



Buckhorn State Park, Buckhorn Wildlife Area, and Yellow River Wildlife Area Master Plan and Environmental Assessment

Wisconsin Department of Natural Resources
Bureau of Parks and Recreation
Bureau of Wildlife Management
February, 2007

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Publication # PR-652-07



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Acknowledgement

The Master Planning Team thanks the many private citizens, local officials, and organizations who assisted in the creation of this plan by attending meetings and/or submitting written or verbal comments. It is apparent that the public greatly values Buckhorn State Park and its wildlife areas for their beautiful natural resources and abundant recreational opportunities.



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Executive Summary

The Buckhorn State Park, Buckhorn State Wildlife Area and Yellow River Wildlife Area occupy an area of east-central Juneau County along the peninsula of Castle Rock Lake.

Two state natural areas are also designated on these properties. One features the Yellow River bottomlands, the other features barrens type communities in the park and Buckhorn Wildlife Area.

State Park Management, Development, and Use

This plan advises management to retain existing recreational opportunities within the park and also add new facilities to enhance the visitor's experience within this unique setting. Major additions are:

- An 80-unit family campground with 40 electric sites, two shower/flush toilet buildings, and four yurts
- Two shower buildings
- Picnic area upgrades
- Seven additional miles of hiking, skiing, and nature trails
- 1.3 miles of crushed limestone surfaced bike trail

The estimated total cost of these improvements is approximately 2.3 million dollars. Generally, the vegetation within the park will be managed to maintain and/or restore pine barrens, oak barrens, and wetland habitats. This management will improve the property's ecological integrity and diversity. The area around the campground and campsites, boat launch sites, and other developed areas will be managed to maintain trees in a healthy, safe condition. As needed, trees and shrubs will be planted in high use areas to provide shade and screening between campsites. The portion of the park designated as a state natural area will be managed for various types of barrens native communities, including sand-barrens, and oak barrens.

Wildlife Areas Management, Development, and Use

The Buckhorn Wildlife Area, which is entirely within the Buckhorn Barrens State Natural Area, will be managed to promote an oak-pine barrens native community. The Yellow River Wildlife Area, a portion of which is designated as the Yellow River Oxbows State Natural Area, will be managed to maintain and restore native vegetation communities and habitats. Much of this wildlife area is composed of river oxbows with high quality floodplain forest. Exotic, aggressive, and/or invasive plant species will be located and removed as feasible.

A few trails and additional parking lot access points are approved to be developed for the Buckhorn Wildlife Area, but little change will occur in this wildlife area overall. Wildlife area improvements will be minimal and are estimated to cost \$25,000.

The Environmental Assessment

An Environmental Assessment (EA) has been prepared for this Master Plan. The EA assesses the potential impacts of actions recommended in the Master Plan, ranging from land acquisition and facility development to management and operation of park and wildlife areas. The Environmental Assessment concludes that the implementation of the Master Plan will provide positive recreational, ecological, social, and economic benefits to the region with minimal adverse impacts.

The Public Involvement Process

Public involvement has been crucial to the development of this plan. A variety of tools were used to give information on the planning process and solicit public input. These included news releases, newspaper articles, mailings, radio interviews, and a website. In addition, several public open house meetings and listening sessions were held at various stages throughout the planning process.

Generally, the public has indicated that they enjoy the opportunity to camp, hike, swim, fish, boat, and hunt in Buckhorn State Park and wildlife areas. Many park users also indicated a desire for additional facilities such as showers, campsites with electric outlets, trails, an amphitheater, and display/meeting space for nature study and other uses. Comments revealed strong public support for barrens restoration and active vegetation management across the property as a whole. Many citizens support state purchase of lands around Buckhorn State Park, a move that will keep the area in the public domain and open to a variety of passive recreation uses.

Chapter One – Current Status and Overview of the Park and Wildlife Areas

The current Buckhorn State Park Master Plan was approved in 1977. Master Plans are required to be reviewed every 15 years as defined in Wisconsin Administrative Code NR 44. The Buckhorn Wildlife Area did not have a property Master Plan, as it was created as an outgrowth of the original Buckhorn State Park Master Planning process. These factors—along with the recent acquisition of additional land containing recreational developments—underscore the need for this property-wide Master Plan revision.

The Buckhorn State Wildlife Area was formerly comprised of two separated units called Area A and Area B. To reduce confusion, the wildlife areas have been renamed with more distinctive, representative names. These name changes will address hunter questions and concerns relating to hunting opportunities, seasons, and regulations as they apply to each property. **The former Buckhorn Wildlife Area A is now simply called the Buckhorn Wildlife Area. The former Buckhorn Wildlife Area B is now called the Yellow River Wildlife Area.**

Location and Access

Buckhorn State Park, Buckhorn Wildlife Area, and Yellow River Wildlife Area are contiguous properties located on Castle Rock Lake in east-central Juneau County. They are owned and managed by the Wisconsin Department of Natural Resources (WDNR). Situated about 70 miles northwest of Madison, the region surrounding Buckhorn State Park and the wildlife areas is primarily rural with an abundance of forests, farms, and scattered rural residential development. Castle Rock Lake was formed by damming the Wisconsin River just downstream of its confluence with the Yellow River. The lake's large surface area—nearly 14,000 acres—places Castle Rock as the fifth largest lake in Wisconsin. The lake attracts many tourists to the area, many of whom enjoy boating, swimming, and fishing on its waters. Interstate Highway I 90/94 and State Highways 21, 58, and 80 run nearby, providing easy access from urban centers in southern and eastern Wisconsin, northern Illinois, and the Minneapolis/St. Paul region of Minnesota. See Map A – Regional Location Map.

Recreational Use

Since the property's inception, there has been a great deal of overlap and blending of recreational facilities, activities, management, and operations between Buckhorn State Park and adjacent wildlife areas. The Parks Program has provided the primary recreational development and operations for both the park and wildlife areas. In general, visitors use the state park and wildlife areas as one large, seamless property with hunting opportunities and access fees acting as the primary differentiating factors between properties.

The size and diversity of the park and wildlife areas makes it possible to enjoy a large number of activities. Hikers, campers, boaters, swimmers, picnickers, skiers, photographers, canoeists,

birdwatchers, anglers, and hunters all use the land within Buckhorn State Park and wildlife areas. The property's large acreage ensures that these diverse recreational demands can be met without losing the park's secluded feel. Over 150,000 visitors enjoy the park and wildlife areas each year.

Physical and Biological Resources

The region surrounding Buckhorn State Park and wildlife areas is a broad, sandy, and relatively flat plain that formed as the lake bed of ancient Glacial Lake Wisconsin. The Buckhorn peninsula lies within a transition zone of northern conifer-hardwood forests and southern hardwood forests. Prior to the beginning of logging activities in 1900, the original vegetation of the area was pine and oak savanna. Currently, three primary ecosystems exist within property boundaries: forests, barrens/grasslands, and wetlands.

State Natural Areas

A portion of Buckhorn State Park and all of the Buckhorn Wildlife Area is designated as Buckhorn Barrens State Natural Area. The northern portion of the Yellow River Wildlife Area is designated as Yellow River Oxbows State Natural Area. Natural areas are shown on Map B

State Natural Areas (SNAs) are tracts of land or water harboring natural features that represent the diversity of Wisconsin's native landscape. They contain outstanding examples of native biotic communities and are often the last refuges for rare and endangered plants and animals. The finest of the state's natural sites are designated by the DNR as State Natural Areas.

The goal of the State Natural Areas Program is to locate, establish, and preserve a system of SNAs that as nearly as possible represents the wealth and variety of Wisconsin's native landscape for education, research, and to secure the long-term protection of the state's biological diversity. SNAs are unique in state government land protection because they can serve as stand-alone properties, or they may be designated as "overlay" properties. They may also operate under a dual designation when located within another property such as a state park or state wildlife area.

Boundary Realignments between the Park and Wildlife Areas

Prior to development of this Master Plan, a number of developed, intensively used recreational facilities were located within Buckhorn Wildlife Area and Yellow River Wildlife Area. In addition, the "blurred lines" between the park and wildlife areas were causing confusion about hunting regulations, development/management responsibilities, and user access fees. Minor boundary realignments between the wildlife areas and park address these issues. Several parcels of land totaling 107 acres have been transferred from Buckhorn State Park to the two wildlife areas. In addition, 776 acres (660 acres of which are water) in several parcels have been transferred from the wildlife areas to the park. These boundary realignments are described in more detail under Property Boundary Changes in Appendix B.

Chapter Two – Management, Development, and Use

This Master Plan is for the development and management of Buckhorn State Park, Buckhorn Wildlife Area, and Yellow River Wildlife Area.

Buckhorn State Park provides opportunities for camping, nature study, and a variety of recreational opportunities. Management, development, and use of Buckhorn State Park are covered in Section One of this chapter.

Two wildlife areas, Buckhorn Wildlife Area and the Yellow River Wildlife area, provide opportunities for recreational pursuits such as nature viewing, hiking, and hunting. Management, development, and use of these wildlife areas are covered in Section Two of this chapter. Section Three focuses on management elements common to all three properties.

Section One: Buckhorn State Park

Property Designation and Authority

Buckhorn State Park is designated as a state park under Chapter 27, Wis. Stats. This designation allows for a broad range of recreation, education, and vegetative management activities to occur within park boundaries in accord with the project's vision and goals. A portion of the non-intensive use area of the park is designated as the Buckhorn Barrens State Natural Area.

Acreage Goal:

4,371 acres

Statutory Authority: The authority to acquire and manage land within Buckhorn State Park is described in sections 23.09, 23.11, 23.14, and 27.01, Wis. Stats.

Plan Approval Date: February, 2007

Property Vision

Buckhorn State Park provides abundant opportunities for public enjoyment of Castle Rock Lake with a variety of water-based recreational activities in a natural, rustic setting. Remote shoreline campgrounds located within the park offer a unique recreational opportunity for park visitors. The character of the park is further defined by its generally semi-open landscape comprised of savanna, pine barrens, and oak barrens. A system of non-motorized trails and other compatible recreational activities, as well as a popular environmental education and interpretation program, offer many positive experiences to park visitors. Management of the park is integrated with the adjacent state wildlife and natural areas.

Property Goals

- Provide abundant access to Castle Rock Lake for both motorized and non-motorized watercraft.
- Provide abundant day-use recreational opportunities—particularly beaches and picnicking areas—while maintaining the park’s predominantly undeveloped shoreline.
- Provide rustic, walk-in campsites along the Castle Rock Lake shoreline, offering a sense of seclusion and solitude within the larger park setting.
- Provide opportunities for modern and rustic family and group camping.
- Provide trails for family biking, hiking, and other compatible non-motorized trail uses.
- Provide opportunities for park visitors to learn about the natural resources of the park, natural resource management, and important environmental issues.
- Restore and maintain ecologically functional native communities already found within the park, particularly sand barrens and other barrens communities.
- Maintain and promote healthy vegetation within all designated intensive use areas of the park to minimize risks to public safety and reduce catastrophic losses of trees due to disease or pests.

Land Management Classification

Buckhorn State Park is divided into different management areas according to the primary management or use focus of each area. These management areas are described in Table 2-1 and are shown on Map C. Land management classifications are defined in Chapter NR 44.06 of the Wisconsin Administrative Code.

Table 2-1: Land Management Classifications - Buckhorn State Park

Land Management Class	Description	Acres
Recreation Management Area – Type IV Setting.	Intensive recreational use portions of the park	3,796 (1,236 acres are water)
Special Management Area	Administrative/operations facilities; the Park Entrance Visitor Station (PEVS) and the shop/service area	16

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Section One: Buckhorn State Park

Native Community Management Area	The Buckhorn Sand Barrens and Buckhorn Oak Barrens management areas. (They comprise the Buckhorn Barrens State Natural Area portion of the park.)	559
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Management and development for each management class is discussed below.

Recreation and Services

Within this management unit, all existing recreational facilities and opportunities will be retained and several new facilities will be added to enhance the visitor’s experience. The park will continue to provide places for both active and passive types of outdoor recreational activities as well as places for social and educational events.

The park will also provide additional day-use and new modern family camping facilities. The existing hike-in campsites and group camp will remain, with additional facility developments such as showers and potable water developed in a few centralized locations.

Currently, some of the park’s facilities are in need of renovation or updating. Several facility development and improvement projects have been approved to remedy this problem. These renovations and developments will ensure that Buckhorn State Park is providing the same quality recreational experience typical of the Wisconsin State Park System. All existing facilities are discussed below and are also listed in Table 3-1 in Chapter Three.

New facility developments and improvements and their phasing for construction are itemized in Table 2-5. All park facility developments will be constructed with materials and painted in colors that complement the aesthetic of the park. The approximate locations of existing and future recreational facilities are shown on Map D and Figure 1.

The following objectives and management actions apply only to the Recreation Management Area within Buckhorn State Park, except where specifically noted otherwise in the text.

Camping

Objectives:

- Provide and expand modern, rustic, and special camping opportunities without losing the quiet, natural camping experience currently offered at Buckhorn State Park.
- Improve the quality of the camping experience provided at Buckhorn State Park by increasing campground privacy through increased campsite separation distances and/or vegetative screening.

Each type of camping, including the existing and future facilities, is discussed below and is depicted on Map D and Figure 1.

Rustic Lakeside Camping (existing):

- 41 walk-in campsites (non-electric)

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- 11 RV campsites (non-electric)
- 1 ADA accessible campsite (electric)

These sites are classified as rustic campgrounds in accord with NR 44.07(7)(b).

The lake camping experience, a collection of non-motorized rustic campsites on the shores of Castle Rock Lake, will be upgraded with the addition of several strategically located support facilities such as vault toilets and potable water sources. Campsite placement and vegetative screening will be used and adjusted to ensure campsites meet current design standards.

At some point in the future, the ten waterside campsites on the southwest side of the peninsula may need to be relocated due to shoreline erosion at this location. These campsites would be relocated to the tree-covered shoreline north of Boat Launch A in the west ½ of Section 16, south of County Highway G (CTH G). See Map D and Figure 1 for precise location.

Modern Camping

A new 80-site, Class A campground of modern campsites will be constructed south of the shop with access off of the main park road as shown in Map D and Figure 1. The campground is being built in two phases with 40 sites developed per phase. Each phase will include the development of 20 sites with electrical hookups, for a total of 40 new electric sites. This campground is designed as a Modern Campground under NR 44.07(7)(e).

Family campground support facilities include a dump station, pressurized water system, drinking fountains, two flush toilet/shower buildings (one in each phase), two pit toilet buildings for off season use (one constructed in each phase), a shelter, and ADA accessible playground equipment.

Special Camping

Group camp (existing):

The existing group camp has three camp areas with a capacity for 40 persons in each area. The facilities at this popular campground will be upgraded to include the following new facilities as shown in Figure 1:

- Picnic shelter with an 80 person capacity (approximately 36' x 24' in size). Construct the shelter with colors and materials that complement the park's aesthetic character.
- 2-stall unisex shower building
- ADA accessible playground

Electrical service will be provided to the toilet and shower building, the shelter building, and to four campsites (Sites A-1 to A-4).

Yurts:

Four yurts, each with a capacity of 4-6 persons, will be constructed adjacent to the new family campground.

ADA accessible cabin (existing):

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This popular cabin near the lakeshore is available for persons with disabilities and their families. It is fully wheelchair accessible and has kitchen facilities. It is open from May to October. No upgrades to this cabin will occur.

The group camp, ADA accessible cabin and the yurt camping facilities are classified as Modern Campgrounds under NR 44.07(7)(e).

Park Day-Use

Objectives:

- Provide opportunities for a variety of large and small-scale group gatherings in diverse natural settings.
- Increase opportunities for environmental education within the park.
- Provide high-quality visitor support facilities while preserving the park's natural character.

There are six day-use sites or areas that are classified as modern developments under NR44.07(7)(e)5b. The exception is Boat Launch D, which is being maintained at rustic standards defined by NR 44.07(7)(e)4c. See Map D. Each site, as well as any improvements to that site, is discussed below:

Main Swimming/Picnic Area (existing)

Existing facilities include a beach, cold water rinse facility, picnic area, shelter, ADA accessible fishing pier, potable water sources, vault toilet, changing stalls, horseshoe area, volleyball area, and a playground.

A number of improvements to this site will occur. Poor water quality in the lake sometimes causes undesirable swimming conditions. To mitigate this situation, a shower facility will be constructed near the south picnic area to serve swimmers and other park users. The beach curb will be rebuilt to separate the sand and grass areas for maintenance and aesthetic reasons as well as user accommodation. The playground will also be enlarged and made ADA accessible.

South Picnic Area (existing)

Existing facilities at this site include a picnic area, shelter, potable water, amphitheater, and vault toilet.

Boat Launch A (existing)

Existing facilities include a launch ramp, ADA accessible boarding dock, adjacent parking lot with vault toilet, water, and picnic facilities in the nearby main picnic area. An ADA accessible canoe/kayak boarding dock will also be constructed in this area. Additionally, a boat mooring

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area will be added adjacent the launch ramp to ease congestion at the launch. This short-term use mooring area will provide boaters with a place to tie-up while they prepare their vehicle and trailer for boat loading.

Boat Launch B (existing)

Existing facilities include a boat launch, canoe and kayak rental concession area, and a vault toilet. This launch area was previously located within the Buckhorn Wildlife Area but has been transferred to Buckhorn State Park.

Boat Launch C (existing)

Existing facilities include a non-designated swim area, boat launch with accessible boarding dock, picnic area, vault toilet, and bulletin board. The boat launch was previously located within the Yellow River Wildlife Area but has been transferred to Buckhorn State Park. The following improvements will be made to this site:

- Establish a designated beach
- Develop potable water sources
- Construct a new 50-vehicle/trailer parking lot (across CTH G). This parking lot will eliminate vehicle/trailer parking along CTH G that presents congestion and safety concerns. Local Officials support this facility development.

Boat Launch Site D

This launch site will be maintained at a less developed, rustic standard. Existing facilities on the site are a gravel surfaced access road and small parking lot, a concrete plank launch ramp, and a small grassy area with some picnic tables. There is no toilet or potable water available here. Under this Master Plan, this site has been transferred from the Yellow River Wildlife Area to Buckhorn State Park.

