



Kettle Moraine State Forest - Pike Lake Unit Master Plan

October 2009

Wisconsin Department of Natural Resources
Bureau of Parks and Recreation

Kettle Moraine State Forest – Pike Lake Unit

Master Plan

Approved October 2009

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Publication# PR-847-2009

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Chapter One – Executive Summary

Location and Access

The Pike Lake Unit of the Kettle Moraine State Forest (Pike Lake Unit) is located in Washington County, approximately 25 miles northwest of Milwaukee. The property abuts the Village of Slinger on the east and the City of Hartford on the west, and a portion of the Pike Lake Unit lies within the city. The area is a mix of agriculture, urban, rural residential, forest, and wetland. Ready access to the area from urban centers in southeastern Wisconsin is provided by State Highways 60 and 83, and Interstate 41; see *Map A: Regional Locator and Public Lands*.

Pike Lake Unit Management, Development, and Use

The Pike Lake Unit provides a wide range of nature based outdoor recreation opportunities consistent with the property's vision and goals.

Most existing recreational facilities will remain in service. A number of new recreational facilities or upgrades are planned, including:

- A new group picnic area;
- Renovation of the beach/picnic area;
- An education/interpretive center;
- An ADA-accessible fishing pier;
- A motorized boat access site and carry-in non-motor boat access site;
- Campground expansion with 30 campsites, a group camp, and an ADA-accessible cabin.

The primary focus of vegetative management in the Pike Lake Management Area is to provide complementary recreational and natural communities for ecological benefits. Land management activities within the present managed area (2009) will focus on the following:

- Expanding and maintaining the predominantly closed canopy, northern/central hardwood forest for enhanced habitat for forest interior bird species, particularly threatened, rare or special-concern birds such as Acadian Flycatcher and Cerulean Warbler;
- Establishing and maintaining old growth forest characteristics on appropriate sites;
- Maintaining small stands of oak and establishing and maintaining oak savannah;
- Protecting and maintaining the existing open canopy wetlands, and lowland hardwood wetland communities, and the permanent and ephemeral ponds;
- Maintaining and enhancing the shoreline of Pike Lake.

Acquisition Boundary Changes

Approval of this plan expanded the project’s acquisition boundary and goal from 722 acres to 3,540 acres; see *Map A-1: Project Boundary and Ownership*. The expansion area, laying to the south and west, contains significant acreage of wetland, some agricultural land, and the remaining undeveloped shoreline on Pike Lake. The primary objectives for acquisition of these lands are:

- To protect the headwaters of the Ashippun River and wetland habitat;
- To increase forest and grassland block sizes to better accommodate area-sensitive wildlife species;
- To provide an important open-space buffer between the current Pike Lake Unit and residential and commercial development;
- To provide additional public space for future recreational trail uses and hunting.

Additionally, a six-acre developed parcel lying to the north of State Highway 60 was deleted from the project acquisition boundary.

Public Involvement

Public involvement was crucial to the development of this plan. A variety of tools, including news releases, newspaper articles, public meetings, radio interviews, and a web site, were used to give information on the planning process and solicit public input.

Chapter Two – Management, Development, and Use

Property Designation and Authority

This Master Plan is for the development and management of the Kettle Moraine State Forest - Pike Lake Unit (shown on *Map A: Regional Locator and Public Lands* and on *Map A-1: Project Boundary and Ownership*). From its creation in 1971 until 1997, the Pike Lake property was designated as a State Park. In 1997, its administrative designation was changed to incorporate it into the Kettle Moraine State Forest.

Acreage Goal: 3,540 acres

State Ownership (2009): 678 acres

Statutory Authority: The authority to acquire and manage land within the Pike Lake Unit is described in sections 23.09, 23.11, 23.14, and 27.01, Wis. Stats..

Vision

The Kettle Moraine State Forest-Pike Lake Unit contains a diversity of ecosystems and unique glacial features along the globally significant interlobate moraine. The Pike Lake Unit will be managed to provide a variety of recreational, cultural, educational, economic and ecological opportunities and benefits for present and future generations. In an increasingly urban setting, the forest offers an atmosphere of solitude, reflection, and learning. Within this setting, the forest staff will provide the best possible service to all visitors and partners.

Goals

- Provide a natural appearing and attractive setting for outdoor recreational and educational pursuits, including minimally developed places for quiet, solitude and the enjoyment of nature.
- Provide a variety of high quality forested, wetland, and open grassland habitats, with an emphasis on ecologically functional natural communities, and with the production of wildlife and forest products as additional benefits.
- Provide compatible year-round, primarily non-motorized outdoor day-use recreational opportunities, including but not limited to hiking and skiing, picnicking, swimming, and fishing.
- Provide watercraft access to Pike Lake for motorized and non-motorized boating and fishing.

- Provide a wide variety of high quality camping opportunities at a level that is in balance with other property uses.
- Provide hunting opportunities consistent with established seasonal frameworks and recreational activities.
- Provide interpretive, educational, and demonstration programs for the public and school or youth groups that build on knowledge and appreciation of the natural environment and resource management activities, while enhancing an understanding of broad environmental and natural resource issues.

Land Management Classifications

The Pike Lake Unit is divided into three management areas; they are listed below in *Table 2-1* and shown in *Map B: Land Management Areas*. Each management area has distinctive characteristics and unique management and use purposes. Management and development for each management area is discussed in the following pages.

Table 2-1: Land Management Classifications – Pike Lake Unit

Management Area Name	NR 44 Land Management Class	Acres
Pike Lake Recreation Management Area	Recreation Management Area: Type 4 Recreation Setting	725
Headwaters Recreation Management Area	Recreation Management Area: Type 3 Recreation Setting	2,810
Administrative Management Area	Special Management Area	5

Pike Lake Recreation Management Area (725 acres)

The Pike Lake Recreation Management Area includes the most developed and intensively used recreational lands within the property (primarily the 2009 ownership area). This management area is classified as Recreation Management – Type 4 Setting.

Recreation Management

The recreation management goal for the Pike Lake Management Area is to provide for a wide range of nature-based outdoor recreational opportunities and experiences. The planned enhancements and additions in this plan will complement the existing recreational facilities. The planned recreational facilities are summarized in Tables 2-2 and 2-3 and shown on *Map C: Planned Development Overview*.

Trails

A variety of trails are provided within this management area, including a segment of the Ice Age National Scenic Trail. The planned expansion of the trail system will provide an improved biking connection between the campground and day-use area, and separate a section of the Ice Age Trail from the ski trail system. *Map C* shows the locations of existing and planned trails and *Table 2-2* lists the NR 44 development classification and mileage for each trail.

Trail Objectives:

- Provide approximately eight miles of hiking and groomed cross-country ski trails.
- Provide approximately three miles of family bike trails, including trails that connect the major public use areas.
- Provide for a segment of the Ice Age National Scenic Trail that meets the National Park Service’s Ice Age Trail standards.
- Accommodate a short, pass-through segment of snowmobile trail in a location that does not conflict with the primary uses of the property.

