

Figure 1: State and Federal recreation resources available in Minnesota. Credit: Terry Brown, University of Minnesota.

OUTDOOR RECREATION

Natural Resource Profiles



“Recreational development is a job not of building roads into lovely country, but of building receptivity into the still unlovely human mind.”

—Aldo Leopold

History

Outdoor recreation and tourism have a long history in Minnesota. While we can document the start of various park and recreation systems across the state (see Figure 1, facing page), actual recreation participation data is anecdotal through the mid-1900s. Nonetheless, we can be sure that outdoor recreation contributed to individual and community well being prior to and during settlement in similar ways in which it does today by providing individual, social and economic benefits. Pre-settlement conditions of the natural resources on which outdoor recreation and tourism depend are found elsewhere in this report (see Water, Wildlife, Fish, and Land).

We consider recreation resources as those areas and facilities that provide opportunities for recreation and tourism experiences, regardless of ownership including public or private owned.

In Minnesota, residents typically participate in some form of outdoor recreation (see Table 1). Outdoor recreation and tourism experiences provide opportunities for important personal, social and economic benefits. On a personal level, individuals report mental restoration, physical enhancement as well as improved skills and self-competence as a result of recreation experiences. Socially, benefits accrue as social cohesion builds from recreation and tourism experiences and the population is healthier due to mental and physical restoration. Economically, recreation and tourism bring new dollars to communities as well as contribute to community pride.

Minnesotans recognize that recreation is important for them and their economy. The majority of Minnesotans (82%) believe outdoor recreation

Activity	Percent of Population Participating Annually			Number of Annual Hours of Participation (000s)		
	2004	2014	Change	2004	2014	Change
Boating of all types, excluding fishing from a boat	35.50%	31.40%	-11.50%			1.80%
Fishing of all types	30.20%	24.70%	-18.40%			-6.20%
Visiting outdoor zoos	27.50%	20.70%	-24.70%	5,822.60	5,040.90	-13.40%
Visiting historic or archaeological sites	20.70%	16.20%	-21.60%	6,198.60	5,585.50	-9.90%
Viewing, identifying or photographing birds and other wildlife	20.40%	15.90%	-22.00%			-10.30%
Hunting of all types	16.00%	14.20%	-11.20%			
Offroad ATV driving *	10.30%					304.70%
Snowmobiling	9.80%	8.20%	-16.80%		9,817.00	-4.30%

Table 1: Participation figures and projections for outdoor recreation by activity.

Note: Off-road driving revision coming from Minnesota DNR July 2007. Credit: Minnesota DNR.

is important to their lives and believe tourism is important for the economy (94%). The economic impact of recreation and tourism is documented and significant. For example, spending associated with state parks is \$178 million of which \$144 million originates with Minnesota visitors. Similarly, our 28 million tourists spent \$11.786 billion in the state while enjoying the natural and cultural resources. Half of these tourists are Minnesotans traveling within the state. These tourism dollars support 286,000 full-time-equivalent jobs, \$6.9 billion in resident income (wages, salaries and proprietary income), \$1.5 billion in state government revenues and \$0.5 billion in local government revenues.

The conditions of facilities and areas upon which recreation and tourism depend vary greatly. We lack consistent information across administrative sectors and geographic areas. From a recreation standpoint, the resource conditions are subject to what is acceptable for the visitor. The ‘limits of acceptable change’ are applied to understand if and when a resource approaches unacceptable conditions. Known or baseline conditions in these areas are limited to select site specific studies. In terms of facilities, a 2004 study of perceived recreation and facility needs of cities, counties and school districts consistently found the highest demand for trail-related facilities. Beyond the need for trails, the organizational desires varied widely between metro

and outstate as well as by county. Local recreation providers consistently related lack of funding and land protection as problems.

