming existing funding levels and land management costs remain relatively constant, the department would need approximately $5.3 million in additional funding over the next 10 years to adequately manage, restore, and maintain existing NPB lands.

Table 7: 10-Year Projection of Total Land Management Needs for Existing Native Prairie Bank Easements

Number of Acres	Annual Funding Available to Manage, Restore, Maintain Existing Lands (in thousands)	Annual Funding Needed to Manage, Restore, Maintain Existing Lands (in thousands)	Annual Funding Gap for Existing Lands (in thousands)
7,869	**$390**	**$920**	**$530**
		10-Year Budget Need	**$5,300**

Estimated Amount of Funding Needed to Expand the Existing System of Native Prairie Bank Easements

Two alternative scenarios were considered for expanding the existing land base for NPBs, as shown in Table 8. The scenarios present the additional annual need for acquisition and management of the expanded acres. The first demonstrates the annual funding need for acquiring lands at the department's historical rate, approximately 500 acres annually. Scenario 2 is based on the department's 10-year protection target of native prairie through the NPB program.

Table 8: Annual Amount of Funding Necessary to Expand the Existing System of Native Prairie Bank Easements

		Funding Needed to *Expand* Lands (in thousands)	
Alternative Scenarios	**Number of Acres**	**Manage, Restore, Maintain**	**Acquisition**
Scenario 1: Annual amount needed based on current acquisition rate (500 acres/year)	500	$ 70	$ 1,350
Scenario 2: Annual amount needed based on 10-year protection target (1,400 acres/year)	1,400	$ 190	$ 3,780

10-Year Total Estimated Budget Need for Land Acquisition and Management of Native Prairie Bank Easements

Table 9 highlights the estimated annual cost both to manage and to expand the NPB system in the state. The acquisition rate used to determine annual budget need for an expanded land base is drawn from Scenario 2 in Table 8 above, which reflects the department's 10-year protection target of native prairie through the NPB program. The annual funding needed to manage and expand NPBs under Scenario 2 is $4.9 million, resulting in an annual funding gap of $3.6 million. Assuming current annual levels of funding and costs related to acquisition and management remain relatively constant, an estimated $36 million in additional funding is needed over the next 10 years to both manage and expand the NPB system.

Table 9: Total Estimated Annual Need for Land Acquisition and Management for Native Prairie Bank Easements

	Number of Acres	**Annual Funding Available** (in thousands)		**Annual Funding Needed** (in thousands)		**Annual Gap** (in thousands)		**Total Annual Funding Gap**
		Manage, Restore, Maintain	Acquisition	Manage, Restore, Maintain	Acquisition	Manage, Restore, Maintain	Acquisition	
Existing Land Base	7,869	390		920		530		**530**
Expanded Land Base (based on Scenario 2 acquisition rate)	1,400		880	190	3,780	190	2,900	**3,090**
Totals:	**9,269**	**$ 390**	**$ 880**	**$ 1,110**	**$ 3,780**	**$ 720**	**$ 2,900**	**$ 3,620**

Feasibility of the Long-Range Protection Target for Native Prairie Bank Program

DNR does not have a formal long-range plan for acquiring NPB easements but is currently collaborating in the development of the *Minnesota State Prairie Landscape Comprehensive Plan*. In 2009, the department identified a 10-year protection target of 20,000 acres and a 25-year protection target of 25,000 acres through SNA and NPB acquisition, with 70 percent of those figures being NPB. This is consistent with the short-term target found in this report and the *Minnesota State Prairie Landscape Comprehensive Plan*. This target is feasible but dependent on the willingness of owners of qualifying prairies—particularly in sites of high and outstanding biodiversity significance—sufficient funding, and adequate staff resources.

Department Innovations to Manage Costs

For most NPB management costs, the SNA program leverages external cost-share funds and the landowner's capacity to plan and implement management actions. The SNA program helps reduce management costs by pooling the needs of many landowners and capitalizing on economies of scale. While one landowner contracting a prescribed burn is met with potentially prohibitive fees, combining a number of NPB prescribed burns into one project can drive down the cost per acre substantially. The SNA program also helps coordinate "bartering agreements" between NPB landowners and providers of management services, such as when a native seed company collects seed from NPB lands: the landowner retains half the seed for restoration projects and the seed vendor retains half as payment for services. Thus SNA can ensure best management practices are being followed, the landowners receive the seed they need, and the seed company can market local ecotype seed: a winning situation for everyone involved.

SECTION 3. PUBLIC WATER ACCESS (PWA)

About Public Water Access

Purpose

The Public Water Access (PWA) program was created by the 1947 Minnesota Legislature to provide and maintain a statewide system to ensure public access to high-quality recreation opportunities. Minnesota ranks third in the nation in number of licensed boats (816,000) and first in boats per capita, with one for every six people. Public water access facilities are essential for Minnesotans to access public waters, serving the varied needs of the state's boaters, anglers, hunters, lakeshore owners, and resorts.

Description of the Unit

Major components of the PWA program include public water accesses, Lake Superior small craft harbor and protected accesses, and water trails. Minnesota has nearly 3,000 PWAs, of which 1,595 are owned and operated by DNR and the remaining by county, city, township, and federal agencies. DNR often partners with other government units, typically providing engineering and site development while federal, state, and local government partners donate the land and provide long-term operations and maintenance.

PWAs are generally open year round, 24 hours daily unless otherwise posted. Most sites have concrete launch ramps to serve trailered boats, but some sites on smaller rivers and lakes are carry-in only. Toilets and docks are typically located on the busier sites; DNR consistently receives requests to add these popular amenities to more existing accesses. A combination of fencing, trees, or other vegetative buffers are often provided between an access and the neighboring property to reduce encroachments and complaints. Sites are not staffed on a daily basis, but general maintenance activities are regularly performed.

Statutory Authorization

Designation and management of PWAs are authorized and directed through Minnesota statutes and rules, including:

MS 86A.05, Subd. 9. State water access site; purpose; resource and site qualifications; administration. (a) A state water access site shall be established to provide public access to rivers and lakes which are suitable for outdoor water recreation and where the access is necessary to permit public use. (b) No unit shall be authorized as a state water access site unless its proposed location substantially satisfies the following criteria: (1) the body of water to which access is being provided and surrounding lands can withstand additional recreational use without undue damage to the environment or undue risks to the health and safety of water users; (2) public access to the body of water is either nonexistent or inadequate. (c) State water access sites shall be administered by the commissioner of natural resources or the commissioner of transportation in a manner which is consistent with the purposes of this subdivision to provide public access to water. Access roads, off-road parking areas, refuse containers, sanitary facilities, and facilities for limited picnicking and primitive camping may be provided when the commissioner determines that these activities are justifiable and are compatible with the resource and the natural environment.

The Lake Superior small craft harbors and protected access program provides safe access to Lake Superior for recreational and small commercial watercraft. The system currently consists of 11 facilities offering a variety of opportunities from full-service marinas to small craft harbors with protected access. The canoe and boating route program, now called the water trails program, was established in 1963 to provide and maintain facilities such as public accesses, campsites, rest areas, and portages along rivers. The program also supplies maps, river level reporting, obstruction removal, signs, and safety buoys. Thirty-two state water trails offer about 4,400 miles of mapped routes.

Extent of the Unit

	Total Sites
Carry-in access	315
Trailer access	1,280
Total	**1,595**

Definition of Land Acquisition and Management Activities

Activities to manage the statewide system of PWAs fall into three broad categories:

- *Acquisition and Initial Site Development:* Acquisition and initial site development include all activities and time spent on purchasing land in order to create or expand an existing PWA site as well as all activities and time spent on planning and initial development of such sites.
- *Restoration:* Restoration includes all activities and time spent on rehabilitation and/or renewal of existing PWA sites.
- *Management and Maintenance:* Management and maintenance include all activities and time spent on day-to-day facility operations and maintenance, resource management, internal and external partnerships, disseminating information, and customer service related to existing PWA sites.

Existing Funding Available for Public Water Access

Table 10 represents the department's funding levels for acquiring, restoring, and managing PWA sites. Approximately $14.9 million is available annually for acquisition, restoration, and management of PWAs. As the table illustrates, the FY 2010–11 annual average in base funding for PWAs is $12.6 million. Approximately 75 percent of base funding is directed toward management, restoration, and maintenance of these sites. Sources of special funding support both acquisition and restoration and management of PWAs. The five-year annual average in special funding is approximately $2.2 million. The federal boat and water safety appropriation has been constant over the past five years, while the state bonding appropriation has varied from $3 million in 2006 to no funding in 2010.

Table 10: Total Average Base and Special Funding Available for Public Water Accesses (in thousands)

Base Funding (Average Annual for FY 2010-11 Biennium--in thousands)			
Fund Name (code)	Total Amount Available	Amount Available to Manage, Restore, Maintain	Amount Available for Acquisition and Initial Site Development
Water Recreation Account (181)	10,450	9,250	1,200
Game & Fish Fund (230) *Note: $154,000 of the available funding is for fishing piers, not public access*	2,200	250	1,950
Subtotals:	$ 12,650	$ 9,500	$ 3,150
Special Funding (Annual Average for FY2006-11--in thousands)			
Fund Name (code)	Total Amount Available	Amount Available to Manage, Restore, Maintain	Amount Available for Acquisition and Initial Site Developememt
Federal (300) annual appropriation, Boat and Water Safety	1,500	1,390	110
Bonding (500)	730		730
Subtotals:	$ 2,230	$ 1,390	$ 840
Totals:	**$ 14,880**	**$ 10,890**	**$ 3,990**

Guidelines on Proper Frequency of Management Activities for Public Water Access

Since 1984, DNR has conducted annual boating studies to inform the department on changes in recreational boating and to survey public satisfaction of water access sites.

Boat registrations increased at a rate of two to five percent per year from 2000 to 2008, dropping by one percent in 2009, possibly due to the depressed economy. There are 555,000 motorboats, 45,000 personal watercraft, 135,000 canoes, 40,000 kayaks, and 16,000 vessels including sailboats, sculls, and rowboats registered in Minnesota. Boats today are larger in size with more powerful motors than they were 25 years ago – the average length has increased from 16 to

19 feet and the average horsepower has increased from 45 to 114. The increased size of motor boats requires launch and retrieval at modern facilities.

Public accesses serve an increasingly diverse group, including lakeshore homeowners, resort customers, and other boating-related businesses taking advantage of PWA features. User ratings of PWAs have shown a modest improvement in satisfaction over time; however, there is a continued need for improvement. Leading concerns reported by users focus on facility size (e.g., "parking area too small," "insufficient number of launch lanes/ramps," "not enough maneuvering room"), a tendency related to the larger equipment now being used at facilities originally designed for smaller towing vehicles and fishing boats.

The PWA program offers well-developed facilities managed to provide recreation and to demonstrate ecologically sound practices. A program priority is to evaluate, design, develop, and maintain sites to retain unique qualities. Emphasis is placed on protecting natural resources while providing a state-of-the-art, barrier-free, and safe boating access facility. The program accomplishes these goals by applying up-to-date design and land management practices, summarized in the following chart. To ensure access facilities are installed in a sustainable manner, the PWA program's efforts to incorporate best management practices for stormwater infiltration, for shoreline protection including planting native vegetation, and to meet requirements of the Americans with Disabilities Act continue to evolve.

Major Land Management Activities	Descriptions	Range of Occurrence (Frequency)
Site evaluation and design Evaluate and design initial, expanded, or redeveloped sites, including: install/monitor/maintain stormwater management systems; demonstrate shoreline protection practices; plant native vegetation; incorporate maintenance vegetative management systems; design and develop sites using universal design principles	Refer to *Design Handbook for Recreational Boating and Fishing Facilities,* developed by the States Organization for Boating Access (SOBA) Comply with *Minnesota's Stormwater Manual,* produced by the Pollution Control Agency (PCA) Refer to DNR's *Restoring your Shoreline* guide Meet or exceed the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and standards	An average of 20 sites per year developed or redeveloped, creating an average life cycle of 80 years. Increasing frequency to 32 sites per year would result in an average life cycle of 50 years. All components are performed with each development or redevelopment and as needed based on site conditions
Invasive species control Implement site-level management to limit the spread and effects of invasive species (terrestrial and aquatic); research, develop, and implement ways to improve access sites to prevent the spread of aquatic invasive species (AIS)	Work closely with Division of Ecological and Water Resources, citizens, and other partners to enhance efforts to control invasive species	Performed as needed. Create a priority system and improve access sites with areas for AIS prevention.
Launch ramp replacements, extensions, repairs	High use, freeze-thaw cycles, and spring ice-out damage a number of concrete ramps each year, requiring attention at a higher frequency than the rest of the site	Performed as needed: Replacements: 40 to 80 sites/year Extensions: 100 sites/year Repair: 100 sites/year

Dock and toilet amenities	Docks aid in launching and retrieval of boats; toilets improve sanitary conditions. Both are highly requested amenities. Public demand for docks to be in place immediately after ice-out and to remain until ice forms creates a high workload in spring and fall.	950 sites have docks and 550 sites have toilets. 20 to 30 new or replacement boarding docks are purchased each year. 450 additional sites could use toilets.
General maintenance Boarding dock maintenance (installation, removal, adjustments, repairs); toilet vender contracts; litter removal; vegetation control; sign installation	Docks must be installed each spring after ice-out and removed each fall. Height adjustments are often required as water levels naturally fluctuate. Trash cans are not provided; however, many sites require regular litter pick up. Mowing, trimming, etc. are performed throughout the summer. Signs are often targets of vandalism and need to be replaced.	Each site is visited approximately 14 times each summer, on average every 2 weeks. More frequent site visits would decrease complaints and staff time per visit; however, costs related to mileage and staff time spent driving from site to site would increase.
Gravel parking lot and road maintenance	Approximately 1,300 sites have gravel surfaces, and there are approximately 200 gravel roads. Regular grading and adding of material keeps sites usable, especially at the tops of ramps, where concrete planks end and ruts form.	Material is added to each site as needed, on average once per year. Sites are graded 2 times per year on average; however, 3 to 4 times would be ideal.
Capital asset renewal Capital asset renewal, including: asphalt parking lots; buildings; seawalls and breakwaters; slip and crib docks; and navigation aids	Approximately 295 sites have asphalt parking lots. Asphalt lots built in the mid-1980s and 1990s are failing and in need of replacement. The Lake Superior small craft harbors and protected accesses have additional rehabilitation and renewal needs.	To maintain asphalt parking lots, cracks need to be filled every 3 years and the surface seal-coated every 7 to 8 years; these tasks are not currently performed. Buildings, seawalls and breakwaters, slip and crib docks, and navigation lights are maintained for safety. Performed as needed.
Fishing piers and shore fishing site maintenance General maintenance, including: vegetation control; litter removal; signs; repairs; spring/fall readiness	$154,000 from the Game and Fish Account is used for operation and maintenance of DNR's fishing pier and shore fishing sites	Repairs are done as needed. Piers are made ready in the spring after ice-out and in the fall prior to ice-in. Sites are visited on average every 2 weeks for general maintenance activities.