Trail Management and Development Prescriptions:

The existing and planned trail system, including the Ice Age Trail, traverses approximately eight miles of woods and shoreline within the management area. A few minor connector trails will be added in the day-use area to connect various facilities. Additionally, a new hard-surfaced bike/pedestrian trail will be constructed connecting the campground to the beach/picnic area. The Ice Age Trail will be relocated and redeveloped on a new, dedicated route and will only be open for hiking and snowshoeing. Most of the trails are designed for

hiking and are groomed for cross-country skiing in the winter. (See the General Property-wide Management Section of this plan for additional details.)

The final “on the ground” alignment of the new trails will be determined during the facility design process and included in the Department’s Capital Development Program Statement site plans.

Table 2-2: Existing and Planned Trails - Pike Lake Recreation Management Area

Trail	Existing Mileage (2009)	Planned Additional Mileage	Total Mileage	Designation
Ice Age National Scenic Trail	2.6 (2.4 mi. are on the hiking/ski trail system)	0.4 (a relocation off of existing trails)	3.0	Primitive trail – Ice Age Trail Standard
Hiking / Skiing / Astronomy Trail	8.0		8.0	Lightly developed trail
Nature Trail	0.8	0	0.8	Moderately developed trail
Disabled Access Trail	0.5	0	0.5	Moderately developed trail
Bike Trail	1.7	1.3	3.0	Fully developed trail
Snowmobile Trail	2.0	0	2.0	Lightly developed trail
Total	13.2 (net)*	1.7	17.3	

* This total excludes the 2.4 miles of Ice Age Trail that follow the existing property trails

Camping

The Pike Lake Management Area currently (2009) has one campground with 32 family campsites. Ten sites have electricity and one is ADA accessible. Additional camping opportunities are planned, including walk-in sites, a separate group campground, and a new, modern campground loop. They are summarized by camping type in the prescriptions section below and their approximate locations are shown on *Map C*.

Camping Objectives:

- Provide opportunities for rustic and modern family camping in a quiet, natural setting.
- Provide opportunities for outdoor group camping in a setting apart from other uses.
- Provide opportunities for primitive, walk-in camping for Ice Age Trail hikers and other property visitors seeking a more secluded, less developed camping experience.
- Provide indoor ADA camping, with support from the Pike Lake Friends Group and others.

Camping Management and Development Prescriptions:

Family Camping

The existing, largely wooded, modern campground is a 32-unit loop with a shower building, flush toilets, pressurized water and a dump station. Ten sites have electricity. Its small size and layout give it a rather rustic feel, even with the many modern conveniences it offers. This campground loop will be maintained and managed to continue to provide campers a sense of solitude and closeness to nature.

An additional campground loop with 30 sites will be constructed. This new loop will be designed to provide a modern family camping experience with a flush toilet, a shower building, and electricity at all sites. This loop will more easily accommodate the larger camping vehicles common today. In total, 40 campsites on the property will have electricity when the new loop is completed.

Rustic Walk-in Camping

Three semi-primitive walk-in campsites will be developed north of the existing campground near the Ice Age Trail. The campsites will have a minimum separation distance of 300 feet and be within 300 feet of the Ice Age Trail. A vault toilet and drinking water will be available within 400 feet of each campsite.

Group Camping

A separate group campground will be developed to accommodate up to 30 campers in 2 or 3 camping pods with a centralized gathering area. Electricity, a two-unit unisex flush toilet building, and pressurized drinking water will be provided here.

Accessible Cabin

One accessible cabin will be developed for use exclusively by people (and their family or attendants) whose physical disability makes use of traditional camping facilities very difficult or impossible. Development will follow Department ADA cabin design and construction standards.

Day-use

The Pike Lake Management Area has a beach, large picnic area, two rentable shelters and a small non-motorized boat access site. Water-based recreation is one of the primary attractions for Pike Lake Unit visitors. There are a number of improvements and additions planned for the day-use facilities. All shoreline developments will meet or exceed the requirements of NR 1.15 Wis. Adm. Code and Washington County shoreland ordinances for vegetative buffers and building setbacks.

Day-use Objectives:

- Provide high quality opportunities for beach use, swimming, and picnicking at Pike Lake.

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- Provide motorized watercraft access to Pike Lake with an accessible mooring pier. The total number of vehicle/trailer parking spaces shall not exceed the maximum allowed under NR 1.91 Wis. Adm. Code.
- Provide dedicated facilities for non-motorized watercraft access to Pike Lake.
- Provide shore-fishing opportunities for all persons (ADA accessible).

Day-use Management and Development Prescriptions:

The developments and renovations presented below and shown on Figure 1 are conceptual and their design and/or location is subject to change during the site design process.

Beach and Picnic Area

The planned redevelopment of the beach and picnic areas will provide improved access, and will address visitor capacity and environmental sustainability. The entire area will be redesigned to reduce water flow into the lake. The specific facility improvements to this site include:

- The parking lot will be redesigned and enlarged to provide up to 325 parking spaces (including up to 10 pull-through parking spaces) and to improve traffic and pedestrian circulation;
- The picnic and sunbathing area will be redesigned to provide for adequate open space for visitors, and a new restroom will be constructed on the north end of the picnic area;
- The south picnic shelter will be replaced by the new education/interpretive center;
- The sand beach will be reconstructed to better accommodate users and to provide for a more sustainable design. *(The new beach will be deeper, though not as long as it is now. The sand beach is currently long and narrow. This configuration, along with the rotting retaining wall, does not provide an adequate sand beach and play area. Each year there is also a loss of the sand beach through wave and ice action.)*

A conceptual layout of these and other facilities of the day-use area is shown on *Figure 1*, located in the map section of the plan.

Day-use Area Non-motorized Boat Access

Continue to provide a small non-motorized boat access to Pike Lake at or near the picnic area. (This is in addition to the non-motorized boat access site with parking that will be developed near the proposed motorized boat access site. See the Non-motorized Boat Access section for additional details.)

Pet Swim Area

An area will be designated north of the beach where pets can access Pike Lake. A platform will be built upon the shoreline that will allow a pet to jump into the water. This site will also have picnic tables and grills. Pets will be required to be on-leash while on land in this area.

Group Picnic Area

A new group picnic area will be developed north of the current picnic area to serve approximately 300 people. This facility will have a separate access road and parking lot. It will have two shelters. One shelter will be an enclosed, heated, year-round facility, approximately 40 ft. x 60 ft., with a capacity of up to 200 people. The other shelter will be an open-air building, approximately 30 ft. x 40 ft., and serve up to 100 people. Outdoor picnic facilities, an open play area, and playground equipment will also be provided. Two parking lots with a total of 150-200 stalls will be built to serve this facility.

Both shelters will provide a venue for group social events such as corporate gatherings, wedding receptions, banquets or private parties. The open-air shelter will be located near the shoreline of Pike Lake and offer vistas of the lake. Water access will not be offered directly at this site because of the steep banks along the shoreline. Both hiking and biking trails connect this area to the beach and other day-use areas. The addition of these shelters should alleviate some of the capacity issues that currently exist at the day-use area.