To optimize the benefits of outdoor recreation and tourism for Minnesota, attention to and research on several key factors is required:

- land use patterns
- health concerns
- demographic changes
- climate change
- water quality
- aquatic habitat degradation

Existing evidence in each of these areas is presented below, followed by research recommendations. Information from the forthcoming Statewide Comprehensive Outdoor Recreation Plan (expected December 2007) will be informative on these issues as well.

Drivers of Change

Land Use Patterns

Lakeshore Development - Increased lakeshore residential development impacts recreation resources in terms of access, ecological quality, aesthetics and economics. First, lake access is more restricted for nonresidents, who must rely more heavily on select public access points for lake use. In addition, the aesthetics of a lake and the recreation experience is altered when the shoreline is no longer “natural” scenery but lined with housing. The type of lakeshore development permitted also impacts recreational resources. For example, a lakeshore resort will have different impacts than a single-family vacation home or a single-

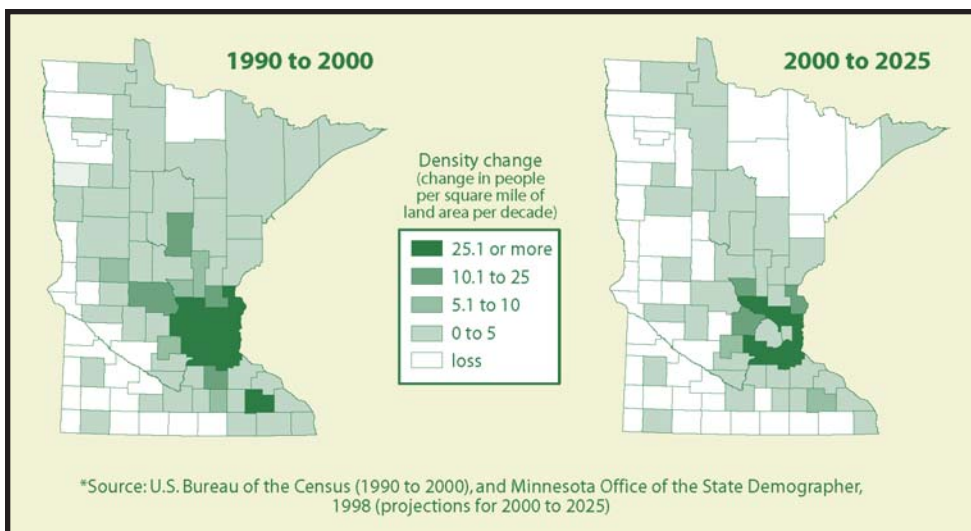


Figure 2: Population change in Minnesota - recent history (1990 - 2000) and projections (2000 - 2025). Credit: SCORP 2003-2008

family year-round home. The decreasing number of resorts in Minnesota influences the severity and duration of these impact changes. Recognizing these issues, the Minnesota Environmental Quality Board updated their thresholds for environmental review as applicable to lakeshore development in 2004.

Increased lakeshore development also affects recreation resources indirectly. As General Development and Recreational Development Lakes become fully developed, demand increases to develop around ecologically sensitive Natural Environment Lakes.

Expansion of Urban Areas and Land Use Conversion - In Minnesota, the Twin Cities area and regional urban centers have seen significant growth and this growth is expected to continue. Population density in the Twin Cities metro area collar counties is expected to increase by 50.1 people per square mile between 1990 and 2025 (see Figure 2, facing page). Other regional urban centers predicted to expand in the coming decades include St. Cloud, Rochester, Baxter/Brainerd, Western Lakes Region (Alexandria to Detroit Lakes), Bemidji, and Wilmar. According to the 'Regional Parks for Minnesota's Outstate Urban Complexes' study, people tend to be attracted to these areas because of their natural resources and outdoor recreation amenities. However, few of these areas have sufficient land set aside to maintain their natural and recreation resources. By 2030 an additional 26,750 acres of land would have to be set aside to provide outstate urban areas with a comparable ratio of regional parkland per person as in the seven county metro area. If these areas want this level of parks and open space these lands need to be purchased soon, before land prices become prohibitive. Furthermore, the report observes that 26,000 regional parkland acres will not be enough to maintain the scenic rural character of quickly developing urban areas, and that other tools such as stricter zoning and innovative land conservation measures will be necessary.