29th Street Boat Launch and Day-Use Area

This site is a potential future addition to the park. If acquired, it would be upgraded with the addition of a pit toilet, well, and drinking fountain. However, it is recommended that this recreation site, required by the Federal Energy Regulatory Commission (FERC), be excluded whenever possible from land purchases in the area.

Canoe and Kayak Concession Area

To meet visitor needs, the canoe concession area will be expanded as possible.

Trails

The existing trail system traverses 5.6 miles of wetlands, oak woods, jack pine thickets, shoreline, and barrens/prairie within the park and extends into the Buckhorn Wildlife Area. The combined park-wildlife area trail system is described below.

Table 2-2: Designated Trails of Buckhorn State Park

Buckhorn State Park, Buckhorn Wildlife Area, and Yellow River Wildlife Area
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Chapter Two – Management, Development, and Use
Section One: Buckhorn State Park

Trail	Designated Use	Total Miles	Development Level Classification
Nature Trail Loop	Interpretive and Campsite Access	1.4	Moderately Developed
Savanna Nature Trail	Hiking, Interpretive	1.5	Moderately Developed
Sand Blow Vista *	Interpretive	1.5	Moderately Developed
Sand Blow Pond	Hiking, Interpretive	2.0	Moderately Developed
Bicycling	Bicycling	1.6	Moderately Developed
Bicycling/ Snowmobile Trail	Bicycling, snowmobiling	3.0	Fully Developed

* The Sand Blow Vista Trail is a short path leading to an overlook facility.

Trail Objectives:

Provide a variety of trails for various recreational and educational experiences including hiking, interpretation, nature study on land and water, biking, and limited snowmobiling. See Map D for trail locations and Table 2-2 for a complete listing of existing and future trails and their lengths.

Trail Management and Development Prescriptions:

- Maintain approximately 9 miles of new and existing hiking/skiing trails. Groom the ski trails as personnel, equipment, and budget allow.
- Develop and maintain approximately 3 miles of bicycling/snowmobiling trails. This expanded trail system will connect various sections of the park and will eventually be extended into the new expanded areas of the park if these lands are acquired. The new trail will closely parallel the road system where needed and utilize the road where practical. Off-road portions of the trail will be surfaced with gravel or other appropriate material as needed.
- Develop a new 1.5-2 mile nature trail, the Sand Blow Pond Trail. This trail will be constructed if and when the Wisconsin Department of Natural Resources acquires the land along CTH G that is presently under a scenic easement agreement granted to the Department from Wisconsin River Power Company (WRPCo.). The trail will be located on the perimeter of the sand blow and dug pond.
- Maintain and upgrade approximately 1.5 miles of the Savanna Nature Trail and add an appropriate number of interpretive signs. The trail will include ADA accessible elements such as hard surfaced trail and an observation platform. Specifically, the first story of the two-story structure will be ADA accessible.

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- Harden or relocate any trail sections that require continual maintenance.

Policies on the use of bicycles and motorized recreational vehicles:

- Motorized: No motorized off-road vehicles are allowed in the park except for snowmobiles operated on designated trail.
- Bicycles: On department lands, as defined by NR 45.05 (3) (e), “Bicycles may be used only on public highways and designated trails.”

Park Entrance Visitor Station (PEVS) and Shop Building

The objective of the PEVS facility is to serve park operations/administration needs, to provide visitor service facilities and to support nature interpretation/education programs. The Park Entrance Visitor Station (PEVS) building includes a visitor service area, display room, accessible restroom, and the park office.

The shop building and adjacent area serves to provide facilities for repair, maintenance and storage of park equipment and park infrastructure. It is a non-public use area. The PEVS, shop facilities, and adjacent grounds are classified as a Special Management Area.

Management/Development Prescriptions:

- Maintain the Park Entrance and Visitor Station (PEVS) building to provide visitor services and office space for park staff.
- Maintain the shop building and adjacent area for safe and efficient maintenance of equipment and park facilities.
- Install native landscape plantings around these buildings to provide screening, improved aesthetics, and visitor education through interpretation.
- Maintain small, appropriate turf areas around the buildings. Manage the non-turf areas according to the Recreation Management Area objectives and prescriptions.

Road System Improvements

A number of road improvements are prescribed under this Master Plan. The first includes upgrading the gravel surface on 33rd Street. This will be done soon due to the road’s poor condition. Depending on the availability of private lands within the existing park boundary, the potential upgrade of 20th Avenue and 33rd Street will allow for a large portion of the park to become a single entrance property. For instance, road modifications may include new park road alignments to connect the entrance road with 33rd Street, thereby eliminating the need to upgrade 20th Ave. Options should be kept open for any practical park road redevelopment in the future. Approximately 3 miles of road may need some form of reconstruction and surfacing. Park roads will be renamed to reflect the state park and local setting.

Utility Lines

Overhead utility lines will be buried within the park to meet design standards and increase park aesthetics. There are 1.6 miles of overhead line within the park property. This total does not include lines within road right-of-way on the periphery of the property, which will not be buried.

Wildlife Management

Hunting and Deer Management

Buckhorn State Park offers hunting opportunities for deer and spring turkey. There is no waterfowl or small game hunting allowed in the park.

Deer

The park lies within Deer Management Unit 54A. Archery deer hunting is one of the most popular recreation activities at the Park. Most of the property is open during the early and late bow-hunting seasons. An annual Youth Deer Gun Hunt Program in November is also held in the Buckhorn State Park and the Buckhorn Wildlife Area (formerly known as Wildlife Area A).

Deer numbers within Buckhorn State Park are currently very high. Deer are severely browsing vegetation, significantly limiting tree and shrub regeneration. Continued excessive deer numbers impair the ability of park managers to achieve many of the vegetation management objectives outlined in this plan. Deer hunting is a valuable tool to help manage deer numbers.

Objectives: The following are objectives for deer management:

- Manage deer populations in accordance with Deer Management Unit 54A, which has an over-winter deer density goal of 25 deer per square mile.
- Provide quality hunting and hunter education opportunities in the park that are compatible with other recreational uses and that maintain visitor safety.

Management Prescriptions: The following management prescriptions will be used:

- Allow and promote hunting in the non-intensive use areas of the park. The property manager shall determine which portions of the park should be categorized as “non-intensive use areas” to be open to hunting.
- Provide an annual youth hunt to provide training and experience to new hunters.

Turkey

Buckhorn State Park is open to spring turkey hunting in Wild Turkey Management Zone (15C) by permit only. Hunter numbers in this zone are limited by permit. The spring turkey hunting season in 15C is limited to the first three time periods of the statewide spring turkey season.

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Overabundant Wildlife Species

Overabundant wildlife species such as raccoon can cause nuisance problems and, in some cases, health hazards for park visitors. Management of these species within Buckhorn State Park and wildlife areas will include the controlled removal of these animals during high population periods, or when excessive human exposure and/or 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 park staff.

Vegetation Management

Vegetative management within the park falls into three primary management areas: Buckhorn Recreation Management Area, Buckhorn Sand Barrens Management Area, and the Buckhorn Oak Barrens Management Area. See Map C for precise locations of these units. Management for each area is described below.

Buckhorn Recreation Management Area – 3,796 acres (2,560 acres land/1,236 acres water)

Vegetative management on the Recreation Management portion of the park emphasizes native vegetation and the maintenance of an attractive and safe recreational environment. It is described below.

Management Objectives:

- Manage with an emphasis on native plants.
- In campgrounds, provide for a healthy mixed forest (in both age and species composition) of longer-lived tree species. A shrub layer should also be developed to provide screening between campsites whenever possible.
- Throughout the remainder of the recreation management unit, excluding mowed grass areas, provide and maintain a woodland/barrens/grassland landscape, including the establishment of an additional 120 -160 acres of barrens/grassland.
- To the degree practicable (considering the primary ecological management objectives of the various areas of the park), manage vegetation to avoid producing or maintaining habitats that promote high deer populations.

Management Prescriptions:

- Manage for a mixed forest (both in terms of age and species composition) of native longer-lived species whenever possible. Due to the extent of oak wilt and pine budworm infestation, trees will be retained as long as they do not negatively impact park users, structures, or other infrastructure.
- Manage hazardous trees as appropriate in campgrounds, along roadways, and in day-use areas. Develop a management plan to deal with the high level of dead and diseased oak

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and other trees that need to be removed from campsites, day-use areas, trails and other sites frequented by park visitors and staff.

- Plant trees and shrubs of indigenous species in various use areas and campsites for shade, screening, and aesthetic reasons. Replace trees and shrubs lost to deer browse and other causes in intensive use areas.
- Use sustainable forest management techniques, including commercial timber harvests, to maintain the pine and oak barrens grassland cover types. In small acreage increments, and where appropriate, continue to convert sites containing diseased and dying oak and jack pine into barrens.
- The 1,142-acre area of park boundary expansion is primarily pine plantation and cutover/open land. Of the red pine plantation, 390 acres is merchantable and 125 acres is non-merchantable. If this area is acquired, over time harvest the plantations and convert the existing cutover and open areas to native vegetation. Some of these sites may also be converted to barrens.
- Consider the feasibility of designating sites for wood storage and processing. This would be done based on available funding, staffing, and volunteer labor.
- Use firewood permits to remove trees close to roads and accessible areas. Follow Forestry and USDA Oak Wilt Management Practices for salvage operations.
- As appropriate, make wood remaining from management activities or timber sales available for firewood use by campers.
- Dispose of slash from timber cutting through firewood permits. In barrens restoration areas slash may be piled and burned. In areas where forest cover is maintained, it may be cut and scattered to minimize visibility of management activities.
- Incorporate the various vegetative management activities into the park's education/interpretation program.

Authorized Management Activities:

- Management activities may include tree cutting or harvesting, shrub cutting or shearing, mowing, fire, chemical treatment, mechanical site preparation, and planting, as deemed appropriate by the property manager.
- Cutting, girdling, application of herbicide, or other methods may also be used to control invasive/aggressive plant species.

Buckhorn Sand Barrens Management Area – 261 acres

This non-intensive use part of the park is well suited to the restoration and management of the sand barrens natural community. Areas of open, shifting patches of sand and dune-like formations are defining characteristics of this barrens community. Patches of prairie will also be a key component of future vegetation. Many oak grubs, groves of Hill's oak and jack pine, and a few scattered, larger jack pine and individual oak trees form the basic structure of the sand barrens. This community is very rare in Wisconsin as a whole, good examples are found here on the Buckhorn peninsula, along the lower Wisconsin River, and along the lower Chippewa River. Many endangered, threatened, and concern species do well in these sand barrens, including lark sparrows, vesper sparrows, prairie racerunners, bull snakes, and numerous insects.

Management Objectives:

- Restore and maintain approximately 260 acres of ecologically functioning sand barrens native community.
- Provide opportunities for research, education, and ecological interpretation.

Currently, the Sand Barrens Management Area is composed of nearly uniform mid-aged jack pine and Hill's oak. These tree species need to be drastically reduced in abundance to favor more rare species common to the sand barren community. Restoration of these areas could occur in stages, or as one restoration. The speed in which management activities are completed will depend on the funds available for timber harvesting and subsequent slash reduction. Regardless the length of the management schedule, all development activities will be the same. Restoration is a long, slow process and will take many years to complete.

Management Prescriptions:

- Dramatically reduce tree cover to limit the shading influence of the canopy.
- Harvest most trees via timber sale.
- Leave non-harvested trees (mostly oak with limited jack pine) in small patches.
- Scattered older jack pine and Hill's oak with open grown structure will be left, but most of the area will be composed of oak grubs and small jack pines.
- Slash from tree harvesting activities will be piled and burned within 100 feet of the boundary, or pulverized using wood chippers.
- Inside to the firebreak, slash will be removed from the base of leaf trees and groves so as not to harm them with fire.
- Use herbicide treatment to thin multiple oak stump shoots (may be reduced by up to one half) to create the desired barrens structure.

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- After the slash is managed, conduct a first burn to further reduce slash and prepare the site for sand barrens rejuvenation. Subsequent burns will be implemented to rejuvenate small patches. The second full barrens burn may not occur for 10-15 years.
- Periodically monitor for and eradicate exotic species. Spotted knapweed, leafy spurge, and crown vetch are the primary targets for eradication.
- Construct and designate limited pedestrian trails to support opportunities for public education and ecological interpretation. Construct and maintain these trails in ways that minimize negative environmental impacts on the area.

Authorized Management Activities:

Authorized management activities for forests and barrens include brushing, thinning, and site preparation with mechanical and chemical means. Selective cuts, small patch clear cutting, and prescribed fire will also be applied where appropriate.

Buckhorn Oak Barrens Management Area – 298 acres

This site in Buckhorn State Park is well suited to management for an oak barrens native community, a rare community type that was well represented in this area prior to European settlement. Many native “barrens” plant species exist in the area. This management area is shown on the Land Management Areas Map (Map C). Barrens can range from nearly treeless “grasslands” containing only oak grubs, to areas with scattered large trees, to scattered grassy openings located within primarily forested areas. Barrens communities occur on sandy outwash plains, sandy lake plains, and on the broad sandy terraces that flank some of the major rivers of southern Wisconsin.

Black oak is the dominant tree in this fire-adapted savanna community type but other oaks may also be present. Common understory species include lead plant, black-eyed Susan, round-headed bush clover, goats rue, June grass, little bluestem, flowering spurge, frostweed, false Solomon's seal, spiderwort, and lupine. Distribution of this community is mostly in southwestern, central and west-central Wisconsin.

The oak barrens community is similar in species composition to the oak-pine barrens in the adjacent Buckhorn Wildlife Area, except that more open “park-like” conditions will be maintained in the state park’s oak barrens management area.

Management Objectives:

- Restore and maintain approximately 298 acres of ecologically functioning oak barrens native community with an open park-like structure.
- Provide opportunities for research, ecological observation, interpretation, and wildlife viewing.

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Management Prescriptions:

This area will have many fewer oak grubs and jack pine than the more closed structure of the oak-pine barrens community in the adjacent Buckhorn Wildlife Area.

- Cut diseased trees and follow up with fire.

- Periodically monitor for and eradicate exotic species. Spotted knapweed, leafy spurge, and crown vetch are the primary targets for eradication.

- To support public education and ecological interpretation use of the area, provide pedestrian trails and the other necessary facilities detailed in the park recreation plan management section of this plan. Locate, construct, and maintain these trails in ways that minimize negative impacts to sensitive resources in the area.

Authorized Management Activities:

- Management activities for the grassland, barrens and sand barrens management may include fire, tree and shrub cutting or shearing, mowing, chemical treatment, mechanical site preparation, and planting as deemed appropriate by the property manager.

- Cutting, girdling, application of herbicide, or other methods may also be used to control invasive/aggressive plant species.

Section Two: Buckhorn and Yellow River Wildlife Areas

Property Designation and Authority

Buckhorn Wildlife Area and Yellow River Wildlife Area are designated as State Wildlife Areas. Wildlife Areas (WLAs) are managed under the authority of Sec. 23.09 (2) (d) 3 Wis. Stats. to provide an area where people can hunt, trap, and fish. Walking, nature study, berry picking, and other low-impact recreational activities are also permitted under this designation. Other recreational uses may be allowed under the property's Master Plan when they do not detract from the primary purpose of the property.

Acreage Goal:

Buckhorn Wildlife Area

1,675 acres

Yellow River Wildlife Area

2,432 acres

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

Plan Approval Date: February, 2007

Property Vision

Buckhorn Wildlife Area and Yellow River Wildlife Area provide quality public hunting, wildlife viewing, and other compatible recreational opportunities for a variety of upland, wetland, and aquatic habitat types. The two wildlife areas protect, restore, and maintain rare or unique habitats and ecosystems, particularly aquatic habitats, bottomland hardwoods, and barrens. The management of these wildlife areas is integrated with the adjacent state park and state natural areas to provide high ecological and public use benefits.

Property Goals

- Provide opportunities for hunting waterfowl, turkey, deer, and small game.
- Maintain forested lands in a healthy, vigorous condition as appropriate for site conditions and wildlife habitat goals.
- Restore, enhance, and protect ecologically functioning savanna and barrens habitat sites and protect high value habitats along the Yellow River.

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- Provide for non-motorized trail uses in conjunction with the Buckhorn State Park trail system.
- Provide public hunting and fishing access to Castle Rock Lake and the Yellow River, augmenting the access provided at Buckhorn State Park.

Land Management Classification

The Buckhorn Wildlife Area and the Yellow River Wildlife Area are classified as three Native Community Management Areas: the Yellow River Oxbows, Yellow River Bay, and Buckhorn Oak-Pine Barrens Management Areas.

A primary management focus for both the Buckhorn Wildlife Area and the Yellow River Wildlife Area is to provide a natural mix of habitat types for a variety of game and non-game species. The principal game species in the area are turkey, deer, waterfowl, and squirrels. Management will also be directed at protecting the quality of the two natural areas found within the wildlife areas—Buckhorn Barrens State Natural Area (overlying Buckhorn Wildlife Area) and Yellow River Oxbows State Natural Area (located within the Yellow River Wildlife Area). See Map B for the precise location of natural areas. Management of the two natural areas will be accomplished through a variety of vegetative management techniques ranging from timber harvests to barrens restoration and passive management.

Wildlife Management

Hunting and Deer Management:

The primary recreational uses for the Yellow River Wildlife Area and the Buckhorn Wildlife Area are hunting and nature viewing. Major wildlife species hunted are the whitetail deer and wild turkey. Secondary hunting species include cottontail rabbits, gray and fox squirrels, ruffed grouse, woodcock, and waterfowl (primarily mallards and wood ducks in the wetlands and along rivers).

Deer

Both the Buckhorn Wildlife Area and the Yellow River Wildlife Area are located within Deer Management Unit 54A, which has an over-winter goal of 25 deer per square mile of deer range. For the purposes of these wildlife areas, all land within them is considered to be deer range.

Turkey

State populations of wild turkey have risen steadily since the bird's reintroduction from Missouri beginning in the mid-1970's. The number of hunting permits currently being issued can easily be accommodated by the large existing population of these birds. Should turkey populations continue to rise, permit levels may be expanded as needed.

Recreation and Public Access

Objectives:

Provide opportunities for hunting, wildlife viewing, and trapping. Secondly, provide opportunities for hiking, skiing, nature study, and berry picking.