Motorized Boat Access and Landing

There is a need for a motor boat launch at the Pike Lake Unit to provide lake access for property visitors. Pike Lake access is currently provided by two public and two private boat access sites. Parking is not provided at the two town road end public landings. Private landings provide beneficial access to the lake, but their future availability is uncertain. The Pike Lake Unit will develop a boat access site at the southern end of the property, providing access in perpetuity. This access site will provide two boat ramps with parking that will meet boating access standards under NR 1.91 Wis. Administrative Code. The site will be lighted, have a two-stall restroom with pressurized water, and a boat washing station. The development of the boat launch facility will depend on available funding and an assessment of reasonable motorized boat access to Pike Lake. Provided an adequate private-provider agreement for public watercraft access remains in effect, the development of the boat launch facility will not be considered for funding until at least the 2013-2015 state budget biennium.

Non-Motorized Boat Access Site

A new carry-in boat access site will be developed north of the new motorized boat launch. This site will provide up to nine vehicle only parking stalls, one being an ADA stall. Other site amenities will include an open, grass staging area for boats and a grass path leading to a launching pad surfaced with a mix of gravel and sand. Restrooms and water will be available near the motorized access site; a path will connect the two access sites.

Fishing Platform and Pier

A fishing platform of a universal design (i.e. ADA accessible) that will accommodate all users will be developed. A pier will extend out 40ft. to 60ft. from the shore and have a fishing platform approximately 8 x 15 to 18 ft. in size. An ADA accessible trail will link the fishing platform to the beach, picnic area, and parking lot.

Educational and Interpretive Center

An educational and interpretive building will be constructed to provide year-round indoor space for educational and interpretive activities and displays. Hunter and Boat Safety

education classes would be held at the center. The building may also include a modest Friends Group concession space for the sale of pre-prepared food, beverages, nature literature and merchandise, and a water craft and winter sports equipment rental area. The building would also serve as a warming shelter for ice anglers, skiers and other winter recreational users of the property. Use of or rental of the meeting/classroom will be limited to interpretive and educational gatherings, Department and State Agency meetings, non-profit recreational or park events and use by park-related organizations, including the Friends of Pike Lake. (See the Interpretation/Education Program section of this plan for additional information on the use of this building.)

The educational center will be located, if possible, where there is easy access to the Management Area’s highest concentration of interpretive and educational features and to provide scenic vistas. The educational center building will include public restrooms, a nature center exhibit area and an outdoor deck with table seating. It will have a meeting/classroom to accommodate up to 80 persons. A sink, projection screen, audio-visual equipment and an equipment storage room will also be provided.

Amphitheater

An amphitheater to accommodate 50 to 75 people will be constructed on the north end of the beach picnic area for outdoor educational programs and other gatherings.

Table 2-3: Existing and Planned Facilities - Pike Lake Recreation Management Area

Facility	Existing (2009)	Planned	Total
Non-motorized water access sites	1	1	2
Motorized water access site / landing	0	1	1
Accessible Fishing Pier	0	1	1
Beach and Day-use Area	1	0	1
Camping sites:			
Modern Campground			
Non electric	22	0	22
Electric	10	30	40
Accessible	1	0	1
Group Campground	0	1	1
Rustic Hike-in campsites	0	3	3
Picnic Shelters	1	2	2*
Interpretive Center	0	1	1
Dog Swim Area	0	1	1

* One picnic shelter site will be removed and be replaced by the interpretive center.

Interpretation / Education Program

This property master plan does not direct the focus, content, or the specific ways that these programs will be carried out. That is determined by the Property Interpretation/Education Plan; which may be revised from time to time independently of this plan.

The Pike Lake Unit has a current (2009) Interpretation/Education Plan. It recommends the following themes be featured:

- Wisconsin glaciation and the Ice Age National Scenic Trail;
- Bird migration at the property and along the lake.

Other types of themes that are often addressed in Department interpretive/educational programs include, but are not limited to, historical and archeological resources, environmental or ecological issues, resource management topics, and general nature interpretation.

The current interpretive facility is a kiosk displaying material on the region's glacial history. The master plan supports expansion of the interpretive/educational program in a variety of added facilities. The most significant being the planned new education building and nature trail. Additionally, signs or kiosks, will be incorporated into property trails and public use facilities as directed by the interpretive plan. Future expansion of the nature trail, or establishment of a new nature trail is authorized if it is detailed in the property interpretation plan and if it does not conflict with other established facilities, uses, or sensitive resources.

Hunting

The Pike Lake Management Area is closed to all hunting and trapping because of the high intensity of other recreational use on this portion of the property.

Deer and other wildlife populations and their impacts will continue to be monitored. If conditions warrant, hunting or other measures to control wildlife numbers may be allowed in the future; and it would be done only during time periods and at locations that would ensure public safety and minimize conflicts with recreational users.

Vegetation Management

The primary focus of vegetative management in the Pike Lake Management Area is to provide complementary recreational and conservation opportunities in a forested environment. See *Maps D and E* for existing (2009) and planned vegetative coverage of this management area. Vegetative management on the Pike Lake Management Area emphasizes management for natural communities for ecological benefits and the maintenance of a natural appearing and safe recreational environment. Management of this area is described below.

Long-term Resource Management Objectives (50 yr +):

Provide a high quality recreational setting with an attractive, natural appearing forested setting featuring a large contiguous block of closed canopy northern hardwood forest with old growth characteristics, including abundant larger trees of older age classes, snags, and downed coarse woody debris and smaller tracts of grassland and oak savanna, wetlands, and shoreline habitat.

Short-term Resource Management Objectives (0 - 50 yr):

- Protect and enhance the natural, scenic character of the area. Expand and maintain the acreage of predominantly closed canopy, northern/central hardwood forest to approximately 400 acres for enhanced habitat for forest interior bird species,

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particularly threatened, rare or special-concern birds such as Acadian Flycatcher and Cerulean Warbler. On appropriate sites establish and maintain old growth forest characteristics, including abundant larger trees of older age classes, snags, and downed coarse woody debris.

- Maintain approximately 25 acres of oak and aspen dominated stands.
- Establish and maintain approximately 80 acres of oak savannah and approximately 15 acres of grassland/shrub community type in areas that do not fragment forest blocks.
- Protect and maintain 37 acres of open-canopy wetland and 27 acres of lowland hardwood wetland communities. Protect and maintain permanent and ephemeral ponds.
- Maintain and enhance the shoreline of Pike Lake (outside of developed recreational use areas) to provide fish and wildlife habitat.

Resource Management Prescriptions by Habitat Type:

Northern\central Hardwoods

- Use uneven-aged selection harvests and group harvests to maintain and expand this forest type and to establish larger trees and closed canopy conditions. Shelterwood, group selection, and single-tree selection management systems may be used as appropriate.
- Use intermediate treatments, such as release or thinning, to develop uneven-aged stands and improve composition and timber quality.
- Artificial regeneration from seed or seedlings may be used to establish desirable trees where seed source and advanced regeneration is lacking.
- Except for developed sites, retain 70 percent crown closure of the forest canopy using selective cutting or timber stand improvement practices.

