Boyle Lake State Wildlife Area Master Plan
Michigan Department of Natural Resources

Wildlife Division
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Contents

Intended Purpose and General Management Direction

The Boyle Lake State Wildlife Area is 430 acres in central Berrien County (Weesaw (T7S R19W, Section 12) and Buchanan (T7S R18W, Section 7) townships (Figure 2). Communities within five miles of the area include: Baroda, Berrien Springs, Bridgman, Buchanan, and Galien. Larger communities within 20 miles include: Benton Harbor and St. Joseph to the northwest, and Elkhart and South Bend, Indiana to the south. In addition, Chicago, Ill., is within 75 miles of the area. Much of the surrounding area is rural with scattered small towns. The wildlife area has a 35-acre freshwater lake (Boyle Lk) and the east branch of the Galien River flows through the southern end of the property.

Establishment of the Area

The land for Boyle Lake State Wildlife Area was purchased in 1997 from the estate of Anita and Gerald Tichenor using money from the Michigan Natural Resources Trust Fund (MNRTF). In 1999, an additional 40 acres were purchased from Mr. Merle Phillippi using MNRTF and Pittman Robertson funding.

Public Use

Boyle Lake State Wildlife Area gets regular, year around use, for hunting and outdoor recreation. Deer hunters are the number one users of the areas, followed by small game hunters pursing squirrel and eastern cotton tailed rabbit. In recent years, a growing number of duck hunters are also using the area with fair success. There are a considerable number of people who use the County drain to access Boyle Lake for year-round fishing and a few that trap the area for beaver and muskrat.

While the main use of the area is for hunting, there is usually always someone at the Boyle Lake State Wildlife Area. Uses throughout the year include: hiking, cross country skiing, bird watching, mushroom hunting and berry picking. Also, several people enjoy kayaking and canoeing on the lake throughout the summer months. Local educators occasionally use the site as an outdoor classroom and it’s a popular location for people to camp (both permitted and not).

Legislation, Policies and Agreements Specific to this Area

There are three powerline easements that cross the Wildlife Area, that allow access to the property for mechanical removal of vegetation along the powerlines without a permit. If herbicide treatments are needed, then the company or representative must obtain a permit before application.

Commercial Uses of the Area

Sharecropping and timber harvest are two commercial activities conducted on the game area. Sharecropping agreements are typically annual contracts between local farmers and the DNR aimed at producing agricultural products beneficial to wildlife. The state retains a portion of the crop produced, usually as standing grain, for wildlife cover and food.

Background

The mission of the Michigan Department of Natural Resources (DNR), Wildlife Division, is to enhance, restore, and conserve the State's wildlife resources, natural communities and ecosystems for the benefit of Michigan's citizens, visitors, and future generations. This master plan was written to fulfill this mission as it pertains to the Boyle Lake Wildlife Area.

The primary purpose of this plan is to set strategic direction and guide future management activities to achieve desired conditions for the Boyle Lake Wildlife Area. Obligations to the funding sources used to acquire and manage this area require that it be maintained for managing for wildlife, wildlife habitat and associated recreation including hunting and trapping. Other activities and uses of the area that compliment or do not conflict with wildlife management have been considered and incorporated where appropriate.

This plan describes management activities on the Boyle Lake Wildlife Area that is expected to take approximately 10 years to complete. However, in developing this plan, time frames beyond the decade-long interval and land outside the boundaries of the area were taken into consideration. Progress on the plan will be reported on annually. Also, the plan itself will be reviewed annually; and if needed, updated. The management planned in this document is a good faith effort taking into consideration the current conditions, anticipated resources, and the state of knowledge at the time this plan was written.

Wildlife Species

Upland small game and furbearing species can be found on the Area including: American woodcock, cottontail rabbits, squirrel, raccoons, mink, beaver, and muskrat. Larger wildlife species like white-tailed deer and wild turkeys can find adequate resources in the Area and the surrounding private land to maintain permanent residence. In the Southern Lower Peninsula 23 Featured Species have been identified, nine of these species will likely benefit most from management at Boyle Lake Wildlife Area (Table 1).

