The 2011–2016 Wisconsin Statewide Comprehensive Outdoor Recreation Plan

SCORP

OUTDOOR RECREATION IN WISCONSIN



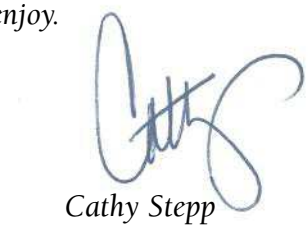
Wisconsin Department of Natural Resources

Dear Friends,

I am pleased to present Wisconsin's 2011-2016 Statewide Comprehensive Outdoor Recreation Plan (SCORP). This document will provide you with comprehensive, up-to-date information on the status of the Wisconsin's outdoor recreation that includes a discussion of outdoor recreation options. Unlike previous versions of this document, this SCORP focuses more on the needs of our population centers and available recreational opportunities as requested through the US Department's of the Interior's America's Great Outdoors initiative.

In Wisconsin, we can take pride in our strong and longtime tradition of public investment in protecting Wisconsin's special places and providing quality outdoor recreation opportunities. Wisconsin's public lands play an important role in the health and well-being of the people in Wisconsin and our visitors. Our quality of life and economy are directly tied to the well-being of the natural places in which so many Wisconsinites pursue their outdoor recreation passions. This document will help Wisconsin to successfully compete for available funds so that we can continue our efforts to provide quality outdoor recreation experiences and protect our much loved natural and cultural resources.

In closing, protecting Wisconsin's great outdoor spaces is a top priority for me—not only for our recreational enjoyment and the benefit of our tourism industry, but for the enjoyment of generations to come. Thank you to the numerous recreation providers, the general public, and recreation interest groups that participated in the creation of this plan for helping make Wisconsin a great place to live, work, and enjoy.



Cathy Stepp
Secretary
Department of Natural Recourses

SCORP

The 2011–2016 Wisconsin Statewide Comprehensive Outdoor Recreation Plan

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SCORP

PREPARED BY:

Wisconsin Department of Natural Resources
P.O. Box 7921, Madison, Wisconsin 53707-7921

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Primary Authors/Editors

Jeffrey Prey
David Marcouiller
Anna Haines

Contributors

Austin Outhavong
Daisy / Bui Chung
Kathleen Kiefaber
Taylar Foster

Students of the 2010 UW-Madison Graduate Planning Workshop (URPL 912) including Milena Bernardinello, Nicole Birringer, Josh Donaldson, Tyler Glodt, Collean Hoesly, Joe Klosterman, Amy Klusmeier, Rosa Kozub, Shang Kuei-Ching, Troy Maggied, Megan parsons, Dan Payette, Reese Railing, Adam Smith, Angela Tackaberry, Ben Vondra, Ben Wendt, and Seungmo Yang.

External Review Panel

Shelly Allness	*Wisconsin Department of Tourism*
Mike Carlson	*Gathering Waters Conservancy*
Steve Carlyon	*City of La Crosse*
Donald Field	*University of Wisconsin–Madison*
Eric Fowle	*East Central Regional Planning Commission*
Randy Harden	*Wisconsin State Trails Council*
Angie Tornes	*National Park Service: Rivers, Trails and Conservation Assistance Program*
Sarah Young	*City of Antigo*
Allen Youngwood	*Wisconsin Department of Transportation*

Assistance

Wisconsin Department of Natural Resources

Peter Biermeier
Lavane Hessler
Angela Jacobs
Sally Kefer
Elizabeth Kluesner
John Pohlman
Jeff Pritzl
Jean Romback-Bartels
Dan Schuller
Nicole Schulz
Mike Zeckmeister

University of Wisconsin–Stevens Point

Melissa Baker
Eric Olson

United States Forest Service

Fred Clark
Gary T. Green

Layout/Design

Nan Rudd – *Rudd Design*

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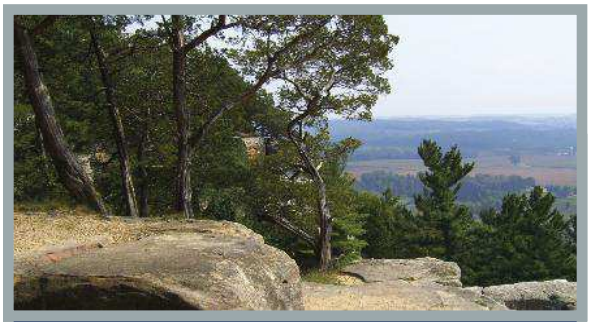
The 2011–2016 Wisconsin Statewide Comprehensive Outdoor Recreation Plan

EXECUTIVE SUMMARY

The 2011–2016 Wisconsin Statewide Comprehensive Outdoor Recreation Plan (SCORP) serves as a blueprint for state and local outdoor recreation planning through support of national initiatives, sets the course for recreation within the state by describing current recreation supply and trends, and provides a framework for future recreation development and focus.

Every five years, Wisconsin publishes a Statewide Comprehensive Outdoor Recreation Plan (SCORP) as required by the Federal Land and Water Conservation Fund (LWCF) Act of 1965. At its core, the document is used to help allocate federal funds equitably among local communities, but the document also transcends many levels of outdoor recreation discussion and policy. At the nation level, this SCORP recognizes the America's Great Outdoors (AGO) initiative is based on the idea that the protection of the country's natural heritage is a non-partisan objective shared by all Americans. The AGO encourages state and local communities to develop local, grassroots conservation and recreation initiatives. In keeping with the AGO's emphasis on local action, this SCORP presents Wisconsin's strategy of how state and local goals and actions can align with AGO initiatives.

This document shows a clear vision of how preserving and improving recreation opportunities in Wisconsin fits within a broader national initiative of conservation and recreation. This SCORP describes and quantifies some of the most important benefits of recreation, and establishes goals to improve outdoor recreation for Wisconsinites across the state. The SCORP further targets assessments on several key relationships that include public health and wellness, urban access to outdoor recreation, and public and private partnerships.



Preserving and improving natural spaces in Wisconsin fits within a broader initiative of conservation at the national level.

Public Health and Wellness

Access to outdoor recreation is an important predictor of community health and wellness. Parks, trails, and sports facilities provide convenient, safe, and attractive spaces for people to get outside. Time spent outdoors is associated with a number of important health factors, including improved mental health, more connected communities, and more active citizens. In particular, there is increasing evidence that improving access to outdoor recreation can lower obesity levels.

To assess the health benefits currently provided by Wisconsin's outdoor recreation, rankings of existing recreation types by relative physical exertion levels are examined. This work establishes a clear relationship between outdoor recreation activities and health and wellness benefits specific to Wisconsinites. Using this data, this SCORP identifies those recreation facility types that provide the greatest public health benefits. This information can be used to make recommendations regarding future recreation facilities to better optimize public health and wellness across the state.

This SCORP encourages more active outdoor recreation, and presents a series of goals and actions to help state, county, and local governments plan for facilities that will provide the greatest health benefit to their populations.

Urban Access to Outdoor Recreation

Accessibility to outdoor recreation has been shown to increase health benefits and physical wellness for local citizens, especially in urban environments. Populations in rural counties are diminishing, while populations in metropolitan areas are growing rapidly, resulting in increased urbanization of Wisconsin. The benefits and significance of urban parks—improved health, community ties, and economy—are therefore increasingly important.

For insight into park planning for urban areas, this SCORP considers various urban recreation barriers and their solutions, and analyzes peer-to-peer statistics for urban recreation in Wisconsin municipalities, small to

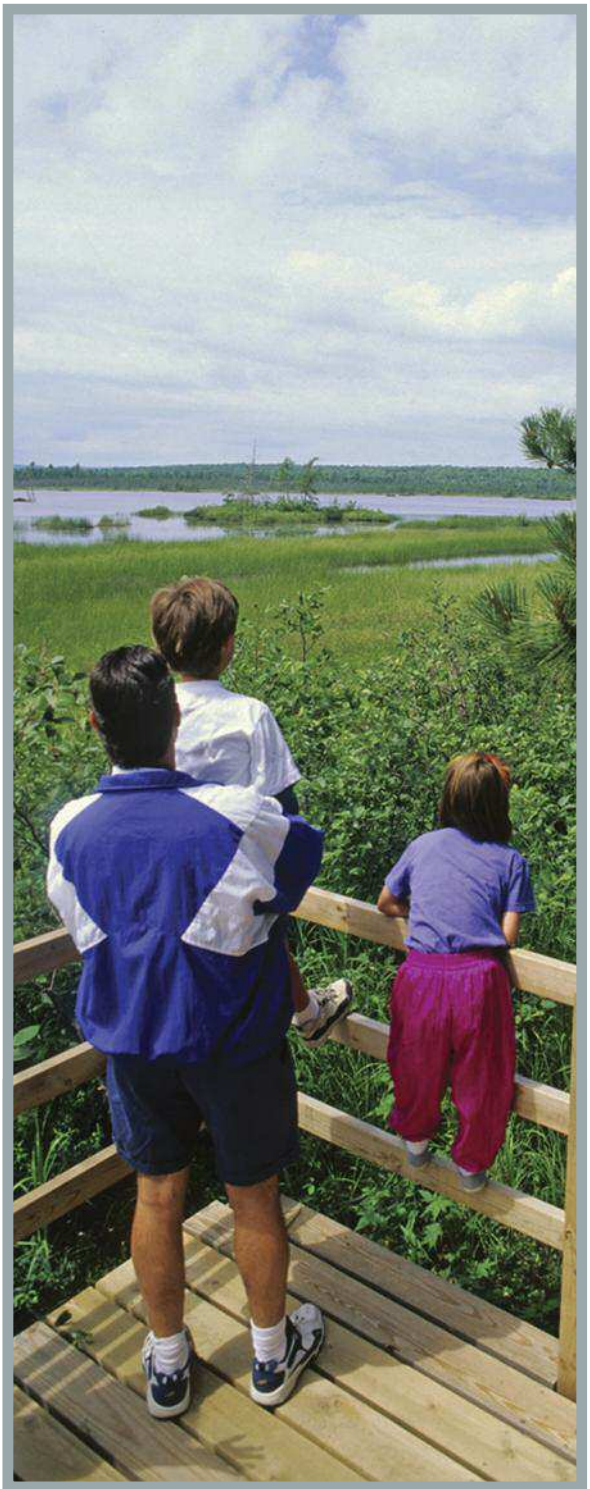
large. This data provides specific information on where Wisconsin can improve on recreation facilities, and which areas need additional focus on developing increased urban recreation.

Public and Private Partnerships

High quality and accessible outdoor recreation builds healthy communities, provides numerous health benefits to citizens, and allows Wisconsinites to enjoy the state's many natural resources. Providing access to outdoor recreation, however, is often a challenge. Conservation and recreation development need a web of community and government support. This SCORP therefore highlights the importance of inter-governmental relationships and private organizations to provide high quality outdoor recreation to the citizens of Wisconsin.

Wisconsin depends on a mixture of publicly and privately owned lands in the overall recreation landscape of the state. Preservation and development of recreational land is at the core of discussion between stakeholders and recreation groups from across the state. Partnerships and collaborations between federal, state, and local agencies, user groups, non-profit organizations, and others are seen as critical to success in open space protection and management. This SCORP presents findings from four focus groups that address the challenges and benefits to outdoor recreation, as well as how to facilitate increased access.

The State of Wisconsin demonstrates strong dedication to the health and well-being of its population by providing accessible public recreation statewide. Wisconsin is also committed to creating strong public and private partnerships that foster recreation development and opportunities for its citizens. This SCORP presents a clear vision of how preserving and improving natural spaces in Wisconsin fits within the broader initiative of outdoor conservation on a national level.



Wisconsin is committed to creating strong public and private partnerships that foster recreation development and opportunities for its citizens.

CHAPTER 1



Introduction

Every five years, Wisconsin publishes a Statewide Comprehensive Outdoor Recreation Plan (SCORP) to serve as a blueprint for state and local outdoor recreation planning as required by the Federal Land and Water Conservation Fund (LWCF) Act of 1965. For the 2011–2016 Wisconsin SCORP, the State not only met the requirements of the LWCF Act but also reflected on the America's Great Outdoors (AGO) Initiative, launched in 2010 by President Obama, for an approach that asks the American people to become partners in preserving and enhancing their conservation and recreation heritage for the 21st-century. This SCORP is presented out of the respect to the state's great outdoor recreation resources and their value to the people of Wisconsin.

Land and Water Conservation Fund (LWCF)

The 2011-2016 Wisconsin SCORP was prepared in accordance with the Federal LWCF Act for the eligibility of LWCF acquisition and development assistance, administered by the Wisconsin Department of Natural Resources (DNR) as authorized by the Governor. The LWCF Program is a vital source of voluntary grants for state and local outdoor recreation projects. In order to distribute dollars equitably among local communities, a project rating system, the Open Project Selection Process, has been developed to consider a variety of pertinent factors. Each application is rated based on this system and the highest-ranking submissions are awarded LWCF funding. This SCORP continues to meet LWCF eligibility with the following components:

- Description of the process and methodology(s) chosen to meet LWCF guidelines
- Generous public participation in the planning process
- Comprehensive identification of outdoor recreation issues
- Comprehensive evaluation of outdoor recreation supply and demand
- Implementation program with strategies, priorities, and actions to serve as detailed project selection criteria for LWCF funding
- Wetlands priority component

Fifteen combined federal and state outdoor recreation funding programs require projects applying for funds to use the SCORP's implementation program (see Appendix A for a complete list of programs).

America's Great Outdoors (AGO) Initiative

The AGO Initiative is established in recognition of the importance of conservation to the American people, and it calls for greater federal support to grassroots conservation efforts through financial and technical assistance. Direction for the AGO Initiative was taken from the American people through 51 public listening sessions held across the country as well as 105,000 submitted comments. The consensus was clear: America's outdoor spaces are essential to our quality of life, economy, and national identity. Nature reduces stress and anxiety, promotes learning and personal growth, and fosters mental and physical health.

Through this public engagement, three major visions emerged. The first vision promotes a reconnection and enhancement of relationships between the American people and vast outdoor recreation opportunities. The second AGO vision seeks to ensure availability of quality outdoor recreation to the American public through open space conservation and restoration, especially by funding the Land and Water Conservation Act. Finally, the AGO vows to become a more effective conservation partner by fostering cooperation and collaboration between federal, state, and local governments, and AGO partnerships.

To meet such challenges, a new vision for conservation in the 21st-century is needed. The American people and federal, state, local, and tribal governments must collectively work together to preserve and promote America's great outdoors and its benefits. The AGO Report, released February 2011, outlines goals and actions to be accomplished by such partnerships. For the 2011-2016 Wisconsin SCORP, Wisconsin charges forward with dynamic recreation planning that keeps in mind the actions of the AGO Report.

Description of Plan

A recommendation from the AGO report (Action item 5.3) calls for developing new guidelines and criteria for SCORPS that focus a portion of LWCF funding on urban parks and community green spaces, landscape-scale conservation and recreational blueways, in addition to outdoor recreation. Figure 1-1 illustrates how multiple approaches of the 2011-2016 Wisconsin SCORP align with these visions and recommendations.

Public Participation Process

Public participation has been an extensive component of this planning process. An External Review Panel comprised of nine members participated in several phases of the planning process. Members, representing a broad range of recreational providers and experts, contributed their expertise to initiatives such as identifying and prioritizing significant statewide outdoor recreation issues and determining possible solutions. In addition to this, seven focus groups were held across the State that represented a broad spectrum of recreation and conservation interests.

Figure 1-1: **Outline of Wisconsin SCORP Alignment with AGO Visions**

Discussions were also held the Governor's Bicycle and State Trails Council's on recreation issues.

The draft plan underwent a 30-day public review period in which 32 written responses were received. All responses were in support of the plan with the largest amount of comments associated with the lack of a specific recreation resource such as equestrian trails or water trail campsites. Other comments included the support of public/private partnerships, a more refined state focus upon popular recreation activities such as camping and biking and the need for better targeting of local park and recreation needs. The sum of these many and varied responses begins to indicate the complexity and challenge of providing high quality outdoor recreation or the numerous user groups who rely on Wisconsin lands and waters.

In detail, this plan consists of six chapters and seven appendices, which are summarized below.

Chapter 2 analyzes the demand for outdoor recreation activities by popularity and by setting. Further, this chapter reviews the effect of migration and urban population growth on outdoor recreation and its access.

Chapter 3 looks at the inclusion of health and wellness in outdoor recreation planning. The effect of outdoor recreation access on health determinants is examined, as are the participation rates in outdoor recreation activities that yield the greatest health benefits. The push to consider public health in planning is relatively new to SCORPs, and the 2011-2016 Wisconsin SCORP sets itself apart with this challenging chapter.

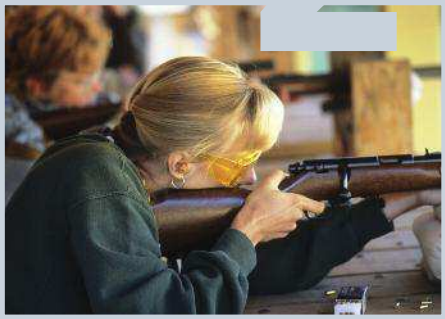
Chapter 4 explores the current offerings of urban recreation across municipalities in Wisconsin when compared to similar peers. Focus groups discussed barriers to urban recreation and identified potential solutions to meet modern needs in urban recreation by addressing such factors as demographics, safety, and aesthetics.

Chapter 5 examines the public and private holders of recreation land throughout Wisconsin and the programs that encourage conservation and acquisition of public land and protection and public access of private land. Extensive findings from focus groups of stakeholders are presented, including successes, challenges, and big ideas for open land conservation.

Chapter 6 describes seven goals, each with a list of actions, designed to encourage the connection of Wisconsin's residents to the great outdoors within their state. The goals and actions presented in this chapter were developed with the input of DNR groups, the SCORP External Review Panel, and the citizens of Wisconsin.

CHAPTER 2

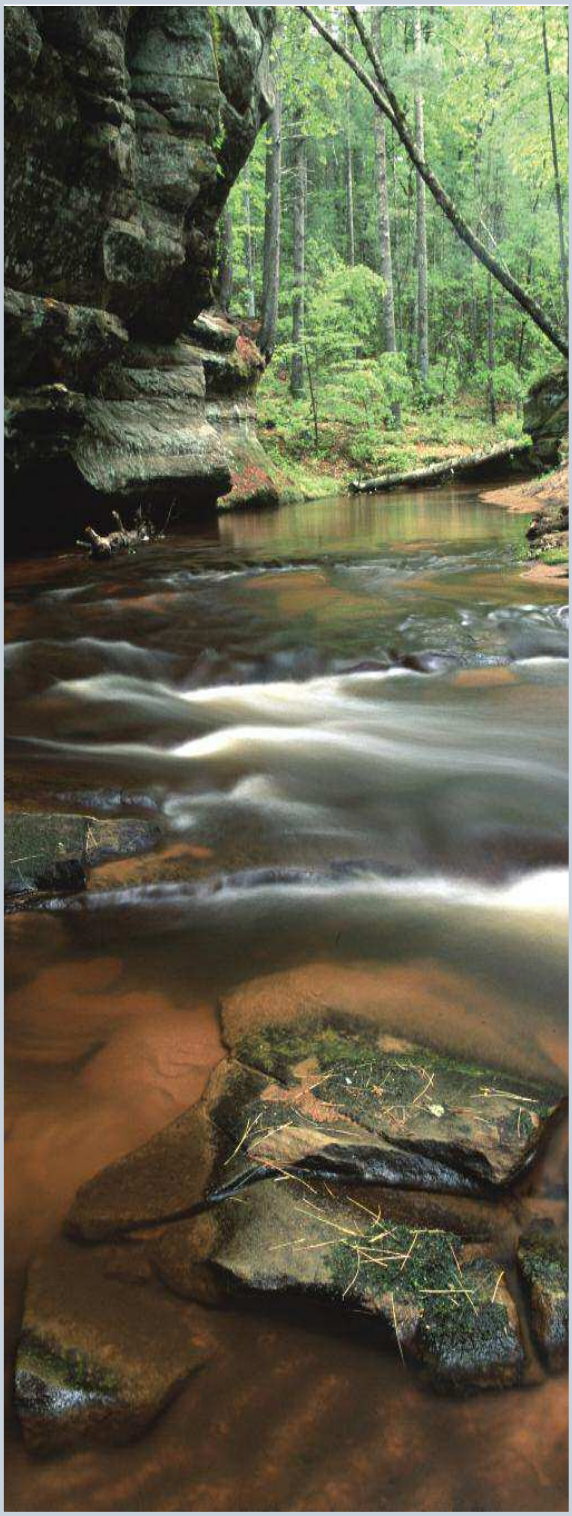




Wisconsin Outdoor Recreation Uses and Trends

As the America's Great Outdoors (AGO) Initiative looks to reconnect Americans to the outdoors, Wisconsin must examine its outdoor recreation uses and trends to better understand how Wisconsinites currently connect to the state's outdoor recreation resources. The second theme of the AGO Report, "Enhance Recreational Access and Opportunities," was developed out of the public's desire to remove barriers to recreation and to make recreation a higher priority for land and water management agencies. The survey analyses in this chapter can be used to determine what improvements are needed in regard to access and opportunities in outdoor recreation.

By identifying outdoor recreation demand by demographics and by projecting outdoor recreation activity trends relevant to the immediate future, Chapter 2 of the SCORP gives Wisconsin communities direction in outdoor recreation planning. Under AGO, community-based efforts to increase outdoor recreation access will receive federal government support (AGO Recommendation 2.2). Such support will include technical assistance for local, state, and tribal efforts to enhance recreation (AGO Action Item 2.2a), and backing of community programs that improve safety of open spaces and access routes (AGO Action Item 2.2c).



The challenge for recreation providers is to understand the ever-changing needs of the outdoor recreation public.

Overview

Over 87% of Wisconsinites enjoy some form of outdoor recreation. This staggeringly high number reflects a state that is passionate about outdoor recreation and the traditions that go with it. Outdoor recreation happens over a variety of landscapes—whether in a duck blind along the Mississippi River or bicycling on a paved trail in Milwaukee, Wisconsin provides high quality outdoor recreation experiences for a diverse population. The challenge for recreation providers is to understand the ever-changing needs of the outdoor recreation public.

This chapter explores several of the factors that influence a person's recreation preferences—recreation settings, recreation experiences, and geographic locations—and classifies recreational activities and users according to these groupings. By dividing recreational activities into standard categories, this chapter seeks to explain recreation preferences within Wisconsin.

Recreation demand survey results for this SCORP are primarily based on the 2005–2009 National Survey on Recreation and the Environment (NSRE). The NSRE's Wisconsin data is based on 718 survey responses across five versions.

Participation in Outdoor Recreation

Wisconsinites are active participants in most forms of outdoor recreation, and recreation participation rates within Wisconsin are higher than most other regions of the country. This high level of participation may be attributed to the combination of Wisconsin's abundant recreation resources as well as the state's four season climate, which provides unique recreational opportunities year-round. Table 2-1 lists the 72 outdoor recreation activities surveyed for this SCORP. DNR identified these activities by following state and nationally recognized outdoor recreation demand survey methodology as detailed in Appendix B.

Table 2-1: **Wisconsin Outdoor Recreation Participants by Participation Rate (Age 16+), 5-year view**

Activity	2005–2009 Participation	
	Percent Participating	Number of Participants (1,000s)
Walk for pleasure	87.7	3,947
Gardening or landscaping for pleasure	65.4	2,944
View/photograph natural scenery	65.3	2,939
Attend outdoor sports events	65.0	2,926
Family gathering	63.5	2,858
Visit nature centers, etc.	63.5	2,858
View/photograph other wildlife	57.9	2,606
Driving for pleasure	52.8	2,377
View/photograph wildflowers, trees, etc.	52.4	2,359
Sightseeing	50.6	2,278
Bicycling	48.7	2,192
Boating (any type)	47.3	2,129
Picnicking	47.0	2,115
Visit historic sites	46.7	2,102
Snow/ice activities (any type)	45.9	2,066
Yard games, e.g., horseshoes	44.7	2,012
Gather mushrooms, berries, etc.	42.8	1,926
Visit a beach	42.3	1,904
Golf	41.8	1,881
Swimming in lakes, streams, etc.	41.7	1,877
View/photograph birds	41.7	1,877
Freshwater fishing	37.4	1,683
Day hiking	36.7	1,652
Motorboating	36.0	1,620
Visit a farm or agricultural setting	35.3	1,589
Swimming in an outdoor pool	34.5	1,553
Visit a wilderness or primitive area	33.7	1,517
Warmwater fishing	33.2	1,494
Attend outdoor concerts, plays, etc.	32.8	1,476
Soccer outdoors	32.3	1,460
Running or jogging	32.1	1,445
Mountain biking	30.7	1,382
Sledding	28.2	1,269
View/photograph fish	26.7	1,202
Developed camping	25.4	1,143
Handball or racquetball outdoors	23.5	1,058
Visit other waterside (besides beach)	22.6	1,017
Hunting (any type)	22.2	999

Activity	2005–2009 Participation	
	Percent Participating	Number of Participants (1,000s)
Off-highway vehicle driving	19.8	891
Trail running	18.6	773
Snowmobiling	18.3	824
Big game hunting	18.0	810
Canoeing	17.9	806
Visit prehistoric/archeological sites	15.5	698
Boat tours or excursions	13.9	626
Ice skating outdoors	13.5	608
Ice fishing	13.1	590
Waterskiing	13.0	585
Coldwater fishing	12.8	576
Primitive camping	11.4	513
Small game hunting	11.3	509
Rafting	9.2	414
Cross country skiing	8.8	396
Horseback riding (any type)	8.7	392
Tennis outdoors	8.5	383
Backpacking	7.4	333
Kayaking	7.3	329
Rowing	7.2	324
Downhill skiing	7.0	315
Horseback riding on trails	6.6	297
Use personal watercraft	6.5	293
Snorkeling	6.2	279
Snowshoeing	6.1	275
Migratory bird hunting	4.1	185
Sailing	3.9	176
Rock climbing	3.8	171
Snowboarding	3.7	167
Mountain climbing	2.7	122
Caving	2.6	117
Inline skating	2.5	113
Orienteering	1.6	72
Scuba diving	1.1	50
Windsurfing	1.1	50
Surfing	1.0	45

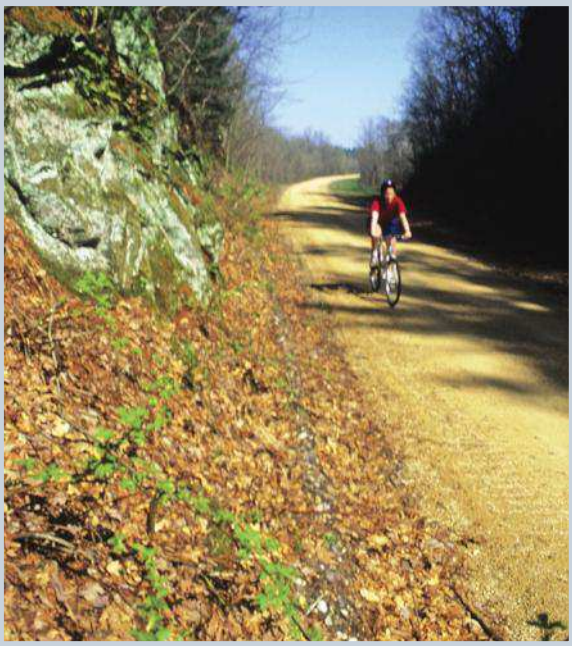
See the 2005–2010 Wisconsin SCORP for additional detail on residents' participation in outdoor recreation.

Wisconsin Outdoor Recreation Setting Segmentation

While the above rankings are useful in determining which outdoor recreation activities are popular among Wisconsinites, it is also useful to understand what causes an activity to be popular. One method of examining outdoor recreation participation is by recreation setting, or the environment in which people recreate. For the purpose of this plan, the NSRE activities were divided into five groupings describing different activity and setting trends. These groupings, listed below, suggest that people in different recreation setting segments seek different kinds of experiences from outdoor recreation. By understanding recreation use in terms of these segments, we may begin to see how individual recreation activities fit within a broader spectrum of recreation settings.

Segmentation of Wisconsin Outdoor Recreation Activities:

1. Developed Land
2. Limited Development
3. Water
4. Winter
5. Viewing and Interpretive



Bicycling is a very popular activity in Wisconsin.

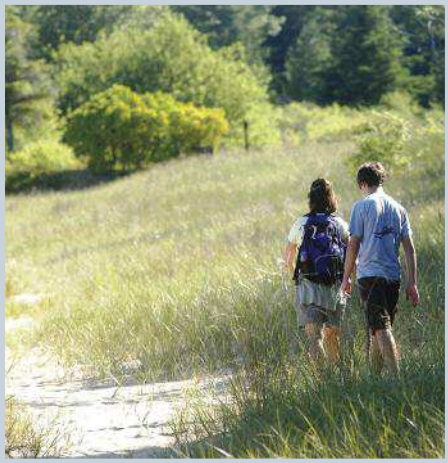
Developed Land Activities

Outdoor recreation in developed settings includes a wide mix of recreational activities, all of which use some form of manmade development (such as roads or sidewalks) or involve a high level of social interaction. Developed land setting outdoor recreation is by far the most popular form of recreation in Wisconsin; more Wisconsin residents participate in two developed land recreation activities—walking for pleasure (87.7% participating) and gardening/landscaping for pleasure (65.4% participating)—than any other activities. Family gathering and bicycling are other popular activities in this category. Table 2-2 lists the percentage of Wisconsin residents participating in several popular developed land activities.

Table 2-2: **Percent Wisconsin Residents Participating in Developed Land Activities (Age 16+)**

Activity	Percent Participating	Estimated Number of Participants (1,000s)
Walk for pleasure	87.7	3,947
Gardening or landscaping for pleasure	65.4	2,944
Attend outdoor sports events	65.0	2,926
Family gathering	63.5	2,858
Driving for pleasure	52.8	2,377
Bicycling	48.7	2,192
Picnicking	47.0	2,115
Yard games, e.g., horseshoes	44.7	2,012
Golf	41.8	1,881
Soccer outdoors	32.3	1,460
Running or jogging	32.1	1,445
Developed camping	25.4	1,143
Handball or racquetball outdoors	23.5	1,058
Horseback riding (any type)	8.7	392
Tennis outdoors	8.5	383
Horseback riding on trails	6.6	297
Inline skating	2.5	113

See the 2005–2010 Wisconsin SCORP for additional detail on residents' participation in outdoor recreation.



Parks, Trails, and Pedestrians in Wisconsin

Public parks and trails are essential components of Wisconsin's outdoor recreation infrastructure. Aside from other benefits, parks and trails serve as the setting for many of the state's most popular outdoor activities. Walking is by far the most popular outdoor activity in Wisconsin. While much of recreational walking takes place on neighborhood sidewalks, the presence of parks and trails plays a significant role in activities like walking. Research has linked the presence of parks, trails, enjoyable scenery, and other people exercising to increased physical activity.

	2005-2009 Participation	
Activity	Percent Participating	Number of Participants (1,000s)
Walk for pleasure	87.7	3,947
Bicycling	48.7	2,192

While the presence of public parks and trails are essential to outdoor activities, the connectivity of surrounding communities to these recreational opportunities is also important. For example, a park connected to a local bike trail or located just a short walk down the street may see higher usage frequency from nearby neighborhoods as compared to one far and remote. Public parks and trails with coherent pedestrian connectivity, such as through popular activities of walking or biking, to adjacent communities can increase residents' accessibility to outdoor recreation.

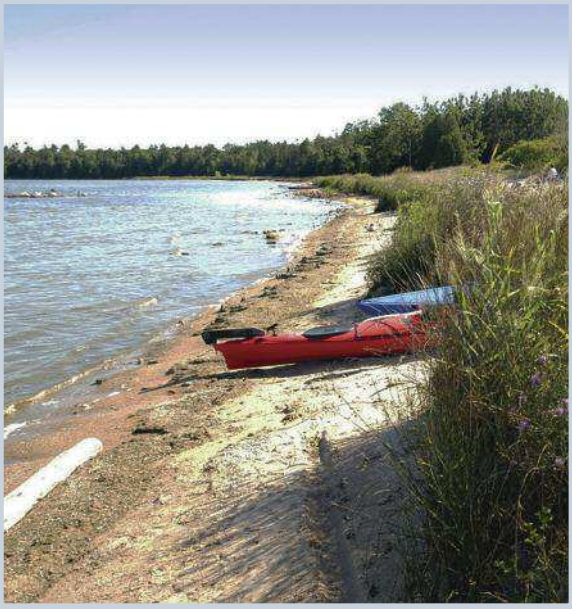
In 2011, a study assessed the pedestrian accessibility of Wisconsin's parks and trails. This network analysis considered where people live, where parks and trails are located, and how parks and trails are connected by public sidewalks. This led to a county-by-county estimation of how many residents live within a ½-mile walk of a park or trail.The results indicate that over 70% of Wisconsin residents do not live within a ½-mile walk of a public park or trail. The assessment also revealed wide variation in park walkability across the state. For example, more that 50% of all residents in Dane, Milwaukee, and Rock counties live within a ½-mile of a park or trail. Meanwhile, in 31 other counties, less than 5% of residents have that level of pedestrian access.

Limited Development Activities

Wisconsin offers many outdoor recreation activities in undeveloped, or primitive, sites. Generally, these activities involve hiking, camping, or some form of hunting. Over 1/3 of Wisconsinites participate in day hiking. One in five participate in some form of hunting. While limited development facilities may be used in conjunction with these activities, the typical nature-based land activity participant wants to experience natural surroundings.

Water Activities

Water-based outdoor activities are among the most popular recreation activities in Wisconsin. Abundant water resources across the state offer a wide variety of recreation options from high speed motorboating to lazy lounging at the beach. Just under half of Wisconsin residents participate in boating, visiting a beach, or swimming in a lake or stream. The lakes and rivers of northwestern Wisconsin provide ample opportunities for water-based recreation. The Lake Michigan and the Mississippi River regions, both of which provide many miles of shoreline for water-based participants, are also popular areas for water recreation.



Abundant water resources across the state offer a wide variety of recreation options.

Table 2-3: **Percent Wisconsin Residents Participating in Limited Development Activities (Age 16+)**

Activity	Percent Participating	Estimated Number of Participants (1,000s)
Day hiking	36.7	1,652
Visit a wilderness or primitive area	33.7	1,517
Mountain biking	30.7	1,382
Hunting (any type)	22.2	999
Big game hunting	18.0	810
Small game hunting	11.3	509
Primitive camping	11.4	513
Migratory bird hunting	4.1	185
Backpacking	7.4	333
Rock climbing	3.8	171
Mountain climbing	2.7	122
Caving	2.6	117
Orienteering	1.6	72

See the 2005–2010 Wisconsin SCORP for additional detail on residents' participation in outdoor recreation.

Table 2-4: **Percent Wisconsin Residents Participating in Water Activities (Age 16+)**

Activity	Percent Participating	Estimated Number of Participants (1,000s)
Boating (any type)	47.3	2,129
Visit a beach	42.3	1,904
Swimming in lakes, streams, etc.	41.7	1,877
Freshwater fishing	37.4	1,683
Motorboating	36.0	1,620
Swimming in an outdoor pool	34.5	1,553
Warmwater fishing	33.2	1,494
Visit other waterside (besides beach)	22.6	1,017
Canoeing	17.9	806
Waterskiing	13.0	585
Coldwater fishing	12.8	576
Rafting	9.2	414
Kayaking	7.3	329
Rowing	7.2	324
Use personal watercraft	6.5	293
Snorkeling	6.2	279
Sailing	3.9	176
Scuba diving	1.1	50
Windsurfing	1.1	50
Surfing	1.0	45

See the 2005–2010 Wisconsin SCORP for additional detail on residents' participation in outdoor recreation.

Winter Activities

Snow- and ice-based activities are those that involve some form of frozen water. These activities are very popular among Wisconsinites with just over 45% of residents participating in some form of snow or ice activity. Sledding is the most popular of these activities, with just over a quarter (28.2%) of the state participating. Ice-related activities are also very popular in the state, with 608,000 Wisconsinites participating in ice skating and 590,000 participating in ice fishing.

Viewing and Interpretive Activities

Statewide, the most popular viewing and interpretive activity is viewing or photographing natural scenery, an activity in which over 65% of Wisconsinites participate. The second most popular viewing and interpretive activity is attending outdoor sporting events, with 65% of residents participating. Over half of all state residents have gone sightseeing within the last year, while just under half have visited historic sites. Physical activity is not generally a primary component of these activities, although it is often a complementary component. In general, rates of participation in viewing and interpretive activities are higher in Wisconsin than they are in other states. This may be a reflection of Wisconsin's strong educational system and history of environmental awareness.

Wisconsin Recreational Trends and Observations

As society grows and changes, so too does the recreational landscape. Changes in demographics, the economy, user preferences, and availability of recreation venues all influence the demand for different recreational activities. As part of the NSRE survey work, Wisconsin recreational activities have been tracked over the last 15 years. By far the biggest change in Wisconsin has been the migration of rural populations to urban centers, which is reflected in increased demand for urban-based recreational activities.

Demographics

Demographics play an important role in the popularity of outdoor recreation activities. From the years 2000 to 2010, the 2010 Census showed that Wisconsin's population grew 6%, which is well below the national average of 9.7%. The state fared better than four of the other six states in the Midwest region, trailing only Minnesota and Indiana in population growth. However, 2010 census data shows that rural counties in northern Wisconsin continued to lose population to urban areas in the past decade, while counties adjacent to major metro areas grew in population.

Table 2-5: **Percent Wisconsin Residents Participating in Snow- and Ice-Based Activities (Age 16+)**

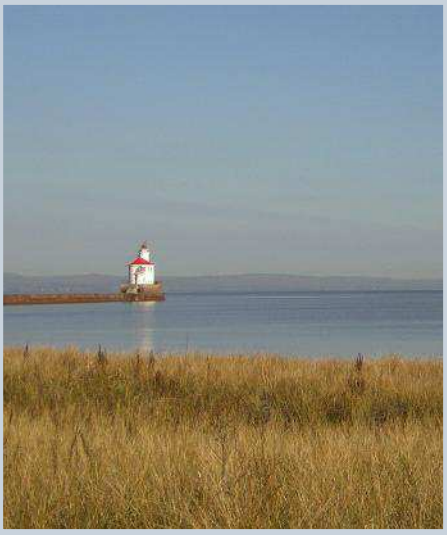
Activity	Percent Participating	Estimated Number of Participants (1,000s)
Snow/ice activities (any type)	45.9	2,066
Sledding	28.2	1,269
Snowmobiling	18.3	824
Ice skating outdoors	13.5	608
Ice fishing	13.1	590
Cross-country skiing	8.8	396
Downhill skiing	7.0	315
Snowshoeing	6.1	275
Snowboarding	3.7	167

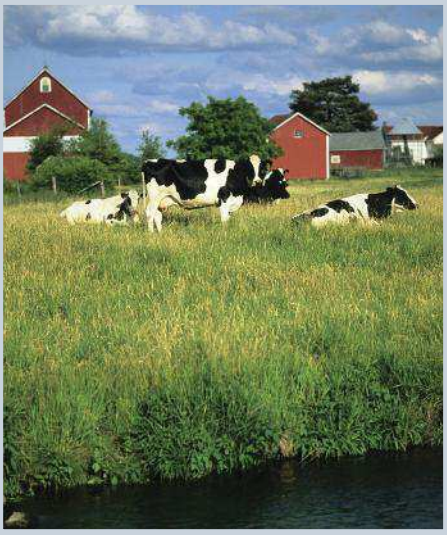
See the 2005–2010 Wisconsin SCORP for additional detail on residents' participation in outdoor recreation.