Oak

Maintain oak stands through management techniques appropriate for the stand and site conditions. Both natural and artificial regeneration systems may be used and needed.

- Use natural regeneration systems for oak, including even-age management techniques, clearcutting, and shelterwood harvesting.
- Artificial regeneration from seed or seedlings may be used to establish oak reproduction prior to or after timber harvests when natural regeneration is not adequate.
- Where feasible and safe, other management techniques that may be used to help regenerate oak stands, include soil scarification, herbicide treatments and prescribed fire.
- Use intermediate treatments, such as release or thinning, to develop young stands and improve composition and timber quality.

Aspen

- Achieve natural regeneration of aspen primarily through coppice (i.e. root sprouts).

General Management Prescriptions for All the Above Types of Forest Stands

- Follow the DNR Silviculture and Forest Aesthetics Handbook for additional guidance on selecting the appropriate regeneration system based on stand composition, advanced regeneration, site, and other factors.
- Give aesthetic and recreational values preference when making decisions on timber and other management with primary focus on the timing of management actions to minimize negative visual and audio impacts on recreational users.
- Retain abundant snags and dead and downed trees for wildlife habitat, except near designated public use facilities.
- To maintain or restore scenic values, conduct salvage harvests and take other actions as necessary to restore sites following natural disturbances. Planting appropriate native tree species may be used to speed restoration.
- Trees and shrubs may be removed as needed for the development or redevelopment of designated public use areas or sites.
- Planting and maintenance of native trees, and shrubs may be done on these sites for screening, scenic enhancement, wildlife habitat enhancement, or for enhancing recreational use of the site.
- Conduct management activities to minimize forest fragmentation to maintain interior forest habitat conditions. Give a high priority to reforesting openings within or between larger wooded tracts.

Lowland Hardwood

- Due to the variability of local site conditions, the selection of the most appropriate silvicultural system to use for these forest stands is very site-specific and must be determined based on the judgment and experience of the managing forester.

Emergent Marsh

- Remove invasive and woody species through the use of mowing, cutting, burning, or herbicide application.
- Maintain or restore original hydrology of wetland where applicable.
- Maintain health of vegetative community through the use of prescribed fire where possible.

Open Canopy Wetland

- In areas that are undergoing conversion from open sedge meadow/wet prairie to shrubs and brush use prescribed fire, mowing, and herbicide to remove the woody vegetation.
- On sites that are dominated by monotypic stands of reed canary grass, where practicable use prescribed fire, mowing, and herbicide treatment to reduce competition to the native vegetation.

Grassland/shrub, Prairie and Oak Savanna

Land management in areas of prairie restorations and oak savanna primarily focuses on simulating the natural disturbances (primarily fire) that historically functioned to maintain structure and diversity in these communities.

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The following management practices are to be applied on grassland/shrub, prairie restoration, and oak opening restoration sites:

- Where possible, use prescribed fire to invigorate native grasses and forbs to suppress the encroachment of woody species, and to control non-native invasive plants.
- Use cutting, mowing, brushing, and herbicide application (when necessary) to remove invading trees and shrubs and exotic or invasive grasses and forbs.
- On prairie and savanna restoration sites, plant a diversity of native prairie grassland species.
- On sites to be targeted for cool-season grass habitat, plan a variety of cool-season grasses or legumes.
- Planting may be used to increase or establish oak on oak-opening restoration sites.
- Locate prairie restoration sites to maximize grassland block size and minimize forest fragmentation.

Other Authorized Resource Management Activities:

In addition to the management activities that are included in the prescriptions above, the following may be used, as deemed appropriate by the property manager:

- Removal of hazard trees, shrub cutting or shearing, mowing, prescribed fire, chemical treatment, mechanical site preparation (tilling);
- Planting native trees and shrubs and cool season or prairie grasses.

Headwaters Recreation Management Area (2,810 acres)

The Headwaters Recreation Management Area is shown on *Map C: Planned Development Overview*. This management area is classified as Recreation Management – Type 3. Lands under this classification are managed to provide readily accessible areas with modest recreational facilities offering opportunities at different times and places for a variety of dispersed recreation.

Recreation Management

The primary focus of recreation management in the Headwaters Management Area is to provide for a variety of compatible non-motorized recreational uses, including hunting, to complement the more intensive uses on the Pike Lake Management Area.

Recreation Management Objectives:

- Provide for compatible, non-motorized trail uses (including but not limited to hiking, skiing, and biking) as may be appropriate for the capability of the lands acquired.
- On a route that is compatible with natural resources and other recreational uses, accommodate a “pass-through” connector snowmobile trail when it is essential for the function of the regional snowmobile trail network.
- Provide for a segment of the Ice Age National Scenic Trail.
- Provide a broad range of hunting and trapping opportunities.
- Provide wildlife viewing where opportunities are available.

Recreation Management and Development Prescriptions:

Non-motorized Trails

Establish trails for hiking and skiing, wildlife observation, hunting access and other compatible non-motorized recreational uses based on opportunity and demand. Decisions on the types and locations of trails must be based on consideration of potential conflict with other uses, such as hunting, and impacts to sensitive wildlife habitat. Trail locations and use designation may change over time as lands are acquired and circumstances change. All these trails will be built to the NR 44 standard appropriate for the designated uses. Construct ADA accessible trails where appropriate.

The Ice Age National Scenic Trail is discussed in the General Property-wide Management Section of this plan, because it traverses more than one management area on the property.

Snowmobile Trails

The Department recognizes there is a potential future need for a southerly extension of the existing county snowmobile trail which may require crossing the Pike Lake Unit Headwaters Recreation Management Area. Therefore, as existing trails across private land become inaccessible, the Washington County Association of Snowmobile Clubs can request access to Department-owned lands in the Pike Lake Unit Headwaters Management Area under the following conditions:

- That the trail be a corridor trail connecting other public trails and not a looped trail on the property;
- That the trail be developed on a Department-approved trail corridor on the Department-owned lands in the Headwaters Management Area, as outlined in the KMSF-Pike Lake Unit Master Plan;
- That the Washington County Snowmobile Alliance obtain permission from private landowners within the Headwaters Management Area boundary whose property the trail would be crossing;
- That the trail on Department-owned lands be developed in an environmentally sensitive manner that minimizes impacts on the natural resources;
- That the trail be designed to minimize conflicts between users of the Headwaters Management Area.

Hunting and Trapping

Provide a range of hunting and trapping opportunities per established seasonal frameworks consistent with statewide rules, Department policy, and local ordinances.

Vegetation Management

The primary focus of vegetative management in the Headwaters Management Area is to complement recreational use and conservation opportunities. Vegetative management in this area will emphasize the maintenance and enhancement of plant native communities. Once lands are acquired, management objectives will be determined to provide the appropriate ecological setting or habitat. General guidelines are listed under the management objectives.