Migratory songbirds use the area for nesting and migration stopovers. Many of the southern Michigan raptors can be found in the area and there is an active osprey nest on Judy Lake within a half mile of the Wildlife Area.

Boyle Lake and the waters of the Galien River provide valuable resources for amphibians and reptiles. Boyle Lake is also a good pan fishing lake. Fisherman from all around come to the lake to experience quality fishing in an undeveloped setting, a rare thing in southern Michigan.

Table 1. Featured species found at Boyle Lake State Wildlife Area and management for these species.

Common Name	**Scientific Name**	**Beneficial Actions for Species at Boyle Lake Wildlife Area**
Eastern Cottontail Rabbit	*Sylvilagus floridanus*	Brush piles construction, downed woody debris, early successional forest, edge feathering practices.
American Woodcock	*Scolopax minor*	Creating of singing and nesting fields in proximity to wetlands, early successional forest management
Bobolink	*Dolichonyx oryzivorus*	Expansion of wet emergent cover types, planting of native grasses
Canada goose	*Branta canadensis*	Lake management, wetlands.
Mallard	*Anas platyrhynchos*	Lake maintenance and enhancement, wetland creation and management, planting of buffers around grasslands for nesting.
Red Shouldered Hawk	*Buteo lineatus*	Survey and identification of any nests, protect and

Common Name	Scientific Name	Beneficial Actions for Species at Boyle Lake Wildlife Area
		buffer if a nest site occurs on the area.
Wild Turkey	*Meleagris gallopavo*	Edge feathering, planting of power lines, mast enhancement of forest resources and food plots.
Wood Duck	*Aix sponsa*	Riparian forest management, forested wetlands.
White Tailed Deer	*Odocoileus virginianus*	Food plots, heavy cover plantings, buffer plantings.

Threatened and Endangered

American lotus (*Nelumbo lutea*), which is a state threatened plant, was found at Boyle Lake in 1981. Several State threatened species or species of concern were identified within several miles of the site, making it possible that other threatened or endangered species could be located on site in the future. Such management will be opportunistic as species are verified.

Existing Conditions

The landscape to the northwest of the wildlife area is mostly agricultural with scattered woodlots along drainages and where disparate ownerships connect. Most of the agricultural lands are in row crop and some orchards and vineyards.

Southeast of the Wildlife Area, the landscape is wooded with small kettle lakes, ponds and marshes. The topography also changes from nearly flat in the northwest to more hilly terrain. Agricultural products shift to more orchards and livestock operations.

Boyle Lake Wildlife Area is located very close to the transition from the lake plain to the moraine ridges. The cover types (Figure 3) and composition found at Boyle Lake State Wildlife Area varies from open water to upland forests (Table 2).

Land cover- Non-Forested cover types	Acres	% Cover
Cropland	127	29%
Emergent Wetland	11	3%
Herbaceous Open land	34	8%
Low-Density Trees	15	3%
Mixed non-forested wetland	32	7%
Upland Shrub	17	4%
Open Water	25	6%
Non-forested acres	***261***	***60%***

Land Cover-Forested cover types	Acres	% Cover
Lowland Deciduous Forest	32	7%
Mixed Upland Deciduous	40	9%
Northern Hardwood	93	21%
Other Upland Deciduous	9	2%
Forested Acres	**173**	**40%**
Total Acres	**434**	**100%**

Table 2. Two charts showing cover type summary of Boyle Lake State Wildlife Area.

Recreational Use

Recreational and commercial uses on the area that are not incidental to our management for the purposes described above are generally not allowed. These uses can be allowed, however, under the following circumstances:

1. The uses must not interfere or conflict with the wildlife conservation purposes of the area described above.
2. The DNR has no obligations to determine if requested uses would conflict or interfere; the burden of determining must remain with those requesting the uses.
3. The requested uses cannot be exclusive of other allowable uses and must not result in the DNR losing management control of any portion of the area.
4. A lack of a specific prohibition in rules and regulations for the area does not constitute approval of the activity.

5. The DNR always reserves the ability to disallow activities previously allowed as wildlife conservation needs dictate.

Additionally, the DNR will continue to monitor any existing commercial and recreational uses for interference with the intended purposes of the area as described in this plan.