In a recent DNR report on recreation facility needs, land acquisition was rated as a problem by both city and county officials. For example, as new land is developed for housing, there is more demand for recreational opportunities in those areas.

Ownership of Forest Lands - Some of Minnesota's forested recreational lands are presently held in large, privately-owned parcels by average citizens. The average recreational land owner is 62 years old, retired, and uses their property approximately 55 days per year. In the past, many of these land owners have left their land undeveloped and allowed hunters and other individuals access to their land, thereby providing a benefit to the general public. However, as property changes ownership, the new owners may not allow this access and/or sub-divide the parcel and thus, potentially reduce the public recreational benefit. An estimated one million acres of large, mostly undeveloped tracts of land in Minnesota are at risk of being sold.

Demographics

Ageing Population - The Minnesota population of people 65-85 is expected to more than double between 2005 and 2035. In suburban counties, those 85 or older will increase 115%. As recreation users age, recreation resources, particularly public resources must be accessible to older users and will be increasingly assessed for compliance with the

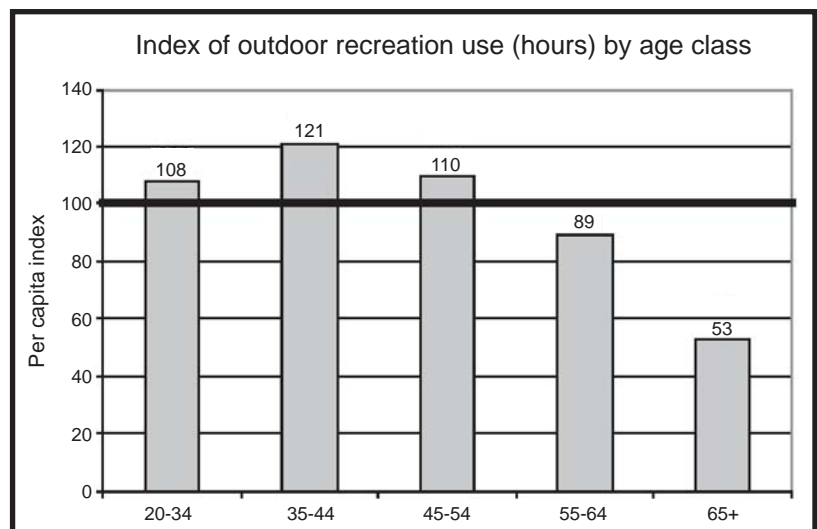


Figure 3: Index of outdoor recreation use by age class. Credit: Minnesota DNR



Figure 4: Fishing off a launch on Mille Lacs. Credit: Explore Minnesota Tourism

Americans with Disabilities Act. Activities that are inexpensive, convenient, and accessible are stable across various age groups and, as such, increases in activities that meet these characteristics are likely. As Minnesota's population ages, per capita use of outdoor recreation facilities may decrease (Figure 3, page 95). In addition, as the population ages, public policy decisions such as funding for recreation resources and their management will likely be increasingly influenced by voting patterns associated with older voters.

Cultural Diversity - According to the US Census Bureau, the foreign-born population increased by 57% from 1990 to 2000 and their annual births account for 75% of all US population growth. In Minnesota, the State Demographics Center predicts that by 2025, 17% of Minnesotans will be people of color. Specifically, the non-white population growth will outpace others with a tripling of Latinos by 2030 and a 121% increase in Asian groups. Of the 16 Asian ethnicity groups, one of the largest in Minnesota is Hmong (46,352).

