APPENDIX A

Outdoor Recreation Grant Programs Administered by the WDNR

Detailed information, application forms, and WDNR staff contacts are available on the WDNR Bureau of Community Financial Assistance website – *www.dnr.wi.gov/org/caer/cfa*, or by calling the WDNR region office nearest you.

All Terrain Vehicle (ATV)

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 2004-5 fiscal year, over $2.7 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, and 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 June 1 of each year. Claim forms shall be filed with the DNR on or before June 1. For the 2004-5 fiscal year, $200,000 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 are related to hunter/angler facilities. Applications are submitted throughout the year until funding is depleted. For the 2004-5 fiscal year, $150,000 was 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 Department of Natural Resources (DNR) prioritizes fisheries related projects (sport fish restoration, boating access, fishing piers) biennually to identify projects eligible for a 75% cost share; the DNR sometimes negotiates contracts and 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 collection by US Treasury.

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 the development of facilities for public park and recreation areas. Applications are due to the DNR by May 1 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 2004-5 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 an additional 30% cost-sharing assistance. Applications are

due to the DNR and reviewed and recommended quarterly by the governor-appointed Wisconsin Waterways Commission. For the 2004-5 fiscal year, over $4.4 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 for 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 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 each year. For the 2004-5 fiscal year, over $7.7 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, and 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 2004-5 fiscal year, $400,000 was available.

Knowles-Nelson Stewardship 2000 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 the 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 each year. For the 2004-5 fiscal year, $4 million was available for eligible projects.

Knowles-Nelson Stewardship 2000 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 the 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 each year. For the 2004-5 fiscal year, $1.6 million was available for eligible projects.

Knowles-Nelson Stewardship 2000 Local Assistance Programs: Urban Greenspace

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 each year. For the 2004-5 fiscal year, $1.6 million was available for eligible projects.

Knowles-Nelson Stewardship 2000 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 each year. For the 2004-5 fiscal year, $800,000 was available for eligible projects.

APPENDIX B

Park and Recreation Designs

THIS SECTION IS PRESENTED IN THE INTEREST OF ASSISTING PARK AND RECREATION AGENCIES IN THE DEVELOPMENT OF A SYSTEM OF PARKS AND RECREATION AREAS. A RECREATION SYSTEM IS COMPOSED OF MANY DIFFERENT COMPONENTS, THE COMBINATION OF WHICH PROVIDE FACILITIES AND LANDSCAPES FOR OUTDOOR RECREATION. MANY ENTITIES ARE INVOLVED IN THE DEVELOPMENT AND MANAGEMENT OF RECREATIONAL AREAS AND FACILITIES FOR A COMMUNITY OR REGION. FACILITIES PROVIDED BY THESE ENTITIES SHOULD BE COMPLEMENTARY AND SERVE A PARTICULAR GEOGRAPHIC AREA OR RECREATIONAL NEED. FOR THIS PLAN, PARKS AND RECREATION AREAS HAVE BEEN CLASSIFIED ON THE BASIS OF THEIR SERVICE AREAS. THEY ARE DESCRIBED AS THE FOLLOWING:

- MINI PARK
- NEIGHBORHOOD PARK
- COMMUNITY PARK
- SPECIAL USE PARK
- SCHOOL PARK
- COUNTY PARK
- STATE PARK
- STATE FOREST

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.

**Stand-alone play lots require more land area than play lots incorporated into larger parks.*

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 limita-

tions 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.

APPENDIX C

Outdoor Recreation Demand Survey Methodology

This appendix describes the results of the 1999-2004 National Survey on Recreation and the Environment (NSRE) and version 18 of the NSRE (called Wisconsin Survey), which was conducted September to November, 2004. In addition, this appendix includes two other sources: the Outdoor Industry Foundation (OIF) 2002 Outdoor Recreation Participation & Spending Study, A State-by-State Perspective; and the Department of Tourism 2004 Wisconsin Advertising Awareness and Competitive Analysis Wave VIII Study.