Impacts on the Local Economy

Contributions to the local economy resulting from activities on the game area include sharecropping on 128 acres through an agreement with a local farmer. Management activities over time will also allow for timber sales to improve the forested areas and provide valuable forestry products. Users of the area provide a direct boost to local restaurants, sporting goods stores and convenience stores and gas stations.

Management Direction

The desired future condition for the SGA for the Boyle Lake State Game Area is outlined in the following two tables.

Table 4. Desired future condition of cover types and habitat issue direction on the Boyle Lake SGA.

Cover type and Habitat Issues	***Desired Future Condition***
Oak	Increase
Northern Hardwoods	Decrease
Mixed Upland Deciduous	Decrease
Lowland Shrub	Maintain
Emergent Wetland	Increase
Acres of Agriculture	Decrease
Acres of Aspen	Increase
Acres of Warm Season Grass	Increase
Acres of Herbaceous Open lands	Maintain
Acres of Cool Season Grass	Maintain
# of Forest Openings	Maintain
Mature Forest	Decrease
Unfragmented Forest	Maintain
Riparian Corridor	Increase
Unmanaged Wetlands	Increase

Goals/Objectives/Actions

(Listed as highest priority to lowest)

What follows is the strategic direction for the Boyle Lake State Wildlife Area. This plan describes the **goals** or desired future condition for the area, the **objectives** under each goal, and the **actions** associated with each objective.

***Goal I*:** Is to create, maintain, and enhance habitat for white-tailed deer and wild turkeys.

Rationale: 1) White-tailed deer and wild turkeys are commonly hunted species at Boyle Lake State Wildlife Area; 2) Habitat management directed at game species will be beneficial for numerous other species.

Objective A: Provide supplemental food sources to attract and hold white-tailed deer and wild turkeys, and to enhance recreational opportunities on the Wildlife Area.

Action 1. Annually maintain several food plots or agricultural fields to provide cover and food sources, using sharecroppers when feasible. Corn will be left standing until spring and may be harvested as soon as green-up occurs. For grain crops such as wheat, oats, or soybeans, the outer 30 yards (90 feet) of the perimeter of the field will remain unharvested until the field is planted in the spring.

Action 2. Plant and maintain powerline corridors to cool season grasses, forbs and legumes; mowing can occur one time from July 15-Sept. 1 for maintenance or early in the spring to control unwanted woody vegetation.

Objective B: Is to enhance natural food production and forest cover habitat components through timber management.

Action 1. Mast producing trees will be encouraged and managed by using timber stand improvement techniques, such as: identifying buffers, group select harvest units from one to five acres in size, mast tree release practices, under-planting, and stand diversification. Beech trees will be encouraged and maintained but not actively managed due to the imminent spread of Beech Bark Disease throughout southern Michigan's forests (Bramer pers. comm.).

Action 2. Encourage early successional habitat, browse and cover for wildlife by regenerating marketable aspen, using clear cutting to

manage existing aspen stands and increasing the aspen component in mixed stands as stands are harvested over time. Marketable aspen stands will be identified for sale, combined with other units, or managed opportunistically on an expected rotation of 40 years.

***Goal II*:** Is to create, maintain, and enhance habitat for American woodcock, cottontail rabbits, and other small game.

Rationale: 1) American woodcock and cottontail rabbits are commonly hunted species at Boyle Lake State Wildlife Area; 2) Habitat management directed at game species will be beneficial for numerous other species.

Objective A: Enhance active agricultural fields, odd areas and powerline transition areas for wildlife.

Action 1. Create soft edges by planting small trees and shrubs, as feasible, along perimeters of large power line easements, large agricultural fields, and woodlot edges.

Action 2. Establish field borders around perimeter of all agricultural fields over 10 acres in size, by planting a minimum of a 50-foot-wide area to native warm season grasses and forbs. These areas can be maintained by prescribed burning, mowing or disking in the early spring of the year; post establishment.

Action 3. Plant the hill lot across from Boyle Lake Road parking area to a hillside – short grass prairie mix. This area will create valuable nesting and display cover for woodcock.

Objective B. Create early successional management areas.