Management Prescriptions Common to Both Wildlife Areas:

- Public motor vehicle access is limited to designated parking lots and their access roads. Department management roads may be gated or otherwise closed to public access at the discretion of the property manager.
- ATV and horse use is prohibited on the property. Snowmobiles may only be used on designated trails.
- Bicycles may be used only on designated trails.

Management Prescriptions – Buckhorn Wildlife Area:

- Develop and maintain up to 4 loop-walking trails of 1-2 miles each as part of the integrated park trail system.
- Place informational signs at the trailhead parking lots and way-finding markers along the route on designated trails. Trails will be open for cross-country skiing or snowshoeing but will not be groomed. A network of non-designated management roads and volunteer trails will provide access to other areas of the property.

Table 2-3: Designated Trails of the Buckhorn Wildlife Area

Trail	Designated Use	Total Mileage	NR 44 Development Level
Canoe Interpretive Trail	Water-based interpretive trail	1.5	n/a
Partridge Trail	Hiking, skiing, campsite access	1.2	Lightly Developed
Turkey Hollow	Hiking, skiing, campsite access	1.5	Lightly Developed

Management Prescriptions – Yellow River Wildlife Area:

- Develop and maintain up to two lightly developed 10-vehicle parking lots with access roads on the northern side of the property. These access roads and vehicle parking lots may either be soil or gravel surfaced, depending upon the level of use and site conditions.
- Provide additional boat launch facilities in northern portions of the Yellow River Wildlife Area to provide recreational access to the river and lake.

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- Designated trails will have informational signs at the trailhead parking lots and way-finding markers along the route. Although they will not be maintained specifically for cross-country skiing or snowshoeing, the trails may be used for these purposes. In other areas of the property, a network of non-designated management roads, logging skid trails, and volunteer trails will provide access routes. This is especially true in the Yellow River Wildlife Area where trails will be rustic with little or no maintenance.
- Maintain the lightly developed water access facilities and 6-vehicle, graveled parking lot presently located at Boat Launch E.

Table 2-4: Summary of New or Upgraded Yellow River Wildlife Area Facilities

Facility	Development	Development Phase
Parking lots	Provide up to two 10-vehicle parking lots for hunters and nature watchers included in the expanded boundary area.	1-2
Boat access	Continue to provide an unimproved boat access site at Boat Launch E and add new sites at appropriate location(s) within expanded boundary area of the Yellow River WLA.	1-3

Vegetation Management – Buckhorn Wildlife Area

Buckhorn Oak-Pine Barrens – Native Community Management Area – 1,675 acres (934 acres land/742 acres water)

The Buckhorn Oak-Pine Barrens Management Area covers all of the Buckhorn Wildlife Area (see Map C). Like portions of Buckhorn State Park, this property is highly suited to oak-pine barrens restoration and management. It has dry, sandy soils and contains many native oak and pine species, as well as numerous grassland ground-layer species.

Barrens community types are rare, natural communities that were well represented in this area prior to European settlement. Pine and oak barrens share many similarities and are often integrated. Structurally, barrens can range from nearly treeless “grasslands” containing only oak grubs, to areas with scattered large trees, to scattered grassy openings located within primarily forested areas. Barrens communities occur on sandy outwash plains, sandy lake plains, and on the broad, sandy terraces that flank some of the major rivers in southern Wisconsin. Black oak is the dominant tree in this fire-adapted savanna community, but other oaks may also be present. Scattered jack pine is another defining forest component of this mixed community type. Less commonly, red pines may also be present. Common understory species in this in this central and west-central Wisconsin region include lead plant, black-eyed Susan, round-headed bush clover, goats rue, June grass, little bluestem, flowering spurge, frostweed, false Solomon's seal, spiderwort, and lupine.

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The Buckhorn Wildlife Area is also a designated state natural area, Buckhorn Barrens State Natural Area (the State Natural Area Boundary is shown on Map B). This natural area also includes barrens communities within Buckhorn State Park—the Buckhorn Oak Barrens Management Area and the Buckhorn Sand Barrens Management Area. These park management areas and the Buckhorn Wildlife Area’s Buckhorn Oak-Pine Barrens Management Area are shown on the Land Management Areas map (Map C).

The oak-pine barrens within Buckhorn Wildlife Area have much in common with the adjacent oak barrens in Buckhorn State Park. However, due to the lower development and public use, and the large fire-break provided by the lake, the wildlife area provides more opportunity than the park to use prescribed fire as a primary management tool, creating somewhat different structural conditions. Specifically, the management area within Buckhorn Wildlife Area is less open with a stronger jack pine component.

Vegetative Management Objectives:

- Restore and maintain approximately 930 acres of ecologically functioning oak-pine barrens native community with a moderately open structure and scattered older jack pine.
- Provide opportunities for research, education, and ecological interpretation.

Vegetative Management Prescriptions:

The understory in this area will have many more oak grubs and jack pine than the open park-like structure of the oak barrens community in Buckhorn State Park.

- Use prescribed burns as a primary management tool. Apply at appropriate intervals based on site conditions and needs.
- Use a small amount of thinning and slash reduction at fire breaks to reduce fuel load.
- Expand the existing prairie by cutting trees and brush in patches ranging from a few acres to hundreds of acres in size. Site selection for new prairie will be partially based on the location of diseased, dying, and dead trees.
- Remove downed material through timber sale, firewood salvage, piling, burning, or other appropriate and feasible means.
- Retain large snag trees, (greater than 17”dbh, at a density of 13 per acre) for cavity dwelling wildlife.
- Periodically monitor for and eradicate exotic species. Spotted knapweed, leafy spurge, and crown vetch are the primary targets for eradication.
- To support public education and ecological interpretation use of the area, provide pedestrian trails and the other necessary facilities detailed in the park recreation plan management section of this plan (Chapter Two, Section One). Locate, construct, and

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maintain these trails in ways that minimize negative impacts to sensitive resources in the area.

Authorized Management Activities:

- Management activities for the grassland, barrens, and sand barrens management may include fire, tree and shrub cutting or shearing, mowing, chemical treatment, mechanical site preparation, and planting, as deemed appropriate by the property manager.
- Cutting, girdling, application of herbicide, or other methods may also be used to control invasive/aggressive plant species.

Vegetation Management – Yellow River Wildlife Area

Yellow River Oxbows – Native Community Management Area – 939 acres (819 acres land/120 acres water)

This management area is also a designated state natural area. Near level topography and sandy soils characterize the Yellow River. The river meanders and turns frequently, creating oxbow lakes, cut-off and running sloughs, and small ponds within the floodplain. The management area, a designated state natural area, contains a high quality floodplain forest of silver maple, green ash, swamp white oak, river birch, and other associated lowland tree and shrub species. The lowlands are punctuated by low sandy ridges. Being slightly higher than the surrounding floodplain, these lowlands support white oak, bur oak, shagbark hickory, black cherry, and white pine. The presence of scattered, large, native conifers within a lowland hardwood community is unique and rare in Wisconsin and many rare, uncommon, and declining animal species have been documented in the Yellow River bottoms area. These species are often sensitive to the size, isolation, and quality of their habitat.

A small acreage of uplands containing a pine plantation and jack pine forest also lie within the management area boundary and buffer the floodplain forest.

Vegetative Management Objectives:

- Maintain approximately 770 acres of ecologically functioning floodplain forest native community.
- Manage a 10-acre pine plantation west of the river by thinning towards a forest community dominated by scattered, larger, biologically mature trees.
- Maintain jack pine where it occurs on the upland sites east of the river.
- Provide opportunities for research, education, and ecological interpretation.

Periodic floods, particularly in spring, are the key natural disturbance events to which species of the floodplain community are adapted. Flooding deposits silt and creates microtopography, both

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of which create suitable sites for tree germination and invasion of exotic species. Floodwaters often carry seeds and propagules of plant species to new locations. Controlling invasive exotic species are the primary management activity needed to protect and maintain this community.

Vegetative Management Prescriptions:

- Periodically monitor for and eradicate exotic species. Glossy buckthorn, garlic mustard, and purple loosestrife are the primary targets for eradication.
- Thin the pine plantation to promote larger diameter, vigorous pines.
- Harvest the existing jack pine to regenerate jack pines. Allow these trees to grow to biological maturity before the next regeneration harvest.

Authorized Management Activities:

Authorized management activities include thinning, timber harvesting (including clear-cutting), site preparation by mechanical and chemical means, and brushing and herbicide application to control invasive species.

Yellow River Bay - Native Community Management Area – 1,493 acres (910 acres land/583 water)

This management area is located within the Yellow River Wildlife Area south of the Yellow River Oxbows Management Area (see Map C for the precise location). The upland portion of the Yellow River Bay Management Area lends itself to oak/pine/barrens management. Oak and pine species in this area are in decline, while barrens groundlayer species are very common. This Management Area provides hunting opportunities and complements the park by providing an oak/pine/barrens habitat for observation, interpretation, and wildlife viewing. The floodplain and river component lend themselves to forest and wetland plant species and corresponding animal and fish habitat.

Vegetative Management Objectives:

- Maintain approximately 100 acres of ecologically functioning floodplain forest native community.
- Convert approximately 80 acres of pine plantation east of the river to a natural appearing, pine forest dominated by scattered, larger, biologically mature trees.
- Maintain approximately 11 acres of jack pine and 156 acres of jack pine/oak.
- In the area located south of the Yellow River Oxbows State Natural Area and on the west side of the lake, north of 32nd Street (an area of heavy oak wilt and mature jack pine), maintain oak and pine cover and convert a portion of the area to barrens according to local site conditions. Improved wildlife habitat is a primary purpose of this segment.

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- Provide opportunities for research, education, and ecological interpretation throughout the Yellow River Bay Management Area.

Vegetative Management Prescriptions:

- Periodically monitor for and eradicate exotic species. Glossy buckthorn, garlic mustard, and purple loosestrife are the primary targets for eradication.
- Thin the pine plantation to promote a pine forest dominated by larger diameter, vigorous pines.
- Harvest mature and over-mature jack pine to regenerate a younger generation of jack pines. Allow these trees to grow to biological maturity before the next regeneration harvest.
- Maintain a diversity of lowland vegetation including floodplain forest and other habitats as appropriate through passive management.
- Harvest approximately 150 acres of jack pine/oak located south of the Yellow River Oxbows State Natural Area on the west side of Castle Rock Lake, north of 32nd Street. This area has heavy oak wilt infestation and a mature jack pine population. The area is converting to jack pine as oak trees die from wilt.

Authorized Management Activities:

Authorized management activities include passive management, thinning, site preparation with mechanical and chemical means, selective cuts, clear cutting, and brushing and herbicide application to control invasive species.

Section Three: Common Management Elements – State Park and Wildlife Areas

Although they exist as separate management units, Buckhorn State Park, Buckhorn Wildlife Area, and Yellow River Wildlife Area share some common management objectives. The following management elements apply to all properties and management zones of Buckhorn State Park and wildlife areas, excluding lands in private ownership and easement areas, unless otherwise stated below. This part of the plan contains sections related to:

- Fisheries management
- Property-wide management policies
- Operations and Administration
- Property boundary changes
- Real estate management

Fisheries Management

Objectives:

Manage those portions of Castle Rock Lake within and adjacent to the park and wildlife areas and its shoreline for fish habitat, and to provide shore fishing and boat access to Castle Rock Lake. Provide fishing opportunities in one of the dug ponds in the park.

Management Prescriptions:

- Fallen trees in Castle Rock Lake that are the result of ice push or other natural occurrences should be left to provide fish habitat whenever possible.
- Provide boat launch facilities for fishing access to Castle Rock Lake.
- Seasonally stock the small pond across from County Highway G and near the park entrance for fishing. Construct a small (5-car) parking lot for fish pond users.

General Property Management Policies and Activities

Vegetative Management:

- Due to the extensive oak wilt within the park and wildlife areas, inventory the status of the problem and establish a program to track the disease.
- Use commercial timber harvests as the primary management tool for all forest stands. Layout harvests primarily in scattered patches to reduce visual and habitat impact.
- Timber harvest sites will be chosen to meet multiple objectives. The three primary criteria include retention of the stand for habitat values, control and removal of oak wilt, and barrens restoration/conversion. Habitat value and program objectives will also be

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Section Three: Common Management Elements – State Park and Wildlife Areas

used to identify and prioritize sites. For example, some large, standing dead trees will be retained as habitat for birds like red-headed woodpecker and flicker.

- Conduct a public educational program to explain vegetation management.
- Conduct periodic inspections to control invasive exotic plant species such as spotted knapweed, purple loosestrife, garlic mustard, honeysuckle, buckthorn, and other alien and invasive plants that may become problematic in the future.
- Cutting, girdling, application of herbicide, or other methods may also be used in park and wildlife area lands to control invasive/aggressive plant species.
- All management activities will be designed and carried out in ways that minimize soil erosion and emphasize protection of the water quality of Castle Rock Lake.

Refuse Management:

Day-users in the park and wildlife areas are required to carry out all refuse and recyclables they bring in. No trash receptacles are provided.

Operations and Administration

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 and federal funding sources.

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 Buckhorn State Park and wildlife areas is addressed in the emergency action plan for the properties. 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 fire, disease, insect infestation, or timber blow-down will be managed on a case-by-case basis. 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 with immediate attack.

Inspections of Designated Use Areas:

All designated use areas must be inspected semiannually (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

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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.

Tree Removal Schedule:

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. Management activities will therefore not contribute to the transmission of oak wilt fungus.

Protection of Historic and Archaeological Features:

Approved future facility development sites (parking lots, buildings, etc.) 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 park facilities will be constructed with colors and materials that complement the aesthetic of the park. 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 public contact official for this property. Mailings, news releases, and other means may be used to notify the public of significant issues or events that occur on the property. The park and wildlife area manager will maintain a mailing list of persons or groups interested in the park or wildlife area issues.

Yearly Management Assessment:

The property manager will coordinate, schedule, and lead a yearly 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 that meets current standards and has 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, and boundary signs.

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Phasing for Park Facility Development, Improvements and Construction:

The property improvement projects described for each of the management zones in the preceding sections will generally be implemented according to the three phases indicated below. The rate of 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 three phases of park improvements will be approximately \$2.86 million (in 2007 dollars). This cost will be distributed over a period of 10-15 years or more.

Table 2-5: Facility Developments and Improvements

Existing Park Facilities	Facility Modifications	Cost Estimate	Phase
Group campground	Electricity to outdoor group camp	\$29,000	1
	Lights in pit toilet building at group camp	\$2,500	1
	Pressurize well at group camp	\$13,500	1
Existing campsites	Install electricity at the four drive-in sites including the ADA site in the group campground	\$11,500	1
Boat Launch C	Beach improvement – install swimming area buoys	\$2,000	1
Main beach/day-use area	Rebuild beach curb with a sand/grass barrier	\$5,000	1
Existing hiking, nature, and interpretive trails	Upgrade trail surface on 4.5 miles and develop more signage	\$10,000	1-2
PEVS	Add a small public meeting room	90,000	2-3
Utility lines in park and wildlife area	Bury 1.6 miles of existing overhead utility lines in the park and wildlife area	\$62,500	2-3
Upgrade park roads	Upgrade the gravel surface on 33rd Street	\$39,600	1-3
	Upgrade 20th Avenue, 33rd Street, and 22nd Avenue to allow for a single entrance property. Road modifications may include a new road alignment to connect the entrance road with 33rd Street, thereby eliminating the need to upgrade 22nd Ave. Road work is to be done in phases as conditions warrant.	\$168,000	
Park Facilities			
	New Developments	Cost Estimate	Phase
Class A Family Campground	Class A 80-site family campground, built in two phases. The campground will be located south of the shop with access off of the main park road.	\$250,000	2-3
	Electric hookup - each development phase will include 20 electrified sites, for a total of 40 electrified sites at the end of development.	\$105,200	
	Dump station – one located in or near the family campground	\$90,000	
	Family Campground pressurized water system	\$25,000	
	Two flush toilet/shower buildings in the family campground, one to be developed in each phase	\$852,000	
	Two 4-unit pit toilet buildings for off-season use, one built in each phase	\$84,000	
	Shelter in the family campground (construct during phase one)	\$30,000	
Playground	\$45,000		
Yurts	Yurts – four units adjacent to the new family campground	\$52,000	2-3
Shower buildings (in addition to the family campground building)	Two 2-stall unisex shower buildings – one at the outdoor group camp, one at the south picnic area site	\$100,000 each, total \$200,000	1
Outdoor group camp	4-unit pit toilet building	\$42,000	1

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	Shelter building	\$30,000	2
	Asphalt road	\$300,000	1
	Playground	\$45,000	2
Park Facilities (continued)	New Developments	Cost Estimate	Phase
Boat launch C	Well and drinking fountain at Boat Launch C	\$16,000	1
	Parking lot - 50 double deep stalls for use by vehicles and trailers, located across from Boat Launch C	\$58,000	1-2
Interpretation/education	Observation platform – two-story, located along Savanna Trail, the first level will be ADA accessible	\$18,000	1-2
	Interpretive trail development adjacent to sand blow areas	\$14,000	1-2
	Amphitheater – between south picnic area and beach picnic area	\$35,000	1
Snowmobile trail	Snowmobile/bike trail – gravel, access from the north end of backpack sites to beach area, use roads as appropriate. Total length of about 6 miles.	\$60,000	1-2
	Eliminate snowmobile use on snowplowed roads and reroute this use parallel to the road system. Total length of 2 miles	\$10,000	1-2
	Snowmobile/biking trails – off road, 1.3 miles linking on-road segments	\$30,000	1-3
Hiking trails	Hiking/skiing/nature trails – an additional 6-7 miles of trail throughout the park connecting various use areas, campsites, and other points of interest.	\$27,000	1-3
Canoe boarding dock	ADA accessible boarding dock for canoes, kayaks, and small water craft	\$6,000	2
29 th Street Boat Launch	If this parcel is added to the park, Improve boat launch and day-use area to include a pit toilet, well, and drinking fountain.	\$75,000	3
Signage	Improved signage within the Park	\$10,000	1
Fish pond parking	Construct a 5-6 car parking lot off Hwy G near the fishing pond	\$ 2,000	
Total Estimated Cost		\$2.8 million	

Note: Costs for the development are based on 2007-2009 dollar-values and assume full completion of all construction. In actuality, work may be phased over several state capital biennial budget cycles.