Budget Analysis and Cost Projections for Public Water Access

Estimated Amount of Funding Needed to Manage Existing Public Water Access

Table 11 illustrates the department's estimated 10-year budget need for managing existing sites within the PWA system. The average annual available funding for managing the existing 1,595 PWAs is $10.9 million. In order to meet current management guidelines, DNR's annual budget need for PWA management is approximately $14.7 million, meaning an additional $3.8 million annually is required to adequately manage, restore, and maintain these sites. Assuming existing funding levels and management costs remain relatively constant, the department would need approximately $38 million in additional funding over the next 10 years to adequately manage, restore, and maintain the existing system of PWAs.

Table 11: 10-Year Projection of Total Land Management Needs for Existing Public Water Access

Number of PWA Sites	Annual Funding Available to Manage, Restore, Maintain Existing Sites (in thousands)	Annual Funding Needed to Manage, Restore, Maintain Existing Sites (in thousands)	Annual Funding Gap for Existing Lands (in thousands)
1,595	**$10,890**	**$14,690**	**$3,800**
		10-Year Budget Need	**$38,000**

Restoration. Site expansion and restoration needs are high. Each year DNR staff evaluate and prioritize sites most in need of expansion and restoration. Site-specific engineered plans are drawn up for high-priority projects. After multiple reviews, the plans are put out for competitive bid. Expanding a PWA site allows DNR to make improvements to the site, typically including stormwater retention features, additional parking spaces, and increasing safety and convenience for boaters of all types.

To meet the most current restoration practices and standards, the PWA program needs to increase the rate at which sites are restored from 20 to 32 sites per year. Cooperative projects with local government units also receive funds used for site restoration. Increasing the rate of restoration will allow DNR to keep up with user trends related to equipment and activities, new regulations and prevention strategies related to invasive species, changes in design standards for ADA and stormwater management, and safety standards for the public and employees

Manage and Maintain. To meet the most current practices and standards, the PWA program needs additional funding for facility maintenance and capital asset management, allowing DNR to increase the number of launch ramp replacements, extensions, and repairs; install amenities like boarding docks and toilets; maintain gravel parking lots and roads and asphalt parking lots; renew facility and building infrastructure; and improve access sites for aquatic invasive species (AIS) prevention.

The PWA program collaborates with the Division of Ecological and Water Resources and citizens to improve efforts to control aquatic invasive species. The program researches ways to improve the function of access sites for AIS prevention. Strategies need to be developed and tested at key sites. As a result, additional funds for accelerating the redesign of access sites for AIS prevention may be needed in the near future.

<u>Estimated Amount of Funding Needed to Expand the Existing Public Water Access System</u>

New site developments are often made through cooperative agreements/partnerships with local government units. These partnerships allow DNR to add facilities without taking on increased annual operations and maintenance costs. To operate and maintain an expanded system of PWA sites comes at relatively low cost. The estimated rate of $9,000 per site is based on the “manage, maintain, and restore” costs presented in Table 11. If the restore category is removed, the average cost to manage and maintain a site is closer to $4,200 per year.

In Scenario 1, the PWA program budget for acquisition and initial site development is approximately $3.9 million. On average, 12 parcels are acquired each year: 10 to expand existing sites and 2 for new sites that add to the system. The number of actual parcels acquired can vary greatly from year to year. The high cost of lakeshore property, availability of priority parcels, and amount of state funds available to match federal dollars are all factors that affect the quantity of sites acquired.

In Scenario 2, the PWA program budget for acquisition and initial site development increases to $5.4 million, allowing for a slight increase in the quantity of acquisition which in turn creates more opportunity to improve facilities for boaters and to expand existing sites to meet the most current practices and standards.

PWA sites are often developed or expanded 2-4 years after they are acquired. Lake Superior marinas and small craft harbors are not included in Tables 12 and 13 as these facilities require specific state bonding and federal agency appropriations for initial acquisition, development, and major restorations.

Table 12: Annual Amount of Funding Necessary to Expand the Existing System of Public Water Access

		Funding Needed to *Expand* Lands (in thousands)	
Alternative Scenarios	**Average Number of Sites**	**Manage, Restore, Maintain**	**Acquisition**
Scenario 1: Annual amount needed based on current acquisition rate	2 new sites/10 expansions	$ 20	$ 4,000
Scenario 2: Annual amount needed based on 10-year long-range plan	3 new sites/12 expansions	$ 30	$ 5,400

10-Year Total Estimated Budget Need for Land Acquisition and Management of Public Water Access Sites

Table 13 highlights the estimated annual cost both to manage and to expand the PWA system in the state. The acquisition rate used to determine annual budget need is drawn from Scenario 2 in Table 12 above, which is based on the department's 10-year acquisition plan. The annual funding needed to manage and expand the PWA system under Scenario 2 is $20 million, resulting in an annual funding gap of approximately $5.2 million. Assuming current annual levels of funding and costs related to acquisition and development remain relatively constant, an estimated $52 million in additional funding is needed over the next 10 years to both manage and expand the PWA system.

Table 13: Total Estimated Annual Need for Land Acquisition and Management for Public Water Access

	Number of Sites	**Annual Funding Available** (in thousands)		**Annual Funding Needed** (in thousands)		**Annual Gap** (in thousands)		**Total Annual Funding Gap**
		Manage, Restore, Maintain	Acquisition	Manage, Restore, Maintain	Acquisition	Manage, Restore, Maintain	Acquisition	
Existing Land Base	1,595	10,890		14,690		3,800		**3,800**
Expanded Land Base (based on Scenario 2 acquisition rate)	3 new / 12 expansions		3,990	30	5,400	30	1,410	**1,440**
Totals:	**1,598**	**$ 10,890**	**$ 3,990**	**$ 14,720**	**$ 5,400**	**$ 3,830**	**$ 1,410**	**$ 5,240**

Note: To properly manage and maintain sites, an additional $1 million/year is needed. To properly restore sites, an additional $2.8 million/year is needed. To slightly increase the rate of expansion of the PWA system, an additional $1.4 million/year is needed. To properly maintain the expanded sites would cost less than $24,000/per year.

Feasibility of the Long-Range Acquisition Plans for Public Water Access

The PWA program develops an acquisition plan to assist with planning and budgeting. DNR staff take an active role in finding potential sites and working with willing sellers. Once a potential property is identified, DNR staff from multiple disciplines evaluate the site. If the site qualifies as a PWA, it is added to the acquisition plan. The biennial acquisition plan typically has twice as many potential acquisitions as money available. Planning and funding must be flexible to acquire key lakeshore parcels when the opportunity exists: decades may pass before another opportunity presents itself. The long-term goal of the PWA program is to provide access to all public waters of the state.

Department Innovations to Manage Costs

The PWA program continuously seeks ways to improve its products and services, efficiently utilize available funding, and incorporate innovative ideas. New access sites use native vegetation in combination with minimal maintenance systems in order to reduce mowing. At many sites, maintenance contracts for routine work such as mowing and litter pick up reduce DNR staff time and fleet expenses. Additionally, solar panels offset utility costs and provide services at remote sites. Partnerships with local government units will continue to be an important program component. Typically, DNR provides expertise and covers the cost of engineering and site development while the partner contributes the land and the long-term operations and maintenance of the site.

SECTION 4. SCIENTIFIC AND NATURAL AREAS (SNA)

About Scientific and Natural Areas

Purpose

Scientific and Natural Areas (SNAs) are established to protect and perpetuate in an undisturbed natural state lands and waters that embrace natural features of exceptional scientific value. SNAs contain rare species, native plant communities, and geological features of statewide significance. The SNA program is administered by the department's Division of Ecological and Water Resources.

The SNA system was initially authorized in 1969, with the first SNA unit acquired in 1974 to preserve a heron rookery. Since 1976, SNAs have been designated as part of the state's outdoor recreation system to both protect these rare features and provide for research, education, and public use. Through the Wetland Conservation Act, the 1991 Minnesota Legislature designated as SNAs 18 representative patterned peatland areas, approximately 80 percent of the acres in the SNA system.

Statutory Authorization

Designation and management of SNAs are authorized and directed through Minnesota statutes and rules, including:

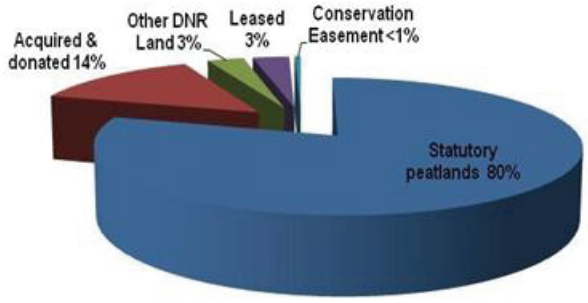
M.S. 86A.05, Subd. 5. State scientific and natural areas; purpose; resource and site qualifications; administration; designation. (a) A state scientific and natural area shall be established to protect and perpetuate in an undisturbed natural state those natural features which possess exceptional scientific or educational value.

Description of the Unit

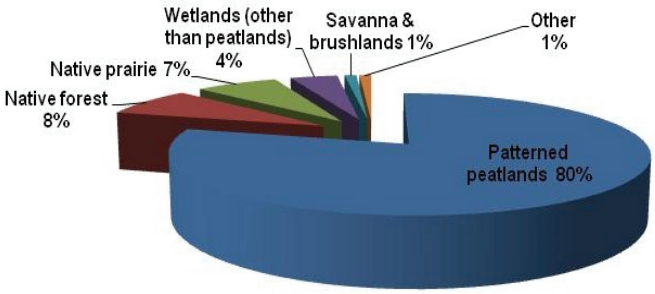
As of the end of FY 2010, DNR administers 152 designated SNAs totaling about 184,090 acres. As part of the state's outdoor recreation system, SNAs are open to the public for hiking, nature photography, bird watching, snowshoeing, and other activities that don't disturb the natural conditions. Some SNAs are open to all legal hunting, while others are open only to specific types of hunting to help achieve management goals. Currently, 88 percent of SNA acres (55 units) are open to hunting. Only 12 SNAs contain lands with limited public access: these are primarily rookeries and other nesting sites.

With the exception of the patterned peatlands, which were established by statute, SNAs are designated by order of the DNR commissioner. Responsibilities and costs for the management, restoration, and maintenance of SNAs depend on type of land ownership and habitat. State law allows SNAs to be designated on lands owned in fee or easement by DNR or on sites leased by DNR that are permanently protected by The Nature Conservancy (TNC) and managed cooperatively by DNR and TNC. In addition to acquiring lands directly, SNAs may be designated on state lands whose primary administrator is another division within the department, such as Forestry or Parks and Trails.

Origin of designated SNAs by percentage of acreage:



Percent of native habitat types within system of designated SNAs:



Extent of the Unit

	Units	Acres
SNAs acquired in fee	105	26,157
Statutory Peatland SNAs	18	146,594
SNAs designated on lands administered by Division of Forestry or Division of Parks and Trails (# of units is those which are all or part Division of Forestry or Division of Parks and Trails)	12	5,081
SNAs held through DNR conservation easement (# of units is only those solely held by conservation easement; 8 other SNAs are partly conservation easement)	3	813
SNAs designated through lease	14	5,443
TOTAL	152	184,088

Definition of Land Acquisition and Management Activities

Activities to manage the statewide system of SNAs fall into two broad categories:

- *Acquisition*: Funds available and costs for SNA acquisition are assumed to include landowner payments, boundary survey, transaction costs (e.g., payments to the Division of Lands and Minerals and attorney general office, appraisals, recording fees, etc.), and acquisition-related salary costs (primarily SNA program acquisition specialists). Typically SNAs are acquired in fee, but occasionally a conservation easement is acquired which may also be designated as SNA. Acquisition includes the full process from landowner contacts through completion of the designation order; it also includes shared services costs.
- *Management, Restoration, and Maintenance:* Funds available and costs to manage, restore, and maintain SNAs are assumed to include those associated with land asset management (including signing and securing property boundaries; providing public access; boundary survey if not part of acquisition process; maintaining, constructing, or removing fencing; building or other structure removal, well sealing, and site cleanup if needed; and monitoring for SNA conservation easements); restoration and enhancement (full-cycle management from planning through implementation to monitoring and adaptive management to improve resource conservation); operational and administrative activities necessary to manage public, educational, and research use of SNAs and to cooperate and coordinate with neighbors, volunteers, local units, partners, etc.; and shared services costs.

Existing Funding Available for Scientific and Natural Areas

Table 14 represents current funding levels for the department to acquire and manage lands. Approximately $2.6 million is available annually for acquisition and management of SNAs. The FY 2010–11 annual average in base funding for this program is $610,000. The five-year annual average in special, or one-time, funding is approximately $2 million. As illustrated in Table 14, support for management, restoration, and maintenance of SNAs is equally dependent on both base and special funding, while acquisition relies primarily on one-time sources of funding.