Action 1. Create six, one acre early successional management areas by identifying and clearcutting unmarketable pockets of cottonwood, aspen, red maple, gray dogwood and alder. This will provide valuable habitat for woodcock, eastern cottontail and other early successional species.

Action 2. Cut areas on a rotational basis, as needed, to ensure a minimum of two age classes of early successional vegetation present at any time.

Objective C. Construct a series of large brush piles inside of cover around perimeter of woodlands and power line corridors.

Action 1. Complete an average of 5 large brush piles per year, 50 for the life of this plan. Efforts will be made to use volunteers to complete this action.

***Goal III*:** Is to increase the potential of the Wildlife Area to support mallards and wood ducks.

Rationale: 1) Nesting habitat for puddle ducks has declined dramatically in the last 50 years; 2) Boyle Lake Wildlife Area has many areas of hydric soils with associated hydrology that is restorable with minimal amounts of effort; 3) Wetland restoration and management is a Regional and Division priority and current efforts are under way to create wetlands for mitigation banking sites; 4) other Featured Species such as white-tailed deer, wild turkeys, eastern cottontail and reptiles and amphibians will benefit from wetland management of this area, 5) objectives below will provide increased recreational access to waterfowl and wetland furbearers for users, 6) provide positive ecological functions by protecting water quality and creating fish habitat.

Objective A: Create 3 to 5 small hemi-marsh/wet meadow wetlands.

Action 1. Identify low spots in fields or odd areas where tiles can be broken and hydrology easily restored. The timeline for this action will be based on funding and program rules.

Action 2. Plant buffers of native grasses and wildflowers around wetlands.

Objective B: Create and restore riparian and wet forest areas.

Action 1. Plant and maintain a minimum 100-foot buffer along all riparian zones currently being farmed. These areas will be planted to permanent woody and perennial vegetation and excluded from farming.

Action 2. Restore hydrology on 30 acres of low, old field area and plant to wetland tree and shrub species. Control invasive species and plant transitional areas to wet meadow, or emergent species.

Action 3. Maintain a 100 foot buffer of uncut forest around the perimeter of the lake and the Galien River to support wood duck nesting opportunities.

Objective D: Maintain hunting access to Boyle Lake.

Action 1. Determine proper repairs for current erosion issues on the access trail. Repairs may include erosion fabric, water bars and proper substrate will reduce or eliminate issues

Action 2. Monitor lake access point and channel and identify maintenance needs annually.

Figure 1. Mallard ducks are a featured species that will benefit from wetland management at Boyle Lake Wildlife area.

Figure 2. Power lines on Boyle Lake SGA offer opportunities for food plot construction and edge feathering practices which benefit deer and turkeys.

