



# Interim Forest Management Plan

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## Property Identifiers

### Kinnickinnic State Park

County: Pierce

Property Acreage: **1275**

Forestry Property Code(s): # **4879**

Master Plan Date: **1980**

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### Part 1: Property Assessment (1-2 pages maximum)

The following items should be considered during the property assessment. Not all sections may be relevant for all properties.

#### General Property Description

- Landscape and regional context
- History of land use and past management

Kinnickinnic State Park is located in the Western Prairie Ecological Landscape and has the following Landtype Association: 222md06 St. Croix Prairie. The Landscape is entirely glaciated. Almost half of the current land cover is agricultural crops and about one third of the area is grasslands, with smaller amounts of forest, open water, open wetlands, and urban areas. The major forest types are maple-basswood and oak-hickory, with lesser amounts of lowland hardwoods. Grassland management at multiple scales is a major opportunity in the Western Prairie. Small, scattered remnants of native prairie exist here along with substantial areas of "surrogate grassland" that now provide increasingly critical habitat for many grassland species, especially birds. The St Croix River's floodplain contains good examples of emergent marsh, wet prairie and floodplain forest. The forested slopes of the St. Croix Valley contain rich mesic hardwood forests, dry oak forests and a few stands of natural white pine. Remnant bluff prairies and oak savannas occur on the uppermost slopes above the St. Croix. The St. Croix Prairie LTA has a characteristic landform pattern of undulating outwash plain. Soils are well drained silty, loamy, and sandy soils over acid gravelly sandy outwash.

The park is bordered by the St. Croix River on the west. The Kinnickinnic River, a class 5 trout stream, bisects the park from east to west.

Migratory bird use of the St. Croix River valley is high, and the river corridor also provides nesting and wintering habitat for many common and rare birds, including species of conservation concern. Over 140 species of birds frequent the valley during the migrating season.

The park was created from several farm ownerships. Native plant communities were impacted by cropping, grazing, and timber harvest. Most of the former croplands have been restored to native grasses, forbs, and some small conifer stands (primarily white pine). Very steep slopes along the gorge of the Kinnickinnic protected these areas from the disturbances/ uses that occurred on the uplands. Succession to northern hardwoods will ultimately occur in many stands.

#### Site Specifics



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- Current forest types, size classes and successional stages
  - Oak:** (19% cover of the park) 141 acres of large sawtimber (15"+ diameter) and 26 acres of small sawtimber (11-15" diameter) in 100 – 120 year age class; and 77 acres of large (15"+ diameter) sawtimber in 60-70 year age class.
  - Bottomland Hardwoods:** (8%) The dominant species is silver maple, with lesser numbers of box elder, cottonwood, willow, and American elm. There are 99 acres of large sawtimber (15"+ diameter) in the 50 – 70 year age class, and 8 acres of small sawtimber (11-15" diameter) in the 30 – 40 year age class.
  - Central Hardwoods:** (18%) This type is a mixture of several species including green ash, American elm, box elder, red cedar, oak species, black cherry, aspen, white birch, walnut, basswood, and black locust. There are 81 acres of small sawtimber (11-15" diameter), 27 acres of poletimber (5-11" diameter) 90 – 100 year age class, 105 acres of poletimber (5-11" diameter) 30 – 50 year age class, and 38 acres of seedlings/saplings (0-5" diameter) in 1 – 10 year age class.
  - White Pine /Northern Hardwoods:** (8%) 100 acres large sawtimber (15"+ diameter), 100 – 110 year age class, primarily on steep slopes along the river gorge and tributary drainages.
  - White Pine:** (3%) 43 acres of planted stands (includes some red pine and mixed conifers) 20 – 40 year age class small sawtimber and poletimber.
  - Aspen:** (2%) 21 acres of poletimber (5-11" diameter) in the 60 – 70 year age class, 24 acres of poletimber in the 30-40 year age class.
  - Walnut:** (1%) 14 acres, 40 year age class sawtimber/poletimber.
  - Grassland:** (30%) 268 Acres native grasses, 116 acres non-native cool season grasses.
- State Natural Area designations