Long-term Resource Management Objectives (50 yr +):

- Provide wildlife habitat and a high quality recreational setting featuring forested areas, grasslands and prairie and oak savannas, wetlands, and shoreline habitats. Maintain and enhance existing forested lands, and expand where practicable.
- Protect the quality and extent of the wetlands and increase the protection of water quality of the Ashippun River and Pike Lake.
- Convert and maintain acquired agricultural lands to native grasses and forbs or cool season grasses, or to forest cover.

Resource Management Prescriptions:

Follow the habitat type management prescriptions for the Pike Lake Management Area.

Administrative Management Area (5 acres)

The administrative management area includes the Forest Entrance Visitor Station and office building as well as the shop building and its adjacent grounds. The shop facility is used for the repair, maintenance, and storage of state forest equipment and infrastructure and equipment used by wildlife management, and warden staff.

Management Objectives:

Provide areas and facilities to support operations and administration needs and provide facilities to help deliver public services.

Management and Development Prescriptions:

- Maintain the Forest Entrance and Visitor Station building to provide visitor services and office space for state forest, wildlife, forestry, and warden staff.
- Provide shop and storage facilities for use by State Forest staff and, as necessary, for staff from other Department programs, such as Parks, Forestry, Wildlife, and Law Enforcement. Locate these facilities in locations that do not conflict with the primary purposes of the Pike Lake Unit. New shop and storage facilities may be constructed or existing facilities redeveloped as deemed appropriate by the Department.
- Maintain native landscape plantings around buildings to provide screening, improved aesthetics, and visitor education through interpretation. Also, maintain small, turf areas around buildings as appropriate. Manage the non-turf areas according to the Recreation Management Area objectives and prescriptions.

General Property-wide Management Elements

The following management elements apply to all management areas of the Pike Lake Unit, excluding lands in private ownership and easement areas unless otherwise stated below. This part of the plan contains sections related to:

- Ice Age National Scenic Trail;
- Real estate management;
- Property-wide management policies; and
- Operations, administration and development.

Ice Age National Scenic Trail

The Pike Lake Unit will provide an estimated 4.5 mile segment of the Ice Age National Scenic Trail across the property. Within the Headwaters Management Area, the trail will generally follow the route shown on *Map C: Planned Development Overview*.

In the Pike Lake Management Unit, relocate and redevelop the trail to a new route to be used only by the Ice Age Trail. It will be a primitive hiking trail built to standards established by the National Park Service. Trail standards are referenced in the document “Ice Age National Scenic Trail: A Handbook for Trail Design, Construction and Maintenance”.

Real Estate Management

Real Estate Acquisition Policy:

All property purchases are on a willing seller basis. The Department is required by state and federal laws to pay just compensation, which is the estimated market value of a property based on an appraisal by a certified general licensed appraiser. At times, it is in the interest of the Department and the landowner for the Department to acquire partial rights to a property, in the form of an easement. The WDNR has a number of easement alternatives available to address these situations. Landowners within the Pike Lake Unit boundary will be contacted periodically by Department staff to explain the Department’s land acquisition program and to see if they have an interest in selling their property for state forest purposes.

Payment in Lieu of Taxes:

For all new properties purchased, the Department makes an annual payment in lieu of real estate taxes to replace property taxes that would have been paid had the property remained in private ownership. The payment is made to the local taxing authority where the property is located. More detailed information on how the Department pays property taxes may be found in a publication titled *Public Land Property Taxes*, PUB-LF-001.

General Property Management Policies and Activities

Vegetation Management:

- Conduct educational programs on vegetation management objectives and practices.
- Conduct periodic inspections for invasive exotic species, such as spotted knapweed, purple loosestrife, garlic mustard, honeysuckle, and buckthorn. Control infestations by appropriate, approved methods, including, but not limited to, hand pulling, mowing, cutting, girdling, tilling, herbicides, and fire.
- To the degree practicable, locate logging roads and skid trails to minimize the impacts on campsites and designated recreational trails. Temporary or permanent logging roads may not be sited on the Ice Age Trail. Minimal crossings of the Ice Age Trail are allowed when other routes are not feasible.
- Except in the case of catastrophic events where diseased or downed trees negatively affect human health, safety, and welfare, tree removal will primarily be performed when the ground is frozen to minimize soil compaction and disturbance.
- Conduct vegetation management at times that would minimize impact to recreational use and breeding wildlife populations.

Wildlife Management:

From time to time, some wildlife may become overabundant. Overabundant wildlife such as raccoon, Canada geese, and other species can cause nuisance problems and, in some cases, health hazards for property visitors. Management of these species within the Pike Lake Unit may include the controlled removal of nuisance animals during high population periods, or when excessive human exposure and/or public danger exists. Live trapping and relocation of these species to other areas is not a viable option due to their overpopulation throughout the region as a whole. Animals may be removed by contract trapping or shooting and/or removal by staff.

Fee Areas:

A vehicular annual admission sticker or daily fee payment is required for property access.

Trail Development:

The specific footprint location and design of the designated trails will be determined in the facility design process during the initial plan implementation. Trails will be sited and designed for long-term sustainability. Existing trails and roads will be evaluated for their suitability for the intended use. If they cannot be redeveloped to be sustainable, or if they cannot be readily redeveloped to provide the intended visitor experience, then the trail should be developed in a new suitable location. In the future, if any trail segments are found not to be sustainable under the intended use, they will be redeveloped to be sustainable or closed and relocated on a more suitable site and, in either case, the assigned design level will be maintained.

Refuse Management:

No trash receptacles are provided in the day-use areas. Day-use visitors are required to carry out all waste and recyclable products they bring in. In the campground, campers are provided with trash and recyclable waste disposal containers.

Operations and Administration

Emergency Action Plan:

Maintain an emergency action plan that describes staff response to natural disasters and outlines Department coordination with other agencies. The suppression of fires at the Pike Lake Unit is addressed in the emergency action plan for the property. This plan should be reviewed on an annual basis for possible revision. Department responses to natural resource impacts resulting from natural disasters will be determined by specific interdisciplinary evaluations following such an event.

Response to Catastrophic Events:

Catastrophic events such as, but not limited to, forest disease or insect infestation, blow-down, or fire will be managed on a case-by-case basis as needed. Specific management options will be chosen after considering multiple factors, including visitor safety. The normal response to wildfire on the property will be to protect life, property, and natural resources by extinguishing the fire. Forest pests will be controlled, as necessary, and as required by Wisconsin Statutes 26.30.

Endangered and Threatened Resources:

All management actions occurring on the property will be conducted in a manner that avoids negative impacts to threatened or endangered resources. The most recent biotic inventory information will be consulted prior to the design and construction of any development project.

Municipal Jurisdiction within the State Forest (County and Township roads):

Several county and town roads pass through the property. These roadways will continue to be managed by the respective municipalities outside the scope of this master plan.