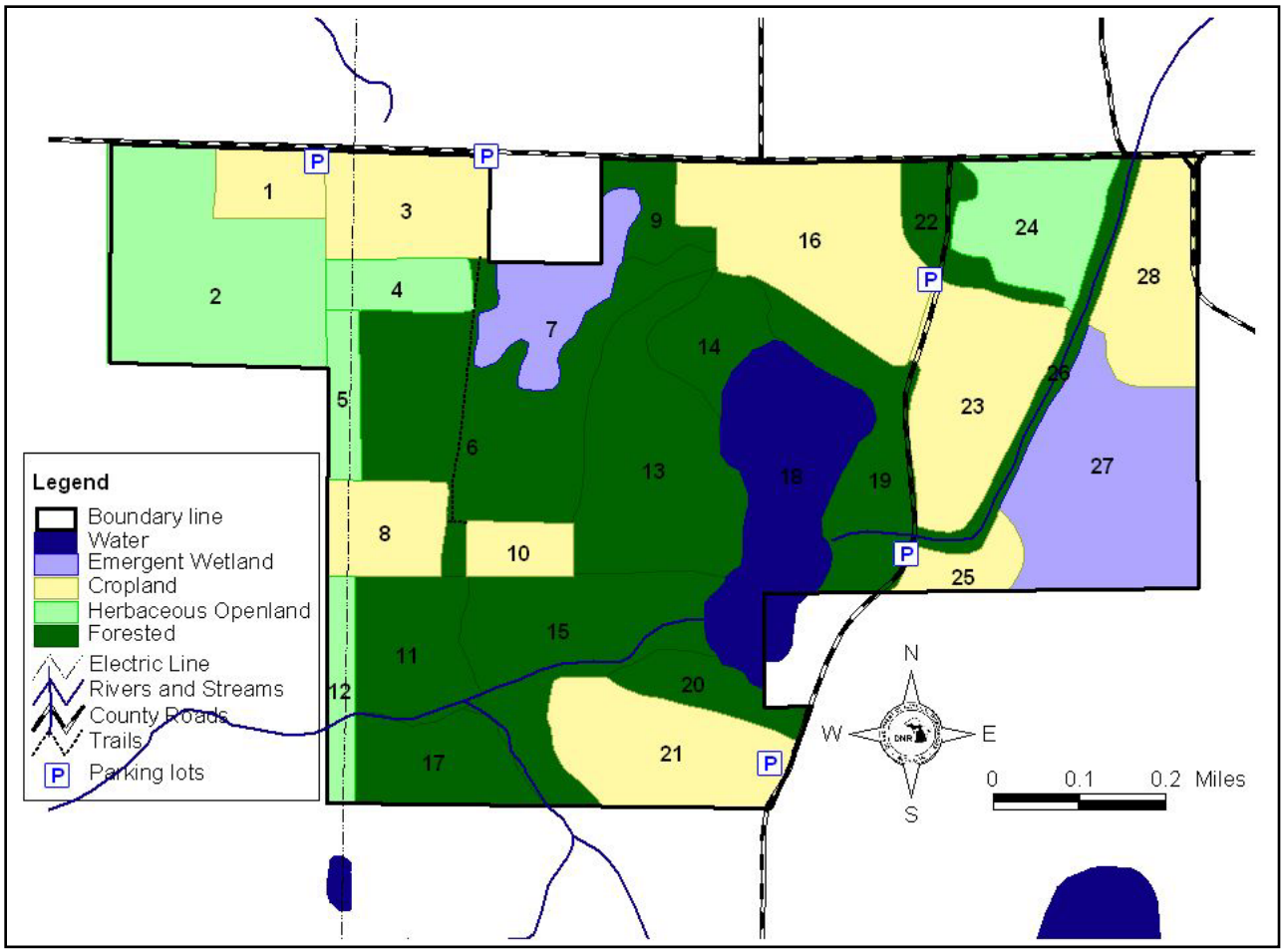


Figure 3. Map representing the major habitat cover types at Boyle Lake State Wildlife Area.