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, responsibility 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 C-1 for the contact, cooperation, and response rates for the NSRE 2000 sur-

vey). 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 C-1 and a comparison of sample and population distributions in Table C-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 C-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 C-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 C-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 C-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 C-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 C-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 C-3 shows that these factors were also important in explaining participation in marine recreation. Table C-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 sufficient 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 C-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 C-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 C-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 C-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
- Riding motorcycles for pleasure on a highway

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
- Waterfowl

Fishing:
- Fishing in coldwater such as mountain rivers or streams
- Fishing in warm rivers and lakes
- Ice fishing
- Saltwater fishing
- Fishing for migratory fish (salmon, shad or other spawning fish)

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:
- Softball or baseball
- Football
- Basketball outdoors
- Soccer outdoors
- Handball, racquetball, or squash outdoors
- Yard games—horseshoes, badminton, croquet, frisbee
- Attending outdoor sporting events as a spectator
- Volleyball outdoors

Boating/Floating/Sailing:
- Sailing
- Canoeing
- Kayaking
- Rowing
- Motor boating
- Water skiing
- Personal water craft such as jet skis and wave runners
- Sailboarding or windsurfing
- 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
- Target shooting
- Paintball games
- Geocaching
- Disc golf
- Nature-based educational program
- Outdoor amusement, water, or theme park
- Visit a dog park to walk a pet
- Hunting upland birds
- Playing ice hockey
- Dog sledding
- Off-road ATV
- Off-road motorcycle
- Off-road 4-wheel driving
- Fishing in a Great Lake

Participation Questions and Possible Responses

Because the NSRE will be used for many different purposes, the level of detail needed to describe participation in the activities varied. For each activity, a categorical yes/no answer recorded whether or not the respondent participated in the activity at least once in the past twelve months. Activities covered are listed on page C-12.

Outdoor Industry Foundation (OIF)

This report was made possible by the Business for Wilderness Program (B4W). B4W is engaging outdoor businesses to support America's public lands. The B4W program is an initiative of The Pew Charitable Trusts supported by a grant from the Outdoor Industry Foundation (OIF). OIF was established by the Outdoor Industry Association to support programs and events to increase participation in human powered outdoor recreation activities and to educate the public about the economic and recreational benefits of the conservation of wild lands. Outdoor Industry Association (OIA) provides trade services for over 4,000 manufacturers, distributors, suppliers, sales representatives, and retailers in the outdoor industry. State-level participation data was collected on behalf of Outdoor Industry Association as a part of the Outdoor Recreation Participation Study, 4th edition. Collection of participation data was funded in part by Business for Wilderness.

This data can be used to assess trends and perceptions among Americans 16 and older, not precise participant numbers. This data collection is designed to give insight into how Americans perceive themselves as outdoor recreationists. Canoeing is a good example. The survey question for canoeing is undefined, and the question simply asked: "Did you go canoeing (this year)?" The question is open to a respondent's interpretation. While interpretations may vary slightly from person to person, overall participation trends and perceptions may still be assessed. For this report, a participant is defined as an American 16 or older who reports participating in an activity at least once during the past year. Census-based information is used to classify participants by the region in which they live. The results presented in this report are based on a total of 7,000 interviews conducted during 2001 and the first six months of 2002. The overall results may be applied to the American population, age 16 and over, with a margin of error of +/– 1.2% at the 95% level of confidence. Data collection for the report was conducted using scientific sampling and random digit dial methodology. A disproportionate stratified random sample by census region was used for the study. Calls were made at random until a representative quota for each region was reached. Only Americans age 16 or over were interviewed. The results for each activity reflect where each resident lives, not necessarily where each activity occurred. For example, results show a sizeable population of snowshoe participants living in Florida. This suggests that many Floridians travel to cold-weather states to participate in the activity.

Department of Tourism

The Wave VIII report is the eighth in a tracking study on advertising and Wisconsin awareness. The survey is a follow-up study conducted after the largest segment of the summer campaign ended in July 2004. A random sample survey was conducted by telephone in the core markets of Chicago and Minneapolis/St. Paul during the middle of July 2004. A total of 1,000 interviews were completed; 500 in Chicago and 500 in the Twin Cities.

One of the purposes of the study is to track the awareness level of Wisconsin and competing states' travel campaigns among consumers in our core out-of-state markets. This is accomplished by measuring the impact of the Wisconsin summer campaign, which includes television advertising. The results are compared with prior summer campaigns to measure market changes. Additionally, comparisons are made with previous winter campaigns conducted both with and without the benefit of television advertising. The campaign conducted during winter 2002/2003 included television advertising for the first time.

The Wave VIII, report is an expanded version of the study conducted during summer 2003 so that updated data could again be collected for seasonal activities. In addition to continuing to track changes in share of mind, this study is also designed to identify the most memorable activities and travel characteristics in our core out-of-state markets.