Best Management Practices (BMPs):

All land management and development activities within the property will follow the standards for Best Management Practices for water quality.

Inspections of Designated Use Areas:

All designated use areas must be inspected semi-annually (Wis. Statutes s. 23.115). Vegetation inspections in designated use areas must be performed semi-annually with one of the inspections performed by a person trained in the identification of hazard trees. Monitoring will pay particular attention to forest infestations that pose a serious threat to forest resources, such as oak wilt, pine bark beetles, gypsy moth, forest tent caterpillar, two-lined chestnut borer, and emerald ash borer. Control measures will be performed as needed.

Protection of Historic and Archaeological Features:

Approved future facility development sites (i.e. parking lots, buildings.) will be inspected prior to construction to locate and evaluate any evidence of significant archaeological or historic material in compliance with federal laws and state guidelines on historic preservation.

Facility Development Standards:

All approved future facilities, roads, and structures providing either public recreation or supporting public recreation activities or other administrative services will be designed and constructed in compliance with state building codes and DNR design standards. All forest

facilities will be constructed with colors and materials that complement the aesthetic of the property. All new facilities and buildings, whether for use by the public or by employees, will comply with the Americans with Disabilities Act (ADA).

Public Communication Plan:

The property manager will serve as the official public contact for this property. The manager will maintain a mailing list of persons or groups interested in the Pike Lake Unit's on-going management and development. Mailings, news releases, and other means may be used to notify the public of significant issues or events that occur on the property.

Yearly Management Assessment:

The property manager will conduct a yearly public meeting to document and assess progress on the management actions accomplished during the previous year and plan management activities for the upcoming year. A file documenting these yearly assessments is maintained for implementation of the Manual Code 9314.1(C), which calls for formal plans to determine progress on implementation and assess whether the plan is accomplishing the intended results.

Uniform Property-Wide Signage Plan:

The WDNR will develop and implement a property-wide signage system plan in compliance with the Sign Handbook-Manual Code 8672.05 and the Design Standards Handbook-Manual Code 8605.1. Signs will have a unified aesthetic character that is harmonious with the area's natural surroundings. Signs to be developed in this plan include property trail markers and regulatory, directional, informational, interpretive and boundary signs. Signage and trail markings related to the Ice Age National Scenic Trail will be designed and installed by the IATA in compliance with the 2001 *Ice Age National Scenic Trail: A Handbook for Trail Design, Construction and Maintenance*.

Funding Constraints:

The ability to implement any Master Plan element will depend on the budgetary authorization granted to the Department of Natural Resources by the Wisconsin Legislature and the Governor of the State of Wisconsin, as well as the availability of state, federal, or other funding sources.

Projected Costs for Facility Development, Improvements, and Construction:

The rate of facility development will depend upon the availability of funding and the approval of the improvement projects as part of the Department of Natural Resources' Capital Development Process. It is estimated that the total cost of all phases of Pike Lake Unit improvements will be almost \$4.9 million (in 2009 dollars), as shown in *Table 2-4*.

Table 2-4: Projected Facility Development and Improvement Costs

Pike Lake Management Area	Facility Developments and Site Improvements	Cost Estimate
Group Picnic Area	Open-Air Picnic Shelter, Parking, Picnic Tables, Grills	\$125,000
	Enclosed Picnic Shelter, Parking, Picnic Tables, Grills	\$235,000
	Restroom, Drinking Fountains	\$200,000
	Road to Group Picnic Area	\$175,000
	Playground	\$35,000
Beach and Day-Use Area	Pet Swimming Area and Platform	\$15,000
	Carry-In Boat Access Site	\$12,000
	Re-Designed Beach and Shoreline Restoration	\$350,000
	Restroom	\$175,000
	Outdoor Amphitheater, Stage, Seating	\$55,000
	Interpretive/Education Center and Restrooms	\$500,000
	Sustainable Re-Design of Parking Lot	\$475,000
	ADA-Accessible Trail, South Shoreline	\$9,500
	ADA-Accessible Fishing Pier	\$25,000
	Bike Trail, Campground to Beach/Day-Use Area	\$120,000
Motorized Boat Access Area	Road to Access Sites and Parking	\$240,000
	Boat Access Parking Lot – Motorized and Carry-In	\$90,000
	Motorized Boat Launch, Restroom, Boat Wash	\$300,000
	Carry-In Access and Parking	\$30,000
Campground	30-Unit Electric Campground Loop	\$475,000
	Entrance Re-Design	\$75,000
	Toilet-Shower Building	\$225,000
	Dump Station Upgrade/Re-design	\$135,000
	ADA-Accessible Cabin	\$150,000
	Outdoor Group Campground and Flush Toilet Building	\$425,000
	Three Rustic, Walk-In Campsites and Uni-Sex Vault Toilet	\$65,000
Administrative Management Area	Cold Storage Building – Multi-Program Use	\$150,000
TOTAL	Estimated Total Cost	\$4,866,500

Note: Costs for the development are based on 2009-20011 dollar-values and assume full completion of all construction. In actuality, work may be phased over several state capital biennial budget cycles.

Chapter Three – Supporting and Background Information

Material for this chapter is taken from the *Kettle Moraine State Forest – Pike Lake Unit, Property and Regional Analysis* (WDNR 2009); http://www.dnr.state.wi.us/master_planning/pike_lake/ra.html. Refer to this document for additional data and analysis on this property and its ecological and socio-economic context.

The Pike Lake Unit was designated as a State Park from its creation in 1971 until 1997. At this time the park was incorporated into the Kettle Moraine State Forest. The Pike Lake Unit of the Kettle Moraine State Forest is located in Washington County, approximately 25 miles northwest of Milwaukee. The area is a rolling landscape with a mix of agriculture, forest, wetland, rural residential and urban areas. Ready access from urban centers in southeastern Wisconsin is provided by State Highways 60 and 83, and Interstate 41.

Washington County's landscape was shaped by glaciers and consists of wooded hills, valleys, rivers and lakes, wetlands, and abundant farmland. Rugged kettle moraine features define the central portion of the County, including the Pike Lake Unit. The 522-acre spring-fed kettle lake attracts tourists and day-use visitors to the property to motorboat, ski, swim, windsurf, and fish. Hiking, cross-country skiing and rustic camping is also popular at this rolling, forested property. The National Ice Age Trail follows the glacial moraine through the county and is an important feature of the Pike Lake Unit.

Land Use and Trends

Washington County lies within the eight county southeastern Wisconsin region and is part of the Milwaukee metropolitan area. It is the most densely populated region of the state, with over 1.9 million people in 2000. Washington County lies in the northwestern portion of the region, and contains a mix of urban areas, small villages, rural subdivisions, and areas of farmland, forest, and wetlands. While agricultural and other undeveloped lands are still common here, farming has been on a steady decline with a loss of 31 percent of farms and 34 percent of its agricultural land in Washington County between 1980 and 2002¹. This area is rapidly developing as cities and villages push outward and more rural subdivisions are platted. The municipalities of Hartford and Slinger bracket the Pike Lake Unit, as shown on *Map F: Adjacent Municipalities to the Pike Lake Unit*

The County has experienced significant population growth and increased urbanization in recent decades, and it is projected to grow by nearly 34 percent (39,800 people) by 2035. This is the third highest percentage increase in the region (*Multi-Jurisdictional Comprehensive Plan for Washington County: 2035*). Between 1970 and 2004, the population increased by 93.6 percent.