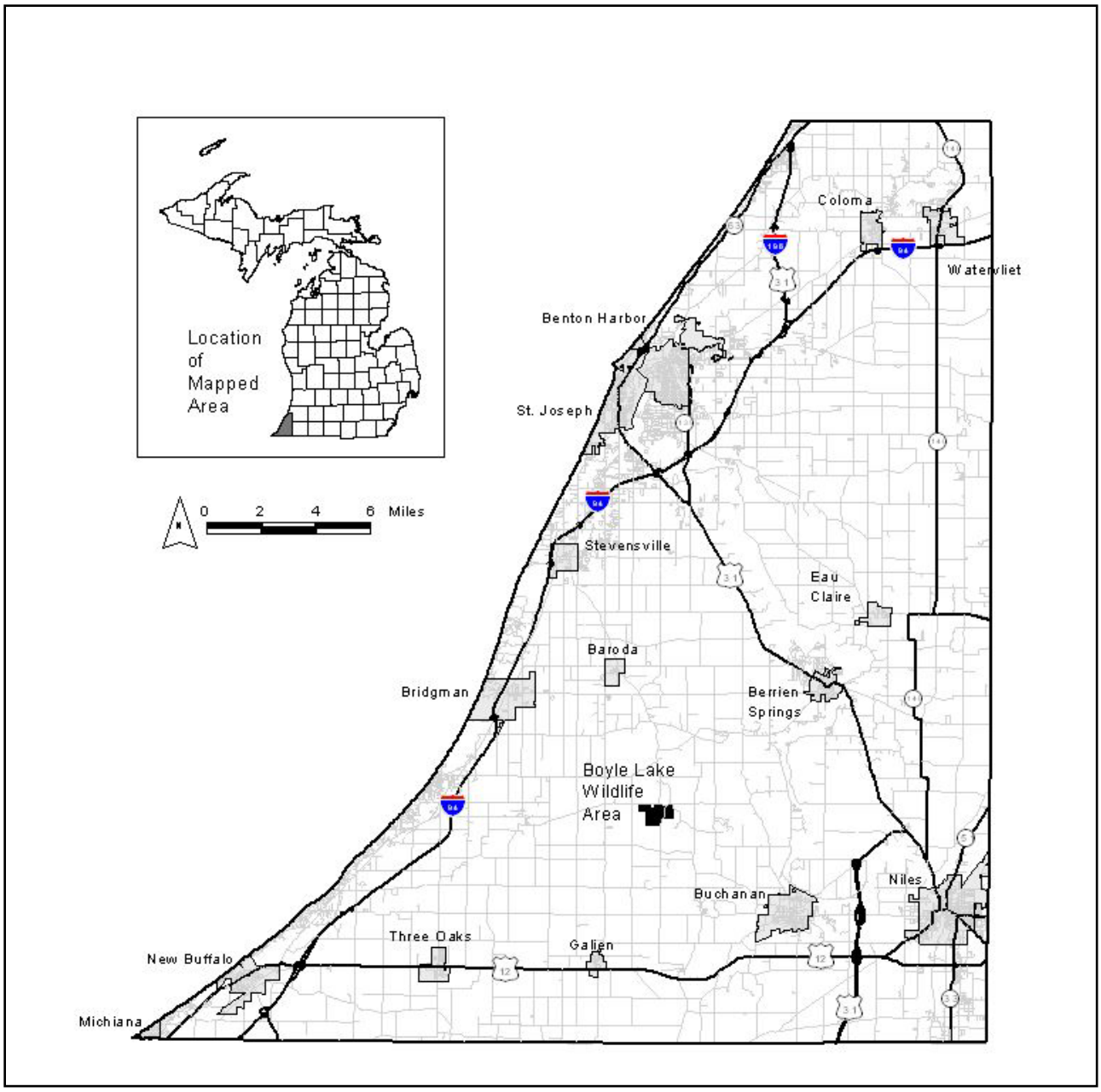


Figure 4. Location of the Boyle Lake SGA.