Table 2-6: **Percent Wisconsin Residents Participating in Viewing and Interpretive Activities (Age 16+)**

Activity	Percent Participating	Estimated Number of Participants (1,000s)
View/photograph natural scenery	65.3	2,939
Attend outdoor sports events	65.0	2,926
Visit nature centers, etc.	63.5	2,858
View/photograph other wildlife	57.9	2,606
View/photograph wildflowers, trees, etc.	52.4	2,359
Sightseeing	50.6	2,278
Visit historic sites	46.7	2,102
Gather mushrooms, berries, etc.	42.8	1,926
View/photograph birds	41.7	1,877
Visit a farm or agricultural setting	35.3	1,589
Attend outdoor concerts, plays, etc.	32.8	1,476
View/photograph fish	26.7	1,202
Visit prehistoric/archeological sites	15.5	698
Boat tours or excursions	13.9	626

See the 2005–2010 Wisconsin SCORP for additional detail on residents' participation in outdoor recreation.





Rustic Roads, Byways, and Circle Tours

One relaxed way to enjoy the beauty of Wisconsin is to travel its rustic roads and byways. Wisconsin is the only state with a rustic road program, which was established in 1973. By 2011, 111 rustic roads totaling 639 miles now cut across 58 counties. These selectively preserved areas allow travelers to journey back in time through miles of charming and quaint paths that uniquely set them apart from other roads in the area. Rustic roads offer access to scenic resting points and connect scenes from Wisconsin's past, from lighthouses to Amish farms. As the only nationally designated scenic byway in the State, the Great River Road runs through 33 river towns while showcasing some of the oldest communities in Wisconsin. Other Wisconsin byways allow visitors to witness the beauty of our state through vantage points along lakes, rivers, bluffs, valleys, and swamps, all with various animal and plant life. With spans of 15 to 250 miles, byways offer historic and seasonal scenery through lakes, rivers, and national forests, all in flexible driving tours of 2 to 10 hours.

Wisconsin motorists can also enjoy highway expeditions around both Lake Michigan and Lake Superior via their respective circle tours. The Wisconsin portion of the Lake Michigan Circle Tour (LMCT) is 325 miles in length, and it extends along the entire eastern shore of Wisconsin. The Lake Superior Circle Tour (LSCT) on the northernmost shore of Wisconsin is 144 miles long, complete with optional passage through Big Bay State Park and Apostle Islands National Lakeshore. Both circle tours provide views of scenic waterfalls and miles of shoreline beaches, as well as numerous boating, camping, and fishing opportunities.

Table 2-7: **Top Growth Wisconsin Recreation Activities 1994–2009 (Age 16+)**

Recreation Use	Survey of 1994* (1,000s)	Survey of 2009* (1,000s)	Difference (1,000s)
Soccer outdoors	179.1	1,460.0	+ 1,280.9
View/photograph other wildlife	1,582.9	2,605.8	+ 1,022.9
Golf	888.8	1,882.3	+ 993.5
Handball or racquetball outdoors	96.8	1,058.3	+ 961.5
Walk for pleasure	2,988.0	3,946.9	+ 950.9
Attend outdoor sports events	1,995.2	2,923.5	+ 928.3
Bicycling	1,486.8	2,190..8	+ 704.0
Day hiking	949.0	1,652.8	+ 703.8
Running or jogging	803.8	1,446.8	+ 643.0
View/photograph birds	1,261.4	1,877.5	+ 616.1

*Each survey represents a rolling average of five previous years.

Table 2-8: **Top Growth Wisconsin Recreation Activities by Percent 1994–2009 (Age 16+)**

Recreation Use	Survey of 1994* (1,000s)	Survey of 2009* (1,000s)	Percent Difference
Handball or racquetball outdoors	96.8	1,058.3	+ 993.3%
Soccer outdoors	179.1	1,460.0	+ 715.2%
Kayaking	46.6	328.4	+ 604.7%
Surfing	10.3	44.5	+ 332%
Football	282.5	852.4	+ 201.7%
Horseback riding	139.3	389.9	+ 179.9%
Mountain/rock climbing	53.3	122.9	+ 130.6%
Use personal watercraft	131.9	293.7	+ 122.7%
Golf	888.8	1,882.3	+ 111.8%
Snowboarding	77.7	164.4	+ 111.6%

*Each survey represents a rolling average of five previous years.

A number of recreation activities have seen exponential growth over the last 15 years. In terms of sheer numbers, soccer has outpaced every other outdoor recreation activity.

From the years 2000 to 2010, nineteen Wisconsin rural counties lost population during this decade—experiencing more deaths than births that are part of a larger pattern of rural population loss across the Midwest. The 2010 census shows a shift from the 1990s, when only Milwaukee County experienced population loss. The population decline was mostly in the northern parts of the state, with Iron (down 14%), Florence (down 13%), and Price (down 11%) in the top three. The reasons for migration of younger people moving out of more rural areas are multifaceted that include job and educational opportunities, and a desire for diversity and cultural amenities (Applied Population Laboratory 2011). In stark contrast, just two Wisconsin counties lost population in the 1990s. A factor in this increased rural population loss is the recession that started in 2008, which pulled people away from rural areas and toward metro areas.

Wisconsin counties across the state line from the Chicago and Minneapolis metropolitan areas saw rapid population growth since the year 2000. St. Croix County, which lies within commuting range of Minneapolis and St. Paul, was the fastest-growing county in the state, increasing in population by more than 33% since 2000. Kenosha County, across the border from Chicago, grew 11.3% during the same period.

The state's Hispanic population has grown 74.2% since the year 2000. Hispanics now account for 5.9% of the state's population. Blacks remain the largest state minority group at 6.3%.

Fifteen Year Recreation Trends

A number of recreation activities have seen exponential growth over the last 15 years. In terms of sheer numbers, soccer has outpaced every other outdoor recreation activity. This growth can be attributed to the number of youth soccer leagues that have been formed over the last decade. Table 2-7 shows the top 10 recreational activities by total numbers.

Another way to show growth is by percentage change. This method shows a different set of recreation activities that have grown in popularity. Interestingly, most participants in these activities are urban residents. Table 2-8 reflects the top 10 recreational activities by total percentage change.

Table 2-9 considers the percentage changes in recreation participation rates, as well as industry forecasts and opinions from recreation professionals, to suggest which activities will be popular in the future. These observations are made for a five year period, and therefore reflect the most pressing demands on recreation in the immediate future.

Table 2-9: **Projected Trends in Wisconsin Outdoor Recreation Activities**

Increasing Demand ▲	Adventure racing	Popular as both an individual and a group activity.
	Driving for pleasure	An easy activity for the aging baby boomer generation.
	Developed/RV camping	Baby boomers are a continued driving force for this growth.
	Kayaking	Cheaper entry points have attracted more participants.
	Visit a dog park	Urban residents continue to demand more of these areas.
	Soccer outdoors	Youth growth is still strong in urban areas.
	BMX biking	X Games popularity may be driving this growth.
	Climbing	Indoor climbing walls have led to an outdoor resurgence.
	Stand up paddling/paddleboarding	A fast growing water sport sweeping the country.
	Triathlon (on- and off-road)	Varying distance events have allowed for growth.
	Off-highway vehicle driving	Post recession growth continues.
	Gardening or landscaping for pleasure	The "grow local" concept is taking hold at many levels.
Stable Demand —	Walk for pleasure	Market saturation does not allow for large growth.
	Running or jogging	Gen Y is replacing the baby boomers for this activity.
	Water parks	Recession may have caused this growth to slow.
	Motorboating	Still easy access in a water-based state.
	Day hiking	Popular with many generations.
	Golf	Time constraints do not allow for growth.
	Tent camping	Continues to be stable, but growth is illusive.
	Snowboarding	May have peaked after 20 years of growth.
	Trail running	A stable niche activity with Gen Y.
	View/photograph wildlife	An easy activity that spans generations.
	Bicycling (road and non-paved)	Popular with many generations – access is still key.
	Snowshoeing	After large growth, this has stabilized.
Decreasing Demand ▼	Hunting	Continues to struggle with generational loss and private access.
	Inline skating	A large decrease in the last six years, the bottom may be near.
	Skateboarding/skate parks	Gen M is free-skating with longboards.
	Horseback riding on trails	Recession impacts have caused this to decrease with no rebound.
	Softball	Baby boomers continue to leave this sport.
	Downhill skiing	Gen Y does not have the numbers to replace aging baby boomers.

Summary

As society continues to change and evolve, so too does outdoor recreation participation. Recreation participation reflects many elements: recreation preferences, the diversity of the Wisconsin population, the variety of recreation landscapes available throughout the state, and the increasing barriers placed upon the average recreationalist. Taken as a whole, these factors contribute to a diverse range of recreational activity preferences and demands throughout the state. As recreation providers attempt to accommodate these various needs, proactive planning will become increasingly important to ensure that recreation in Wisconsin remains accessible and adaptable to the needs of the state's population.

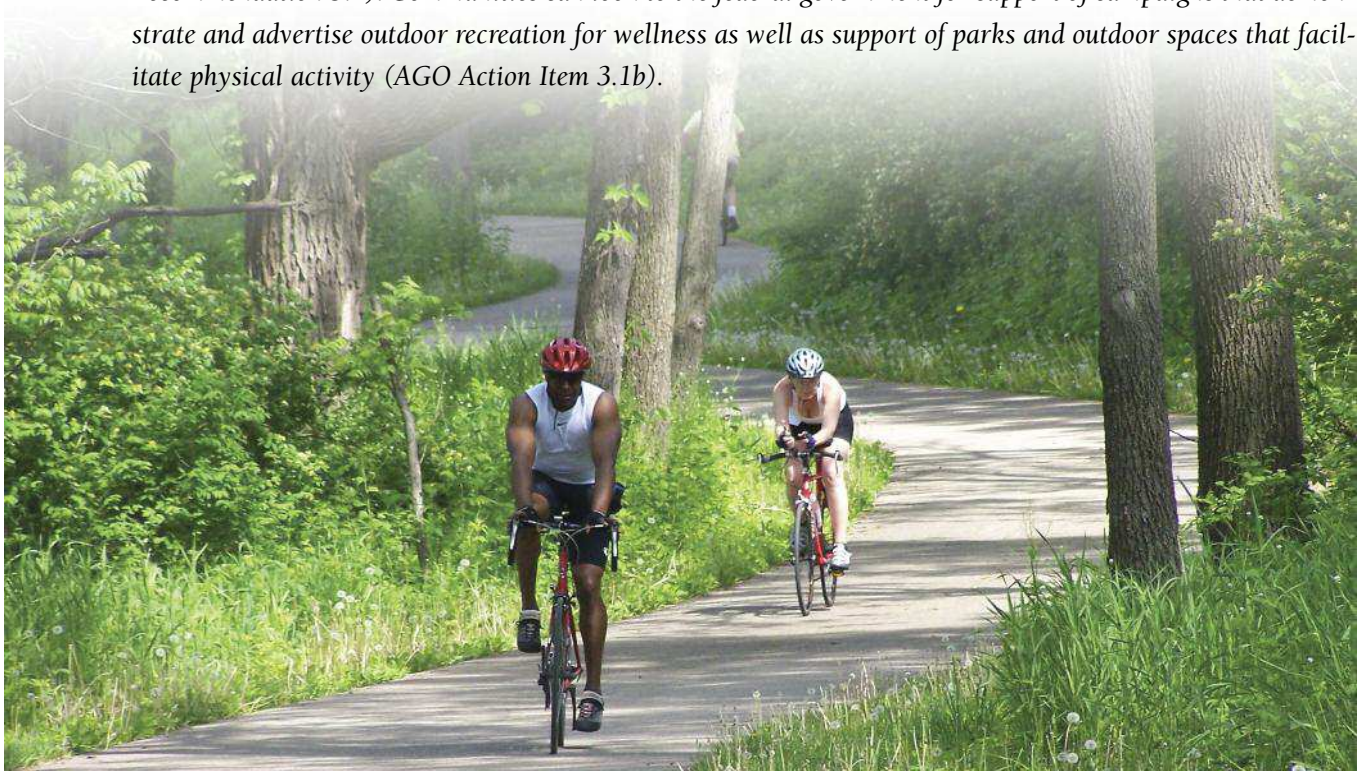
CHAPTER 3



Outdoor Recreation and Public Health

The third goal of the America's Great Outdoors (AGO) Report, "Raise Awareness of the Value and Benefits of America's Outdoors," was developed out of the public's concern that youth are lacking exposure to outdoor education. AGO sets out to partner with Let's Move Outside! to instill lasting values of health and wellness, and environmental conservation in youths.

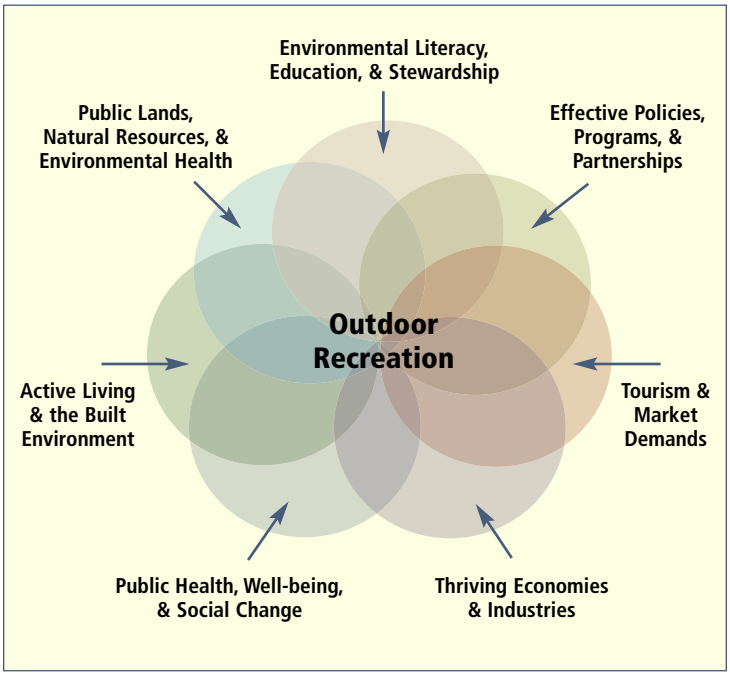
By examining the component of health and wellness that motivates recreation and by comparing the most popular outdoor activities that yield the greatest health benefits, Chapter 3 lays the groundwork for recreation planners seeking to make outdoor recreation relevant to today's youth and Wisconsinites. Wisconsin, too, should raise public awareness of the physical and mental health benefits of the great outdoors (AGO Recommendation 3.1). Communities can look to the federal government for support of campaigns that demonstrate and advertise outdoor recreation for wellness as well as support of parks and outdoor spaces that facilitate physical activity (AGO Action Item 3.1b).



Overview

Statewide comprehensive outdoor recreation plans (SCORPs) are important documents that help guide the development of local parks and recreation. Increasingly, SCORPs are including public health and wellness as central elements of recreation planning (Bloecher and Merriam 2011), with notable efforts being made by the States of California, Indiana, and Oregon. Traditionally, SCORPs have focused on recreation supply and demand assessments as a way to guide recreation development. However, health and wellness, along with other factors, have been shown to be a critical component of how and why people recreate (see Figure 3-1). In this light, Chapter 3 is written to outline several elements important for understanding the role of outdoor recreation in fostering local public health and wellness.

Figure 3-1: **Converging Elements Related to Outdoor Recreation**



Source: Bloechner and Merriam 2011 as originally presented in the Colorado SCORP.

The built environment plays an important role in our ability to affect public health and wellness (Gordon-Larsen et al. 2000; Frumkin et al. 2004). For example, parks, trails, and sports facilities are key local assets that allow for convenient, safe, and attractive places for people to participate in physical activities of all kinds (Sallis et al. 2006). While public health and wellness are affected by a number of social, economic, and environmental determinants, there is increasing evidence that improving access to outdoor locations favorable for physical activity can act to lower obesity levels and improve health outcomes among target populations (Campbell and Cornelssen 2004; Kelly et al. 2007; Lovasi et al. 2009).

The Connection Between Public Health and Wellness, MET, and Outdoor Recreation[1]

Outdoor recreation encompasses a wide variety of activities, each of which has a different level of physical activity. In many cases, health and wellness outcomes can be improved through participation in activities that require higher levels of physical exertion. This section will explore how different types of outdoor recreation compare for their level of physical exertion and how recreation sites across Wisconsin provide opportunities for different types of outdoor activity. The primary question being addressed in this section is straightforward: how do outdoor recreation facilities relate to recreation activities and health and wellness metrics?

To answer this question, various outdoor recreation activities appropriate to Wisconsin were arranged by their relative levels of physical exertion. Available secondary data on outdoor recreation activities were arranged to provide a ranked list of caloric exertion rates for a specific period of time. Further, an inventory of recreation sites offering activities with the most health benefits provides an opportunity to prioritize recreational sites.

A variety of data sources were used to address these issues. The Centers for Disease Control and Prevention (CDC) is a source of secondary quantitative and qualitative data regarding the relative and absolute intensity of physical activities. For the rankings, health benefits of activities are measured as the ratio of work metabolic rate during recreation to resting metabolic rate, known as MET. This measure of metabolic intensity of various physical activities is found in research from the American College of Sports Medicine journal, Medicine & Science in Sports & Exercise (Ainsworth et al. 2000). This data was used to rate the metabolic intensity of

[1] This section is taken from work done during the fall of 2010 by students of the UW-Madison Graduate Planning Workshop (URPL 912). Their report, entitled *Outdoor Recreation, Health, and Wellness: Enhancing the Relationship through SCORP* (Birringer, et al. 2010), contains a complete description of this effort and can be accessed online at http://www.urpl.wisc.edu/people/marcouiller/courses/912/3final.pdf.

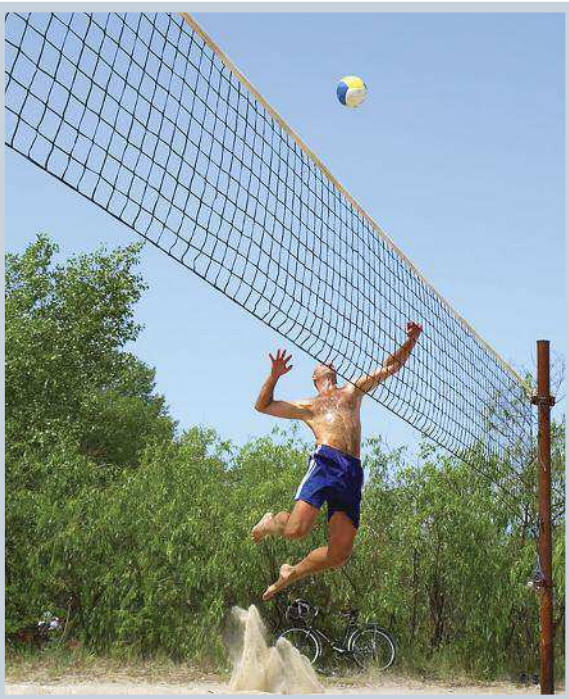
Wisconsin outdoor recreation activities. Activities were then ranked in terms of those with the most health benefits (high intensity), medium benefits (moderate intensity), and least benefits (low intensity). The metabolic intensity research and data is widely accepted among specialists in the exercise and public health fields (Ainsworth et al. 1993). This data is commonly used to create calculators that determine the amount of calories burned during exercise.

Recreation planning and park design have been shown to affect use; characteristics and specific features found in parks are important in fostering the use of these public spaces for physical activity. Features in trails and parks (playground equipment, sports facilities, etc.) have been shown to enhance that property's use for physical activity (Kaczynski et al. 2008). Alternative forms of outdoor recreation have differing levels of physical activity as measured by metabolic rate (calories burned in a given period of exercise) standardized using relative metabolic intensity (MET). The MET of a variety of physical activities has been thoroughly documented within the sports medicine literature and includes both non-motorized (Ainsworth et al. 1993; Ainsworth et al. 2000) and motorized (Burr et al. 2010; COHV 2010[2]) forms of outdoor recreation. The exercise quality and happiness elements play a role in public health and wellness outcomes.

Energy expenditure data compiled from multiple published sources as "indirect calorimetry" (Ainsworth et al. 2000) was used. It should be noted that the metabolic intensity data is limited in its use for estimating calories burned during an activity for specific individuals. The research provides standardized intensity levels that do not account for differences in body mass, gender, etc. Therefore, individual differences in energy expenditure can be large. For the purposes of this research, standardized metabolic intensities are adequate for developing a ranking of relative health benefits of recreation activities for the population as a whole.

MET data was translated to caloric expenditure by multiplying an individual's weight (in kilograms) by the METs for the activity and the duration of the activity. For example, a 60-kg individual bicycling for leisure (4 METs) for 40 minutes expends the following: 60kg x 4 METs x (40/60min) = 160 calories (Ainsworth et al. 1993).

[2] Canadian Off-Highway Vehicle Distributors Council (COHV) ATV & ORM Health Benefit Study Fact Sheet can be found at: http://www.arra-access.com/site/DocServer/2010_ATV_ORM_Health_Benefit_Fact_Sheet2.pdf?docID=321.



Specific features found in parks are important to fostering the use of these public spaces for physical activity.

The 2005-2010 Wisconsin SCORP demand data provided a basis to understand common outdoor recreational activities in Wisconsin. These activities were then matched with their respective energy expenditures to create a ranking of the health benefits of physical activities.

Calculations for caloric expenditures are based on a 30-minute duration with respect to different body weights. Sample calculations based on standard BMI table at which an individual is considered obese at varying heights is detailed in Appendix C. Since one goal of the 2011-2016 Wisconsin SCORP is to improve public health by increasing physical activity, obesity weights are important to include in these calculations.

The relative health benefits of Wisconsin recreation activities in terms of METs are summarized in Table 3-1. Activities that are considered light intensity have less than 3 METs, moderate intensity activities have between 3 and 6 METs, and vigorous intensity activities have more than 6 METs. Some recreation activities (e.g., bicycling, running, etc.) have multiple MET values, depending on the speed and intensity of the activity. In these cases, a moderate speed was assumed.

Table 3-1: **Recreation Activity Intensities by Appropriate Facility Type**

Facility	Activity	MET
Water – lakes, streams, fishery areas, boat launches, marinas, piers, trout streams, waterfalls, whitewater rafting rivers	Canoeing	7
	Rowing	7
	Scuba diving	7
	Ice skating outdoors	7
	Swimming in lakes, streams, etc.	6
	Waterskiing	6
	Rafting	5
	Snorkeling	5
	Kayaking	5
	Fishing, general, warm water	3
	Sailing	3
	Windsurfing	3
	Surfing	3
	Boating, power boat	2.5
	Ice fishing	2
	View/photograph scenery and wildlife	2
	Visit a waterside	2
	Sightseeing	2
	Boat tours or excursions	2
	Family gathering	1.5
	Picnicking	1.5
Beaches, shoreline	Volleyball, outdoors	8
	Walking for pleasure	3.5
	Fishing, general, warm water	3
	Camping	2.5
	View/photograph scenery and wildlife	2
	Visit a waterside	2
	Sightseeing	2
	Family gathering	1.5
	Picnicking	1.5
Forested land (state parks or natural areas, forest reserves, trust lands, wildlife and wilderness areas)	Rock climbing	9.5
	Orienteering	9
	Mountain biking	8.5
	Mountain climbing	8
	Skiing, cross-country	8
	Snowshoeing	8
	Backpacking	7
	Dog sledding	7
	Hiking, general	6
	Walking for pleasure	3.5
	Geocaching	3.3
	Camping	2.5
	View/photograph scenery and wildlife	2
	Visit a wilderness or primitive area	2
	Sightseeing	2
	Gather mushrooms, berries, etc.	2
	Family gathering	1.5
	Picnicking	1.5
Ski hills	Snowshoeing	8
	Sledding	7
	Skiing, downhill	6
	Snowboarding	6
Local parks, parkland	Inline skating	12.5
	Running	9
	Handball outdoors	8
	Bicycling	8
	Volleyball, outdoors	8
	Football	8
	Sledding	7
	Tennis	7
	Racquetball	7
	Soccer	7
	Hiking, general	6
	Basketball	6
	Skateboarding	5
	Baseball	5
	Softball	5
	Walking for pleasure	3.5
	Disc golf	3
	Visit a dog park to walk a pet	3
	Yard games, e.g., horseshoes	2.5
	View/photograph scenery and wildlife	2
	Family gathering	1.5
	Picnicking	1.5
	Attend outdoor concerts, plays, etc.	1.5
	Attend outdoor sports events	1.5
Trails – single- or multi-use	Inline skating	12.5
	Running	9
	Mountain biking	8.5
	Bicycling	8
	Cross-country skiing	8
	Snowshoeing	8
	Backpacking	7
	Dog sledding	7
	Hiking, general	6
	Horseback riding	4
	Walking for pleasure	3.5
	Snowmobiling	3.5
	Off-road motorcycling	2.5
	Off-road driving with an ATV	2.5
	View/photograph scenery and wildlife	2
	Sightseeing	2
Trails – snow	Snowshoeing	8
	Skiing, cross-country	8
	Dog sledding	7
	Snowmobiling	3.5
	Off-road driving with an ATV	2.5

Table 3-1: **Recreation Activity Intensities by Appropriate Facility Type (continued)**

Facility	Activity	MET
Sports facilities – indoor and outdoor	Football	8
	Volleyball	8
	Handball	7.5
	Soccer	7
	Tennis	7
	Paintball	6
	Basketball	6
	Baseball	5
	Softball	5
	Skateboarding	5
Outdoor ice rinks	Ice hockey outdoors	8
	Ice skating outdoors	7
Public hunting lands	Hunting, big game	6
	Hunting, migratory bird	6
	Hunting, small game	5
Golf courses, driving ranges, resorts, and country clubs	Golf	4.5
Horseback riding stables, facilities, trails	Horseback riding	4
Public outdoor swimming pools	Swimming in an outdoor pool	4
Disc golf courses	Disc golf	3
Dog parks	Visit a dog park to walk a pet	3
ATV parks	Off-road riding with an ATV	2.5
Shooting ranges (archery, guns, etc.)	Target shooting	2.5
Dirt bike/motocross tracks	Off-road motorcycling	2.5
Campgrounds	Camping	2.5
Arboretums	Running	9
	Bicycling	8
	Skiing, cross-country	8
	Snowshoeing	8
	Hiking, general	6
	Geocaching	3.3
	View/photograph scenery and wildlife	2
	Driving for pleasure	2
	Visit nature centers	2
	Sightseeing	2
	Gather mushrooms, berries, etc.	2
	Nature-based educational programs	2
Playgrounds	Basketball	6
	Yard games	2.5
	Picnicking	1.5
Lighthouses	View/photograph scenery	2
	Visit historic sites	2
Nature centers	Visit nature centers	2
	Nature-based educational programs	2
Outdoor water/ theme parks	Swimming, pool	4
	Visit outdoor theme/water park	2
Zoos	Walking for pleasure	3.5
	View/photograph wildlife	2
	Nature-based educational programs	2
	Visit nature centers	2
Caves	Visiting a cave	2
	View/photograph scenery and wildlife	2
	Visit prehistoric/archeological sites	2

The 2005-2010 Wisconsin SCORP supply dataset was used to compile a list of the types of recreation facilities and the recreation activities that typically occur within each facility. The ranking of recreation activities relative to health benefits, compiled in the first task, was then used to determine the types of recreation facilities that provide the most potential health benefits to Wisconsin residents and recreation users. This provides an opportunity to make recommendations regarding future recreation facilities that provide the most potential health benefits, particularly in areas of the state experiencing poor health.

The NSRE 2005-2009 data set was also used as a data source, providing participation rates for a variety of recreation activities. Along with health benefits, participation rates from the NSRE 2005-2009 data set representing recreation needs were used to differentiate recommendations in terms of feasibility.

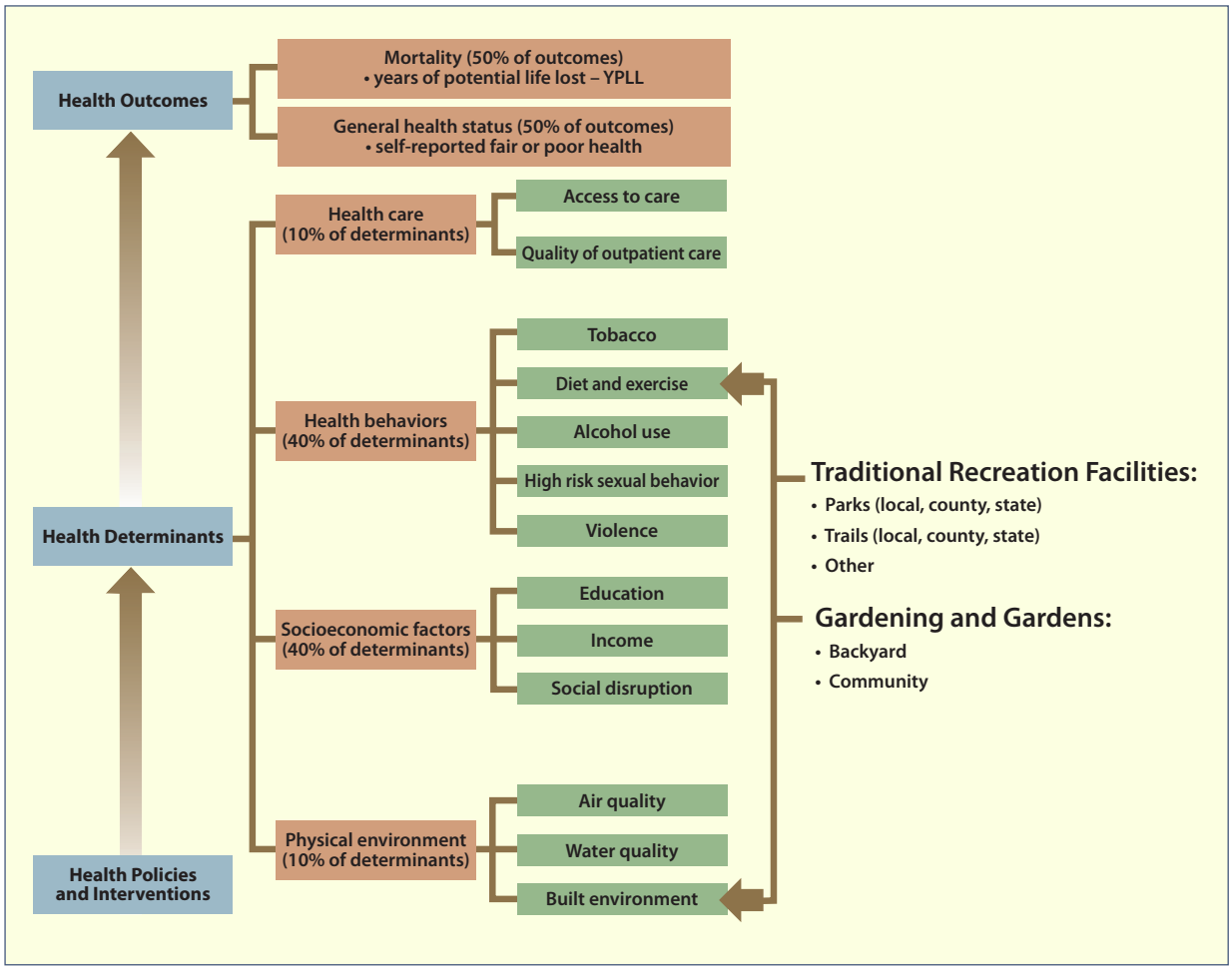
Different types of recreation facilities cater to different recreation activities. Recreation facilities from the previous Wisconsin SCORP were sorted into categories as seen in Table 3-1. Some facilities (e.g., ATV parks and shooting ranges) provide for a single recreation activity while others provide for multiple activities.

The intensities and relative health benefits of the activities in Table 3-1 combined with appropriate facility types can be used to help prioritize future investments in outdoor recreation that provide high potential for healthy activities. A more detailed list can be found in Appendix C.

The Supply of Outdoor Recreation and its Relation to Public Health and Wellness[3]

Improving public health outcomes through policy requires an understanding of health determinants (the factors that affect public health and wellness). These determinants include health care, health behaviors, socioeconomic factors, and the physical environment. Health determinants are in turn associated with a variety of behavioral, demographic, and environmental attributes as summarized in Figure 3-2.

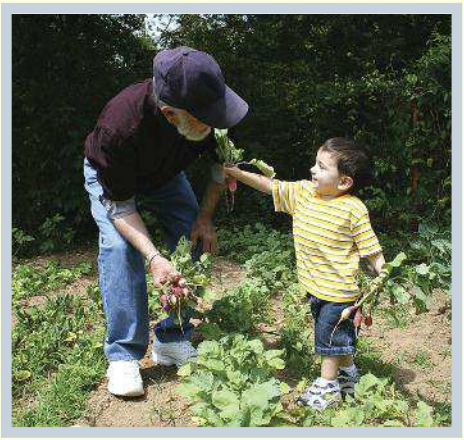
Figure 3-2: **Conceptual Relationships Between Local Public Health and Wellness Outcomes**



Source: Adapted from Peppard et al. 2008.

[3] This section is taken from two sources. First and foremost, there is work done during the fall of 2010 by students of the UW-Madison Graduate Planning Workshop (URPL 912). The report, entitled *Outdoor Recreation, Health, and Wellness: Understanding Key Relationships* (Bernardinello et al. 2010), contains a full description of this effort and can be accessed online at http://www.urpl.wisc.edu/people/marcouiller/courses/912/2final.pdf. Second, a subsequent manuscript entitled *Outdoor Recreation Planning for Public Health and Wellness: A Spatial County-level SCORP Assessment for Wisconsin* (Marcouiller et al. 2011) was presented at the ISSRM Annual Conference, June 2011 in Madison, WI.

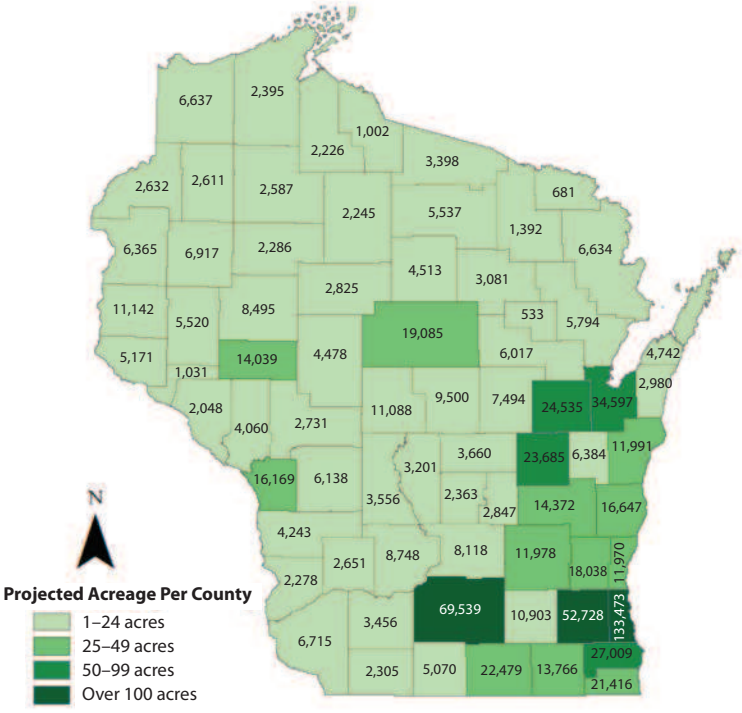
The Winning Combination of Outdoor Recreation and Public Health Benefits: Gardening



Gardening is one of the most popular recreational activities in the United States and provides many benefits, including improved access to fresh produce, increased physical activity, and community-building. A recent recreation participation survey suggests that almost 70% of Wisconsin adults garden or landscape for pleasure. This makes gardening the second most popular recreation activity in the state, second only to walking. General gardening results in a MET value of 4.0, categorizing it as a moderate intensity activity. Findings estimate Wisconsin has 11,000 acres of land used for gardening. The state's growing season lasts about half the calendar year (95-200 frost-free days).

Gardening activities can be divided into two categories: backyard and community. Around 90% of gardening takes place in backyard gardens and recent research suggests that 35% of Wisconsin households maintain a backyard garden. Community gardens are plots of land gardened by groups of people. Community gardens are found in 66 counties in Wisconsin, and the state has a total of 448 community gardens. Prominent examples include Growing Power in Milwaukee and Troy Gardens in Madison.

Figure 3-3: **Extent of Backyard Gardens in Wisconsin**



Numbers within county boundaries reflect estimated number of backyard gardens, while shading reflects total county acreage in backyard gardens (Foster 2011).

Benefits of Gardening (continued)

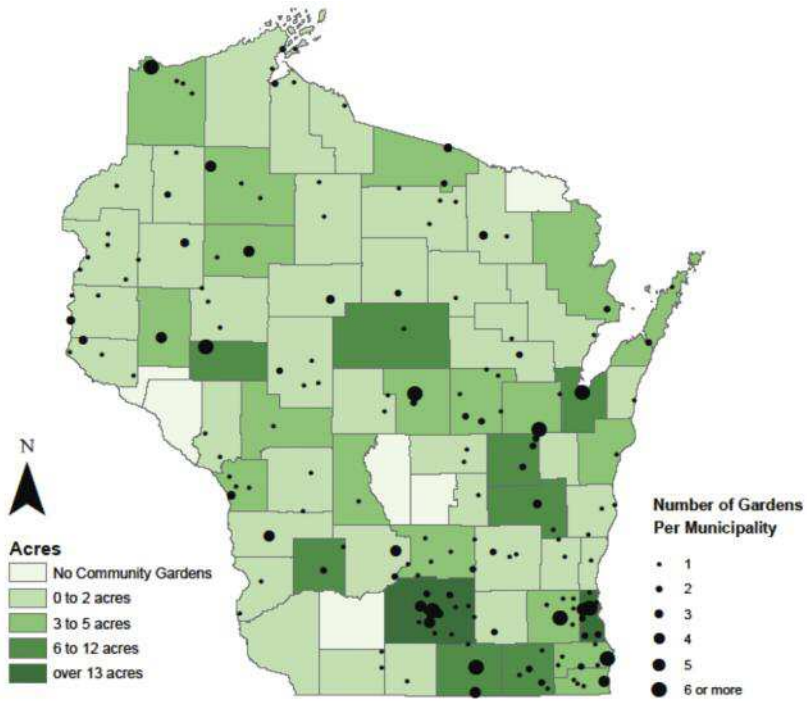
One particularly valuable aspect of gardening as an outdoor activity is its potential to keep an individual engaged frequently over a growing season. Someone who goes for a walk one day may have little reason to continue doing so with regularity. Someone who plants a garden, however, is motivated to continue tending to that garden over the course of the year. This leads to frequent, regular, and ongoing physical activity.

Among other outdoor recreation activities, gardening is relatively unique in its connection to personal nutrition. Only hunting, fishing, and foraging activities have a similarly direct connection to eating habits. It has been estimated that Wisconsin gardeners produced 800 million pounds of food in 2010. By providing access to fresh fruits and vegetables, gardening promotes healthier eating habits. More fresh produce means that gardeners are more likely to make home-cooked meals, which are typically lower in salt and sugar, and contain fewer excess calories.