Resource use, development, and maintenance will increasingly be influenced by cultural preferences for activities and site attributes. For example, research indicates Latino visitors have larger travel

party sizes, prefer more developed facilities and engage differently in picnicking and other activities than non-whites. Similarly, Hmong appear to feel more comfortable and secure hunting, fishing, camping, and picnicking in larger groups. Outdoor recreation activities strongly associated with non-white Minnesotans included in the DNR research include nature observation, outdoor court sports (tennis, basketball, volleyball),

and sledding. However, a survey of Minnesota adults showed that non-white Minnesotans tend to participate in outdoor recreation less often than white Minnesotans. Reasons for this differential participation demand may be related to access, information (non-English information), discrimination or the fact that the facilities and resources simply do not meet the non-white needs.

Disposable Income - Minnesota's income ranked 9th in the U.S., although incomes vary widely by county with higher incomes in the more densely populated areas. Since 1990, personal income in Minnesota is becoming more unevenly distributed, meaning there are substantial differences in disposable incomes. As participation in outdoor recreation opportunities increases with disposable income, greater pressures on recreation resources are possible. More management attention will likely be required to meet demand and to avert environmental degradation.

Lifestyle and Recreation Preferences

Concern for Physical and Mental Health - Health benefits are a primary motivation for and benefit of outdoor recreation. In Minnesota, survey research indicates that health is the second highest motivation for outdoor recreation, following the opportunity

to enjoy nature. In terms of physical health, inactivity is a serious problem as nearly 30% of U.S. citizens are completely inactive and only 25% engage in the recommended amount of physical activity. Leisure time physical activity on public lands is important to examine as public parks offer free to low cost places for physical activity and are accessible to individuals from culturally and socio-economically diverse populations, all age groups, and all abilities. Federally, this issue has been recognized by a Presidential Executive Order in 2002, which mandates federal land agencies to promote the use of recreation areas for improved health. The MN Department of Health's Cardiovascular State Plan addresses the connection between access to green space and health. Similarly, the National Parks and Recreation Association and their state offices are encouraging 'healthy parks, healthy people' initiatives. The City of St. Paul, for example, has partnered with local health providers to provide information on the health benefits of outdoor recreation. Among the many outdoor recreation areas that provide opportunities for physical activity, trails provide a 'green treadmill' which Minnesota, city and county officials have identified trail facilities among their top ten needs.

Declining Participation - At the same time that the average age is increasing (see Demographics, page 95), there is decreasing participation in outdoor recreation by youth. In the past, young adults (20-34) have had the highest per-capita recreation hours compared to other adult age groups. However, in a recent survey of Minnesota adults, young adults reported fewer per-capita recreation hours than adults age 35-44 and 45-54.

The reasons for this change in participation are many and complex. However, we do know that outdoor recreation participation is often introduced by older family members: fishing with a parent, hiking with the family (see Figure 5), hunting with an uncle or appreciating nature with an older sibling.