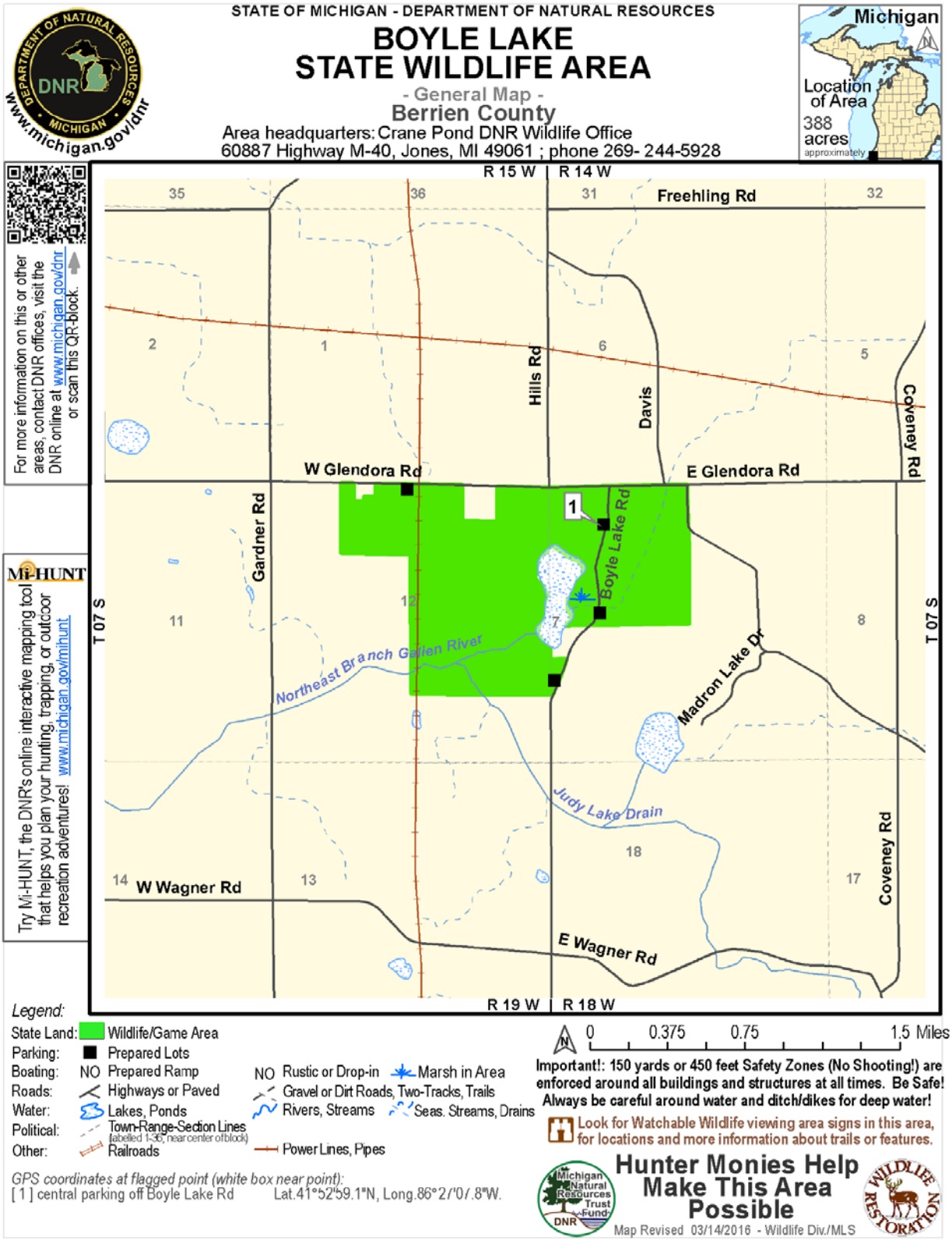


Figure 5. Boyle Lake SGA boundaries.

Acquisition and Disposal of Land

This is an important game area that provides a host of recreational opportunities for local resident and visitors. Our overall goal is to continue to provide these opportunities while providing users the highest quality recreational experience that we can. This is the closest State Wildlife Area for residents of Niles, South bend, Elkhart, Berrien Springs and Benton Harbor. Also, it's the closest State Land available to any non-residents coming from Chicago.

Since the Boyle Lake State Wildlife Area is in southwest Michigan's "cold zone" maintaining and expanding the area is very important to provide continued recreational access to our users. The land acquisition strategy for the Boyle Lake State Wildlife Area is to both fill in state ownership by acquiring available blocks located among current State ownership, and importantly to expand the area by obtaining appropriate parcels that are outside the current ownership, but within the acquisition boundary. Parcels will be evaluated as they become available and will be acquired on a willing seller or donation basis only.

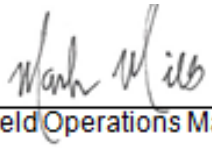
Boyle Lake Wildlife Area is not expected to change much in the next 50-100 years. Moderate additional home construction and land fragmentation is expected. However, this will probably have little impact on the landscape immediately adjacent to the area, as it's a rural area where most residents will likely maintain the fields and forests on their properties.

Plan Review

The master plan process provides the public with an opportunity through written communications to have input regarding the future of the area. Although public input was encouraged and considered in developing this plan, given the legal requirements and funding obligations for the area; management may not always shift based on these comments.

This plan was available for public review and comment on the DNR website between February 1, 2017 and February 28, 2017. There was one comment received asking to enhance public access to the lake for fishing and hunting, this will be considered as the Department moves forward with the property. The plan will be reviewed again within 10 years of the approved date. For question or comments on Boyle Lake State Game Area the public may contact the Crane Pond Field Office at 269-244-5928.

Approvals



7 March 2017

Mark Mills, Field Operations Manager — Date

Mark Sargent, Regional Supervisor — Date