Gardening's integration of active living and healthy eating make it a natural fit with the White House's Let's Move! Initiative. This initiative was launched by First Lady Michelle Obama and aims to tackle rising levels of childhood obesity through increasing physical activity and improving eating habits. Indeed, one component of the campaign includes promoting the creation of community gardens across the country. In 2009, a 1,100-square foot vegetable garden was installed on the White House lawn to serve as a model for American households.

Communities interested in creating a new garden may consider seeking grant money to help start the project. Federal grant programs, such as the People's Garden Grant Program (PGGP), could be a potential funding source. The PGGP, which is administered by the U.S. Department of Agriculture, assists in the creation of locally-sponsored, self-sufficient gardens. Projects that benefit their communities are collaborative in nature, and incorporate sustainable practices are eligible for grants of up to $150,000.

Figure 3-4: **Extent of Community Gardens in Wisconsin**



Circles within county boundaries reflect estimated number of community gardens, while shading reflects total county acreage in community gardens (Foster 2011).

Physical and mental health of the user is often cited as a primary benefit of outdoor recreation facilities (Rosenberger et al. 2009). However, supporting evidence of spatial relationships between local public health and recreation facilities is not that simple. Data often suggests strong correlations between health and wellness, and local income and educational status. Data may show counter-intuitive, often inverse, relationships between public health and the presence of local outdoor recreational facilities. While these previous research results suggest the need for more rigorous empirical methods, there also could be actual linkages that are at best, marginal, and at worst, non-existent. Ongoing research focused on health determinants involves complex, multifaceted, and often imprecise public health metrics. Data shown in Figure 3-2 suggests that roughly 10 percent of health determinants involve the physical environment, which also includes air and water quality. Further, Figure 3-2 suggests that roughly 40 percent of health determinants involve health behaviors; these determinants include diet and exercise along with tobacco and alcohol use, high risk sexual behavior, and violence. Isolating parks and recreation planning as causal to improved public health outcomes is indeed a complex empirical problem that exists within a broad set of determinants.

The next question that is addressed deals with current recreation supply and its relationship to local health and wellness metrics. Specifically, how does the supply of outdoor recreation relate to the health and wellness of surrounding populations? To answer this question, formal spatial models were developed that specified and tested hypothetical relationships between local health and wellness metrics, and the presence and use of outdoor recreation facilities. This was done using spatial statistical modeling of county-level data from previous Wisconsin SCORP supply assessments, NSRE place-based estimates of outdoor recreation demand, census estimates of socio-demographic control elements, and government agency estimates of local public health and wellness.

How does the supply of outdoor recreation relate to the health and wellness of surrounding populations?

This work follows in the footsteps of other states attempting to link public health and wellness with recreation. A West Virginia spatial analysis identified key attributes that link parks and recreation with public health and wellness outcomes (Rosenberger et al. 2005). For Wisconsin, two different approaches were taken. The first analysis attempted to explain local public health and wellness in region *i* (county) using demographic controls and local built environment attributes reflective of parks and recreation. This first type of analysis reflects relationships that explain local public health and wellness outcomes as a function of demographics and local environmental attributes following work of Peppard et al. (2008), Rosenberger et al. (2005), and Rosenberger et al. (2009). The first analysis can be described by equation 1 below.

(1) $\text{Public health and wellness}_i = f(\text{demographic controls}_i + \text{built environmental attributes}_i)$

The second type of analysis used to explain the presence of local parks and recreation as a function of demographic controls and local public health and wellness is specified in equation 2.

(2) $\text{Built environmental attributes}_i = f(\text{public health and wellness}_i + \text{demographic controls}_i)$

These two specifications were analyzed using standard ordinary least squares regression models as specified in equation 3,

(3) $y = X\beta + \varepsilon$

where y denotes the vector of response variables, X denotes the matrix of explanatory variables, β denotes regression coefficients of the explanatory variables, and ε denotes the vector of error terms that are independent but identically distributed. Operational ordinary least squares (OLS) models for each type are outlined in scalar form in equations 4 and 5,

(4) $PHW_i = \beta 0 + \beta 1 D1_i + \beta 2 D2_i + \ldots + \beta n PRn_i + \varepsilon$

(5) $PR_i = \beta 0 + \beta 1 D1_i + \beta 2 D2_i + \ldots + \beta n PHWn_i + \varepsilon$

where PHW represents various public health and wellness outcome metrics (rate of adult obesity, premature death rate, poor mental health days per month, etc.), D

represents demographic controls (education, age structure, income, race, etc.), and PR represents local parks and recreation attributes (number of parks, miles of trails, walkability access, etc.). Once again, *i* denotes region, which for this work was limited to the state of Wisconsin and its 72 counties. One benefit of county-level geography is that it allows the use of an array of data sources for both public health and outdoor recreation.

Three broad types of data were assessed for appropriateness in specifying explanatory models. These included (1) public health and wellness metrics, (2) relevant demographic controls, and (3) outdoor recreation supply. In total, 10 demographic control variables, 5 public health and wellness outcomes, and over 30 recreation supply metrics were examined. The assessment of variables included multi-faceted criteria involving theoretical consistency, high metabolic activity, and the level of spatial variation. The final selection criteria resulted in the model results outlined fully in Appendix D (variables listed in Table D-1, their descriptive statistics in Table D-2, and regression results in Table D-3 and D-4).

Specifically, the spatial models that used premature death and adult obesity as dependent variables had the highest amounts of explained variation (see Table D-3). In these models, education, income, race, and age were important statistically significant variables. The total number of parks, mileage of trails, or percent of walking access was insignificant in explaining local public health and wellness outcomes. When models were re-specified to look for local elements that explain the presence of recreational facilities (parks and trails), results again suggested that education and race were significant (Table D-4). Our best model failed to show that local health and wellness played a part.

It is important to note that insignificant findings for linking local public health and wellness outcomes to the presence of local parks, trails, and walking access could have several implications. First, these results could suggest that the simple presence of outdoor recreation facilities does not necessarily imply use that leads to improved local health and wellness outcomes. Second, it is important to remember that previous decisions about location of recreation facilities may have been based on other, non-health related reasons and not solely based on improving local health and wellness. Insignificant findings of such a relationship could confirm this fact. Finally, insignificant findings could imply a need for further empirical research; perhaps on a finer grained spatial level that accounts for sub-county, community, and/or neighborhood analyses.

Explaining local public health and wellness is complex, and clear relationships with the built environment are difficult to isolate.

This spatial modeling did generate several conclusions that are difficult to ignore. Results of various model specifications suggest that (1) socio-economic elements were indeed significant in explaining local public health and wellness outcomes across the state of Wisconsin, (2) spatial association exists for most relevant modeling variables and is most often marked by clustering within analogous regions along the urban-rural continuum, (3) explaining local public health and wellness is indeed complex, and clear relationships with the built environment are difficult to isolate, and (4) model specification matters to the development of robust estimates that relate outdoor recreation with public health and wellness.

There is ample opportunity for further research along these lines. Extensions and refinements in both geographic specificity and model specification are obvious next steps. Further, this analysis does not account for obvious benefits associated with available local parks and recreation opportunities on the mental health and wellness of Wisconsinites. Metrics that reflect local mental health and wellness outcomes are not well developed. Certainly, further research is needed that extend beyond physical health and wellness outcomes to include the calming effects of outdoor recreation. Future work that examines the impact of parks, trails, and public open spaces on local quality-of-life, the availability of solitude, natural aesthetics, quiet, and peaceful environments throughout Wisconsin would aid in parks and recreation planning. We are confident that results of this extended research agenda will support, recognize, and confirm that local parks and trails are central assets of local community well-being.

Summary

After compiling an inventory of popular Wisconsin recreation activities, comparing their associated health metrics using caloric burning potential, and placing them into appropriate facility categories, activities with the most vigorous metabolic rates included both nature- and urban-based activities. While some of these recreation activities featured adequate participation levels or substantial increases in participation from five years prior, the greatest participation levels were seen in low-intensity activities that burn less calories and offer fewer health benefits. In order to encourage greater participation in activities that yield greater health benefits, the following recommendations are offered, sorted by facility type:

Activities with the most vigorous metabolic rates included both nature- and urban-based activities.

Trails

Plans should be created for entire corridors. Multi-tread trails should be constructed to avoid conflict between users. For example, walkers and runners can use gravel trails while bikers ride on adjacent paved trails. Signage should indicate the separation of users.

Water

Water-based activities tend to have significant health benefits (swimming, kayaking, etc.) The DNR should fund and support improved access to lakes, streams, and other bodies of water, as well as facilities that cater to these activities (such as piers, boat launches, rental facilities, etc.). Wisconsin is home to countless lakes and streams, and it is important to ensure access to these amenities.

Snow

Non-motorized snow sports were generally ranked as moderate to high intensity and are therefore beneficial to health. Motorized uses, while more popular, have fewer health benefits. Trails should be separated between these two usage types, with certain trails designated for non-motorized uses only. This will make users feel safe and help to increase participation.

Ice Rinks

Outdoor rinks cater to ice skating and hockey, both of which are high-intensity activities. Municipalities should construct rinks or use existing ponds. Rinks are relatively inexpensive to build, and they have the benefit of increasing park usage during the winter. Maintenance can be an issue because snow on the rinks is removed only after streets are cleared, which leads to poor ice conditions. Municipalities should involve neighborhood associations and other groups with shoveling and maintenance tasks. The City of Madison started this initiative in 2011, and the program has been successful with active neighborhood groups.

Sports Facilities

Organized sports (such as basketball, soccer, and football) are high and moderate intensity activities with good participation levels. Government entities should try to partner with private sports facility providers in order to increase participation while efficiently managing public funds. For example, a municipality may give a sports complex incentives through Tax Increment Financing (TIF) or other means if they are open one night a week to the public.

Team Sport Leagues

Some high-intensity team sports are growing in popularity (particularly handball, football, volleyball, and soccer). If existing open space is available, fields should be created for use by recreation sports leagues.

Safety

Safety can be addressed through increased police presence, increased street lighting, traffic safety, and a decrease in the amount of vacant buildings. These changes will make residents feel safer traveling to and from recreation sites, and using parks and open spaces. More people using recreation sites will help to increase physical activity rates of Wisconsin residents. Safety can also be promoted through using bike paths to connect residential areas to local schools, which would provide students with a safe route to walk or bike to school. This is consistent with Wisconsin's Safe Routes to School Program, which works to promote healthy lifestyles in young children by giving them options other than cars to get to school. This program is funded through the revised Federal Transportation Act.

There are both personal and built environment factors that influence outdoor recreation preferences and health outcomes.

CHAPTER 4

Access to Outdoor Recreation in Urban Wisconsin

In response to rural-to-urban population growth and expansion in counties bordering out-of-state metropolitan areas, Wisconsin needs to launch a new generation of urban parks and green spaces. One of America's Great Outdoors (AGO) goals, "Establish Great Urban Parks and Community Green Spaces," was developed out of the public's demand for outdoor recreation facilities and associated benefits—improved health, community ties, and economy—closer to their home, work, and school.

For urban parks planning insight, Chapter 4 considers various urban recreation barriers and solutions, and analyzes peer-to-peer statistics for 145 municipalities. As AGO encourages use of the Land and Water Conservation Fund to create and enhance urban parks and community green spaces (AGO Recommendation 6.1), Wisconsin can develop new parks in overlooked urban waters and former industrial sites to suit emerging urban recreation activities (AGO Action Items 6.3c and 6.3b). Satisfying Wisconsin's need to unify park systems, AGO will support local, state, and tribal governments and communities to connect federal parks to urban and neighborhood parks by building community paths and sidewalks (AGO Action Items 6.4b and 6.4a).

Overview

Readily available outdoor recreation is an important part of a healthy community. Wisconsin city parks and trails, playgrounds, and urban green spaces contribute to quality of life and foster local public health and wellness. Previous research has catalogued the availability of outdoor recreation facilities and related amenities across the state (WDNR 2006; Marcouiller et al. 2009). Urban recreation themes developed for this SCORP can also be a useful guide to analyze the benefits and availability of urban parklands and greenway open spaces in Wisconsin. These themes also provide an important framework for future recommendations and should be taken into consideration when planning for urban-based recreation.

Wisconsin city parks and trails, playgrounds, and urban green spaces contribute to quality of life and foster local public health and wellness.

THEME: *The Link between Urban Parks and Public Health*

The link between urban parks and public health is a critical issue across the state, but this connection is even more important to understand in urban areas of Wisconsin. Health agencies at every level of government acknowledge that local facilities in urban areas are important for public health. The World Health Organization (2007), the White House (2010), the Centers for Disease Control and Prevention (CDC) (2009), and the Wisconsin Department of Health Services (2010) each list increased or improved local recreational facilities as an important objective for increasing physical activity. While many organizations recommend increased availability of recreation facilities, research appears divided on a causal connection between the availability of outdoor recreation and improved public health. Cohen and his collaborators (Cohen et al. 2007) question the magnitude of the causal connection between park provision and public health, recognizing the complex nature of the topic. However, Barton (2009) argues that the urban environment "exacerbates or mitigates health and well-being outcomes." These divergent results are understandable, as no physical environment can guarantee high levels of physical activity and public health. Urban recreation facilities may also contribute to public health in ways not measured in existing studies.

THEME: *Standardized Metrics for Quality, Distance, and Size of Recreation Areas*

In order to accurately assess the state of urban recreation facilities in Wisconsin, standard metrics for the quality and distribution of urban parklands and greenway open spaces will need to be developed. Currently, most local government plans use the guidelines and standards of the National Recreation and Park Association (Mertes 1996). This commonly-used set of standards may be helpful for evaluating recreation across urban areas.

Research has shown that other factors are also important to consider in evaluating recreation. The Marshfield Comprehensive Outdoor Recreation Plan (Schreiber Anderson 2009) notes that factors like regional and statewide plans, and public input should also be used to measure the success of urban parks and outdoor recreational facilities. Brown (2007) uses island biogeography theory to evaluate the value of parks based upon size. Kaczynski et al. (2008) found that the range of features offered was more important in determining how much physical activity took place in a facility than

size and distance of the facility from population centers. Cohen et al. (2010) concluded that both range of activities and facility size are important. Some studies also make note of the fact that the distance as the crow flies to a recreational facility may be different from the functional network distance, particularly in urban areas with large barriers like freeways. Equitable distribution of high quality outdoor recreational facilities is an important goal. With proper metrics to measure the availability of these facilities, we can better plan for recreation across the state.

THEME: *Classification of Facilities and Activities*

Just as standardized guidelines for urban recreational facilities will help guide future research and development, so too will a classification scheme for types of facilities and recreational activities. The National Parks and Recreation Association guidelines, used by many communities in their individual plans, include a hierarchy of park types with different features, roles, and catchment area sizes. Mini parks, neighborhood parks, community parks, and special use parks all have different functions within a community. However, many other types of facilities were singled out, including trails and greenways, water trails, zoos, etc. Additionally, Ribeiro and Barao (2006), among others, focuses on improving pedestrian and bicycle facilities as a way to improve public health outcomes via the built environment. Currently, there is no clear distinction between bicycle and pedestrian facilities that are considered recreational and those that provide transportation and access functions.

As new classification systems are developed, it will be important to incorporate new and emerging recreation activities. Numerous articles allude to new trends in parks. Rooftop gardens and repurposed brownfields are becoming prime locations for outdoor recreational space in cities. The American Society of Landscape Architects provides one example of a new park in Brooklyn's High Line trail, which was constructed on an abandoned elevated railroad bed. These recent trends of non-traditional facility locations and the rise in popularity of activities like adventure recreation may require innovative or more nuanced classification schemes.

THEME: *Accommodating Various Demographic Groups*

Related to the above trends, literature repeatedly identifies the importance of catering to the needs of different demographic groups based on age, gender, race, and ethnicity. A number of studies have found that quiet areas and green or tree-lined areas used for walks and social interaction were important for senior citizens. This may prove to be a particularly important goal in Wisconsin's smaller cities and villages, where senior citizens make up a higher proportion of the population. As Duzenli et al. (2010) point points out, the needs of adolescents are also markedly different from those of other age groups. This may be important, as children and young adults are often targets of public health policies and campaigns. Gobster (2002) highlights the need to be sensitive to racial and ethnic differences in the provision of recreational opportunities. The preferences of nearby groups should be considered in the design and maintenance of parks and other facilities. Keeping local demographic makeup and associated recreational use patterns in mind should help determine the type and nature of facilities that are provided in a given area.

THEME: *The Importance of Safety*

Safety was a noted consideration in a number of reviewed studies. The safety of a facility (and the ability to get to and from the facility safely) can play a critical role in determining the level of use for some outdoor recreational facilities. The Centers for Disease Control (CDC) and the White House's Let's Move! Initiative (2010) prioritizes the enhancement of public safety near parks and other places where citizens could be physically active. Peter Harnik's (2003) article also mentions safety as a key indicator for recreation facility success. SSugiyama and Ward Thompson (2008) found that the safety of paths to and from facilities is important, particularly for children and the elderly. While metrics like size, distance, and quality of recreation facilities will always be important, safety should not be ignored in evaluating Wisconsin's urban parks and greenways.

THEME: *Aesthetic Appeal and Placement*

Two other factors that can help determine the success of parks and urban recreation facilities are a facility's aesthetic appeal and placement. Aesthetic appeal, as determined by design and level of maintenance, can either attract participants or turn away potential users. Thwaites et al. (2005) argue argues that parks should incorporate fundamental properties of order and integrate the locational, directional, and transitional spatial experience, which are present in the natural and cultural world and are associated with psychological benefits. Golicnik (2010) reviews Geographical Information System techniques that use annotation and visualization to reveal common patterned behavior that correlates to park layout and details, providing a technological advantage.

THEME: *Financing Urban Parks and Greenways*

The last theme, and an unavoidable issue when evaluating the provision of public facilities, is the issue of financing. While research recognizes the benefits of parks and supports an increase in community recreation facilities, the fact remains that financing these facilities in a sustainable and equitable way is not easy. Creative approaches like public-private partnerships are being employed in some places. The Great Communities Collaborative (2007) discusses a number of possible financing strategies, as well as the strengths and weaknesses of various approaches. Recommendations for improving Wisconsin's urban parks and greenways should be sensitive to the fiscal stress of local governmental units.

Walking is by far the most popular outdoor activity in Wisconsin.

Urban Park and Trail Accessibility

Recreation that occurs close to home is an important aspect of outdoor recreation that directly affects residents of communities throughout the state. Questions like "to what extent are opportunities for outdoor recreation present where people live?" and "how accessible are these activities to local residents?" are important to understand the availability of local recreation in Wisconsin.

Currently, data on these questions is hard to come by. In evaluating access to outdoor recreation in a direct way, what matters most are parks, trails, and playgrounds in close proximity to where people live. At the most micro-scale, parks, playgrounds, and trails within walking distance of a Wisconsinite's front door provide direct access to outdoor recreation. Spatially explicit data on outdoor recreation, as well as an assessment of where this recreation exists relative to where people live is needed.

Walking is by far the most popular outdoor activity in Wisconsin. While much of recreational walking takes place on neighborhood sidewalks, the presence of parks and trails plays a significant role in activities like walking. Research has linked the presence of parks, trails, enjoyable scenery, and other people exercising to increased physical activity (Rosenberger et al. 2005; 2009). These are all environmental factors that are directly or indirectly provided by parks and trails.

The State of Wisconsin does not yet maintain a statewide comprehensive park spatial database. This said, finely grained data is available using the ESRI geographic information system.[1] To begin our assessment of local access to outdoor recreation, it is interesting to note that spatially, across Wisconsin, there are distinct differences in access to locally available parks, playgrounds, and trails. While many metrics could be developed, an interesting component to capture for urban park planning deals with walkability. For this, accessibility can be measured by the percentage of residents that live within walking distance of a public park (defined as a ½ mile for this assessment).

A network analysis was conducted to assess the pedestrian accessibility of Wisconsin's parks and trails. This network analysis considered where people live, where parks and trails were located, and how they were connected by public sidewalks. This led to a county-by-county estimation of how many residents lived within ½-mile walk of a park or trail, as shown in Figure 4-1 on the next page.

The results indicate that over 70% of Wisconsin residents do not live within a ½-mile walk of a public park or trail. The assessment also revealed wide variation of park walkability across the state. For example, more than 50% of all residents in Dane, Milwaukee, and Rock counties live within ½-mile of a park or trail. Meanwhile, in 31 other counties, less than 5% of residents have that level of pedestrian access.

When ranked at the county level, counties containing Wisconsin's largest urban areas (Milwaukee and Madison) rose to the top of this walkability metric.

[1] Park and trail data were taken from a nationwide park layer published by ESRI in 2003. This layer was assembled from National Park Service data, National Forest data, and Geographic Technology Dynamap/2000 v7.3. Dynamap/2000 is the source of local and county park data, which is the most important data to this assessment. This spatial data came from Tele Atlas North America/Geographic Data Technology database (TANA/GDT), which is sourced from federal agencies, state agencies, regional agencies, county agencies, as well as most cities and towns. Since further detail on TANA/GDT's relationships with Wisconsin agencies is not provided, the overall quality of the Wisconsin parks in this dataset is uncertain. Similar uncertainty exists with regard to the consistency of park inclusion across the state.

Figure 4-1: **Percent of County Residents within a ½-Mile Walk of a Public Park**

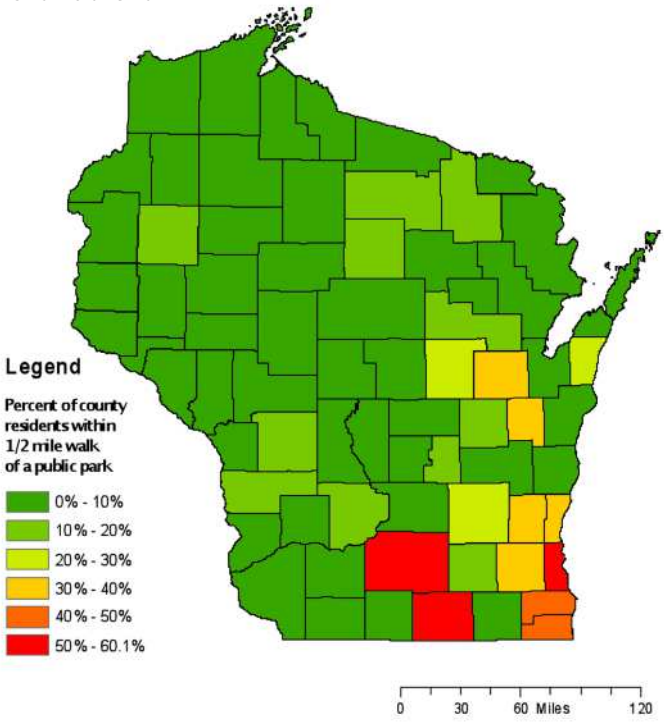


Table 4-1: **Top Ten Counties for Pedestrian Park and Trail Access**

County	2000 Population	Number of Residents Within 1/2-mile Walk of Park or Trail	Percent of Residents Within 1/2-mile Walk of Park or Trail
Dane	426,526	256,335	60.1%
Milwaukee	940,164	547,344	58.2%
Rock	152,307	80,931	53.1%
Kenosha	149,577	74,040	49.5%
Racine	188,831	87,094	46.1%
Outagamie	160,971	60,038	37.3%
Calumet	40,631	14,836	36.5%
Waukesha	360,767	129,999	36.0%
Ozaukee	82,317	29,355	35.7%
Washington	117,493	37,041	31.5%

However, it would be incorrect to consider park walkability as a proxy for urbanization. Using standard classification of degrees of urbanization by county (Beale codes), there are many "non-metro" counties that offer higher rates of park and trail access than "metro" counties. For example, 13 of Wisconsin's metro counties (including Brown, La Crosse, Marathon, and Sheboygan) offer less than 10% access while 12 non-metro counties offer more than 10% access (including Dodge, Forest, Green Lake, and Waupaca).

The focus on urban parks and open spaces as a mechanism to improve local health and wellness outcomes is well-founded, but it has not been addressed in comprehensive planning processes. Recent data from the CDC point to the fact that Wisconsin is behind the national average in percentage of youth with parks or playgrounds, community centers, and sidewalks or walking paths available in their neighborhoods (USDHHS 2011). Prioritizing the placement of outdoor recreation opportunities close to where Wisconsinites live will improve this issue of local access. In addition, it has been clearly shown that the type of park facility (e.g., presence of a trail) dictates the extent to which parks are used for physical activity. Access and proximity to public parks is important. As a first step toward this prioritization, we need to identify where the greatest potential for increased usage (and thus public health benefits) exists within the state.

Wisconsin is behind the national average in percentage of youth with parks or playgrounds, community centers, and sidewalks or walking paths available in their neighborhoods.

Defining Recreational Access in Urban Wisconsin

While walkability remains important, comparing recreational access at the municipality level requires a broader set of characteristics and a more finely grained geographic scale (unit of analysis) than the county level. To measure access to outdoor recreation in urban Wisconsin, municipalities across the state were compared to other Wisconsin municipalities of similar population. To make this assessment manageable, urban Wisconsin was defined in a three-step process.[2] First, counties were ranked by their level of urbanization based on census data prepared by the Wisconsin Department of Administration. Counties with more than 50% of their population living in an urban area were selected for inclusion. Using this method, 24 of Wisconsin's 72 counties were identified as urban. Second, from these 24 counties, data was collected from all municipalities with populations greater than 1,000. This yielded 145 municipalities that serve as the basis of this assessment of urban parks and greenway open spaces. Finally, these 145 municipalities were split into four peer groups for comparative purposes. Characteristics of these peer groups are defined in Table 4-2. Municipalities under the cities of Milwaukee and Madison are not included in the peer groups as they have no peers within the state. Instead, Milwaukee and Madison were compared to other U.S. cities with similar populations and demographics. Madison was compared to Lincoln, NE; Durham, NC; Boise, ID; and Des Moines, IA. Milwaukee was compared to Nashville, TN; Louisville, KY; Columbus, OH; and Kansas City, MO.

Table 4-2: **Urban Peer Group Criteria**

Peer Group	Population Threshold	Number of Municipalities
1	45,000 to 150,000	12
2	20,000 to 45,000	19
3	10,000 to 20,000	28
4	1,000 to 10,000	86
	Total	145

Source: Department of Administration. There were 17 municipalities omitted from the peer group analysis due to missing data. Madison and Milwaukee were excluded as unique cases and were compared to similar-sized American cities as noted in the text.

[2] There are many alternative definitions of "urban Wisconsin" that could be used and would potentially generate slightly different results. Further, other counties in the state that were not used as a basis for this assessment likewise contain municipalities that would fit our urban peer group criteria. Simple application of results by peer-group to these missing municipalities would be a logical approach for local planning needs. Certainly, there is a need for further research in the area of access to urban outdoor recreation.

For all cities included in the four peer groups, data was collected on a variety of recreation supply components that focused on public parks (both number and acreage), public hiking and biking trails (length in miles), and non-school playgrounds. This data captured the relative presence of both activity-based outdoor recreation and open space (or greenspace). More detail on park and recreation facility information can be found in Appendix E.

For Madison and Milwaukee, data was collected on the availability of parks and recreation facilities across cities. In addition, fiscal data was collected on expenditures for outdoor recreation to assess relative investment levels in different communities. Specifically, data on each municipality's 2008 parks and recreation budget allocation and total annual budget was collected.

Urban Peer Group Comparisons of Recreation Supply and Budgets

Using population thresholds defined in Table 4-2 as the criteria, Wisconsin cities and villages were divided into four peer groups with at least 10 municipalities in each group. This was done to compare like-sized units of government with similar recreation demand.

Five elements of recreational supply were selected from the 2005-2010 SCORP and compared across peer groups. The five outdoor recreation supply components included were (1) the number of non-school equipped playground facilities, (2) the number of parks, (3) park acres, (4) the length of bicycle trails, and (5) the length of hiking trails. All components were adjusted to a per capita basis. Many other components of urban outdoor recreation supply could be examined using this approach but remain beyond the scope of this assessment.

To allow for comparisons both within and among peer groups, recreation supply was indexed to reflect resident population. For each municipality (r), a measure that placed recreation supply on a per 1,000 residents basis (per 1000 capita) was first calculated, as shown below.

$$RS_r = \frac{rs_r}{Pop_r \times 1000}$$

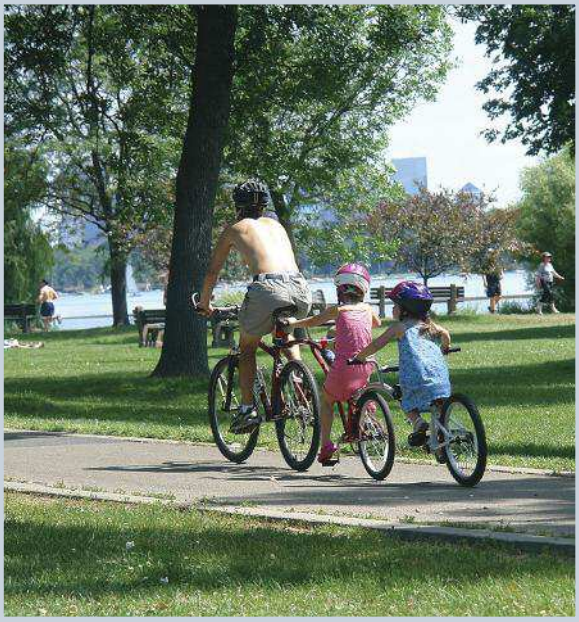
Here, *RS* is the per capita metric of recreation supply for each municipality (r), rs_r is the total amount of each supply component for each municipality, and Pop_r is the resident population of each municipality. When separated into peer groups, differences in mean values point to some interesting distinctions that speak to recreation access by the size of municipality. An indexed level of recreation supply that can be used to assess the distribution of recreation supply is fully outlined in Appendix E.

To allow for comparisons both within and among peer groups, a recreation supply index was developed that took into account population and maximum value within each peer group. This straightforward index simply reflects the per capita level of recreation supply divided by the maximum value for all four peer groups. The per capita recreation supply metric was then used to find an indexed recreation supply as shown in the equation below.

$$\text{Indexed Recreation Supply} = \left(RS_r \Big/ Max\,RS_{145\,municipalities} \right) \times 10$$

The indexed recreation supply reflects a range of variability on a linear scale from 0–10. This index allows us to compare recreation supply both within each peer group and between all four peer groups. Results of this assessment allow us to consider priorities for future investments in urban outdoor recreation for communities across Wisconsin. Given their sizes, Madison and Milwaukee are compared to similar sized cities elsewhere in the United States.[3]

Results of this assessment have been summarized in Table 4-3 below. For a breakdown describing each peer group with respect to recreation type, see Appendix E.



Assessing recreation supply within peer groups allows us to consider priorities for future investments in urban outdoor recreation for communities across Wisconsin.

Table 4-3: **Average Levels of Urban Recreation Supply by Peer Group**

Recreation Type	Peer 1	Peer 2	Peer 3	Peer 4	Average of ALL Municipalities
Non-school equipped playground facilities [number] per 1000 people	0.31	0.50	0.69	1.12	0.89
Parks [number] per 1000 people	0.78	0.95	1.19	1.83	1.51
Parks [acres] per 1000 people	14.80	19.14	19.11	21.78	20.37
Trails – bicycle use [miles] per 1000 people	0.19	0.40	0.27	0.41	0.36
Trails – hiking use [miles] per 1000 people	0.12	0.40	0.33	0.69	0.54
Number of Municipalities by Peer Group	12	19	28	86	

Peer group comparisons on a per capita basis suggest important differences. This data shows the indices for non-school equipped playground facilities varied widely, with clear peer group differences. Data describing the number of parks within community boundaries also shows similar disparity between peer groups. In general, smaller communities (peer groups 3 and 4) tend to have a higher number of playground facilities and parks when compared to larger communities (peer groups 1 and 2). The total acreage of urban parks on a per capita basis also shows the same trend. While not as dramatic as the difference between peer groups in terms of playground facilities and parks, per capita data for urban park acreage does suggest that smaller population centers have higher per capita park acreages. Meanwhile, the supply comparison of biking and hiking trail[4] miles per 1000 people do not suggest significant differences between peer groups.

[3] Once again, this approach has limitations, recognizing the simple fact that Madison and Milwaukee, being excluded from the peer assessment, remain outside of this prioritization assessment. That said, these two cities compare quite favorably to their national peers.

[4] The study is inclusive of bicycle and hiking trails only; sidewalks and other walking trails are not included, but recommended as part of future tabulation.

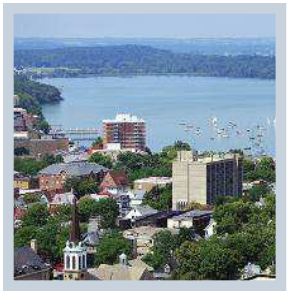
Madison and Milwaukee Peer Group Comparisons

Because of their larger populations, the cities of Madison and Milwaukee could not be compared to other municipalities within Wisconsin. A case study approach was therefore used to evaluate park systems within these cities. Peer groups for each city were defined using U.S. cities that were similar to Madison and Milwaukee in population size and regional characteristics. Madison and Milwaukee were then compared to their peer cities using several different metrics.

This analysis had two components: a comparative analysis and a budget analysis. The comparative analysis focused on the basic features of a park system. The budget analysis compared per capita investment in park systems.

Cities selected as peers to Madison were Lincoln, NE; Durham, NC; Boise, ID; and Des Moines, IA. Madison's population at the time of this study was 235,626; the mean population for the peer group was 222,365. Madison's peer group was used as a benchmark for comparison to better understand how Madison performs in its provision of parks and recreation facilities and level of recreation investment.

Data was collected on the number and size of facilities per 1,000 residents for each city, and mean and median scores were calculated. Table 4-4 shows a summary of this data.



In a number of categories, Madison was found to be performing on par with or better than its peers. Madison is above average in number and size of all park types, number of arboretums, and number of golf courses. Madison is particularly strong in the number and size of small and medium sized parks. In fact, the size of Madison's mini and neighborhood parks make it an outlier among its peer group.

Madison does fall below its peers in number of skate parks, miles of trails, number of pools, and acres of land conserved. The abundance of lakes and the city's reliance on private neighborhood clubs might explain why Madison has chosen to limit its investment in public pools. Madison's arboretum and conservancy areas may compensate for its lack of a nature center, as these facilities also provide residents with opportunities to learn about nature.

Madison also performed below its peers in number of conservancy areas. However, results for this metric varied widely among peer cities, making it difficult to speculate on Madison's performance. Because conservancy areas were also included in the calculation for total park areas, this also affects Madison's lower than average level of total park acres. A high amount of conservation land in Boise drives up the mean score of park areas and puts Madison below average for this measure as well.

Overall, Madison has a strong park system, but it could improve some of its recreation facilities to better compete with its peer cities. Adding a skate park, adding more pools, and expanding the miles of trails would offer Madison residents more options for outdoor recreation. The city should also consider constructing a nature center at its conservancy area to increase interest and awareness of the outdoors.

To conduct this same analysis for Milwaukee, a peer group was selected that included Louisville, KY; Nashville, TN; Kansas City, MO; and Columbus, OH. These cities were selected because of their similar populations, geographical location, and cultural makeup. With 605,013 inhabitants, Milwaukee is very close to the group's mean population of 605,724.

Like the Madison case study, data was collected on the number and size of facilities per 1,000 residents for each city, and mean and median scores were calculated. Milwaukee was then compared to its peer cities in these metrics. Summary statistics are assembled in Table 4-5.

Milwaukee's park system competed well against its peers, appearing in the top half of the peer group in all but three categories. Milwaukee excels in providing trail miles and golf courses to its residents—it has double the trail miles and number of golf courses of its closest peer. Data on the size of large regional parks in Milwaukee is lacking, but the city does have the highest number of these facilities in its peer group. Milwaukee residents therefore have better access to large parks even though these parks may be smaller than those of peer cities.
Milwaukee lacks an adequate number of neighborhood parks, skate parks, and conservancy areas. While Milwaukee has the most mini parks per 1,000 residents, the size (acres) of these parks are well below the mean score.

Table 4-4: **Madison Comparison Data (per 1,000 residents)**

Facilities		Madison	Lincoln	Durham	Boise	Des Moines	Mean	Median
Mini Park	number	0.581	0.119	0.081	0.084	0.126	0.198	0.119
	acres	1.184	0.072	0.166	0.047	0.316	0.357	0.166
Neighborhood Park	number	0.395	0.191	0.125	0.182	0.101	0.199	0.182
	acres	3.994	1.494	1.357	1.459	1.107	1.882	1.459
Community Park	number	0.093	0.068	0.054	0.044	0.035	0.059	0.054
	acres	2.988	3.881	1.729	0.858	3.326	2.556	2.98
Large/Regional Park	number	0.042	0.028	0.027	0.025	0.020	0.028	0.027
	acres	11.607	13.240	3.932	50.850	2.857	16.497	11.607
Total Park*	acres	26.814	30.168	7.699	102.516	8.447	35.129	26.81
	skatepark	0.000	0.008	0.004	0.015	0.005	0.006	0.005
	trails (miles)	0.110	0.509	0.087	0.281	0.202	0.238	0.202
	pools	0.004	0.036	0.022	0.030	0.025	0.023	0.025
	golf courses	0.017	0.020	0.000	0.005	0.015	0.011	0.015
	arboretum	0.004	0.000	0.000	0.000	0.000	0.001	0.000
	nature center	0.000	0.004	0.009	0.005	0.000	0.004	0.004
Conservancy Areas	number	0.089	0.008	0.009	0.005	0.005	0.023	0.008
	acres	7.041	11.481	0.515	49.302	0.841	13.836	7.041
Population		235,626	251,624	223,284	202,832	198,460	222,365.2	223,284

*includes acres of convervancy area lands in calculation

Table 4-5: **Milwaukee Comparison Data (per 1,000 residents)**

Facilities		Milwaukee	Nashville	Louisville	Columbus	Kansas City	Mean	Median
Mini Park	number	0.233	0.038	0.095	0.120	0.131	0.123	0.120
	acres	0.082	n/a	0.187	0.278	0.305	0.213	0.233
Neighborhood Park	number	0.084	0.059	0.042	0.091	0.195	0.094	0.084
	acres	1.161	n/a	0.535	0.948	2.220	1.216	1.054
Community Park	number	0.046	0.025	0.026	0.043	0.068	0.042	0.043
	acres	1.913	n/a	0.841	1.412	2.208	1.594	1.663
Large/Regional Park	number	0.063	0.035	0.042	0.026	0.060	0.045	0.042
	acres	13.522	n/a	20.258	10.878	16.497	15.289	15.009
Total Park*	acres	16.678	17.694	21.821	13.516	21.230	18.188	17.694
	skatepark	0.000	0.002	0.000	0.001	0.000	0.001	0.000
	trails (miles)	0.179	0.061	0.177	0.066	0.079	0.112	0.079
	pools	0.021	0.005	0.007	0.013	0.019	0.013	0.013
	golf courses	0.025	0.012	0.016	0.009	0.010	0.014	0.012
	arboretum	0.002	0.000	0.000	0.000	0.004	0.001	0.000
	nature center	0.002	0.007	0.002	0.000	0.002	0.002	0.002
Conservancy Areas	number	0.002	0.007	0.002	0.004	0.044	0.011	0.004
	acres	0.413	9.834	10.976	1.348	0.518	4.618	1.348
Population		605,013	605,473	566,503	769,332	482,299	605,724	605,013

*includes acres of convervancy area lands in calculation

Budgetary Resources for Urban Parks and Recreation

In addition to measuring the supply of urban park facilities, this report also sought to understand the effort that each city puts into its park and recreation system. To make this comparison, data on financial support for park and recreation facilities was compiled and analyzed. For this metric, we divided each city's parks and recreation budget by its population and calculated mean and median scores for benchmarking. Results of this assessment for Madison and its peers are presented in Table 4-6.