The metropolitan neighborhoods targeted for the survey were selected by zip code to ensure compatibility with the sample audiences in the previous seven waves. Selected areas have a higher saturation of households with annual incomes of $50,000 and above. This technique is used to achieve a better measure of Wisconsin's market penetration among households that have sufficient disposable income to afford travel anywhere in the world.

SCORP

The 2005–2010 Wisconsin Statewide Comprehensive Outdoor Recreation Plan

APPENDIX D

Conservation and Recreation Lands in Wisconsin

Table D-1: **Conservation and Recreation Lands in Wisconsin • Acres by Ownership • June 30, 2004**

County[1]	Federal Government[2]	State Forests and Wild Rivers	State Natural and Park Areas	State Fisheries and Wildlife	County Parks and Forests[3]	City, Town and Village Parks	Total
Adams	344	—	5,089	8,741	813	9	14,996
Ashland	216,763	756	5,107	6,784	43,041	356	272,807
Barron	—	60	338	6,200	16,468	164	23,230
Bayfield	278,059	49	9,774	10,347	169,353	145	467,727
Brown	—	—	609	2,396	5,807	1,923	10,735
Buffalo	9,374	—	814	12,649	535	57	23,429
Burnett	—	15,157	229	54,420	108,918	24	178,748
Calumet	—	—	1,199	10,592	1,131	353	13,275
Chippewa	—	—	6,574	3,651	33,416	689	44,330
Clark	—	224	—	266	133,660	310	134,460
Columbia	2,846	19	548	20,371	815	349	24,948
Crawford	15,269	6,074	2,341	4,064	579	602	28,929
Dane	1,442	4,147	2,543	14,270	3,205	9,414	35,021
Dodge	20,918	—	216	23,331	1,131	969	46,565
Door	29	—	9,980	3,526	1,281	2,981	17,797
Douglas	—	40,953	3,850	7,598	270,813	434	323,648
Dunn	1,022	—	2,169	11,495	1,183	543	16,412
Eau Claire	—	—	140	2,468	54,714	1,189	58,511
Florence	85,028	5,630	4,980	42	39,973	24	135,677
Fond du Lac	1,706	10,696	507	13,500	1,691	1,152	29,252
Forest	344,008	25	454	3,532	30,877	25	378,921
Grant	6,469	13,629	3,638	534	1,070	555	25,895
Green	—	—	1,457	3,696	487	159	5,799
Green Lake	—	—	343	17,949	747	162	19,201
Iowa	—	8,661	6,694	4,150	381	140	20,026
Iron	—	61,569	2,186	11,660	182,015	21	257,451
Jackson	1,697	67,565	518	7,509	122,868	128	200,285
Jefferson	250	3,553	511	14,136	661	964	20,075
Juneau	79,831	—	4,517	5,763	16,240	298	106,649
Kenosha	—	—	4,838	1,942	2,700	2,204	11,689
Kewaunee	—	—	396	2,428	273	120	3,217

[1] Land in Menominee County that is not privately owned is held by the Menominee Nation.
[2] Federal lands include national parks, national forests, and lands controlled by the U.S. Fish and Wildlife Service as of June 30, 2002.
[3] Includes lands designated as public areas and trust lands not listed separately as of June 30, 2002.