The five major categories of lands designated as SNAs—statutory peatlands, acquired and donated, leased, conservation easement, and other DNR land—influence department costs associated with managing these lands. The SNA land management work, needs, and costs in this report do not include those provided by other primary land administrators for SNA-designated sites. Specifically, the work, needs, and costs not included here are substantial TNC work on land leased by SNA; moderate levels of work by the Division of Parks and Trails on SNAs designated within state parks; and very limited work by the Division of Forestry on lands administered by the SNA program and by fee owners on sites designated through conservation easements. DNR cooperates with the nonprofits Friends of the Mississippi River and Great River Greening, who secure their own state, federal, and private funding to assist with land management work on about 10 sites in or near the Twin Cities. In addition, SNA volunteers actively contribute in-kind work at one site and do minimal work at a couple dozen sites.

Table 14: Total Average Base and Special Funding Available for Scientific and Natural Areas (in thousands)

Base Funding (Average Annual for FY 2010-11 Biennium--in thousands)			
Fund Name (code)	Total Amount Available	Amount Available to Manage, Restore, Maintain	Amount Available for Acquisition
General Fund (100)	470	300	170
General Fund (100-E01 Invasives)	110	110	
Heritage Enhancement Fund (239)	30	30	
Subtotals:	$ 610	$ 440	$ 170
Special Funding (Annual Average for FY2006-11--in thousands)			
Fund Name (code)	Total Amount Available	Amount Available to Manage, Restore, Maintain	Amount Available for Acquisition
Environment and Natural Resources Trust Fund (030)	550	200	350
Lakeshore Lease (184)	10		10
Outdoor Heritage Fund (350)	250	70	180
Federal (200 & 300)	240	40	200
Bonding (500)	1,000	100	900
Subtotals:	$ 2,050	$ 410	$ 1,640
Totals:	**$ 2,660**	**$ 850**	**$ 1,810**

Guidelines on Proper Frequency of Management Activities for Scientific and Natural Areas

The numerous types of rare resources and native habitats for which SNAs are acquired demand a broad and adaptive array of management techniques to protect them. Acquired sites must be in a predominantly high-quality natural state. However, peripheral disturbed areas are often part of an acquisition, and threats to the integrity of native plant community remnants, such as invasive species or human disturbance, continue to increase. Individual site conditions and native plant community types influence the need for various activities across a wide range of frequencies. The guidelines summarized here are general and average in nature and do not capture the full range of activities or frequencies that may take place on any one site. In general, because of scale of remaining natural habitat and lack of natural disturbance (e.g., fire), native prairie and savanna SNAs require the greatest level of management, while peatland SNAs require the least. Forested SNAs fall in the middle and vary among themselves depending on location and size.

SNAs offer the opportunity to experience undisturbed nature. No public convenience facilities (restrooms, picnic tables, etc.) are provided on SNAs, and generally no trails are maintained. Trails may be allowed if the designation order stipulates, but they are typically handled by other organizations except in very limited circumstances.

All SNAs are posted with boundary and rules signs and at least one large wood-routed site identification sign shortly after designation. Peatland SNA boundary signage is backlogged, and many old-style boundary signs need to be replaced. The *MNDNR Sign Manual* provides guidelines and standards for signing DNR lands. Custom-designed interpretive signs are added on selected sites as funding permits.

At least one safe parking area is provided for each SNA through an on-site lot or along the adjoining public right-of-way. Parking lots are either gravel or vegetated depending on site conditions and usage. Access roads are generally not built.

Many SNAs also include gates to limit illegal vehicular use. The SNA adheres to boundary fence law where fences exist or are needed along agricultural borders, primarily to keep livestock from trespassing on to the SNA. On small portions of a limited number of targeted sites, the SNA program constructs and maintains exclosures to protect vegetation threatened by browsing deer.

All SNA acres are to be managed as existing or restored native plant communities. This goal includes reconstruction of such communities on sites previously converted to other uses and may involve rehabilitation of degraded sites through interseeding. At existing SNAs (as of July 1, 2010), a total of about 1,700 acres statewide need native plant community reconstruction with local seed. In order to minimize noxious or invasive weed problems, such areas are usually retained in their converted condition until the materials and funding are available to restore them to a suitable native plant community.

All fire-dependent plant communities in SNAs should be managed through prescribed burning. Excluding the peatlands, an estimated 20 percent of SNAs have prairie-grassland-wetland communities and an estimated 5 to 10 percent have forest or brushland communities that need to be managed through prescribed fire; no more than 25 percent of a given site (or site complex) should be burned annually.

On all impacted SNAs, control measures are implemented to reduce effects from species harmful to the plant community or other native features. Plant management treatments target herbaceous and woody invasive species that displace native plant communities. Control of these species may be manual, biological, or mechanical, and chemicals are used in very limited circumstances. An estimated 0.5 percent of non-peatland SNA acres require major woody invasive species removal, and under current conditions about four percent of the non-peatland acres (and less than 0.1 percent of peatlands) need some form of invasives monitoring and treatment annually. The statewide distribution and intensity of these SNA invasive species treatments is driven by the native plant community class, the individual property's proportion of edge to interior habitat, and to a lesser extent its location in the state.

Major Land Management Activities	Descriptions	Range of Occurrence (Frequency)
Signing	Signs identifying SNA/entry, demarking boundaries, and specifying rules	Installed shortly after acquisition; boundary signs checked for replacement about every 4 years; entry and interpretive signs repaired or replaced as damaged (on average every 10 to 15 years)
Public access facilities	At limited locations: parking lot construction and maintenance; gate installation and maintenance; road maintenance	New parking lot construction is one-time activity; re-graveling lot or driveway occurs every 6 to 20 years. Parking lots require general maintenance (i.e., mowing or garbage cleanup) about 2 times per year. Gates may need replacement about every 10 years.
Fencing	Boundary or exclosure fence construction and maintenance	Boundary or exclosure fences need inspection annually and are repaired if needed; electric exclosure fences need inspection about 3 times each year to address any interruptions to their electricity
Conservation easement stewardship	Communications with fee landowners on easement stewardship and natural resource management; monitoring of easement terms and conditions	On-site monitoring and report completion is at least every 3 years

Plant community reconstruction	All activities involved in re-establishing plants native to a site converted in the past to a different use (e.g., agricultural fields, conifer plantations, former building sites) will be reconstructed from a bare soil seedbed. The process includes soil preparation, plant material collection (and testing) and propagation (if needed), plant material installation, and several years of weed maintenance for the planted area. Native seeds (or other propagules) are collected or purchased from local sources within about 25 miles.	Done in multiple phases, each considered a one-time activity spread across a 5- to 10-year timeframe: 1 to 4 years of soil preparation, plant material collection and propagation; then plant material installation; and first 5 years of weed maintenance of planted area
Plant community rehabilitation	All activities involved in rehabilitating an existing, degraded native plant community by interseeding a low-diversity site or sites where woody materials have encroached. Native seeds (or other propagules) are collected or purchased from local sources within about 25 miles.	Done in multiple phases, each considered a one-time activity spread across a 5- to 10-year timeframe: 1 to 4 years of plant material collection and propagation; then plant material installation; and first 5 years of weed maintenance of planted area. The timing of this activity depends upon resource availability and priorities.
Prescribed burning	Management of fire-dependent plant communities through planned and controlled fire	On average, grassland/wetland and brushland systems need to be burned every 4 to 5 years and fire-dependent forest systems about every 20 years. To protect fire-sensitive species, no more than 25 percent of a given site (or site complex) is usually burned per year.
Invasive species control	Treatments target herbaceous and woody invasive species that displace native plant communities	SNA sites with serious invasive species typically require some treatment every year

Budget Analysis and Cost Projections for Scientific and Natural Areas

Estimated Amount of Funding Needed to Manage Existing Scientific and Natural Areas

Table 15 illustrates the department's estimated 10-year budget need for managing existing lands within the SNA system. The average annual available funding for managing the existing 184,000 acres of SNAs is $850,000. In order to meet current land management guidelines, the department's annual budget need for SNA management is approximately $2.3 million, meaning an additional $1.4 million is needed annually to adequately manage, restore, and maintain these lands. Assuming existing funding levels and land management costs remain relatively constant, DNR would need approximately $14.4 million in additional funding over the next 10 years to adequately manage, restore, and maintain the existing SNA system.

Table 15: 10-Year Projection of Total Land Management Needs for Existing Scientific and Natural Areas

Number of Acres	Annual Funding Available to Manage, Restore, Maintain Existing Lands (in thousands)	Annual Funding Needed to Manage, Restore, Maintain Existing Lands (in thousands)	Annual Funding Gap for Existing Lands (in thousands)
184,088	**$850**	**$2,290**	**$1,440**
		10-Year Budget Need	**$14,400**

Estimated Amount of Funding Needed to Expand the Existing Scientific and Natural Area System

Two alternative scenarios were considered for expanding the existing land base for SNAs, as shown in Table 16. The scenarios present the additional annual need for acquisition and management of the expanded acres. The first demonstrates the annual funding need for acquiring lands at the department's historical rate, equivalent to approximately 500 acres annually. Scenario 2 is based on a short-term target of acquiring one percent of the unprotected acres identified with high and outstanding biodiversity significance, equivalent to approximately 1,980 acres annually over the next 10 years.

Table 16: Annual Amount of Funding Necessary to Expand the Existing System of Scientific and Natural Areas

Alternative Scenarios	Number of Acres	Manage, Restore, Maintain	Acquisition
Scenario 1: Annual amount needed based on current acquisition rate (500 acres/year)	500	$ 60	$ 2,500
Scenario 2: Annual amount needed based on 10-year protection target	1,980	$ 220	$ 9,900

10-Year Total Estimated Budget Need for Land Acquisition and Management of Scientific and Natural Areas

Table 17 highlights the estimated annual cost both to manage and to expand the state's SNA system. The acquisition rate used to determine annual budget need for an expanded land base is based on Scenario 2 in Table 16 above, which reflects the department's 10-year target. The annual funding needed to manage and expand the SNA system under Scenario 2 is $12.4 million, resulting in an annual funding gap of $9.7 million. Assuming current annual levels of funding and costs related to acquisition and management remain relatively constant, an estimated $97.5 million in additional funding is needed over the next 10 years to both manage and expand the SNA system. DNR will continue to rely on a diverse mix of funds—such as bonding, Environment and Natural Resources Trust Fund, Heritage Enhancement Fund, and Legacy funds—to continue to address ongoing management and acquisition needs for the system.

Table 17: Total Estimated Annual Need for Land Acquisition and Management for Scientific and Natural Areas

	Number of Acres	Annual Funding Available (in thousands)		Annual Funding Needed (in thousands)		Annual Gap (in thousands)		Total Annual Funding Gap
		Manage, Restore, Maintain	Acquisition	Manage, Restore, Maintain	Acquisition	Manage, Restore, Maintain	Acquisition	
Existing Land Base	184,088	850		2,290		1,440		**1,440**
Expanded Land Base (based on Scenario 2 acquisition rate)	1,980		1,810	220	9,900	220	8,090	**8,310**
Totals:	**186,068**	**$ 850**	**$ 1,810**	**$ 2,510**	**$ 9,900**	**$ 1,660**	**$ 8,090**	**$ 9,750**

Feasibility of Long-Range Acquisition Plans for Scientific and Natural Areas

The SNA Long-Range Plan identifies two types of protection goals: number of sites to be protected as SNAs and number of occurrences of the state's natural features. To meet the long-range goal of 500 SNAs by 2085, another 348 sites need to be designated, about five sites per year. This report identifies a short-term target of acquiring one percent of the unprotected high and outstanding biodiversity significance acres, or 1,980 acres per year over the next 10 years. Both the long-range goal and short-term target are feasible but dependent on available funding, adequate staffing, and land acquisition opportunities, which are beyond the department's control. As indicated in this report, the rate of SNA acquisition over the past five years has been below the short-term target. A gap analysis of the protection status of state natural resource features will be conducted starting in FY 2013 through Legislative-Citizen Commission on Minnesota Resources-recommended funding. As part of this process, the SNA long-range plan will be updated, offering opportunities to gather input from stakeholders and to refine goals.

Department Innovations to Manage Costs

In 2008, the division enhanced the efficiency of SNA management by moving from having all work happen from St. Paul, with accompanying higher fleet and travel costs, to regionalizing a small core of staff and equipment in co-located area offices, which are closer to sites and allow for sharing equipment. Further, some SNAs are handled by other land managers proximate to those sites, including other DNR divisions and TNC. Assigning the same staff to both public (SNA) and private (including NPB) land work in the prairie region fosters efficiencies and collaboration with partners across ownership boundaries. SNA increasingly utilizes Sentence-to-Service, volunteers, Conservation Corps Minnesota, and local partner organizations to reduce costs and to bring in other funding (e.g., National Fish and Wildlife Foundation grants to NGOs, the Board of Water and Soil Resources Native Buffer grants through Soil and Water Conservation Districts, etc). Finally, SNA utilizes an integrated management approach that incorporates more efficient and effective methods, including biocontrols to manage invasive species and non-native tree and brush removal through biomass/timber harvest projects in partnership with energy facilities and loggers.

SECTION 5. STATE FORESTS (SF)

About State Forests

Purpose

The Division of Forestry administers 4.2 million acres of forest land, of which 3.8 million acres comprise Minnesota's 58 state forests. DNR's responsibilities include managing these lands for a sustainable supply of fiber and fuel, providing outdoor recreation opportunities, maintaining and enhancing wildlife populations and habitat, sustaining biological diversity, and improving water quality. Forest management supports the forest products industry, creates jobs, and provides income for the state's general and school trust funds.

The Division of Forestry carries out these responsibilities by focusing on the health and growth of individual stands of trees (silvicultural activities), ensuring that the state's forested landscapes are diverse and productive (planning, coordination, and support for silviculture), and suppressing wildfires. Although wildfire suppression is important to sustaining the productive capacity of Minnesota's forests, costs related to wildfire suppression are not included within the scope of this report.