Madison's per capita investment in parks and recreation is the median value, but it is roughly $7 below the mean per capita spending of its peer group. Part of this difference is caused by Boise's high level of spending. Boise appears to be an outlier in this measure; at over $106 per capita, Boise's value drives up the mean. Were Boise's value removed from the set, the mean would lower to roughly $61. This puts Madison's spending efforts slightly higher than this smaller group's average. Either way, Madison remains in the middle of its peer group with respect to fiscal effort in parks and recreation.

Results for investment in the Milwaukee parks and recreation system relative to its peer group are presented in Table 4-7.

In its peer group, Milwaukee's per capita fiscal effort with respect to parks and recreation is second only to Kansas City's. Comparing these results to Table 4-6, we see that cities that spent less on parks and recreation also had lower recreation supply metrics. While Milwaukee spent only slightly more than it closest peers, it is interesting to note from Table 4-6 that lower expenditure cities did not perform better on most of the recreation supply metrics. It is also important to note that while Kansas City has a higher per capita investment, it also appears to be at the top of this peer group in most measures of recreation facility supply. Should Milwaukee decide to expand its park system services, a further examination of Kansas City's park system and financial support structure could provide valuable insight.

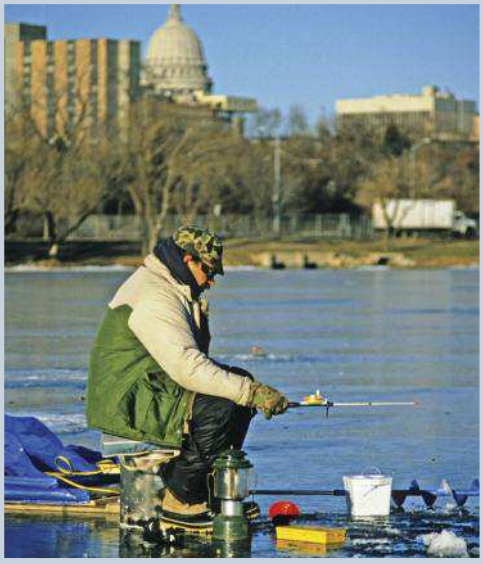
Analogous fiscal assessments for the municipalities listed in Appendix E (those located in the 24 urban counties of Wisconsin) were also done and suggest some interesting results. Analysis of municipal budgetary commitments to outdoor recreational facilities reveals that the mean community in our study group of 163 municipalities spent about $1.2 million, or 6.8% of operating and capital expenditures, on parks and recreation in 2008. The median community spent about $520,000 on parks, equating to a 6.2% share of total expenditures.

Table 4-6: **Madison Peer Group Budgetary Analysis Results per Capita**

City	Parks & Recreation Budget (2008 USD)	Population	Investment per Capita (2008 USD)
Madison, WI	$14,806,922	235,626	$62.84
Lincoln, NE	$13,775,752	251,624	$54.75
Durham, NC	$10,300,000	223,284	$46.13
Boise, ID	$21,540,000	202,832	$106.20
Des Moines, IA	$15,798,586	198,460	$79.61
Mean	$15,244,252	222,365	$69.90
Median	$14,806,922	223,284	$62.84

Table 4-7: **Milwaukee Peer Group Budgetary Analysis Results per Capita**

City	Parks & Recreation Budget (2008 USD)	Population	Investment per Capita (2008 USD)
Milwaukee	$34,785,810	605,013	$57.50
Nashville	$30,600,800	605,473	$50.54
Louisville	$27,348,500	566,503	$48.28
Columbus	$35,674,624	769,332	$46.37
Kansas City	$53,961,614	482,299	$111.88
Mean	$36,474,270	605,724	$62.91
Median	$34,785,810	605,013	$50.54



Madison remains in the middle of its peer group with respect to fiscal effort in parks and recreation.

In terms of peer group analysis, the percentage of operating and capital expenditure expended on parks and recreation are listed below in Table 4-8.

Table 4-8: **Urban Peer Group Summary for Percent of Operating and Capital Expenditures Spent on Parks and Recreation in 2008**

N = Number of Municipalities by Peer Group	Peer 1 (N=12)	Peer 2 (N=19)	Peer 3 (N=28)	Peer 4 (N=85)	Average Municipalities*
Operating and Capital Expenditure Spent on Parks and Recreation	5.58%	6.95%	8.51%	6.83%	7.06% (Peer Groups) 6.88% (ALL)

*Note: Only 144 out of 163 Wisconsin municipalities are categorized into peer groups; this is either due to missing data from some municipalities or unique cases like Madison and Milwaukee.

Focus Groups and Expert Observations

In 2010, a focus group and expert interviews were held to assess urban recreation barriers. From these interactions, the following themes emerged that highlight barriers, as well as opportunities for addressing these barriers. The primary barriers and opportunities are as follows:

- **Lack of real and perceived safety from crime and traffic.**
  - Create safe spaces by bringing traffic to the park and altering park design so there are no hidden places.
  - Bring foot traffic by offering programming and versatile spaces.
  - Install traffic-calming structures on area streets and crosswalks and reduce speed limits.
- **Lack of desired facilities and necessary amenities.**
  - Create versatile facilities like multipurpose fields and provide basic amenities including unlocked bathrooms and drinking fountains.
  - Rehabilitate or tear down blighted or unsafe infrastructure.
- **Lack of connectivity.**
  - Increase park connectivity with surrounding communities and other parks via greenways and bike paths.
- **Lack of programming.**
  - Create programming including walking clubs, which are very popular in urban areas, using neighborhood partnerships.

Walking clubs are popular in urban areas.

Programming may also be developed through governmental partnerships and funding strategies. A good example of this type of partnership is the Center for Resilient Cities (CRC) in Milwaukee. The CRC has a development agreement with Milwaukee County that allows the CRC to oversee final park and recreation design. CRC holds all funds in escrow, and they are able to raise more funds than the city or county because they are a 501(c)(3), meaning that donations to the organization are tax-deductible, the organization is tax-exempt, and CRC projects are eligible for a wider range of grants. In discussions with the CRC, the organization noted that people are often more comfortable donating to a nonprofit than the City for specific projects because nonprofits are seen as more transparent. The CRC is able to leverage its existing neighborhood connections to build community trust, respond to community desires, and help in the operation of park programming. The County provides money for capital expenditures (such as playground structures or berm removal), and the CRC helps fund the programmatic and operational aspects of a park. The CRC is a good example of how public-private partnership can work to overcome challenges in a difficult financial time.

Park programming tailored to meet the needs of local residents can increase park use and improve the image of a park system.

Summary and Policy Implications

This chapter has addressed the benefits and availability of recreation facilities in urban areas across the state. The following implementation strategies have been developed in response to the data presented in this chapter. These strategies may be adjusted to best meet the goals of individual park systems. The implementation strategies are as follows:

Small Parks, Connectivity, and Conservancy Land

Further park acquisition and development should be strategic and focus on physical unification of the park system. By developing trails and conservancy land corridors, park systems will be able to improve access and increase recreation offerings in underserved areas. Improved connectivity efforts can also be complimented with the strategic placement of mini-parks. Mini-parks (parks that are less than five acres in size) can meet some of the more common recreation demands in urban areas. These parks can also act as gateways to trails that connect users to larger community and regional parks. Connecting parks and improving access to a larger park system can help build a more integrated park system. Integrating green infrastructure into a park system is a perfect example of a co-benefit relationship that can improve connectivity and increase the sustainability of a city's infrastructure.

Increased connectivity also addresses safety concerns. Improved connectivity can provide designated routes and access points to limit users' exposure to high-volume traffic and congestion. Improved connectivity also has the potential to increase the number of park users at any given time. More people using park facilities means more eyes on the park—a safety measure similar to the eyes on the street concept. Efforts to improve connectivity should consider these possible safety benefits.

Programs, Specialized Facilities, and Versatile Facilities

Park programming tailored to meet the needs of local residents can increase park use and improve the image of a park system. It is also important to achieve a balance between providing specialized facilities and increasing park versatility. Increasing specialized facilities can meet the demands of niche recreation groups and help reach underserved populations with targeted recreation opportunities. Steps should be taken to evaluate demand and identify shortcomings for specialized facilities. Future projects should reflect these needs.

However, while specialized facilities are instrumental parts of park systems, individual parks should also strive to improve versatility by, for example, installing multipurpose fields instead of regulation soccer fields. Emerging recreation trends like bike polo and disc golf require small additions or alterations to typical park structures, which can also ideally be used for other recreation. Development should accommodate new recreation opportunities and integrate them into existing facilities whenever possible. The DNR standardizes recommendations for park and recreation designs in the interest of assisting park and recreation development agencies; more detail can be found in Appendix E.

Partnerships: Public-Public and Public-Private

Government agencies play a primary role in providing high quality, accessible outdoor recreation in urban areas. In order to provide the best recreation opportunities across multiple jurisdictions, agencies need to collaborate. Intergovernmental partnerships should focus on organizational structure and increasing administrative efficiencies. Efforts should focus on improving recreation connectivity and increasing park access. Potential areas for intergovernmental partnerships include but are not limited to school districts, water-utility departments, and metro area park systems.

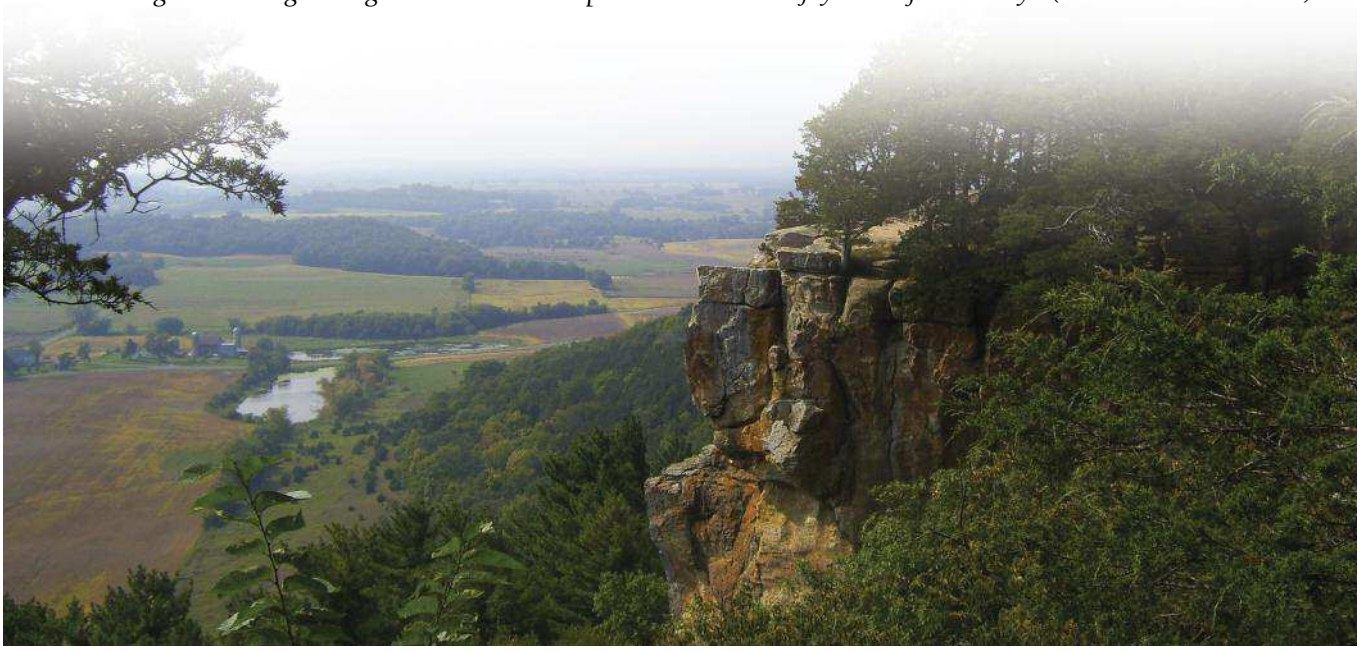
Partnerships between government agencies and local organizations have the potential to vastly improve recreation offerings in urban areas. Public-private partnerships may focus on funding issues, programming elements, safety, and management strategies. In this kind of partnership, private partners often take on a level of ownership and responsibility that would traditionally be held by a public entity. This could include monitoring programs, park maintenance, fundraising, etc. Public-private partnerships may also bring in additional revenue sources though fundraising activities. Public-private partnership opportunities should be considered in order to improve park system offerings and increase park efficiency.

CHAPTER 5

Open Space Conservation:
Connecting People to Outdoor Recreation Opportunities

Reflected in America's Great Outdoors (AGO) Report, the goals to "Conserve Rural Working Farms, Ranches, and Forests through Partnerships and Incentives" and to "Protect and Renew Rivers and Other Waters" ensure conservation and recreation enjoyment of beloved lands and waters. Wisconsin shares this view by incentivizing landowners to conserve public recreation opportunities on private lands, and prioritizing safe access to waterways.

Through focus groups discussions, Chapter 5 examines open space conservation roles from public lands and the programs that support them to private lands leveraged financially—deemed necessary by stakeholders—for preservation and public recreation access (AGO Recommendation 7.5). AGO supports expanding federal and state partnerships with private landowners through federal programs (AGO Action Item 7.5a), collaborating with local, state, and tribal governments to conserve and restore large landscapes (AGO Action Item 8.1d), and fostering networking among communities to improve access and enjoyment of waterways (AGO Action Item 9.2b).



Overview

This chapter of the SCORP addresses the relationships between open space conservation and outdoor recreation in Wisconsin, and provides an inventory of existing recreation and conservation lands. Related work serves to support one of the overarching goals of the 2011-2016 SCORP by connecting urban and rural populations to the outdoors. The comprehensive guide to such local outdoor recreation planning can be found in Appendix F.

Recreation lands and facilities are provided by two major groups in Wisconsin. Governments at the state, federal, county, and local level provide important resources to enhance recreation access opportunities. Equally important are the private landowners that own and provide access to recreation lands. A relationship exists between all of these providers. To understand this relationship, various stakeholders were asked to think about the challenge of connecting urban and rural people and to help identify possible strategies. Stakeholders were asked to discuss four major themes:

1. **Identifying priorities that help the State of Wisconsin to be a more effective partner in open space conservation.**
2. **Building a framework to focus existing and new state actions for open space conservation.**
3. **Training natural resource managers to help them fully use the resources and skills from all parts and levels of the State to improve coordination.**
4. **Identifying collaborative approaches and partnerships that support open space and conservation programs.**

The Public and Private Outdoor Recreation Landscape

Both public and private lands are important contributors to Wisconsin's outdoor recreation supply. This section discusses Wisconsin's land resources for public and private outdoor recreation and conservation. Table 5-1 is a comprehensive list of public and private land types broken down by ownership and/or program. The largest public land category is county parks and forests, accounting for 42.7% of all public lands. For private lands, the largest category is open managed forest lands, accounting for 31.8% or over 1.1 million acres. Appendix G provides a complete listing of state-owned lands.

Table 5-1: **Public and Private Recreation and Conservation Lands in Wisconsin: Acres by Ownership (2011)**

Land Ownership Type	Total Acreage	Percent of Subtotal	Percent of Total
Public Ownership			
Federal government	1,500,000	26.6%	16.3%
Wisconsin Department of Natural Resources			
Forests and wild rivers	820,379	14.6%	8.9%
Park and natural areas	203,209	3.6%	2.2%
Fisheries and wildlife	668,755	11.9%	7.3%
Total DNR program lands	1,705,772	30.3%	18.6%
County parks and forests*	2,368,099	42.0%	25.8%
City, village, and township			
City	38,571	0.7%	0.4%
Village	12,677	0.2%	0.1%
Town	10,754	0.2%	0.1%
Total city, village, and township	62,002	1.1%	0.7%
Subtotal public lands	5,635,873	100%	61.3%
Private Ownership			
Managed forest law lands			
Open lands	1,132,412	31.8%	12.3%
Closed lands	2,010,014	56.5%	21.9%
Total managed forest law lands	3,142,426	88.3%	34.2%
Forest legacy program lands	136,751	3.8%	1.5%
Land trust	280,000	7.9%	3.0%
Voluntary public access	6,500	0.2%	0.1%
Subtotal private lands	3,559,177	100%	38.7%
Total all lands	**9,195,050**	—	**100.0%**

*County parks and forests represent lands enrolled under County Forests Law only.

Public Recreation Lands

Federal Government

Federal recreation providers in Wisconsin include the National Park Service, the Fish and Wildlife Service, and the Bureau of Land Management, all under the U.S. Department of the Interior; the Forest Service, under the U.S. Department of Agriculture; and the U.S. Army Corps of Engineers, under the U.S. Department of Defense, Department of the Army. These providers offer opportunities for both active and passive recreation and are also actively involved in the conservation of forest, prairie, and water resources. Federally owned recreation lands in Wisconsin are therefore tied to the preservation of open space and natural resource management. Recreational activities provided in these areas are generally nature-based and non-destructive: hiking, camping, fishing, hunting, nature study, canoeing, boating, swimming, and similar activities.[1]

Wisconsin Department of Natural Resources

The Wisconsin Department of Natural Resources (DNR) has two divisions, Land and Forestry, which provide the majority of state-owned recreational lands and facilities. The DNR plays a significant role in identifying and conserving areas of unique and valuable natural resources across the state. DNR lands that include park and natural areas provide a wide variety of outdoor recreation resources within Wisconsin. Recreation opportunities provided by the DNR are similar in type to those provided by federal agencies. As on federal properties, the preservation of open space and conservation of natural resources are critical components of state-owned land management.

State Forests and Wild Rivers

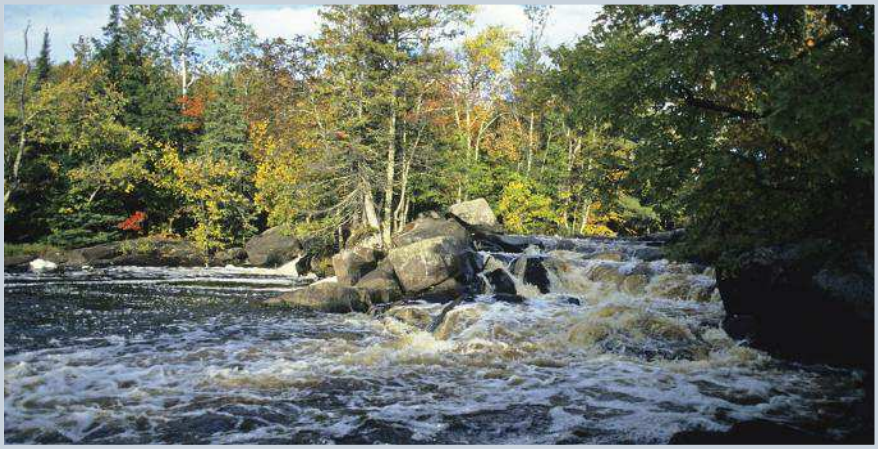
People most often associate Wisconsin's state forests with recreational opportunities including fishing, camping, hiking, snowmobiling, and skiing. But the state forests were originally created to preserve important watersheds and unique ecosystems. Today those forests are managed for multiple uses.[2] The DNR manages six state forests that provide diverse landscapes for recreation and conservation.

The Wisconsin system of state wild rivers was established in 1965 in order to provide Wisconsinites with an opportunity to enjoy natural streams, to attract out-of-state visitors and assure the well-being of Wisconsin's tourism industry, and to preserve selected rivers in a free flowing condition protected from development. Wild rivers are designated by legislative acts. The following rivers, or portions of rivers, are currently designated as wild rivers:

- Pike Wild River – Marinette County
- Pine and Popple Wild Rivers – Florence and Forest Counties
- Martin Hanson Wild River – a portion of the Brunsweiler River in Ashland County
- Totagatic Wild River – Bayfield, Burnett, Sawyer, and Washburn Counties

The DNR owns land within Pike Wild River and Pine and Popple Wild Rivers.[3]

1 From SCORP 2005-2010, Chapter 3
2 WDNR State Forests: http://dnr.wi.gov/forestry/StateForests/
3 WDNR Wild Rivers: http://dnr.wi.gov/org/land/facilities/wildrivers/



The Wisconsin system of state wild rivers was established in 1965.

State Park and Natural Areas

There are 49 state parks, 42 state trails, 9 state recreation areas, and 653 state natural areas.[4] State natural areas (SNAs) protect outstanding examples of Wisconsin's native landscapes and communities, significant geological formations, and archeological sites. Wisconsin's state natural areas encompass over 358,000 acres. SNAs are valuable for research and educational use, preservation of genetic and biological diversity, and provision of benchmarks for determining the impact of use on managed lands. They also provide some of the last refuges for rare plants and animals; more than 90% of the plants and 75% of the animals on Wisconsin's list of endangered and threatened species are protected in SNAs.[5]

County Parks and Forests

All Wisconsin counties have county parks, but not all have county forest land. State legislation mandates that county forests land enrolled under the Wisconsin County Forests Law be open to hunting, camping, hiking, and bird watching. With the exception of a few sensitive areas, there are no lands enrolled under the County Forests Law that are closed to the public. These county forests provide more than 1,200 campsites and thousands of miles of hiking, skiing, and snowmobile trails, as well as public access to hundreds of lakes and streams.[6]

Enrolled county forests represent the state's largest public forest landholding and are extremely important to Wisconsin's forest products industry and economy; each year they generate anywhere from $25 to $30 million in timber revenues for the counties and towns in which they are located. Approximately 16,000 jobs and $4.6 billion in the generation of forest products result from the timber harvested from county forests. County forests also provide many recreation and tourism opportunities.[7]

There are enrolled county forests in 29 of Wisconsin's 72 counties, totaling more than 2.36 million acres. Figure 5-1 shows which counties in Wisconsin maintain county forest lands.

Figure 5-1: **Wisconsin County Forests**

Wisconsin Stewardship Program

Wisconsin has a long and successful history of bipartisan financial support for the conservation of the state's natural resources and the provision of outdoor recreation opportunities. The state's first comprehensive, long-term land acquisition and recreational development program was the Outdoor Recreation Action Program (ORAP); it was first enacted in 1961, then revised in 1969 and 1981. The program is funded by general obligation bonds, and in turn provides funding to state and local governments for the acquisition of conservation lands and the development of recreational facilities. The original ten-year stewardship program (FY1991-2000) created in 1989 (Wis. 1989 Act 31) authorized approximately $23.1 million annually to be used by the DNR, local units of government, and nonprofit conservation organizations. The success of this program resulted in an extension and redevelopment of the original program. Consequently, the next ten-year program, dubbed Stewardship 2000, became the state's primary funding source for state government, local government, and nonprofit conservation organizations to acquire land and easements for conservation and outdoor recreation purposes.

Stewardship 2000, also known as the Knowles–Nelson Stewardship Program, was created in 1999 for FY2001-2010 (Wis. 1999 Act 9). This program remains comprehensive and addresses a broad spectrum of land conservation and nature-based recreation needs across the state. For Stewardship 2000, the original stewardship program's fund subprograms were reorganized to allow for more flexibility of use depending on need. In addition, local assistance grants were redefined from broad spectrum community outdoor recreation to nature-based outdoor recreation.

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4 National Association of State Parks Directors: Statistical Report of State Park Operations 2010-11

5 State Natural Areas Program: http://dnr.wi.gov/org/land/er/sna/

6 Wisconsin County Forests Association: http://www.wisconsincountyforests.com/wcfa-acr.htm

7 WDNR County Forests: http://dnr.wi.gov/topic/CountyForests/

Today, Stewardship II (FY2011–2020) provides $86 million per year. The program includes several subprograms, each with its own goals and priorities. These subprograms provide funds to improve visitor amenities at state and local parks; restore wetlands and prairies; and acquire land for trails, natural areas, state and county forests, wildlife habitat, urban green space, state and local parks, river and stream corridors, and flowages and wild lakes.[8]

Land and Water Conservation Program

The Land and Water Conservation Program is a visionary program established by Congress in 1965 to preserve, develop, and assure accessibility to quality outdoor recreation resources for active participation in recreation and "to strengthen the health and vitality of the citizens of the United States" (Public Law 88-578). The program is funded by the Land and Water Conservation Fund (LWCF), which is administered by the DNR and supported through a combination of federal dollars and matching grants provided at the state level. In 2009, Wisconsin received $495,242 through the LWCF. This is a portion of the estimated $50 million needed annually by the state to enhance parks and recreation facilities.[9]

8 WDNR: http://dnr.wi.gov/stewardship/

9 LWCF: State Assistance annual report 2009. http://www.nps.gov/lwcf/2009_lwcf_annual%20_rpt.pdf

10 WDNR: http://dnr.wi.gov/forestry/feeds/faqsFull.asp?s1=ForestTax&s2=MFL&inc=ftax

Private Recreation Providers

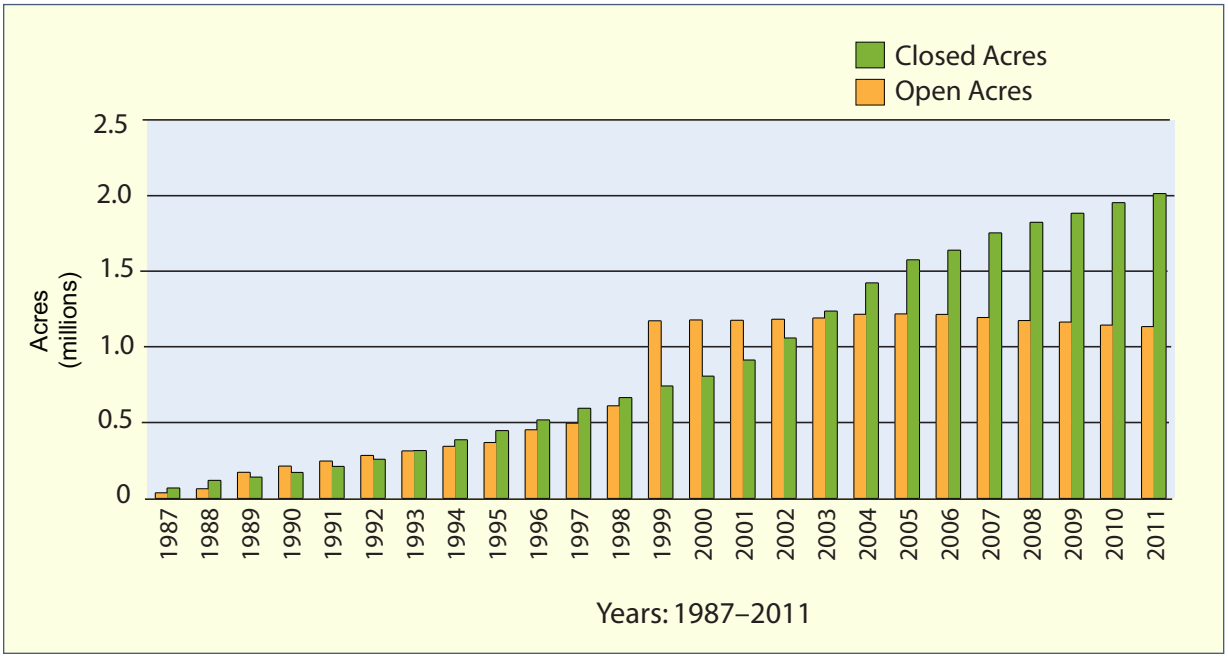
Privately owned lands play a critically important role in open space conservation and outdoor recreation through the Managed Forest Law Program, Forest Legacy Program, Voluntary Public Access Program, and nonprofit land trusts. Most land in these programs is held in private ownership and conserved through open space easements. These programs allow landowners to maintain their land while providing Wisconsinites with access to natural areas and outdoor recreation.

Managed Forest Law Program

The Managed Forest Law Program is a landowner incentive program that encourages sustainable forestry on private woodland. The Managed Forest Law (MFL) was enacted in 1985 and replaced the Woodland Tax Law and the Forest Crop Law. The MFL is currently the only forest tax law that is open to enrollment in Wisconsin. Enrolled program lands must be managed by the landowner in accordance with a forest management plan written by a certified consulting forester.[10] In exchange for following sound forest management, the landowner pays reduced property taxes.

Lands enrolled under MFL can be designated as open or closed to public recreation. Open designation allows public access to the property for hunting, fishing, hiking, sight-seeing, and cross country skiing without additional permission from landowners. Closed designa-

Figure 5-2: **Managed Forest Law Lands (by Year, all Landowners)**



tion gives landowners the right to restrict or permit access to their lands. Figure 5-2 illustrates the growth of MFL lands in acreage by open or closed designation since 1987. Table 5-2 shows the 10 counties with the largest acres of MFL program lands, as well as the percentage of open acres in each county.

Table 5-2: **Top Ten Counties with Most Acreage Enrolled in Managed Forest Land Program**

Top 10 Counties by Total MFL Acreage		(Open Lands %)
1	Oneida County	195,835 (74.9%)
2	Forest County	127,436 (77.4%)
3	Lincoln County	126,488 (37.3%)
4	Price County	123,430 (52.6%)
5	Sawyer County	116,348 (77.0%)
6	Langlade County	113,042 (47.7%)
7	Marinette County	112,182 (25.6%)
8	Adams County	100,136 (37.4%)
9	Marathon County	96,025 (16.0%)
10	Ashland County	84,915 (75.6%)

State and Federal Forest Legacy Program

In 2001, the Natural Resources Board granted the Department the authority to establish a Forest Legacy Program. The goal of the program is to minimize fragmentation and conversion of significant forested areas to non-forest uses. To help maintain the integrity and traditional uses of private forest lands that enter the program, the state prefers the acquisition of conservation easements that focus on the sustainable use of forest resources. Easements allow the Department to acquire land at a reduced value since only the rights necessary to protect the land from conversion and to ensure it remains in a forested state are purchased. Another main goal of the program is to allow public access on these lands where appropriate. To help further the state's contributions toward these acquisitions, the Department can apply for funding through the U.S. Forest Service Forest Legacy Program. As part of the 1990 Farm Bill, Congress created the program to identify and protect environmentally important private forest lands threatened with conversion to non-forest uses. At the close of 2010, Wisconsin had partnered with landowners to conserve more than 133,000 acres through the Forest Legacy Program.[11]

Voluntary Public Access Program

The Voluntary Public Access (VPA) Program allows Wisconsin private landowners to open their property for public recreational use such as hunting, fishing, trapping, and wildlife observation. In return for joining this voluntary program, landowners enjoy financial incentives from the 2008 Farm Bill for leasing qualified property. VPA enrollments pertain to 37 Wisconsin counties in four geographical focus areas: northeast, south central/southeast, southwest, and west central. As of December 2011, the state has active leases on about 6,500 acres until 2014.[12]

Land Trusts

Land trusts are established by private, community-based, and non-profit organizations to protect land and water resources for the public benefit. These organizations permanently protect important resources in their communities from overdevelopment. Most often, the resources under protection have natural, recreational, scenic, historic, or productive value. Land trusts that have been incorporated as non-profits operate like charities—any donation, including money, land, or equipment, is tax deductible. They are independent, non-governmental organizations whose mission is determined by their members and volunteers.[13]

Other Open Space Conservation Programs

Additional outdoor conservation programs are available at multiple government levels. These programs typically focus on conservation with a combination of limited public access. Programs offered in Wisconsin include the Conservation Reserve Program, Conservation Reserve Enhancement Program, and conservation easements. These programs enhance outdoor recreation and protect the state's scenic beauty.

Conservation Reserve Program

The Conservation Reserve Program (CRP) is a voluntary program for agricultural landowners.[14] The federal Farm Bill allocates funding by distributing annual rent payments and up to 50 percent of cost-share assistance to establish long-term resource conservation on eligible farmland. The Conservation Reserve Program safeguards Wisconsin's natural resources by protecting topsoil, groundwater, and wildlife populations. Wetlands are also included under this program, and a detailed summary is provided in Appendix H. In 2011, 399,835 acres were enrolled in CRP status in Wisconsin.

11 From WDNR Website: http://dnr.wi.gov/

12 http://dnr.wi.gov/org/land/wildlife/vpa.htm

13 Gathering Waters Conservancy: http://www.gatheringwaters.org/

14 http://dnr.wi.gov/forestry/private/financial/crp.htm

Conservation Reserve Enhancement Program

The state-sponsored Conservation Reserve Enhancement Program (CREP) is a further rendition of Conservation Reserve Program initiatives. The program is run by the DNR and local land conservation departments in conjunction with federal agencies that contribute partnership support through the USDA's Farm Service Agency and Natural Resources Conservation Service along with the Wisconsin Department of Agriculture, Trade, and Consumer Protection. CREP targets long-term conservation practices through restoration of grassland habitat and water quality. In exchange for participating in the program, landowners receive financial incentives and cost share payments. The program encourages specific long-term practices by offering 15 year or permanent contracts. In 2011, 40,962 acres were enrolled in CREP status by the State.

Table 5-3: **Easements by Holder Type**

Easement Holder	Count	Acres
Federal	727	64,835
State	27	77,301
NGO	79	5,574

Table 5-4: **Easements by Landowner Type**

Landowner Type	Count	Acres
Federal	2	39
Local	2	10
NA	8	377
Private	142	83,474
State	679	63,810
Total	833	147,710

Table 5-5: **Easements by Purpose**

Purpose	Count	Acres
Data Not Available	126	6,719
Environmental System	608	56,950
Open Space – Farm	41	4,331
Open Space – Forest	27	77,326
Open Space – Other	18	1,469
Recreation or Education	13	916

[15] The data for these tables come from the National Conservation Easement Database. http://nced.conservationregistry.org/reports/easements?report_state=Wisconsin&report_type=All

The challenge is conserving natural places while accommodating recreation use.

Conservation Easements

Conservation easements allow property owners to protect their land while also enjoying associated financial benefits. A conservation easement is a legal agreement between a landowner and an organization like a private land trust or a government agency. Land in an easement remains in private ownership, and easements may be purchased or donated. Conservation easements permanently limit specific uses on a property to protect its conservation or historic values. Conservation purposes in an easement may include outdoor recreation or education; protection of fish, wildlife, agricultural, and plant habitat; and preservation of scenery.

Wisconsin has many easements held by federal and state government, and by non-governmental organizations (NGOs) such as land trusts. Tables[15] 5-3 through 5-5 provide information about easement holder types, landowner types, and easement purposes.

Connecting Urban and Rural Populations to Outdoor Recreation

State and local governments face a challenge as they attempt to conserve natural places while also promoting and accommodating recreational use. This has been made more difficult in light of decreasing funding to land management agencies and state policy shifts that prioritize economic development and jobs over preservation and recreation development. How can Wisconsin maintain state lands, assist local governments and private landowners with maintenance, and increase the health and availability of outdoor recreation lands?

To some extent, the quantity of natural amenities found in Wisconsin is fixed: there are only so many miles of high quality, accessible shoreline, and the state's terrain will not become mountainous anytime soon. The quality of these resources is more malleable and will be shaped, in part, by private actions and public policies. Communities in Wisconsin can take action to protect and enhance their natural resources to better attract new households and maintain vitality.

A guide for future considerations in large-scale recreation planning comes from the recent federal out-

door recreation framework, America's Great Outdoors Initiative. The AGO is a national plan that presents a set of goals and actions intended to connect people to the outdoors, to conserve and restore the outdoors, and to establish partnerships in part to accomplish this vision. There are 10 sections of the report, each containing a series of goals, recommendations, and action items considered for the overarching goal of connecting people, both rural and urban, to open space lands.

Even in good times, these would be ambitious goals for local, state, and national agencies. When resources are scarce and the economic outlook is cloudy, it becomes a greater challenge to effectively connect people with the outdoors. To help overcome these challenges, the 2011-2016 SCORP establishes a framework for creating and/or enhancing collaborative approaches and partnerships that better support open space and conservation programs and effectively connect the physical pieces of our recreational assets.

In short, there needs to be a better way of doing the work of planning and creating our open space system. The ideal system of the future would be:

- **Seamless:** Private lands are open to recreation and local, county, state, and national recreation and open space assets would be tied together through greenways, trails, and water blueways (water trails).
- **Accessible:** Citizens would be able to enjoy these resources regardless of their wealth or location.
- **Leveraged:** Multi-party collaborations and funding strategies would be needed to acquire, improve, and protect Wisconsin's open space system.

To help develop a framework for this kind of a recreation system, recreation professionals and landowners from across the state were asked to propose concrete examples and creative ideas. Proposing major changes in how recreational space is planned for and provided may sound daunting, but Wisconsin has a history of developing and implementing revolutionary ideas in outdoor recreation. The state government itself is uniquely positioned to enact such change due to its resources ($86 million annually from 2011-2020 in Stewardship bonding authority plus millions spent in complementary programs to protect and enhance natural resources), its authority (state and county laws impact the vast majority of open space land in Wisconsin), and its expertise and experience (the State has already been a key actor in creating our current outdoor recreation and open space resource). This SCORP aims to capture new ideas and set the stage for more detailed planning, implementation, and follow-through.

Collaborative Approaches to Support and Improve Outdoor Recreation Landscapes

To begin the work of connecting open space to communities, several focus group meetings were held involving public parks and recreation directors and managers; land trust directors; owners of woodland and agricultural land; and managers of public lands at the county, state, and federal levels. Focus groups allowed participants to respond to questions in an open-ended, small group format. The purpose of these meetings was to understand the kinds of challenges and future themes that those involved in recreation in Wisconsin are facing. The following section reports on the focus group meetings and questions that were asked.

Focus Group Meetings

Six focus group meetings were held around the state. Table 5-6 shows each group, the number of participants in the focus group, meeting dates, and the location of the focus group meeting.

At each focus group meeting, all participants were asked the same questions. The questions were grouped around the idea of open space conservation into four broad categories: successes, challenges, strategies, and big ideas. Participants were asked to record their com-

Table 5-6: **Focus Group Meetings**

Group	Number of Participants	Date	Location of Meeting
WI Parks and Recreation Association	3	March 25, 2011	Wisconsin Dells
Land Trusts	8	April 14, 2011	Milwaukee
Woodland Owners	6	August 23, 2011	Stevens Point
Lakes	7	August 24, 2011	Stevens Point
Agriculture	9	August 25, 2011	Baraboo
County Forest	5	November 3, 2011	Minocqua

ments, and comments were recorded on flip charts. After the meetings, the flip chart comments and participant notes were typed and saved.

Focus Group Findings

Upon completion of all six focus group meetings, the comments and notes were reviewed and categorized but not tallied. Part of the purpose was not to vote, but to identify themes from all groups. While the participants and organizations in each focus group helped us to gather ideas pertaining to open space conservation, the findings represent a compilation of focus group discussions and do not represent the views of any particular organization or group or individual.

Successes

In order to consider the direction open space conservation and protection should take in the future, it is important to first understand where current successes are being found. To that end, participants were asked to provide examples of instances when their organization was able to work effectively with the State to protect open space in Wisconsin. Examples of these cooperative efforts included the availability of grants and funding opportunities, the provision of technical assistance, formation of partnerships, and other efforts.

Challenges

Understanding the challenges to open space conservation is the first step in creating new solutions and strategies focused on open space. We asked focus group participants to respond to the following questions: What are the challenges for maintaining open space collaborations? What other challenges inhibit better coordination across interested parties in Wisconsin? The responses fell into one of five possible categories: responses specific to how the DNR works and functions; the political environment within which these collaborations and partnerships operate; the specific challenges to collaboration and coordination; how the external environment affects open space conservation; and finally, education and engagement about open space conservation.