Fee Areas

A vehicular admission sticker is required for access to and use of state park facilities and lands which include Boat Launch B, C, and D sites. Very few hunters currently use these parking lots. Wildlife areas do not charge a vehicular access sticker fee. Hunter access parking lots and the unimproved Boat Launch E are non-fee areas.

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 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, otherwise known as an easement. The WDNR has a number of easement alternatives available to address these situations. Landowners within the state park 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 park or wildlife area use.

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Aides 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.

Existing Easement Land:

The management of land and resources within the 280 acres of scenic easement land within the State Park is governed by the terms of the existing agreement between WRPCo. and the Department of Natural Resources. This area is located across from the Buckhorn State Park entrance and parallels CTH G to the north and east. The 280-acre parcel is within the original park boundary. The state will attempt to purchase this land if it becomes available

Chapter Three – Supporting and Background Information

Recreational Facilities – Buckhorn State Park

Intensive Use Facilities and Structures

Buckhorn State Park has a number of recreational and park facilities including camping, picnic areas, and water access sites. These and other facilities are summarized in Table 3-1.

Table 3-1: Park Facilities

Site	Development
Park Office	<ul style="list-style-type: none"> • Park office building with an indoor area for displays or environmental education. Serves as a gateway to the interpretive program and nature trails • Parking for cars and trailers • Bulletin board/kiosk • Drinking fountain • Self-registration station • Wood storage building • Accessible unisex toilet
Shop Area	<ul style="list-style-type: none"> • 2 shop buildings; 1 is heated with 2 stalls and a bathroom with shower, 1 is cold storage with 4 bays. • 1 lean-to for storage • 1 Friends of Buckhorn storage shed
Camping	<p><u>Family Camping</u></p> <ul style="list-style-type: none"> • 51 walk-in campsites, non-electric (30 are near shoreline) • 12 vehicle accessible sites (these will accommodate hard-sided or pop-up trailers; 11 are non-electric, 1 is an electric ADA accessible site) <p><u>Handicapped Cabin</u></p> <ul style="list-style-type: none"> • 1 handicapped accessible cabin (open from May to October) <p><u>Outdoor Group Camp</u></p> <ul style="list-style-type: none"> • 3 outdoor group camp sites <p>This area has the following facilities :</p> <ul style="list-style-type: none"> • Gravel parking lot for 24 vehicles • 2 small picnic areas • Recycling center and dumpster • 1 pit toilet with solar lighting • Hand-pump for water • Bulletin board • Horseshoes and volleyball • 12-vehicle graveled hunter parking lot • Accessible waterfowl blind

Chapter Three – Supporting and Background Information

Site	Development
Picnic Areas	<p><u>South Picnic Area</u></p> <ul style="list-style-type: none"> • 1 enclosed day-use shelter for sites 10-12 and 25 • 1 open shelter with electricity • Parking for 95 vehicles for campers and day-users. • 1 pit toilet building with lighting • Pressurized well • Bulletin board • Recycling center and dumpster <p><u>North picnic Area</u></p> <ul style="list-style-type: none"> • 1 shelter (3-sided) • Parking for 106 vehicles • Electricity • Pressurized well • 1 bulletin board • 1 handicapped accessible fishing pier • Horseshoe pits
Main Beach Area	<ul style="list-style-type: none"> • Parking for 146 vehicles • Pit toilet with lighting • Changing stalls for men and women • Volleyball court and playground • Pressurized well • Bulletin board • Cold water shower
Water Access Sites	<p><u>Boat Launch A</u></p> <ul style="list-style-type: none"> • 1 pit toilet building • Accessible boat boarding pier • Parking for 24 vehicles/trailers. <p><u>Canoe and Kayak Launch Site B</u></p> <ul style="list-style-type: none"> • 1 pit toilet building • Asphalt parking lot for 10 vehicles and 10 vehicles with trailers • Picnic area • Canoe rental • 1 accessible waterfowl blind <p><u>Boat Launch C</u></p> <ul style="list-style-type: none"> • 45-vehicle asphalt parking lot and trailers (2 are accessible) • Accessible boat boarding pier • Picnic tables • Pit toilet building • Bulletin board <p><u>Boat Launch D</u></p> <ul style="list-style-type: none"> • Picnic area • Gravel parking lot for 8 vehicles
Vista and Wildlife Observation	<ul style="list-style-type: none"> • Sand Blow Vista Tail with boardwalk and platform. Parking for 4 vehicles. • Two-story wildlife observation/hunting blind. Handicapped accessible lower level.
Additional Hunter/Trail Parking	<ul style="list-style-type: none"> • Hunter lot A - 15 stalls (for hunters and campers in sites 17-19) • Savanna/pond trail parking for 8 vehicles • Gravel parking lot D (near bridge) for 16 vehicles

Trails

Buckhorn State Park offers 4.4 miles of hiking trails. Some of the trails extend into the Buckhorn Wildlife Area and there are an additional 1.2 miles of connected trail within the wildlife area. The trails course along wetlands and shorelines, through oak woods, jack pine thickets, and barrens. Snowmobilers can go on designated park roads. No snowmobiles are allowed off-road or on the trails. Cross-country skiers can use 4 miles of the hiking trails during the winter. Individual trails are detailed below:

- Nature trail loop has 10 interpretive signs and is 1.4 miles long.
- Turkey Hollow Trail is 1.5 miles long (located partially in Buckhorn Wildlife Area).
- Savanna Trail is 1.5 miles long. The trail starts at a parking lot along the park entrance road and is located entirely within the park.
- Sand Blow Vista Trail is a short path leading to an overlook facility with two interpretive signs. It is approximately .25 miles long. The trail will extend approximately 1.5 miles as it follows the boundary of the enlarged sand blow area. A specific vegetative management plan will be formulated in cooperation with the Endangered Resources Program to direct the layout of this area. Similarly, a 1.5 - 2 mile long trail located on the periphery of a sand blow and dug pond will be developed in the future if and when the WDNR acquires all of the land containing these features along CTH G. This area is presently under a scenic easement agreement granted to the Department from the Wisconsin River Power Company (WRPCo.).
- The Canoe Interpretive Trail developed by the Parks program is a 1.5-mile long water trail with 10 interpretive markers that are used in conjunction with an interpretive brochure. It begins at Boat Launch B and traverses a quiet slough within the Buckhorn Wildlife Area that leads to the main part of the lake within the wildlife area.

Park Use and Demand

Park visitation estimates, shown in Table 3-2, show a significant increase in attendance at Buckhorn State Park since 1995. Visitation increased by over 36% during this period.

Table 3-2: Buckhorn State Park Visitation

	1995	2000	2003	Percent Change from 1995-2003
Annual Number of Visitors	85,549	107,590	115,123	+ 36.2%

Fish Habitat, Fishing, and Boating – Park and Wildlife Areas

Power loading of boats and the associated prop wash can dig holes into underwater ramps. The common solution to this problem is to fill the holes or to extend a steel plate past the ramp's concrete edge. Boat mooring areas will be developed adjacent to boat ramps to allow boat users to prepare their vehicle and trailers for boat loading.

Ice push damage to shorelines varies from year to year and depends on the strength of winter winds, as well as the level of the late winter drawdown. Fallen trees resulting from ice push will be left whenever possible to provide fish habitat.

Hunting - Park and Wildlife Areas

Archery deer hunting is one of the most popular recreation activities at Buckhorn State Park. Most of the park is open during the early and late bow seasons.

Buckhorn Wildlife Area is open for all regular season waterfowl and small game/upland bird hunting. Turkey hunting is restricted to the spring hunt by permit only. The wildlife area is open for early and late season archery deer hunting. Gun deer hunting is limited to only the annual Buckhorn State Park-sponsored Youth Deer Hunt Program. The wildlife area is not open for the regular gun deer season. Trapping is allowed during regular seasons

The Yellow River Wildlife Area is open for all gun deer hunting seasons as well as all small-game/upland bird and waterfowl seasons. Wild turkey hunting is permitted during all six spring periods and also the fall season. Trapping is allowed during the respective species season.

Recreational Facilities – Buckhorn Wildlife Area

Buckhorn Wildlife Area has a limited amount of recreational facilities. Some were transferred to Buckhorn State Park. Facilities currently within the Buckhorn Wildlife Area are summarized in Table 3-3.

Table 3-3: Buckhorn Wildlife Area Facilities

Site	Amenities
Hunter Parking Lot A	<ul style="list-style-type: none"> • 15 parking stalls used by hunters and campers in sites 17-19.
Gravel Hunter Parking Lot On 20 th Street	<ul style="list-style-type: none"> • Space for 10 vehicles.
Gravel Hunter Parking Lot on 33 rd Street	<ul style="list-style-type: none"> • Space for 10 vehicles.
Trails	<ul style="list-style-type: none"> • Turkey Hollow Trail is 1.5 miles long, located partially within Buckhorn Wildlife Area. • Partridge Trail is 1.2 miles long, located in Buckhorn Wildlife Area. • The Canoe Interpretive Trail is a 1.5 mile-long water trail with 10 interpretive signs. It begins at Boat Launch B and traverses a quiet Buckhorn Wildlife Area slough.

Recreational Facilities – Yellow River Wildlife Area

The recreational facility within the Yellow River Wildlife Area is Boat Launch E. Amenities provided at this boat launch are described in Table 3-4.

Table 3-4: Yellow River Wildlife Area Facilities

Site	Amenities
Boat Launch E	<ul style="list-style-type: none"> • Gravel parking lot for 6 vehicles

Regional Analysis – Buckhorn State Park and Buckhorn and Yellow River Wildlife Areas

Buckhorn State Park and wildlife areas are located in east-central Juneau County on Castle Rock Lake. Located about 70 miles northwest of Madison, the region surrounding Buckhorn State Park is primarily rural with an abundance of forests and wildlife areas. Castle Rock Lake was formed by damming the Wisconsin River just downstream of its confluence with the Yellow River. Its large surface area—nearly 14,000 acres—places Castle Rock as the fifth largest lake in Wisconsin. This lake attracts many tourists to the area, many of whom enjoy boating, swimming, and fishing on its waters. Interstate Highway I 90/94 and State Highways 21, 58, and 80 run nearby, providing easy access from urban centers in southern and eastern Wisconsin, northern Illinois, and the Minneapolis/St. Paul region of Minnesota.

Land Use and Trends

The region's popularity as a recreation destination has prompted rapid growth in the number of both permanent and seasonal housing units in Adams and Juneau counties. The region, however, still retains its rural character with vast tracts of agricultural and forested land.

In the period from 1990-2000, both Adams and Juneau County saw a decline in numbers of seasonal homes. Adams County declined by 5% while Juneau County declined by 16%. These declines are thought to be evidence of the increasingly common practice of converting seasonal homes into permanent homes. Median house values in the region rose from 1990-2000. For townships surrounding Castle Rock Lake (Necedah, Germantown, Marion, Quincy, and Strongs Prairie), median house value rose an average of 65%.

Geology and Soils

The region surrounding Buckhorn State Park and wildlife areas is a broad, relatively flat plain of the ancient bed of Glacial Lake Wisconsin. The soil is predominantly Plainfield sand and Boone fine sands. Both soils have very little organic matter and therefore have low agricultural values and are subject to wind erosion. These soils have moderate to severe development limitations for various recreational uses. Both the Boone fine sand and the Plainfield sands are droughty, exhibit poor stability on slopes, and have difficulty maintaining some types of vegetative cover. High water table levels and low gradient slopes serve to mitigate these recreational suitability problems. These soils' loose structure causes natural, excessive drainage. Today, Plainfield sand and Boone fine sand soils are found predominantly in agricultural land, forests, wildlife habitat, and pine plantations.

Vegetative Cover

The Buckhorn peninsula and Yellow River bottoms lie within a transition zone of northern conifer-hardwood forests and southern hardwood forests. Prior to logging in 1900, the original

vegetation was pine and oak savanna. Currently two primary ecosystems exist in the area: lowlands and uplands.

Lowland plant communities are typified by herbaceous species such as grasses, forbs, sedges, and other species commonly found in wetland settings. Woody species account for less than 30% of the vegetation. The lowland forest area is composed of wetland species such as river birch, willow, aspen, elm, and tamarack. The current vegetative cover is shown on Map E.

Conservation Needs and Opportunities

With increased housing and commercial development along Castle Rock Lake, wetland sites in the area are diminishing. Proper management of remaining wetlands areas will provide for high watershed values and greater biodiversity.

Upland vegetation can be divided into three categories; open/brush uplands, conifer forest and plantations, and upland forest. The open/brush uplands are mostly remnant agricultural fields or grasslands that were cleared in the past. Most of these areas are in some stage of succession to the undisturbed upland forest state they existed in prior to clearing. In these areas, small tree species (diameter less than 6”) are predominantly mixed hardwoods (oaks), with some jack pine, white pine, sumac, common prickly ash, and hazel brush. The conifer forest and plantations consist primarily of red pine stands. The upland forest habitat consists of jack pine, aspen, white birch, and mixed hardwoods (primarily oaks).

Findings – Ecological Opportunities

The quality and pattern of the existing vegetation in the region is partly the result of previous resource exploitation. In the 1800’s, stands of white pine, oak, and maple were logged from the area. Once cleared, the land formerly occupied by these pines was used for farming wheat and later potatoes. During the Great Depression, the land lay idle and through natural regeneration and reforestation, began to redevelop forest cover. Woody vegetation from this regeneration is now beginning to invade sites that should naturally be prairie/barrens areas. Continued prairie burning is important to restore and maintain these prairie and barrens areas in their natural state. Prescribed burning also eliminates diseased and dying oak and jack pine trees.

Despite the fact that the vegetation in and around Buckhorn State Park and wildlife areas has become highly disturbed, these areas may be converted back to the region’s native vegetation even as residential, commercial, and agricultural development continue.

Endangered Species

Numerous endangered species call the Buckhorn region their home. The federally listed (threatened) bald eagle (*Haliaeetus leucocephalus*) nests and winters in both Adams and Juneau counties. Hydroelectric activity causes water to remain open during the winter, providing ample feeding areas for the bald eagle. The state-listed (threatened) Blanding’s turtle (*Emydoidea*

blangingii) uses the shallow wetlands during the summer and moves to deep ponds during the winter. The federally listed (endangered) Karner blue butterfly (*Lycaeides melissa samuelis*) is found in areas of sandy soils where wild lupine (*Lupinus pernnis*) is present, as this is the exclusive food plant for the butterfly's larvae. Ospreys (*Pandion haliaetus*) are currently listed as a state threatened species in Wisconsin and can also be found along the area's lakes.

Water/Fisheries Assessment

The water quality of Castle Rock Lake is similar to that of the Wisconsin River. Waters are of light-brown color, range from alkaline to neutral, and have a low transparency. Sand is the predominant bottom type and there are small quantities of bedrock, boulder, rubble, and gravel. Toxic substances in surface water and in lake and stream bottom sediments are not a major problem in the Lower Wisconsin River Basin; however, Castle Rock Lake is currently under a fish consumption advisory. With the present phosphorus load in the Wisconsin River sediment, algae blooms are a recurring condition that creates problems for swimmers and boaters alike.

The 79-mile Yellow River rises in eastern Clark County and flows southeasterly through Wood and Juneau counties to join the Wisconsin River at Buckhorn State Park. The Yellow River has a light brown color and medium hard-water stream.

Public fishing opportunities are plentiful in the local Buckhorn State Park area. Castle Rock Lake, with a maximum depth of 36 feet, has a surface area of nearly 14,000 acres. Walleyes are the most sought after species in the lake. White bass, northern pike, small and largemouth bass, channel catfish, and panfish (bluegills, crappies, perch) are also found in the lake. Numerous fishing tournaments take place on Castle Rock Lake. Fish advisories are common on these waters and carp, white bass, and catfish all test high for levels of PCBs. Additionally, there is a mercury contamination concern in the walleye population. Contamination levels are expected to remain high due to toxic materials being recycled through the lake sediment.

Boating and Swimming

Castle Rock Lake and Petenwell Lake serve as the main water recreation sites/resources in the region. These two lakes are extremely popular for recreational use including motor boating, fishing, pontoon boating, jet skiing, sailing, canoeing, and swimming.

Numerous boat launches provide access to Castle Rock Lake. Together, the park and wildlife areas have five boat launches, 33 car stalls, and 78 double stalls (car and trailer). Juneau County offers one boat launch with 5 car stalls and 22 double stalls at Castle Rock Park. Adams County has three boat launches with 8 car stalls and 17 double stalls.

Numerous beaches along Castle Rock Lake provide opportunities for swimming. Buckhorn State Park has a 300' beach with a sandy bottom ideal for swimming. There is an undesignated beach at Boat Launch C west of the Buckhorn Bridge. This is a 250' x 50' beach with an asphalt

parking lot, vault toilet and a few picnic tables. Both Castle Rock Park in Juneau County and Castle Rock County Park in Adams County also have a 300’ swimming beach.

Public Recreational Lands

There are a variety of public lands located near Buckhorn State Park and wildlife areas. These are summarized in Table 3-5 and are shown on Map A.

Table 3-5: Major Public Lands within 20-30 miles of Buckhorn State Park

Name	Acres	Primary Public Uses
Necedah National Wildlife Refuge	43,696	Hunting, fishing, hiking, wildlife viewing
Roche-A-Cri State Park	604	Camping, fishing, hiking, scenic/historical viewing
Quincy Bluff & Wetlands State Natural Area	7,000	Hiking, hunting, fishing, trapping, birding
Mill Bluff State Park	1,258	Camping, hiking, swimming
Castle Rock Park (Juneau County)	160	Boating, swimming, skiing, canoeing, fishing
Wilderness Park (Juneau County)	80	Swimming, boating, canoeing, skiing, fishing
Castle Rock County Park (Adams County)	141	Boating, swimming, canoeing, fishing, camping
Petenwell Park (Adams County)	431	Boating, swimming, fishing, hiking, camping
Colburn State Wildlife Area	5,000	Hunting, fishing, hiking

Hunting

Hunting opportunities are abundant in the region. Portions of the Necedah National Wildlife Refuge (NNWR) are open to deer, migratory waterfowl, wild turkey, and small game hunting. The Meadow Valley Wildlife Area, which, when combined with the NNWR, exceeds 100,000 acres, offers excellent hunting habitat. Other hunting is available at the Quincy Bluff and Wetlands State Natural Area, the Colburn State Wildlife Area, and the extensive county forests.