APPENDIX D: Conservation and Recreation Lands in Wisconsin

County[1]	Federal Government[2]	State Forests and Wild Rivers	State Natural and Park Areas	State Fisheries and Wildlife	County Parks and Forests[3]	City, Town and Village Parks	Total
La Crosse	12,192	2,972	368	3,805	3,096	2,232	24,665
Lafayette	—	—	1,530	4,048	278	210	6,066
Langlade	32,727	3	307	16,093	131,654	113	180,897
Lincoln	—	1,881	2,797	7,206	102,664	1,317	115,865
Manitowoc	120	2,903	334	6,255	1,052	1,217	11,881
Marathon	—	356	1,695	23,830	34,149	1,080	61,110
Marinette	—	11,951	4,372	10,053	238,730	408	265,514
Marquette	1,185	—	832	10,537	359	172	13,085
Milwaukee	—	237	—	—	16,359	1,585	18,181
Monroe	15,529		1,547	3,602	7,317	261	28,256
Oconto	141,498	472	817	5,178	44,974	793	193,732
Oneida	11,184	74,361	2,856	8,385	105,227	279	202,292
Outagamie	35	—	1,224	7,807	2,631	1,680	13,377
Ozaukee	536	—	2,294	237	1,243	1,232	5,542
Pepin	—	—	1,426	3,506	243	24	5,199
Pierce	—	—	1,626	1,433	1,223	147	4,429
Polk	1,085	4,984	2,090	13,198	21,799	512	43,668
Portage	—	—	1,044	28,412	3,349	728	33,533
Price	151,317	9,066	259	9,892	103,403	56	273,993
Racine	—	—	99	3,087	5,484	2,064	10,734
Richland	—	6,170	—	1,598	98	221	8,087
Rock	297	—	91	7,127	3,188	3,566	14,269
Rusk	—	15,202	—	3,273	91,382	4	109,861
St. Croix	302	—	2,955	6,758	8,688	462	19,165
Sauk	4,954	4,620	13,701	4,190	1,498	962	29,925
Sawyer	—	71,828	452	9,095	2,534	575	84,484
Shawano	126,686	—	1,024	13,857	117,927	878	260,372
Sheboygan	108	15,794	924	3,960	1,159	434	22,379
Taylor	123,952	—	249	8,014	18,534	99	150,848
Trempealeau	4,207	58	1,618	4,869	362	127	11,241
Vernon	6,863	52	3,957	1,573	1,538	86	14,069
Vilas	54,536	139,470	726	7,710	49,054	104	251,600
Walworth	—	6,835	1,269	5,866	766	1,020	15,756
Washburn	__	155	745	5,653	149,585	80	156,21
Washington	__	4,548	285	6,737	1,524	1,987	15,081
Waukesha	__	11,612	606	5,008	9,905	6,322	33,453
Waupaca	__	__	1,927	7,552	1,080	650	11,209
Waushara	232	__	622	17,411	1,990	135	20,390
Winnebago	2,118	__	5	9,198	1,784	1,107	14,212
Wood	2,312	173	14	14,955	59,949	612	78,015
State	1,795,030	624,470	141,246	600,978	2,594,625	62,004	5,782,353

[1] Land in Menominee County that is not privately owned is held by the Menominee Nation.
[2] Federal lands include national parks, national forests, and lands controlled by the U.S. Fish and Wildlife Service as of June 30, 2002.
[3] Includes lands designated as public areas and trust lands not listed separately as of June 30, 2002.

APPENDIX E

Wisconsin Wetlands Summary

"We promote, protect, restore, enhance, and preserve the quantity, quality, and diversity of Wisconsin's wetlands as a critical component of ecosystems essential to the health and quality of life of our state's diverse citizenry, plants, animals, and landscapes."

— WETLANDS VISION STATEMENT

As anyone who has ever witnessed the early morning commotion of riverbed roosting birds, or the spring blooming of water-loving wildflowers will tell you, wetlands are special places. The term "wetland" encompasses a variety of diverse habitats from sedge meadows, to wet forests, to calcareous fens, to bogs, to cattail marshes and more. 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. Beyond their value as habitat, wetlands perform many important functional processes as well. They act as buffers for excess stormwater, preventing flooding of inundated areas, and they protect water quality by filtering out contaminants.

In Wisconsin we have been blessed with an extensive array of wetlands, but these areas are in peril. 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, more and more wetlands are falling victim to an encroaching human presence. Other threats such as invasive species and contamination by pollutants have also increased and though they do not destroy wetlands directly, they do weaken wetland systems, making these areas more vulnerable to other threats.

Though efforts have been made to reduce wetland loss through regulation, restoration, and land-acquisition, we as a state are still losing wetland habitat at an alarming rate. The Wisconsin Wetlands Inventory (WWI) completed in 1985 identified wetlands across the state, creating a county-by-county inventory of where and how many wetlands each region contained. This survey inventoried 5.3 million acres of wetlands, a loss of 47% from original state acreages. Although the State Legislature has authorized the DNR to update the WWI on a 10-year cycle, budget cuts and limited staff have stalled the process and the Inventory has not been updated since its first inception in 1985. Data from other sources, however, indicate that this loss has continued.