Strategies

Once participants had described some of the challenges to the collaborative protection of open space, they were asked to think about strategies that could be used to address some of these challenges. These strategies fall into seven categories: grants and funding, existing programs and opportunities, education, partnering, communication, being strategic, and politics.

Big Ideas

One of the final questions asked of all focus group participants was, "What is the next big idea in open space and recreation planning and protection over the next 50 years?" Although a question of such magnitude was challenging for participants, it elicited much discussion. The question was framed within the context of identifying ideas that may take 10–20 years to accomplish because of their complexity, lack of political popularity, or long-range goals. Through the many responses, the following five categories were identified: education, research, funding, green infrastructure, and a catchall "other" category.

Major Themes

Throughout each of the focus group discussions, three major themes consistently emerged. Participants regularly discussed the importance of collaboration, grants and funding, and education in aid of outdoor recreation. Although these three categories were consistent among all groups, participants also provided a variety of other comments that were not easily categorized. Each of these categories are discussed below, in turn looking at successes, challenges, strategies, and big ideas.

Collaborative Approaches to Support Outdoor Recreation

Partnerships and collaborations were seen as critical to success in open space protection and management. Specifically, participants cited the accessibility of DNR staff in attending meetings, providing guidance on conservation issues, and partnering with outside groups to accomplish goals (e.g., invasive species control). Other examples of collaboration mentioned by participants focused on acquisition and management of land for recreation and conservation, including the state trails system, Rails to Trails, the Ice Age Trail, the Wild Rivers program, and land swaps between the counties and the State.

Consistent responses from many of the focus groups concerned challenges of collaboration and coordination. Here the participants saw challenges related to coordination among state and federal agencies in terms of programming and grant opportunities. Many also cited the need for collaboration in developing engineering standards for trails. The DOT and DNR need to coordinate levels of engineering appropriate to sections of a trail rather than have the same standard for all trails. Participants also indicated that they did not understand the range of agency program goals and requirements under one umbrella. Increased collaboration at the state government level could help coordinate the timing of grants, for example.

Because much of the previous discussion had focused on challenges to open space collaboration and coordination, the strategies discussion focused on partnering and communication as major themes. Many of the responses listed here are short-term and could be addressed internally by the DNR. The responses included the following:

- Improve communication across jurisdictional boundaries.
- Increase networking/sharing of information among a variety of stakeholders.
- Provide opportunities for people to share ideas.
- Work at bringing the non-hunting community to the table.
- Work/interact with individuals/public.
- Communicate to the public the challenges that the DNR faces. Let the public help identify ways to deal with the challenges.
- Follow up on next steps when meetings are held.
- Use technology to integrate and update data/reports/documents/plans.
- Create a mechanism for communication and collaboration.

Within the partnering category, the responses apply both to the DNR and a potential partnering organization. Responses included the following:

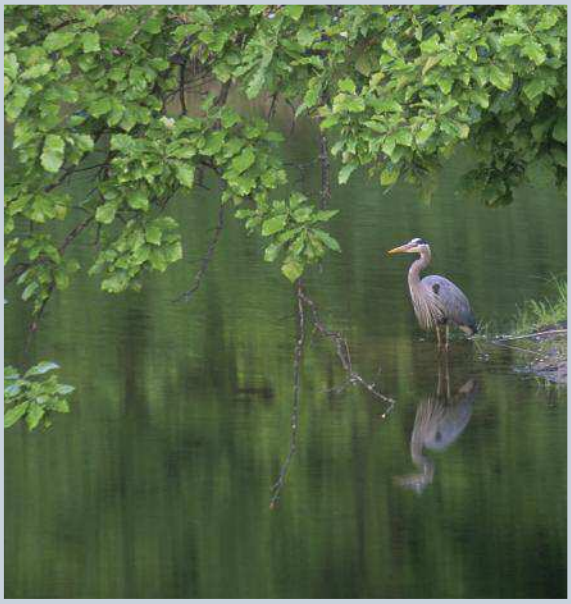
- Use volunteers/take advantage of volunteerism.
- Work with sportsmen's groups to provide incentive funds to private landowners for conservation easements that protect fish and wildlife habitat and specific recreation opportunities.
- Work together for common goals. Use outside organizations when appropriate for tasks.
- Find a way for organizations to work together toward common goals.
- Get a broad spectrum of people involved.
- Work with the Secretary of Tourism.

In summary, collaboration, cooperation, and partnerships—all words to describe the efforts of federal, state, and local agencies, user groups, non-profit organizations, and others to make the work each does more effective—are recognized as critical and necessary to accomplishing individual organizational missions and goals. Such group efforts need organizational recognition and institutional support to work effectively.

Coordinated Funding and Grants for Outdoor Recreation

One theme that was consistent among each of the focus groups was the importance of grants and funding programs for the protection of open space and water resources. Many participants cited the Knowles-Nelson Stewardship Program as an important mechanism for protecting open space, stating that Stewardship funds have been important for leveraging other monies; without available Stewardship funds, many projects would have been impossible. Participants also discussed the importance of the Forest Legacy Project, recreation and trail grants, lake protection and river planning grants, and collaboration with the DNR to apply for external funding sources.

The following challenges may find easier solutions because many of them can be addressed internally by the DNR. Consistent responses from focus groups concerned grants and easements, specifically the participants' frustration about the decision-making and ranking process related to the Knowles-Nelson Stewardship Program. This program could be reviewed in light of the comments to see if changes can be made to the grant-making process. A barrier to this program is the requirement that all easements under Stewardship must grant access to the public. This prevents valuable lands from being part of the easement process.



It is important to diversify funding opportunities and strategies as a key mechanism for outdoor recreation and open space conservation.

Not surprisingly, because the emphasis both in successes and challenges focused on grants and funding, a group of responses also addressed this topic. All focus groups recognized the importance of diversifying funding opportunities and strategies, including grant funding, as a key mechanism to further their work for outdoor recreation and open space conservation.

Some of the strategies listed below are administrative in nature and others would need legislative involvement:

Administrative Considerations:

- Establish a single date for grant applications, plus an open application process as funding allows.
- Look for ways to join and leverage resources.
- More and better information about grants and funding.
- Grant resources better connected and linked together.
- Bring in a larger constituency and diverse users.

Programmatic and External Partners:

- Explore opportunities for bequeathment.

Legislative Considerations:

- Continue to use state and federal funds and explore other funding sources to purchase working forest easements on large blocks.
- Establish a state landowner fund to cover costs of conservation easement donations to land trusts.
- Provide state money for regional liaisons who promote and process easement donations.
- Plan and create a mechanism if a land trust fails.

Throughout the focus group discussions, grants and funding were a large part of the conversation. Several ideas for funding included the following:

- Better funding and more authority for Gathering Waters.
- Tap resources in the federal Farm Bill for recreation and open space.
- Sales tax and real estate transfer tax for Stewardship.
- On state income tax forms, include a line for donating a specific amount towards open space conservation.
- $200 million bond issue for private development rights to maintain agriculture production.

Each of these ideas would need legislative action and some would be controversial.

The Role of Education in Aid of Outdoor Recreation

Education was recognized by all focus groups as an important and critical ingredient to aid in outdoor recreation and open space conservation. Many of the successes attributed to education were focused on the important contributions of the DNR with regard to technical assistance. Specifically, participants mentioned the assistance of the DNR in navigating the legal processes involved in easement acquisition and in working with the Federal Energy Regulatory Commission. Participants also mentioned the importance of DNR assistance with aquatic invasive species management.

Participants identified a lack of education across the state for open space and recreation and the need to engage citizens on the topic of open space conservation. Participants also suggested more assistance from UW-Extension to help all aspects of agriculture, including open space conservation and tourism efforts.

The education category was seen as a top priority for many of the focus groups, and several of their suggestions for the next big idea were related to education. All focus groups identified forms or topics of education. A careful examination of the responses yielded four subcategories: audience, topics, delivery methods, and large and well-funded organized efforts.

In terms of audience, the discussions focused on whom to educate about open space conservation. Suggested audiences included youth, public officials, the legislature, farmers, and the general public.

Along with audience as a discussion point, every focus group identified educational topics. Many topics were identified that could be part of a larger effort or separate efforts from a variety of organizations, partnerships, and collaborations. Topics suggested included the following:

- What is open space and how much is lost to development?
- Benefits of open space and business attraction
- Generational transfer of land and knowledge
- The values of resources beyond economics
- Better understanding of ecosystem services
- Public access and activities
- Better understanding and marketing of the Stewardship program; a potential program name change to increase program accessibility
- The work and benefits of land trusts
- Clarification and promotion of the public interest
- Public rights versus private profit potential
- Comparison of the costs and benefits of open space conservation

These diverse topics would need some background research and identification of individuals with respective expertise. In addition, refinement of the topics would be necessary depending on the audience and delivery mechanism.

Many of the groups recognized a need to deliver education in a variety of methods. A key strategy recognized by all focus groups was exposure to and contact with open spaces (e.g., outside the classroom). Delivery mechanisms to accomplish this type of education included the following:

- Internships and volunteering
- Summer camps using DNR land
- Environmental education programs and staff at recreation resources
- Inclusion of open space and recreation as part of school curriculum

There are many opportunities to partner with current programs and organizations, but an organized effort would be necessary.

Finally, a small set of large and well-funded organized efforts were identified and included the following new ideas:

- Create a land use and open space institute.
- Organize an annual forest or open space event akin to farm technology days.
- Establish a confederation/conference of recreation areas' friends groups.

There is a need to engage Wisconsin citizens on the topic of open space conservation.

Each of these ideas would need an organized, collaborative effort and funding to make it happen.

Focus group participants identified education as critical to their success in outdoor recreation and open space conservation. The groups generated many creative ideas that will need additional consideration by both the DNR and other organizations.

Additional Focus Group Findings

In addition to the successes mentioned above, focus group participants also cited the important contribution of local comprehensive planning efforts (e.g., the identification of existing and potential recreation corridors in southeast Wisconsin county forest plans), as well as extension work such as the Ultimate Land-Use Tour and the Wisconsin Woodland Owners' Association Field Days, which often include participation from the DNR.

Many of the challenges discussed by the groups have no short-term solutions. Other challenges have more direct and simple solutions that can be addressed more easily. First, the most difficult challenges should be examined. Consistent responses within the focus groups involved concerns about DNR staffing and funding.

Focus group participants recognized that, in addition to existing grant opportunities, there is an array of other funding programs and opportunities. Rather than establishing new programs, the State should work toward identifying and promoting these existing programs. Other responses in this category emphasized a diversification of open space and recreation plans. These ideas suggest eliminating the requirement that specific recreation be available based on state land type (e.g., promote agriculture on non-agricultural land) and encouraging and supporting small projects.

Many groups discussed green infrastructure as a component of the big ideas discussion. Suggestions from this discussion are listed below in order of increasing implementation difficulty:

- Modify engineering standards, i.e. to use renewable energy or recycled material, where appropriate at connecting trails under/across highways.
- Increase and improve riverway and lake frontage trails.
- Promote greenbelts and green networks around and between cities.

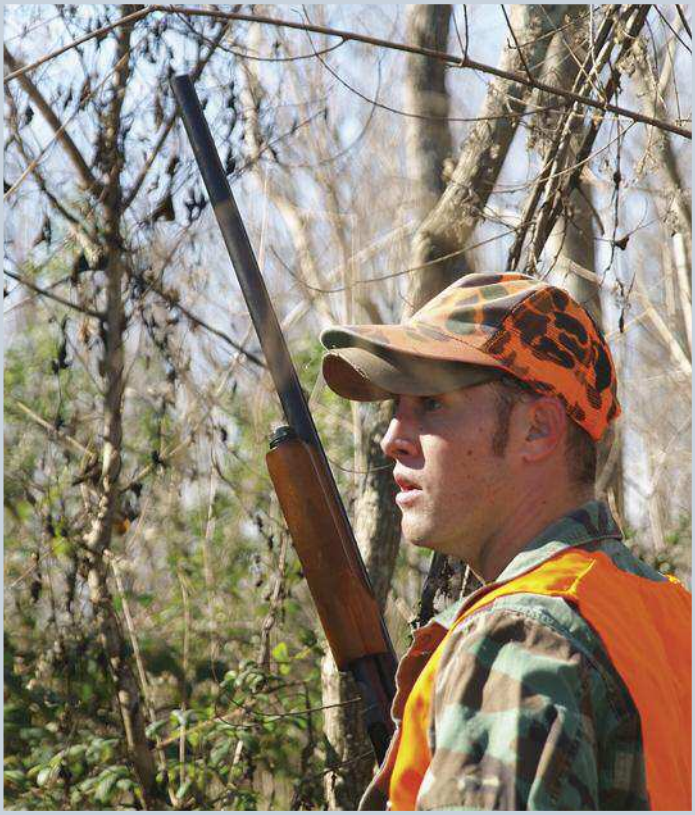
Other ideas that needed large, coordinated efforts but did not have widespread support within the focus groups included the following:

- Privatize recreation activities on public land.
- Develop a growth management board.

Finally, research was suggested as a tool to help both educational and funding efforts. These research activities included the following:

- Quantify economic benefit of green space.
- Conduct a statewide study on potential land for hunting and fishing, and develop these lands as a focus of land trusts.
- Identify and rectify park deserts.

This section provided ideas from the focus groups that did not fit neatly into the collaboration, grants and funding, and education categories. Besides current laws (e.g., comprehensive planning), past programs (e.g., Ultimate Land Use Tour), and current and past UW-Extension programming, it is worth noting that green infrastructure and identified research play important roles in open space conservation that provides opportunities for outdoor recreation across Wisconsin.



Research was suggested to identify potential land for hunting and fishing, and develop these lands as a focus of land trusts.

Summary, Conclusions, and Policy Recommendations

At the beginning of the chapter, the following question was asked: How should Wisconsin connect urban and rural populations to the outdoors over the next five years and beyond? Results from focus groups suggest that there are many successes and challenges in open space recreation. Strategies and big ideas developed in these discussions will help move the conversation about open space forward in a meaningful way. Ideas generated will help Wisconsin plan for future outdoor recreation while ensuring open space conservation.

Although the focus groups consisted of stakeholders from a variety of interests and backgrounds, the themes that emerged within each of the groups were fairly consistent. Participants identified collaboration among private land-owners, non-profit groups, agricultural and industrial interests, and federal, state, and local agencies as a critical component of past successes and a necessary part of future open space planning.

In addition, focus group participants highlighted the importance of coordinated funding and grant opportunities for outdoor recreation. They did, however, indicate that the process of obtaining grants and funding presented many challenges.

Finally, groups identified the need for education in aid of outdoor recreation provision and management. Participants indicated that educational efforts should focus on a variety of stakeholders (e.g., managers, visitors, the public, and elected officials) and should be concentrated on themes such as the importance of open space; the missions and goals of multiple stakeholders (to aid in collaboration); ecological services; and the economic as well as non-economic benefits of open space protection.

Policy Recommendations

As participants discussed the successes and challenges of protecting and managing open space for recreation, they also made multiple policy recommendations. These are outlined below under their appropriate category:

Collaborations and Partnerships

- Address communication issues and challenges identified by the focus groups to improve present and future collaborative efforts.

Grants and Funding

- Review and, if necessary, address the administrative challenges to grant opportunities.

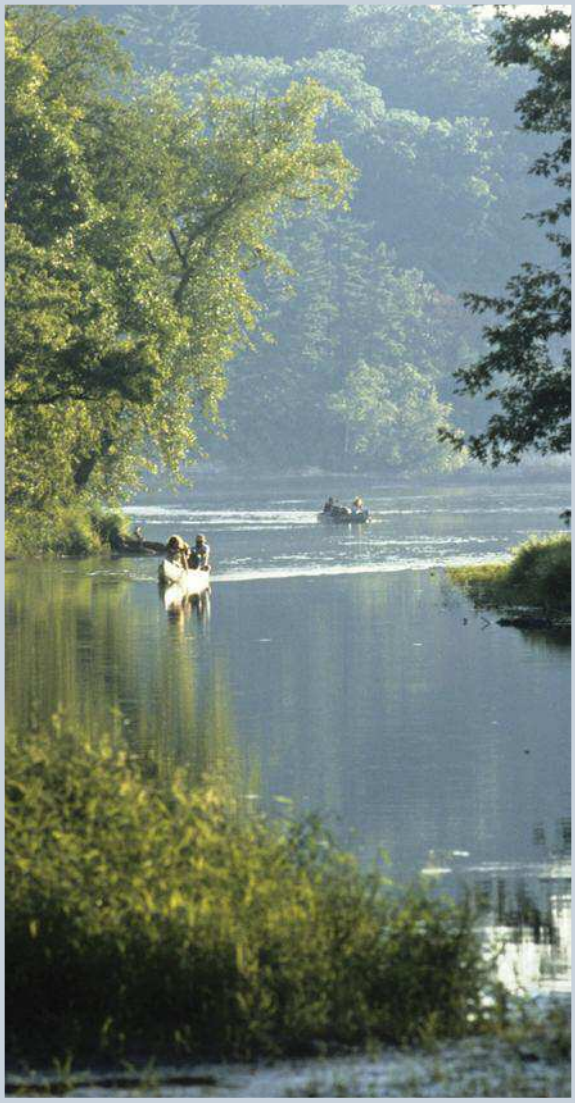
- Explore additional avenues for increasing funding opportunities through a variety of mechanisms (some of which have been identified previously).

Education

- Work with partners to address how to educate a variety of audiences about open space conservation topics using a variety of methods, especially experiential learning.
- Initiate a dialogue with partners on which ideas are possible and appropriate out of the big ideas identified. Possibilities include creating a land use and open space institute, organizing an annual wood or open space event akin to farm technology days, and establishing a confederation/conference of recreation areas' friends groups.

Other

- Explore new and existing opportunities for many types of green infrastructure with a particular focus on trails and other engineering standards.
- Work on conducting relevant research identified in this process.



As participants discussed the successes and challenges of protecting and managing open space for recreation, they also made multiple policy recommendations.

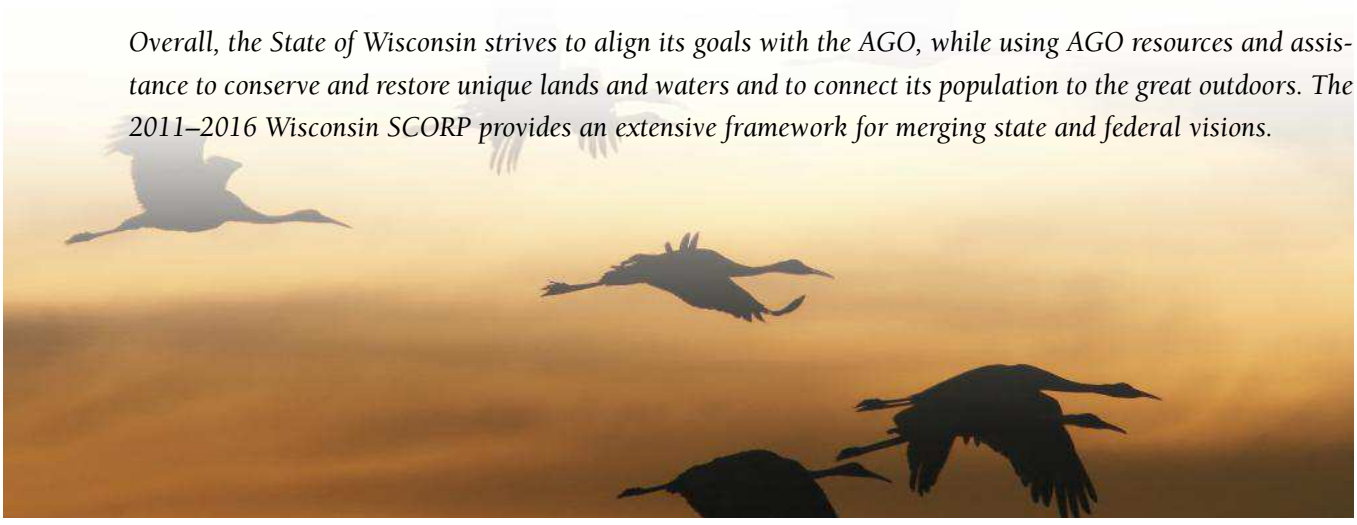
CHAPTER 6

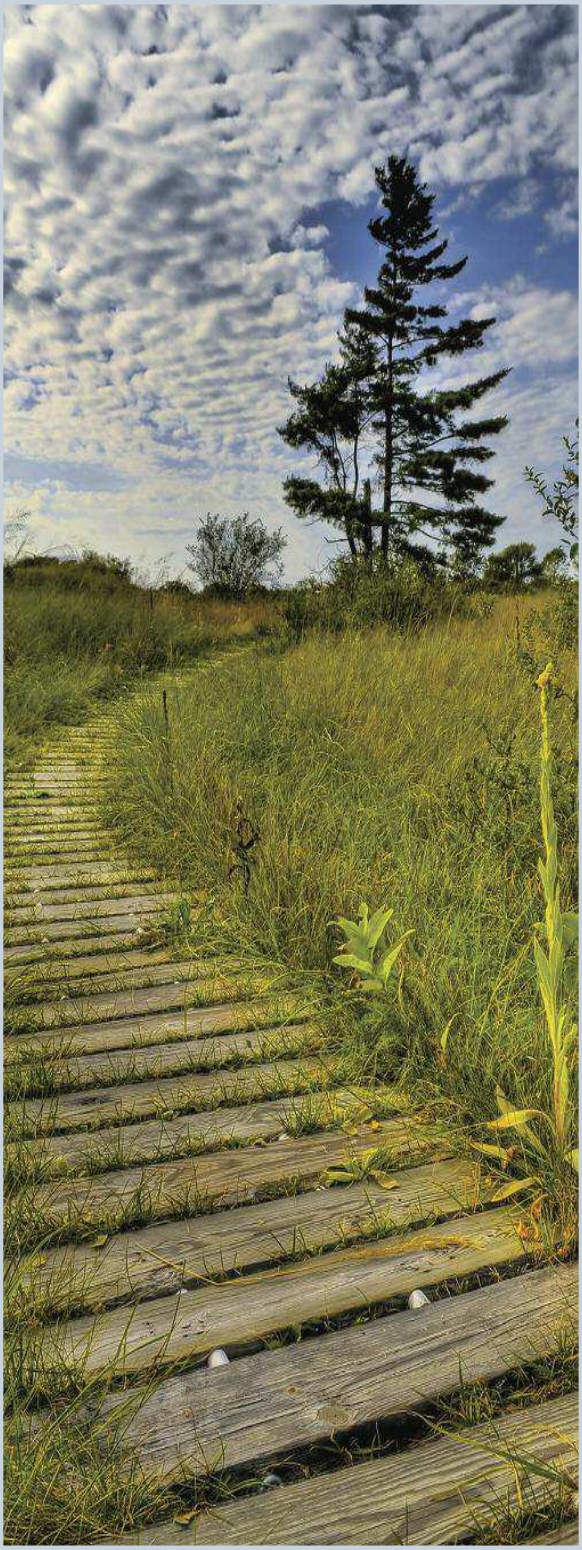
Wisconsin SCORP Outdoor Recreation Goals and Actions

In the collective, cross-country discussion that took place for the America's Great Outdoors (AGO) Initiative, Americans spoke from their minds and their hearts, and out of that came a clear vision: a future where their children are near safe and clean parks where they can "play, dream, discover, and recreate." They see a future where everyone shares responsibility for protecting and caring for our natural and cultural heritage, where rural lands are conserved, and public and private lands essential to supporting wildlife and human needs are unified. They see a future where working together to restore and protect rivers and lakes means healthy lives and a healthy economy.

The State of Wisconsin can live up to this vision. The tenth and final theme of the AGO Report, "Make the Federal Government a More Effective Conservation Partner," was developed out of the public's plea that the federal government eliminate obstacles created by poor policies and processes that keep Americans from the outdoors. For people to reconnect to the great outdoors, the government at all levels—federal, state, local, and tribal—must improve as a conservation partner to the American public. By creating partnerships, aligning resources, and leveraging funding, government can achieve goals set in outdoor recreation planning.

Overall, the State of Wisconsin strives to align its goals with the AGO, while using AGO resources and assistance to conserve and restore unique lands and waters and to connect its population to the great outdoors. The 2011–2016 Wisconsin SCORP provides an extensive framework for merging state and federal visions.





Everyone shares responsibililty in protecting and caring for our natural and cultural heritage.

Overview

The goals and actions listed in this chapter represent a summation of targeted elements to encourage the citizens of Wisconsin to enjoy more of the state's great outdoors. For the most part, these actions take a broad approach to expanding outdoor recreation, with no one person or agency being able to accomplish all goals. The intent of this chapter is to provide a list of common goals and actions so that individuals and organizations working in outdoor recreation in Wisconsin may work together to improve and expand outdoor recreation opportunities in our state.

Goal: Assess, Understand, and Adapt to Growing Recreation Tourism Demands and Preferences

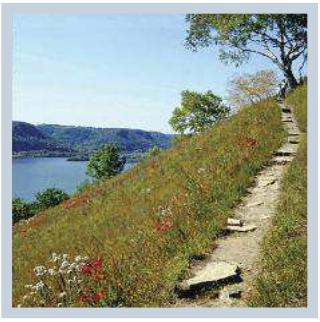
Wisconsin's lands and waters are a natural draw for outdoor recreation for both in-state and out-of-state visitors. The Wisconsin outdoor recreation economy contributes over $9.7 billion annually while supporting 129,000 jobs. State initiatives such as Travel Green Wisconsin make connections between tourism, business, and the outdoors as important partners. These partnerships need to be maintained and enhanced to keep Wisconsin a leader in regional tourism.

Actions and Recommendations

- *Understand the recreation and tourism preferences associated with growing market segments.*
- *Identify existing and emerging strategies to evaluate appropriate levels and types of service for expanding user groups.*
- *Hold an annual forum on outdoor recreation as part of the Wisconsin Governor's Conference on Tourism.*
- *Continue collaborations between the Department of Natural Resources and the Department of Tourism as well as other partners to promote outdoor recreation.*
- *Continue to promote and expand the Travel Green Wisconsin program for business connections to the outdoors.*
- *Maintain funding for tourism marketing to promote high quality outdoor recreation experiences.*
- *Acknowledge the potential issues surrounding climate change adaptation with outdoor recreation and tourism.*

Goal: Improve Integration of Outdoor Recreation Interests and Needs in Land Use and Other Relevant Planning Efforts

One of the primary objectives of a SCORP is to improve the integration between state and local organizations, partners, and other organizations that provide or influence outdoor recreation. The SCORP presents a set of goals and actions that allow organizations to work together toward a common vision of improved outdoor recreation in the state. As recreation continues to place demands on public lands and waters, these partnerships will become even more important. By integrating outdoor recreation interests, decisions on the management of recreation resources and recreation opportunities become more effective, efficient, fair, reasoned, and defensible.



Actions and Recommendations

- *Support outdoor recreation access and opportunities on public lands by establishing a State Interagency Council on Outdoor Recreation.*
- *Support and align state agency programs and initiatives to promote the creation, expansion, and enhancement of urban parks and community green spaces.*
- *Manage state lands and waters within a larger landscape context to conserve and restore ecosystems and watershed health.*
- *Encourage regional planning efforts for integrated, cost-effective use of recreation lands and facilities.*
- *Provide education and awareness of how recreation uses can impact the natural resources along with actions to reduce those impacts.*
- *Promote the collaboration of public and private recreation opportunities though integrated management planning.*

Goal: Continue to Provide and Enhance Public Access to Wisconsin Recreational Lands and Waters

As recreation continues to place demands on public lands and waters, the lack of public access to these areas has become an increasing concern for many state citizens. In some cases this perception is true; more water/boating access is needed in certain portions of the state. In many cases, however, public access to recreation resources does exist, but the public is simply not aware of it. Improved and easily accessible maps and signage would aid the public in locating these access points.

Actions and Recommendations

- *Continue to develop a statewide interactive mapping system showing all public lands and water access points within the state.*
- *Continue to acquire and develop boating access sites to meet public boating needs.*
- *Promote awareness of the location of existing recreation lands, facilities, and opportunities available within a given region.*
- *Continue to meet Americans with the Disabilities Act standards for accessibility to outdoor recreation facilities.*
- *Support community based efforts to increase access to outdoor recreation.*
- *Promote sustainable recreation facility design, construction, and maintenance practices.*

Goal: Conserve Rural Landscapes and Forests through Partnerships and Incentives

More than 80% of Wisconsin land is held in private ownership. Most of this land is farms and forests, and over 500,000 acres is held in trust by the United States for state Indian tribes. In areas where there is a large component of publicly held land, privately owned lands often provide important wildlife habitat and migration corridors. With so much of the state under private ownership, it is vital that we manage and protect these privately held lands to conserve water resources, ecosystems, wildlife habitat, and natural heritage for generations to come.

Actions and Recommendations

- *Support financial and other incentives that increase access to outdoor recreation activities on or across private lands.*
- *Encourage large-scale land conservation partnership projects through economic incentives and technical assistance.*
- *Support collaborative landscape conservation through competitive processes, including increases in Land and Water Conservation Fund (LWCF), stewardship funding, and other programs.*
- *Continue to support the Wisconsin Working Lands Initiative for habitat conservation and protection.*

Goal: Address Funding Challenges Associated with Managing Wisconsin Outdoor Recreation Resources

From its early years of establishing state parks, Wisconsin has had an active program of land acquisition. The latest iteration of these programs is the Warren Knowles-Gaylord Nelson 2010 Stewardship Program. Under this program, the State may issue bonds in a total not to exceed $860 million spread over a 10 year period. The stewardship program targets land acquisition, property development, and local assistance. As Wisconsin recreation has received increasingly less state resources, targeted funding programs have provided vital support to an ever dwindling pool of funds for outdoor park and recreation lands and facilities.

Actions and Recommendations

- *Encourage all local governments to develop park and recreation plans for participation in state and federal cost share programs.*
- *Provide more cost share opportunities for local governments to develop and maintain recreational lands and facilities.*
- *Provide adequate funding to the Wisconsin State Park System to meet the needs of its 14 million visitors a year.*
- *Explore new and innovative funding methods for outdoor park and recreation facilities. These methods may include public/private partnerships or cost sharing among many governmental agencies.*
- *Increase revenue generating capabilities for outdoor recreation by continuing to update and improve technologies such as automated fee collection systems.*
- *Increase the capacity of public lands friends groups to provide and support recreation facilities.*

Goal: Promote Outdoor Recreation as a Means of Improving Public Health Among Wisconsinites

The United States as a whole (and Wisconsin is no exception) is in the midst of an overweight and obesity epidemic brought on by increasingly inactive lifestyles coupled with high caloric intakes. This epidemic has created rising health care costs and shortened life expectancies. Outdoor park and recreation areas can provide the type of active recreational opportunities key to reversing this trend. Encouraging Wisconsinites to use available lands and facilities will benefit not only park and recreation areas, but also Wisconsin citizens receiving the health benefits of increased activity.

Actions and Recommendations

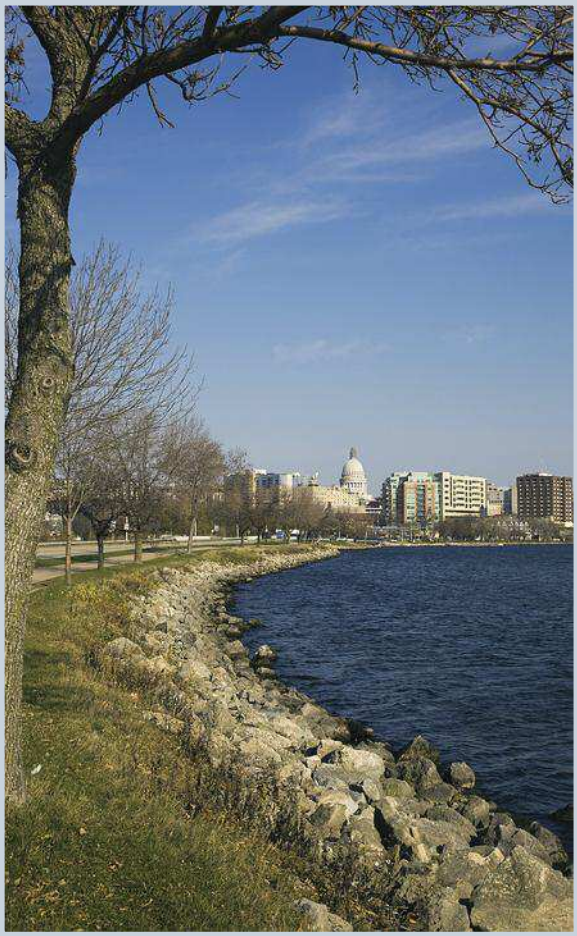
- *Develop a "Get Fit with Wisconsin Campaign" for public lands and waters that touts the health benefits of using recreational areas and reaches a wide audience of potential users.*
- *Educate the public about the health benefits of moderate and enjoyable physical activities such as walking, biking, nature study, etc.*
- *Integrate opportunities and incentives for exercise during the workday—give employees 30 minutes a day for exercise, provide exercise equipment, etc.*
- *Start a dialogue between public outdoor recreation providers and health agencies to identify other (non-traditional) funding sources for recreational facilities and development.*
- *Continue the "Walk with Walker Program" by encouraging citizens to use state parks, forests, and trails for health and wellness.*
- *Promote the mission of the "Governor's Council on Physical Fitness and Health" on informing, promoting and encouraging citizens of Wisconsin to incorporate healthy eating and physical behaviors for a lifetime.*

Goal: Establish Great Urban Parks and Community Green Spaces

Frederick Law Olmsted, the central architect of Milwaukee's Grand Necklace of Parks, extolled the virtues of outdoor space, especially for urban communities. Today, urban parks and community green spaces play an even more important role as special public places that promote health, provide economic benefits, and nurture democratic values by inviting casual interaction among citizens. Urban parks and community green spaces are essential for providing places for people to recreate outdoors, to find quiet and solitude, and to generally improve their quality of life.

Actions and Recommendations

- *Create and enhance a new generation of safe, clean, accessible, and connected great urban parks and community green spaces.*
- *Connect people with urban parks, trails, and community green spaces.*
- *Target technical assistance support to communities as they create and enhance urban parks and community green spaces.*
- *Continue to provide funding to communities through the Stewardship Program to acquire and develop local park and greenway spaces.*
- *Leverage private community foundations and public funding to increase park acquisitions.*
- *Provide funding to restore, preserve, and protect historic outdoor facilities for future generations.*



Urban parks and community green spaces are essential for providing places for people to recreate outdoors and to find quiet and solitude.

Projects that Highlight Outdoor Recreation and Conservation

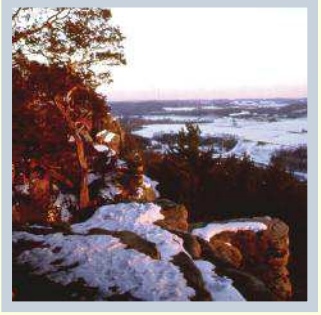
The Department of Interior held meetings with the State of Wisconsin and stakeholders to solicit ideas on how to best implement AGO in the state. These projects were identified for their potential to conserve important lands and build recreation opportunities and economic growth for the surrounding communities. Key stakeholders in the conversation included private landowners, local and tribal elected officials, community organizations, and outdoor-recreation and conservation groups.

With the overarching goals of creating and enhancing urban parks and green spaces, renewing and restoring rivers, and conserving large, rural landscapes, three projects were identified within Wisconsin. These projects represent what are among the best investments in the nation to support a healthy and active population, conserve wildlife and working lands, and create travel, tourism, and outdoor-recreation jobs.

Lake Michigan Water Trail

The State of Wisconsin in partnership with federal and local agencies is developing a new, 523-mile water trail along the Lake Michigan shoreline. This water trail will become the state's second longest and will increase public access to the shoreline. A campaign starting in 2012 will engage local communities and private affiliates to help acquire land for and to build the new trail. The four states bordering Lake Michigan are also working to expand on the national recreation trail designation that exists on part of the lake. This partnership will support AGO priorities by enhancing recreational access and opportunities and engaging citizens in conservation and the great outdoors.

Ice Age National Scenic Trail



One of only 11 national scenic trails in the United States, the Ice Age National Scenic Trail stretches for 1,200 miles across Wisconsin. State and local partners are working to connect trail segments through strategic land acquisition and easements. One area of great success has been the Baraboo Hills landscape. The variety of recreation options within a one-hour drive of Madison—the state capital—make the Baraboo Hills/Devil's Lake landscape a hub for outdoor activity that serves over 1.7 million visitors a year. The area combines unique geologic features, diverse fauna, prehistoric effigy mounds, historic Civilian Conservation Corps buildings, and spectacular scenery. The Baraboo Hills, long recognized as ecologically unique and valuable, host many preserves, state natural areas, and two state parks. The National Park Service designated the southern range of the Baraboo Hills as a national natural landmark in 1980. Various organizations, including the University of Wisconsin, Baraboo Range Preservation Association, National Park Service, State of Wisconsin, and Ice Age Trail Alliance, have formed a strong conservation partnership with the DNR, protecting thousands of acres through acquisitions and easements. This effort supports several AGO goals, including large landscape conservation, preservation of natural and culturally significant areas, and support for creative public-private partnerships.

Mississippi River Bluffs

The Mississippi River Bluffs are part of the largest international bird migration corridor in the nation. They contain exceptional ecosystems—from algific talus slopes to hillside bluff prairies and rare forests. The State of Iowa has partnered with Minnesota, Wisconsin, Illinois, and local nongovernmental organizations to promote the Mississippi River Bluffs region as an ecotourism destination. The bluffs connect people and communities with the outdoors while protecting regional heritage. In addition, the Mississippi River Bluffs partnership aims to protect water quality and reduce flooding by conserving targeted lands.

SCORP

The 2011–2016 Wisconsin Statewide Comprehensive Outdoor Recreation Plan

APPENDIX A

Outdoor Recreation Grant Programs Administered by the WDNR

All Terrain Vehicle Trails

Section 23.33, Wis. Stats.; Ch. NR 64, Wis. Admin. Code

Counties, cities, villages, and towns are eligible for up to 100% (including $ per mile caps) of the costs of maintenance, development, rehabilitation, insurance, and acquisition of ATV trails and intensive use areas. Applications are due to the DNR by April 15 each year. For the 2010-11 fiscal year, over $3.4 million was available for eligible projects through ATV registration funds and motor fuel tax funds.

ATV Enforcement Patrol

Section 23.33 (9), Wis. Stats.; s. NR 64.15, Wis. Admin. Code

County Sheriff Departments are eligible for up to 100% of their net costs (salaries, fringe benefits, travel, materials, supplies, etc.) associated with all-terrain vehicle patrols and enforcement. A county must file a Notice of Intent to Patrol form with the DNR on or before July 1 of each year. Claim forms shall be filed with the DNR on or before September 1. For the 2010-11 fiscal year, $500,000 was available.

County Conservation Aids

Section 23.09 (12), Wis. Stats.; Ch. NR 50, Wis. Admin. Code

Counties or recognized Indian tribes are eligible for 50% of the costs of carrying out fish or wildlife management projects that enhance fish and wildlife habitat or relate to hunter/angler facilities. Applications are submitted throughout the year until funding is depleted. For the 2012-13 fiscal year, $297,000 is available.

Federal Aid in Sport Fish Restoration

16 U.S.C. 777-777k, 64 Stat. 430 (also known as Federal Aid in Sport Fish Restoration Act)

The DNR prioritizes fisheries related projects (sport fish restoration, boating access, fishing piers) to identify projects eligible for a 75% cost share; the DNR sometimes negotiates contracts and develops use agreements with counties, villages, and towns for use of this funding for construction of boat landings and fishing piers. The amount of funding available varies depending upon excise tax revenue from fishing equipment sales and the federal gas tax.