**The Kinnickinnic River Gorge and Delta State Natural Area (#162, 100 acres)** lays entirely within the park.

## State Natural Area Description

Kinnickinnic River Gorge and Delta contains an undisturbed river gorge with a diversity of plant communities and features one of the finest examples of river delta in Wisconsin. The deep river valley, cut into glacial drift, sandstone, and limestone, contains dry-mesic forest on the sheltered north-facing slope and xeric oak-cedar woods and small prairie openings on the exposed south-facing slope. The steep south bank contains large beds of Canada yew and walking fern under a forest of sugar maple, ironwood, and white pine. The steep, thin-soiled slope contains hepatica, common polypody fern, walking fern and other mesic woodland plants. Dripping to dry cliffs are found intermittently throughout the valley. On the south side of the river is the Devil's Mixing Bowl - a series of cascades originating in a deep box canyon and emptying into a small pool. A spectacular example of dripping cliffs is found within this canyon. At the head of the canyon the sheer walls support a ribbon of bulblet ferns growing along a high shelf. From this shelf, water falls 10 feet to the canyon floor and down the cascades. The lower waterfall is dry except in wet seasons. Numerous mosses and lichens blanket the canyon floor. Of special geomorphologic interest is the large semi-open delta deposited by the Kinnickinnic River as it flows into the St. Croix River. The delta and river lowlands are used by waterfowl and nesting turtles. Kinnickinnic River Gorge and Delta is owned by the DNR and was designated a State Natural Area in 1980.

- High Value Conservation Forests (HCVF) or other resources/natural community types limited in the landscape
  - The Kinnickinnic River Gorge and Delta State Natural Area (SNA), and some portions of Stand #23 – White Pine/Northern Hardwoods – and Stand #17- Bottomland Hardwoods, lying outside of the SNA, are considered HCVF's.
- Biotic Inventory status: **none**
- Deferral/consultation area designations: **none**
- Rare species
  - As of 2013, 1 state endangered, 2 state threatened, and 6 special concern species are known from the general vicinity of the park and include plants, birds, and 1 reptile. Also it is likely that a number of rare grassland birds occur associated with the grasslands of the park and an uncommon shrub, Canada yew, is known to occur within the park.



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- **Invasive species**  
The level of invasive plants varies from heavy along forest edges and former pastured sites (open and forested) to moderate to light in the gorge and forest interior areas. Species present include, black locust, common buckthorn, non-native bush honey-suckle, autumn olive, Amur maple, dame's rocket, crown vetch, bird's-foot trefoil, spotted knapweed, reed canary grass, white and yellow sweet clover, pampas grass, and garlic mustard.
- **Soils**  
The park lies in the Antigo-Onamia Association which occupies the terrace of the Kinnickinnic River. The terrace is bedrock overlain with outwash and loess. Soils vary from sand, fine sandy loam, loam, to silt loam.

## Cultural and Recreational Considerations

- **Cultural and archeological sites (including tribal sites)**
  - **Cultural** – Former dam and mill site along the Kinnickinnic River east of County Highway F. Ultimately remnants of the small family farming history will have historical significance.
  - **Archeological** - No known/recorded sites, though the junction of the rivers makes the setting a likely one.
- **Recreational**- The park provides opportunities for hiking, fishing, picnicking, swimming, boat camping, cross-country skiing, etc. Also most of the Park is open for hunting for portions of the deer and small game hunting seasons. General park information, maps, and hunting information is available on the parks website at: <http://dnr.wi.gov/topic/parks/name/kinnickinnic/>

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## Part 2: IFMP Components (1-2 pages maximum)

### Management Objectives (Outline primary forest management objectives):

To manage and enhance the park's scenic and landscape quality and insure vegetative cover type diversity and health.

- **Aesthetics**: Protect scenic views and allow forest cover to provide settings for solitude and privacy.  
Maintain the variety of forest types and plant communities within the park.  
Promote natural-appearing forest stands.  
Encourage the growth of large diameter trees.
- **Forest Health**: Allow for regeneration of portion of the forest through forest management and seek opportunities that enhance or maintain the overall health and vigor of the forest ecosystem.
- **Water quality**: Sustain the cold water fishery of the Kinnickinnic River, the local watersheds and water resources including erosion control along waterways, trails, and other property features.
- **Recreation**: Sustain large canopy cover and shade in picnic areas, campgrounds, along nature trails, and high use areas.
- **Habitat**: The majority of forest on this property is relatively old. Allow some areas of the forest to continue to get older to provide habitat for both common and rare wildlife species associated with older forest. Develop young forest in some patches to provide habitat for common and rare wildlife species associated with young forest.
- **Pest management**: Manage invasive plant and animal species, pests, diseases, and nuisance wildlife through prevention, control, and eradication activities.



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- Education and research: Provide opportunities for interpretation, education, and scientific research.