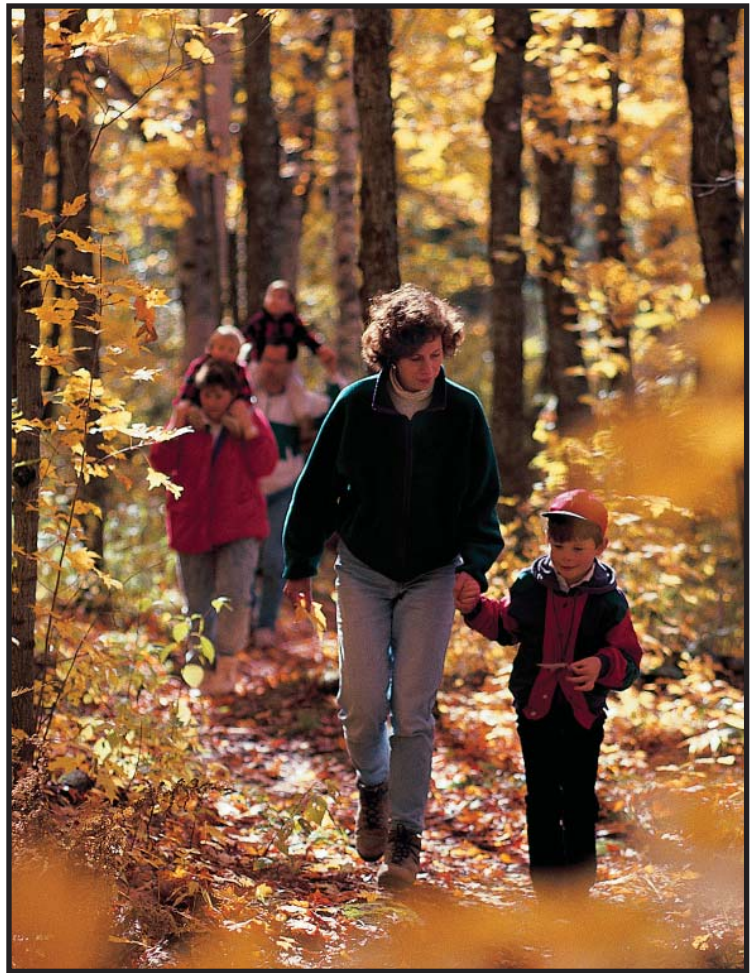


Figure 5: Family hike on the Superior Hiking Trail.
Credit: Explore Minnesota Tourism

Given the change in participation by young adults, such introductions to outdoor recreation experiences are less likely and, subsequently, disconnects with nature may occur leading to reduced recreation participation and outdoor engagement overall. The increasing urbanization of Minnesota may exacerbate this issue whereby youth have increasingly limited access to outdoor recreation areas. Richard Louv's 'Last Child in the Woods' has popularized this idea and raised the idea of a 'nature deficit disorder' to a prominent position among federal land management agencies. The state of California created and received gubernatorial endorsement for a children's bill of rights which seeks to 'encourage California's children to participate in outdoor recreational activities and discover their heritage' (www.calroundtable.org).

Recreation Participation Patterns - Both the types of and time for outdoor recreation is changing. Since

2006, both national and state participation in fishing and hunting has declined. Similarly, expenditures related to fishing and hunting has also declined. This trend is expected to continue where fishing of all types is expected to decrease 18.4% and hunting of all types decline 11.2% by 2015 (see Table 1, page 93).

In contrast, wildlife viewing has increased 13% nationally in the last decade. In 2001, Minnesota ranked second in the nation for wildlife viewing. Minnesota’s wildlife viewing participation rate increased 53 percent from 1996-2001 and spending rose 36 percent in the same time frame to \$523.5 million. Given the national trends in wildlife

viewing, Minnesota participation and expenditures are likely to follow suit (see Table 2 - State results from the USFWS are expected July 2007).

Beyond wildlife-related recreation, outdoor recreation activities have varying participation levels. In 2004 Minnesota adults reported participating in new activities that included boating (10%), followed by biking, camping, off-road driving (ATV) and fishing. In contrast to these other activities, ATV sales have increased substantially since 1995 resulting in 2004 unit sales estimated at 914,000. Minnesota is already among the top 10 states for ATV riding participation, and this participation is expected to increase.

Indicators of nature-based outdoor recreation participation changes over the last 10 years for U.S. and MN (June 14, 2007)		
Activity	Per-capita change in number of participants or visitation, 1996 to 2006	Change in number of participants or visitation, 1996 to 2006
U.S.		
Fishing participation (age 16+)*	-25%	-15%
Hunting participation (age 16+)*	-21%	-10%
National park visitation**	-19%	-10%
Away from home wildlife-watching participation (age 16+; "away from home" is over one mile from home)*	-15%	-3%
Total wildlife-watching participation (age 16+; includes "away from home" and "around the home")*	-1%	13%
BWCAW use (May-September overnight groups)****	-27%	-19%
MN		
Resident anglers licensed in MN (age 16+)**	-16%	-6%
Resident hunters licensed in MN (age 16+)**	-9%	3%
MN State Park visitation, all parks**	-10%	-1%
MN State Park visitation, same parks over period**	-12%	-3%
Away from home wildlife-watching participation (age 16+; "away from home" is over one mile from home)*		
Total wildlife-watching participation (age 16+; includes "away from home" and "around the home")*		
MN use of BWCAW (May-September overnight groups)****	-27%	-20%