Knowles-Nelson Stewardship Local Assistance Programs: Acquisition and Development of Local Parks

Section 23.09(20), Wis. Stats.; Ch. NR 51, subchapter XII, Wis. Admin. Code

Qualified towns, villages, cities, counties, Indian tribes, and nonprofit conservation organizations as defined under s. 23.096, Wis. Stats., are eligible for up to 50% of the costs of acquisition of land or conservation easements and development of facilities for public park and recreation areas used for nature-based outdoor recreation purposes. Applications are due to the DNR by May 1 of each year. For the 2011-12 fiscal year, $8.0 million was available for eligible projects.

Knowles-Nelson Stewardship Local Assistance Programs: Acquisition of Development Rights

Section 23.09(20m), Wis. Stats.; Ch. NR 51, subchapter XV, Wis. Admin. Code

Qualified towns, villages, cities, counties, Indian tribes, and nonprofit conservation organizations as defined under s. 23.096, Wis. Stats., are eligible for up to 50% of the costs to acquire development rights (conservation easements) in areas where restrictions on residential, industrial, or commercial development would provide or enhance nature-based outdoor recreation. Applications are due to the DNR by May 1 of each year. For the 2012-13 fiscal year, $800,000 is available for eligible projects.

Knowles-Nelson Stewardship Local Assistance Programs: Urban Green Space

Section 23.09(19), Wis. Stats.; Ch. NR 51, subchapter XIII, Wis. Admin. Code

Qualified towns, villages, cities, counties, Indian tribes, and nonprofit conservation organizations as defined under s. 23.096, Wis. Stats., are eligible for up to 50% of the costs of acquisition of land and conservation easements for nature-based outdoor recreation purposes that will protect open natural space and land with scenic, ecological, or natural values in urban areas. Applications are due to the DNR by May 1 of each year. For the 2011-12 fiscal year, $1.6 million was available for eligible projects.

Knowles-Nelson Stewardship Local Assistance Programs: Urban Rivers

Section 30.277, Wis. Stats.; Ch. NR 51, subchapter XIV, Wis. Admin. Code

Qualified towns, villages, cities, counties, Indian tribes, and nonprofit conservation organizations as defined under s. 23.096, Wis. Stats., are eligible for up to 50% of the costs of acquisition of land or conservation easements and development of facilities for public park and recreation areas, including shoreline enhancements, for nature-based outdoor recreation purposes along urban waterways and riverfronts. Applications are due to the DNR by May 1 of each year. For the 2011-12 fiscal year, $1.6 million was available for eligible projects.

Land and Water Conservation Fund (LWCF)

LWCF Act of 1965, Public Law 88-578, 78 Stat. 897; 36 CFR Ch 1, Part 59

Qualified towns, villages, cities, counties, Indian tribes, and school districts are eligible for up to 50% of the costs of acquisition of land and development of facilities for public park and recreation areas. Applications are due to the DNR by May 1 of each year. The amount of funding available varies depending upon the amount appropriated by Congress to the program within the Department of Interior's budget each year.

Municipal Water Safety Patrols State Assistance

Section 30.79, Wis. Stats.

Municipalities, tribes, inland lake rehabilitation and protection districts, and sanitary districts are eligible to receive up to 75% of the costs (salaries, supplies, and equipment) of operating a Boating Law Enforcement program, including conducting boating education programs, providing professional enforcement of boating laws and local regulations, and providing search and rescue for live persons. Applicants must file an Intent to Patrol form with the DNR on or before March 1 of each year. Claim forms shall be filed with the DNR on or before January 31. For the 2010-11 fiscal year, $1.4 million was available.

Recreational Boating Facilities

Section 30.92, Wis. Stats.

Counties, cities, villages, towns, sanitary districts, public inland lake protection and rehabilitation districts, and qualified lake associations are eligible for up to 50% of the costs of feasibility studies and the construction of capital improvements related to the development of safe recreational boating facilities, purchase of aquatic weed harvesting equipment, purchase of navigation aids, dredging of channels of waterways, and chemical treatment of Eurasian watermilfoil. An additional 10% may be available if a municipality conducts a boating safety enforcement and education program approved by the DNR. Projects of statewide or regional significance may be eligible for additional 30% cost-sharing assistance. Applications are due to the DNR and are reviewed and recommended quarterly by the governor-appointed Wisconsin Waterways Commission. For the 2010-11 fiscal year, over $2.5 million was available for eligible projects.

Recreational Trails Program

The Safe, Accountable, Flexible, Efficient Transportation Equity Act - Title 23 United States Code (23 U.S.C.).

Towns, villages, cities, counties, tribal governing bodies, school districts, state agencies, federal agencies, and incorporated organizations are eligible to receive up to 50% of the costs of maintenance and restoration of existing trails, development and rehabilitation of trailside and trailhead facilities and trail linkages, construction of new trails (with certain restrictions on federal lands), and acquisition of easements or property for trails. Funds are available for both motorized and non-motorized trails. Applications are due to the DNR by May 1 of each year. The amount of funding available varies depending upon federal gas excise taxes paid on fuel used by off-highway vehicles.

Snowmobile Trail Aids

Section 23.09(26) and Ch. 350, Wis. Stats.

Counties are eligible for 100% (including $ per mile caps) of the cost of approved trail maintenance, development, major bridge rehabilitation, and trail rehabilitation. Applications are due to the DNR by April 15 of each year. For the 2010-11 fiscal year, over $7.3 million was available for eligible projects through snowmobile registration, motor fuel tax, and nonresident trail pass funds.

County Snowmobile Enforcement Patrols

Sections 350.12(4)(a)(4) and 20.370(4)(ft), Wis. Stats.; s. NR 50.12, Wis. Admin. Code

County sheriff departments are eligible for up to 100% of their net costs (salaries, fringe benefits, travel, materials, supplies, etc.) associated with snowmobile patrols and enforcement. A county must file a Notice of Intent to Patrol form with the DNR on or before June 1 of each year. Claim forms shall be filed with the DNR on or before June 1. For the 2010-11 fiscal year, $396,000 was available.

APPENDIX B

Outdoor Recreation Demand Survey Methodology

This appendix describes the methods and results of the 1994-2009 National Survey on Recreation and the Environment (NSRE) which has been conducted on a continuing basis since 1994.

The National Survey on Recreation and the Environment (NSRE)

The NSRE, was conducted to discover and describe: (1) participation by Americans in outdoor recreation activities, (2) opinions concerning management of both public and private forests and grasslands, (3) the importance and value of our natural environment, (3) uses and values of wildlife and wilderness, (4) people's lifestyles, and (5) recreational trips people take away from home. The NSRE data is be used by a variety of public and private organizations for both management and research purposes.

History of the NSRE

The 1999-2004 National Survey on Recreation and the Environment (NSRE) is the latest in a series of national surveys started in 1960 by the Outdoor Recreation Resources Review Commission (ORRRC). The federal government (through ORRRC) initiated this National Recreation Survey (NRS) to assess outdoor recreation participation in the United States. Since the first survey in 1960, six additional NRSs have been conducted: 1965, 1970, 1972, 1977, 1982-83 and 1994-95. Over the years, NRS surveys have changed in their methodology, composition, funding, and sponsorship.

In the 1960 NRS, interviews were conducted in person over the four seasons of the year. In 1965, interviewing was done only in the early fall. The 1970 survey instrument was a brief supplement attached to the mailed National Fishing and Hunting Survey. The 1982 survey was conducted in person in cooperation with the National Crime Survey, and the 1977, 1994, and 1999-2002 surveys were conducted by telephone.

In 1994 the NRS was renamed the National Survey on Recreation and the Environment (NSRE). This new name was introduced to reflect the growing societal interest and emphasis on the natural environment. Accordingly, the NSRE was expanded to include questions concerning peoples' wildlife and wilderness uses, environmental values, and attitudes regarding management issues. Additional information pertaining to the recreational needs of people with disabling conditions was also included.

The NSRE is the eighth in a continuing series of U. S. National Recreation Surveys. Although similar to previous national surveys, NSRE explores the outdoor recreational needs and environmental interests of the American people in greater depth than any previous study. The growth of the NSRE reflects the continuing interest in outdoor recreation and the natural environment.

NSRE was conducted as an in-home phone survey of over 90,000 households across all ethnic groups throughout the United States. Questions from the NSRE broadly address such issues as outdoor recreation participation, demographics, household structure, lifestyles, environmental attitudes, natural resource values, constraints to recreation participation, and public attitudes toward management policies.

The funding and responsibility of the NRS have also changed quite considerably over the years. Initially, the Outdoor Recreation Resources Review Commission, the organization which completed the first survey in 1960, recommended that subsequent surveys be completed at five-year intervals. Consistent funding and responsibility, however, were not created. From 1965 through 1977, research for the survey was done by the Bureau of Outdoor Recreation and its successor, the Heritage Conservation and Recreation Service. When both of these agencies were abolished in 1981, responsi-

bility fell to the National Park Service in the U.S. Department of the Interior (USDI). The National Park Service coordinated the development of a consortium that included itself, the Forest Service in the U.S. Department of Agriculture (USDA), the Department of Health and Human Service's Administration on Aging, and the USDI's Bureau of Land Management.

By the late 1980's, it was clear that the National Park Service could no longer assume the financial and organizational demands of such a large survey. Park Service officials therefore asked the Forest Service to assume its coordinating role for the next National Recreation Survey. The Outdoor Recreation and Wilderness Assessment Group, a part of the research branch of the Forest Service, assumed this role jointly with the National Oceanic and Atmospheric Administration (NOAA). This partnership between the Forest Service Outdoor Recreation and Wilderness Assessment Group in Athens, Georgia and NOAA has continued to the present day with the organizations holding joint responsibility for the current NSRE survey.

The present list of sponsoring agencies for the 1999-2004 NSRE effort includes the USDA Forest Service, NOAA, the USDA's Economic Research Service, the U.S. Environmental Protection Agency, USDI Bureau of Land Management, the National Park Service, the University of Georgia, and the University of Tennessee. In addition, valuable assistance and resources were also provided by the American Horse Council, the American Motorcyclist Association, the American Recreation Coalition, B.A.S.S., Inc., the Carhart Wilderness Training Center, the Corps of Engineers, the Forest Service (specifically the Carhart Wilderness Training Center, Ecosystem Management Coordination, recreation staff, the Rocky Mountain Research Station, and Wildlife staff), the Motorcycle Industry Council, the National Association of Recreation Resource Planners, the National Association of State Outdoor Recreation Liaison Officers, the National Environmental Education & Training Foundation, the Natural Resources Conservation Service, the Outdoor Recreation Coalition of America, the Rails-to-Trails Conservancy, the Recreation Vehicle Industry Association, the Snow Sports Industries of America, the U.S. Orienteering Federation, and the Wilderness Society.

Instrumentation

The NSRE is not one survey but several smaller versions of surveys combined. For instance, each version of the NSRE consists of approximately five modules of questions. In each version of the NSRE, one module of questions always pertains to people's participation in recreation activities and a second module always pertains to their social-demographic characteristics (i.e., age, income, education level, etc). The three remaining modules of questions in each version could pertain to a myriad of topics from wilderness use, environmental opinions, attitudes to land management policies, wildfires, private lands, etc. Each version of the NSRE has a target of 5,000 completed interviews. Once these interviews have been collected, a new version of the NSRE (with a recreation participation, demographic, and three other modules) is constructed and conducted. Please see appendices for Version 18 of the NSRE (the Wisconsin survey).

Survey Methods

Computer-Aided Telephone Interviewing System(CATI):

The CATI system has two primary functions: (1) it facilitates the dialing and interviewing process of the NRSE; and (2) it manages the administrative functions associated with interviewing. For each interview, the CATI system randomly selects numbers for an interviewer, who then instructs the computer to dial that number.

The phone numbers for the NSRE survey were obtained from Survey Sampling, Inc (SSI). SSI updates and validates their inventory of phone numbers regularly, ensuring that all interviews are currently valid. SSI provided the NSRE with a random-digit-dial (RDD) sample using a database of "working blocks." A block is a set of 100 contiguous numbers identified by the first two digits of the last four numbers (e.g., in number 559-4200, "42" is the block). A block is termed to be working if one or more listed telephone numbers are found in that block. Numbers are generated from all eligible blocks in proportion to their density of listed telephone households. As numbers are pulled, they are marked as used and are not available again during a nine-month period. Once numbers are selected, they are entered into the computer-aided telephone interviewing system (CATI).

Once the CATI system has randomly selected and dialed a telephone number, the interviewer explains the survey, its main purpose, and the name of the research laboratory conducting the survey (Presser, Blair, &

Triplett, 1992). The interviewer then inquires how many people in the household are 16 years or older, and asks to speak to the person 16 or older who had the most recent birthday (Link & Oldendick, 1998; Oldendick, Bishop, Sorenson, & Tuchfarber, 1988). Upon reaching an appropriate person and receiving agreement to an interview, the interviewer reads the survey questions as they appear on the computer screen. Using a computer to control the survey, skip patterns are executed as intended, responses are within range, there are no missing data, and data entry occurs as the survey is administered. As responses are fed through the programmed data entry and management system, they are reviewed to assure they are within the permissible range of values and missing data problems are resolved. If no person is contacted or an answering machine is obtained, the interviewer enters a code (e.g., busy or no answer). If the timing of the call is inconvenient, a call back is scheduled for another date and time (Presser et al., 1992).

Sampling

Sampling was designed to sample across the country's populations and regions, providing a minimum number of interviews for each state so that individual state reports on participation across all activities could be generated and so that reliable estimates of activity participation could be computed for activities with less than a 10% national participation rate. To achieve these objectives, an initial sampling strategy for a national sample of 50,000 completed interviews was developed. The strategy combined proportional nationwide population sampling aiming for 29,400 completed interviews and a quota sample (i.e., 65% urban, 25% near urban, and 10% rural). 400 interviews were distributed to each state, totaling 20,600 completed interviews. The remaining 40,000 completed interviews were obtained using a national sampling strategy. Sampling occurred throughout the year(s) during which the NSRE was being conducted to minimize seasonal recall bias to the extent possible. For the 1,400 additional completed interviews collected in version 18 (i.e., the Wisconsin survey), a random statewide sampling strategy was employed.

General Overview of Methods Used to Maximize Response Rates and Control for Non-Response Bias

Carefully Design, Test, and Revise the Survey Contents

In order to maximize response rates, the NSRE phone survey was carefully designed and refined through careful attention to input from experienced phone interviewers at the University of Tennessee. Wording and ordering of questions was designed to ease flow, maximize interest in the questionnaire subject matter and maintain consistency over time.

Scheduling Callbacks

In order to maximize the opportunity of interviewing an eligible member of an eligible household, each eligible number was attempted a minimum of 15-20 times at various time intervals of the day and on different days of the week. To minimize respondent burden and encourage full involvement in the survey, each person was asked, "Is this a good time to answer a few questions or would another time be better for you?" The Computer Aided Telephone System (CATI) facilitated the scheduling of callbacks at a specific time if requested by the respondent. The computer managed the database of telephone numbers so that scheduled callbacks were distributed to the first available interviewer at the designated time and date.

Training

Interviewer training was a vital part of achieving maximum response rates. All interviewers underwent intensive and detailed training to ensure a high level of familiarity and practice with the survey. Each interviewer was monitored regularly for quality control purposes and additional training was provided as needed.

Minimize Language Barriers

In order to maximize response rates, the NSRE was also administered in Spanish.

Interviewers screened for Spanish-speaking people at the beginning of the survey and transferred them to a Spanish-speaking interviewer as needed.

Meet AAPOR Quality Standards

Similar surveys repeated over a five-year period at the Human Dimensions Research Lab used the same methods as the NSRE and have been shown to produce very reliable results. (See Table B-1 for the contact, cooperation, and response rates for the NSRE 2000 survey).

Response rates were calculated using the definitions of response rates established by the American Association of Public Opinion Research. The Lab followed the code of ethics set by the American Association of Public Opinion Research and upheld AAPOR quality standards. Adherence to ethics and quality standards were crucial to maintaining interviewee confidence and achieving adequate response rates.

Attempt to Convert Refusers

To help deal with non-response, a random sample of immediate ("soft refusals," including those who hung up immediately) and a sample of those not ever contacted were selected at the end of each version. These samples of refusals and non-contacts were limited to those for which an address could be obtained. Residents of these households were sent an explanatory letter indicating the nature of the survey and its importance. The letter notified the household that a further callback would be made to solicit their participation. Their numbers were then attempted again, and the results of completed surveys from converted refusers were compared with the results from those who accepted the survey during the first round of calling. Any significant differences between acceptor and refuser/non-contact responses to the primary variables of this study, i.e., recreation participation rates, were compared. If there were sufficient sample sizes for developing independent estimates of refuser/non-contact activity participation rates, weighting ratios were also calculated. These weights were used to adjust estimates of acceptor activity participation rates for analysis and reporting.

Weight to Correct for Over or Under Representation of Population Strata

Survey respondents were weighted so that their distribution across socio-demographic strata mirrored the distribution of the U. S. population across the same strata. This is a widely accepted, non-controversial and necessary method for addressing non-response issues. The weights computed and applied to the NSRE 2000-04 survey were small, indicating good sample distribution from the 19-20% response rates attained (see response rates in Table B-1 and a comparison of sample and population distributions in Table B-2). In addition, NSRE 2000-04 estimates of participation rates were generally in the same range of the estimates obtained from the 1994-95 NSRE. In neither survey did non-response bias seem to be significant. A sizeable number of referred journal articles have been published using both the 1995 and 2000-04 NSRE surveys and in all cases peer reviews were favorable and the articles accepted.

The U.S. Census Bureau advised that the civilian non-institutionalized population was the best estimated population distribution for validating telephone-sampling frames. Table B-3 compares the percentage distributions of the civilian non-institutionalized population aged 16 and older based on Census Bureau estimates with the NSRE sample distributions for Versions 1 through 6. Strata included sex, race/ethnicity, age, education level, and urban/rural residence. Response rates were higher for females, non-Hispanic whites, and for those ages 25-34, 45-54, and 55-64. Response rates were slightly lower for those aged 35-44. Response rates were generally higher among those with higher levels of education. Differences between urban/rural strata were more related to intentional over-sampling (to meet different research needs) than to differences in response rates.

Weighting Based on Multiple Regression Estimates of Coefficients

The primary approach to weighting and adjusting estimated marine recreation participation was development of multivariate models where estimated coefficients were used as weights for sex, race/ethnicity, and age strata. Results are summarized in Table B-3. Since the survey was designed so that, for some applications (modules), a version could be a stand-alone survey, there were constraints on how many cells could implement using multivariate weighting. For education level and urban/rural residence, multiplicative weights were utilized.

Table B-4 shows the effects of sample weighting of marine recreation activities. Comparison of the unweighted and weighted sample estimates of participation rates shows the potential extent of over- or under-representation of samples on estimated participation rates. Of the 19 activities/settings shown, 11 were corrected for over-representation, 7 were corrected for under-representation, and one remained uncorrected because sample and population percentages were the same. Given the small differences between weighted and unweighted estimates, it was concluded that the sample distribution generally represents the distribution of the population. However, weighting was undertaken as one means for adjusting for potential non-response bias. The large sample sizes of the NSRE help make this approach to sample weighting more reliable.

Table B-1: **Types of Response Rates for NSRE 2000–04**

Type		ALL – Version 1 thru Version 13
Response Rate 1	I/(I+P) + (R+NC+O) + (UH+UO)	0.191868
Response Rate 2	(I+P)/(I+P) + (R+NC+O) + (UH+UO)	0.200296
Response Rate 3	I/((I+P) + (R+NC+O) + e(UH+UO))	0.192627
Response Rate 4	(I+P)/((I+P) + (R+NC+O) + e(UH+UO))	0.201088
Cooperation Rate 1	I/(I+P)+R+O)	0.210388
Cooperation Rate 2	(I+P)/((I+P)+R+0))	0.219629
Cooperation Rate 3	I/((I+P)+R))	0.215806
Cooperation Rate 4	(I+P)/((I+P)+R))	0.225286
Refusal Rate 1	R/((I+P)+(R+NC+O) + UH + UO))	0.688781
Refusal Rate 2	R/((I+P)+(R+NC+O) + e(UH + UO))	0.691505
Refusal Rate 3	R/((I+P)+(R+NC+O))	0.697108
Contact Rate 1	(I+P)+R+O / (I+P)+R+O+NC+ (UH + UO)	0.911975
Contact Rate 2	(I+P)+R+O / (I+P)+R+O+NC + e(UH+UO)	0.915582
Contact Rate 3	(I+P)+R+O / (I+P)+R+O+NC	0.923001

An Additional Step for Identifying and Comparing Refusers

An additional step taken with regard to non-response effects was to include a follow-up to refusals to ask a very limited number of questions (e.g., age, sex and participation in any outdoor recreation). One could then analyze this information to suggest something about the extent of non-response bias on estimates of participation. This approach was also attempted in the 1994-95 NSRE not as a way to address non-response bias, but to reduce the burden on people that did not participate in outdoor recreation through the use of a screening question. A sample of 1,000 participants was chosen and the screening question was used. A significantly smaller proportion of people participated in outdoor recreation when the screening question was used. People did not understand the definition of outdoor recreation unless the entire list of activities was explained. Any attempt to analyze non-response bias from a sample of refusals that employs a screening question would be therefore be invalid. Significantly lower participation rates would also be expected amongst those receiving a screening question regarding outdoor recreation participation.

A similar experiment was used in NSRE 2000-04. Attempts were made to use various screening questions for different groups of activities as an alternative to going through each separate activity with every participant. Again, the objective was to reduce burden and costs by shortening survey time. The screening question worked for boating activities (i.e., no significant differences in estimates of participation in boating), but it did not work for wildlife viewing activities (i.e., there were significant differences in participation rates for wildlife viewing using a screening question). The screening question was therefore used for boating activities, but not for wildlife viewing activities.

Our approach for addressing refusals was to ask for age and sex (recorded according to interviewer's judgement). Analysis with respect to participation was then accomplished by relating age and sex, along with other factors, to participation. If there were different response rates by age and sex for the soft refusals sample versus the sample of complete surveys, and there was a significant relationship between age, sex, and participation in outdoor recreation, one might infer some level of non-response bias. However, the question addressed extent of the bias, a number that, as previous analysis has demonstrated, was relatively small and could be adjusted for by sample weighting. To further analyze non-response bias, two additional activity questions were used to ascertain some indication of recreation participation by soft refusals.

Table B-2: **Population and Sample Comparisons—Demographics for Weighting**

Demographic Characteristic	Census[1]	NSRE
Sex		
Male	47.8	43.6
Female	52.2	56.4
Race/Ethnicity		
White, Non-Hispanic	74.2	83.0
Hispanic	10.2	6.6
Black, Non-Hispanic	11.2	7.5
Other, Non-Hispanic	4.3	2.9
Age		
16 – 24	16.1	14.0
25 – 34	17.9	18.5
35 – 44	21.4	21.0
45 – 54	17.4	19.6
55 – 64	11.3	12.8
65 +	15.9	14.1
Education Level		
8th Grade or less	7.56	2.22
9th – 11th Grade	14.71	8.26
High School Graduate or GED	31.49	26.50
Some College or Technical School	18.17	22.80
Associate's Degree or Technical School	6.64	7.70
Bachelor's Degree	14.35	19.83
Master's Degree	4.41	8.92
Professional Degree	1.23	1.54
Doctorate Degree	0.89	1.67
Other	0.56	0.56
Urban/Rural Residence		
Urban	80.04	65.68
Rural	19.96	34.32
Total Population/Sample	206,171,709	27,854

[1] U.S. Department of Commerce, Bureau of the Census, Civilian noninstitutionalized population 16 years of older, Sept. 1999, (http://www.census.gov) for multivariate on sex, age and race/ethnicity.

Sample Proportionate to the Geographic and Demographic Distributions of the Population

RDD sampling was conducted proportionate to the distribution of the national population both geographically and demographically. Data was collected from a random sample of the population of individuals 16 years of age or older residing in the United States and the District of Columbia at the time of survey implementation. Sample households were selected by means of a Random Digit Dialing (RDD) technique, permitting a natural stratification of the sample by state, county, and area code (Frey, 1989; Groves and Kahn, 1979). RDD samples theoretically provided an equal probability sample of all households in the nation with a telephone access line (i.e., a unique telephone number that rings in that household only). This equal-probability sample included all households with telephones regardless of whether a phone number was published or unlisted (Lavrakas, 1987).

Response Rates

A necessary but not sufficient condition for non-response bias was that there is (are) a (some) factor(s) for which response rates in the sample were not proportional to their representation in the population surveyed. The U.S. Census Bureau advised that the civilian non-institutionalized population best represents telephone-sampling frames. Table B-2 compares the civilian non institutionalized population years 16 and older with the NSRE 2000-04 sample for Versions 1 through 6 for sex, race/ethnicity, age, education level, and urban/rural residence. Response rates were higher for females; those who were White, not Hispanic; and those aged 25-34, 45-54, and 55-64. Response rates were slightly lower for those aged 35-44. Response rates were generally higher for higher levels of education. Differences for urban/rural were probably more related to intentional rural over-sampling than differences in response rates.

Relationship Between Sample Characteristics and Participation in Marine Recreation

Response rates for selected sample characteristics established a difference in survey response rates for several important characteristics. Table B-3 shows that these factors were also important in explaining participation in marine recreation. Table B-3 shows a summary of probit and logit equations estimated for all 19 activities/settings for which this study estimated marine recreation participation rates. Estimates of participation in marine recreation were dependent on factors for which there were biases in response rates. This finding provided suf-

ficient conditions to conclude that potential for non-response bias exists.

Sample Weighting to Correct for Non Response Bias

Sample weights were constructed by first developing multivariate weights for sex, race/ethnicity and age. Since the survey was designed to allow some applications (modules), to be a stand-alone survey, some constraints were present on how many cells could be implemented using multivariate weighting. For education level and urban/rural residence, multiplicative weights were used.

For Table B-3, the following definitions apply:

AGE = Age of respondent

AGESQ = Age of respondent squared

MALE = Dummy variable for sex, 1=male 0=female

BLACK = Dummy variable for Race/Ethnicity,
1 = Black/African American, non-Hispanic (White, non-Hispanic is base or excluded category)

ASIAN = Dummy variable for Race/Ethnicity,
1 = Asian or Pacific Islander, non-Hispanic (White, non-Hispanic is base or excluded category)

NATIVE = Dummy variable for Race/Ethnicity,
1 = Native American or Native Hawaiian, non-Hispanic (White, non-Hispanic is base or excluded category)

HISPANIC = Dummy variable for Race/Ethnicity,
1 = Hispanic (White, non-Hispanic is base or reference category).

URBAN = Dummy variable for Urban/Rural residence,
1 = Urban residence and 0=Rural residence

EDUCHS = Dummy variable for Education Level,
1 = High School Graduate (those with less than a High School Graduate level of education and other in base or excluded category)

EDUCOL = Dummy variable for Education Level,
1 = Some College or College Graduate (those with less than High School Graduate level of education and other in base or excluded category)

Table B-3: **Results for Selected Participation Equations for Marine Recreation**

Activity	AGE	AGE SQ	MALE	URBAN	BLACK	ASIAN	NATIVE	HISPANIC	EDU CHS	EDU COL	EDU GRAD
Visit Saltwater Beaches	–*	+*	–*	+*	–*	–*	–*	–*	+*	+*	+*
Visit Saltwater Watersides Besides Beaches	–*	+	+*	+*	–*	–*	–	–*	+	+*	+*
Swimming in Saltwater	–*	+	–*	+*	–*	–*	–*	–*	+*	+*	+*
Snorkeling in Saltwater	–*	–**	+*	+*	–*	–*	–*	–*	+*	+*	+*
Scuba Diving in Saltwater	–*	–	+*	+*	–*	–*	–	–*	–	+*	+*
Surfing in Saltwater	–*	+*	+*	+*	–*	+**	–	–*	+	+*	+*
Wind Surfing in Saltwater	–	–	+*	+	–	+	+*	–	–*	–	+
Fishing in Saltwater	–	–*	+*	–	–*	–	+	–*	+	+*	–*
Motorboating in Saltwater	–	–	+*	+**	–*	–*	–	–*	+*	+*	+*
Sailing in Saltwater	–*	+*	-**	+*	–*	–*	–	–*	–	+*	+*
Personal Watercraft Use in Saltwater	–*	+*	+*	+*	–*	–	+	–**	+*	+*	+*
Canoeing in Saltwater	–*	+	+*	+	–*	+**	+	–*	–*	–	+
Kayaking in Saltwater	–**	–	+	+	–*	–*	–	–*	–	+*	+*
Rowing in Saltwater	–*	+	+*	–	–	–	+	–	–**	+	+
Water Skiing in Saltwater	–*	+*	+*	+*	–*	–*	–	–**	+	+*	+
Birdwatching in Saltwater Surroundings	+*	–*	–*	+**	–*	–*	–	–*	+*	+*	+*
Viewing Other Wildlife in Saltwater Surroundings	+*	–*	–*	+*	–*	–*	–	–*	+*	+*	+*
Viewing or Photographing Scenery in Saltwater Surroundings	+*	–*	–*	+*	–*	–*	–	–*	+*	+*	+*
Hunting Waterfowl in Saltwater Surroundings	–*	+	+*	–	–*	–*	+	–*	+*	–	–

EDUCGRAD = Dummy variable for Education Level, 1 = Masters, Doctorate or Professional degree (those with less than High School Graduate level of education and other in base or excluded category).

'–' means factor is negatively related to participation.

'+' means factor is positively related to participation.

'*' means factor is statistically significant at 0.05 level of significance.

'**' means factor is statistically significant at 0.10 level of significance.

NOTE: *Other factors, such as household income and residence in a coastal county were other factors included in estimation equations. Those factors are not included here, but were significant in explaining participation for several marine recreation activities/settings.*

Table B-4 shows the effects of sample weighting. Comparison of the unweighted and weighted sample estimates of participation shows the potential extent of non-response bias on estimated participation rates in marine recreation. Of the 19 activities/settings, 11 would have been over-estimated using unweighted data; 7 would have been under estimated using unweighted data; and one would have been the same with weighted and unweighted data.

Table B-4: **Participation in Coastal/Marine Recreation**

Activity or Setting	Participation Rate (%) Unweighted	Participation Rate (%) Weighted [2]	Over or Under Estimate [3]
Visit Saltwater Beaches	31.99	30.03	+
Visit Saltwater Watersides Besides Beaches	4.50	4.50	same
Swimming in Saltwater	27.97	25.53	+
Snorkeling in Saltwater	5.80	5.07	+
Scuba Diving in Saltwater	1.46	1.35	+
Surfing in Saltwater	1.43	1.59	–
Wind Surfing in Saltwater	0.38	0.39	–
Fishing in Saltwater	10.13	10.32	–
Motorboating in Saltwater	7.93	7.11	+
Sailing in Saltwater	3.49	2.98	+
Personal Watercraft Use in Saltwater	2.39	2.57	–
Canoeing in Saltwater	0.98	1.05	–
Kayaking in Saltwater	1.51	1.33	+
Rowing in Saltwater	0.55	0.53	+
Water Skiing in Saltwater	1.03	1.15	–
Birdwatching in Saltwater Surroundings	9.13	7.17	+
Viewing Other Wildlife in Saltwater Surroundings	7.68	6.45	+
Viewing or Photographing Scenery in Saltwater Surroundings	11.01	9.19	+
Hunting Waterfowl in Saltwater Surroundings	0.32	0.33	–
Any Coastal/Marine Recreation	45.33	43.30	+

[1] Civilian Non Institutionalized Population 16 years and Older, Sept. 1999 - NSRE 2000, Versions 1-6, Sample of 27,854 Households.

[2] Weights included multivariate weights for Age, Race/Ethnicity and Sex and multiplicative weights for Education Level and Urban/Rural place of residence.

[3] + means unweighted sample estimate of participation greater than weighted estimate and – means unweighted sample estimate of participation is less than weighted estimate.

Specific Methods Used to Maximize Response Rates and Control for Non-Response Bias

Change Introduction

- **Identify Survey Sponsor**
  Response rates for government-sponsored surveys were reportedly higher (49% or more) than the response rates being achieved by the NSRE. The current introduction being used by the Human Dimensions Research Lab did not identify the survey as being government sponsored. Therefore, the opening statement was changed to the following:

  "Hello. My name is _____ and we are calling on behalf of the United States Forest Service."

- **Increase Motivation for Survey Participation**
  The next statement in the introduction was shortened to spark the respondent's interest in completing the survey. Removing the word "outdoor" encouraged those who did not participate in outdoor recreation to continue with the survey versus not completing the survey due to lack of interest. The next statement in the introduction was therefore changed to the following:

  "We are asking a select sample of the public about recreation opportunities in the U.S."

Increase Level of Detail for Recording Call Dispositions

By keeping more detailed records regarding residential household status of non-contacted phone listings, the HD Lab was able to estimate the value of e, the estimated proportion of non-contacted cases which were eligible as household residents to be respondents to the survey. This parameter was used to calculate AAPOR's Response Rate 3. All attempts coded as no answers and busy signals for the NSRE were recorded in the past as "Non-contact" in the AAPOR response rate calculations, with no distinction of potential eligibility. Therefore, all no answer and busy signal attempts were reviewed to determine whether the number was likely a residential listing. This review enabled researchers to estimate likely residency rate for non-contacted phone listings of unknown eligibility for use in computing survey response rates (see separate spreadsheet for response rates).

Pre-notification Using Advance Letters

- **Experimental Design and Sampling**
  Some studies have shown increases in response rates resulting from sending an advance letter notifying potential respondents that a phone contact will be attempted. Advance letters were therefore used to improve NSRE response rates. For the RDD sample drawn for the Wisconsin survey, a reverse appended was conducted that provided the names and addresses for all numbers listed in the sample. There is no way to know exactly what percent of the sample had listed addresses. An average 40% match rate of names, addresses, and numbers has been reported in other studies which, for the Wisconsin survey meant sending approximately 14,000 letters. For the approximately 40% of listings with names and addresses, response rates were calculated and compared (see separate spreadsheet).

- **Advance Letter Specifications:**
  a. Official U.S. Forest Service stationery was used to identify the survey as government sponsored. The letter was from Dr. Ken Cordell, Project Leader and Senior Scientist with the USDA Forest Service, and emphasized the importance of the study.
  b. Since the survey selected participants randomly from a household, the advance letter was addressed to the "John Smith Household" and the salutation greeted the "residents at the John Smith household." The person that was randomly selected in the household to be interviewed may or may not have seen the letter.

Reducing Survey Length

The Human Dimensions Research Lab at The University of Tennessee has shown that response rates improve with shorter interviews. The Wisconsin survey was therefore limited to an average 15-minute interview time. All versions of the NSRE were submitted to extensive testing and refinement before application.

Strengthen Refusal Conversion Efforts

- **Training**
  The supervisory staff of the Human Dimensions Research Lab at the University of Tennessee reviewed interviewer training materials and searched for ways to improve overall interviewer training. The highest priority was given to more intensive refusal aversion and refusal conversion training.
- **Extend Data Collection Period**
  Based on the time frame for overall data collection and in order to meet agency data needs for resource planning, management and policy, extending the data collection period was difficult. However, to the maximum extent possible, extra time was budgeted near the end of the data collection period to allow a crew of interviewers to work specifically on refusal conversions. At the end of these extended time periods, improvements in response rates and costs were evaluated and approaches refined in accordance with this evaluation.
- **Send Follow-up Letter to Refusals**
  For those households for which addresses were obtained, a sample of those who refused were sent a letter on Forest Service letterhead prior to re-contact. In cases where a name was obtained, the letter was also personally addressed. The letter again stressed the importance of the survey. Selection of this sample occurred at the end of each week's interviewing.

Weighting Procedures

As blocks of interviews were completed and compiled, they were examined to identify differences in demographic profiles between those surveyed and the overall population of the country as described in Bureau of Census website reports. Indeed, sufficient differences are typically found to require weighting adjustments for over- or under-sampling. Weighting was achieved using a composite of multivariate and multiplicative weights to account for age, race, gender, education, and urban/rural differences. This composite weighting helped adjust estimates of recreation participation and other NSRE estimates to better represent what those estimates would have been had the sample been truly proportionately distributed across all social strata.

This type of weighting procedure, referred to as *post-stratification* (Holt & Smith, 1979), is the most widely accepted method for adjusting sample proportions to mirror population distributions (Zhang, 2000). Post-stratification has been successfully applied in similar national surveys in the United States and other countries (Thomsen & Halmoy, 1998). For NSRE, a total of 60 strata (6 age x 2 gender x 5 race) were identified to match identical strata in the U.S. Census. Each individual strata weight, Swi, is the ratio of the Census population proportion to the NSRE sample proportion:

$Swi = Pi / pi$
where Pi = U.S. Census proportion for strata i
pi = NSRE 2000 sample proportion for strata i

A weight Swi >1.0 indicated that the particular strata was a smaller proportion of the sample than of the U.S. population based on Census estimates. Likewise, weights with a value less than 1.0 indicated that the stratum was randomly sampled in greater numbers than its proportion of the U.S. population age 16 and over. A unitary weight (i.e., no adjustment) means the sample strata was sampled at the same rate as its proportion of the population. Each individual respondent was assigned to one and only one of the 60 age-gender-race strata and thus assigned a Swi for that stratum.

An additional step accounted for the sampling proportions of two other socioeconomic strata: educational attainment and place of residence (rural/urban). Weights for each of these were calculated separately in a similar fashion to the age-gender-race weight. The education weight, *Ewi*, is the ratio of Census sample proportions for nine different levels of educational attainment, ranging from "8th grade or less" to "Doctorate Degree." The residence weight, *Rwi*, is simply the ratio of the percentage of the U.S. population living either in metropolitan statistical areas or not living in these areas divided by their counterparts in the NSRE data. This weight was adjusted for the fact that urban or metropolitan residents were slightly under-sampled in the survey. A single weight, *Wi*, for each individual survey respondent was then calculated as the product of the three intermediate weights:

$Wi = Swi \; C \; Ewi \; C \; Rwi$

The largest composite weights, therefore, were applied to respondents whose numbers were under-represented in the total sample. The smallest weights were applied to strata which were over-represented. The sample had a potential total of 1,080 (60 x 9 x 2) unique weights, with each individual assigned a weight, *Wi*, depending on his or her combination of the three intermediate weights.

Sources of Error

There are many potential sources of error or bias in a large survey of human subjects. The principal sources of bias for the NSRE include recall and digit preference among the response biases, and refusal, avidity, and incomplete listings among the non-response biases. As with any survey, regardless of scope or complexity, bias is a reality to be recognized and accounted for to the extent affordable through design of the sample and survey content. Brief descriptions of principal anticipated sources of bias in the NSRE are presented below.

Recall Bias

Recall bias is simply an inability of a respondent to recall accurately or to recall at all whether they participated in recreational activities, the number of activities undertaken, or the places where these activities were undertaken. There is no conclusive evidence regarding optimum recall period (one week, one month, six months, etc.) or methods of correcting recall bias. Digit preference bias is related to recall bias, but more specifically is a participation rounding bias. For example, for activities of frequent participation, such as walking or running/jogging, respondents often round to the nearest five or ten, such as 25, 30, or 40, rather than accurately reporting actual number of occasions.