Description of the Unit

The State Forest (SF) land base is the largest category of state land within the classification set forth by the Outdoor Recreation Act (M.S. 86A.05). SFs, accounting for 91 percent of the lands for which the Division of Forestry is the primary administrator, comprise an extremely diverse land base, ranging across all forested regions of the state from the northernmost point of Minnesota, where the Northwest Angle State Forest meets Lake of the Woods, to the southeast corner of the state, where the Richard J. Dorer Memorial Hardwood State Forest spans portions of Dakota, Goodhue, Wabasha, Winona, Olmsted, Houston, and Fillmore counties. SFs of varying composition and unique features occur within all the forested ecological regions of Minnesota, including the Laurentian Mixed Forest, Eastern Broadleaf Forest, and Tallgrass Aspen Parklands provinces. SF land managers face challenges related to issues such as land fragmentation, risk of wildfire damage (due to increased development in forested regions), and market pressures on the state's forest products industry.

Statutory Authorization

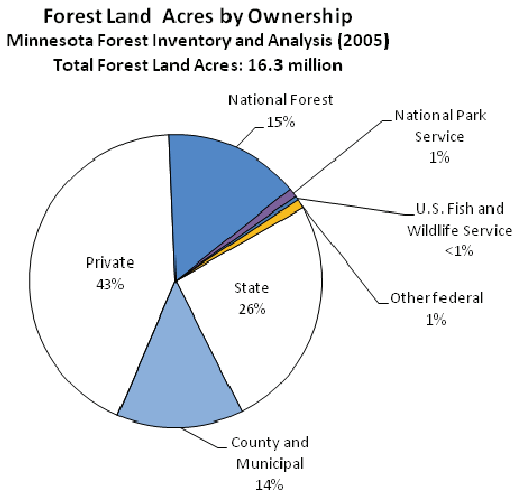
Designation and management of state forests are authorized and directed through Minnesota statutes and rules, including:

M.S. 86A.05, Subd. 7. State forests and state forest subareas; purpose; resource and site qualifications; administration. (a) A state forest, as established by section 89.021, shall be administered to accomplish the purposes set forth in that section, and a state forest subarea shall be established to permit development and management of specialized outdoor recreation at locations and in a manner consistent with the primary purpose of the forest. (b) No unit shall be authorized as a state forest subarea unless it is located within a state forest and contains suitable natural resources to accommodate any of the following uses: (1) Day use areas. Areas which permit recreational use of the forest in its natural state, not requiring an overnight stay, including but not limited to picnicking, fishing, swimming, boat launching, hiking, interpretation, and nature observation. (2) Campground. Provide minimum facilities to accommodate overnight camping. (c) Outdoor recreation subareas located within state forests shall be administered by the commissioner of natural resources in a manner which is consistent with the purposes of this subdivision.

M.S. 89.021, Subd. 1. Established. There are hereby established and reestablished as state forests, in accordance with the forest resource management policy and plan, all lands and waters now owned by the state or hereafter acquired by the state, excepting lands acquired for other specific purposes or tax-forfeited lands held in trust for the taxing districts unless incorporated therein as otherwise provided by law.

M.S. 89A.02. Policy. It is the policy of the state to: (1) pursue the sustainable management, use, and protection of the state's forest resources to achieve the state's economic, environmental, and social goals; (2) encourage cooperation and collaboration between public and private sectors in the management of the state's forest resources; (3) recognize and consider forest resource issues, concerns, and impacts at the site and landscape levels; and (4) recognize the broad array of perspectives regarding the management, use, and protection of the state's forest resources, and establish processes and mechanisms that seek and incorporate these perspectives in the planning and management of the state's forest resources.

Forest products manufacturing is Minnesota's fourth largest manufacturing sector with a total annual economic effect of $18 billion output and $7.3 billion value added (contribution to gross state product), supporting 89,500 jobs with about $4 billion in labor income. Forest products manufacturing and related sectors generate $530 million in state and local income, sales, and property tax payments. Since FY 2008, timber harvested from state managed land has accounted for about 26 percent of annual statewide harvest volume. Based on percentage harvest volume, DNR's contribution to the state's timber economy is estimated to be $4.7 billion output and $1.9 billion value added, supporting 23,300 jobs with about $1 billion in labor income. In addition, DNR's portion of the forest products total state & local tax effect is about $138 million.



Extent of the Unit

Designated state forests	58 units, encompassing 3,850,000 acres[1]
Roads in state forest system	2,330 miles
Total forest land administered by Division of Forestry	4,200,000 acres[1]
Percent of forest land administered by Division of Forestry (as percent of total forest land in Minnesota)	26
SFI/ FSC -certified forest land (includes WMA and LUP)	4,900,000 acres (SFI) / 4,800,000 acres (SFI and FSC)[2]
Commercial timberland within state forests (administered primarily by Division of Forestry)	2,800,000 acres[2]

[1]Includes all land classifications (2.4 million acres of which are forested trust fund lands)
[2]Includes all land classifications

Definition of Land Acquisition and Management Activities

Activities to manage the statewide system of SFs fall into two broad categories:

- *Land Management*: Land management includes managing, restoring, and maintaining state-owned forest lands through the following activities: forest inventory, forest management planning, silviculture, forest pest and disease management, roads, forest certification, forest information systems, and land asset management.
- *Acquisition*: Acquisition includes the funding available for or cost of land acquisition for access to currently owned state forest land for management and recreation and the purchase of private holdings of commercial forest land.

Existing Funding Available for State Forests

Table 18 represents current funding levels for the department to manage and acquire state forest lands. Approximately $25.3 million is available annually. The FY 2010-11 annual average in base funding for this program is $22.7 million. The five-year annual average in special, or one-time, funding is approximately $2.6 million. As illustrated in Table 18, sources of base funding for state forests are largely supported by the Natural Resource Fund and General Fund and directed toward land management. The majority of special funding is supported by state bonding appropriations.

The Division of Forestry provides forest management services to other DNR divisions in a manner consistent with their respective authorities and missions, primarily on Wildlife Management Area lands. The main activities for which the division fulfills this role are timber appraisal and design, timber harvest administration, and forest land management plan development. An analysis of acres and activities indicates that if the Division of Forestry were to shift to an internal "fee for service" strategy of sharing resources, the associated charges for forest management assistance provided to other DNR units would be approximately $1 million per year, charged primarily to the divisions of Fish and Wildlife, Parks and Trails, and Ecological and Water Resources. The "available funding" displayed in Table 18 has been reduced by $1 million to exclude the other land units for which the Division of Forestry has responsibility. The division is the primary administrator on the following lands for which a secondary administrator within another DNR Division is listed: 230,642 acres in WMAs; 136,182 acres in SNAs; and 15,833 acres for which both the Division of Ecological and Water Resources and the Division of Fish and Wildlife are listed.

Table 18: Total Average Base and Special Funding Available for State Forests (in thousands)

Base Funding (Average Annual for FY 2010-11 Biennium--in thousands)			
Fund Name (code)	Total Amount Available	Amount Available to Manage, Restore, Maintain	Amount Available for Acquisition
General Fund (100)	10,240	$ 10,240	
Natural Resource Fund (18J)	11,090	$ 11,090	
Game & Fish Fund (230)	1,400	$ 1,400	
Subtotals:	$ 22,730	$ 22,730	$ -
Special Funding (Annual Average for FY2006-11--in thousands)			
Fund Name (code)	Total Amount Available	Amount Available to Manage, Restore, Maintain	Amount Available for Acquisition
Special Revenue (Gas Tax) (200)	210	210	
Federal (300)	150	150	
Bonding (500)	2,230	2,000	230
Subtotals:	$ 2,590	$ 2,360	$ 230
Totals:	**$ 25,320**	**$ 25,090**	**$ 230**

Note: The above figures for available funding do not account for an anticipated one-time appropriation reduction of $3-3.2 million from General Fund and Heritage Fund for FY2012.

Guidelines on Proper Frequency of Management Activities for State Forests

Sustaining Minnesota's forests in a healthy, resilient, and productive state will ensure that current and future generations enjoy a full range of forest benefits, including clean water, wildlife habitat, timber, and outdoor recreation opportunities.

Major Land Management Activities	Descriptions	Range of Occurrence (Frequency)
Forest inventory	Sustainable management of SF lands requires a regularly updated field inventory to track changes due to growth and aging, succession, fire, windstorm, insects and disease, management, and other factors. Decisions about when, where, and how DNR forest stands are treated relies on this information. The Forest Inventory Module (FIM) contains data for each stand on more than 4 million acres of DNR-administered forest land. Inventory activities include designing and conducting field surveys, maintaining an inventory database, and training field personnel and supervising contract personnel to conduct field inventories.	Target: Re-inventory 150,000 acres of FL in FY 2011. This rate provides for a complete inventory every 20 years. Long-term target: reduce inventory cycle length to 15 years
Planning	Subsection Forest Resource Management Plans (SFRMPs) describe the mix of values and products (e.g., wildlife habitat, rare features, timber) that will be sustained through vegetation management on 4.5 million acres of DNR-administered forest lands. The plans outline both long-term (50-plus years) and short-term (10-year) management strategies. Local interdisciplinary DNR teams identify issues and assess forest resources, determine a strategic direction, and identify forest stands to be treated in the next 10 years. Statewide, foresters visit about 50,000 to 70,000 acres annually and recommend harvest treatment on roughly half of those acres; other silvicultural treatments are prescribed for another 10,000 acres. DNR meets multiple forest management objectives and offers at least 800,000 cords of wood for sale each year. Budgets and staffing levels are key factors influencing how much and what kind of timber is offered each year. Implementing process improvements identified in the next round of plan development will result in a more efficient and timely process and should reduce the need for additional resources.	Target: Complete all SFRMPs in 2011 so that all DNR forest land is managed under an active plan SFRMPs are revisited and updated as needed every 10 years
Silviculture	Silviculture includes core management practices to sustain the full range of forest resource values—economic, environmental, and social. Site preparation, tree planting, direct seeding, seedling browse protection, prescribed burning, precommercial thinning, and timber harvest are all regularly applied on SF lands. These silvicultural activities meet multiple goals, from sustaining wildlife populations and producing timber to protecting soil and water. To meet forest landscape goals, timber sale acreage will increase from 35,000 to approximately 42,000 acres per year. Acres requiring planting and seeding postharvest are expected to increase from 10,500 to 18,500 acres per year. Expanding timber harvest will increase the need for site preparation and browse protection. Site preparation activities are expected to increase from 4,600 to approximately 6,000 acres per year. These increased activities will require new investments.	Visit every forest stand on the 10-year SFRMP schedule to evaluate for potential harvest or other management activity

Ecological classification system	Ecological Classification System (ECS) provides a scientific framework for managing natural resources. ECS tools (native plant community classification and mapping, silvicultural interpretations and strategies, and monitoring) help managers select the best treatments to optimize the forest's potential to produce timber, support wildlife, and protect water and soil. ECS provides a common system for resource managers to efficiently determine landscape goals and identify sites to focus on with specific restoration and enhancement efforts that will improve forest productivity, habitat diversity, and health.	Target: Map and classify an additional 115,000 acres of forest lands to natural plant community (NPC) in 2011 Long-term target: accelerate NPC classification and mapping in order to reach 2 million acres of SF lands over the next 10 years
Forest pest and disease management	The division is responsible for forest pest and disease research, surveys, evaluations, impact assessments, response strategies, and tactic implementation. Staff assist with forest health evaluation, protection, and management. Costs to maintain an effective program are expected to increase over the next 10 years due to the influx of invasive species: emerald ash borer and gypsy moth, already present in the state, are expected to become more widely established and cause significant damage to Minnesota's rural and urban forests. In addition, invasive terrestrial plants have the capacity to overwhelm and reduce the habitat diversity and productivity of native forest ecosystems statewide.	Ongoing
Roads	The SF system consists of roads and associated infrastructure (e.g., culverts, stream crossings, bridges) that provide critical access to forest lands for management activities and outdoor recreation. Road system maintenance and restoration include grading, graveling, clearing rights-of-way, replacing culverts, and repairing or reconstructing bridges. Forest roads may be closed at certain times to prevent damage.	Grade roads: 6 times per year Gravel roads: every 12 years Right-of-way maintenance: every 3 years Culvert replacement: every 17 years
Forest certification	The Forest Certification Initiative maintains dual third-party certification first awarded to DNR in 2005 from the Forest Stewardship Council (FSC) and Sustainable Forestry Initiative (SFI) on 4.84 million acres of state-administered forest lands. Certified lands include SF and Wildlife Management Areas. Certification will continue to increase the social, economic, and environmental value and marketability of the state's forest resources. Additional staff time is needed over the next 10 years to incorporate new standards into DNR operations as established by the certification system, make corrective actions requested by certifiers, and engage Minnesota's forestry community on certification issues. (Note: Although staff from other divisions participate in this effort, staff time costs in this analysis only account for the Division of Forestry.)	Target: Maintain dual forest certification on 4.8 million acres of state-administered forest lands Full certification audit: every 5 years Surveillance audit: annually (except during full audit years) Minnesota Forest Resource Council management guideline monitoring: every 2 to 3 years

Forest information systems	The Forest Information Systems Unit supports DoF land management efforts by building and maintaining related computer systems and information databases essential at all levels of operation, from strategic planning and financial management to tracking site-level management activities. Due to the sizable extent of the SF land base and the necessity of detailed record keeping for management actions, optimizing the use of sophisticated geo-spatial technology is critical. Although the cost of maintaining hardware and software is expected to increase substantially over the next 10 years, updated technology will save time and dollars by reducing computer response times, enabling timely database updates, and curtailing the number of hardware failures. Additional staff dedicated to system and user support will be needed at both division and department levels to accelerate delivery of needed products, provide better design systems, train users, and fix problems.	Ongoing
Land asset management	Land asset management focuses on strategic acquisitions and exchanges to provide continuous access to the current land base for management purposes and public use as land transactions on neighboring parcels occur. These transactions enable DNR to maintain its current capacity to manage SFs and provide a full range of public benefits. Land asset management also includes administering leases (including mineral leases); providing professional services for land dispute resolution; maintaining land asset databases, licenses, and permits; and establishing boundaries and resolving trespass issues to control state land use.	Ongoing

Budget Analysis and Cost Projections for State Forests

Estimated Amount of Funding Needed to Manage Existing State Forests

Table 19 illustrates the department's estimated 10-year budget need for managing existing lands within the SF system. The average annual available funding for managing the existing state forest system is $25 million. In order to meet current management guidelines, DNR's annual budget need for state forest management is $32.3 million, meaning an additional $7.2 million is needed annually to adequately manage, restore, and maintain these lands. Assuming existing funding levels and management costs remain relatively constant, the department would need approximately $72 million in additional funding over the next 10 years to adequately manage, restore, and maintain existing state forest lands.