Developed Recreation

The following analysis focuses on the recreational opportunities within 20 miles of Buckhorn State Park and wildlife areas. Properties further away are thought to be beyond the typical use zone of most visitors and area residents.

While there are numerous state and county parks in the region, parks located along Castle Rock and Petenwell lakes are the primary source of camping, non-motorized trails, fishing, and water-based recreation. Table 3-6 summarizes the recreational opportunities and facilities at each of the major state and county properties in the Buckhorn region.

Table 3-6: Major Public Recreational Properties and Facilities in the Region

Property	Acres	Campsites	Electric Sites	Showers	Boat	Boat Motor	Swimming	Fishing	Canoeing	Hiking	Biking	XC Skiing	Group Campsites
Buckhorn State Park and W.A.	7,000	57	1		•	•	•	•	•	5 6	•	4	3
Mill Bluff State Park	1,258	21	6				•			2			
Roche-A-Cri State Park	604	41	1							6		6	
Castle Rock Park (JC)	160	300	150	•	•	•	•	•	•				
Wilderness Park (JC)	80	140	56	•	•	•	•	•	•				
Castle Rock County Park (AC)	141	200	•	•	•	•	•	•	•	•			
Petenwell Park (AC)	431	500	•	•	•	•	•	•	•	•			
Necedah National Wildlife Refuge (USFWS)	43,696					•		•	•	•			

Park Visitation and Demand in the Region

Park visitation estimates, shown in Table 3-7, indicate that there has been a significant increase in attendance at Buckhorn State Park. Visitation has increased by over 36% since 1995. Mill Bluff State Park saw its attendance rise by 75.6%, while Roche-A-Cri State Park saw its attendance decrease by 17.5% for unexplained reasons.

Table 3-7: Comparison of Annual State Park Use for 1995, 2000, and 2003

Annual Recreation Visitors	1995	2000	2003	Percent Change from 1995-2003
Buckhorn State Park	85,549	107,590	115,123	+ 36.2%
Mill Bluff State Park	30,350	49,541	53,300	+ 75.6%
Roche-A-Cri State Park	93,569	72,232	77,169	- 17.5%

Camping Facilities and Demand – Regional State Parks

The demand for camping at area state parks exceeds the supply on summer weekends, with the possible exception of Roche-A-Cri State Park. As shown in Table 3-8, average summer weekend occupancy rates are very high—over 94% at Buckhorn State Park, over 86% at Mill Bluff State Park, and 70% at Roche-A-Cri State Park. Many campers seeking reservations are unable to get

sites at Buckhorn State Park, and others are turned away at the gate. Roche-A-Cri State Park does provide an alternative for overflow camping from Buckhorn State Park. Development of showers and electrical sites at Roche-A-Cri State Park would make this type of overflow camping even more viable.

Table 3-8: Comparison of Campground Occupancy Rates for Weekday and Weekends

Property	Average Summer Weekday Occupancy % Rate	Average Summer Weekend Occupancy % Rate
Buckhorn State Park	28	94
Mill Bluff State Park	24	86
Roche-A-Cri State Park	9	70

Comparison of Park Camping Facilities

Buckhorn State Park

Has 57 campsites, 2 of which are electric; a handicapped site; and a handicapped cabin. There are 41 backpack sites, 30 of which are near water. There are also 11 family campsites that can accommodate tents or hard-sided and pop-up trailers, and 3 group campsites that can accommodate up to 40 people each.

Roche-A-Cri State Park

Has 41 rustic camping sites. One site is accessible to people with disabilities and has electricity hook-ups.

Juneau County Parks

Two nearby county parks in Juneau County offer camping. Castle Rock Park offers 300 campsites, half of which have electrical hook-ups. Wilderness Park has 140 campsites, 56 of which have electrical hook-ups.

Adams County Parks

Petenwell Park has 500 campsites, 270 of which have electrical hook-ups. Castle Rock Park offers 200 campsites, 190 of which have electrical hook-ups.

Private Camping/Lodging Supply

There are six private campgrounds operating within 25 miles of Buckhorn State Park that offer 624 sites in total. 80% of these sites have partial hook-up (water and electricity), with an additional 13% offering full hook-up (usually 30 or 50 amp electrical, water, sewer, septic, telephone, and sometimes cable TV hook-ups). 80% of all sites have no hook-ups. Three campgrounds offer phone/modem hook-up. Most of the campgrounds offer resort-like amenities including a swimming pool, video game room, athletic fields, and play equipment.

Recreational Trails

Buckhorn State Park offers 5.6 miles of hiking trails which course through wetlands, oak woods, jack pine thickets, shoreline, and barrens. One trail loop has 10 interpretive signs to help visitors conduct their own nature hike. Cross-country skiers are permitted on 4 miles of the trails. Snowmobilers are permitted on designated park roads and adjacent connector links.

Numerous bike trails exist in Juneau County. Of these, the Elroy-Sparta State Bike Trail is the main trail providing links to other trails. The hard-packed limestone route covers 32 miles of an abandoned Chicago & Northwestern Railroad bed. The 22 miles of the hard packed limestone '400' State Trail parallels or crosses the Baraboo River over the entire length between Elroy and Reedsburg. A recent addition to the trail links Hillsboro to the south. The Juneau County Omaha Bike Trail is 12.5 miles of seal-coated trail owned and maintained by Juneau County. In addition to these trails, Juneau County has hundreds of miles of well-maintained county and township roads. During the winter, Juneau County provides close to 220 miles of groomed snowmobile trails and 66 miles of groomed cross-country ski trails.

Recommendations for Recreational Facilities within the Region

Estimates show that, overall, park visitation numbers will rise gradually over the next 10 years. Several primary recreation activities are expected to increase during this time period, including activities such as walking, day hiking, wildlife/bird observation, and nature study. The increased popularity of these activities will coincide with the aging of Wisconsin's population. RV camping is currently the most popular style of camping in Wisconsin State Parks. While 43% of campers in Wisconsin State Parks use a tent, 51% use an RV, pop-up camper, or truck/van camper. Demand for camping amenities such as electricity, showers, and running water will increase to accommodate the growing RV and vehicular camper group. Pressure will increase on the Wisconsin State Park system to provide these amenities at a higher level.

An opportunity exists to accommodate these campers through the addition of a family campground on a site identified in the original Master Plan. Development of campground amenities such as showers, flush toilets, and a trailer sanitary station may be difficult due to the shallow water table on the peninsula. To accommodate the more immediate needs of campers who seek electricity, non-electric sites may need to be converted to electric in the near future.

The proximity of Buckhorn State Park and wildlife areas to Castle Rock Lake means that these properties are faced with increasing development pressures. Both Castle Rock Lake and nearby Petenwell Lake attract a large number of visitors to the region. Increased housing and commercial development along the lakes is decreasing the amount of undeveloped land in the area. This trend will make Buckhorn State Park and wildlife areas even more rare and valuable in the future.

Chapter Four – Assessment of the Environmental Impacts of the Master Plan

This chapter explains the potential primary and secondary environmental effects of the management plan for Buckhorn State Park and wildlife areas. Chapter Two describes the preferred management alternative. An analysis of environmental impacts is an important element of the Environmental Assessment (EA) for the Master Plan. The intent of the EA is to disclose the environmental effects of an action (the Master Plan) to decision-makers and the public, and to determine if the action would have a significant impact on the natural and man-made environment. If such an impact is determined, the development would require the preparation of an Environmental Impact Statement. The EA in this Master Plan has been prepared to meet the requirements of the Wisconsin Environmental Policy Act (WEPA) and Chapter NR 150 of Wisconsin Administrative Code.

Environmental Effects and Their Significance (long and short-term)

Impacts to Air Quality

The primary impacts to air quality will come from the timber harvest and controlled burns used to eliminate slash and restore grassland type cover to park and wildlife area lands. Because these management activities will generate a large amount of smoke, the size and timing of their implementation will be coordinated with local private and public officials, as well as the public at large. The speed of management will depend on the availability of staff and funding, as well as the contracting for commercial timber harvest. A fire boss will prepare and implement a burn plan with sufficient staff to manage the fire.

During construction periods, dust may be present in the air surrounding project areas in Buckhorn State Park. There will be very limited primitive roads and trails constructed in the wildlife areas. Application of water from a tank truck is a common dust suppression practice that is used during road and trail construction and on large-scale site grading projects. This technique may be appropriate for the campground road, gravel surfaced park roads, trail development, and at various building construction sites. Impacts on air quality, whether from fugitive dust particles or construction equipment exhaust emissions, will be finite and short-lived. When construction is complete, no residual impacts to air quality will be detectable from dust-creating activities.

Snowmobiles may cause limited, local air quality impacts along and adjacent to the short corridor (under 3 miles) that runs from CTH G to the lake on the east side of the park. Historically, a very low number of snowmobiles use the corridor. This use is not expected to increase significantly in the future.

Impacts to Groundwater Resources

There will be 1-2 potable water wells drilled to serve the Class A campground in Buckhorn State Park. The addition of these wells to the other existing or approved wells will make the complex a high capacity property. Because these wells are dispersed throughout the multi-thousand acre property, their effect on the local water table is expected to be minimal. No wells will be built in the wildlife areas.

Impacts to Surface Water Resources

An increase in impervious surface area will occur from the development of campground roads and some trail improvements. The hard surface road and parking lots will be the main source of sheet runoff. There will also be some runoff from pervious trail sections. All runoff from the impervious surfaces will be directed away from nearby surface waters, minimizing any risk of water pollution from spilled or water-transported materials. Any surface water will quickly permeate the loose and open soils found throughout the properties.

Impacts to Geological Resources

New potable water wells will be drilled and installed according to state well drilling code, effectively minimizing any risk of groundwater contamination. The entire peninsula is composed of Plainfield and Boone fine sands that have high water table levels. The soil structure is loose and open and the soils are erosive, droughty, exhibit poor stability on slopes, and have moderate to severe development limitations for various recreational uses. Low gradient slopes serve to mitigate these recreational suitability problems. The subsoil consists of yellow-colored, loose, incoherent fine sand that has high iron content.

Impacts to Visual/ Scenic Resources

Impacts on the visual/scenic resources in the area will primarily be related to the restoration of barrens on the existing poor quality oak/pine cover found on various sites throughout the park and wildlife areas. There will be a period of time when effects of management burns will be visible on the landscape. Vegetative regeneration in the spring, however, should rid the landscape of all visible burn effects. Views will vary from small shifting patches of sand and dune-like formations to patches of prairie-dominated vegetation, to oak groves and groves of larger oaks and pine to hardwood forest cover. Any new recreational structures such as shelters and buildings will be designed to harmonize with the natural surroundings of the park and wildlife areas. Signs and informational kiosks will be a new visual element within the trailheads and along the trails within the park. Approved future signs within the wildlife areas will mark boundaries, give information, and direct people to small parking areas. Signs placed on nearby public roads will direct visitors to the park and wildlife areas and will be a new visual element.

Impacts to Land Use

The main impact on land use in the area will be the vegetative management associated with barrens restoration in the park and wildlife areas. In the long term, approximately 900 acres of grassland will be restored throughout the multi-thousand-acre park and wildlife areas. A combination of commercial timber harvest, slash removal, and controlled burns will be used to restore grass cover. Habitat will change from forest cover to a more open barrens/mixed grassland cover. This habitat will foster a slight change in animal species composition and population. Hikers, hunters, and nature enthusiasts will notice a more open appearance and will be able to see for greater distances. This may impact the layout of trails and other facilities, as well as the use of these facilities. The secluded feeling of current vegetation may be reduced by the increased sight line distances within the grassland areas.

An increased level of active recreation is anticipated within the new campground and use area facilities within Buckhorn State Park. Beach/day-use areas and the trail system within Buckhorn State Park and Buckhorn Wildlife Area are also anticipated to experience a rise in visitors. Existing trails will be upgraded as staff and budget allow. No additional facilities will be constructed in the Buckhorn Wildlife Area. The Yellow River Wildlife Area may experience increased use in its northern reaches if and when access to this area is acquired and primitive vehicular access is developed. Primitive trails may also be added to the property if and when staff and budgets allow. Most neighboring land use adjacent to the park and wildlife areas is residential and forested/recreational. Some growth in rural residential and recreation-oriented business development is expected to occur in the vicinity the park and wildlife areas. The land within and surrounding the park and wildlife areas are zoned as ARO, agricultural/residential/open space district.

Impacts to Infrastructure and Transportation

Given the large power demands of other recreational developments adjacent to Castle Rock Lake, Buckhorn State Park and wildlife areas will be minor consumers of the area's electrical power, even after completion of all improvements outlined in this plan. The properties' impacts to the infrastructure and transportation of the community and region will also continue to be negligible. An increase in solid waste generation is expected from the anticipated increase in park attendance. Solid waste will continue to be handled on a carry-in/carry-out basis for day-users, with dumpster facilities for use by campers. A new parking lot is approved to be constructed across from the Boat Launch C facility to eliminate parking along CTH G in this congested area.

The increase in campsites and recreational facilities will increase visitation and potential visitor damage to the park and wildlife areas. Camping visitation is anticipated to more than double upon the completion of the new Class A family campground. However, user impacts will be mitigated by the expansion and upgrading of various day-use facilities and trails. Day-use may increase 20%-50 % over the next 15-20 years. Littering, trampling of vegetation, vandalism, and other problems associated with visitor use may occur. Property ranger supervision will help to mitigate these impacts.

Noise Impacts

Construction noise resulting from capital improvements such as campground road and building construction, vegetation management, and other development activities, could have a moderate and temporary impact on the properties' users, wildlife, and neighbors. This noise would peak (high level, short duration) during construction periods, and would not be continuous. It is anticipated that the additional visitors at the park will also create additional noise. This noise will be mitigated by the separation between use areas and the central park location of the Class A campground. Seasonal noise generated by the use of snowmobiles on the short length of designated trail within the park, and by boats on Castle Rock Lake, may have a negative impact on wildlife, day-users, and lakeside campers. However, these uses are not expected to be very loud or of long duration and should therefore have a minor impact on wildlife and visitors. Neighboring property owners should not be affected by this use to a measurable degree. Noise originating from the properties may have more impact on users (especially lakeside campers) at night during the summer tourist season.

Impacts to Recreational Resources

Upon completion of all Master Plan objectives, Buckhorn State Park will have enhanced facilities for day-use, camping, hiking, skiing, hunting, and other more passive uses. In the park, the number of campsites with electric service will be increased and rustic yurts will be added. Together, these facilities will provide improved opportunities for modern camping in the park. The quality of the existing group camp and scattered rustic campsites will be improved with increased vegetative screening between sites and the addition of support facilities such as showers, vault toilets, and electrification of some existing campsites. The overall number of campsites will be increased by 80 sites, a more than a 100% increase in camping opportunities within Buckhorn State Park (currently there are 57 sites). In the Buckhorn Wildlife Area and Yellow River Wildlife Area, the addition of upgraded rustic trails and parking areas will provide improved access for hunters, anglers, hikers, and wildlife viewing.

There are many positive recreational impacts of these future amenities. The focus of facility developments will be two-fold. The first focus is to provide limited improved and upgraded amenities for campers preferring more developed facilities to the extent that is permissible by the DNR. The second focus is on increasing the intimacy of the visitors' experiences with nature. The new interpretive trails and support facilities will combine with existing facilities and vegetative management to facilitate outdoor education activities. The grouping of yurts near the Class A campground will expand camping opportunities to new groups of visitors, such as those with little camping experience, or those who want to camp but are not able to sleep in tents and/or do not own recreational vehicles. Expanding the camping experience with modern facilities will also complement the scattered rustic campsites presently available and will accommodate people with RVs and campers. Development and vegetative management will provide a more nature-based recreational experience, thus reinforcing the mission of the DNR to provide nature-based, environmentally-sensitive outdoor experiences that are resource protective.

A 20% - 50 % increase in visitors is projected due to these additional facilities. However, the impacts of additional visitors are expected to be minimal.

Recreational impacts on the Buckhorn Wildlife Area and Yellow River Wildlife Area are projected to be minimal. This Master Plan will improve rustic trail access to and throughout the wildlife areas for hunters, walkers, cross-country skiers, anglers, and wildlife viewers. These uses will likely increase to some degree. Current and future use levels do not indicate potential conflicts for these uses.

Impacts to Human Health

By providing a swimming beach, open field sports areas, playground, other active recreation venues and trails, the state park and wildlife areas will provide for increased exercise and aerobic activities. The properties will benefit all those who use them. Increased outdoor exercise has been shown to reduce individual weight, increase overall endurance, and allow for better cognitive skills. Improved physical fitness also reduces the incidence of many diseases such as congestive heart disease, cancer, and diabetes, while also working to extend overall life expectancy.

Blue-green algae have been found to present a health concern. Problems with these algae will be addressed with the addition of a cold water shower in the beach area and the future construction of a shower building to serve beach goers and rustic campsite users alike.

Impacts to Biotic Resources

Recreation Management Area

Vegetation management within the Recreation Management Area emphasizes native vegetation and the maintenance of an attractive and safe recreational environment. The intent is to manage with an emphasis on native plants. In campgrounds, management will provide for a healthy, mixed forest (in both age and species composition) of longer-lived species with a shrub layer to provide screening between campsites whenever possible. Throughout the remainder of the recreation management unit, excluding existing mowed grass areas, it is the intent to provide and maintain a woodland/barrens/grassland landscape, including the establishment of an additional 220 acres of barrens and sand barrens. In the remainder of the area, vegetation will be managed for a mixed forest (in both age and species composition) of native, longer-lived species whenever possible. Due to the extent of oak wilt and pine budworm infestation, healthy trees will be retained as long as they do not negatively impact park users, structures, or other infrastructure. Hazardous trees in campgrounds, along roadways, and in day-use areas will be removed as appropriate and replaced with indigenous plant species as possible. A management plan will be developed to deal with the high level of dead and diseased oak and other trees that need to be removed from campsites, day-use areas, trails, and other sites frequented by visitors and staff. To contain and guard against spreading oak wilt, designated sites for wood storage and processing will be developed based on available funding, staffing, and volunteer labor. Oak wilt

management guidelines will be followed closely to guard against further spread of the disease. Authorized management activities include selective tree harvesting/thinning, small patch clear cuts, removing hazard trees, planting trees, shrubs, and native grasses, and prescribed fire. Harvests may be either commercial or non-commercial. Native landscape plantings around buildings will be incorporated to provide screening, improve aesthetics, and foster visitor education through interpretation. Management of the existing turf areas will continue until they are converted to prairie and/or oak barrens plant communities. The effect of this management will be the retention of the diverse vegetative cover in the park's use areas and campsites and the gradual conversion of a portion of the undeveloped area to a more open barrens/grassland landscape.