**Property Prescriptions** (Identify specific and pertinent prescriptions by area or forest type, including passive management areas, extended rotation, and other information that will help achieve the objectives):

**OAK** - Maintain oak cover types where feasible. Extend rotation age from normally recommended 80-90 years to 120 years to spread oak harvest schedule. Consider some mid-age or near rotation age stands for harvest to diversify oak age classes (2/3 of oak acreage is age 100 plus).

- a. Prioritize regeneration harvests on accessible south and west facing stands where the possibility of oak regeneration success is greater, or stands where terrain is suitable for site prep, pre and post-harvest treatments, and weeding necessary to maximize oak regeneration (*stands 3,5,6, 21 scheduled tentatively for 2014*).
- b. Manage to convert to uneven-aged northern hardwoods where even-aged management will not be consistent with aesthetic or recreation goals. There is at least 1 active oak wilt pocket in the park that has been expanding for several years. Northern hardwoods are rapidly seeding into this pocket.
- c. On extremely steep inaccessible slopes permit natural succession to northern hardwoods.

**CENTRAL HARDWOOD** - Opportunities exist for maintenance of an oak component in some of the central hardwood stands. Release young oak that occur in these stands (perhaps via marked fuelwood plots) to enhance their survival and larger diameter growth. Similar treatment could be applied to less abundant species such as walnut, hackberry, etc. to maximize diversity within these stands.

**ASPEN** - Maintain a portion of the relatively small acreage of aspen type in the park. A harvest is currently planned for 2 small aspen areas (parts of Stand #14) that are past the normal rotation age. The remainder of this stand occurs in very small clones and will be permitted to succeed naturally to central hardwoods.

**WHITE PINE** – Planted conifers stands (#9, #12) will be thinned to achieve large diameter, a natural spacing/distribution of trees, and promote natural understory shrubs and herbaceous vegetation. Volunteer ash and elm in these stands may be removed to reduce the proportion of ash on the property and remove invasive seed source from grassland edges. Stand 24, planted mixed conifers, will be thinned to reduce the proportion of non-native species (Scotch pine, blue spruce) in this stand, ultimately converting to central hardwoods (walnut, green ash, elm) and balsam fir (seeding in naturally). Passively manage native, non-plantation white pine.

**ALL TYPES** - Increase coarse woody debris and snags (where not a hazard). Reduce proportion of ash species to lessen impacts of future emerald ash borer infestation.

**UPLAND FIELDS** – Most of the agricultural fields in the park have been planted with native grasses and forbs. Crop land remaining will likely be planted with native grasses also. There are opportunities to create open grown “savanna” trees by crop tree release of young bur oak that occur along some of the grassland edges (especially in Stand 5). Access to this area is good and fuelwood permits/plots may be a possibility. Thinning of “hard” grassland/forest edge to establish more natural prairie/forest transition, especially where young bur oak may be released. Grassland restoration and maintenance will be enhanced by control (or target during thinning) of hardwood species that are aggressive invaders of grasslands – box elder, elm, ash, and cottonwood, along forest edges.

**INVASIVE PLANT CONTROL** – Emphasize early detection and response when populations are small and easier to control.



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Prioritize areas where:

- 1) Critical for successful regeneration in most stands.
- 2) Invasive plants are just beginning to establish - in the SNA and other forest interior areas.
- 3) In the native grass and forb stands.
- 4) Other areas as funding and workload permits.

See Wisconsin Administrative Code Chapter NR 40 -  
Invasive Species Identification, Classification and Control

## STATE NATURAL AREA MANAGEMENT

### **Site objectives**

Manage the site as a reserve for dry prairie and shaded cliff, as a significant geological feature, and as an ecological reference area. Natural processes will determine the structure of the delta. Natural processes, prescribed fire, and processes that mimic natural disturbance will determine the structure of the prairie and associated gorge and cliff communities. Provide opportunities for research and education on the highest quality native prairies and depositional delta features.

### **Prescriptions**

The ecological characteristics of the native prairie will be primarily shaped by a fire management program. The native prairie species are managed actively through tree/shrub control using tree harvest, brushing and especially fire to mimic natural disturbance patterns. Occasional fire-tolerant oaks, hickories, and native shrubs such as hazelnut may be retained at low densities. The native dominant tree species in the gorge are managed passively. However, some thinning of the canopy, understory manipulation and shrub control via harvest, brushing or fire may be needed to mimic natural disturbance patterns. Other allowable activities throughout the entire site include control of invasive plants and animals, augmentation of native prairie species after careful review, maintenance of existing facilities, access to suppress wildfires, and salvage of trees after a major wind event.

Approvals:

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Regional Ecologist Date

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Forester Date

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Property Manager Date

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Area/Team Supervisor Date



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