Table 19: 10-Year Projection of Total Land Management Needs for Existing State Forests

Number of Acres	Annual Funding Available to Manage, Restore, Maintain Existing Lands (in thousands)	Annual Funding Needed to Manage, Restore, Maintain Existing Lands (in thousands)	Annual Funding Gap for Existing Lands (in thousands)
3,850,000	**$25,090**	**$32,290**	**$7,200**
		10-Year Budget Need	**$72,000**

Estimated Amount of Funding Needed to Expand the Existing State Forest System

Two alternative acquisition scenarios were considered for the state forest system, as shown in Table 20. The scenarios present the additional annual need for acquisition and management of the expanded acres. The first scenario demonstrates the annual funding need for acquiring lands at the department's current rate, approximately 200 acres annually. Additional costs for managing the expanded acres under Scenario 1 are negligible. Scenario 2 is based on long-

range goals derived from area land asset management plans, which identified acquisition needs for securing access and reducing in-holdings in state forests. The program's overall land acquisition goal is not to increase the size of state forests, but to reduce in-holdings and secure access, both of which improve DNR's ability to manage existing forest lands, provide for public use, and reduce future management costs.

Table 20: Annual Amount of Funding Necessary to Expand the Existing System of State Forests

		Funding Needed to *Expand* Lands (in thousands)	
	Number of Acres	**Manage, Restore, Maintain**	**Acquisition**
Scenario 1: Annual amount needed based on current acquisition rate	200		$ 1,340
Scenario 2: Annual amount needed based on long-range acquisition plan	1,560	$ 20	$ 2,510

10-Year Total Estimated Budget Need for Land Acquisition and Management of State Forests

Table 21 highlights the estimated annual cost both to manage and expand the state forest system in the state. The acquisition rate used to determine annual budget need for an expanded land base is based on Scenario 2 in Table 20 above, which reflects the department's long-range goals for securing access and reducing in-holdings in state forests. The annual funding needed to manage and expand the state forest system under Scenario 2 is $34.8 million, resulting in an annual funding gap of $9.5 million. Assuming current funding levels and costs related to acquisition and management remain relatively constant, an estimated $95 million is additional funding is needed over the next 10 years to both manage and expand the state forest system. DNR will need to rely on a diverse mix of funds to continue to address ongoing land management needs for the system in the future.

Table 21: Total Estimated Annual Need for Land Acquisition and Management for State Forests

	Number of Acres	**Annual Funding Available** (in thousands)		**Annual Funding Needed** (in thousands)		**Annual Gap** (in thousands)		**Total Annual Funding Gap**
		Manage, Restore, Maintain	Acquisition	Manage, Restore, Maintain	Acquisition	Manage, Restore, Maintain	Acquisition	
Existing Land Base (Non-capital funds)	4,200,000	23,090		27,790		4,700		**4,700**
Existing Land Base (Capital investments)		2,000		4,500		2,500		**2,500**
Expanded Land Base (based on Scenario 2 acquisition rate)	1,560		230	20	2,510	20	2,280	**2,300**
Totals:	**4,201,560**	**$ 25,090**	**$ 230**	**$ 32,310**	**$ 2,510**	**$ 7,220**	**$ 2,280**	**$ 9,500**

Note: Eligible capital investments include road reconstruction for state forest roads, bridge replacement, reforestation, and timber stand improvement.

Feasibility of Long-Range Acquisition Plans for State Forests

DNR administers approximately 4.9 million acres of forest land (under FSC/SFI certificate, including WMAs), supplying more than one-quarter of the wood fiber used in the state. Of this, the Division of Forestry administers forest on 4.2 million acres. The program's overall land acquisition goal is not to increase SF size but to reduce in-holdings and to secure access, both of which will improve the department's ability to manage existing forest lands, provide for public use, and reduce future management costs. Under Scenario 2, land acquisition goals associated with maintaining critical

access include acquiring approximately 500 acres per year for the next 10 years, while land acquisition goals for consolidating SF in-holdings include acquiring approximately 1,060 acres per year for the next 10 years.

Department Innovations to Manage Costs

The Division of Forestry has evaluated and updated several discrete processes within core programs in recent years. Procedural improvements and timber sales reforms focused more heavily on Sold on Appraised Volume and Sealed Bids methods of sale are some examples. Additionally, the division is striving to build capacity within its staff and partners to work efficiently and effectively, training personnel in a variety of skills to adequately fill various positions and empowering external partners to lead appropriate tasks (following the model established by the Urban and Community Forestry Program). The division has undergone inventive restructuring of its work in response to shifting budgets. Some program budgets have been revised to run as enterprises in order to be more self-supporting, allowing for redirection of energy toward SF management. Moreover, the Division of Forestry has completed Phase 1 of its Strategic Initiative, which outlines goals and strategies toward major problem-solving and innovation focused on building efficiencies, and begun Phase 2, which is further focused on efficiency and on cost savings.

SECTION 6. WILDLIFE MANAGEMENT AREAS (WMA)

About Wildlife Management Areas

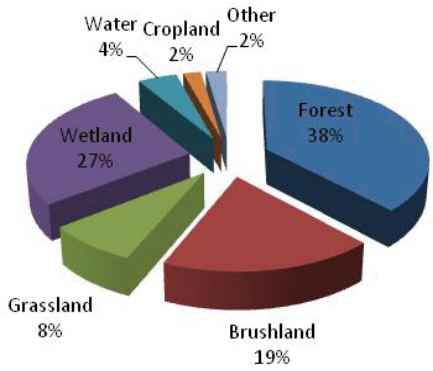
Purpose

Wildlife management areas (WMAs) are established to protect lands and waters that have a high potential for wildlife production and to develop and manage these lands and waters for the production of wildlife, for public hunting, fishing, and trapping, and for other compatible outdoor recreational uses (M.S. 86A.05, Subd. 8). The Wildlife Management Area program is administered by the Division of Fish and Wildlife.

Description of the Unit

DNR has been acquiring lands to support healthy wildlife populations and provide high-quality recreation opportunities since the early 1950s. Today, this system includes 1,430 WMAs encompassing approximately 1.3 million acres of forest lands, brushlands, wetlands, and grasslands (see Figure 1). The diverse WMA network spans 86 of the state's 87 counties, providing multiple benefits ranging from supplying clean water and flood control to maintaining populations of rare and threatened species, from supporting local economies to providing wildlife viewing and photography opportunities.

Figure 1. Percentage of major habitat types occurring on WMAs



Extent of the Unit

	Units	Acres
Wildlife Management Areas	1,430	1.277 million

Statutory Authorization

Designation and management of WMAs are authorized and directed through Minnesota statutes and rules, including:

MS 86A.05, Subd. 8. State wildlife management area; purpose; resource and site qualifications; administration. (a) A state wildlife management area shall be established to protect those lands and waters which have a high potential for wildlife production and to develop and manage these lands and waters for the production of wildlife, for public hunting, fishing, and trapping, and for other compatible outdoor recreational uses. (b) No unit shall be authorized as a state wildlife management area unless its proposed location substantially satisfies the following criteria: (1) includes appropriate wildlife lands and habitat, including but not limited to marsh or wetlands and the margins thereof, ponds, lakes, stream bottomlands, and uplands, which permit the propagation and management of a substantial population of the desired wildlife species; and (2) includes an area large enough to ensure adequate wildlife management and regulation of the permitted recreational uses. (c) State wildlife management areas shall be administered by the commissioner of natural resources in a manner which is consistent with the purposes of this subdivision to perpetuate, and if necessary, reestablish quality wildlife habitat for maximum production of a variety of wildlife species. Public hunting, fishing, trapping, and other uses shall be consistent with the limitations of the resource, including the need to preserve an adequate brood stock and prevent long-term habitat injury or excessive wildlife population reduction or increase. Physical development may provide access to the area, but shall be so developed as to minimize intrusion on the natural environment.

Definition of Land Acquisition and Management Activities

Activities to manage the 1.3 million acres of WMAs fall into three broad categories:

- *Acquisition*: Purchase price of a land parcel to be used as a new WMA or to expand upon an existing WMA, plus all costs related to acquisition, excluding direct appropriations to the Division of Land and Minerals.

- *Management, Restoration, and Maintenance*: All land management costs associated with maintaining, restoring, or establishing habitats (vegetation) on WMAs to increase wildlife productivity.
- *Facilities Maintenance*: All costs for maintenance of facilities for public access and use, including parking lots, roads and trails, boundary and boundary signs, and water control structures.

Existing Funding Available for Wildlife Management Areas

Table 22 represents funding available for the purpose of acquiring and managing WMAs. Annual funding for acquisition, management, and operations comes from many different sources. Approximately $27 million is available annually for acquisition and management of WMAs. As illustrated in Table 22, the FY 2010-11 annual average in base funding for this program is $14.8 million. The five-year annual average in special, or one-time, funding is $12.3 million. Sources of base funding for WMAs are largely directed toward management, restoration, and maintenance of these lands, while sources of special funding primarily support land acquisition. Partner organizations such as Pheasants Forever, Ducks Unlimited, and The Nature Conservancy also receive special funding from sources including the Outdoor Heritage Fund for acquisition and management of WMA lands. Funding received by partners is not included in this table but represents a significant source of dollars directed toward WMA acquisition and management.

Table 22: Total Average Base and Special Funding Available for WMAs (in thousands)

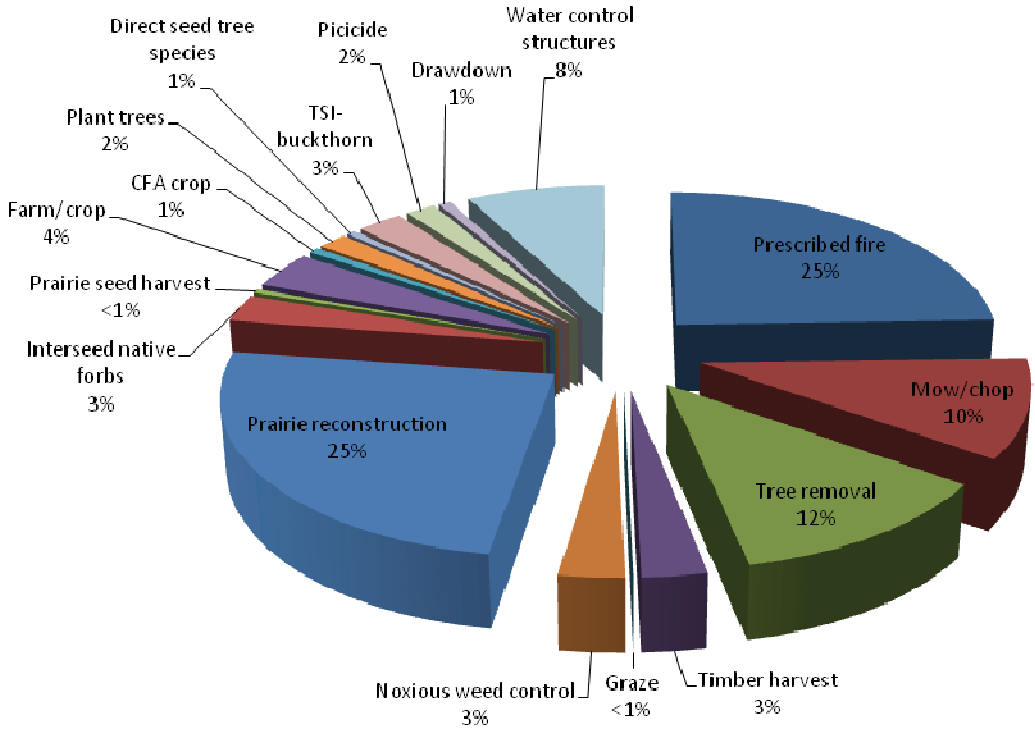
Base Funding (Average Annual for FY 2010-11 Biennium--in thousands)			
Fund Name (code)	Total Amount Available	Amount Available to Manage, Restore, Maintain	Amount Available for Acquisition
General Fund (100)	-	-	-
Game & Fish Fund (230)	5,740	5,000	740
Game & Fish Dedicated Accts (231-238)	4,790	3,770	1,020
Heritage Enhancement Fund (239)	4,300	3,580	720
Subtotals:	$ 14,830	$ 12,350	$ 2,480
Special Funding (Annual Average for FY2006-11--in thousands)			
Fund Name (code)	Total Amount Available	Amount Available to Manage, Restore, Maintain	Amount Available for Acquisition
MN Resources (130)	20	20	
Land Acquisition Account (184)	120		120
Beltrami Island Fund (200)	620	270	350
LAWCON (18E)	130		130
Environment and Natural Resources Trust Fund (030)	230	120	110
Outdoor Heritage Fund (350)	1,640	510	1,130
Federal (300)	630	200	430
Bonding (500)	4,760	480	4,280
RIM gift (521)	1,020	10	1,010
RIM License Plate Match (522)	3,030	10	3,020
Gift (690)	50	50	
Subtotals:	$12,250	$ 1,670	$ 10,580
Totals:	**$ 27,080**	**$ 14,020**	**$ 13,060**

Guidelines on Proper Frequency of Management Activities for Wildlife Management Areas

Land managers recognize the importance of natural disturbance in the function and productivity of terrestrial ecosystems; thus, frequency of management activity is generally based on mimicking natural disturbance patterns occurring in the habitat (native plant community), or restored habitat. Important natural disturbances mimicked on WMAs through active management techniques include fire, wind storms, insects and disease outbreak, herbivory, drought, and flooding. Regarding habitat or vegetation management activities, the *Native Plant Communities of Minnesota* guides, which document the intervals of natural disturbances, are key. DNR's *Invasive Species Guidelines* provide managers with advice on controlling invasive species. Numerous documents help determine management activities and frequencies for specific habitat types. For example, DNR's *Subsection Forest Resource Management Plans* also provide guidance relating to timber harvest rotations. The new *Moist Soil Management Guidelines* advise on the frequency of seasonal wetland disturbance in order to maximize waterfowl attraction. The *Open Landscape and Brushland Assessment* and *Brushland Biomass Harvesting Guidelines* cover these habitats. The Board of Water and Soil Resources' *Prairie Restoration Guidelines* provide management advice for restored grasslands. DNR administrative documents for WMAs and AMAs offer further recommendations.