Native Community Management Areas

All of Buckhorn Wildlife Area and the Yellow River Wildlife Area are classified as Native Community Management Areas, and a portion of Buckhorn State Park is Native Community Management Area as well. The community types are barrens and floodplain forest. Most of these areas rank of a high enough quality to also be designated as state natural areas. See Maps B and C. Management will be directed at protecting the quality of these important native communities through a variety of vegetative management techniques including timber harvests, barrens restoration, and passive management.

Barrens Communities

Three management areas on the wildlife areas and the park will be managed for various types of barrens native communities. These areas are the Buckhorn Sand Barrens Management Area, the Buckhorn Oak Barrens Management Area, and the Buckhorn Oak-Pine Barrens Management Area.

All of the properties have sites that lend themselves to barrens management. Oak, pine, and numerous savanna groundlayer species are already found throughout the properties. Approximately 250 acres will be created and maintained as barrens. Approximately 150 acres will be created and maintained as sand blow/sand barrens in specific locations within the management area. The rest of the management area will be kept in its present cover type of oak, oak/pine, pine, aspen, and associated species.

The overall purpose of these management actions is to open the forest canopy and reduce the amount of understory woody vegetation. The existing barrens will be expanded through tree and brush cutting in patches ranging from a few acres to hundreds of acres in size. Site selection will be partially based on the location of diseased, dying, and dead trees. Downed material will also be removed through timber sale, firewood salvage, piling, burning, or other appropriate and feasible means. Large snag trees (greater than 17" dbh, at a density of 13 per acre) will be retained for cavity dwelling wildlife. Prescribed burns will be used to promote and maintain the barren/savanna restoration. The barrens restoration is a long-term project that will take years to complete.

In the forested areas, management will maintain a mixed forest composed primarily of oak and pine with small areas of mixed aspen and other early succession species. In areas with early succession species such as aspen, jack pine, and scrub oak, management will promote the regeneration of oak/aspen stands in limited pockets to benefit songbird species.

The management plan for the Sand Barrens Management Area calls for open, shifting patches of sand and dune-like formations. Patches of prairie will dominate with many oak grubs, groves of larger Hill's oak and jack pine, a few larger scattered jack pine, and several individual oak trees. Though this community is very rare in Wisconsin, examples are found at Buckhorn along the lower Wisconsin River and along the lower Chippewa River. Many threatened, endangered, and concern species do well in these sand barrens, including lark sparrows, vesper sparrows, prairie bullsnakes, and numerous insects.

Management in the Buckhorn Oak Barrens Management Area will restore and maintain approximately 300 acres of ecologically functioning oak barrens native community with an open park-like structure. This will provide opportunities for research, education, and ecological interpretation. The barrens restoration is a long-term project that may take years to complete. Primary management will include cutting diseased trees and fire management. The Master Plan also calls for periodically monitoring for and eradicating exotic species such as spotted knapweed, leafy spurge, and crown vetch. Current vegetative structure in this management area is nearly uniform mid-age jack pine and Hill's oak. These tree species will need to be drastically reduced in abundance to favor the sand barrens community. Restoration may occur in stages or in one operation. Speed of management will be dependent upon the funds available to conduct the timber harvest and subsequent slash reduction. Management activities will be the same regardless of the speed of action. Authorized management activities for forests and prairies/savannas will include selective cutting, brushing, thinning, site preparation with mechanical and chemical means, selective cuts, small patch clear cutting, and, where appropriate, prescribed fire.

The Buckhorn Oak-Pine Barrens Management Area comprises all of the Buckhorn Wildlife Area. Management objectives for this area are to restore and maintain approximately 360 acres of ecologically functioning oak barrens native community characterized by a moderately open structure and scattered older jack pines. The understory will have many more oak grubs and jack pine than the open park-like structure of the Buckhorn Oak Barrens Management Area. This area will provide opportunities for research, education, and ecological interpretation. Prescribed fire, used at appropriate intervals, will be the primary management tool. After thinning, slash will be burned to reduce fuel load and create fire breaks. Management will also include periodic monitoring for and eradication of exotic species such as spotted knapweed, leafy spurge, and crown vetch.

The Yellow River Bay Native Community Management Area comprises the southern portion of the Yellow River Wildlife Area. While the native communities present here are not of state natural area quality, the area is still well suited for native community management. Nearly all of the area lends itself to oak/pine/barrens management, with a small 100-acre area along the river

being floodplain forest. Oak and pine species are in decline in the area and numerous barrens ground-layer species are found throughout.

Approximately 80 acres of pine plantation east of the river will be managed via thinning towards a pine forest dominated by scattered larger, biologically mature trees. In addition, 11 acres of over-mature jack pine and 156 acres of jack pine/oak will be cut to rejuvenate the stand. On the area located south of the Yellow River Oxbows State Natural Area on the west side of the lake, north of 32nd Street (an area of heavy oak wilt infestation and mature jack pine), the plan calls for the maintenance of the oak/pine cover type and conversion of a portion of the area to barrens based on local site conditions.

Management prescriptions for this site include periodic monitoring for and eradication of exotic species including glossy buckthorn, garlic mustard, and purple loosestrife if discovered. The pine plantations will be thinned to promote larger diameter, vigorous pines. Jack pine stands will be harvested to regenerate this forest type. The jack pine will be allowed to reach biological maturity before the next regeneration harvest. Lowland vegetation, including floodplain forest, will be maintained through passive management where appropriate for the site.

Floodplain Forest Communities

The Yellow River Oxbows Native Community Management Area comprises the northern portion of the Yellow River Wildlife Area. It is also a designated state natural area.

Near-level topography and sandy soils characterize the Yellow River. The river meanders and turns frequently, creating oxbow lakes, cut-off and running sloughs, and small ponds within the floodplain. The management area, a designated state natural area, contains a high quality floodplain forest of silver maple, green ash, swamp white oak, river birch, and other associated lowland tree and shrub species. The lowlands are punctuated by low, sandy ridges. Being slightly higher than the surrounding floodplain, these lowland areas support white oak, bur oak, shagbark hickory, black cherry, and white pine. The presence of scattered large native conifers within a lowland hardwood community is unique and rare in Wisconsin. Many rare, uncommon, and declining animal species have been documented in the Yellow River bottoms with many being sensitive to the size, isolation, and quality of the habitat.

Management will maintain approximately 770 acres of ecologically functioning floodplain forest native community. A 10-acre pine plantation west of the river will be managed via thinning towards a pine forest dominated by scattered larger, biologically mature trees. In addition, 37 acres of upland east of the river will be maintained as a jack pine forest. The entire area will provide opportunities for research, education, and ecological interpretation.

Periodic floods, particularly in spring, are the key natural disturbance event to which species of this community are adapted. Silt deposition and development of microtopography during flood events create sites suitable for tree germination and establishment. Floods also carry seeds and propagules of plant species. Because of these factors, exotic species control will be the primary

management for protection and maintenance this community. Glossy buckthorn, garlic mustard, and purple loosestrife are the primary targets for eradication if discovered.

Impacts to Endangered or Threatened Species

Many rare, uncommon, and declining animal species have been documented within and near the Buckhorn park and wildlife areas. Some of the species in the Yellow River bottoms are sensitive to size, isolation, context, and quality of their habitat. Several have been victims of active, officially sanctioned persecution programs in the past. Species found on Wisconsin's list of endangered, threatened, or special concern species that are found in the region of Buckhorn State Park and wildlife areas include:

Massasauga rattlesnake (*Sistrurus catenatus*) – Endangered
Blanding's turtle (*Emydoidea blandingi*) – Threatened
Red-shouldered hawk (*Buteo lineatus*) – Threatened
Cerulean warbler (*Dendroica cerulea*) – Threatened
Prothonotary warbler (*Protonotaria citrea*) - Threatened
Acadian flycatcher (*Empidonax vireescens*) – Threatened
Yellow-crowned night-heron (*Nyctanassa violacea*) – Threatened
Sedge wren (*Protonotaria citrea*) – Special Concern
Louisiana waterthrush (*Seiurus motacilla*) – Special Concern
Bald eagle (*Haliaeetus leucocephalus*) – Threatened
Karner blue butterfly (*Lycaeides melissa samuelis*) - Federally Endangered
Osprey (*Pandion haliaetus*) - Threatened
Little white tiger beetle (*Cicindela lepida*) - Special Concern

Plants

Woolly milkweed (*Asclepias lanuginosa*) - Threatened
Virginia meadow-beauty (*Rhexia virginica*) - Special Concern
Prickly pear cactus (*Opuntia Sp.*)

Federal and state endangered, threatened, or special concern species that occur on these lands will receive long-term protection and enhancement according to the property's management plan.

Impacts to Historical and Archaeological Features

Studies conducted by the Mississippi Valley Archeological Center in the 1990s, found that there are a number of historic and prehistoric sites within the Yellow River WLA. However, only one site in the western quadrant of the wildlife area was considered eligible for the National Register. The site was determined to be a woodland campsite of an undetermined phase. Many of the historic sites are normally inundated and exposed only during drawdown. Protection of the sites may involve some management, as private collectors routinely visit these sites during drawdown to collect artifacts. Available records show that no other archaeological sites have been

documented within Buckhorn State Park or Buckhorn WLA. However, this does not preclude the possibility of future discoveries. Additional analyses of interior land sites can be undertaken in the future. Where required, these future surveys will be planned and undertaken according to standards acceptable to the Wisconsin State Historical Society and the DNR.

Economic Effects and their Significance

The anticipated increase in tourist numbers will increase the utilization of local business establishments. Economic benefits are anticipated to result from the influx of visitors to Buckhorn State Park. Recent data indicates that, in the southwestern region of Wisconsin, local resident park visitors contribute an average of \$28.55 per day to the economy, while non-local park visitors contribute an average of \$36.82 per day. With additional development, anticipated annual visitation for Buckhorn State Park will increase to approximately a 150,000 visitors per year with a resulting economic impact of approximately \$4.8 million per year.

Economic benefits during construction of the park facilities will accrue to building trade members, laborers, and suppliers, some of whom may be local. Competitive bidding procedures will be followed. Total development cost for the park and wildlife areas is expected to amount to many millions of dollars over the life of the projects. No estimate of dollar amounts to the local area is available, as extent of local contractor involvement is not yet known. Employees working on development will probably live in the vicinity of the park. Those employees will participate in the local economy and expend a significant amount on their daily needs as members of the community.

Fiscal Effects – State Government

Lands purchased for addition to the park and wildlife area will likely be acquired using State Stewardship funds or a similar bonding fund. Bonding programs fund the development of much of Wisconsin's State Park and Wildlife Area System. The cost to the state of bonding for land acquisition and project development occurs when the interest or dividends must be paid on the bonds. Several methods of making these payments could be used, the main one being General Program Revenue (GPR).

The Wisconsin State Park and Wildlife programs budget for their capital development needs on a biennial basis, as do all state agencies. Because of the significant development cost of developing facilities for Buckhorn State Park, funding priorities within the capital budget will necessarily be adjusted to accommodate park development. Without an increase in capital spending authority and an increase in the park's operating budget, construction of park and wildlife area facilities could cause temporary delay or deferral of implementation of other WDNR projects.

Estimated Costs of Land Acquisition

DNR policy is to purchase land only from willing sellers. The purchase price is set by an appraisal prepared in compliance with state and national guidelines, unless the seller chooses to

make a gift or partial donation of land. This Master Plan outlines a 1,142-acre addition to the state park and a 235-acre addition to the Yellow River Wildlife Area. The approximately 1,370 acres of land that have been added to the park and wildlife area boundaries are valued at an average of \$1,500 - \$1,800 per acre for the wetlands, \$2,500 - \$3,500 for the uplands, \$9,000 - \$10,000 per acre for 4 -5 acre back lots, and \$40,000 - \$50,000/acre for front lots on the lake. Individual parcel values vary depending on the individual qualities of the site, as well as whether any improvements or buildings existed on the parcel under consideration. It is unlikely that all tracts within the boundaries will be available for acquisition simultaneously. Expenditures will therefore likely be spread over a considerable span of time, perhaps many years.

Projected Staffing Needs and Estimated Annual Operations Cost and Revenue

Buckhorn State Park Costs:

As a result of this Master Plan, a Park Ranger-Operations and four limited term employees (ranger, laborer, clerical assistant, and part-time naturalist) will be added to the Buckhorn State Park staff. The costs for these (all costs in 2006 dollars) will be \$39,000/yr. and \$33,500/yr., respectively. Additional supplies and services for new facilities and campgrounds, vegetative management, vegetation restoration, and trail maintenance will cost approximately \$58,250.

Buckhorn Wildlife Area/Yellow River Wildlife Area Costs:

As a result of this Master Plan, it is anticipated that operational increases in the two wildlife areas will be needed for parking area maintenance, property boundary postings, routine maintenance, litter removal, prescribed burning, exotic species control, trail maintenance, and law enforcement. These activities will likely add \$6,500/yr to the property budget.

Revenue Projections:

The State Park Access Fee will be the main revenue source for Buckhorn State Park. Current average annual revenue for the park is approximately \$103,000 per year. With the addition of an 80-unit campground, conversion of Boat Launch C to parkland, and other improvements, yearly revenues are expected to increase \$100,580.

Fiscal Effects – Local Government

According to State Statute 70.114, effective January 1st, 1992, on all lands the Department of Natural Resources acquires, the agency must pay aids-in-lieu-of-taxes equal to the property taxes that would have been paid had the land remained in private ownership. According to State Statute 70.11 (1), property acquired by the DNR is removed from the tax roll. In lieu of the loss of tax base, each taxing jurisdiction receives an aid payment equivalent to property taxes. *Note: Land purchased prior to January 1st, 1992 is on separate aid payment schedules and procedures.*

The only difference between the DNR payment-in-lieu-of-tax (PILT) program and private land relates to the assessed value. To avoid the need for local assessors to continually assess DNR property, and for the DNR to review and possibly appeal assessments, the initial assessed value is set at the DNR purchase price of the property, which is based on the appraised market value.

Subsequently, this value is adjusted to reflect the change in the assessed value of land in the taxation district. The first year payment is actually based on an adjusted purchase price. All other aspects of the DNR aid-in-lieu-of-tax payments under this program are the same as those for a local taxpayer.

The program works like this:

- 1.) In the year of purchase (i.e. 2006), regular property taxes are paid as determined in the closing transaction. The seller pays a prorated share and the DNR pays the balance.
- 2.) For the following year (i.e. 2007), the assessed value of the property is the purchase price as determined by certified appraisals. In cases where the acquisition value is other than market value, such as a donation, the assessed fair market value for the year preceding the purchase is used.
- 3.) The DNR adjusts the purchase price to reflect the change in the assessed value of all land in the taxation district. The State Department of Revenue supplies the adjustment rate. The adjustment factor is used to calculate a current “assessed value”. In addition, the adjusted “assessed value” is equalized. The Department of Revenue provides the equalization rate. The “equalized assessed value” is then used to calculate the aid payment.
- 4.) In December (i.e. 2006) the DNR gathers the general property tax rates for the current year (i.e. 2006) for all the taxing jurisdictions from the taxation district clerk.
- 5.) On or before January 31 of the next year (i.e. 2007), the DNR calculates and pays the taxation district treasurer the aid-in-lieu-of-tax payment. The amount is calculated by multiplying the equalized adjusted assessed value by the appropriate tax rates.
- 6.) On or before February 15 (i.e. 2007), the taxation district treasurer pays each taxing jurisdiction (town, village, or city; school; vocational/technical colleges (VTAE); county; State of Wisconsin; and special districts) its appropriate share of aid payment.

Under this program the Department of Natural Resources pays a fair share of aid on lands it purchases.

State Aid Formula Impact:

When the state acquires land, the land is removed from the tax rolls for the purposes of calculating state aid to local governments. How the state aid formula reacts to this change may result in an increase or decrease in local taxes. For example, if aids increase as a result of public land purchases, local property taxes would be decreased to compensate for this increase in local revenue. The largest impact is on the school, township and county tax portions of the property tax. The State of Wisconsin (Forestry Mill Tax) and VTAE have little or no change. In previous tax impact studies for DNR land acquisition projects, the change on an average residential

property tax bill has been +/- \$1-\$2.00 for the overall tax bill. This assumes that there are no changes in spending, tax rates, or aid formulas for the townships.

Significance of Cumulative Effects

Acquisition of additional lands for the park and wildlife area is expected to produce a cumulative benefit, as it will complement the existing public properties in the area. Protection and management of rare, threatened, and special concern species; wildlife and fish habitat; natural aesthetics; and archeological sites will contribute to the overall quality of the human and natural environment in the region. Additional acquisition projects of this type in the future would improve conditions for wildlife and provide added public land for a variety of recreational activities. The cumulative effects from the preferred alternative for the Buckhorn State Park, Buckhorn Wildlife Area, and the Yellow River Wildlife Area will have a long-term positive effect on the quality of human life in the region. In particular, the public has recognized the need to preserve land to benefit present and future generations. They have demonstrated this support verbally and in writing.

Tax impact of state ownership of lands will be negligible because the Department of Natural Resources pays aids-in-lieu-of-taxes equal to the properties' assessed values to each taxing jurisdiction. Payments will be adjusted annually to reflect changes in assessed value in the taxation district.