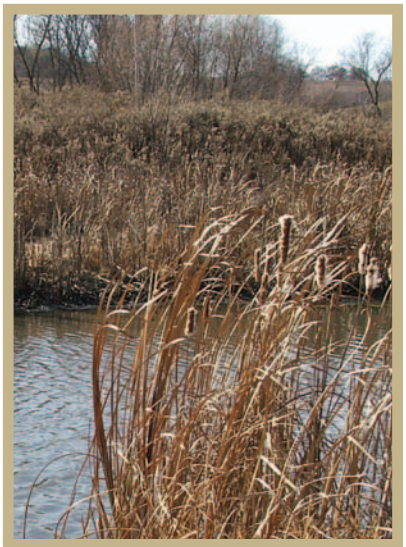
A DNR review of U.S. Army Corps of Engineers (COE) individual permit decisions from 1982 – August 1991 shows wetland losses of approximately 10,800 acres statewide (1,200 acres/year average). A later DNR review of COE individual and nationwide permit decisions from August, 1991 – April, 1998 shows wetland losses of approximately 2,053 acres statewide (312 acres/year average). Permitted wetland losses during this period declined by 460% (1,128 acres/year average), a decline attributed to the state's adoption of state wetland water quality standards on August 1, 1991. Wetland losses due to illegal wetland filling, wetland drainage and activities pre-authorized by general and nationwide permits are not known for either of these time periods and losses may therefore be larger than these estimates.

To protect these gems of biodiversity and ecosystem health we must be vigilant about further loss and implement strategies to protect and restore our wetlands. The first step in effective wetland management

and protection will be the involvement of local citizens. The DNR and other organizations are working to strengthen relationships with property owners, nonprofit conservation organizations, and local governments. Educational initiatives that teach the economic and environmental value of wetlands will be crucial in motivating people to implement and support conservation programs within their own communities. To assist these community restoration projects, the DNR has developed the *Wetland Restoration Handbook*. Offering practical guidance to property owners and conservation groups, this manual has proved quite popular among Wisconsinites, indicating the value state citizens place on their healthy wetland ecosystems.

Of all the groups involved in wetland management and restoration, private property owners will be among the most important. Today 75% (over 4 million acres) of Wisconsin's wetland habitat is held in private possession. Wetland mitigation programs that offer incentives to property owners who maintain and protect wetlands on their property have proven effective in slowing the loss of wetlands statewide. Current legislation offers reduced property taxes for those with land in a "managed wetland" or "preserved wetland" program, as well as those whose properties contain wetlands protected by easements or transfer of development rights. Other programs such as the Wetland Reserve Program offer incentives and cost-sharing options to property owners who wish to restore wetlands to their properties. Programs like these will become increasingly important in statewide wetland protection and should be expanded to involve the widest range of property owners in wetlands stewardship. The state should also work to establish a wetland protection and restoration grant program to maintain or protect current wetlands and restore altered and degraded areas.

We must also work to protect and manage species diversity within wetland environments. These areas play host to a wide array of species, some of which are endangered, rare, or exclusive to wetland systems. Healthy wetlands not only provide habitat, but also support the health of forest, prairie, and lake ecosystems around them. To ensure the continued health of these areas we will need to manage invasive species, improve water quality standards, and reduce polluted runoff. Rare, unique, or in-peril wetland areas should be protected through property acquisitions and land easements. Management plans that protect and restore entire watershed systems will become increasingly important in protecting the wide expanses of habitat needed for effective protection.



Working together, the DNR, private property owners, community organizations, and local governments can all ensure a healthy future for Wisconsin's extraordinary wetlands.

To ensure more efficient handling of this management, the DNR will need to streamline their regulatory approach. Currently most wetland regulation is carried out under federal laws. This system is inefficient, inconsistent, and not easily adapted to Wisconsin's specific economic, environmental, and social needs. A state wetland protection program should be established that supersedes federal regulation and deals with Wisconsin's wetland concerns in a more efficient and consistent manner. Continued mitigation with developers should consider the full range of wetland impacts when planning and implementing development in wetland areas.

Finally, wetland preservation will rely on the use of modern technology to map, monitor, protect, and manage wetland areas. The Wisconsin Wetland Inventory contains over 1,700 maps showing the location and types of wetlands in Wisconsin. Unfortunately, the information in this database is often outdated and therefore not useful to developers and management agencies. A statewide, comprehensive, and integrated inventory of natural resources should be developed to provide planners, local governments, and the general public with an up-to-date source of wetland information. This sort of database would facilitate legislation, planning, and restorations efforts, all of which would promote healthier wetland ecosystems.

Working together, the DNR, private property owners, community organizations, and local governments can all ensure a healthy future for Wisconsin's extraordinary wetlands.

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Publication number: PR-026-2006