¹ A Park and Open Space Plan for Washington County, Washington County Planning and Parks Department, Southeastern Wisconsin Regional Planning Commission, March 2004

Population is projected to increase to 149,500 in 2025 and grow to 157,300 by 2035². During the period of 2000 and 2002 the City of Hartford, lying adjacent to the Pike Lake Unit, gained 532 residents, the highest growth in Washington County in that period.

Geology and Soils

The Kettle Moraine landscape near Pike Lake is distinguished by its rugged glacial features – kames and eskers. Powder Hill, a large glacial kame, rises 1,350 feet above sea level and is the second highest point in southeastern Wisconsin. The beach and picnic area are at approximately 1,000 feet above sea level, and provide a flat recreational plain.

Soils of the Pike Lake Unit are predominantly Hochheim-Theresa. This is a well-drained soil that has a subsoil of clay loam, formed in loess and the underlying sandy loam to loam glacial till. On both the northern and southern edges of Pike Lake the soil is classified as Houghton-Palms-Adrian. This is a very poorly drained organic soil typically found along drainageways, in depressions, and in old lakebeds.

The United States Department of Agriculture’s Soil Survey for Washington County indicates that there are moderate limitations of Hochheim-Theresa soil for recreational trails. The soil becomes muddy and slippery when wet and it is erodible. There are very slight limitations of this soil for the development of playgrounds, picnic areas, and utility buildings. There are both severe and very severe limitations to Houghton-Palms-Adrian soils for all development, including recreational trails, buildings, play areas, and campsites.

Vegetative Cover

The Pike Lake Unit has a variety of plant communities including mixed hardwood forest, conifer plantations, wetlands, restored native prairies and agricultural fields. Existing vegetation on the property is listed below on *Table 3-1* and shown on *Map D*. About 50 percent of the current (2009) state-ownership is forested with about 93 percent being upland forest with a mix northern\central hardwoods, sugar maple, beech, basswood, white ash, and yellow birch. Oak dominated stands comprise only 25 acres. A small amount of lowland hardwoods are also present. The non-forested lands are primarily grass, brush, marsh, cropland, and maintained ground. The property has several small permanent ponds and a number of ephemeral ponds. *Table 3-1* summarizes the various vegetation cover types present in the Pike Lake Unit.

² SEWRPC, 2004 A Park and Open Space Plan for Washington County, Washington County Planning and Parks Department, Southeastern Wisconsin Regional Planning Commission, March 2004

Table 3-1: Vegetation Cover Types - Pike Lake Unit*

Vegetation Type	Acres	Percent
Northern/central hardwood	344	51
Oak 25		4
Grassland/shrub 17	8	27
Lowland hardwood	28	4
Open canopy wetland	37	6
Open water – deep water marsh	9	1
Ponds/ephemeral ponds	13	2
Maintained active use grounds	28	4
Agricultural land	8	1

* DNR managed lands, 2009

Conservation Needs and Opportunities

Another record of species with special management needs is the Department’s “Wildlife Species of Greatest Conservation Need (SCGN)” list. This appears in the Strategy for Wildlife Species of Greatest Conservation Need in Wisconsin (WDNR 2005). SCGN include species already recognized as Endangered, Threatened, or Special Concern that are in a state of decline. In total, 43 species are potentially associated with the Kettle Moraine landscape. A complete listing of needs and opportunities can be found in the Property and Regional Analysis, http://www.dnr.state.wi.us/master_planning/pike_lake/ra.html.

Endangered Species

As of June 2009 (WDNR 2007), NHI data indicates that two species of fish, one turtle, and three types of natural communities are present or may likely be found on the Pike Lake property as listed in *Table 3-2*. The records also show several others that might be on lands within one mile around the property and they are also listed.

Table 3-2: Rare / Threatened Wildlife Species and Native Communities - Pike Lake Unit

Common Name	Scientific Name	Status
Banded Killifish	Fundulus diaphanus	SC/M
Pugnose Shiner	Notropis anogenus	THR
Blanding’s Turtle	Emydoidea blandingii	THR
Acadian Flycatcher	Empidonax virescens	THR
Cerulean Warbler	Dendroica cerulea	THR
Wood Thrush	Hylocichla mustelina	SC/M
Brown Thrasher	Toxostoma rufum	SC/M
Blue-winged Warbler	Vermivora pinus	SC/M
Southern Dry-mesic Forest	na	na
Forested Seep	na	na
Hardwood Swamp	na	na

THR = threatened; SC = Special Concern. WDNR and federal regulations regarding Special Concern species range from full protection to no protection. SC/H = take regulated by establishment of open closed seasons; SC/FL = federally protected as endangered or threatened, but not so designated by WDNR; SC/M = fully protected by federal and state laws under the Migratory Bird Act. LT = Federal listed threatened. GC = Greatest Conservation Need

Water/Fisheries Assessment

Pike Lake is a 522-acre natural lake that formed approximately 10,000 years ago during Wisconsin glaciation with a maximum depth of 45 feet and a mean depth of 13.5 feet. It is classified as a mesotrophic–eutrophic lake with fairly large areas supporting abundant rooted plants and algae. The lake generally has a muck bottom but also has areas of more coarse material such as sand and gravel. Several shoreline areas in the southeastern and southern parts of the lake have gravel and rubble shorelines that provide excellent habitat for walleye spawning. Most of the western and southern shores are developed into year-round homes. The north shore is largely undeveloped wetland fringe. Most of the eastern shore is state owned, lying within the Pike Lake Unit property.

Walleye is the most abundant and sought after game fish in Pike Lake. Other species found in the lake include yellow perch, bluegill, rock bass, and northern pike. Due to moderate levels of mercury contamination, the lake falls under the general state mercury advisory.

The Rubicon River feeds and drains Pike Lake. A small dam, on land owned by the Town of Hartford, is located at the lake’s outlet; it is used to control water levels in the lake. Several small feeder streams also contribute to the lake.

From Pike Lake, the Rubicon River flows west from the city of Hartford to the Rock River. Rural and urban pollution has adversely affected water quality and habitat. Rough fish, particularly carp, dominate the fishery in the river’s lower portion.³

Pike Lake Unit – Existing Recreation Use and Facilities

Recreational use of the Pike Lake Unit is year-round and quite broad, including trail-based activities such as hiking, snowshoeing, and skiing (traditional and skaters); water-based activities such as swimming, wind surfing, canoeing and kayaking, and cold and warm water fishing; picnicking; camping; and nature-based activities such as birding, nature study and photography. The property does not provide a public motor boat access to Pike Lake. The Unit offers 32 campsites, eight miles of trail and a very popular beach/day-use area along with a 60 foot observation tower. They are shown on *Map G: Existing Facilities and Trails*.