Significance of Risk

Management and development of Buckhorn State Park presents low overall potential risk to the environment. Environmental impacts associated with park facility construction will be minimal as construction affects less than 10% of total park acreage. Other than trail and related facilities, all construction will be located outside of the designated natural areas. The presence of motor vehicles and other equipment during the construction phase may pose an increased risk from spills and erosion. These risks will be mitigated by best management practices and procedures outlined in the bid documents and at preconstruction meetings with contractors. Risk to the resources of the site that result from human activity on the park and wildlife areas will be mitigated by emergency action plans put in place by park and wildlife management staff. These plans are reviewed annually and updated as needed or when circumstances change. Risk of introduction of invasive exotic species may increase due to public use of the trails and other use areas throughout the park and wildlife areas.

Fire has been identified as a vegetative management tool, especially for the barrens restoration sites that will be developed under this Master Plan. Necessary precautions are always followed during prescribed burns, including having fire-fighting equipment and personnel present on site. Being located on a peninsula, Buckhorn State Park and wildlife areas are surrounded on three sides by water. This placement provides a major fire break, guarding against fires moving to adjacent lands. During periods of high fire danger, restrictions are put into effect. During

exceptionally dry weather, a complete fire ban may be implemented. Additional protection during high fire danger periods will be available from a DNR fire control unit stationed in the vicinity.

If the proposed land acquisition were not undertaken, public ownership and subsequent management for natural resource and public outdoor recreation benefits would not occur. Permanent resource protection would likely not occur either. While it is possible that private ownership may manage the forest resource for sustainable yield, management for multiple uses including recreation and rare resource protection may not be considered under private ownership. The potential for residential development and resultant habitat destruction and fragmentation is high in the non-project portion of the proposed acquisition area if the lands are not transferred to the public trust. An exception is on those lands owned by WRPCo, as the terms of its FERC license require the company to carry out both resource management and protection, as well as to provide for full public utilization of the project lands and waters.

Endangered and threatened wildlife occurrences on the property will likely decline if development occurs. Natural aesthetics would also be impacted if development took place on portions of this relatively undisturbed environment.

Private ownership typically eliminates public recreational use of the uplands associated with the proposed acquisition. The majority of public recreation including hunting, hiking, and bank fishing would not continue under private ownership. Trespass complaints to law enforcement officials could be expected to increase were the land to be sold to private individuals. However, navigation would continue to enable anglers, boaters and canoeists to use the river and lake.

Significance of Precedent

This project is not precedent setting in the county or state. Such a project has a sound basis in applicable statutes and codes, and state project expansions such as this one are not uncommon. The earlier state park and wildlife area purchase provides a very similar case precedent. A negative decision on this proposed project would subject the property to strong private development pressure and would limit public recreation use and reduce the natural resource base of the area. Approval of this plan would not significantly influence future decisions on other WDNR property Master Plans as all recreational uses described are currently allowed within other WDNR state parks and wildlife areas.

Significance of Controversy over Environmental Effects

No public controversy over state acquisition and/or development has been identified during the public involvement aspect of this plan. Most people who commented on the plan indicated they wanted the state to purchase as much land as possible to keep it open for public recreation and hunting. Public officials voiced no opposition to state acquisition as long as the state pays real

estate taxes on the property acquired. Local officials want to feature the park and wildlife areas as a major component of tourism promotion for the area. They realize that the properties provide for the recreational wants and desires of local citizens and those who visit the area.

The citizen involvement effort for this Master Plan included contacting affected adjacent landowners, local legislative and elected officials, Buckhorn State Park friends group members, and public and private entities who may be affected by and/or have an interest in the properties. Public open-house forums, news releases and articles, direct mailings, a website and radio announcements were some of the media used to foster citizen involvement in master planning.

A total of 30 people attended the two open house master planning meetings. Approximately 70 comments were received from the public as of Feb. 1, 2006. Suggestions ranged from providing shower facilities and new RV campsites, to increased opportunities for nature preservation and interpretation. The majority of respondents felt that any new land use should be passive in nature, including hunting but excluding ORVs. Respondents also felt that the properties should serve as a focal point for bringing tourists into the area for extended stays. Barrens restoration and preservation are highly valued by the public who would like to see vegetative management continued and expanded. People appreciate the properties' existing facilities, and the personnel that maintain them. Nature trails, an amphitheater, and an indoor nature center, possibly attached to the office, are desired. Biking trails should also be developed. Generally, people want and enjoy silent sports and hunting on these properties. Some respondents mentioned the desire to have ATVs allowed on the properties. No one commented on horse riding.

The consensus has been one of strong local support for acquiring more land for the Yellow River Wildlife Area and Buckhorn State Park.

Conclusions

Implementation of Master Plan goals for management and development of Buckhorn State Park, Buckhorn Wildlife Area, and Yellow River Wildlife Area will provide positive recreational, ecological, social, and economic benefits to the Buckhorn region by providing state park and wildlife areas that provide public access to a variety of outdoor recreational activities and facilities. These properties also provide for the protection of unique, rare, and endangered species, and the management and restoration of the barrens community that occurred here prior to European settlement.

Chapter Four – Assessment of the Environmental Impacts of the Master Plan

Project Name: Buckhorn State Park and Buckhorn and Yellow River State Wildlife Areas Master Plan

County: Juneau

DECISION (This decision is not final until certified by the appropriate authority)

In accordance with s. 1.11, Stats., and Ch. NR 150, Adm. Code, the Department is authorized and required to determine whether it has complied with s.1.11, Stats., and Ch. NR 150, Wis. Adm. Code.

Complete either A or B below:

A.EIS Process Not Required



The attached analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action which would significantly affect the quality of the human environment. In my opinion, therefore, an environmental impact statement is not required prior to final action by the Department.

B. Major Action Requiring the Full EIS Process



The proposal is of such magnitude and complexity with such considerable and important impacts on the quality of the human environment that it constitutes a major action significantly affecting the quality of the human environment.

Signature of Evaluator <i>Michael L. Ries</i>	Date Signed <i>Apr 10, 2006</i>
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Number of responses to news release or other notice: *4*

Certified to be in compliance with WEPA Environmental Analysis and Liaison Program Staff <i>Tom Lovvick</i>	Date Signed <i>12/5/06</i>
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NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to section 227.42, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. The filing of a request for a contested case hearing is not a prerequisite for judicial review and does not extend the 30-day period for filing a petition for judicial review.

Note: Not all Department decisions respecting environmental impact, such as those involving solid waste or hazardous waste facilities under sections 144.43 to 144.47 and 144.60 to 144.74, Stats., are subject to the contested case hearing provisions of section 227.42, Stats.

This notice is provided pursuant to section 227.48(2), Stats.

Chapter Five – Alternatives and Their Environmental Impacts

A Master Plan alternative is a grouping of a number of compatible options for resource management, recreational development, and public use of a property owned by the Department of Natural Resources. The content of an alternative should be compatible with the property designation, property capabilities, the Master Plan's vision and goals, and the area's Regional Analysis. The alternatives summarized below are the most recent set of alternatives that were considered as part of the planning effort for Buckhorn State Park, Buckhorn Wildlife Area, and Yellow River Wildlife Area.

Recreation Management Alternatives

Alternative One: Status Quo

Under this alternative, the park and wildlife areas would be operated and maintained as they are currently. There would be no new recreational facilities or development of the park or wildlife areas. Operations within the park and wildlife areas would continue per parks program guidelines. Parks staff would continue to manage recreational facilities in the wildlife area. Hunting would be allowed according to current regulations and policies and park staff would oversee the youth deer hunt, law enforcement, and deer registration for both the park and wildlife area. The status quo option is not desirable as it would not meet the vision and goals for the properties. Based on public comment, Regional Analysis, wildlife management, and present park operations, this alternative would not be desirable.

Alternative Two: Reduce Recreational Development on the Wildlife Areas

Presently there are a number of park facilities located on wildlife area lands. These include parking lots, 2.7 miles of hiking trail, 10 campsites, 3 small boat/canoe launches, one large boat launch and beach, toilets (1 vault and 6 portable), and 2 ADA accessible observation/hunting blinds. These facilities receive a great amount of use from park users and hunters alike. These recreational facilities meet the vision and goals for the park and wildlife properties. Based on public comment, Regional Analysis, wildlife management, and present park operations, it is not desirable, nor practical to eliminate these recreational facilities.

Alternative Three: Designate the Park and Wildlife Areas as a Single Property – a Recreation Area or a State Park

The Recreation Area classification provides management tools to create zones in which the DNR can control the type of use, numbers of users, and time of use. This classification could work for

Buckhorn State Park and wildlife areas, although designation as a recreation area often causes people to associate the area only with motorized forms of recreation such as ATVs and ORVs. From public comments, it is very apparent that park and wildlife area users wish to see silent sport activities and hunting as the primary uses in Buckhorn State Park and wildlife areas. These properties are also very important for their natural resource and educational value and are associated with the nearby Buckhorn Barrens State Natural Area and Yellow River Oxbows State Natural Area. Motorized recreational use is not allowed within state natural areas.

Alternately, the area now occupied by Buckhorn State and Wildlife Areas could be designated a park. However, under a "park" designation, the administrative code which allows small game hunting in certain designated areas of the park would have to be revised. This designation was found not to be desirable due to the confusion and conflict which may arise between user groups that have a 30 year history of using the park and wildlife areas in separate ways. In addition, trapping would not be allowed within the park except for the removal of nuisance animals, thus eliminating one of the recreational activities provided by the wildlife areas. For the above reasons, this alternative is not feasible or desirable

Alternative Four: The Preferred Alternative - Provide Recreational Use of the State Park and Wildlife Areas in Alignment with their Respective Property Designations

This alternative was chosen as the preferred option. Buckhorn State Park will continue to provide a variety of camping and day-use activities such as picnicking, swimming, fishing, hiking, nature study, and other park associated activities. The park will also allow regulated deer and turkey hunting as secondary activities. Buckhorn Wildlife Area and Yellow River Wildlife Area will provide for big and small game hunting and trapping. Secondary activities will include wildlife observation, hiking, fishing, berry picking, and other compatible types of recreation. Since the properties' creation (nearly 30 years ago) there has been considerable overlap and blending of recreational activities, management, and operations between Buckhorn State Park and wildlife areas. The Master Plan calls for this synergy to continue. The park and wildlife areas will be enlarged to provide more recreational land base and protection for the natural resources the lands contain. A portion of the park and wildlife areas lands will be exchanged to provide a clearer division between park and wildlife area managed lands and associated recreational activities. The park and wildlife areas are managed as described in applicable statute and NR administrative code.

Vegetation Management Alternatives

Alternative One: Status Quo

Management of the 1,680-acre Buckhorn Barrens State Natural Area, which overlays Buckhorn State Park and Buckhorn Wildlife Area would continue in consultation with the State Parks, Wildlife, and Endangered Resources programs. The Endangered Resources program also manages Yellow River Oxbows Natural Area, an 820-acre area within Yellow River Wildlife

Area. The Bureau of Parks would continue cooperative efforts with the Wildlife and Endangered Resources programs to restore and/or manage these sites according to the approved management plan. Firewood permits would continue to be used to salvage wood in accessible locations. This alternative is feasible but not desirable because it would not meet the vegetative management needs for lands added to the park and Yellow River Wildlife Area that lie outside of the designated natural areas.

Alternative Two: Preferred Alternative – More Active Barrens Restoration and Cutting for Visitor Safety and Tree Cover Health.

Vegetative management would include the continued removal of diseased, dying and dead trees as appropriate for the park and wildlife areas (including any lands acquired within the boundary expansions). Firewood permits have been and would continue to be used to remove trees close to roads and accessible areas. Woodlots containing diseased and dying oak and jack pine would continue to be converted to barrens in a variety of acreage increments as appropriate. A Vegetative Management Plan would be developed in cooperation with the Parks, Wildlife, Endangered Resources, and Forestry Programs. Tree disease and invasive species would be managed as feasible and practical. Vegetative management would be used as an educational tool. Limited tree and shrub planting of indigenous stock would occur in various park use areas and campsites for shade, screening and aesthetic reasons. Sustainable forest management techniques would be used as appropriate to meet land management objectives and goals for the properties. Commercial timber harvests would be used as applicable to maintain and promote a healthy and vigorous forest condition, regenerate new forests, or convert existing vegetation to desired vegetative conditions. This alternative meets the vision and goals for the properties, and addresses the needs expressed through public comment, Regional Analysis, wildlife management and park operations.

Due to the extensive nature of oak wilt within the park and wildlife area, an inventory will be undertaken and a program established to track the disease. The feasibility of using timber sales to manage the disease should be further evaluated. In addition, a specific plan would be developed to deal with the diseased wood that needs to be removed from campsites, day-use areas, trails, and other sites frequented by visitors and staff alike. The feasibility of designating sites for wood storage and processing needs to be addressed based on available funding and staffing as well as volunteer labor.

Specific sites within the wildlife areas and park would be chosen for timber harvest based on the need for oak wilt management, stand age, and desire for retention of the stand's cover type and/or conversion to barrens. Habitat value and program objectives would also be used to identify and prioritize sites. For example, some large standing dead trees would be retained in various locations for the habitat they provide for birds such as the red-headed woodpecker and flicker.

Real Estate and Boundary Alternatives

Alternative One: No Additional Land Acquisition and No Land Exchange between the Park and Wildlife Properties.

This alternative would allow no land acquisition beyond what is within the existing state park and wildlife area property boundaries. Lands recommended in the Master Plan for acquisition would not be acquired. This would cause the state park and wildlife areas to not meet their stated vision and goals of providing additional lands for a variety of recreational pursuits and providing additional protection for unique, rare, and endangered habitat and species. Because no land would be exchanged under this alternative, Buckhorn State Park would continue to manage recreational facilities on wildlife area lands. The public's confusion over access and use of the subject lands would continue.

Alternative Two: Preferred Alternative – Expand the Buckhorn State Park and Yellow River Wildlife Area and Exchange Lands between the Wildlife Areas and Park.

Under this alternative, the park boundary would be enlarged to include approximately 1,142 acres of land north of the park on the east side of the peninsula. The Yellow River Wildlife Area would be enlarged by about 235 acres. Acquisition would provide an opportunity to protect unique natural resources, including rare and endangered species, while providing land for public recreation and hunting. There would be a land exchange between the park and wildlife area to address hunter and park user concerns. Buckhorn State Park would transfer the area east of 20th Ave. (21 acres) to Buckhorn WLA to clarify the boundary between the park and wildlife area. In addition, the park would transfer the area north of CTH G and east of the Yellow River (86 acres) to the Yellow River WLA for additional public hunting grounds. In exchange, Wildlife would transfer the area containing the 10 campsites south and west of hunter parking lot A (163 acres), and the 3 acres of land including the parking lot, toilets and launch at Boat Launch B to Buckhorn State Park. The area containing Boat Launch C and the triangular piece of land bounded by CTH G, Castle Rock Lake, and 16th Ave. (~67 acres) would also be transferred from wildlife to parks. Hunting, other than deer bow, would be eliminated from the area due to its close proximity to homes and roads. Boat Launch C, presently in the Yellow River WLA, is used as a boat launch, beach, and picnic area. These recreational facilities, which have been upgraded, managed, and maintained by Buckhorn State Park, make Boat Launch C more compatible with the Parks program than with the wildlife area it is currently managed within. This boat launch should therefore be designated as state park property. Boat launch D would also be transferred to Buckhorn State Park.

Chapter Six – Summary of Public Involvement

The planning process for the Buckhorn State Park, Buckhorn Wildlife Area, and Yellow River Wildlife Area Master Plan began in fall 2004 with the gathering of background and resource information. During the spring and summer of 2005, DNR staff hosted two listening sessions with individuals, special interest groups, and government officials. Staff also personally contacted and/or attended meetings with local and state government officials who did not attend the open house sessions. Alternative proposals covering expansion, management, use, and development of the park and wildlife areas were discussed at each of these meetings. Meetings were supplemented with two mailings to approximately 240 stakeholders, newspaper articles and releases, radio announcements and interviews, and a DNR website created for the Master Planning process.

Generally, the public indicated they enjoy the opportunity to camp, hike, swim, fish, boat, and hunt within Buckhorn State Park and wildlife areas. They want additional park facilities such as showers, campsites, electric outlets, trails, an amphitheater, and a display/meeting space for nature study and other uses. They want to see more barrens restoration and management of the properties' vegetative cover. They want the state to purchase as much land as possible to keep it in the public domain and open to a variety of passive recreation uses including hunting.

Chronology of Public Involvement Activities

April 16 and 17, 2005: the following officials were contacted by the park superintendent to inform them of the Master Plan and upcoming meetings:

Jim Barrett, Juneau County Board Chairman, 3/16/05
Dale Schultz, talked to aide, 3/16/05
John O'Brien, liaison for Dale Schultz, 3/16/05,
Robert Miller, Germantown Town Chairman, 3/16/05
Senator Russ Feingold, talked to aide, 3/17/05
Senator Herb Kohl, talked to aide, 3/17/05
Sheryl Albers, talked to aide (Ryan), 3/17/05
Vince Marchetti, Necedah Town Chairman, 3/17/05
Terry Whipple, Juneau County Development Council, 3/17/05
Dennis Lawrence, North Central Planning Commission, 3/17/05. This group is working on the Smart Growth Project for Juneau County

April 26, and September 1, 2005: A public informational open house was held at the Germantown Town Hall. These open houses were used to gather input on the vision, goals, and alternatives developed for the draft Master Plan. A total of 31 people attended these two meetings. A total of 65 comments were received from the public as of 2-20-06. Their comments

Chapter Six – Summary of Public Involvement

were useful in preparing the recommendations contained with the plan document. Representative Sheryl Albers attended the April 26, 2005 meeting.

May 9, 2005: Representative Dale Schultz toured the properties and discussed the Master Plan with Joe Stecker-Kochanski, Buckhorn State Park Superintendent.

July 1, 2005: Buckhorn State Park Superintendent contacted the Juneau County Board Chairman, Germantown Town Chairman and a number of other county and town board members to discuss the potential additional acquisition of land for the park and wildlife area. All were in favor of the acquisition. The county and town representatives were also apprised of the parking facility to be built in the area across from Boat Launch C to get parked cars and trailers off of CTH G. All were in favor of this construction.

August 18, 2005: *Tomah Journal* runs an article, “Buckhorn Planning Meeting Sept. 1,” which outlines Master Plan topics and date, time, and location of the second public open house meeting.

August 30 and 31, 2005: WRJC 92.1 radio announcement covering Master Plan topics and date, time and location of the second public open house meeting.