Figure 2 identifies the major habitat treatments conducted on WMAs and the percentage of resources dedicated to these different management activities. Half of all management costs are spent on prairie reconstruction and prescribed fire. Costs are tied both to habitat type and to the habitat quality of acquired land, which influences initial site development. For example, approximately one-third of all lands acquired for WMAs were previously marginal farmland and are in need of reconstruction in order to achieve a desired future condition that is highly productive for wildlife. The frequency of management activities described in the table below is based on achieving that desired future condition.

Figure 2. Percentage of resources spent on major habitat treatments to achieve a desired future condition that is highly productive for wildlife



Major Land Management Activities	Descriptions	Range of Occurrence (Frequency)
Prescribed fire	The burning of fire-dependent systems to simulate natural disturbance	3 to 5 years for prairies, wetlands, and grasslands; 10 years for brushlands; 20 to 40 years for forests
Timber harvest	Removal of standing trees through a timber sale, often to create early successional habitat	Dependent upon forest type, but averages 40 to 60 years
Tree removal on prairies	Mechanically remove or fell trees growing on prairie sites that cannot be controlled by prescribed fire or sold in a timber sale	15 to 25 years
Water control structure replacement	Replace old water control structures with new ones	Dependent upon structure type; average is about 40 years
Grassland mowing	Mow grasslands where prescribed fire cannot be used or is not cost effective; suppresses unwanted vegetation and maintains vigor of native grasslands	3 to 5 years
Brushland mowing/ shearing	Mowing or winter shearing of brushlands to create early successional habitats and/or maintain open landscapes	8 to 10 years
Prairie reconstruction	Reconstruction of native prairies using local and diverse seed sources	Once, usually following initial acquisition
Farming	Growing traditional agricultural crops to provide food for wildlife	Annually
Seasonal wetland management	Treatment of seasonal wetland basins by discing or tilling to stimulate annual seed production	2 to 5 years
Wetland drawdown	Temporarily remove water from wetlands to stimulate native emergent and submergent plants and to control exotic fish	Dependent upon wetland type; averages 2 to 5 years for semi-permanent wetlands, longer for permanent basins
Invasive species control	Treatments target herbaceous and woody invasive species that displace native plant communities	Significant invasions should be treated annually

Frequencies for managing facilities are based on providing the users of WMAs a positive experience as well as maintaining infrastructure in good operating condition. Parking lots are maintained annually, as are hunter walking trails and access roads. Boundaries and signage are maintained so the WMAs are easily located by hunters and other users. Water control structures are replaced as needed based upon their type, material, and expected life cycle.

Budget Analysis and Cost Projections for Wildlife Management Areas

Estimated Amount of Funding Needed to Manage Existing Wildlife Management Areas

Table 23 illustrates the department's estimated 10-year budget need for managing existing lands within the WMA system. To calculate the funding needed to manage WMAs to a desired future condition, this report relies on several simple macro spreadsheet models to estimate annual expenditures for habitat management activities. These models are sensitive to both the cost and the frequency of such activities. Costs were calculated from previous expenditure and accomplishment reporting and in some cases were estimated using land managers' professional judgment. This table shows the projected land management costs for WMAs based upon the spreadsheet models.

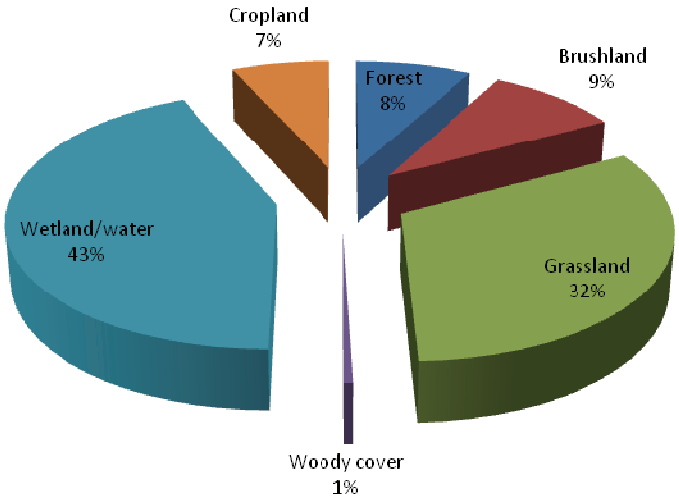
Table 23: 10-Year Projection of Total Land Management Needs for Existing Wildlife Management Areas

Number of Acres	Annual Funding Available to Manage, Restore, Maintain Existing Lands (in thousands)	Annual Funding Needed to Manage, Restore, Maintain Existing Lands (in thousands)	Annual Funding Gap for Existing Lands (in thousands)
1,277,000	**$14,020**	**$19,950**	**$5,930**
		10-Year Budget Need	**$59,300**

Figure 3 shows the percentage of total resources directed to WMA land management to achieve a desired future condition highly productive for wildlife by major habitat type The wetland/water habitat receives the greatest percentage of land management resources, reflecting DNR's commitment to improving habitat conditions for waterfowl as well as accelerated shallow lake management and intensively managed moist soil sites. In the model, moist soil management alone is projected to cost $2.8 million annually.

Grassland habitat receives the second-highest allocation of resources. Although this habitat type makes up only eight percent of WMA holdings, spending on grassland management accounts for 32 percent of total expected expenditures. Accelerated prescribed fire and prairie reconstructions are significant habitat management treatments that account for 50 percent of projected spending, and both are used extensively in grassland habitats.

Figure 3. Percentage of resources spent by major habitat type to achieve a desired future condition that is highly productive for wildlife



<u>Estimated Amount of Funding Needed to Expand the Existing Wildlife Management Area System</u>

The citizens' advisory committee (CAC) report *Minnesota's Wildlife Management Area Acquisition—The Next 50 Years* states that the current WMA system, while highly successful, does not meet all current and future needs for wildlife habitat, wildlife population management, and hunter access. Minnesota's population has increased substantially since 1990, leading to more demands on wildlife resources and for recreational opportunities. The plan's recommendations consider ways to preserve additional habitat to meet the needs of all wildlife species—game as well as nongame—and expectations for public hunting and wildlife-related recreation over the next 50 years.

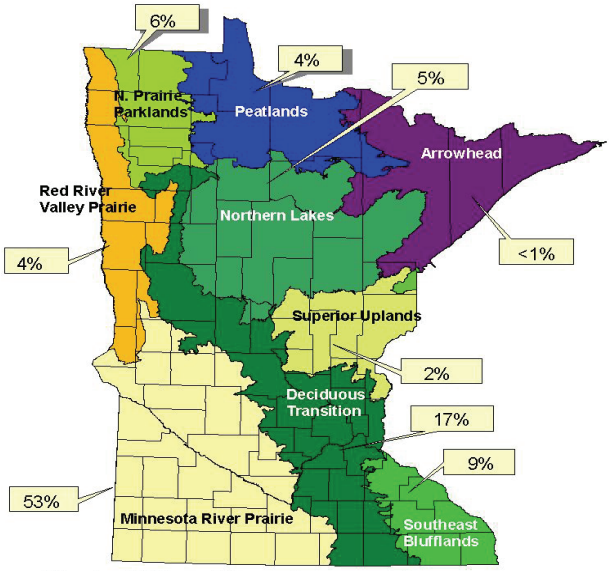
Table 24 represents annual acquisition plan recommendations. The first scenario shows future costs based on the average rate of acquisition over the past decade. Scenario 2 outlines future acquisition based on acquiring the in-holdings within existing WMAs as of 2002. Scenario 3 shows one year of the 50-year CAC acquisition plan. Figure 4 represents the likely distribution of new land acquisitions within the WMA system.

Table 24: Annual Amount of Funding Necessary to Expand the Existing System of Wildlife Management Areas

		Funding Needed to *Expand* Lands (in thousands)	
	Number of Acres	**Manage, Restore, Maintain**	**Acquisition**
Scenario 1: Annual amount needed based on current acquisition rate	5,180	$ 3,420	$ 19,120
Scenario 2: Annual amount needed based on long-range acquisition plan (in-holdings only)	5,260	$ 3,470	$ 19,420
Scenario 3: Annual amount needed based on long-range acquisition plan (all acres)	10,340	$ 6,820	$ 38,180

Note: Estimated costs per acre based on 2010 dollars.

Figure 4. Likely percentage of expanded WMA acres by Ecological Section



*Based on WMA acquisition goal recommendations by ecological section in the Citizen's Advisory Committee Report entitled "Minnesota's Wildlife Management Area Acquisition - The Next 50 Years" dated December 2002

<u>10-Year Total Estimated Budget Need for Land Acquisition and Management of Wildlife Management Areas</u>

Table 25 highlights the estimated annual cost both to manage and to expand the state's WMA system. The acquisition rate used to determine annual budget need for an expanded land base is based on Scenario 3 in Table 24, which reflects long-range acquisition goals as recommended in the CAC report. The annual funding needed to manage and expand the WMA system under Scenario 3 is approximately $65 million, resulting in an annual funding gap of $37.9 million. Assuming current annual levels of funding and costs associated with acquisition and management remain relatively constant, an estimated $379 million in additional funding will be required over the next 10 years to both manage and expand the WMA system. Recent support from new funds, such as the Outdoor Heritage Fund, has enabled the department and its partners to acquire additional lands for the WMA system. However, DNR will continue to rely on a diverse mix of funds to adequately address acquisition and management needs for the system in the future.

Table 25: Total Estimated Annual Need for Land Acquisition and Management for Wildlife Management Areas

	Number of Acres	Annual Funding Available (in thousands)		Annual Funding Needed (in thousands)		Annual Gap (in thousands)		Total Annual Funding Gap
		Manage, Restore, Maintain	Acquisition	Manage, Restore, Maintain	Acquisition	Manage, Restore, Maintain	Acquisition	
Existing Land Base	1,277,000	14,020		19,950		5,930		**5,930**
Expanded Land Base (based on Scenario 3 acquisition rate)	10,340		13,060	6,820	38,180	6,820	25,120	**31,940**
Totals:	**1,287,340**	**$ 14,020**	**$ 13,060**	**$ 26,770**	**$ 38,180**	**$ 12,750**	**$ 25,120**	**37,870**

Feasibility of the Long-Range Plan for Wildlife Management Areas

The 2002 Citizens' Advisory Committee Report's recommendations for additional WMA acreage distributed across the state were based on needs in wildlife habitat conservation as well as in wildlife-related recreation. The report advised that existing WMA projects be completed and new complexes created and was based on existing habitat and wildlife species plans as well as on the expert opinion of DNR wildlife resource managers. The report assessed the state's major ecological sections and emphasized new acquisition in areas where public land ownership and public hunting opportunity are currently low and where habitat needs of grassland and wetland wildlife species are high. The goals are both reasonable and realistic, especially considering the 50-year planning horizon, and represent citizen and stakeholder desires and expectations for the WMA system. Nearly 40 percent of the called-for new acquisition would be "rounding out" current units, leading to increased efficiency by eliminating the need to post and manage around inholdings. In recent years, accelerated funding for WMA acquisition has been appropriated by the legislature both through bonding bills and more recently from Outdoor Heritage Funds. State agencies and other supporting organizations are capable of delivering the level of effort demanded by the report, and many owners in priority areas have expressed interest in selling their land for this purpose. However, even with the recent accelerated funding, the current rate of acquisition will not allow DNR to reach recommended goals within the allotted timeline. In addition to funding shortfalls, other factors that could affect the department's ability to achieve these goals include escalating land costs, local concerns over public lands, and the Payment in Lieu of Tax program.

Department Innovations to Manage Costs

The Division of Fish and Wildlife employs many innovative techniques developed by local land managers to enhance its ability to meet management needs while supporting local economies. Commercial timber harvest, long a cornerstone of forested land habitat management, contributes significantly to Minnesota's timber industry while meeting habitat enhancement goals. During the past 10 years the division has accomplished more habitat work on public lands with fewer staff by greatly accelerating grant agreements with non-governmental outdoor organizations and by engaging in direct competitive contracts with an increasing number of private vendors. To supplement an unreliable and insufficient supply of local ecotype prairie seed, the division invested in grass seed harvesting equipment and annually harvests thousands of pounds of seed to minimize costs for future restorations. DNR is actively working with the cattle and energy industries to implement alternative grassland management including rotational grazing and biofuel harvest that can be effective tools in increasing productivity of grasslands, controlling woody plants, and augmenting nesting success of certain birds. Wildlife managers have long worked with local farmers in agreements to provide food plots and other land management services through cooperative farming agreements on WMAs. Significant land management activities continue to be implemented by DNR staff, and the division has greatly improved efficiency through fleet reduction and use planning and through cooperative equipment sharing agreements with the Minnesota Department of Transportation and the U.S. Fish and Wildlife Service.

APPENDIX. PARKS AND TRAILS BUDGET ANALYSIS

- Parks and Trails Budget Analysis
- Parks and Trail Budget Analysis – Addendum

Minnesota Department of Natural Resources
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Office of the Commissioner
651-259-5555

July 29, 2009

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RE: **Parks and Trails Budget Analysis**

Dear Honorable Chairs and Ranking Minority Members:

This letter is in regards to the Parks and Trails Budget Analysis outlined in Minnesota Laws 2009, Chapter 172, Article 3, Section 6, Subdivision 3, requiring the commissioner of natural resources to submit by August 1, 2009 an estimate for the total amount of funding available for parks and trails for the next 10 and 25 years.