(data do not appear reliable for MN, perhaps due to sample size; the MN trends for fishing and hunting from this source do not compare well with the more reliable trends from license certifications, which are the basis of the trends shown in this table for MN anglers and hunters)

* Source: USFWS and U.S. Census Bureau. National Survey of Fishing, Hunting and Wildlife-Associated Recreation. 2006 data are preliminary at this time (6/14/07)
 ** Source: National Park Service visitation records (www2.nature.nps.gov/stats/)
 *** Source: MN DNR data on certified licensed hunters and anglers, and park visitation from Division of Parks and Recreation
 **** Source: Data compiled from USFS records of May-September quota group permits.

Table 2: Indicators of nature-based outdoor recreation participation changes over the last decade for the U.S. and Minnesota. Credit: US Fish and Wildlife Service

Not only have recreation activities undergone participation changes, but so has the length of time we spend on vacations that include outdoor recreation. Vacations have transitioned from single week trips to several 3-4 day getaways. Almost 30% of Americans have taken 5 or more weekend trips in the past year and 40% of weekend travelers report they are taking more day trips and/or weekend trips, 38% more today than five years ago. Minnesota travel data supports this vacation length as the majority of visitors were on trips of 3 to 4 days in duration.

Such shorter timeframes change the distance people can travel and subsequently the pressure and impact on resources nearest to population centers. Interest in nature based tourism and travel to areas that sustain their natural geographic character is high and growing. In fact, eco tourism may be the fastest growing market in tourism. As such, it is essential that Minnesota maintain its highly valued tourism product of natural resources.

Climate Change

Lack of Snow and Safe Ice - Snow and ice conditions are variable and appear to be decreasing in duration and longevity. These conditions change the spatial distribution of traditional winter recreational activities. Winter recreationists may be displaced and go farther north within Minnesota or leave Minnesota as they seek appropriate snow and

ice conditions. Users may also alter their recreation activities, choosing those that are not snow and ice dependent.

Lower Water Levels Due to Evaporation - Recreational boating is one of the most frequently engaged in outdoor activities in Minnesota: ranked second only to walking as an outdoor pursuit among Minnesota adults. An increase in boating is consistent in the metro, Brainerd and Central Lake Regions. Most of Minnesota boating is motorized, but one-in-five registered boats in Minnesota is a canoe or kayak. However, as temperatures rise, water levels will decrease and influence the types of water-based recreation that is appropriate and safe. Subsequently, the types of activities pursued in water bodies will change and activities will be spatially distributed to those water bodies that accommodate watercraft and activities. Changes in water level also influence the type and amount of fishing that can be done due to changes in fish habitat (see Fish Natural Resource Profile).

Lengthening Shoulder Seasons (Spring and Fall) - Changes in seasonal temperatures will lengthen springs and falls. Subsequently, more opportunities for moderate-climate recreational activities such as biking, hiking, and golf will be available. For example, a Canadian study used climate modeling to predict future golf season durations and found that the Great Lakes region of Canada is projected to experience substantial growth in golf participation: the climate-change-adapted golf season could extend 16 days longer in the 2020s, 37 days longer in the 2050s, and 68 days longer in the 2080s creating an opportunity for a potential 260 day golf season. It is reasonable to suggest that Minnesota, located in an already milder climate than the Canadian Great Lakes region, could endure the same, if not more extreme, scenario.