September 1, 2005: Second public open house meeting was held, (see above comment).

September 8, 2005: *The Messenger of Juneau County* runs an article on the Sept. 1, 2005 public meeting, “Expansion Part of Buckhorn’s New Plan,” which covers the proposed alternatives including boundary modifications, land management, proposed facility development, and use of the park and wildlife areas. The article concluded that the DNR staff felt they had gathered sufficient resource information and public comment to prepare the draft Master Plan document.

Jan. 18, 2006: *Star Time* Editorial Page features a member of the Friends of Buckhorn State Park voicing agreement with the proposed land acquisition, land protection, and recreational use of the park and wildlife areas.

Public Comments and Responses

The following is a summary of the most common public comments regarding the redevelopment and expansion of Buckhorn State Park and wildlife areas. Responses to these comments are also provided.

Real Estate/Boundaries:

Respondents indicated the WDNR should expand the park and wildlife area boundaries, provided the state pays taxes on all acquired properties. Park and wildlife areas should be proactive in preserving green space. Lands should be purchased that are located adjacent to the park and wildlife areas.

Response:

This Master Plan incorporates an additional 1,142 acres of land into Buckhorn State Park. In addition, this Master Plan incorporates an additional 235 acres of land into the Yellow River Wildlife Area. Wildlife lands will be managed for their natural features, habitat value, hunting potential, and other compatible uses. Park lands will be purchased for resource protection, barrens restoration as appropriate, and passive recreational uses such as pedestrian trails.

Recreational Use:

Respondents commented that uses on the wildlife areas should be passive in nature and include activities such as hunting, hiking, snowshoeing, cross country skiing, and bird/animal observation. Most respondents supported the youth deer hunt. No ATVs or snowmobiles should be allowed on the wildlife areas.

The park should provide a variety of camping experiences ranging from the existing rustic pack-in campsites to the more modern Class A campground capable of accommodating RVs. The park should provide for multiple uses including camping, boating, fishing, hiking, and nature study. Any new areas should allow turkey, deer, and possibly small game hunting if permitted in the unit's land management classification. The majority of people indicated there should be no ATV use in the park. However, a few respondents indicated that the properties should be open to ATVs and ORVs. A few people indicated there should be no new facilities such as campgrounds or showers.

Response:

Past hunting activities will continue in the wildlife areas. The Yellow River Wildlife Area is open for all applicable hunting seasons. Some types of limited hunting are permitted in the Buckhorn Wildlife Area, but it is not open to regular season gun deer hunting or fall turkey hunting. Compatible uses such as hiking, nature study, cross country skiing, and snowshoeing are allowed, although no specific facilities will be developed for such uses. No ATV or ORV use is allowed within the wildlife areas. Authorized electric personal assistive mobility devices may be allowed by permit. Snowmobiles are allowed on specified roads and trails within the park to provide access to Castle Rock Lake on the east side of the park. Buckhorn State Park provides a full range of traditional state park uses. In addition, the park allows turkey and bow deer hunting in applicable seasons under specific regulations appropriate for the state park.

Land Management:

People support the restoration of barrens. They indicated that the WDNR should convert substantial areas of the park and wildlife areas to barrens through tree removal and burning. Some felt that the WDNR should harvest all mature timber instead of allowing oak wilt to destroy it. Some suggested that only tree tops be used for firewood (not the whole trees that are used now). They also requested that firewood collection permits be continued as part of the overall park and wildlife areas management prescription.

Response:

The WDNR will manage the vegetation within the park and wildlife areas through a wide range of management techniques developed jointly between the Parks, Wildlife, Endangered Resources, and Forestry programs. Management will use passive and active techniques to maintain and improve the health of the tree cover and to convert and restore specific sites to barrens. Vegetative management will be an ongoing activity in the park and wildlife areas. Firewood permits will continue to be used as a method to remove dead standing trees and dead downed wood. This activity will be guided by the latest methods in managing oak wilt diseased wood.

Recreational Facilities:

People appreciate Buckhorn State Park, the existing facilities, and the personnel that maintain them. They would like to see additional camping facilities, especially showers and electric hookups at some campsites. Some respondents indicated that they wanted RV sites in addition to the existing rustic walk-in sites. Others would like toilets and water stations added to the existing campsites. Nature trails, an amphitheater, and an indoor nature center, possibly attached to the park office, are desired. Biking trails should be developed. The snowmobile trail on 33rd Street should be rerouted so the road could be opened for access to Castle Rock Lake (there is no other safe access to the lake except through the state park). The park should provide an ADA accessible small boat, canoe, and kayak launch facility. Respondents also want a boat beaching area or short term dock at Boat Launch A for people getting their vehicle or trailer. Finally, several respondents indicated that they like the park as it is. Adding more conveniences to the park, they say, will take away from its unique beauty.

Response:

Existing park facilities will be retained and improved to meet the recreational needs and desires expressed by respondents. The most immediate upgrades will be to the camping facilities with the addition of a shower building and electrical pedestals to some campsites. The office will be expanded to provide space for nature displays and an accessible restroom. Nature and hiking trails will also be expanded and upgraded in the near future. Other improvements such as the RV campground and day-use facilities will be added as budgets and statewide development priorities allow. Although the approved future developments will have some impact on the quality and quantity of the park's recreational facilities, they are not expected to significantly increase the size of the area covered by these facilities, nor are they expected to significantly impact the feeling of solitude one experiences in the park.

Appendix A – Glossary of Terms

Barrens - Pine and oak barrens may share many similarities. Structurally, barrens can range from nearly treeless “grasslands” containing only oak grubs, to areas with scattered large trees, to scattered grassy openings located within primarily forested areas. Historically, prairie and grassland species have been more predominant in southern barren areas and pine has been more abundant in northern barren areas. Barrens communities occur on sandy outwash plains, sandy lake plains, and on the broad sandy terraces that flank some of the major rivers of southern Wisconsin.

Oak Barrens - Black oak is the dominant tree in this fire-adapted savanna community of xeric sites, but other oaks may also be present. Common understory species include lead plant, black-eyed Susan, round-headed bush clover, goats rue, June grass, little bluestem, flowering spurge, frostweed, false Solomon's seal, spiderwort, and lupine. Distribution of this community is mostly in southwestern, central, and west-central Wisconsin.

Pine Barrens - This fire-adapted savanna community is typically characterized by scattered jack pines, or less commonly red pines. Pines are sometimes mixed with scrubby Hill's and bur oaks interspersed with openings in which shrubs such as hazelnuts, prairie willow, and prairie forbs dominate. Flora in these barrens often contains characteristic heath species such as blueberries and bearberry as well as the shrubs American hazelnut, sweet fern, and sand cherry. Dry sand prairie species such as June grass, little bluestem, silky asters, sky-blue asters, lupine, blazing-stars, and western sunflower are also common species. In northern Wisconsin, pines may be infrequent, even absent, in some stands. Areas influenced by previous logging activities, altered fire regimes, and an absence of seed sources may also have low levels of pines.

Biological Diversity - The variety and abundance of species, their genetic composition, and the communities, ecosystems, and landscapes in which they occur. Biological Diversity also refers to the variety of ecological structures, functions and processes at any of these levels.

Campground, Modern (NR 44.07(7)(e)5b) - Modern campgrounds may be comprised of a single campground or a large campground complex, and typically have 75 or more campsites. The separation distance between campsites may vary, although 100 feet is used as a guideline. Facility development options in these types of campgrounds are not limited; however, the following facilities are usually provided: electric hook-ups for recreational vehicles, hand pump or pressurized water supply, vault or flush toilets, a recreational vehicle dumping station on-site or nearby, asphalt roadways, open play areas, paved paths and trails, and lighting on buildings and public telephones. Other facilities that are occasionally included in these types of campgrounds include playground equipment, full-service concessions, showers, and laundry facilities.

Appendix A – Glossary of Terms

Cultural Resources - Any archeological, architectural or historical artifact, site, or structure that reflects on the human-made environment.

Ecological Capability - The potential of an area to support or develop one or more communities, with the potential being dependent on the area's flora and fauna, its non-biotic attributes, its ecological processes, and disturbances within and upon the area.

Facility Development - The construction of infrastructure, including buildings, roads, and trails for resource management, public use, or other purposes.

Group Campsite - Any campsite authorized for use by groups other than those meeting the definition of a camping party in a family campground as defined by Ch. NR 45.

Master Plan - A DNR plan which describes the authorized land management, resource protection, facility development, and management of recreational use on a DNR property, but does not include a study prepared for the purpose of considering the feasibility of land acquisition respecting a new or existing project.

Native Community - An assemblage of biotic organisms indigenous to the area or region they inhabit.

Native Surface Material - Unprocessed indigenous road and trail surfacing material.

Natural Succession - The predictable tendency of certain longer-lived species to replace shorter-lived species over a period of time and if left undisturbed.

Savanna - Savannas are plant communities that were defined arbitrarily by John T. Curtis in *the Vegetation of Wisconsin* as having no less than one tree per acre and no more than a 50 % tree canopy. He further subdivided Wisconsin savannas into four categories: oak barrens, pine barrens, oak openings, and cedar glades. The first two communities are covered under Oak and Pine Barrens Community descriptions.

Passive Management - A management style in which objectives are achieved without direct action.

Property or Properties - Areas of land approved for acquisition by the governor under sec.23.14, Wis. Stats., or as otherwise established by the Natural Resources Board.

Walk-In and/or Single Unit Campsite - A campsite designated for use by a family, their dependant children, and up to two guests, for a total of 6 persons or less.

Trail - Fully Developed - a trail with a smoothly graded base and a stable, hard surface composed of materials such as asphalt, aggregate, or frozen earth. The trail's cleared width, tread width, cuts, and fills will be developed to be consistent with the trail's intended use. To the

Appendix A – Glossary of Terms

degree practicable and feasible, fully developed pedestrian trails will be made accessible to persons with physical disabilities.

Trail - Lightly Developed - A trail with a maximum sustained and cleared width not normally exceeding 16 feet, a moderately wide tread width for designated uses, a rough-graded base to remove stumps and large rocks, and a surface of primitive or native materials except where other materials are required due to environmental conditions or where the trail also serves as a lightly developed road with other types of surfacing materials.

Trail - Moderately Developed - A trail with a maximum sustained and cleared width not normally exceeding 8 feet, a minimal tread width for the intended use, and a relatively smooth graded base with a compacted surface composed of stable materials such as aggregate. Where practical and feasible, a moderately developed trail shall, at a minimum, meet the standards for recreational trails accessible to persons with a disability.

Trail - Primitive - A trail that is minimally developed as a single-file tread with a maximum sustained and cleared width not normally exceeding 8 feet; a minimal tread width for the intended use; and a rough, ungraded bed where large rocks, stumps and downed logs may be present. Primitive trails primarily follow natural topography and have few or no areas where environmental conditions require the use of other materials. Modifications to the natural trail surface are limited to that which is minimally necessary to provide essential environmental protection.

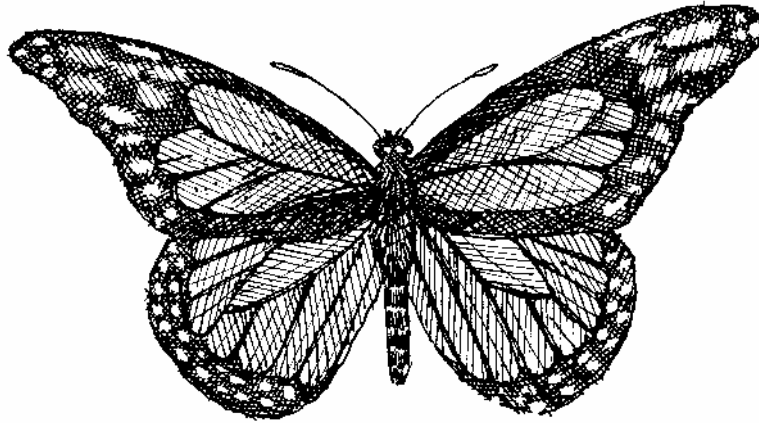
Forbs - Non-woody flowering plants, most often native to the region in which they occur.

Invasive - Both native and exotic species that have a tendency to take over a site in the absence of periodic fires or other natural processes that would have historically kept the plant species in check. Typically the overabundance of invasive species causes a dramatic decrease in a system's diversity.

Presettlement - The time prior to a significant settlement by American/European settlers.

Rare Species - Species which occur infrequently. Often these species are Endangered, threatened, or species of special concern.

Yurt - A circular, domed dwelling that is portable and self-supporting. Yurts were originally used by nomadic Mongol and Turkic people of central Asia but are now used as inexpensive or alternative camping shelters.



Appendix B – Property History

On September 12, 1974, the WDNR acquired title to 3,404 acres of land in Juneau County for the purchase price of \$450,000. In December 1975 the Natural Resources Board (NRB) conditionally approved an initial conceptual Park Master Plan for this property. After reviewing comments received in response to the property’s Environmental Impact Statement (EIS), the NRB revised the Master Plan in 1977 to designate two properties within the site: the 1,760-acre Buckhorn Wildlife Area A (now Buckhorn Wildlife Area) in the southern portion of the park property, and a 1,644-acre park (including 400 acres of scenic easements). Wildlife areas were designed to accommodate hunting and other related interests on the site.

In 1999 the WDNR purchased an additional 3,221 acres of land along the Yellow River from the Wisconsin River Power Company (WRPCo). Of this purchase, 2,581 acres were designated as Buckhorn Wildlife Area B (now Yellow River Wildlife Area) and 640 acres were added to Buckhorn State Park. In addition, the park acquired 116 acres of scattered small parcels between 1974 and 2004.

As of December 31, 2004, state ownership of park properties included 4,386.4 acres in wildlife areas and 2,339.3 acres in Buckhorn State Park. Total acreage within the existing park boundary is 2,689 acres. This includes 70 acres of in-holdings and 280 acres in scenic easement within its existing property boundary.

Two types of boundary changes occurred in 2007 as part of the approval of this master plan between the properties of Buckhorn State Park, Buckhorn Wildlife Area, and Yellow River Wildlife area. One boundary change was a realignment of the shared boundaries of the park and the two wildlife areas. This realignment better defines the boundaries between the three properties and brings all intensive recreational use sites into the park. The other boundary change was a series of property expansions to protect valuable habitat areas and to provide additional public recreational lands in this rapidly developing area.

Park - Wildlife Area Boundary Realignments

Prior to boundary realignments between Buckhorn State Park and wildlife areas, a number of developed, intensively used recreational facilities were located within the wildlife areas. In addition, the “blurred lines” between the park and wildlife areas created confusion over hunting regulations, development/management responsibilities, and user access fees. A boundary adjustment between the wildlife areas and park addresses many of these issues. Several parcels of land totaling 107 acres were transferred from Buckhorn State Park to the two wildlife areas. In addition, 776 acres (115 acres land and 661 acres water), in several parcels, were transferred from the wildlife areas to the park. The parcels that were exchanged are described in more detail below.

Table B-1: Boundary Realignments between Buckhorn State Park and Wildlife Areas

	Buckhorn State Park	Yellow River WLA	Buckhorn WLA
Property Acreage After Boundary Realignments	3,229 acres	2,297 acres	1,675 acres

Wildlife Area Lands Transferred to Buckhorn State Park

From Buckhorn Wildlife Area

- Boat Launch B and the land containing the parking lot and toilets (3 acres).
- The former portion of Buckhorn State Wildlife Area lying west of hunter parking lot A containing 10 campsites and part of the flowage. This parcel is 163 acres (118 acres are water).

From Yellow River Wildlife Area

- Boat Launches C and D have been transferred to the park. Boat launch C is used as a major boat launch, beach, and picnic area. These lands total 67 acres.
- Flowed land south of Co. Hwy G, totaling 543 acres. This adjustment establishes Hwy G as the southern boundary of the Yellow River Wildlife Area.

State Park Lands Transferred to the Wildlife Areas

- The former portion of the Buckhorn State Park east of 20th Ave. has been transferred to the Buckhorn Wildlife Area to establish the road as the park-wildlife area boundary. This parcel is 21 acres.
- Park lands north of CTH G have been transferred to Yellow River Wildlife Area to establish the road as the common park-wildlife area boundary. This parcel is 86 acres.

Boundary Expansions

Buckhorn State Park has been expanded by 1,142 acres and the Yellow River Wildlife Area has been expanded by 235 acres. All lands within current wildlife area boundaries are under state ownership. With the exception of 70 acres, all land within the current park boundary is under state ownership or easement.

Table B-2: Property Acreage after Boundary Expansions

	Buckhorn State Park	Yellow River WLA	Buckhorn WLA
Property Acreage after Boundary Expansions	4,371 acres	2,432 acres	1,675 acres

Each of these expansions is described below.

Buckhorn State Park Expansion

The expansion of the park's boundary to include an additional 1,142 acres of land adjacent to the park's northern boundary brings the park's acreage goal to 4,371 acres. Any additional lands acquired will become part of the Recreation Management Area. Expansion of the park was approved for the following reasons:

- To obtain over 1 mile of shoreline on Castle Rock Lake.
- To provide an important open-space buffer between the park and future development or incompatible land uses.
- To help preserve the regionally important oak-pine cover type and restore additional barrens habitat. Staff from the DNR's Bureau of Endangered Resources recently surveyed the site and strongly recommended acquiring the parcel for its habitat value and potential development as barrens restoration. Additionally, the site will preserve, protect, and provide an opportunity to interpret two ponds and a significant sand blow site.
- To provide additional space for future recreational use and possible facility development, and to provide additional public land for deer and turkey hunting.

Yellow River Wildlife Area Expansion

The 235-acre expansion of the Yellow River Wildlife Area brings the property's acreage goal to 2,432 acres. Expansion of this wildlife area was approved for the following reasons:

- To protect unique floodplain and woodlot habitat.
- To provide an important open-space buffer between the wildlife area and future residential development or incompatible land uses.
- To provide management and recreational access from Highway 80 to one of the parcels.
- To preserve lands for public deer and turkey hunting and wildlife observation.
- To provide for possible future development of hunter parking and small boat access.
- To protect and preserve a larger block of existing crucial habitat for certain wildlife species, and to protect and preserve additional lands having a high potential for barrens restoration.
- To provide more easily recognized boundaries and facilitate better public use of both park and wildlife areas.