In order to estimate parks and trails funding availability, the DNR conducted a survey of parks and trails providers across Minnesota. This survey asked for information regarding current, 10-year, and 25-year funding estimates as well as funding information for operations, maintenance, and expansion. This online survey was sent to the following organizations:

- All member cities of the League of Minnesota Cities
- All member counties of the Association of Minnesota Counties
- All Metropolitan parks and trails providers
- All Federal Agencies in Minnesota that provide recreational facilities
- Minnesota Department of Natural Resources
- Minnesota Department of Transportation

- Iron Range Resources
- Several Private Organizations, such as the Superior Hiking Trail Association and the North Country Trail Association

There were 144 responses to the survey, which include 84 cities, 38 non-metro counties, 2 state agencies (including the DNR), 6 federal providers, 11 metropolitan parks and trails providers, and 5 private organizations. The estimates in Table 1 are only representative of those organizations that responded.

Survey respondents estimated $328 million in current total funding for parks and trails from all sources, with $221 million for operations and maintenance. Most agencies that responded do not separate operations and maintenance, therefore we added them together. $128 million was identified for park and trail expansion.

Table 1: Parks and Trails Expenditure Estimates (From All Sources)

	Current	10-Years	25-Years
Total	$ 328,262,995	$ 4,441,014,829	$ 11,932,592,172
O&M Combined	$ 221,245,480	$ 2,810,105,659	$ 7,645,258,690
Park Expansion	$ 77,955,427	$ 1,120,370,090	$ 2,550,698,360
Trail Expansion	$ 50,290,854	$ 537,957,090	$ 1,657,271,420

Over 10-years, the survey respondents estimated almost $4.4 billion will be spent from all sources for parks and trails, with about $2.8 billion for operations and maintenance and $1.6 billion for park and trail expansion.

Over 25-years, respondents estimated $11.9 billion from all sources for parks and trails. Over $7.6 billion was estimated for operations and maintenance, while $4.2 billion was estimated for park and trail expansion.

The above estimates are for funding from all sources, including but not limited to natural resources fund, general fund, LCCMR, bonding, user fees, local tax revenue, state aid, federal funds, and Legacy Parks and Trails funds.

Revenue estimates in Table 2 for the Constitutional Amendment Parks and Trails Fund were determined by Minnesota Management and Budget (MMB). Current annual revenue for FY10 is estimated to be $33.4 million. Parks and Trails Fund revenues are estimated to be almost $400 million over 10-years and $1.26 billion over 25-years.

Table 2: Parks and Trails Fund Revenue Estimates (From MMB)

	Current	10-Years	25-Years
Net Receipts	$ 33,357,000	$ 398,293,000	$ 1,262,935,000

This information will be used in the development of the 25-year plan as referenced in statute. It is clear that these new dollars will play an important role and will supplement existing funding. As we continue to collect information we will update the expenditure estimates indentified in Table 1.

Sincerely,

Laurie Martinson
Deputy Commissioner

Minnesota Department of Natural Resources
Division of Parks and Trails

Budget Analysis - Addendum

November 16, 2009

Section 1. About this Report

This addendum is a follow-up to a previous submittal dated July 29, 2009, which examine the adequacy of funding sources and appropriations that the DNR receives to acquire, develop, operate and maintain Minnesota's state park and trails systems. It addresses questions asked by the State Legislature *[ML 2009, Chap. 172, Art. 3, Sec. 6, Subd. 3]* regarding the adequacy of funding for State Parks, State Trails, State Recreation Areas (SRA's), state forest trails and recreation areas. **This addendum does not address funding for local, regional, county or municipal recreation facilities.**

All Figures are in Current Dollars

For simplicity, clarity and consistency, all current and future projections and cost estimates are reported in current dollars not adjusted for inflation.

Parks & Trails Legacy Fund Revenue Estimates

Revenue estimates for the Parks and Trails Fund obtained from Minnesota Management & Budget are shown below. The estimates anticipate growth in the fund, which may allow for increased future allocations for fund-eligible activities and programs.

Table 1. Parks & Trails Legacy Fund – Estimated Revenues

2010	$33,357,000
2020	$47,330,000
2035	$69,527,000
10 Years (cumulative)	$398,293,000
25 Years (cumulative)	$1,262,935,000

Parks & Trails System - Defined

"Existing parks" are defined as that portion of those authorized units of Minnesota's Outdoor Recreation System *(MS 85.012 & 85.013)* that have been largely **acquired and developed as of Fall 2009**. This includes 66 State Parks, 7 State Recreation Areas, 8 State Waysides, and 54 State Forest campgrounds and day use areas. Acquisition and development within many of these units is not yet 100% complete.

"Existing trails" refers to the **acquired and developed portion** *(i.e., 21 State Trails and 1,266 miles)* of the authorized State Trail System *(MS 85.015)* consisting of 26 trails and 2,597 trail miles. Also included are state forest trails which include 390 miles of hiking trail, 284 miles of horseback riding trails, 250 miles of mountain biking trails, 170 miles of cross-country ski trails.

Motorized trails and dedicated funding sources are discussed only briefly on Page 5 of the report. Snowmobile and off-highway vehicle trails, located in state forests and managed by the division, were not explicitly addressed in this report. Nor was the Iron Range Off-Highway Vehicle State Recreation

Area *(MS 85.013, Subd. 12a)*, which is also funded almost exclusively by dedicated off-highway vehicle recreation accounts.

Operations & Maintenance - Defined

'Operations' includes visitor and interpretive services, enforcement, customer service, reservations, communications, marketing, and day-to-day facility operations and administration.

'Maintenance' includes time spent on resource management, facility maintenance, rehabilitation and renewal, and the protection of the natural and cultural resources of these units.

'Deferred Maintenance' includes larger, more complex maintenance tasks that generally fall between routine daily maintenance and new capital development. As the term implies, deferred maintenance results from delayed or backlogged maintenance activity. Examples include undertaking a sizable plumbing or electrical upgrade, resurfacing or widening an existing bituminous trail, remodeling or replacing a dilapidated building, or replacing a substantial trail bridge.

Minnesota Department of Natural Resources

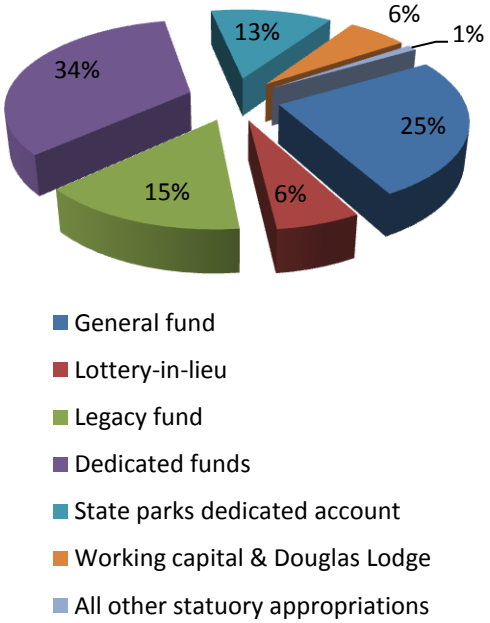
Division of Parks and Trails

Section 2. FY 2010 Budget Overview

Table 2. FY 2010 - Total Budget Appropriations	
General fund	$21,402,000
Lottery-in-lieu	$5,131,000
Legacy fund*	$12,641,000
Dedicated funds *(Water Rec & Trails)*	$28,280,000
State parks dedicated account	$10,620,000
Working capital & Douglas Lodge	$5,200,000
All other statutory appropriations	$875,000
Total	$84,149,000

** Parks & Trails Legacy Funds are split between three DNR initiatives: 1) Connecting People to the Outdoors, 2) Accelerated Natural Resource Management, and 3) Accelerated Facility Maintenance, Rehabilitation and Renewal.*

Fig. 1. FY 2010 All Funding Sources
Division of Parks & Trails
($84,149,000)



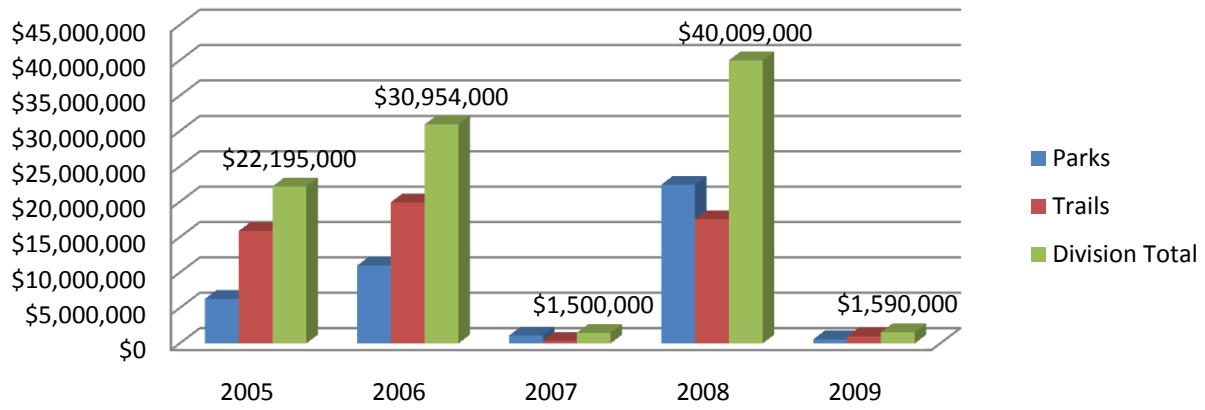
Capital Budget Support. In addition to regular appropriations, the Division of Parks & Trails receives substantial capital support from the Legislature. Figure 2 and Table 3 *(below)* show both LCCMR and

Capital Bonding appropriations for FY 2005-2009. This funding has been, and will continue to be instrumental in acquiring, developing, renewing and replacing state park and trail facilities.

Table 3. Capital Bonding and LCCMR Funding by Year, 2005-2009

Year	*Parks*	*Trails*	*Division Total*	*Source*
2005	$6,300,000	$15,895,000	$22,195,000	Bonding &LCCMR
2006	$11,000,000	$19,954,000	$30,954,000	Bonding Only
2007	$1,119,000	$381,000	$1,500,000	LCCMR Only
2008	$22,436,000	$17,573,000	$40,009,000	Bonding &LCCMR
2009	$590,000	$1,000,000	$1,590,000	LCCMR Only

Fig. 2. Capital Bonding and LCCMR Funding by Year, 2005-2009



State Parks - FY 2010 Operating Budget (Fig. 3)

The Division of Parks & Trails' FY 2010 operations and maintenance budget for State Parks, State Recreation Areas *(SRAs)*, State Waysides, and State Forest campgrounds and day-use areas is $48,357,000 from a range of funding sources. This total includes $640,000 from the Water Recreation Account for authorized purposes *(See Pg. 5 for a discussion of dedicated funding sources).*

Included in this total is $7,079,000 of Parks & Trails Legacy Funding *(of P&T's $12,641,000 total appropriation)* allocated to these units. This additional funding has accelerated resource management, added outdoor education opportunities, and increased facility rehabilitation and renewal projects.

Table 4. FY 2010 Budget – State Parks	
General fund appropriation	$19,572,000
Water recreation appropriation*	$640,000
Lottery-in-lieu allocation	$4,371,000
State parks dedicated account	$10,620,000
Working Capital & Douglas Lodge Account	$5,200,000
All other statutory appropriations	+ $875,000
Total from traditional funding sources	$41,278,000
Legacy funding**	+ $7,079,000
Total from all sources	$48,357,000

** This appropriation is from the Water Recreation Account total reported in Table 6 on Page 6.*

*** Of this, approx. $2 million is for capital-eligible deferred maintenance.*

State Trails - FY 2010 Operating Budget (Fig. 4)

The FY 2010 operations and maintenance budget for state trails and state forest trails is $5,640,000. This includes:

Table 5. FY 2010 Budget - State Trails	
General fund appropriation	$1,830,000
Lottery-in lieu allocation	$760,000
Legacy funding*	+ $5,562,000
	(-$2,912,000)
Total Funded O&M Budget	$5,240,000

**Of this amount, $2,912,000 in Parks & Trails Legacy Funding is being used for state trail bridge replacement and state trail renewal (e.g. bituminous resurfacing).*

For FY 2010, the State Forest *(non-motorized)* Trails budget is $400,000 *(not shown in Table 5)*. Of this, $280,000 is from Parks & Trails Legacy Funding, and $120,000 is revenue generated from sales of the Horse Trail Pass. These dedicated revenues are split between horse trails and facilities in State Parks and those located in State Forests.

Division O&M Budget Summary. The total Parks & Trails Divison's FY 2010 operations and maintenance budget totals nearly $54 million; that is $48,357,000 for State Parks/SRA's and $5,640,000 for Trails.

Dedicated Funding Sources *(Water Recreation & Trails)*

In addition, the DNR receives appropriations from several dedicated user-funded accounts. Part of the Natural Resources Fund, these accounts include Water Recreation, Cross-Country Ski and Horse Pass, Snowmobile, All-Terrain Vehicle, Off-Highway Motorcycle, and the Off-Road Vehicle Accounts. In total, these accounts generate about $28 million annually, about $10 million of which comes to the department in the form of pass-through grants *(Fig. 5, Page 7)*. These funds are generated principally from trail user fees, vehicle and boat registrations, and a portion of unrefunded motor vehicle fuel taxes.

Dedicated account revenues may only be used for specific purposes set forth by law. Moreover, these dollars are subject to annual appropriation, and are not available for general recreational trail purposes. Still, dedicated trail funds are a critical part of overall recreational trail funding. They supplement regular maintenance funding for State Parks, State Trails and state forest trails to assist with trail signing, summer-season mowing, brushing, water access sites, bridge maintenance and bridge replacement along shared trail corridors. Multi-use trail maintenance is increasingly dependent upon this important contribution from dedicated funding sources.

While these accounts do provide a relatively stable and reliable source of user-generated funding, individual fund receipts and annual appropriations do not always keep pace with the demand for new and expanded facilities, or with the need to protect and maintain existing recreational trails. The division anticipates that the programs and activities supported by these accounts will require new and/or additional sources of funding in future years.