Nonresponse Bias

Principal sources of nonresponse bias include avidity and incomplete phone listings. Avidity bias is the tendency of persons who do not participate or who participate only infrequently in outdoor leisure activities to refuse participation in the survey. Left unaccounted for, avidity bias can result in seriously inflated estimates of population participation rates and biased estimates of participation differences by social group. Incomplete phone listings, like any other incomplete sampling frame, can occur for many reasons. More frequently encountered reasons include institutionalization, persons not having a phone, and persons having access only to pay phones or other non-individualistic arrangements. For the NSRE, an attempt to estimate avidity and listing bias was made by asking two key questions of persons who refused the survey. Those questions were age and whether or not the respondent participated in outdoor recreation in the last twelve months. Additionally, the sex of the respondent was recorded when recognizable. The estimated proportions of non-respondents, relative to respondents, was combined with weights derived from the 2000 U.S. Census of Population to weight each observation and correct for over- or under-representation by social group characteristics in the sample.

The NSRE included a more comprehensive listing of outdoor recreation activities than any of the previous national surveys. The activities list for the NSRE included 70 explicitly named activities. Some of these listed activities such as sightseeing and walking for pleasure have always been relatively vague. Other activities such as snorkeling and rock climbing are much more specific and have relatively precise technical definitions. Respondents were left to determine, by their own definition of the activities listed, whether or not they had participated in a given activity. For the NSRE, several new activities were listed, largely driven by newly available or improved technologies such as personal water craft, rock climbing, and orienteering. To the extent that respondents understood the activities they were being asked about, valid responses were recorded. Little guidance exists in the literature to control for this potential source of error in collecting participation data.

Sources of bias were addressed through data weighting and other approaches as necessary. For example, equally distributing a quota of 400 respondents across each of the 50 states would result in over-sampling of rural areas (e.g., 65% Urban, 25% Near Urban, and 10% Rural). This survey therefore used a sampling strategy that combined the quota of 400 per state with a proportional nationwide sample (e.g., 64.6% Urban, 27.4% Near Urban, and 8.0% Rural). Another source of potential bias is random digit dialing, which reaches a random sample of telephone numbers, rather than of people. Affluent families almost always have a telephone number (97%) while many low-income households do not have a telephone (ranging from 8 to 23% depending on geographic area). As a result, affluent people are likely to be somewhat over represented in survey samples (Bowen, 1994; Groves, 1990; Tucker, Lepkowski, Casady, & Groves, 1992). To compensate for these types of sampling biases, the NSRE data set was weighted based on comparisons with 2000 Census data.

Language barriers can also introduce bias through the exclusion of people who cannot speak either English or Spanish. According to the 2000 Census, 12.5 % of the U.S. population is Hispanic. For the non-English speaking segment of the Hispanic population, the NSRE was conducted in Spanish. The most difficult part of this process was making translation generic enough for overall comprehension by all the various Hispanic dialects. Other non-English speaking U.S. residents were excluded from the survey. The complexity of the translation and interviewing processes made interviewing in all languages prohibitively costly.

All results provided within this study are based upon the number of NSRE surveys completed at the time the analysis for this report was conducted. As of the writing of this report, data collection for the NSRE was still on-going. Obviously, as more data are collected final estimates of the percentages and numbers of people participating in different activities may change slightly from those reported in this report.

In analyzing the results presented in this report, it is important to remember that individuals were asked about their personal participation in specific recreation activities. To date, versions 1-12 of the NSRE have been completed, meaning participants have answered questions pertaining to approximately 80 outdoor recreation activities. For analysis and description of results, it was useful to place these activities into 12 groups. For simplicity, each activity was placed in only one category although in many cases, activities could have been placed in more than one category. Hiking, for example, was classed as an individual activity, which it is for many people. For others, however, hiking might best be classed as a backpacking and camping activity.

It is also important to note that with a maximum sample of approximately 3,000 respondents in Wisconsin alone, not all combinations of social characteristics may be present in the analyses investigated in this study. Weighting of data will help compensate for this by correcting for over- or under-representation by the respondent's social group in the sample.

Activities Covered:

Individual Activities:
- Bicycling
- Mountain biking
- Walking for exercise or pleasure
- Horseback riding
- Day hiking
- Running or jogging
- Golf
- Tennis outdoors
- Gardening or landscaping
- Inline skating or rollerblading
- Orienteering

Snow and Ice Activities:
- Ice skating outdoors
- Sledding
- Snowshoeing
- Downhill skiing
- Snowboarding
- Cross-country skiing
- Snowmobiling

Water Activities:
- Swimming
- Swimming in streams, lakes, or the ocean
- Swimming in an outdoor pool
- Snorkeling
- Scuba diving
- Visiting a beach
- Visiting a waterside

Driving for Pleasure:
- Sightseeing
- Driving for pleasure on country roads or in a park
- 4-wheel drive, ATV or motorcycle driving off-road

Viewing or Photographing:
- Viewing, identifying, or photographing birds
- Viewing, identifying, or photographing fish
- Viewing, identifying, or photographing other wildlife
- Viewing, identifying, or photographing wildflowers, trees or other natural vegetation
- Viewing or photographing natural scenery

Hunting:
- Big game
- Small game

Fishing:
- Fishing in coldwater such as mountain rivers or streams
- Fishing in warm rivers and lakes
- Ice fishing

Visiting Educational Sites:
- Visiting a nature center, nature trail, visitor center, or zoo
- Attending outdoor concerts, plays, or other outdoor performances
- Visiting prehistoric structures or archaeological sites
- Visiting historic sites, buildings, or monuments
- Visiting a farm or other rural land setting

Traditional Activities:
- Gathering of family/friends
- Picnicking

Outdoor Team Sports:
- Soccer outdoors
- Handball, racquetball, or squash outdoors
- Yard games—horseshoes, badminton, croquet, frisbee
- Attending outdoor sporting events as a spectator

Boating/Floating/Sailing:
- Sailing
- Canoeing
- Kayaking
- Rowing
- Motor boating
- Water skiing
- Personal water craft such as jet skis and wave runners
- Rafting, tubing, or other floating activities
- Surfing

Outdoor Adventure Activities:
- Exploring caves
- Backpack camping on trails
- Camping at developed sites
- Camping at primitive sites
- Visiting a wilderness or other primitive roadless area
- Gathering mushrooms, berries, firewood, or other natural products
- Mountain climbing
- Rock climbing

Activities Particular to the Wisconsin Survey
- Hunting upland birds
- Fishing in a Great Lake

APPENDIX C

Recreation Activity Intensities

Calculations for caloric expenditures are based on a 30-minute duration and three different body weights: 160lbs (73kg), 180lbs (82kg), and 200lbs (91kg). These weights were chosen based on a standard BMI table and are the weights at which an individual is considered obese given heights of 5'1", 5'5", and 5'8" respectively. Since one goal of the 2011-2016 Wisconsin SCORP is to improve public health by increasing physical activity, obesity weights are important to include in these calculations.

Table C-1: **Recreation Activity Intensities, Caloric Expenditures by Body Weight, Appropriate Location, and Participation Rates**

Recreation Activity	METs		Calories Burned			Location			Available Year-Round	Participation		
	MET Code	Vigorous (>6) Moderate (3-6) Light (<3)	160 lbs. 30 min. duration	180 lbs. 30 min. duration	200 lbs. 30 min. duration	Nature-Based	Urban-Based	Both		Participation % 1994–1995	Participation % 2005–2009	% Change in Participation 1994–2009
Inline skating (rollerblading)	15591	12.5	455	511	568		X			N/A	2.50	N/A
Rock climbing, ascending rock	15535	11.0	400	450	500	X				2.5	3.8	78.0
Orienteering	15480	9.0	327	368	409	X			X	1.4	1.6	31.7
Running, cross-country, jogging	12140	9.0	327	368	409	X			X	20.7	32.1	80
Mountain biking or BMX	01009	8.5	309	348	386	X				N/A	30.7	N/A
Handball, general	15330	8.0	291	327	364		X			2.5	23.5	993.3
Rock climbing, rappelling	15540	8.0	291	327	364	X				2.5	3.8	78
Mountain climbing	17120	8.0	291	327	364	X				1.4	2.7	130.6
Bicycling, general	01015	8.0	291	327	364			X	X	38.3	48.7	47.4
Skiing, cross-country	19090	8.0	291	327	364	X				9.2	8.8	11.3
Snowshoeing	19190	8.0	291	327	364	X				N/A	6.1	N/A
Ice hockey outdoors	15360	8.0	291	327	364		X			N/A	N/A	N/A
Volleyball outdoors, beach	15725	8.0	291	327	364			X		16.5	23	60.7
Football, touch, flag, general	15230	8.0	291	327	364		X			7.3	18.9	201.7
Backpacking	17010	7.0	255	286	318	X				4.8	7.4	79.1
Canoeing, moderate effort	18050	7.0	255	286	318	X				13.1	17.9	58.5
Rowing, moderate effort	18050	7.0	255	286	318	X				6.1	7.2	36.6
Scuba diving	18200	7.0	255	286	318	X				N/A	1.1	N/A
Sledding	19180	7.0	255	286	318			X		18.3	28.2	78.3
Ice skating outdoors	19030	7.0	255	286	318		X			12.9	13.5	21.6
Dog sledding	19180	7.0	255	286	318	X				1.1[1]	N/A	N/A
Tennis outdoors	15675	7.0	255	286	318		X			10.5	8.5	-6.6
Racquetball, casual, general	15530	7.0	255	286	318		X			2.5	23.5	993.3
Soccer, casual, general	15610	7.0	255	286	318		X			4.6	32.4	715.2

[1] Participation based on 1999-2004 NSRE

APPENDIX C: Recreation Activity Intensities

Table C-1: **Recreation Activity Intensities, Caloric Expenditures by Body Weight, Appropriate Location, and Participation Rates**

Recreation Activity	METs		Calories Burned			Location			Available Year-Round	Participation		
	MET Code	Vigorous (>6) Moderate (3-6) Light (<3)	160 lbs. 30 min. duration	180 lbs. 30 min. duration	200 lbs. 30 min. duration	Nature-Based	Urban-Based	Both		Participation % 1994–1995	Participation % 2005–2009	% Change in Participation 1994–2009
Hiking, general	17080	6.0	218	245	273	X			X	24.4	36.7	74.2
Hunting, big game	04080	6.0	218	245	273	X			X	16.6	18	25.8
Hunting, migratory bird	04110	6.0	218	245	273	X			X	2.7	4.1	72.1
Paintball	12010	6.0	218	245	273	X				6.6[1]	N/A	N/A
Swimming in lakes, streams, etc.	18300	6.0	218	245	273			X		42.7	41.7	13.3
Waterskiing	18150	6.0	218	245	273			X		9.3	13	53.5
Skiing, downhill	19160	6.0	218	245	273	X				10.2	7	-20.7
Snowboarding	19160	6.0	218	245	273	X				2	3.7	111.6
Basketball, general	15050	6.0	218	245	273		X			9.2	16.1	102.2
Hunting, small game	04120	5.0	182	205	227	X			X	11.3	11.3	16.5
Rafting	18370	5.0	182	205	227	X				10	9.2	6.4
Snorkeling	18210	5.0	182	205	227	X				5	6.3	44.8
Kayaking	18100	5.0	182	205	227	X				1.2	7.3	604.7
Skateboarding	15580	5.0	182	205	227		X			2.6[1]	N/A	N/A
Baseball	15620	5.0	182	205	227		X			8.9	3.1	-59.5
Softball	15620	5.0	182	205	227		X			14.4	7.1	-42.9
Golf	15255	4.5	164	184	205		X			22.9	41.8	111.8
Gardening, general	08245	4.0	145	164	182		X			N/A	65.4	N/A
Horseback riding, general	15370	4.0	145	164	182	X				3.6	8.7	179.9
Swimming, moderate effort, pool	18350	4.0	145	164	182			X		43.3	34.5	-7.6
Walking for pleasure	17160	3.5	127	143	159			X	X	76.9	87.7	32.1
Snowmobiling	19200	3.5	127	143	159	X				10.2	18.3	108.5
Geocaching	17190	3.3	0	0	0			X	X	2.0[1]	N/A	N/A
Visit a dog park to walk a pet	17165	3.0	109	123	136		X		X	12.4[1]	N/A	N/A
Fishing, general, warm water	04001	3.0	109	123	136			X	X	33.3	33.2	15.4
Sailing	18120	3.0	109	123	136			X		4	3.9	12.7
Windsurfing	18220	3.0	109	123	136			X		1.3	1.1	-8
Surfing	18220	3.0	109	123	136	X				0.3	1	332
Disc golf, Frisbee, general	15240	3.0	109	123	136		X			8.8[1]	N/A	N/A
Camping – moderate effort	09100	2.5	91	102	114	X				25	25.4	17.9
Off-road motorcycling	16030	2.5	91	102	114	X				5.9[1]	N/A	N/A
Off-road driving with an ATV	16030	2.5	91	102	114	X			X	23.4[1]	N/A	N/A
Yard games	15160	2.5	91	102	114		X			43.4	44.7	19.3
Target shooting	04130	2.5	91	102	114	X			X	20.2[1]	N/A	N/A
Boating, power boat	18010	2.5	91	102	114			X		32.8	36	26.8
View/photograph birds	17085	2.5	91	102	114			X	X	32.5	41.7	48.8
Visit a wilderness or primitive area	09105	2.0	73	82	91	X			X	N/A	33.7	N/A
Visit a farm or agricultural setting	09105	2.0	73	82	91	X			X	N/A	35.3	N/A

[1] Participation based on 1999-2004 NSRE

Table C-1: **Recreation Activity Intensities, Caloric Expenditures by Body Weight, Appropriate Location, and Participation Rates**

Recreation Activity	METs		Calories Burned			Location			Available Year-Round	Participation		
	MET Code	Vigorous (>6) Moderate (3-6) Light (<3)	160 lbs. 30 min. duration	180 lbs. 30 min. duration	200 lbs. 30 min. duration	Nature-Based	Urban-Based	Both		Participation % 1994–1995	Participation % 2005–2009	% Change in Participation 1994–2009
Off-highway vehicle driving	16010	2.0	73	82	91			X	X	13.1	19.8	75.2
Driving for pleasure	16010	2.0	73	82	91			X	X	N/A	52.8	N/A
Visit outdoor theme/water park	09105	2.0	73	82	91		X			37.6[1]	N/A	N/A
Ice fishing	04060	2.0	73	82	91			X		12.8	13.1	18.9
View/photograph natural scenery	09105	2.0	73	82	91	X			X	N/A	65.3	N/A
Visit nature centers, etc.	09105	2.0	73	82	91	X			X	64.9	63.5	13.4
Visiting a waterside	09105	2.0	73	82	91	X	X		X	N/A	22.6	N/A
View/photograph other wildlife	09105	2.0	73	82	91	X			X	40.7	57.9	64.6
Sightseeing	09105	2.0	73	82	91			X	X	61.7	50.6	-5
View/photograph wildflowers	09105	2.0	73	82	91	X			X	N/A	52.4	N/A
Visit historic sites	09105	2.0	73	82	91			X	X	44.1	46.7	22.7
Gather mushrooms, berries, etc.	09105	2.0	73	82	91	X			X	N/A	42.8	N/A
View/photograph fish	09105	2.0	73	82	91	X			X	16	26.7	93.8
Visit prehistoric/archeological sites	09105	2.0	73	82	91	X			X	15	15.5	19.4
Nature-based educational programs	09105	2.0	73	82	91	X			X	16.3[1]	N/A	N/A
Boat tours or excursions	09105	2.0	73	82	91			X		N/A	13.9	N/A
Visiting a cave	09105	2.0	73	82	91	X			X	4.3	2.6	-28.9
Family gathering	09100	1.5	55	61	68			X	X	70.4	63.5	4.5
Picnicking	13030	1.5	55	61	68			X		55	47	-1
Attend outdoor concerts, plays, etc.	09115	1.5	55	61	68		X			35	32.8	8.5
Attend outdoor sports events	09115	1.5	55	61	68		X		X	51.4	65	46.5

[1] Participation based on 1999-2004 NSRE

APPENDIX D

Health and Outdoor Recreation Summary Descriptive Statistics

Table D-1: **Variables Used in the Models and their Names, Descriptions, and Sources**

Variable Name	Abbreviation	Description	Source
Premature Death	PD	Age-adjusted years of productive life lost before the age of 75 (YPLL-75) rate per 100,000 persons	National Vital Statistics System, 2005-2007
Adult Obesity	AO	Percentage of population reporting a body mass index ≥ 30	Behavioral Risk Factor Surveillance System, 2008
Mental Health	MH	Average number of reported mentally unhealthy days per month (age adjusted)	National Center for Health Statistics, using Behavioral Risk Factor Surveillance System data from 2003-2009
Bachelor Degree	BS	Percentage of population with a bachelor degree	Census 2000
High School Diploma	HS	Percentage of population without a high school diploma	Census 2000
Income	INC	Median household income	Census 2000
Black or Hispanic	BOH	Percentage of population identified as Black or Hispanic	Census 2000
% Senior	SEN	Percentage of population aged 65 or older	Census 2000
# Parks	PARK	Total number of public parks	Wisconsin SCORP Inventory, 2005
Miles of Trails	TRAIL	Total mileage of non-winter recreation trails	Wisconsin SCORP Inventory, 2006
% Walking access	WALK	Percentage of population living within ½-mile walk of a public park	Author calculation (Outhavong 2011)

Table D-2: **Summary Descriptive Statistics for Variables in the Dataset (72 Wisconsin Counties)**

Variable	Mean	Median	Mode	SD	Range	Minimum	Maximum	Morans I
PD	6354.17	6131.10	0.00	1259.41	7704.30	4200.10	11904.40	0.16***
AO	27.71	28.05	28.10	1.24	6.40	23.90	30.30	-0.04
MH	2.94	2.85	2.68	0.72	3.85	1.49	5.34	0.14***
BS	11.98	10.90	9.40	4.01	19.10	6.50	25.60	0.24***
HS	16.15	16.15	15.90	3.67	16.80	7.80	24.60	0.12**
INC	40420.90	38783.00	0.00	7101.58	33399.00	29440.00	62839.00	0.56***
BOH	2.79	1.30	1.10	4.58	32.70	0.40	33.10	0.34***
SEN	0.15	0.15	0.16	0.03	0.15	0.09	0.23	0.39***
PARK	71.01	40.50	33.00	84.84	606.00	1.00	607.00	0.24***
TRAIL	93.92	85.50	66.00	76.10	381.00	0.00	381.00	0.124**
WALK	11.43	6.80	0.00	14.74	60.10	0.00	60.10	0.403***

*** significant at the p<.01 level
** significant at the p<.05 level

APPENDIX D: Health and Outdoor Recreation Summary Descriptive Statistics

Table D-3: **Explanatory Models Using Public Health and Wellness as Dependent Variable**

	OLS			Spatial Lag		
	PD	**AO**	**MH**	**PD**	**AO**	**MH**
AO	186*		-0.023	210**		-0.012
BS		-0.26***			-0.25***	
HS	69*		0.07**	76**		0.06*
INC	-0.11***		0	-0.10***		0
BOH	59*	0.052*		60**	0.051*	
SEN	-7149	-5.7	1.35	-8464**	-5.1	0.97
PARK	0.62		0.001	0.61		0
TRAIL	-0.05		0	-0.03		0.002
WALK		0.005			0.002	
Adj R^2	**0.56**	**0.50**	**0.02**	**0.61**	**0.53**	**0.12**

*** significance at the p<.01 level
** significance at the p<.05 level
* significance at the p<.10 level

Table D-4: **Explanatory Models Using Recreation Supply as Dependent Variable**

	OLS		Spatial Lag	
	PARK	**TRAIL**	**PARK**	**TRAIL**
PD	-0.002	0.0029	0.01	0.0025
AO				
MH				
BS				
HS	-8.57**	-7.94***	-8.56**	-7.94**
INC	0.001	0.001	0.003	0
BOH	10.01***	4.61**	10.47***	4.68**
SEN	-95	-110	-67	-103
Adj R^2	**0.48**	**0.24**	**0.52**	**0.30**

*** significance at the p<.01 level
** significance at the p<.05 level
* significance at the p<.10 level

APPENDIX E

Park & Recreational Designs, and Recreation Supply Levels (by Urban Peer Groups)

Classification of Parks and Recreation Areas (on the basis of their service areas):

Mini Park

1. ***Definition Summary:***
   A play lot or playground provides space for parental supervised recreation of toddlers and young children within a neighborhood, or as part of a larger neighborhood or community park and urban center, including retail shopping areas.

2. ***Size Objectives:***
   0.5 to 1.5 acres.

3. ***Service Area Objectives:***
   Generally within a neighborhood of a half mile radius or population of 2,000-3,000. Mini parks may be included in parks that serve a larger population or service area.

4. ***Location Objectives:***
   Located in protected areas with separation from street traffic and high visibility; serving local neighborhoods and adjoining schools, libraries, or police and fire facilities.
   - *Population Ratio to Acreage:* .25 to 0.5 acre per 1,000 population to achieve a park unit size that serves 2,000 to 3,000 people.

5. ***Space, Design, and Service Area:***
   The size of a play lot or playground may range from as small as 2,500 sq. ft. to 1.5 acres.* Amenities offered by these facilities generally include sand play areas, play apparatus, play equipment, and other special child-oriented features. The service radius for these parks in terms of distance from population served is limited to less than a quarter mile, or within a super block space, unless the playground is incorporated into a larger park.

6. ***Orientation:***
   Small geographic areas, sub-neighborhoods, or neighborhoods, when combined with a larger park unit. Serves youth ranging in age from toddler to 12 years, with adult supervision. Playgrounds also serve important needs in city business districts and inner city areas where a mix of commercial and recreation activity is desired.

7. ***Function:***
   Provides outdoor play experiences for youth under parental supervision. Generates neighborhood communication and provides diversion from work and domestic chores. Promotes neighborhood solidarity.

Neighborhood Park

1. ***Definition Summary:***
   A neighborhood park, by size, program, and location, provides space and recreation activities for the immediate neighborhood in which it is located. It is considered an extension of neighborhood residents' "out-of-yard" and outdoor use area.

2. ***Size Objectives:***
   5 to 25 acres.

3. ***Service Area Objectives:***
   Generally a one mile radius, but actually defined by collector street patterns which form the limits of a neighborhood or recreation service area. Population served may range from 2,000 up to 5,000.

4. ***Location Objectives:***
   Centrally located for equitable pedestrian access within a definable neighborhood service area. Adjoining or adjacent to an elementary, middle school or high school, fire station, or library, if possible.

5. ***Program Objectives:***
   Compatible with the neighborhood setting and park site constraints. Generally includes the following facilities, which are determined with public input as to use and activities:

a. Parking for 10 to 20 vehicles.
   1) On-street parking is acceptable if negative impact to residential units can be mitigated. On-site parking is preferable as a planning objective.
   2) Bike racks with Class II trail connections where possible.

b. Restrooms
   1) Men's restroom with 2 water closets, 2 urinals, 2 lavatories.
   2) Women's restroom with 3 water closets and 2 lavatories.
   3) Utility and minimum park janitorial storage space.

c. Tot lot/children's play area

d. Family event/group picnic facility

e. Informal family picnic area with benches and tables

f. Unstructured turf grass play area/play or practice field for children, young adults, and families.

g. Sport facilities—compatible with neighborhood setting and park site constraints.
   1) Basketball—half court, full court, or tri-court configuration
   2) Volleyball area
   3) Softball field/soccer practice or game overlay
   4) Other features as needs or site conditions allow

6. Orientation:
Serves all age groups, with an emphasis on youth and families in neighborhood settings.

7. Function:
To provide a combination of active recreation and passive activities, both outdoor and indoor facilities, and special features as required or needed.

8. Space, Design, and Service Area:
A minimum size of 5 to 25 acres with amenities including sports facilities, picnic areas, swim facilities, cultural activities, arts, crafts, and individual passive activities. The park should primarily serve a defined neighborhood area population of 2,000-5,000. Distance from this neighborhood will vary depending on urban development pattern, zoning, and densities in the respective neighborhoods being served. Efforts should be made to allow easy pedestrian access to the park.

Community Park

1. Definition Summary:
A community park, by size, program, and location, provides space and recreation activities for a defined service area, the entire city, or significant geographic segment of the city's population.

2. Size Objectives:
Usually more than 25 acres.

3. Service Area Objectives:
Generally a 2 to 5 mile radius within the city and adjacent neighborhoods outside of city limits.

4. Location Objectives:
Centrally located if planned to serve a particular geographic segment of the city. Located adjoining or immediately adjacent to a collector street providing community-wide vehicular access, thereby reducing neighborhood traffic impacts. Connected with Class II on-street and/or off-street community trail and bike lane system. Adjoining or adjacent to an elementary, middle, or high school if possible.

5. Program Objectives:
Elements that fulfill the service area, park facilities and recreation program demands. The following facilities may be compatible with community setting and park site constraints:

a. Off-street parking calculated to satisfy demand of park and recreation activities provided. Includes bike racks and a public transit station at the site as well as both on-site and street parking.

b. Restrooms designed to accommodate the level of park and recreation activities provided and the number of people served. Restrooms should be located within a reasonable walking distance from children's play equipment and other high-use areas.

c. Community recreation center

d. Park maintenance and equipment storage building

e. Tot lot/children's play area

f. Group picnic shelters

g. Family picnic facilities

h. Sport/recreation facility fulfilling the overall city demand

Appropriate program elements include:
   1) Community pool/water feature
   2) Soccer fields
   3) Softball, little league baseball, junior pony league baseball

4) Football
5) Roller hockey/skateboard area
6) Tennis courts
7) Basketball courts
8) Amphitheater/performing arts center
9) Volleyball (indoor and outdoor)
10) Jogging trails
11) Other facilities as desired and as permitted under park site plan
12) Concessions (food and beverage)

6. Orientation:
Multi-purpose service area or community-wide recreation resource serving most or all of the population.

7. Function:
Provides opportunities for a diverse mix of indoor and outdoor recreation, including walking and bicycling, outdoor performances, various programmed and non-programmed field sports, swimming, and special events.

8. Space, Design, and Service Area:
The minimum space for a community park is 15 acres. Facilities typically provide for some sports activities, though emphasis is on passive cultural and community centers with recreational programming and organized activities. The community park may serve populations within a 2 to 5 mile radius, a scope that would allow residents of other communities to use the park as well.

Special Use Park

1. Definition Summary:
A special use park is often designed as a revenue-generating enterprise created to satisfy demand for a particular sport, recreational activity, or special event. A special use park may also be a sports park combined with enterprise activities and administered as a community recreation resource.

2. Size Objective:
The actual size of a special use park is determined by land availability and facility/market demand for special uses or recreation programs.

3. Service Area Objectives:
Community or area-wide and determined by the type of recreation program, special events or use activities.

4. Location Objectives:
Determined by the property opportunity, service area and size objectives.

5. Program Objectives:
Special use parks require facility programming that is user- or market-driven and based on community needs or economic and service principles for public and private partnerships. The magnitude and type of special use facilities may include:

a. Water play park
b. Amphitheater
c. Festival/swap meet/farmers market
d. League/individual sports complex
e. Fitness/entertainment center
f. Skateboard/in-line hockey park
g. Recreation programs and classes

6. Orientation:
Provides recreation programming, sports and special event attractions and activities for all age groups.

7. Function:
Special events, fairs, festivals, expositions, symposiums, sports, community gatherings, ethnic/cultural celebrations, plays and numerous other recreational programs and activities.

8. Space, Design, and Service Area:
The minimum size for special parks varies depending on intended use and programming.

School Park

1. Definition Summary:
By combining the resources of two public agencies, the school park classification allows for expanding the recreational, social, and educational opportunities available to the community in an efficient and cost-effective manner.

Depending on the circumstances, school park sites often complement other community recreation or open lands. As an example, an elementary/middle school site could also serve as a neighborhood park. Likewise, middle or high school sports facilities could do double duty as a community park or as youth athletic fields. Depending on its size, one school park site may serve in a number of capacities, such as a neighborhood park, youth athletic fields, and a location for recreation classes. Given the inherent variability of type, size and location, determining how a school park site is integrated into a larger park system will depend on case-by-case circumstances. The important outcome in the joint-use relationship is that both the school district and park system benefit from shared use of facilities and land area.

2. Size Objective:

The optimum size of a school park site depends on its intended use. The size criteria established for neighborhood park and community park classifications may apply.

3. Service Area Objectives:

Neighborhood park and community park classifications criteria should be used to determine school park functions and area served. For planning purposes, the degree to which school lands, including buildings or facilities, meet community needs depends on the specific inter-local agreements formed.

4. Location Objectives:

The location of a school park site will be determined by the school district based on district policy. Coordinated city and school district planning allows for siting, acquisition, and facility development to be responsive to community needs. Service areas for school park sites will depend on the type of use and facilities provided.

5. Program Objectives:

The criteria established for neighborhood parks and community parks should be used to determine how a school park site is developed and programmed. If athletic fields are developed at a school park site, they should, where feasible, be oriented toward youth rather than adult programs. Establishing a clearly defined joint-use agreement between involved agencies is critical to making school park relationships workable. This is particularly important with respect to acquisition, development, maintenance, liability, use, and programming of facility issues.

The orientation of school park projects is typically for neighborhood and community recreation services. The functions may include sports, recreation classes, passive recreation activities, and other recreation programs suitable to an elementary or secondary education school.

County Park

1. Definition Summary:

A county park provides sufficient park and recreation area to meet the needs of county residents. County parks consist of land that is specifically set aside for active and passive recreation uses, and that accommodates large gatherings, special events, and individual users. County parks offer a wide variety of compatible outdoor recreation activities, and may provide areas that do not primarily serve a recreational purpose such as protected natural areas, historic areas, and special use areas.

2. Size Objectives:

The size of recreation parks varies greatly from park to park, but with the exception of those parks that serve a special use or are trail corridors, a recreation park should consist of a minimum of 100 acres of land. Each park should be of sufficient size to accommodate the estimated use and to allow for the operation and maintenance of planned recreational facilities.

3. Service Area Objectives:

County parks provide for a regional user group and serve primarily county residents. Special facilities like camping and trails are also used by tourists and visitors to the county.

4. Location Objectives:

The land should have high recreational potential and be able to withstand intensive and extensive recreational activities. Land should have potential to accommodate large groups of people. Land for corridors should be located so as to connect to communities, parks, and open spaces. The potential for future land acquisition should be taken into account.

5. Program Objectives:

Development should be appropriate for intended use and should accommodate moderate to high use. Development and planning should consider the physical condition and characteristics of the land and recognize potential environmental or structural limitations that might require intensive maintenance. County parks may include the following facilities:

a. Camping/group camping
b. Picnic areas
c. Recreational trails (hiking, bicycling, mountain biking, equestrian, cross-country ski, snowmobile, etc.)
d. Play areas
e. Swimming beaches
f. Water access
g. Fishing access
h. Shelters
i. Restrooms
j. Shower facilities
k. Sport fields (basketball, volleyball, softball, etc.)
l. Pet exercise area

6. Orientation:

Multi-purpose service area and regional recreation resource serving a significant portion of a county or multi-county population.

7. Function:

To provide sufficient parks and recreation areas to meet the needs of the people of the county.

8. Space, Design, and Service Area:

The size of a county park should be a minimum of 100 acres. Facilities vary by park; some parks offer active recreation (camping, recreational trails, etc.), while others provide passive recreation (scenic lookouts, picnic areas, beaches, etc.). Most parks provide both active and passive recreation. County parks provide for a regional user group and serve primarily county residents, though special facilities also serve tourists and visitors to the county.

State Forest

1. Definition Summary:

A state forest consists of well blocked areas of state-owned lands which are managed to benefit present and future generations of residents, recognizing that forests contribute to local and statewide economies and to a healthy natural environment. State forests practice sustainable forestry. The management of state forests is consistent with the ecological capability of state forest land and with the long-term goal of maintaining sustainable forest communities and ecosystems. Benefits of maintaining these ecosystems include soil protection, public hunting, protection of water quality, production of recurring forest products, outdoor recreation, native biological diversity, aquatic and terrestrial wildlife, and aesthetic value. The range of benefits provided in each state forest reflect its unique character and position in the regional landscape.

2. Size Objectives:

Typically between 1,000 and 250,000 acres, but can be larger or smaller.

3. Service Area Objectives:

Generally a 100 mile radius. State forests typically provide close-to-home recreational areas. Day users typically travel approximately 50 miles one-way to reach state forests, while overnight users tend to travel further, approximately 100-150 miles one-way. Travel to state forests can, however, exceed 160 miles for longer vacation stays and travel to "destination areas."

4. Location Objectives:

Areas with large blocks of land.

5. Program Objectives:

State forests must meet ecological, economic, social, and cultural needs. Elements are compatible with the natural resource setting and park site constraints. Facilities may include the following:

Current Level of Supply:

Hiking trails	1,256 acres per linear mile of trail
Cross-country ski trails	2,551 acres per linear mile of trail
Snowmobile trails	639 acres per linear mile of trail
Equestrian trails	559 acres per linear mile of trail
ATV trails	1,795 acres per linear mile of trail
Camping sites	1 campsite per 265 acres

6. Orientation:

Multi-purpose service area and regional recreation resource serving a significant portion of a state or regional population.

7. Function:

To provide for nature conservation, provide income to forest owners, supply raw materials to the wood processing industry, and provide public recreation.

8. Space, Design, and Service Area:

The size of a state forest is determined by the extent of the area's natural resources and recreation capabilities. There is no minimum or maximum size for a state forest. Facilities are not universal and vary by forest. The geographic location of the forest and the natural resources present dictate recreation available at the site. State forests serve large geographic areas of a state or region.

State Park

1. Definition Summary:

A state park, by size, program, and location, provides space for outdoor recreation and education about nature and conservation. These parks serve a significant geographic segment of a state or regional population. State parks aim to preserve, protect, interpret and enhance the scenic and cultural resources of the state.

2. Size Objectives:

Parks must be large enough to accommodate a reasonable mix of outdoor recreational activities. Typically, parks are between 500 and 3000 acres, but can be smaller (<20 acres) or larger (>10,000 acres).

3. Service Area Objectives:

Generally a 100-mile radius. State parks typically provide close-to-home recreational areas. Day users generally travel approximately 50 miles one-way to reach

state parks, while overnight users tend to travel further, approximately 100-150 miles one-way. Travel distances to state parks can often exceed 160 miles for longer vacation stays and trips to "destination areas."

4. Location Objectives:

Siting of Wisconsin State Parks is typically based on five criteria developed by John Nolen. These criteria are: 1) large size to serve a large number of citizens, 2) accessibility to major population areas, 3) a healthful, natural setting, 4) reasonable cost for land acquisition, 5) land possessing "decidedly uncommon charm and beauty." All, or a combination of these criteria are used to determine where to site a state park.

5. Program Objectives:

Elements that fulfill the service area, park facilities and recreation program demands. Elements are compatible with the natural resource setting and park site constraints. Developments may include the following facilities:

Current Level of Supply:

Hiking trails	196 acres per linear mile of trail
Surfaced bicycle trails	860 acres per linear mile of trail
Mountain bike trails	549 acres per linear mile of trail
Nature trails	1,871 acres per linear mile of trail
Cross-country ski trails	430 acres per linear mile of trail
Snowmobile trails	426 acres per linear mile of trail
Equestrian trails	400 acres per linear mile of trail
Picnic sites	0.05 acres per picnic table
Camping sites	1 campsite per 29 acres
Parking stalls	Year-Round = 1 stall for every 3 visitors
Swimming beaches	17 linear feet per 1,000 users

5. Orientation:

Multi-purpose service area and regional recreation resource serving a significant portion of a state or regional population.

6. Function:

To provide for public recreation and education of conservation and nature study. To preserve, protect, interpret and enhance the scenic and cultural resources of the state.

7. Space, Design, and Service Area:

The size of a state park is determined by the extent of the area's natural resources and recreation capabilities. There is no minimum or maximum size for a state park. Facilities are not universal and vary by park. Some parks offer active recreation (camping, boating, mountain biking trails, hunting etc.), while others offer passive recreation (scenic lookouts, picnic areas, beaches, etc.). Most provide both active and passive recreation. The geographic area and the natural resources present dictate recreation uses and facilities present in the park. State parks serve large geographic areas of a state or region.

Recreation Supply Data by Peer Group

Using population thresholds defined in Table 4-2 as the criteria, Wisconsin cities and villages were divided into four peer groups with at least 10 municipalities in each group. Through comparisons between like-sized communities with similar recreation demand, an indexed level of recreation supply by peer group can be used to assess the distribution of recreation supply within each group.

Table E-1: **Peer Groups by Population Threshold of Municipalities Found in Select Wisconsin Counties Defined as Urban**

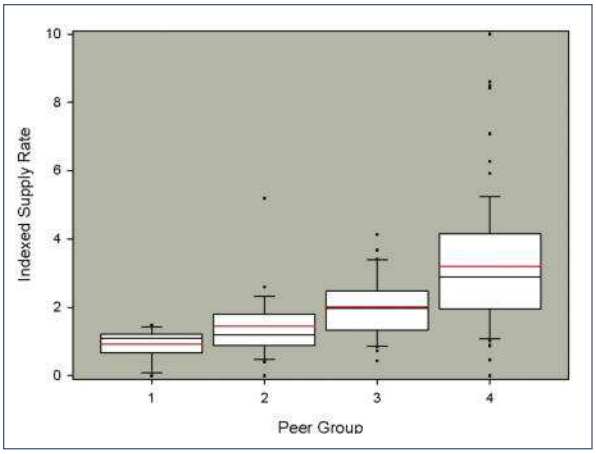
Peer Group 1 (45,000–150,000)	Peer Group 2 (20,000–45,000)	Peer Group 3 (10,000–20,000)	Peer Group 4 (1,000 to 10,000)		
City of Appleton	City of Beloit	Village of Allouez	City of Altoona	Village of Kimberly	City of Ripon
City of Eau Claire	City of Brookfield	Village of Ashwaubenon	Village of Bayside	Village of Kohler	Village of River Hills
City of Green Bay	City of De Pere	City of Baraboo	Village of Big Bend	Village of Lake Delton	Village of Rothschild
City of Janesville	City of Fitchburg	Village of Brown Deer	City of Brillion	City of Lake Mills	Village of Sauk City
City of Kenosha	City of Fond du Lac	City of Cedarburg	City of Burlington	Village of Lannon	Village of Saukville
City of La Crosse	City of Franklin	City of Fort Atkinson	Village of Butler	Village of Maple Bluff	City of Schofield
City of Oshkosh	City of Greenfield	Village of Germantown	City of Chilton	Village of Marshall	City of Seymour
City of Racine	City of Manitowoc	Village of Grafton	Village of Combined Locks	Village of McFarland	City of Sheboygan Falls
City of Sheboygan	Village of Menomonee Falls	City of Hartford	Village of Cottage Grove	City of Milton	Village of Shorewood Hills
City of Waukesha	City of Mequon	Village of Howard	Village of Cross Plains	City of Monona	Village of Silver Lake
City of Wauwatosa	City of Muskego	City of Kaukauna	Village of Darien	City of Mosinee	Village of Slinger
City of West Allis	City of Neenah	Village of Little Chute	Village of DeForest	Village of Mount Horeb	City of St. Francis
	City of New Berlin	City of Marshfield	City of Delafield	Village of Mukwonago	Village of Sturtevant
	City of Oak Creek	City of Menasha	City of Delavan	Village of Nashotah	Village of Sussex
	City of Stevens Point	City of Middleton	Village of Dousman	City of Nekoosa	Village of Thiensvill
	City of Sun Prairie	City of Oconomowoc	Village of East Troy	City of New Holstein	Village of Twin Lakes
	City of Superior	City of Onalaska	City of Edgerton	City of New London	Village of Union Grove
	City of Wausau	City of Pewaukee	City of Elkhorn	Village of N. Fond du Lac	City of Verona
	City of West Bend	Village of Pleasant Prairie	Village of Elm Grove	Village of North Prairie	Village of Wales
		Village of Plover	City of Evansville	City of Omro	Village of Walworth
		City of Port Washington	Village of Fontana-on-Geneva Lake	Village of Oostburg	Village of Waterford
		Village of Shorewood	Village of Fox Point	Village of Oregon	City of Waterloo
		City of Stoughton	Village of Hales Corners	Village of Paddock Lake	Village of Waunakee
		City of Two Rivers	Village of Hartland	Village of Pewaukee	City of Waupun
		City of Watertown	Village of Holmen	City of Plymouth	Village of West Salem
		Village of Weston	Village of Howards Grove	Village of Port Edwards	Village of Whiting
		City of Whitewater	City of Jefferson	Village of Prairie du Sac	Village of Williams Bay
		City of Wisconsin Rapids	Village of Kewaskum	Village of Pulaski	Village of Wind Point
			City of Kiel	City of Reedsburg	

Findings from Urban Peer Group Comparisons of Recreation Supply

Results of the Peer Group Comparisons of Recreation Supply assessment have been summarized using box and whisker plots below. These graphics present a variety of summary statistics that capture the variability of the data within and between peer groups. In all figures, indexed values are represented by dots. The red line represents each peer group's mean (average) value, the black line represents the peer group's median value, the bottom and top of each box represent each peer group's 25th and 75th percentile, respectively, and the whisker ends represent each peer group's 10th and 90th percentile.