Due to its proximity to Milwaukee and Interstate 41, the Pike Lake Unit has a high demand for camping, particularly on summer weekends, with an average occupancy rate close to 95 percent. The weekday occupancy rate is lower at 42 percent. About 60 percent are in tents and 40 percent in an RV or trailer. A similar pattern is also exhibited at the campgrounds in the Northern Unit of the Kettle Moraine State Forest. The demand for electric sites is especially high at both state forest units.

Visitation at the Pike Lake Unit is estimated at more than 190,000 visitors annually. The numbers have been climbing steadily recording a 22 percent increase over the last 10 years.

³ Eagan, Lloyd L. 1989. Upper Rock River Basin Areawide Water Quality Management Plan. Wisconsin Department of Natural Resources

Pike Lake Motorized Boat Access

In 2009, Pike Lake has four motorboat access sites, none of which are located at the Pike Lake Unit. The four motorized boat access sites include two town road ends and two private launches. People routinely launch canoes, kayaks and similar craft from the Pike Lake Unit's day-use and picnicking area.

The public boat launch sites are unimproved Town of Hartford road ends on the west side of the lake. No off-street parking is provided and parking is not allowed on the street. People who use this site typically launch their boat, then one person drives the vehicle and trailer to the Pike Lake Unit's beach parking lot on the east side of the lake while another person boats across the lake and picks up the driver. These road end launches are also used by lake residents who do not need on-site parking.

The two private access sites on the west shore of the lake are Reef Point Resort and Johnny's Landing. They have hard-surfaced launches with both gravel and paved parking lots, with some grass overflow parking areas. The Department has an agreement with Reef Point to provide 17 + 1 ADA vehicle and trailer parking stalls to the public. Johnny's Landing provides parking for numerous vehicle and trailer units. The fee at both sites is \$7.00 to launch and park.

The Department, in keeping with State Statutes and regulations which seek to assure that all Wisconsin residents have access to publicly owned inland waters, has administrative rules regarding lake access, and has surveyed all the major lakes in the State to determine if adequate public access to each is provided and maintained. Public water access standards are set by Chap. NR 1.91 Wis. Administrative Code. The public access standard for the 522-acre Pike Lake is a minimum of 17 + 1 ADA and a maximum of 33 + 2 ADA vehicle and trailer parking spaces. The Department has a private providers agreement with Reef Point Resort until 2011 to provide 17 + 1 ADA public launch parking spaces. This meets the minimum standard; therefore, 16 more public access spaces could be provided to meet the maximum access standard.

Regional Public Lands and Recreation Supplies

Both the Department and Southeastern Wisconsin Regional Planning Commission (SEWPRC) have inventoried all park and open space sites owned by a public agency, including State, County, or local units of government and school districts. There are a wide variety of public lands available for outdoor recreation and conservation near Pike Lake. The major land areas are highlighted below.

Kettle Moraine State Forest- Northern Unit

The Northern Unit of the Kettle Moraine State Forest is located 45 minutes north of Milwaukee and 30 minutes north of Pike Lake. Amid almost 30,000 acres of hills, lakes, grasslands and woods, visitors can camp, swim, boat, hike, and hunt. The forest is known internationally for its unique glacial features.

Horicon National Wildlife Refuge/Horicon Marsh Wildlife Area

Horicon National Wildlife Refuge, managed by the U.S. Fish and Wildlife Service, is located on the west branch of the Rock River in southeastern Wisconsin and encompasses 21,000 acres. The southern 11,000-acre Horicon Marsh State Wildlife Area is managed by the Wisconsin Department of Nature Resources. Both agencies work together to manage the marsh as one 32,000-acre wetland ecosystem. It is the largest freshwater cattail marsh in the United States. Renowned for its migrant flocks of Canada geese, it is also home to more than 260 kinds of migratory birds.

Jackson Marsh Wildlife Area

Jackson Marsh is approximately 2,500 acres and features a southern wet forest of silver maple and a white cedar-tamarack swamp, a community type more common in northern Wisconsin. The silver maple forest is a mature, seasonally inundated wet forest with typically northern elements such as yellow birch and black ash. The cedar swamp is a white-cedar-tamarack tract. Both cedar and tamarack have good reproduction, which is an indication of low deer browse. The ground layer contains sphagnum moss and boasts an excellent northern flora including twinflower, gay-wings, false mayflower, three-leaved goldthread, tall northern bog orchid, and numerous sedges. A large area of wet-mesic forest with yellow birch and black ash borders the conifer swamp. Bird life is diverse with Sharp-shinned Hawk, Broad-winged Hawk, Northern Water Thrush, White-throated Sparrow, Scarlet Tanager, Winter Wren, and Canada and Black-throated Green Warblers. The state-threatened Kentucky Warbler (*Poorness Formosans*) is also found here.

Theresa Marsh State Wildlife Area

Approximately 5,800 acres, the Theresa Marsh Wildlife Area is located 30 miles north of Milwaukee. The habitats consist primarily of marshland, flowages, streams, and lowland forests. Principal wildlife found in the area includes ducks, geese, deer, pheasants, rabbits, squirrels, Great Egrets, raptors, shorebirds, and Common Terns. Primary recreational opportunities include hunting, wildlife viewing, fishing, trapping, hiking, and snowmobiling.

Allenton State Wildlife Area

Like the nearby Theresa Marsh State Wildlife Area, the 1,100 acre Allenton State Wildlife Area, located in western Washington County, offers a variety of upland and marshlands and stream habitats, including a trout stream. The property is used for a variety of hunting, fishing, and wildlife viewing pursuits; pheasant hunting and trout fishing are especially popular. State Highway 41 provides easy access to the property for residents of the Milwaukee Metro Area.

Ice Age National Scenic Trail Corridor

The Ice Age Trail, which is planned to extend approximately 1,000 miles across the State of Wisconsin along the terminus of the continental glacier, was designated as a National Scenic Trail by the United States Congress in 1980. The Trail is administered by the National Park Service in cooperation with the Wisconsin Department of Natural Resources and the Ice Age Trail Park and Trail Foundation. In southeastern Wisconsin, the Trail is located or is proposed to be located in the western portions of Walworth, Waukesha, and Washington Counties. About 25 miles of the proposed 37-mile length of the Trail within Washington County had

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been completed by 2002. Existing segments of the Trail are open to pedestrian travel only, which includes hiking, snowshoeing, and cross-country skiing.

Washington County Parks

In 2002, Washington County owned 15 park and open space sites, including seven major parks encompassing 1,245 acres; six other park and outdoor recreation sites encompassing 125 acres; and two other special outdoor recreation sites, not considered part of the county park system, encompassing 141 acres. In all, these 15 sites encompass 1,511 acres or about 0.5 percent of the total area of the county.