Table 6. Water Recreation & Trails Dedicated Fund Sources – FY 2010 Amounts[1]

Water Recreation[2]	$11,000,000
Snowmobile	$12,400,000
All-Terrain Vehicle (ATV)	$3,100,000
Off-Highway Motorcycle (OHM)	$400,000
Off-Road Vehicle (ORV)	$1,000,000
Cross-Country Ski Pass[3]	$260,000
Horse Pass	+ $120,000
Total	$28,280,000

Footnotes

1. *This table does not include federal sources of dedicated funding.*
2. *About $640,000 of this total is included in the State Parks operations budget.*
3. *Cross-Country Ski receipts are appropriated to the Commissioner as grants-in-aid for ski trails sponsored by local units of government and Special Park Districts (MS 85.43).*

State Park Dedicated Accounts

There are two dedicated accounts used to fund various activities within the State Park System. The **Working Capital & Douglas Lodge Account** generates revenue from the state park merchandise program and operation of the Douglas Lodge. In FY 2010, this account provides 11% of the State Park System budget.

The **State Parks Account** generates revenue from permit sales, camping fees, and other visitor-paid fees. This account represents 22% of the FY 2010 budget for the State Park System. Although increased park visitation and/or higher fees will boost account revenues, increased fees will, at some point, create affordability barriers for some Minnesotans. Moreover, although dedicated funding accounts will likely grow over time and provide additional resources for some activities, they will not be adequate to fund expansion of the park system.

Fig. 3. FY 2010 Funding Sources for State Parks, SRAs, State Waysides, Forest Campgrounds & Day-Use Areas ($48,357,000)

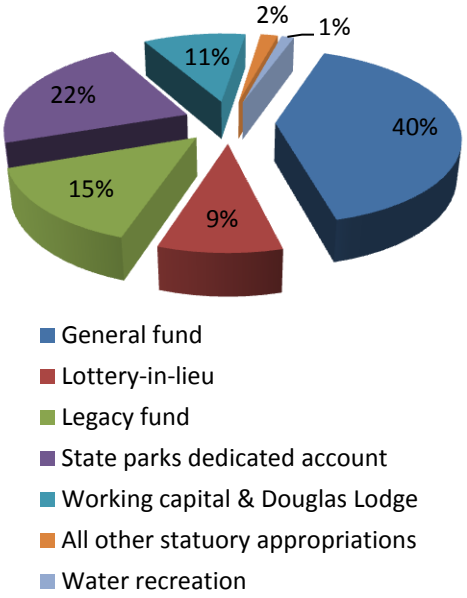
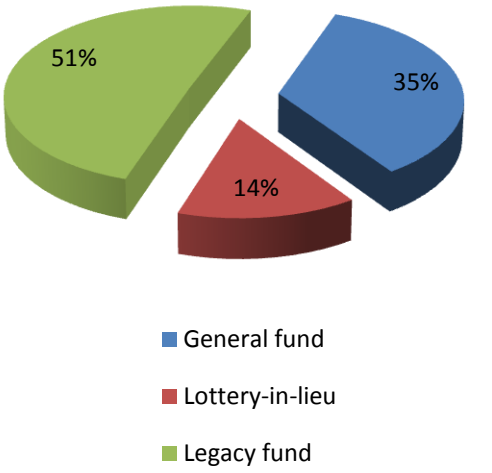
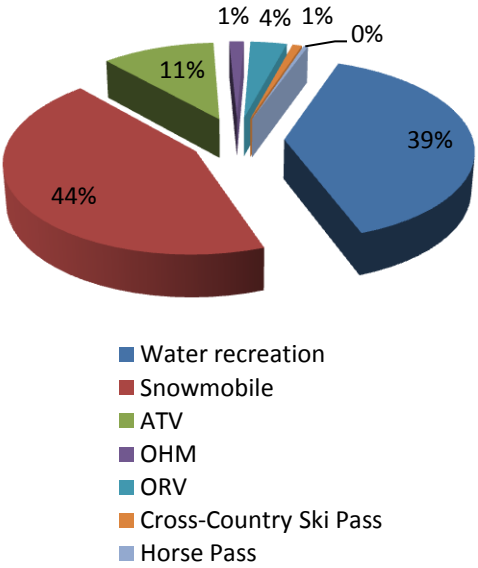


Fig. 4. FY 2010 Funding Sources for State Trails ($5,240,000)



* State Forest non-motorized trails funding is not included ($400,000)

Fig. 5. Dedicated Funding Sources Water & Trail Recreation FY 2010 Amounts ($28,280,000)



Section 3. Budget Analysis & Cost Projections

***Questions 1 & 2:* The amount necessary to operate and maintain the existing system of state parks and trails for the next 10 and 25 years?**

Operations & Maintenance Needs. The Parks & Trails Division's FY 2010 O&M budget is approximately $54 million. In order to meet current practices and standards, the division would need an additional $6 million/yr to improve facility maintenance and visitor services *(for example):*

- Expand conservation education efforts by adding interpretive programs and opportunities.
- Increase trail grooming on over 190 miles of crossing county skiing trails in State Parks.
- Improve spring, summer and fall camping services at State Parks and state forest campgrounds.
- Provide additional crack sealing and asphalt patches along state trails.
- Improve trailhead and parking facilities along state trails.
- Provide additional interpretive signs at trailheads and along state trails.

The division's current FY 2010 budget need for parks and trails operations and maintenance is approximately $60 million. The ten and twenty-five year projections that follow are based on the FY 2010 funded budget plus identified needs. These estimates also include $10 million annually for capital-eligible deferred maintenance *(i.e., $5 million parks/yr + $5 million trails/yr).*

Table 7. 10 Year Projection of Total Needs for Existing Parks and Trails (2011-2020)

	Operations	*Maintenance*	*Def Maintenance*	*Total*
Parks/SRA's	$232,350,800	$295,719,200	$50,000,000	$578,070,000
Trails	+ $28,204,000	+ $42,306,000	+ $50,000,000	+ $120,510,000
Division Total	$260,554,800	$338,025,200	$100,000,000	$698,580,000

25 Year Projection of Total Needs for Existing Parks and Trails (2011-2035)

	Operations	*Maintenance*	*Def Maintenance**	*Total*
Parks/SRA's	$580,877,000	$739,298,000	$125,000,000	$1,445,175,000
Trails	+ $70,510,000	+ $105,765,000	+ $125,000,000	+ $301,275,000
Division Total	$651,387,000	$1,095,063,000	$250,000,000	$1,746,450,000

*[Note that 25 yr projections **include** the 10 yr budget figures.]*

* *At this level of funding, the existing parks and trails system may reach a point, within the 25 year projection period, where deferred maintenance needs may be reduced.*

***Question 3:* Adequacy of funding to support expansion of the existing park system?**

'Expansion' of the park system was defined as: 1) Continued acquisition and development of existing units of the state park system; and 2) Adding one new State Park or SRA every other biennium – **or one new facility every four years** *[e.g., Acquisition/capital development of new Park/SRA in 2014, 2018, 2022, 2026 & 2030, each requiring increased ops/maint dollars two years later].* These cost projections are in addition to costs for operating and maintaining the existing state park system.

Table 8. 10 Year Total Estimated Cost for Expanding the Park System (2011-2020)

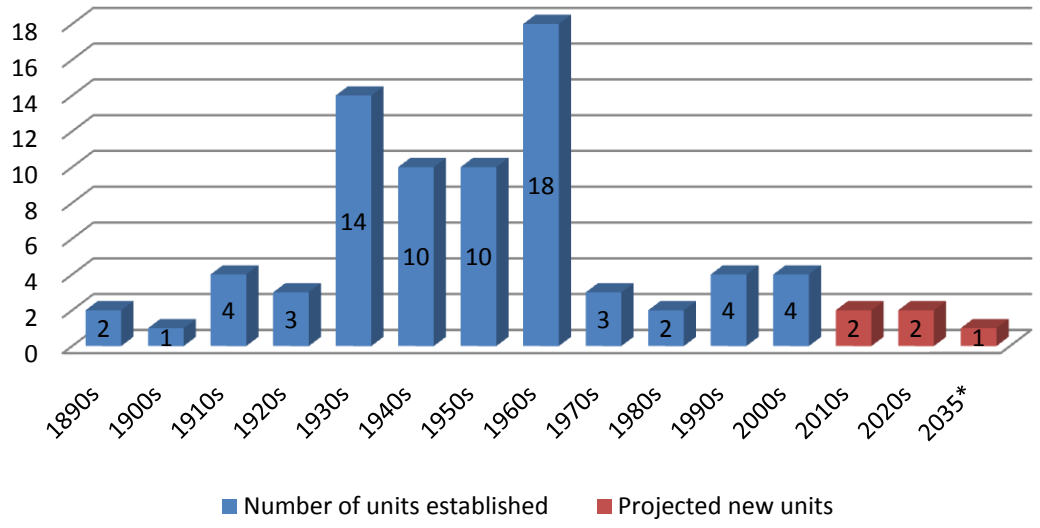
Continued acquisition/develop (existing)	$72,500,000	
Number of new units added	2	
Acquisition and development costs (new)	$50,000,000	($25,000,000/unit)
Operation and maintenance budget cost	$3,600,000	($600,000/yr/unit)

25 Year Total Estimated Cost for Expanding the Park System (2011-2035)		
Continued acquisition/develop (existing)	$181,250,000	
Number of new units added	5	
Acquisition and development costs (new)	$125,000,000	($25,000,000/unit)
Operation and maintenance budget cost	$36,000,000	($600,000/year/unit)

*[Note that 25 yr projections **include** the 10 yr budget figures.]*

Not reflected in these projected costs is the possibility of land donations or land transfers for purposes of establishing a new state park or SRA. Some newer State Parks and SRAs have benefitted from the donation or transfer of a significant portion of the property from a private entity or another public agency. This could significantly reduce initial start-up capital costs. Figure 2 *(below)* illustrates the addition of state parks and SRAs by decade and the expansion scenario described above.

Fig. 6. State Parks & SRAs Established by Decade (1890s-2000s) and Projected New Units *[Source: MN DNR, Parks & Trails, 2009]*



Question 4*: *Adequacy of funding to support expansion of the existing trail system?

Currently, only half of the authorized trail miles in the state trail system have been developed. Expanding this system was defined as developing new or additional miles of state trail at a pace similar to that of the last decade *(25-30 mi/yr)*. Expansion will also include adding four new non-motorized trail areas in State Forests. The following cost projections do not include costs for continued operations and maintenance of the existing trail system.

Table 9. 10 Year Total Estimated Cost for Expanding the Trail System (2011-2020)	
Miles of new state trail developed	300
New state forest trail opportunities	2
Acquisition and development costs	$90,800,000
Operation and maintenance budget cost	$14,500,000

25 Year Total Estimated Cost for Expanding the Trail System (2011-2035)	
Miles of new state trail developed	700
New state forest trail opportunities	4
Acquisition and development costs	$226,600,000
Operation and maintenance budget cost	$75,800,000

Alternative State Trail System Development Scenarios

1) Status Quo. Under this scenario, which is reflected in the calculations above, the State Trail System continues to grow by 25-30 *(paved)* miles per year. Assuming that the historic authorization rate of 60 new miles/year continues, there will be 4,100 authorized miles with approximately 2,100 miles of developed state trails in 2035. This is comparable to the situation that exists today; only about one-half, or 1,266 of 2,597 authorized miles of trail, have actually been developed.

2) Complete the System - No New Authorizations. If no new state trail authorizations were to occur after 2009, and those portions of the authorized system were available for acquisition, approximately 53 miles of trail corridor would need to be acquired and developed **each year** in order to "complete" the (already authorized) system by 2035. The estimated cost to complete the system would be approximately $429 million, or $17 million per year for land acquisition and trail development.

3) Complete the System - Authorizations Continue. If new authorizations continue at the historic rate of 60 miles/year, about 110 miles of trail corridor will need to be acquired and developed **each year** in order to "complete" the system by 2035. The estimated cost to complete the system would be approximately $948 million, or $38 million per year for land acquisition and trail development. Under all three scenarios, operations and maintenance costs would grow commensurate with the addition of newly developed trail miles.

Future Funding Considerations.

In order to meet current needs and standards for operating and maintaining the existing parks and trails system, the division would need an additional **$6 million/yr** above and beyond its FY 2010 funded budget. The addition of Parks & Trails Legacy Funds in FY 2010 has translated directly into higher service levels at the state's outdoor recreation facilities, and have enabled DNR to make serious inroads into the deferred maintenance backlog.

Legacy funds, however, are not adequate to replace current funding sources. This is particularly true when it comes to system 'expansion'. Even with an increased share of fund allocations (currently at 45%), the Parks & Trails Legacy fund will likely come up short of completing the entire system. Increased DNR funding would also come at the expense of other public recreation providers *(e.g., city, county, regional parks)* that fulfill an important public need for close-to-home recreation. These facilities complement the state's system of parks and trails.

As the state park and trail systems grow, there will be substantial costs associated with that growth. Infrastructure rehabilitation and renewal needs will grow both for the existing system, and for new facilities added to the system. Despite increased visitation, and additional revenue from fees, permits, and dedicated user-funded accounts, these sources will not provide the revenue necessary to fund continued expansion of this system.

Expansion of the state park and trail systems, as outlined in this analysis, will almost certainly require increased capital bonding and LCCMR support, in addition to Parks & Trails Legacy Funds. General fund

support will also remain a vital component of the Parks and Trails Division's budget, especially for routine operations and maintenance activities for Minnesota's growing system of outdoor recreation facilities.

10/25 Year Strategic Plan & Framework. *Minnesota Laws 2009, Chapter 172, Article 3, Section 6, subdivision 2*, requires the development of a twenty-five year strategic parks and trails long-range plan and framework by February 15, 2011. *Section 2e* of this same bill calls for the development of a ten year strategic DNR parks and trails plan considering both traditional funding and Parks and Trails Legacy Funding. The information contained in this report will be provided to planners working on the above plans.

It is hoped that the ten and twenty-five year plans will identify needs and inform decisions regarding the appropriate level and mix of funding sources needed to complete Minnesota's system of parks and trails. They will also likely prompt adjustments to future budget needs as outlined here.