Figure E-1 shows an index of non-school equipped playground facilities by peer group.

Figure E-1: **Urban Wisconsin Peer Group Summary Statistics for Non-School Equipped Playground Facilities per 1,000 Residents**

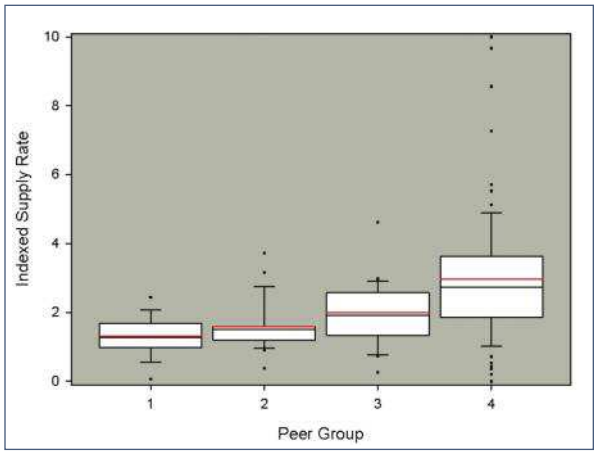


(DNR data for 145 municipalities of population greater than 1,000 within the 24 counties classified as being more than 50 percent urban; red line indicates peer group mean, black line is median, box edges represent 25th and 75th percentiles, and whisker ends indicate 10th and 90th percentiles.)

This data shows the indices for non-school equipped playground facilities varied widely, with clear peer group differences. Results suggest that smaller population centers (peer group 4) had generally higher indexed levels of playground facilities on a per capita basis, while larger population centers (peer group 1) had lower levels of playground facilities on a per capita basis.

Data describing the number of parks within community boundaries shows similar trends. These summary statistics are shown in Figure E-2.

Figure E-2: **Urban Wisconsin Peer Group Summary Statistics for Number of Parks per 1,000 Residents**

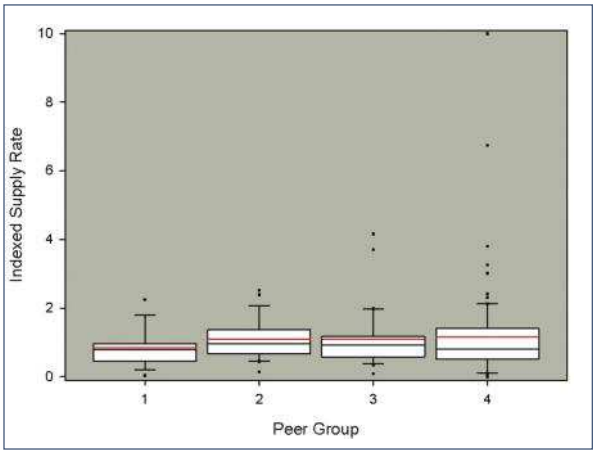


(DNR data for 145 municipalities of population greater than 1,000 within the 24 counties classified as being more than 50 percent urban; red line indicates peer group mean, black line is median, box edges represent 25th and 75th percentiles, and whisker ends indicate 10th and 90th percentiles.)

Again, peer group comparisons on a per capita basis suggest important differences. In general, smaller communities (peer groups 3 and 4) tend to have a higher number of parks per capita when compared to larger communities (peer groups 1 and 2).

The total acreage of urban parks on a per capita basis is outlined in Figure E-3. While not as dramatic as data presented in Figures E-1 and E-2, per capita data for urban park acreage does suggest that smaller population centers have higher park acreages. However, mean park acreages between peer groups do not suggest significant differences.

Figure E-3: **Urban Wisconsin Peer Group Summaries for the Acreage of Parks per 1,000 Residents**



(DNR data for 145 municipalities of population greater than 1,000 within the 24 counties classified as being more than 50 percent urban; red line indicates peer group mean, black line is median, box edges represent 25th and 75th percentiles, and whisker ends indicate 10th and 90th percentiles.)

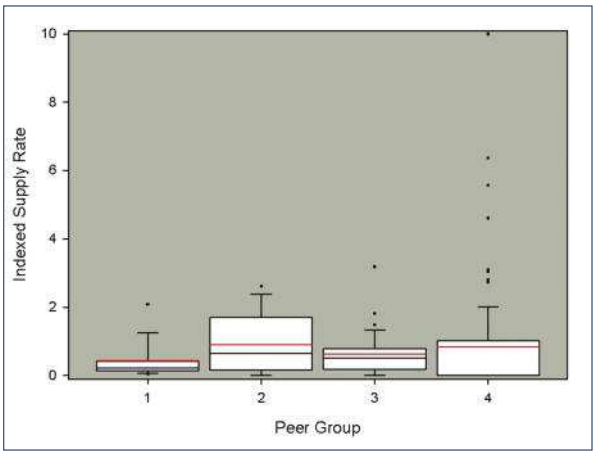
Trails, a central element of community recreation plans, are found in communities across the state. Trails serve as important connections between green spaces and public parks, as well as transportation corridors that encourage non-motorized travel. This analysis looked only at bike and hiking trails, but further research is needed on this topic, particularly for walking trails. Sidewalks are an important outdoor recreation component not captured in this analysis.

Sidewalks in many locations can also serve as local bicycle paths, particularly for young children. Bicycle trail length on a per capita basis is presented in Figure E-4.

Note from Figure E-4 that while variation exists in the maximum indexed level of bike trails across peer groups, few significant differences are shown between peer groups in mean or median values.

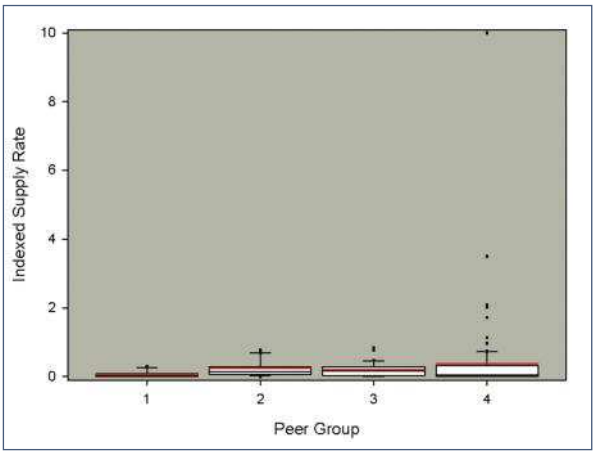
Very similar results for hiking trails are suggested by the summary statistics presented in Figure E-5. Based on this data, there are no significant differences in per capita hiking trails across peer groups.

Figure E-4: **Urban Wisconsin Peer Group Summaries for Bicycle Trail Length per 1,000 Residents**



(DNR data for 145 municipalities of population greater than 1,000 within the 24 counties classified as being more than 50 percent urban; red line indicates peer group mean, black line is median, box edges represent 25th and 75th percentiles, and whisker ends indicate 10th and 90th percentiles.)

Figure E-5: **Urban Wisconsin Peer Group Summaries for Hiking Trail Length per 1,000 Residents**



(DNR data for 145 municipalities of population greater than 1,000 within the 24 counties classified as being more than 50 percent urban; red line indicates peer group mean, black line is median, box edges represent 25th and 75th percentiles, and whisker ends indicate 10th and 90th percentiles.)

APPENDIX F

Guidelines for the Development of Local Comprehensive Outdoor Recreation Plans

Introduction

A prerequisite to participation in outdoor recreation grant programs is the adoption and subsequent DNR acceptance of a local comprehensive outdoor recreation plan. This requirement can be found in Chapter NR 50, Wisconsin administrative code for the following programs: Federal Land and Water Conservation Fund Program (LWCF), Aids for the Acquisition and Development of Local Parks (ADLP), Urban Green Space Program (UGS), and Urban Rivers Grant Program (URGP).

This document was prepared to help local units of government develop comprehensive park and recreation plans that will do the following: 1) guide them in acquiring and developing public outdoor parks and recreation facilities, and 2) insure that plans meet the minimum requirements for participation in both state and federal programs.

Planning occurs at several different levels. Comprehensive planning is an overall survey of the existing facilities within a given jurisdiction, and it gives recommendations for future improvements. A comprehensive outdoor recreation plan (CORP) is only the first step in the development of a recreational park site or system.

Being aware of other planning efforts from other agencies, municipalities, and non-profit organizations during the comprehensive outdoor recreation planning process enables your community to consolidate recreation, resource management, and development efforts for an area, region, or state. Communities may find it easier and more economical to implement the CORP recommendations when coordinated with other plans.

Master planning, which follows the recommendations of the comprehensive plan, is an overall view and analysis of an existing or proposed park area. The purpose is to guide the orderly development of a park or recreational facility.

Site planning is the detailed plan of how an area within a park or recreation area will be developed. Site plans supply the construction details needed to develop a facility recommended in the master plan.

Local Comprehensive Outdoor Recreation Plans

What Are Plans?

Local comprehensive outdoor recreation plans will vary in complexity depending on the size and population density of the municipality. It is unrealistic to expect a small township in northern Wisconsin to complete a plan as complex as one done by a densely populated municipality in southeastern Wisconsin. However, no matter how complex a plan is, it must contain a few basic elements if it is to be effective as a planning tool. The following outline includes the minimum requirements for all plans to gain eligibility to participate in funding programs.

Non-profit conservation organizations (NCOs) are eligible to participate in the Knowles–Nelson Stewardship Program under the Urban Green Space and Aids for the Acquisition and Development of Local Parks programs. NCOs may adopt or carry

out recommendations from a comprehensive outdoor recreation plan of the local unit of government in which the NCO project is located or use their land management plans that are required for participation in the stewardship programs.

What Does A Plan Consist Of?

The following outline lists the required components needed for an approved plan. There is no order or format required for a plan; in fact, communities are encouraged to improvise and develop their own unique plan.

I. Copy of the adopted resolution or minutes approving the comprehensive outdoor recreation plan

II. Table of contents

III. Statement of need and parameters that the plan will establish

IV. Goals and objectives

V. Definitions
- A. Terms
- B. Classifications

VI. Planning process
- A. Description of process
- B. Amending the plan

VII. Summary of past comprehensive outdoor recreation plans

VIII. Description of the planning region
- A. Social characteristics of municipality/planning region
  1. Size
  2. Population trends and projections
  3. Ethnic background
  4. Employment/ unemployment
  5. Age
  6. Economy
- B. Physical characteristics of the region
  1. Topography
  2. Water Resources
  3. Climate
  4. Soils
  5. Flora and fauna

IX. Outdoor recreation supply inventory
- A. Natural resources available for outdoor recreation
  1. Developed
  2. Undeveloped
- B. Outdoor recreation facility inventory
  1. Number of sites
  2. Types of park/recreation areas
  3. Facilities available at sites
  4. Current condition of park/recreation areas and facilities on sites
- C. Accessibility for persons with disabilities

X. Outdoor recreation needs assessment
- A. Public input assessment
  1. Informal
  2. Citizen committees
  3. Public meetings and workshops
  4. Needs assessment surveys
- B. Needs standards
  1. Recreation open space
  2. Recreation facilities
- C. Statewide Comprehensive Outdoor Recreation Plan (SCORP)

XI. Recommendations for outdoor recreation provision
- A. Action program—capital improvement schedule (CIS)
- B. Operation and maintenance
  1. Existing operation and maintenance responsibilities
  2. Implications of CIS on operation and maintenance capabilities
- C. Funding programs
  1. Local funds
  2. Available grant funding programs

XII. Appendix: supporting data, tabular data, graphs, maps, tables

In-depth Look at Plan Components

I. Formal Plan Approval

Obtain approval for your local comprehensive outdoor recreation plan from the local governing body. Each local government must include a copy of the resolution of adoption or minutes from the meeting adopting the plan. Communities included in the county outdoor recreation plan must also submit documentation indicating that they have adopted the county comprehensive outdoor recreation plan.

II. Table of Contents

Include this section to give the reader a sense of how the plan was developed and show where the major points of information are located by chapter and page.

III. Introduction

Provide a general statement that briefly discusses the reason for a comprehensive outdoor recreation plan and what your community will accomplish with the plan. This statement could include the major points of what your plan will accomplish.

IV. Goals and Objectives

List the goals and objectives you expect your plan to produce or write a mission statement to cover the goals and objectives of your plan and state the philosophy of your park and recreation program.

V. Definitions

A. TERMS:
Define the terms used to describe programs, facilities, and recommended actions proposed by the plan.

B. CLASSIFICATIONS:
Define the list of standards used to describe facilities recommended by your plan. These classifications usually correspond to the National Recreation and Park Association's recreation, park, and open space standards guidelines.

VI. Planning Process

A. DESCRIPTION OF PROCESS:
Give a brief description of the sequence of events that took place during the development of the comprehensive outdoor recreation plan. Include landmark dates (e.g., public meetings, inventory gathering periods, draft plan presentation dates, etc.).

B. AMENDING THE PLAN:
Plan amendments are common and should be considered part of the planning process. They frequently represent good implementation or plan usage and should be acceptable for consideration by local decision-makers. Amendments must follow the same process as the original plan and should be outlined in this section. Amendments generally prolong the effectiveness of the parent plan.

VII. Summary of Past Comprehensive Outdoor Recreation Plans

Review the history of outdoor recreation planning in your jurisdiction to help the reader comprehend the present outdoor recreation situation and to support the recommendations for action made in the plan.

VIII. Description of the Planning Region

A. SOCIAL:
Discuss social factors that are important to understanding your community and its recreation needs and potential. These may include but are not limited to the following: the size of the population; its geographic, age, sex, racial, and ethnic distribution; location of concentrations of minorities or senior citizens; number of disabled residents; and socioeconomic levels including employment and unemployment. Discuss population trends and projections over the planning period. Include tables that provide information on population trends and age characteristics.

Note: Population projections for all municipalities are done each year by the following state agencies: Department of Administration, Department of Revenue, and Department of Development. In addition, population projections and other technical services are provided by county or regional planning commissions serving your area.

B. PHYSICAL:
Provide a discussion of the physical factors in the community and region that are important to understanding your community and its recreation needs and potentials. These may include topography, water resources, climate, soils, environmental problems and concerns, and transportation systems. Maps displaying these features should be provided when available. A good inventory will point out environmentally sensitive areas, which may be targeted for protection or avoided for construction sites.

By recognizing trends in social and physical characteristics in your planning area, recreation facilities can be designed for maximum use. For exam-

ple, a playground should be sited in any area with a large concentration of children as well as appropriate soils for construction. Remember, major features such as rivers or traffic arteries will influence the distances needed to travel in order to use recreational facilities.

IX. Outdoor Recreation Supply Inventory

A. NATURAL RESOURCES AVAILABLE FOR OUTDOOR RECREATION USES:
Include a list of all areas available to the residents of a municipality for recreation purposes. List open space areas that have the potential to provide recreation opportunities whether they are currently available for public use or not. This inventory should include information on the size of the parcel, name of the park if so dedicated, current ownership, public access points, present use, and future options.

B. OUTDOOR RECREATION FACILITY INVENTORY:
Provide a detailed listing of all the facilities available to the residents of the municipality or planning region, including number of sites, types of park/recreation areas, facilities available at sites, current condition of park/recreation areas, and facilities on sites. This inventory can be general in nature, concentrating on major facilities such as softball diamonds, tennis courts, shelter buildings, restrooms, etc., or it can be a detailed listing of general as well as specific facilities such as picnic tables, grills, bike racks, etc.

C. ACCESSIBILITY GUIDELINES:
Assess the existing recreational facilities for accessibility to persons with disabilities. Communities that seek grant funds have an extra incentive to conduct an accessibility evaluation because the priority ranking system provides additional credit to sponsors who include the process in their planning program. Persons with training in accessibility issues (including a good understanding of the Americans with Disabilities Act and Barrier Free Design Standards) should be consulted when conducting an evaluation of a community.

In addition to a survey of what is available, the community should include a program of compliance for facilities that do not comply with accessibility requirements. For example, if five restroom buildings in the community need improvements to make them barrier free, the plan should include a remodeling schedule. A second example would be to make accommodations so that a hearing impaired child could attend a playground storytelling event.

Include definitions and guidelines in an appendix to give a better understanding of what is needed to implement the barrier free facility plan.

X. Outdoor Recreation Needs Assessment

Do a needs assessment to discover your community's most crucial recreational opportunities. En route to discovering the exact needs of the community, many other things can be accomplished by conducting a needs assessment, such as the following:

- Citizens' opinions of how recreation services are being delivered.
- Types of programs and facilities wanted, programs and facilities currently being used, and programs being avoided.
- Support levels for new facility and program proposals as well as for proposals on user fees, operating hours, and recreation marketing programs.

Generally, there are two basic methods for conducting a needs assessment: public input and recreation standards. Often both are used in varying degrees to gain the most accurate picture of community needs. Following is a description of each method:

A. PUBLIC INPUT METHODS FOR CONDUCTING NEEDS ASSESSMENTS:
Public participation is an important element when planning your community's park and recreation system. After all, the public will be using the parks. What better way to learn local demands than by involving the general public in the planning process? How to elicit your community's needs is really up to you. What you are looking for is guidance from the people who will be using your recreational facilities. The following four public input methods are often used to assess needs within a community. Choosing the one, or combination, that best suits your community's needs will be based on available staff, time constraints, and financial resources.

1. INFORMAL:
Rather than ask for citizen input, this system records questions and suggestions as they arise. As can be expected, the more vocal citizens and special interest groups will dominate in this type of assessment. Still, this approach has merit because it is important to consider the needs and demands of special interest groups.

2. CITIZEN COMMITTEES:
   Citizen committees act as a liaison between the public and the decision makers. In many communities, prevailing park and recreation boards serve as the citizen committee as well. Boards representing constituents reflect a number of opinions concerning recreation policies and issues. When developing brief surveys, this type of committee helps to gain general impressions of the public's need.

   It is important to establish a committee that represents the entire population of the municipality. Such a committee may include senior citizens, minority groups, disabled persons, community leaders, etc. An ideal committee consists of both citizens and elected officials. Citizens can provide needed public input and opinion while the elected officials can help muster political support in the latter stages of plan adoption and implementation.

3. PUBLIC MEETINGS AND WORKSHOPS:
   Public meetings and workshops are the most common method for measuring citizen needs. They offer the advantages of being relatively inexpensive and they allow for important dialogue between the public and the decision makers of the municipality. A major drawback of this method is that it can be extremely time consuming and therefore not as helpful when working under a strict time deadline.

   One very simple, yet productive technique for gathering opinions from public meetings is known as the modified nominal group process. In this process the public workshop is divided into small discussion groups. Each participant of the group is asked to answer a general question regarding park and recreation issues such as, "In your opinion what problems or issues must be solved to provide adequate recreation for this community in the next five years?" After allowing approximately 15 minutes for thought, the participants are asked to list their answers. Each answer is recorded on a large sheet of paper by a designated group leader. Once all the issues have been recorded, they are ranked by the group in order of importance. After all groups have completed their discussions, they reconvene and present their findings to each other. The final task is to establish the top ten issues of the whole group.

   This process effectively generates many ideas from just one workshop. Also, it has the advantage of representing a cross-section of residents from the municipality or planning region.

4. NEEDS ASSESSMENT SURVEYS:
   These can be the most valuable methods for obtaining citizen opinion on recreation needs, problems, and issues within a municipality or planning region. Unfortunately, if not done properly, needs assessment surveys can produce misleading or useless data.

   Using any one or a combination of the methods listed above will help a municipality gain insight to the recreation needs and demands of the general public. Needs are then prioritized as high, medium, or low priority. It becomes important to compare projected needs against existing facilities. It is possible that needs established by the general public may not represent real deficiencies in recreation provisions for a municipality. Often, public issues and concerns stem from nothing more than a lack of information on the subject. For this reason it is important to compare existing open space areas and facility developments against a set of standards set up to help measure a park system's adequacy.

B. RECREATION NEEDS STANDARDS:
   The standards system is another method of assessing a community's recreation needs. The National Recreation and Park Association (NRPA) developed standards to provide a scale against which the existing recreation system can be measured. Standards can be used to create guidelines for future needs.

   Typically, standards link acreage to the community's population or link the number of facilities to the population. In addition, service area standards are also used to determine recreation needs.

   1. STANDARDS FOR RECREATION OPEN SPACE:
      A community's open space needs are generally assessed using space standards. Space standards are the most widely used and common measure of a recreation system's adequacy. Total park and recreation space is normally expressed as a ratio of acres per population. Standards based on population can be helpful in assessing current and future open space needs and demand for the community. However, because a community may meet open space standards and still be deficient in park facilities, it is important to look at facility standards as well.

2. STANDARDS FOR RECREATION FACILITIES: Facility standards are similar to space standards because they are expressed in facility units per population ratio. The purpose of evaluating a recreation system from a facility viewpoint, in addition to an open space viewpoint, is to determine the amount of needed facility development in each recreation area.

   Problems related to using facilities standards can be seen in the assumption of desired opportunities by the resident population. For example, a tennis court is needed based on the municipality's population. In reality, it is possible that very few people in the community enjoy playing tennis, which eliminates the need for this type of facility.

   In addition to the population-based standards discussed above, it can be useful to analyze a community's recreation needs according to service areas. This can be done for both open space needs and for facility needs. Each park and facility type will serve a geographical area of a certain radius. A drawback to this type of standard is that it does not take into account citizen preferences and barriers resulting from the natural and man-made physical landscape.

   In general, it should be noted that population and service area standards assume that the needs and wants of individuals are similar in all areas to which the standards are applied. Service area standards assume upon reaching some threshold, an increase in the quantity of facilities results. Age, income, and education all contribute to people's recreational preferences, yet standards ignore these variables. Another problem with using standards is that they have been developed primarily for urban communities and have limited application to rural areas.

   Despite these problems, standards have a place in recreation planning. Community leaders can use them to approximate of the adequacy of their park systems. The best advice is to use them cautiously and they should not be the only criteria used to develop a needs assessment. The public input methods described earlier can be used to determine priorities and perceived needs within the community. Standards can then be applied to the prioritized needs. By combining these two methods, it should be possible for a community to determine their most important recreation needs during the planning period. The next step will be to develop recommendations that highlight the community's plan for meeting the needs.

XI. RECOMMENDATIONS FOR OUTDOOR RECREATION PROVISION

Base local government recommendations for the implementation of outdoor recreation on the results of the supply inventory, needs assessment, and SCORP findings. These recommendations should address two elements: 1) an action plan for future park acquisition and development and 2) a program for future operation and maintenance of the community's park system.

A. ACTION PROGRAM:
   Provide an action plan that solves or reduces deficiencies in a community's recreation system. A good plan will identify the actions needed to be taken, where, by whom, and in what time frame. These actions can be identified by formulating a capital improvement schedule (CIS).

   A CIS details anticipated acquisition and development for at least a five year period based upon the needs assessment. For each item listed in the CIS, indicate which year(s) in which the improvement will take place and its location within the park system. Clearly describe the improvement, estimate its cost, and provide a cost breakdown per anticipated funding source.

B. OPERATION AND MAINTENANCE:

   1. Examine the operation and maintenance responsibilities of the existing park system and review the implications of the capital improvement schedule (CIS) on your community's future operation and maintenance capabilities. Many communities jump head-first into ambitious recreation developments with little, if any, attention to operation and maintenance expenses. Communities often construct excellent facilities, only to have serious problems keeping them open for public use.

   2. A municipality's park system operation and maintenance costs should be organized in a schedule or calendar form. List all work required on a property for each year, by season. Break the list down to individual work items and, below each work item, list the tasks required to complete the work item. The next step is to estimate how much time is required between each task. A final step is to indicate

cost estimates for each task, including staffing costs to operate and maintain the park system.

Most successful communities will prioritize major maintenance projects for their facilities and incorporate the projects into a five year CIS. It would be wise to look beyond a five year project planning calendar and anticipate major facility needs, which usually occur beyond the five year period.

C. FUNDING PROGRAMS:

1. Identify existing and potential funding sources for the comprehensive outdoor recreation plan in order to show how implementation of the plan will impact the community and to show what level of investment is required to satisfy the community's needs.
2. A wide base of financial support can be built into the comprehensive outdoor recreation plan through the identification and pursuit of potential funding sources. Funding sources can come in a variety of forms (local bonds, donations, and state and federal grants and loans). Information for finding funding sources can be obtained from the regional DNR community service specialist.

XII. APPENDIX

Use this section to display your supporting data, tabular data, graphs, maps, and tables.

DNR Acceptance

After a local government adopts the plan, it is then submitted to the appropriate regional community service specialist (CSS) for acceptance. The community service specialist evaluates the plan and if it meets specifications, a letter granting five years of eligibility is mailed to the local government. Communities are encouraged to send a draft plan to their regional community service specialist for review before submitting the final plan. If a plan does not meet DNR specifications, the CSS will document the deficiencies in a letter to the local unit of government. A revised plan can then be resubmitted.

APPENDIX G

Lands Managed by the State of Wisconsin

Table G-1: **State of Wisconsin Managed Lands in Acres**

County	State Forests	Wild and Scenic Rivers	Natural Areas	State Parks	State Fishery Areas	State Wildlife Areas	Other	Total
Adams	—	—	7,609	492	1,511	7,471	640	17,723
Ashland	756	—	324	5,958	409	7,523	122	15,092
Barron	60	—	—	343	1,185	6,183	47	7,818
Bayfield	49	—	11,755	—	11,212	952	214	24,182
Brown	—	—	170	517	143	2,413	95	3,339
Buffalo	—	—	417	399	22	13,166	—	14,004
Burnett	15,256	—	—	251	3,941	51,802	222	71,472
Calumet	—	—	42	1,277	14	10,569	18	11,920
Chippewa	—	—	177	6,879	1,897	3,136	45	12,134
Clark	224	—	—	—	163	495	1	883
Columbia	—	116	648	531	1,776	19,872	22	22,966
Crawford	—	8,012	3,897	—	1015	7,113	275	20,313
Dane	—	4,662	1,130	2,670	5,241	10,369	264	24,335
Dodge	—	—	—	223	654	24,505	292	25,673
Door	—	—	3,883	9,399	166	3,508	119	17,075
Douglas	47,266	126	223	4,102	6,865	994	532	60,108
Dunn	—	—	2,377	1,278	891	11,999	—	16,545
Eau Claire	—	—	429	145	475	2,103	50	3,202
Florence	36,323	11,495	8,482	177	123	40	45	56,685
Fond du Lac	10,700	—	99	408	51	17,211	112	28,581
Forest	24,870	—	120	635	269	3,769	2	29,665
Grant	623	13,886	632	3,410	1,590	—	308	20,449
Green	—	—	230	1,324	127	4,022	—	5,703
Green Lake	—	—	429	—	753	17,567	—	18,749
Iowa	85	10,511	720	6,601	2,569	2,037	146	22,669
Iron	33,323	35,523	6,190	63	1	10,775	172	86,047
Jackson	68,084	—	525	113	4,740	3,254	166	76,881
Jefferson	3,580	—	102	462	173	16,271	4	20,592
Juneau	—	—	1,484	5,427	536	5,140	53	12,639
Kenosha	—	—	477	4,537	192	2,034	26	7,266
Kewaunee	—	—	—	480	26	2,729	—	3,235
La Crosse	2,972	127	61	372	625	3,692	—	7,849
Lafayette	8096	—	226	1,418	725	4,048	—	14,513
Langlade	18,515	—	406	304	13,871	2,831	212	36,138
Lincoln	20,149	2,360	80	2,833	2,975	4,641	233	33,271

Table G-1: **State of Wisconsin Managed Lands in Acres** *(continued)*

County	State Forests	Wild and Scenic Rivers	Natural Areas	State Parks	State Fishery Areas	State Wildlife Areas	Other	Total
Manitowoc	2,943	—	296	335	11	6,568	946	11,099
Marathon	1,724	—	—	2,694	2,508	23,017	9	29,952
Marinette	27,214	4,686	1,956	7,408	1,722	8,878	1,016	52,880
Marquette	—	—	1,746	—	4,498	7,137	2	13,383
Menominee[1]	—	—	—	—	—	—	16	16
Milwaukee	304	—	—	107	—	3	76	490
Monroe	—	—	100	1,607	4,079	361	98	6,244
Oconto	632	—	270	772	1,117	4,443	204	7,437
Oneida	68,545	29,294	8,275	574	714	7,770	196	115,369
Outagamie	—	—	1,503	325	328	9,442	57	11,655
Ozaukee	—	—	1,720	701	84	1,388	50	3,944
Pepin	—	—	1,946	—	17	3,798	—	5,761
Pierce	—	—	410	1,445	562	1,227	883	4,527
Polk	5,399	—	878	3,791	1,924	13,261	104	25,357
Portage	—	—	365	838	5,289	27,581	205	34,278
Price	9,304	—	—	263	321	9,805	20	19,713
Racine	—	—	10	99	531	3,254	37	3,932
Richland	—	6,960	53	—	2,350	3,083	—	12,446
Rock	—	—	529	1	339	7,601	112	8,582
Rusk	15,289	—	40	—	446	2,989	148	18,912
St. Croix	—	—	138	2,953	1,123	7,164	713	12,091
Sauk	—	5,805	5,566	15,369	1,423	3,887	1,143	33,193
Sawyer	65,274	14,181	344	658	2,536	6,684	345	90,022
Shawano	—	—	231	957	328	14,012	87	15,615
Sheboygan	16,114	—	53	964	2,038	3,438	59	22,666
Taylor	—	—	249	17	275	8,602	81	9,223
Trempealeau	58	—	—	1,618	1,140	4,357	43	7,216
Vernon	52	—	453	3,766	2,124	221	877	7,493
Vilas	141,585	—	3,829	—	369	7,188	82	153,053
Walworth	7,454	—	1,939	522	662	5,675	105	16,357
Washburn	155	1,988	442	501	3,575	2,537	158	9,356
Washington	5,120	—	—	759	378	7,284	82	13,623
Waukesha	12,377	—	282	357	291	5,229	323	18,860
Waupaca	—	—	645	1,274	5,534	3,530	286	11,270
Waushara	—	—	630	846	12,598	5,432	259	19,764
Winnebago	—	—	402	2	198	13,536	126	14,264
Wood	173	—	14	—	513	15,268	44	16,011
STATE	**670,647**	**149,732**	**88,658**	**114,551**	**128,871**	**539,884**	**13,429**	**1,705,770**

[1] Land in Menominee County that is not privately owned is held by the Menominee Nation.

Sources: U.S. Forest Service, "Land Areas as of September 30, 2008," March 2009; Wisconsin Department of Natural Resources, departmental data, March 2009; Wisconsin Bluebook 2011

APPENDIX H

Wisconsin Wetlands Summary

Wisconsin has a wealth of wonderful wetland sites that are accessible to citizens interested in exploring the state's tremendous diversity of wetland types, which include marshes, swamps, bogs, fens, and sedge meadows. These ecosystems provide habitat for a wide diversity of plant and animal species, some of which are rare and unique to wetland systems.

With the wide diversity of life they support, wetlands are natural recreation areas for birders, hunters, fisherman, boaters, and wildflower enthusiasts. Nationally, 90% of the fish that recreational anglers catch have spent some part of their life in wetlands (EPA843-F-06-004). In Wisconsin, sport fishing generates $2.7 billion in business and provides $200 million in tax revenues for local and state government. In addition to fish, half of all North American bird species nest or feed in wetlands (EPA843-06-004). In Wisconsin, bird-watchers and wildlife watchers spend $271 million waiting for a glimpse of their favorite animals.

Beyond their value as habitat, wetlands perform many important functional processes. They act as buffers for excess stormwater. Wetlands reduce flooding peaks by as much as 60%, and the EPA estimates that an acre of wetlands can store 1-1.5 million gallons of floodwater (EPA843-F-06-001). Wetlands also protect water quality by filtering out contaminants. The filtering capability of wetlands cuts the cost of treating drinking water. Some wetlands can remove a quantity of pollutants from the watershed equivalent to that removed from a $5 million treatment plant (Source: EPA832-R-93-005). This filtering also helps maintain the water quality of Wisconsin's lakes and rivers, which are integral components of the state's lucrative tourism industry.

When first declared a state in 1848, Wisconsin had approximately 10 million acres of wetland. Today only 53% (about 5.3 million acres) of this habitat remains. Historically, wetlands have been drained for farmland and filled for roads and development. As drainage technology has improved and suburban development increases, many wetlands have fallen victim to encroaching human presence. Other threats such as invasive species and contamination by pollutants have also increased and though they do not destroy wetlands directly, these threats weaken wetland systems, making them more vulnerable to other threats. Wetland tracking efforts in 2007 and 2008 by the Wisconsin Department of Natural Resources suggest that efforts to curb wetland loss have met with some success. Figures suggest that Wisconsin has recently seen small wetland acreage increases. The observed gains only account for wetland quantity, not wetland quality, and these annual impacts are miniscule relative to historic loss (less than 0.01% of 4.7 million acres lost since 1848).

Continuing to reverse the loss of Wisconsin wetlands will require further vigilance. The Wisconsin Wetland Team, which represents a coalition of state entities, federal agencies, and interest groups, has outlined eight strategic goals for furthering the protection, restoration, and exploration of wetlands. These goals are elaborated upon in their 2008 publication, *Reversing the Loss*. These goals are presented below:

1. **Strengthen and establish partnerships to maximize wetland stewardship and conservation opportunities.**
   - Strengthen the Wisconsin Wetland Team partnership to ensure state, federal, and local partnership and informed advocacy for wetland protection and restoration. For example, recent collaboration between the Wisconsin Department of Natural Resources with the Wisconsin Waterfowl Association, the U.S. Fish & Wildlife Service, and the Natural Resources Conservation Service allowed the development of administrative stream-

lining to allow quicker and easier permit granting for wetland restoration and enhancement.

2. Strengthen and develop incentives for wetland conservation on private lands.

- As 75% of wetlands in Wisconsin (over four million acres) are privately owned, policymakers should identify and adopt a package of economic incentives for wetland landowners to restore and manage wetlands.

3. Advance public understanding and connection to Wisconsin wetlands.

- Develop and promote a common wetland message.
- Create awareness of wetland laws. Maintain publications like the Wetland Restoration Handbook for Wisconsin Landowners, which was last updated in 2004.
- Increase public awareness of wetlands through public events and outreach, such as the Wisconsin Wetlands Association's Wisconsin Wetland Gems List, which features 100 sites representing all wetland community types and all geographic regions of the state.

4. Avoid and minimize wetland loss and degradation.

- Ensure wetlands are protected at the local, state, and federal level by assuring that standards, policies, and guidance fully address threats to wetlands. Recently, Wisconsin developed state-level protection of isolated wetlands after federal protection standards were changed to exclude these sites, which constitute 20% of Wisconsin's wetlands.
- Take steps to reduce illegal wetland filling and increase permit compliance.
- Develop and implement wetland protection tools for use in local planning and development. Identification of potentially restorable wetland sites could be incorporated into local zoning ordinances.

5. Restore lost wetlands and improve health and functions.

- Restore and maintain wetlands in an efficient manner to maximize limited funding and address identified needs, values, and services that will benefit both the natural resource and Wisconsin residents.
- Develop landscape plans that effectively target wetland restoration activities.
- Position Wisconsin to maximize federal and private investments in wetland conservation.

6. Report and track the status of Wisconsin wetlands.

- Establish and refine an integrated program for tracking wetland quantity and quality, including efforts to develop and promote wetland monitoring programs.
- Increase the production, use, and accessibility of the Wisconsin Wetland Inventory and related data using best available technology. This inventory has not undergone a comprehensive update since its inception in 1985.
- Develop better tools to evaluate wetland function at the watershed scale and site specific tools for assessing wetland function, condition, and restoration success.

7. Develop wetland science and address research needs.

- Develop a mechanism for making wetland research a priority within the Wisconsin Wetland Team and take full advantage of funding opportunities.
- Further develop research and monitoring for invasive species. For example, the Wisconsin Department of Natural Resources has successfully curtailed purple loosestrife encroachment in many wetlands through its release of loosestrife-eating beetles.
- Identify and minimize hydrologic impacts to wetlands from various sources, such as high capacity well pumping and stormwater runoff.

8. Secure stable funding for wetland conservation and stewardship.

- Optimize financial investments for wetland conservation and education.
- Expand resources for public interest work needed to build capacity for education, outreach, and advocacy for wetland stewardship.
- Seek full federal funding allocations for federal wetland conservation and environmental programs.

Through supporting the furtherance of these goals, Wisconsin residents can ensure that future generations will continue to enjoy the ecological and recreational benefits that wetlands offer.

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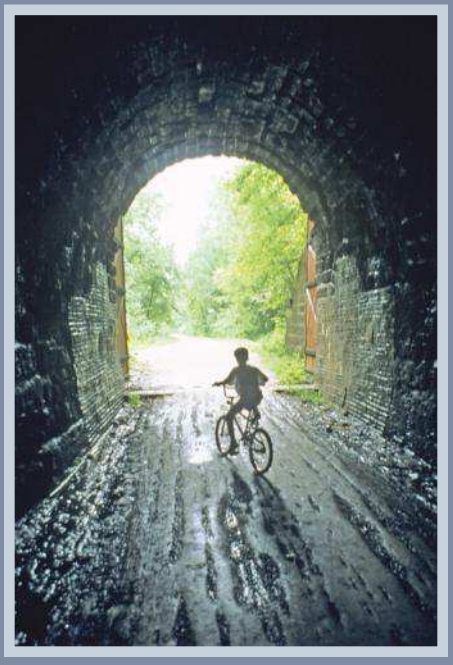
The year 2015 marks the 50th anniversary of the **Land & Water Conservation Fund**. *Over $3 billion in federal grants to states has leveraged more than $7 billion in matching non-federal dollars to preserve natural areas, culturally and historically significant landmarks, and outdoor recreational opportunities. From state parks to urban areas, the Land & Water Conservation Fund continues to preserve lands and build parks for future generations.*



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