Figure 6: Blue Mounds. Credit: Explore Minnesota Tourism

The longer use of resources increases pressure on them, during particularly critical times for wildlife mating and



Figure 7: BWCA campground. Credit: Explore Minnesota Tourism

nesting. In addition, changing habitat created by the changes in seasons impacts opportunities for hunting, fishing, and wildlife viewing. From a Minnesota standpoint the greatest shift in birding emphasis is that the anticipated shrinkage of boreal forest habitats in northern Minnesota and other northern states. It could place boreal birding experiences with a higher priority to see black-backed woodpeckers, boreal chickadees, great gray owls, northern hawk owls, evening grosbeaks, pine grosbeaks, spruce grouse, and some of the northern warblers like the Connecticut warblers. There is already a strong birding tradition for avid birders to travel to northern Minnesota to see these species. To the extent that we retain the opportunities to see those species, the northern regions will become even more significant nationally and internationally as a major birding destination.

More Intense Summer Temperatures - Summer temperatures appear to be becoming more intense. Such temperature changes impact recreation resource use in terms of participation in water based activities, travel patterns and opportunities themselves. First, there is increased demand for water recreation, creating more pressure on water recreation resources and subsequent pressure on

water quality. Such impacts are felt statewide and across recreation providers. Second, there is also increased demand to travel to cooler locations that are farther north, resulting in increased pressure on recreation resources in those areas and a loss of activity and economic impact in locations farther south. Third, hunting, fishing, and wildlife viewing

opportunities will be altered in the short term as species respond to higher temperatures, and in the long term as species are displaced to other climate zones.

Major Data Gaps/Recommendations

Given the importance of outdoor recreation to Minnesotans, their quality of life and the state economy, attention to data gaps and changes in recreation are necessary. Among the many opportunities to further our knowledge of the recreation resource, we offer several key areas for research:

Engage All Minnesotans in Outdoor Recreation - Identify how to engage Minnesotans of all ages and racial/ethnic backgrounds in outdoor recreation and conservation.

- Implement targeted environmental education programs and evaluate their effectiveness on long term nature appreciation, conservation behaviors and recreation engagement among different generational and racial/ethnic groups.
- Create panel studies to assess changes in recreation participation throughout people's life course and factors influencing the changes.

- Initiate or continue research on beliefs about and preferences for outdoor recreation experiences among emerging non-white population groups.
- Identify and emulate innovative engagement efforts to increase recreational participation.

Diversity Preferences - Assess preferences for and constraints to recreation among racially/ethnically diverse population segments and various generational groups.

- Inventory the type and intensity of constraints to recreation preference formation and participation by racial/ethnic group and implement programs that meet non-white population groups recreational preferences.
- Inventory the type and intensity of constraints to recreation preference formation and participation by generational groups and implement programs that address the constraints.
- Inventory existing facilities for ADA compliance.

Land Use Patterns - Assess how changing land use patterns affect demand for, and supply of, the recreation resource.

- Identify spatial and temporal changes in recreation patterns in relation to the supply of desirable recreation areas and the subsequent impacts on natural resources, community economies and the experience itself.

- Monitor changes in visitation to recreation areas and facilities in relationship to population density changes, as well as the available access.
- Examine policies that encourage land owners to maintain public access, regardless of parcel size and ownership and implement land owner incentives that maintain public access.

Degraded Resource and Reduction in Participation - Assess the limits of acceptable change in the natural recreation resources and facilities that support Minnesota's recreation system.

Physical and Mental Health - Measure physical and mental health benefits of outdoor recreation:

- Measure perceived and attained benefits of outdoor recreation at individual and community levels.
- Measure physiological changes, both on and offsite, associated with outdoor recreation in partnership with health related organizations.

Climate Change Implications - Research how the effects of climate change will affect recreation users and recreation providers in Minnesota, including:

- Changes in snow and ice conditions
- Changing water levels
- Change in land cover and water quality/quantity
- Higher summer temperatures/humidity
- Longer spring and fall seasons

“We need to plan for and offer recreational opportunities for a changing population (less campers, but more day trippers).”

—Campaign for Conservation survey participant